

**STATISTICAL SUMMARIES OF STREAMFLOW DATA IN OREGON:
VOLUME 1--MONTHLY AND ANNUAL STREAMFLOW, AND
FLOW-DURATION VALUES**

By Robert L. Moffatt, Roy E. Wellman, and Janice M. Gordon

**U.S. GEOLOGICAL SURVEY
Open-File Report 90-118**

**Prepared in cooperation with the
OREGON WATER RESOURCES DEPARTMENT**



**Portland, Oregon
1990**

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CONTENTS

	Page
Abstract -----	1
Introduction -----	1
Streamflow records -----	1
Summary tables -----	8
Station descriptions -----	8
Monthly and annual mean discharges -----	8
Duration table of daily mean flows -----	9
References -----	10
Gaging-station descriptions and statistical tables -----	11
Index -----	406

ILLUSTRATIONS

[Plate is in pocket]

Plate 1. Map showing location of streamflow gaging stations in Oregon.	
Figure 1. Graphs showing periods of continuous gaging station record used in computing statistics -----	2
2. Graph showing the percentage of time discharge of the Santiam River at Jefferson was equaled or exceeded -----	9

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ABSTRACT

Statistical summaries of streamflow data at 375 stream-gaging sites are presented in this report to aid in appraising the hydrology of river basins in Oregon. Summaries for 30 of these sites were compiled into separate periods because of implementation of reservoir regulation during the period of data collection. Periods before and after regulation are presented for comparison.

The physical and operational features for each gaging station are described briefly. Streamflow data are summarized in monthly and annual tables of flow statistics and duration information.

INTRODUCTION

This is the first of two volumes of statistical summaries of streamflow data collected at gaging stations in Oregon. Volume 1 contains statistical summaries of monthly and annual flow and of flow-duration. Volume 2 will contain statistical summaries of annual low-flow, high-flow, and flood frequency data.

The statistical summaries provide streamflow characteristics based on historical data. This report was prepared in cooperation with the OWRD (Oregon Water Resources Department). Locations of gaging stations used in this report are shown on plate 1 (in pocket at back of report).

STREAMFLOW RECORDS

Both active and discontinued gaging stations having a minimum of 10 years of daily-mean discharge values were used in this report (fig. 1). For active stations the period of record extends to the end of the 1987 water year (ending on September 30). The data compiled in these reports had to satisfy one of two criteria. The data had to be hydrologically transferable (for use in estimating streamflow in ungaged basins), or it had to be a significant indicator of flow availability (Riggs, 1968). For example, data collected at the outlet of a natural lake would have little hydrologic transferability (due to storage of water in the lake), but would be a good indication of low-flow availability as well as flood runoff.

Hydrologic data from canals and reservoirs were not used in this report. Data for combined-flow sites include diverted flow which may, or may not, reenter the stream.

Sometimes the natural flow of a stream may be altered by the construction of a dam, an irrigation diversion, or by the augmentation of flow through diversions by adjacent basins. If this occurs during the operation of a stream gaging station, the statistical summaries must reflect both natural and altered flow, providing there are at least 10 years of data for each. Data for 30 sites of this type are included.

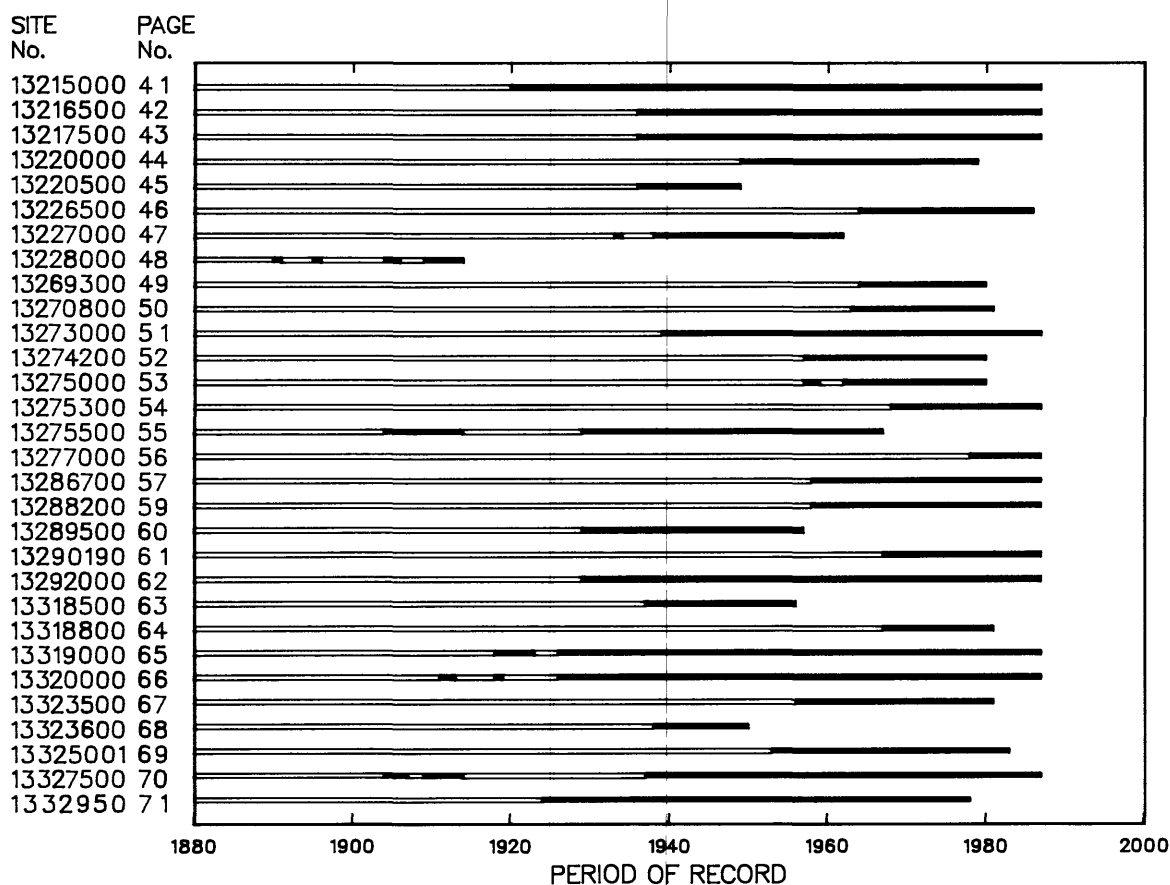
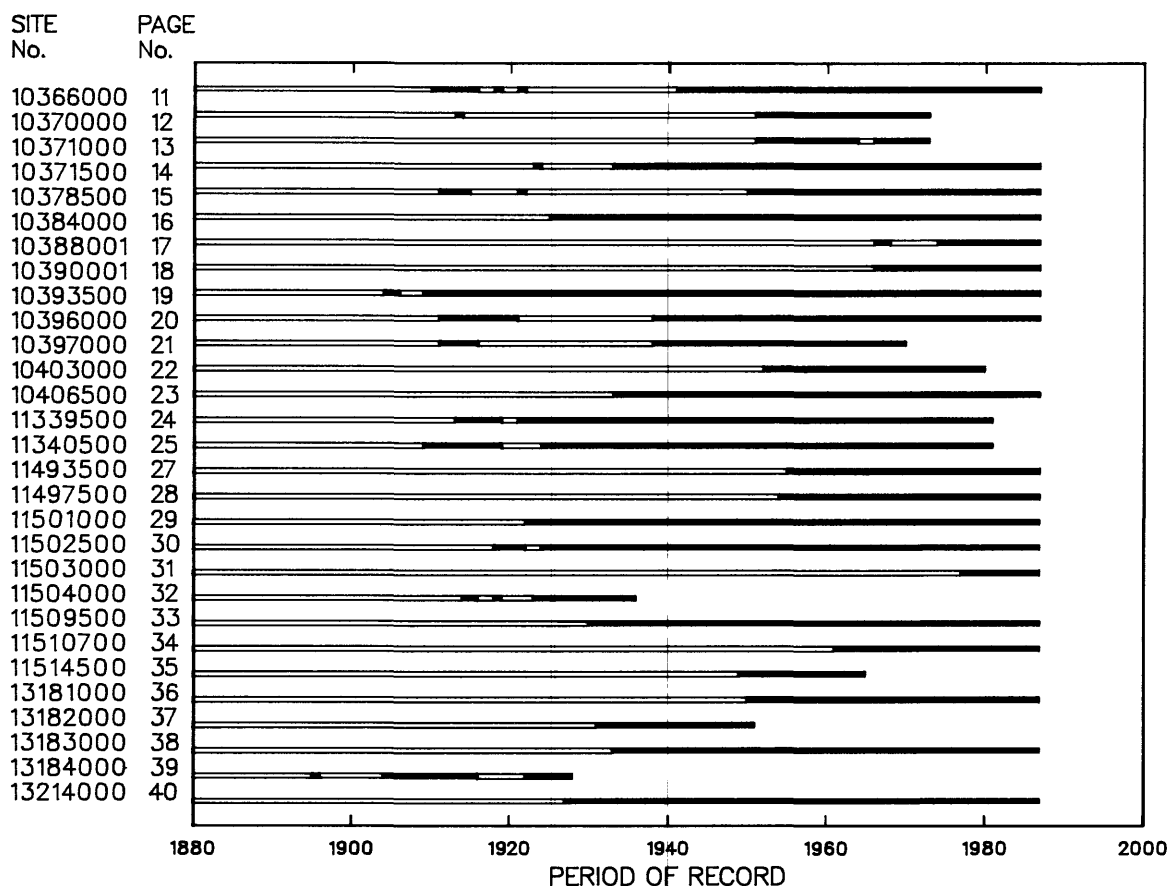


Figure 1.--Periods of continuous gaging station record used in computing statistics.

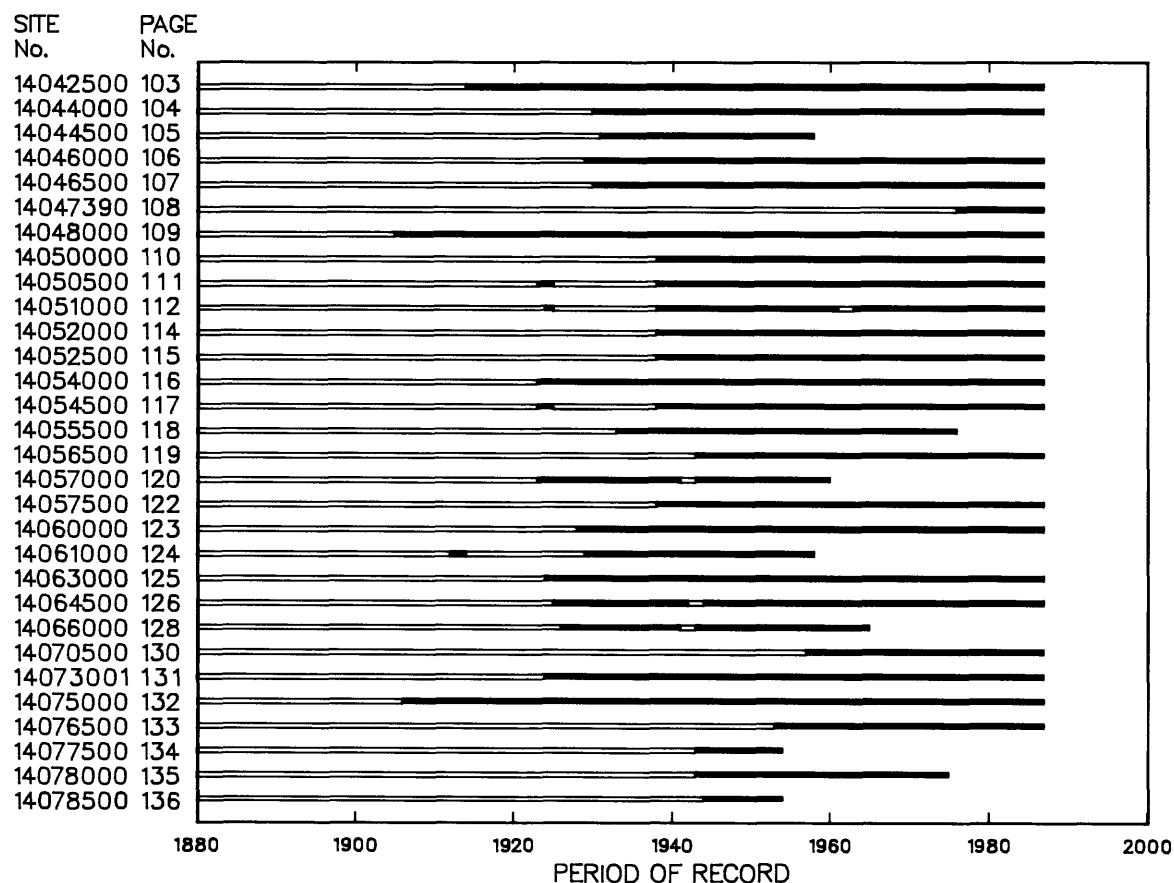
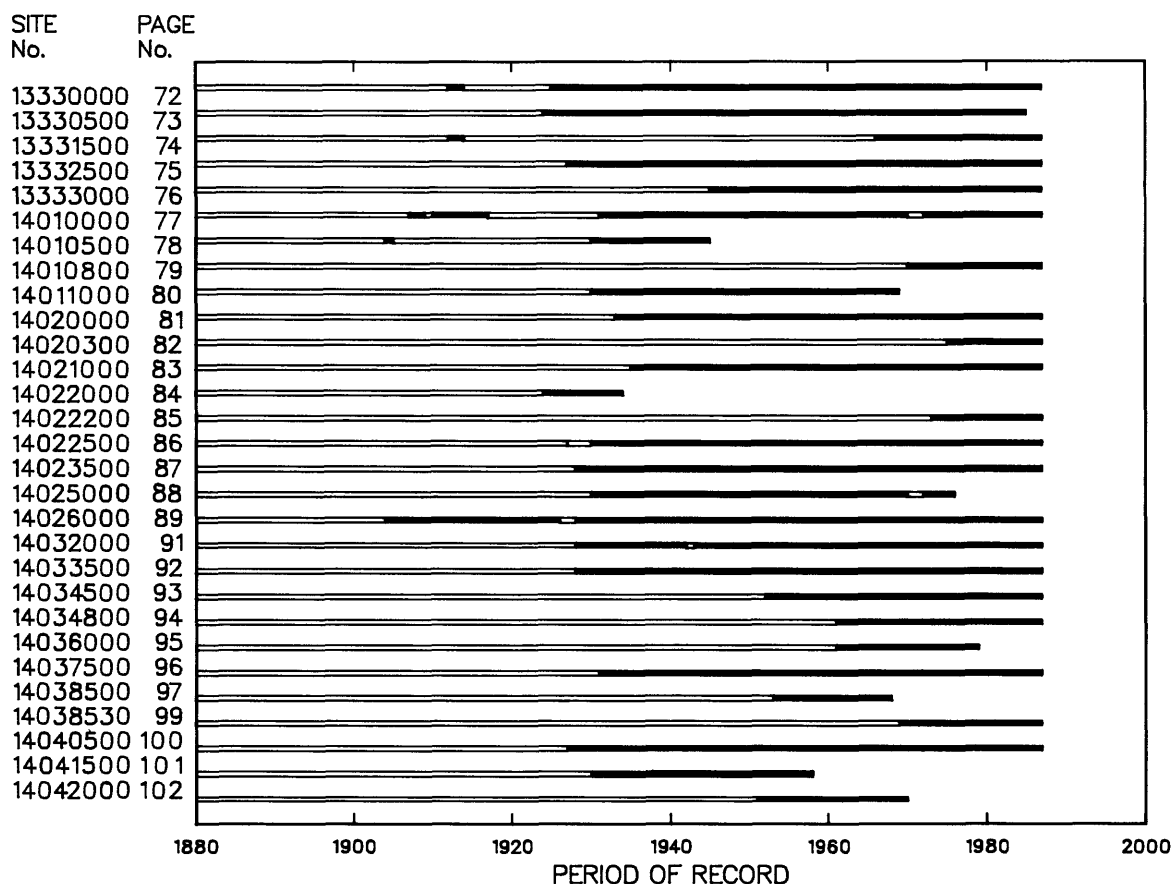
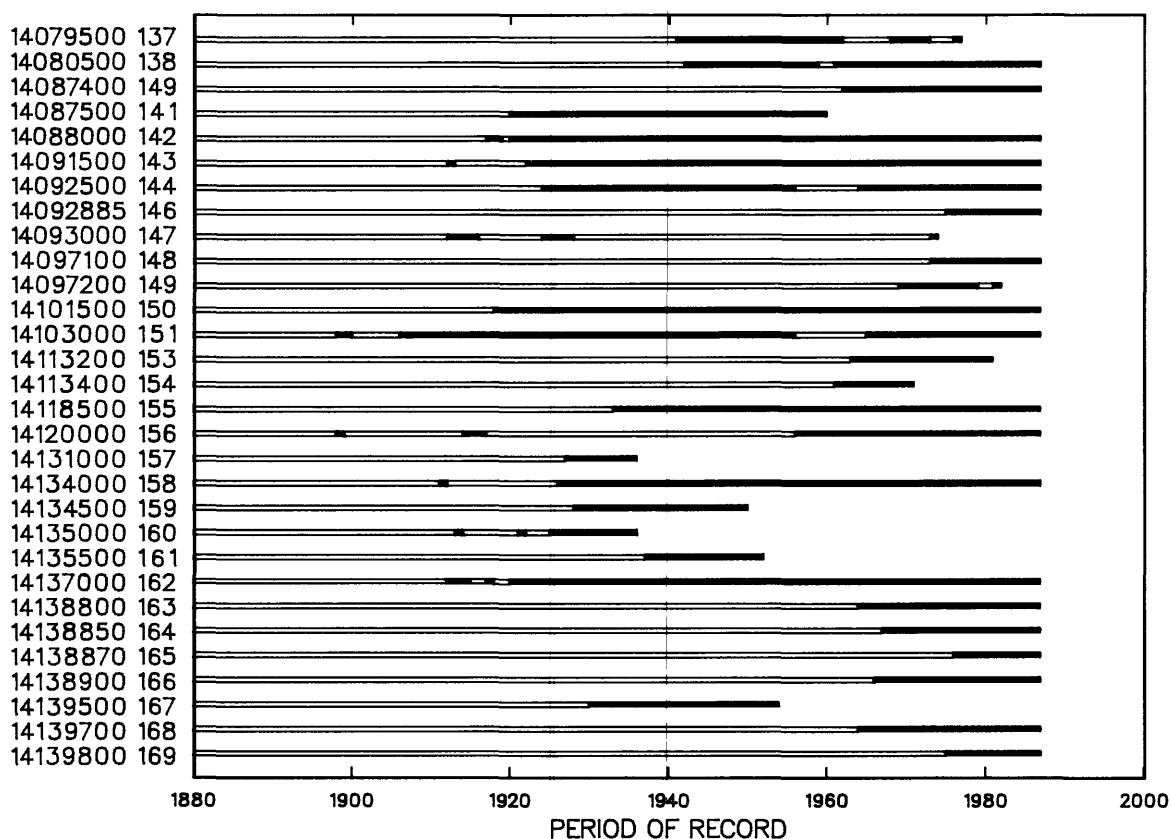


Figure 1.--Periods of continuous gaging station record used in computing statistics.--Continued

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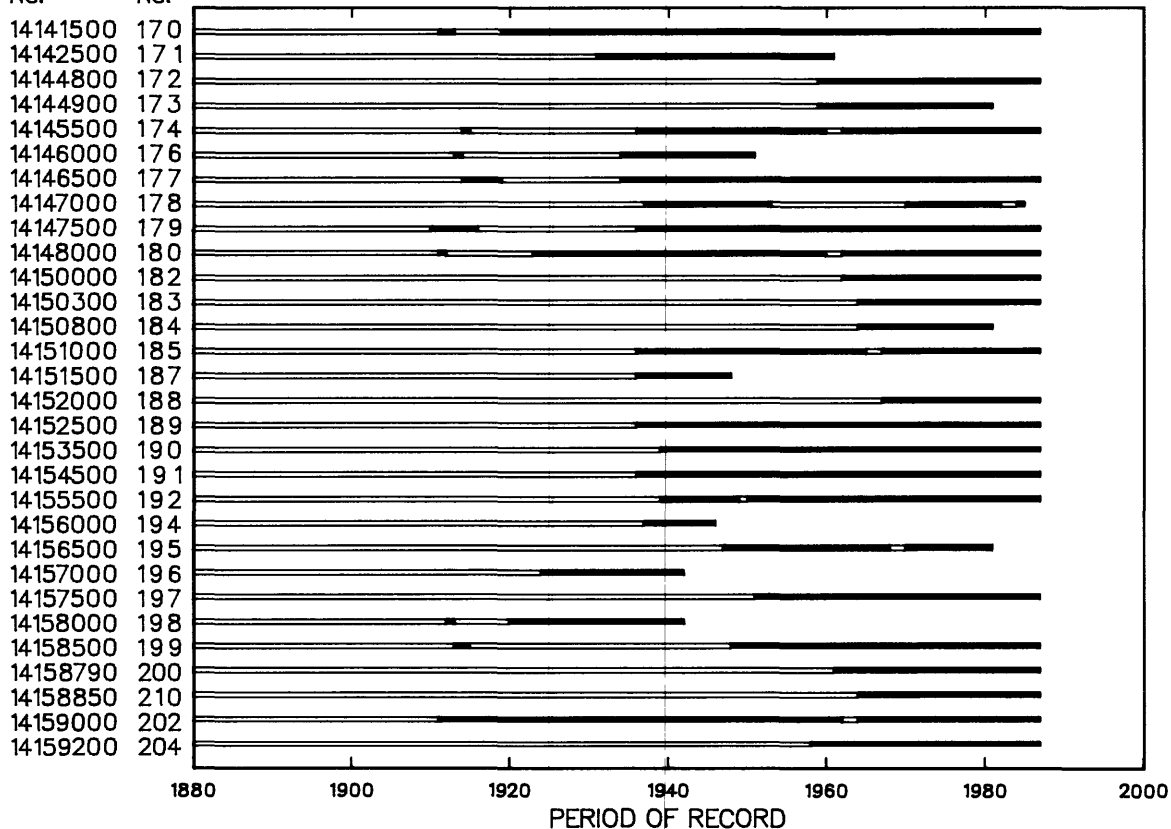


Figure 1.--Periods of continuous gaging station record used in computing statistics.--Continued

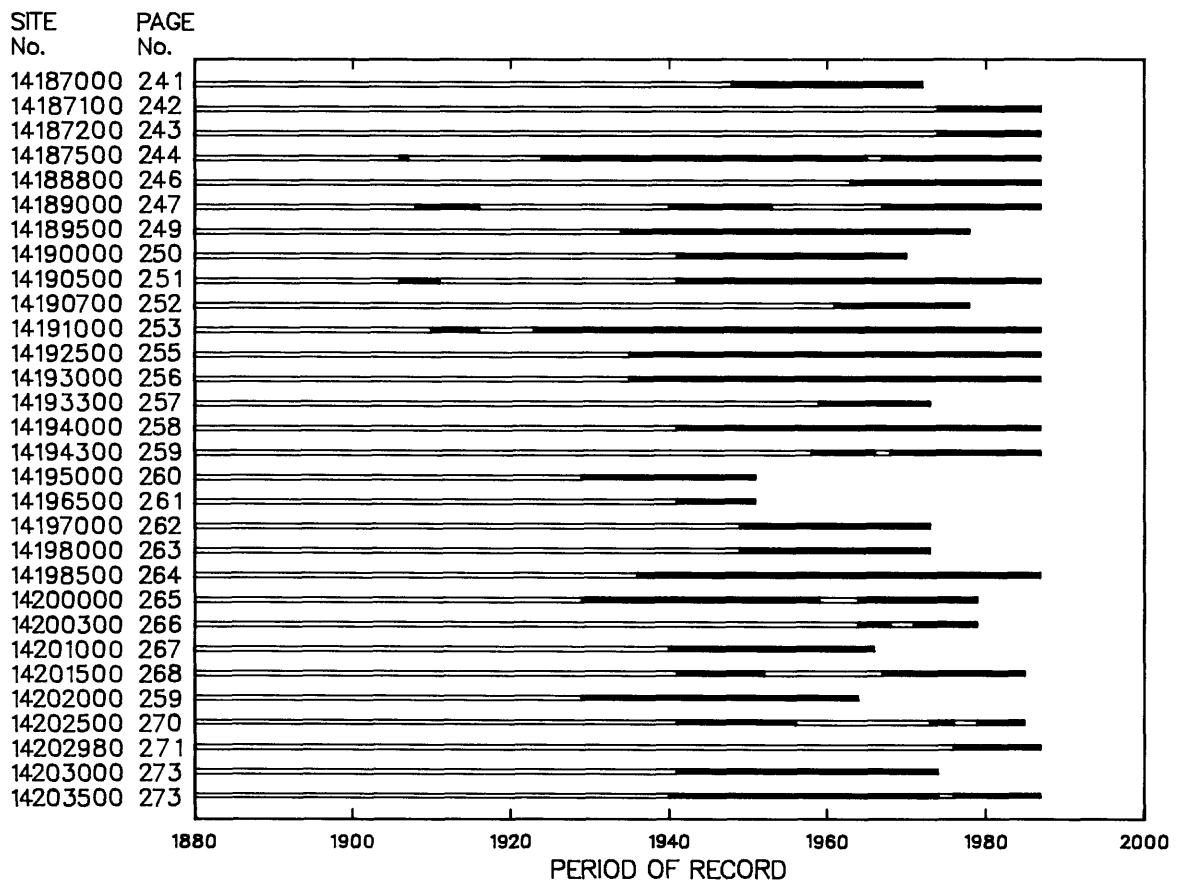
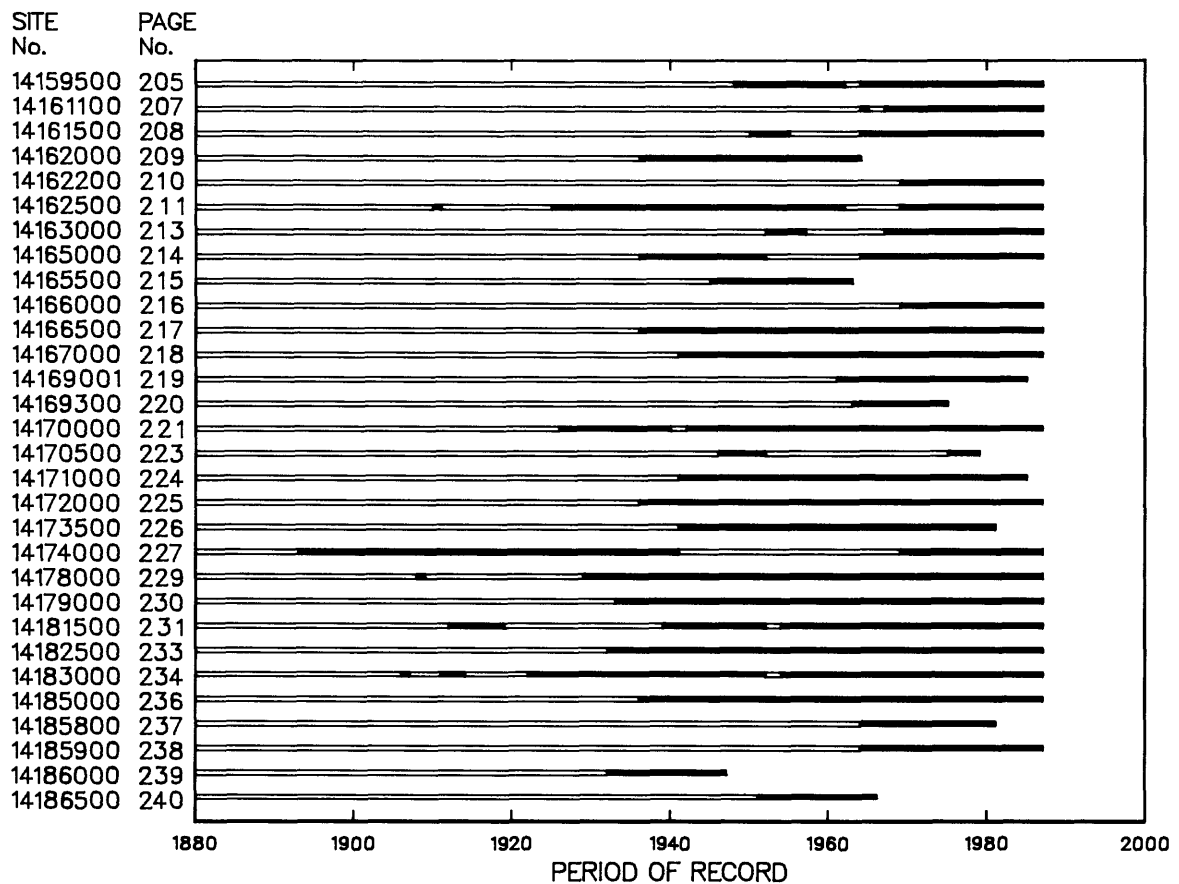


Figure 1.--Periods of continuous gaging station record used in computing statistics.--Continued

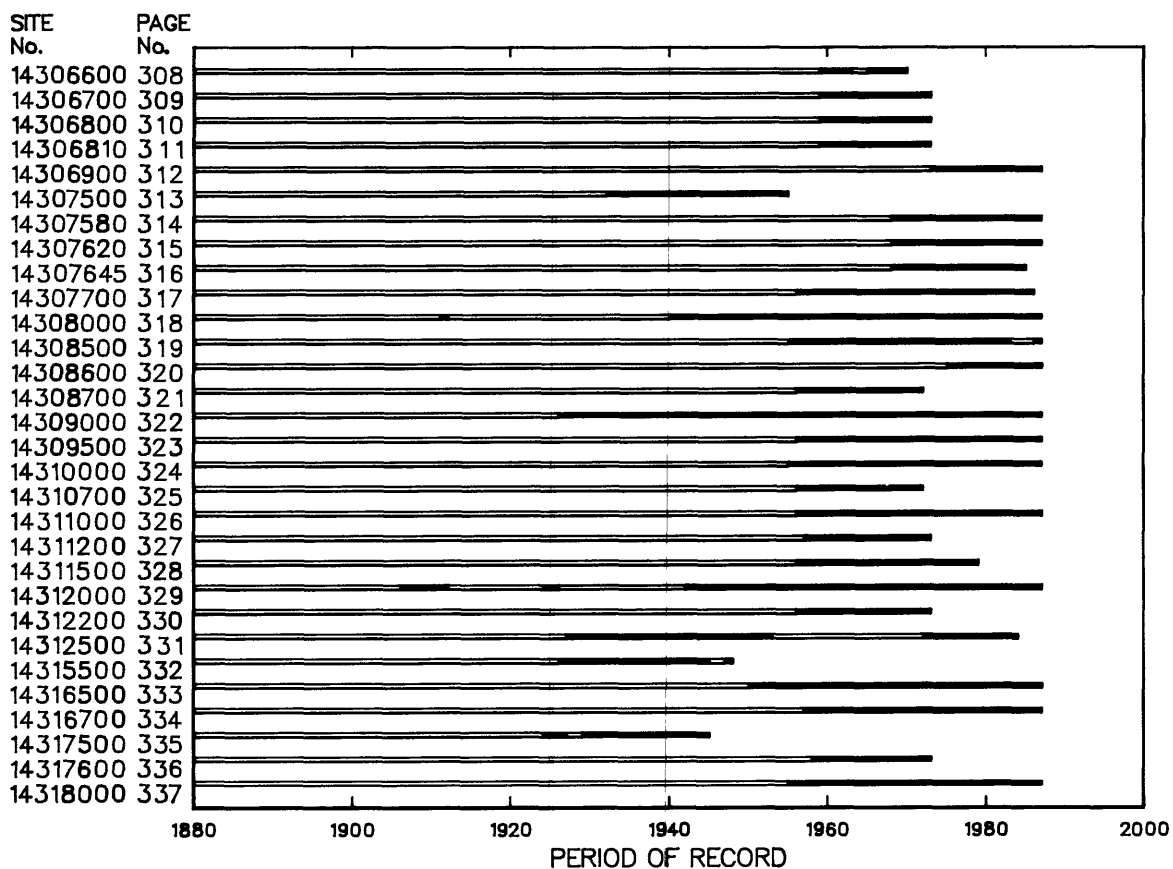
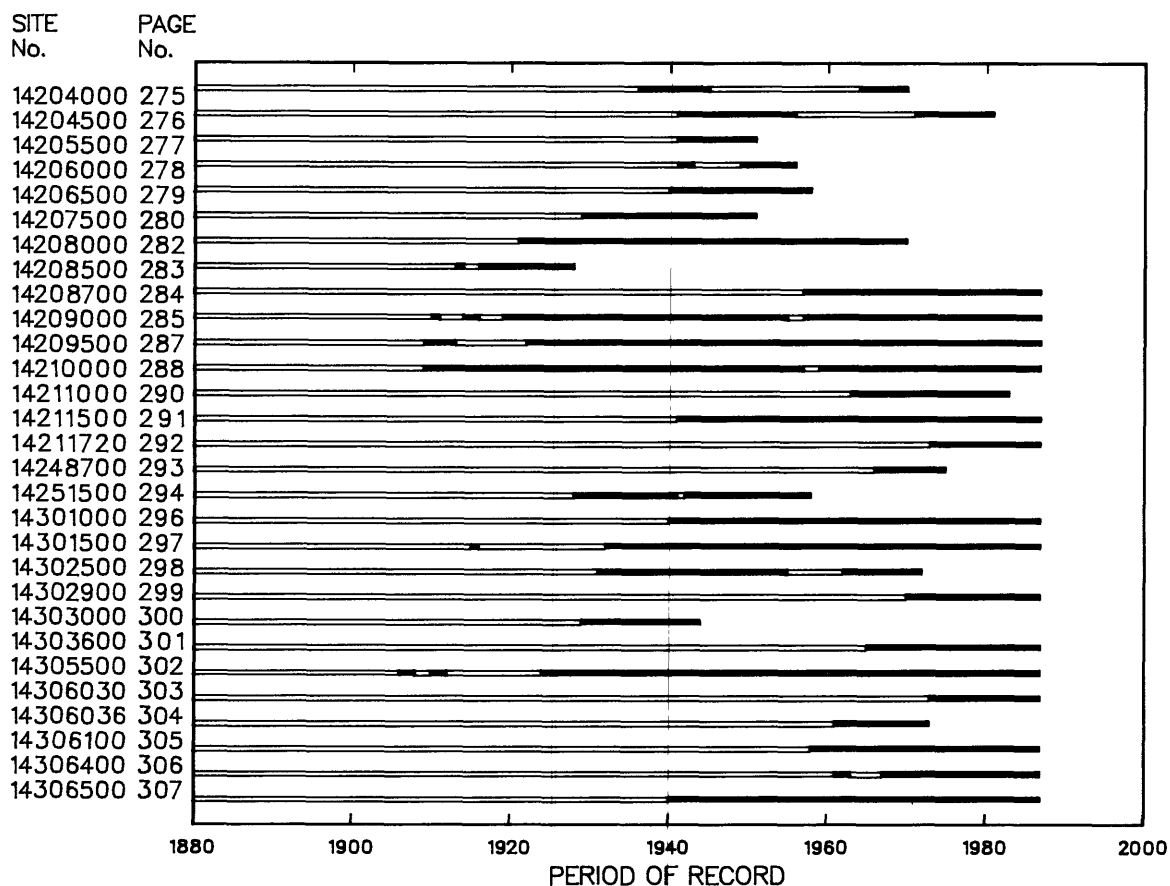


Figure 1.--Periods of continuous gaging station record used in computing statistics.--Continued

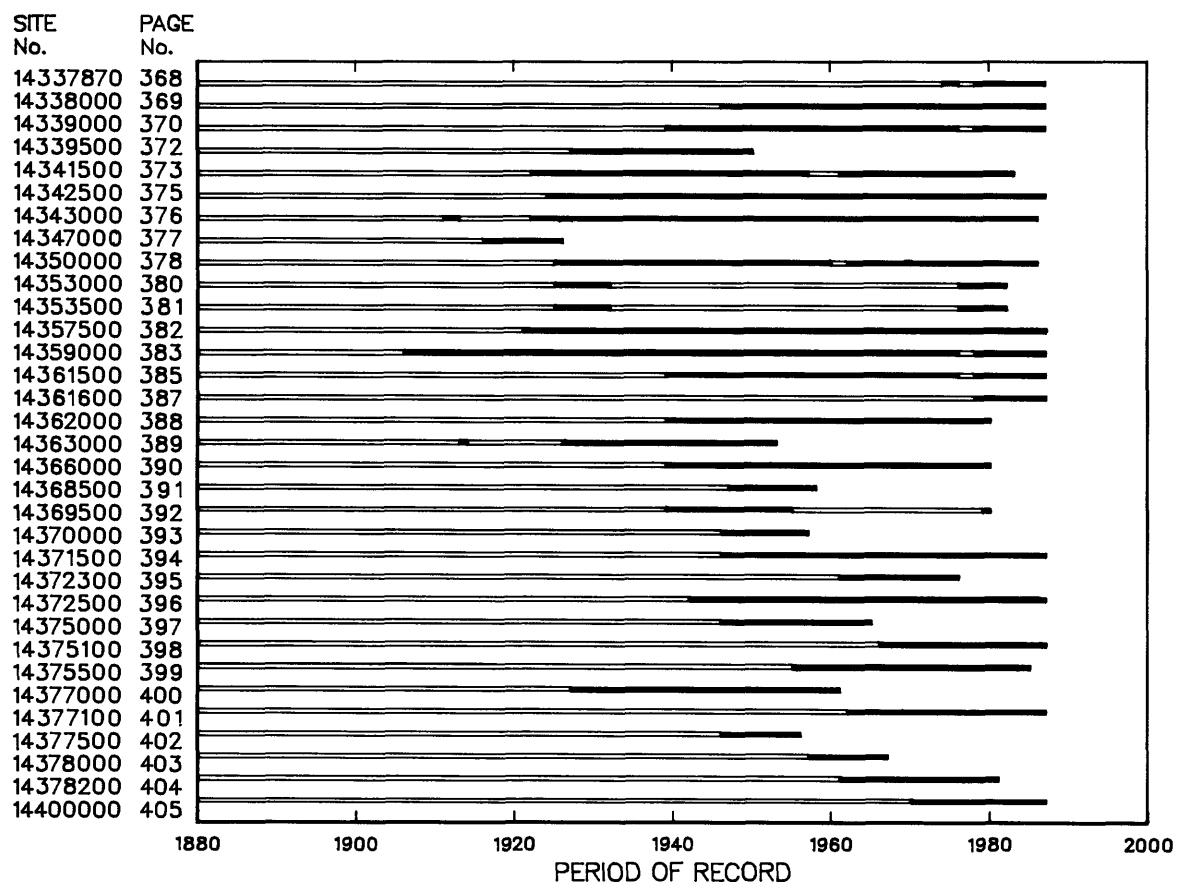
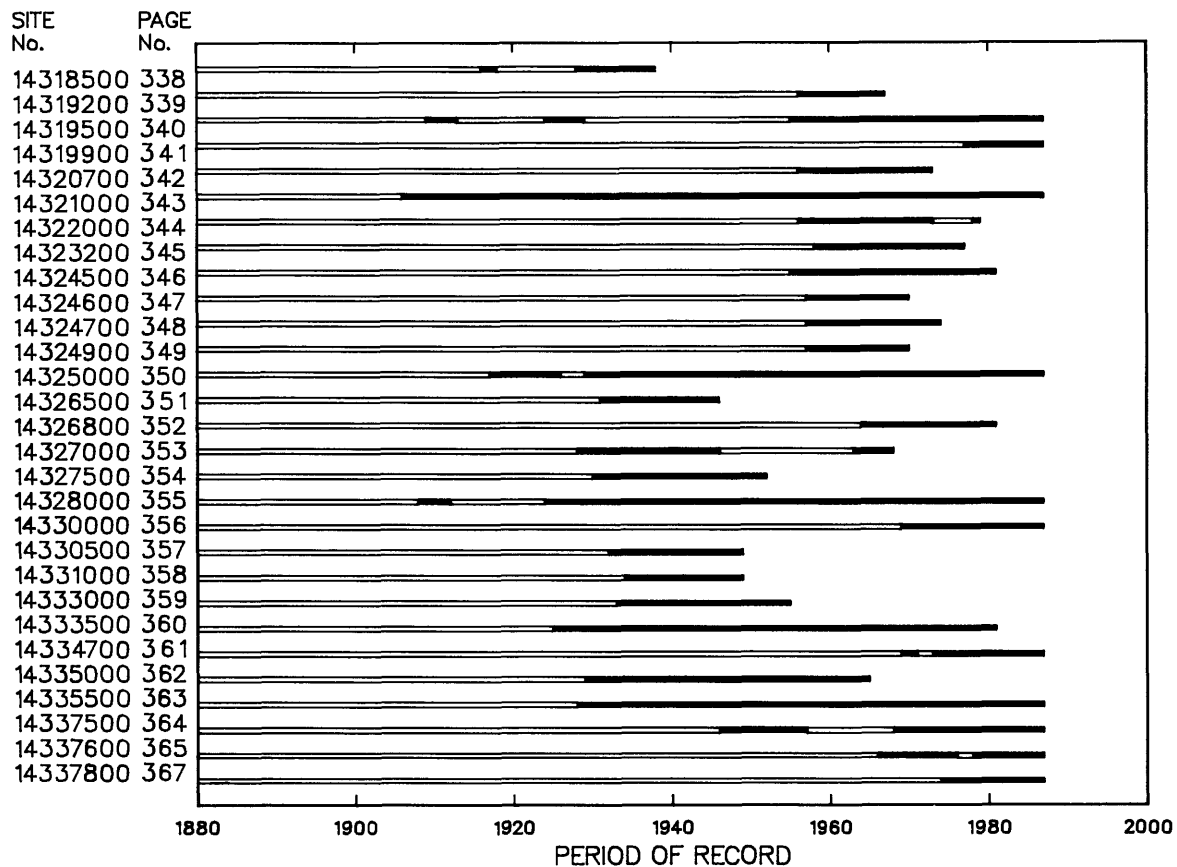


Figure 1.--Periods of continuous gaging station record used in computing statistics.--Continued

SUMMARY TABLES

Station Descriptions

A brief description outlining the physical and operational features of each gaging station precedes the statistical summaries. Except for paragraphs describing revised records and extremes for a specific year the station descriptions are identical to the last-published version in the annual release "Water Resources Data - Oregon" (U.S. Geological Survey, 1987 volumes 1 and 2). A detailed explanation of the station description and a definition of terms is given in that report.

The tables of statistical data include monthly and annual mean discharges, and a duration table of the monthly and annual series of daily mean flows. The period of record shown in the heading is the first and last water year for which daily-mean discharge values are available, and does not necessarily indicate continuous record (see the PERIOD OF RECORD paragraph in the station description for fragmentary records). The statistics were generated by using computer programs available from the U.S. Geological Survey's NWIS (National Water Information System).

Monthly and Annual Mean Discharges

The value "n" shown in the tables represents the number of monthly mean discharges in the set of data used to compute the statistics.

Monthly and annual minimum and maximum values, respectively, are the smallest and largest monthly or annual mean discharges selected from "n" set of data. They are followed by the water year of occurrence.

The mean is a measure of the average of all the monthly or annual mean discharges selected from "n" set of data.

The standard deviation is a measure of the variability of discharge occurring annually or during a given month for the period of record. The value represents the spread in discharges (from the mean value) that could be expected to occur approximately two-thirds of the time based on the distribution of data during the sampling period.

Annual runoff, as used in this report, is the average of annual surface flow that passes a stream gaging station during the period used. The percentage of annual runoff is an indication of how flow is distributed throughout the year.

The annual mean shown in the table sometimes will vary from the average discharge shown in the station description. The annual mean is computed based on data for the period identified above each table. The average discharge is computed using complete water years for the period of record. The values in this summary were computed using ADAPS (Automated Data Processing System) program called DVMAS (Daily-Values Monthly and Annual Statistics) [Bartholoma, 1989].

Duration Table of Daily Mean Flows

The table shows the amount of flow that was equalled or exceeded for the indicated percent of time. When the magnitude of daily mean discharges vary only slightly, the monthly and annual values shown in the table will either remain constant or vary slightly over the range of selected percentages. This results from the computational method used; separating the range of discharge magnitudes into 35 equal classes before ranking them and computing the percentage of time equalled or exceeded.

The values in the table are computed using ADAPS program called Daily-Values Duration and N-Day Low/High Value Analysis (Farmer and Terry, 1989).

Figure 2 shows two duration curves that compared the magnitude of flow with percentage of time equalled or exceeded for two time series; before and after reservoir regulation.

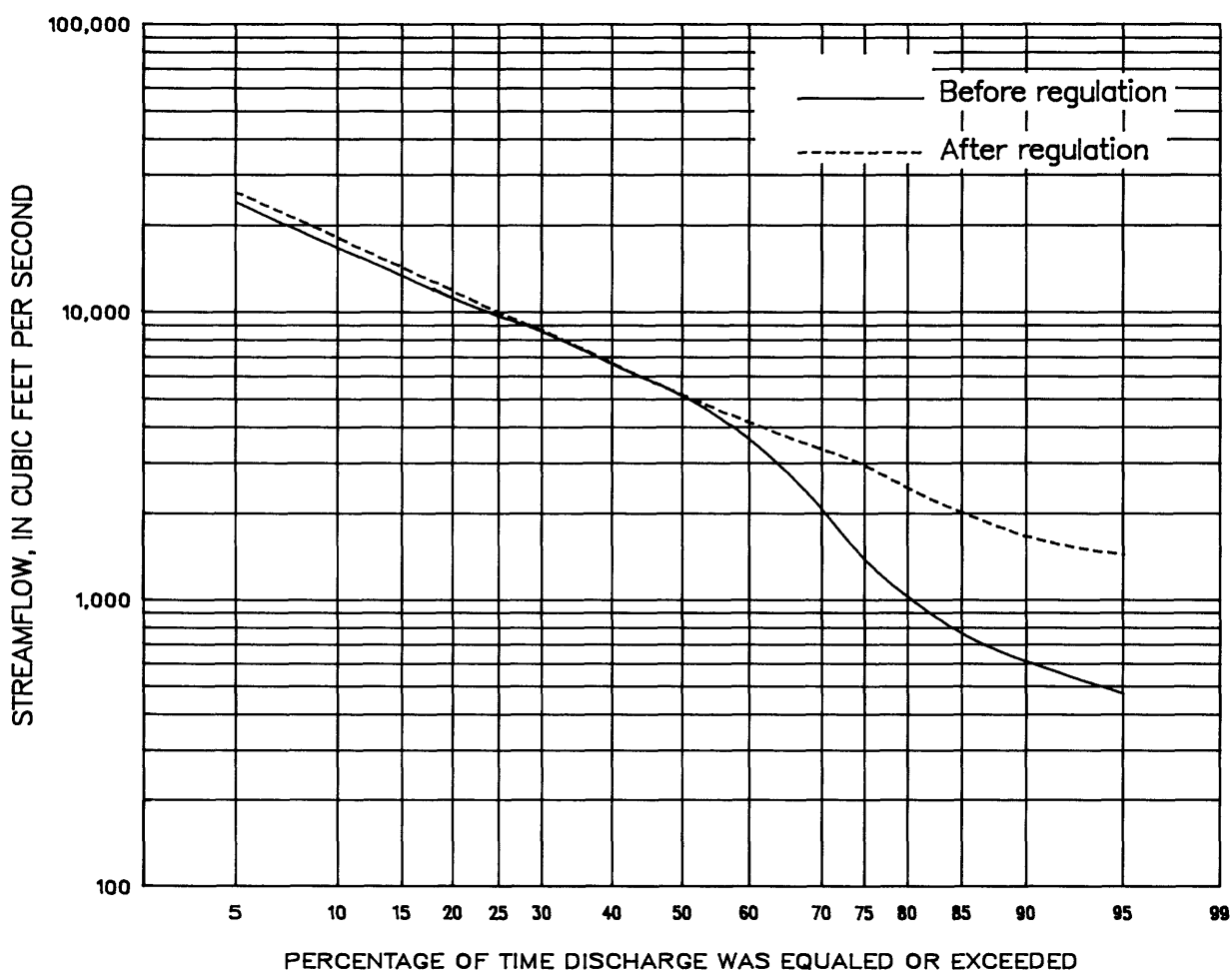


Figure 2.--Percentage of time discharge of the Santiam River at Jefferson was equalled or exceeded.

CITED REFERENCES

- Bartholoma, S.D., 1989, Daily-Values monthly and annual statistics, Section 11.1 of National Water Information System User's Manual 89.1, Volume 2, Chapter 3, Automated Data Processing System (ADAPS): U.S. Geological Survey Open-File Report 90-116, p. 11-1 to 11-10.
- Farmer, M.L., and Terry, J.E., 1989, Daily-values duration and N-day low/high value analysis, section 11.2 of National Water Information System Users's Manual 89.1, Volume 2, Chapter 3, Automated Data Processing System (ADAPS): U.S. Geological Survey Open-File Report 90-116, p. 11-11 to 11-17.
- Riggs, H.C., 1968, Some statistical tools in hydrology: U.S. Geological Survey Techniques of Water Resources Investigations, Book 4, Chapter A1, 39 p.
- U.S. Geological Survey, 1987, Water resources data, Oregon, water year 1987, volume 1. Eastern Oregon; Portland, Oregon: U.S. Geological Survey Water-Data Report OR-87-1, 222 p.
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THE GREAT BASIN

10366000 TWENTYMILE CREEK NEAR ADEL, OR

LOCATION.--Lat 42°04'20", long 119°57'42", in SW 1/4 NW 1/4 sec.25, T.40 S., R.23 E., Lake County, Hydrologic Unit 17120007, on left bank 1.5 mi downstream from Twelvemile Creek and 8 mi southwest of Adel.

DRAINAGE AREA.--194 mi², including 46 mi² in Cowhead Lake area.

PERIOD OF RECORD.-- March 1910 to July 1916, December 1917 to September 1919, and March 1921 to June 1922 (published as "near Warner Lake"), September 1940 to November 1944, March 1945 to 1987.

REVISED RECORDS.--WSP 1090: 1945. WSP 1514: 1951-53, 1954(M), WDR OR-85-1: 1963(P), 1965(P), 1970-71(P).

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,560.83 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 21, 1940, nonrecording gage or water-stage recorder at sites within 1 mi downstream at various datums. Sept. 21, 1940, to Nov. 30, 1944, water-stage recorder at site 1.8 mi upstream at different datums. Mar. 12, 1945, to June 28, 1952, water-stage recorder at site 70 ft upstream at datum 0.88 ft higher.

REMARKS.--Some regulation by pumpage from Cowhead Lake. Diversions in Oregon for irrigation upstream from station; considerable diversions for irrigation in Cowhead Lake area in California.

AVERAGE DISCHARGE.--52 years (water years 1911-15, 1919, 1941-44, 1946-87), 54.1 ft³/s, 39,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,400 ft³/s Feb. 18, 1986, gage height, 16.94 ft, on basis of slope-area measurement; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1910-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	55	2.4	1978	121	1963	6.8	15	1.1
Nov	55	3.8	1914	64	1982	9.0	9.7	1.4
Dec	54	3.1	1977	349	1965	31	59	4.9
Jan	55	2.8	1977	330	1970	49	78	7.8
Feb	55	3.3	1977	797	1986	86	133	12.4
Mar	56	5.9	1977	578	1943	151	128	23.7
Apr	58	5.9	1977	879	1952	132	137	20.0
May	58	9.4	1977	283	1952	100	56	15.7
Jun	58	4.2	1977	261	1971	56	44	8.6
Jul	56	1.5	1961	34	1952	9.9	7.9	1.6
Aug	56	1.2	1955	9.6	1983	3.5	1.6	0.6
Sep	56	2.1	1948	6.4	1983	3.6	1.1	0.6
Ann		4.2	1977	125	1952	54	31	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.7	3.3	3.3	3.3	3.3	3.3	4.0	4.0	4.0	4.8	4.8	4.8	6.1	6.6	7.9	55
Nov	3.4	3.9	3.9	3.9	4.6	4.6	4.6	5.3	5.3	7.0	7.6	8.2	9.8	13	21	55
Dec	2.7	3.4	4.4	4.8	5.2	5.4	5.9	6.6	7.2	8.6	10	13	20	32	76	54
Jan	3.2	3.2	4.3	4.8	5.2	5.5	6.4	6.9	8.2	13	19	27	43	78	197	55
Feb	3.5	4.7	5.7	6.1	7.5	8.3	11	16	25	42	59	82	110	173	390	55
Mar	6.3	7.9	11	15	20	25	44	69	99	143	180	221	306	389	576	56
Apr	14	20	27	32	37	44	60	77	100	126	141	164	209	293	474	58
May	21	30	39	48	56	64	75	85	100	115	125	135	152	184	240	58
Jun	5.2	7.6	12	16	21	24	32	42	53	68	77	86	100	119	151	58
Jul	1.7	2.3	2.6	3.1	3.1	3.6	4.1	5.5	7.2	9.5	13	16	20	24	32	56
Aug	1.5	1.7	1.9	2.2	2.4	2.4	2.7	3.1	3.1	3.5	3.9	4.4	4.9	5.5	7.0	56
Sep	1.9	2.1	2.4	2.4	2.7	2.7	3.0	3.3	3.3	3.7	4.1	4.6	4.6	5.1	5.7	56
Ann	2.2	3.1	3.5	4.0	4.4	4.7	5.8	8.1	15	34	50	69	93	130	219	

WARNER LAKES BASIN

10370000 CAMAS CREEK NEAR LAKEVIEW, OR

LOCATION.--Lat 42°12'59", Long 120°06'05", in SE 1/4 NE 1/4 sec.3, T.39 S., R.22 E., Lake County, on left bank 0.2 mi downstream from Blue Creek and 12 mi east of Lakeview.

PERIOD OF RECORD.--September 1912 to November 1914, March to May 1915, December 1943 to September 1973.

DRAINAGE AREA.--63 mi², approximately.

GAGE.--Water-stage recorder. Datum of gage is 5,472.41 ft above National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). Sept. 11, 1912, to May 9, 1915, water-stage recorder or nonrecording gage at site 500 ft upstream at different datum.

REMARKS.--No regulation. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--25 years (1912-14, 1950-73), 46.6 ft³/s, 33,760 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,190 ft³/s Dec. 23, 1964, gage height, 7.32 ft, from rating curve extended above 410 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.90 ft³/s Aug. 16, 1960.

STATISTICAL SUMMARIES FOR THE PERIOD 1913-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	25	2.9	1967	51	1963	8.6	9.5	1.6
Nov	25	3.3	1960	42	1971	13	8.9	2.4
Dec	25	2.3	1960	241	1965	32	53	6.0
Jan	25	2.7	1960	125	1971	30	36	5.5
Feb	25	6.3	1955	142	1963	41	35	6.8
Mar	25	15	1964	254	1972	63	51	11.6
Apr	25	39	1968	344	1952	164	77	28.9
May	25	19	1968	339	1971	144	87	26.2
Jun	25	7.3	1959	114	1971	41	28	7.4
Jul	25	2.0	1968	23	1971	10	5.8	1.9
Aug	25	1.9	1960	10	1965	5.2	2.3	0.9
Sep	25	2.0	1968	9.1	1971	4.8	1.9	0.8
Ann		17	1959	89	1971	46	20	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.6	3.0	3.5	4.0	4.0	4.6	5.3	5.3	6.1	7.4	7.8	8.5	9.8	14	19	25
Nov	3.0	4.0	4.6	5.3	6.1	6.1	7.9	9.0	11	15	16	18	21	27	39	25
Dec	3.0	5.4	5.8	6.1	6.7	7.1	8.5	12	15	19	22	26	35	55	101	25
Jan	3.0	4.3	5.1	6.4	6.8	7.6	9.3	11	14	18	24	39	54	78	111	25
Feb	6.5	7.2	8.1	9.1	10	11	16	21	29	40	50	59	71	91	136	25
Mar	8.5	12	14	16	22	26	34	43	52	67	78	96	119	152	203	25
Apr	39	52	60	69	80	91	114	143	169	206	229	248	271	310	382	25
May	21	32	45	55	65	75	98	124	144	177	195	215	246	291	361	25
Jun	5.1	6.7	11	14	17	20	27	33	41	50	54	61	70	88	118	25
Jul	2.0	2.5	2.8	3.9	4.9	5.5	7.7	8.9	10	13	14	15	17	20	25	25
Aug	1.6	2.0	2.2	2.3	2.9	3.7	4.6	4.9	5.7	6.2	6.6	7.1	7.7	7.7	9.6	25
Sep	2.0	2.4	2.4	2.6	3.0	3.7	4.0	4.3	4.9	5.6	5.6	6.1	6.5	7.5	8.0	25
Ann	2.5	3.8	4.7	5.5	6.1	6.6	8.1	12	19	37	50	67	94	138	215	

WARNER LAKES BASIN

10371000 DRAKE CREEK NEAR ADEL, OR

LOCATION.--Lat 42°12'00", Long 120°00'41", in NE 1/4 SW 1/4 sec. 9, T.39 S., R.23 E., Lake County, on right bank 800 ft downstream from highway bridge and Parsnip Creek, 1.0 mi upstream from mouth, and 6.5 mi west of Adel.

DRAINAGE AREA.--67 mi², approximately.

PERIOD OF RECORD.--March to May 1915, December 1922 to May 1923, December 1949 to December 1964, October 1965 to September 1973.

GAGE.--Water-stage recorder. Datum of gage is 5,075.94 ft above National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). Mar. 18 to May 10, 1915 and Dec. 21, 1922, to May 9, 1923, nonrecording gage at site 800 ft upstream at different datums. Dec. 16, 1949, to June 21, 1951, at site 1,300 ft upstream at different datum. June 22, 1951, to Dec. 23, 1964, at site 20 ft upstream at datum 0.48 ft higher.

REMARKS.--Some regulation by two reservoirs upstream from station with combined capacity of 436 acre-ft. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--22 years (1950-64, 1965-73), 14.9 ft³/s, 10,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,210 ft³/s Dec. 23, 1964, gage height, 8.9 ft, present datum, result of slope-area measurement; minimum, 0.40 ft³/s Jan. 11, 1963, result of freezeup.

STATISTICAL SUMMARIES FOR THE PERIOD 1951-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	3.1	1962	12	1972	6.5	2.1	3.7
Nov	23	3.0	1962	10	1972	6.5	1.9	3.6
Dec	22	2.9	1962	47	1956	9.2	9.0	5.2
Jan	23	2.4	1962	87	1971	16	20	9.2
Feb	23	4.1	1960	91	1972	26	28	13.5
Mar	23	6.0	1959	121	1972	33	30	19.3
Apr	23	4.3	1961	178	1952	35	43	19.6
May	22	3.5	1961	48	1971	14	10	8.4
Jun	22	3.4	1961	21	1971	8.7	4.2	4.8
Jul	22	3.5	1959	13	1952	7.0	2.5	4.0
Aug	22	3.5	1959	12	1971	6.5	2.1	3.7
Sep	22	3.6	1961	12	1971	6.3	2.1	3.5
Ann		4.7	1961	32	1971	14	7.7	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3.2	3.6	3.9	4.1	4.4	5.0	6.0	6.4	6.8	7.3	7.3	7.8	8.3	8.8	12	23
Nov	3.4	4.0	4.0	4.5	4.8	5.4	5.8	6.5	6.5	6.9	7.3	7.8	7.8	8.8	10	23
Dec	3.0	3.5	3.5	4.3	5.2	5.4	5.9	6.4	6.8	7.4	7.7	8.0	8.3	10	15	22
Jan	2.6	3.1	3.7	4.4	4.4	4.4	5.5	6.1	6.7	7.6	8.1	9.5	13	21	55	23
Feb	2.9	3.5	4.3	4.3	5.5	5.9	6.9	8.1	10	14	18	23	35	49	90	23
Mar	3.6	4.3	5.1	5.1	6.4	7.0	8.6	11	14	19	26	35	48	77	176	23
Apr	4.3	5.0	5.0	6.9	8.3	8.8	12	16	21	26	32	40	60	81	155	23
May	3.8	4.4	5.0	5.0	5.6	5.6	6.4	9.0	12	15	16	18	22	30	53	22
Jun	3.6	3.9	4.3	4.6	5.5	5.9	7.0	7.6	7.6	9.0	10	11	12	13	17	22
Jul	3.2	3.8	4.2	5.0	5.0	5.0	6.0	6.6	6.6	7.3	8.0	8.0	8.7	9.7	12	22
Aug	3.0	3.5	4.0	4.4	4.9	5.1	5.7	6.6	6.9	7.2	8.0	8.0	8.8	9.2	11	22
Sep	3.7	3.7	3.9	4.1	4.3	5.0	5.6	5.9	6.5	6.8	7.6	8.0	8.0	8.8	11	22
Ann	3.0	3.8	3.8	4.9	5.3	5.6	6.2	6.6	7.5	8.1	10	11	14	21	45	

WARNER LAKES BASIN

10371500 DEEP CREEK ABOVE ADEL, OR

LOCATION.-- Lat 42°11'21", long 120°00'02", in SW 1/4 NW 1/4 sec.15, T.39 S., R.23 E., Lake County, Hydrologic Unit 17120007, on left bank 700 ft downstream from Drake Creek and 5 mi west of Adel.

DRAINAGE AREA.--249 mi².

PERIOD OF RECORD.--September 1922 to September 1923, October 1929 to 1987. Monthly discharge only October 1929 to September 1932, published in WSP 1314.

REVISED RECORDS.--WDR OR-83-1: 1979(M), 1980(M,P), 1982(M,P).

GAGE.--Water-stage recorder. Datum of gage is 4,980.34 ft above National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). Sept. 8 to Dec. 20, 1922, nonrecording gage. Dec. 21, 1922, to Sept. 30, 1923, and Oct. 11, 1929, to Dec. 23, 1964, water-stage recorder at site 700 ft downstream at different datums. Jan. 20 to Sept. 30, 1965, nonrecording gage at site 2,000 ft downstream at different datum.

REMARKS.--No regulation. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--59 years, 134 ft³/s, 97,080 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,420 ft³/s Dec. 23, 1964, gage height, 10.64 ft, from floodmark, from rating curve extended above 1,100 ft³/s on basis of slope-area measurement of peak flow at gage height 7.3 ft; minimum discharge, 1.7 ft³/s July 20, 27-29, 1934.

STATISTICAL SUMMARIES FOR THE PERIOD 1923-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	56	5.2	1935	179	1963	24	22	1.5
Nov	56	10	1940	197	1982	40	34	2.4
Dec	56	8.5	1933	605	1965	80	116	4.9
Jan	56	7.0	1933	451	1970	85	105	5.2
Feb	56	8.0	1933	713	1982	121	137	6.8
Mar	56	18	1933	825	1972	192	153	11.8
Apr	56	45	1977	1070	1952	402	215	23.9
May	56	32	1934	920	1971	436	228	26.8
Jun	56	12	1934	629	1983	210	145	12.5
Jul	56	2.4	1934	115	1953	34	28	2.1
Aug	56	2.1	1934	32	1983	13	7.0	0.8
Sep	56	2.9	1934	31	1971	15	7.5	0.9
Ann		27	1977	288	1971	138	66	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	8.6	10	12	14	15	16	18	20	23	26	28	30	32	37	47	56
Nov	12	14	16	19	21	22	24	28	31	36	40	45	53	69	108	56
Dec	12	15	19	21	23	24	28	33	39	48	56	71	97	137	234	56
Jan	13	16	19	20	23	26	31	35	42	57	68	84	113	168	295	56
Feb	17	22	25	28	31	33	41	53	66	89	105	135	182	245	437	56
Mar	24	32	40	49	63	72	92	121	155	201	234	281	332	428	622	56
Apr	88	118	143	167	191	217	269	327	394	488	543	609	689	797	979	56
May	97	133	175	219	250	275	334	392	454	525	569	627	698	788	950	56
Jun	21	34	46	60	75	91	125	162	204	260	287	325	378	452	556	56
Jul	4.8	6.5	8.2	10	12	14	17	21	27	37	43	51	64	82	115	56
Aug	4.3	4.7	5.3	5.9	7.3	8.3	11	13	14	17	18	19	21	24	27	56
Sep	4.7	5.8	7.0	7.7	8.5	11	12	15	17	20	21	23	25	27	32	56
Ann	7.2	11	13	16	18	21	27	36	58	113	159	220	299	411	592	

ABERT LAKE BASIN

10384000 CHEWAUCAN RIVER NEAR PAISLEY, OR

LOCATION.--Lat 42°41'05", long 120°34'08", in SW 1/4 NW 1/4 sec.26, T.33 S., R.18 E., Lake County, Hydrologic Unit 17120006, on left bank 1.2 mi downstream from Mill Creek and 1.4 mi southwest of Paisley.

DRAINAGE AREA.--275 mi².

PERIOD OF RECORD.--April 1912 to September 1921, May 1924 to 1987. Published as "above Conn ditch, near Paisley" April to September 1912 and May 1924 to September 1955, as "above Mill Creek, near Paisley" October 1912 to December 1913, and as "at Chewaucan Land & Cattle Co.'s gage, near Paisley" January to September 1914.

REVISED RECORDS.--WSP 860: Drainage area. WSP 1927: 1957-59.

GAGE.--Water-stage recorder. Datum of gage is 4,430 ft above National Geodetic Vertical Datum of 1929 (river-profile survey). See WSP 1734 for history of changes prior to Oct. 6, 1956.

REMARKS.--No regulation. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--72 years, 148 ft³/s, 107,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,490 ft³/s Dec. 22, 1964, gage height, 8.35 ft, from rating curve extended above 900 ft³/s on basis of slope-area measurement of peak flow; no flow for part of each day Dec. 7, 1927, Dec. 12, 1932, result of freezeup.

STATISTICAL SUMMARIES FOR THE PERIOD 1925-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	63	22	1927	156	1963	40	18	2.3
Nov	63	20	1931	205	1974	54	32	3.0
Dec	63	10	1931	657	1965	86	110	4.9
Jan	63	17	1962	395	1970	89	82	5.1
Feb	63	22	1929	566	1982	115	99	6.0
Mar	63	42	1977	659	1972	171	116	9.7
Apr	63	53	1977	828	1956	346	185	19.1
May	63	56	1977	1210	1971	502	289	28.6
Jun	63	25	1926	793	1983	259	184	14.3
Jul	63	13	1931	219	1983	64	42	3.7
Aug	63	9.4	1931	75	1983	32	13	1.8
Sep	63	14	1931	53	1983	31	9.5	1.7
Ann		34	1931	353	1956	149	75	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	22	25	26	28	30	31	34	37	41	44	46	47	50	56	68	63
Nov	22	26	29	31	34	36	40	44	49	55	59	65	75	89	117	63
Dec	21	24	27	31	34	37	43	49	56	66	75	88	108	147	230	63
Jan	23	28	31	33	36	39	46	54	64	78	88	102	128	170	278	63
Feb	27	34	39	43	47	52	59	70	83	105	120	142	174	226	359	63
Mar	44	51	59	69	78	86	101	120	146	186	207	231	270	343	489	63
Apr	86	108	127	149	171	192	243	284	335	406	455	518	593	696	844	63
May	86	135	176	211	251	300	367	437	531	624	676	742	833	964	1160	63
Jun	36	54	67	82	96	111	147	185	241	319	361	414	472	561	730	63
Jul	17	22	26	30	32	35	41	48	58	71	79	90	105	127	170	63
Aug	13	17	19	20	22	23	26	30	33	38	40	43	46	52	62	63
Sep	17	19	21	23	25	26	28	31	33	37	39	41	43	46	51	63
Ann	20	24	28	31	35	38	46	58	80	124	161	216	294	413	615	

WARNER LAKES BASIN

10378500 HONEY CREEK NEAR PLUSH, OR

LOCATION.--Lat 42°25'33", long 119°55'23", in SW 1/4 SW 1/4 sec.20, T.36 S., R.24 E., Lake County, Hydrologic Unit 17120007, on right bank 700 ft upstream from mouth of canyon, 1.4 mi northwest of Plush, and 4 mi downstream from Twelvemile Creek.

DRAINAGE AREA.--170 mi², approximately.

PERIOD OF RECORD.--May 1909 to September 1914 (prior to January 1910, gage heights only), March to May 1915, March to September 1921, March to June 1922, May 1930 to 1987. Monthly discharge only May 1930 to September 1949, published in WSP 1314.

REVISED RECORDS.--WSP 1564: 1911-12. WSP 1714: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,552.80 ft above National Geodetic Vertical Datum of 1929. Dec. 24, 1964, to Sept. 30, 1965, nonrecording gage at site 100 ft downstream at different datums. See WSP 1927 for history of changes prior to Dec. 24, 1964.

REMARKS.--Slight regulation by five small reservoirs, combined capacity, 870 acre-ft. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--61 years (water years 1911-14, 1931-87), 31.0 ft³/s, 22,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s Dec. 23, 1964, gage height, 13.4 ft, from floodmark, from rating curve extended above 250 ft³/s on basis of slope-area measurements at gage height 10.46 ft and of peak flow; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1911-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	42	0.1	1962	38	1963	3.7	5.8	0.9
Nov	42	0.9	1960	32	1982	7.4	6.7	1.7
Dec	42	1.0	1960	253	1965	21	43	5.1
Jan	42	1.1	1960	107	1974	21	27	5.3
Feb	42	4.0	1911	181	1982	31	38	6.8
Mar	43	4.6	1977	268	1911	54	55	13.1
Apr	45	10	1977	263	1952	97	56	22.8
May	44	11	1977	317	1971	124	74	29.8
Jun	44	3.2	1977	158	1983	51	37	11.9
Jul	43	0.3	1968	27	1983	8.9	7.3	2.1
Aug	43	0.2	1951	9.5	1912	1.8	2.0	0.4
Sep	42	0.2	1955	7.7	1912	1.4	1.3	0.3
Ann		3.9	1977	79	1971	35	19	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.2	0.5	0.8	1.0	1.2	1.5	1.9	1.9	2.4	3.0	3.9	4.5	5.2	6.2	8.3	42
Nov	1.0	1.8	2.2	2.7	2.7	3.3	3.3	4.1	5.8	7.0	8.0	9.5	12	15	23	42
Dec	1.0	1.7	2.7	3.6	4.1	4.6	5.2	6.1	7.8	10	12	15	19	31	71	42
Jan	1.2	2.3	3.7	4.6	5.0	5.4	6.2	6.8	8.0	11	15	21	31	49	75	42
Feb	3.6	4.3	5.3	5.8	6.5	7.0	8.5	13	17	23	28	36	46	59	101	42
Mar	5.4	6.5	7.8	11	14	15	19	25	33	46	55	71	96	128	195	43
Apr	16	25	31	35	41	48	60	78	93	116	131	148	173	205	264	45
May	20	28	39	49	61	71	87	104	125	148	165	184	207	236	301	44
Jun	5.0	9.0	13	16	20	23	28	37	48	59	65	75	87	104	145	44
Jul	0.2	0.3	0.5	0.9	1.3	1.9	3.4	5.2	7.1	10	13	16	20	24	31	43
Aug	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.2	1.7	2.0	2.3	2.7	3.7	6.7	43
Sep	0.2	0.3	0.3	0.4	0.4	0.4	0.6	0.9	1.0	1.4	1.8	1.8	2.4	3.2	3.8	42
Ann	0.3	0.6	1.1	1.4	2.6	3.5	5.1	7.7	14	26	35	51	72	105	163	

SUMMER LAKE BASIN

10388001 ANA RIVER NEAR SUMMER LAKE, OR

LOCATION.--Lat 42°59'42" (revised), long 120°44'54" (revised), in SE 1/4 sec.6, T.30 S., R.17 E., Lake County, Hydrologic Unit 17120005, on left bank 300 ft downstream from diversion dam and 2.0 mi northeast of town of Summer Lake.

DRAINAGE AREA.--Indeterminate; Ana River Springs, source of the stream located three-quarters of a mile upstream from station, are flooded by pondage behind diversion dam.

PERIOD OF RECORD.--October 1929 to September 1939 (river only); June to September 1928, April 1931 to July 1938, and April 1940 to September 1942 (irrigation season records for Summer Lake Canal only); June 1951 to current year. Prior to June 1951 monthly discharge only, published in WSP 1314.

GAGE.--Water-stage recorder. Elevation of gage is 4,160 ft from plans of Ana River diversion dam. Oct. 1, 1929, to Sept. 30, 1939, at site 80 ft downstream at different datum.

REMARKS.--All records presented herein include flow in Summer Lake Canal which diverts 300 ft upstream from station for irrigation of lands along west side of Summer Lake. Flow regulated by gates at diversion dam.

AVERAGE DISCHARGE.--39 years (water years 1931-32, 1936, 1952-87), 90.8 ft³/s, 65,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 188 ft³/s Dec. 22, 1964, gage height, 2.81 ft, no flow in canal; minimum discharge, 1.0 ft³/s Jan. 21, 22, 1970; minimum daily, 3.0 ft³/s Oct. 31, 1970.

STATISTICAL SUMMARIES FOR THE PERIOD 1966-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	17	85	1975	101	1967	91	4.9	8.8
Nov	17	85	1976	107	1967	92	5.7	8.5
Dec	17	83	1976	101	1966	91	4.6	8.7
Jan	17	85	1977	99	1975	92	3.8	8.8
Feb	17	87	1977	104	1966	92	4.2	8.1
Mar	17	80	1977	112	1966	92	6.5	8.9
Apr	17	75	1976	104	1966	85	7.2	7.9
May	17	75	1967	89	1966	82	3.6	7.9
Jun	17	78	1980	91	1966	85	2.7	7.9
Jul	17	80	1974	90	1966	84	2.9	8.0
Aug	17	80	1982	92	1968	86	2.8	8.3
Sep	17	82	1976	93	1979	87	3.7	8.1
Ann		85	1976	97	1966	88	3.1	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	82	85	86	87	87	88	90	91	92	94	95	97	100	105	109	17
Nov	86	87	88	88	89	89	90	91	92	94	95	96	97	104	106	17
Dec	84	86	88	88	89	89	90	91	92	93	95	82	62	41	21	17
Jan	86	88	89	89	90	90	91	92	93	95	96	97	98	99	101	17
Feb	88	89	89	90	90	90	91	92	93	94	95	96	96	99	102	17
Mar	83	88	89	89	90	90	91	92	94	95	95	96	97	100	111	17
Apr	63	68	71	75	79	82	87	89	90	92	93	94	96	97	100	17
May	66	74	79	80	81	82	84	85	86	87	88	89	90	91	92	17
Jun	79	82	84	84	85	85	86	87	87	88	88	89	90	90	91	17
Jul	77	80	80	81	81	82	83	84	85	86	87	88	89	90	93	17
Aug	81	82	84	84	85	85	86	87	88	89	90	90	91	92	85	17
Sep	81	82	83	84	85	85	86	87	89	90	90	91	92	94	99	17
Ann	78	81	83	84	85	86	87	89	90	92	93	93	95	97	101	

SUMMER LAKE BASIN

10390001 SILVER CREEK NEAR SILVER LAKE, OR

LOCATION.--Lat 43°06'50", long 121°03'59" in NE 1/4 SW 1/4 sec.28, T.28 S., R.14 E., Lake County, Hydrologic Unit 17120005, on right bank 1.5 mi downstream from diversion dam of Silver Lake Irrigation District, 1.5 mi southwest of town of Silver Lake, and 3 mi upstream from Bridge Creek.

DRAINAGE AREA.--180 mi², approximately.

PERIOD OF RECORD.--January 1905 to March 1907, January 1909 to September 1927, February to December 1928, February 1929 to 1987.

REVISED RECORDS.--WSP 1564: 1906, 1910, 1921(M). WSP 1734: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Sept. 15, 1932. Datum of gage is 4,361.22 ft above National Geodetic Vertical Datum of 1929. Prior to May 24, 1932, nonrecording gage or water-stage recorder at practically same location at datum 1.00 ft higher, or nonrecording gage at diversion dam outlet 1.5 mi upstream at different datum.

REMARKS.--Flow regulated by reservoir, capacity, 800 acre-ft, 1.5 mi upstream from station and by Thompson Valley Reservoir, capacity, 17,400 acre-ft, 11 mi upstream from station. Records given herein include flow in Silver Lake Irrigation District Canal which diverts 1.5 mi upstream from station. No record of diversion October 1943 to September 1965.

AVERAGE DISCHARGE.--75 years (water years 1906, 1910-27, 1930-41, 1944-87), 31.7 ft³/s, 22,970 acre-ft/yr, including diversion by Silver Lake Irrigation District Canal.

EXTREMES FOR PERIOD OF RECORD.--Creek only, maximum discharge, 1,800 ft³/s Mar. 20, 1907, gage height, 10.08 ft, present datum, from rating curve extended above 700 ft³/s; maximum gage height, 10.3 ft Dec. 22, 1964; no flow at times in 1931-32, 1934, 1937.

Combined flow, maximum discharge, 1,800 ft³/s Mar. 20, 1907, gage height, 10.08 ft, present datum, from rating curve extended above 700 ft³/s; maximum gage height, 10.3 ft Dec. 22, 1964; no flow at times in 1931-32, 1934, 1937.

STATISTICAL SUMMARIES FOR THE PERIOD 1966-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	22	2.2	1982	15	1987	8.8	3.8	1.9
Nov	22	1.2	1978	15	1985	6.8	3.8	1.4
Dec	22	1.6	1977	16	1974	7.4	4.2	1.6
Jan	22	2.1	1977	53	1974	13	13	2.9
Feb	22	2.3	1977	62	1982	15	14	3.0
Mar	22	1.2	1977	224	1972	49	63	10.6
Apr	22	7.6	1979	224	1974	83	74	17.2
May	22	38	1981	304	1983	125	84	26.6
Jun	22	34	1966	119	1983	66	18	13.7
Jul	22	26	1981	54	1975	42	6.7	9.0
Aug	22	4.8	1981	51	1984	35	10	7.4
Sep	22	1.4	1981	42	1987	23	8.6	4.8
Ann		14	1981	72	1974	39	18	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.2	2.9	3.5	4.3	4.8	4.8	5.3	6.4	8.6	11	12	14	15	17	20	22
Nov	1.6	2.6	3.0	3.5	3.5	3.5	4.8	5.8	6.5	7.5	8.4	10	12	13	14	22
Dec	1.9	2.6	3.2	3.5	3.9	3.9	4.8	5.3	6.6	7.3	9.4	12	13	14	16	22
Jan	1.7	2.3	3.2	3.8	4.5	4.5	5.3	7.4	8.6	11	13	15	17	21	42	22
Feb	2.3	2.7	4.1	4.1	4.7	6.4	7.4	9.4	13	16	17	19	21	26	43	22
Mar	2.3	4.1	5.6	6.5	7.5	8.1	13	17	24	35	45	63	92	160	247	22
Apr	5.9	7.6	9.3	15	21	27	36	47	69	104	135	159	185	216	257	22
May	40	46	50	55	58	61	69	77	97	138	167	199	235	291	356	22
Jun	39	42	45	50	53	56	59	64	68	74	76	78	81	86	103	22
Jul	28	31	34	36	37	38	40	42	45	48	49	50	52	54	58	22
Aug	12	18	22	26	28	31	34	36	40	43	44	46	48	50	55	22
Sep	5.5	9.0	12	14	16	18	21	25	27	29	31	32	34	36	41	22
Ann	2.4	3.9	4.9	5.7	6.8	8.4	13	20	32	42	48	55	65	79	156	

SILVIES RIVER BASIN

10393500 SILVIES RIVER NEAR BURNS, OR

LOCATION.-- Lat 43°42'55", long 119°10'35", in NW 1/4 NW 1/4 sec.31, T.21 S., R.30 E., Harney County, Hydrologic Unit 17120002, on left bank 5 mi downstream from Emigrant Creek and 11 mi northwest of Burns.

DRAINAGE AREA.--934 mi².

PERIOD OF RECORD.--May 1903 to July 1906, December 1908 to December 1912, March 1913 to September 1917 (irrigation seasons only), March 1918 to October 1920, March 1921 to July 1922 (irrigation seasons only), October 1922 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 4,195 ft above National Geodetic Vertical Datum of 1929 (river-profile survey). See WSP 1734 for history of changes prior to Oct. 4, 1951.

REMARKS.--No regulation. Diversions for irrigation upstream from station during periods of high flow only.

AVERAGE DISCHARGE.--74 years (water years 1904-5, 1910-12, 1918-21, 1923-87), 181 ft³/s, 131,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,960 ft³/s Apr. 6, 1952, gage height, 15.2 ft; no flow July 19 to Sept. 22, 1934.

STATISTICAL SUMMARIES FOR THE PERIOD 1903-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	76	3.9	1932	74	1985	20	12	1.0
Nov	76	5.2	1932	142	1985	34	20	1.6
Dec	76	10	1932	482	1965	52	58	2.5
Jan	76	10	1932	715	1965	83	107	3.9
Feb	77	18	1937	799	1982	165	170	7.1
Mar	80	30	1934	1650	1983	386	341	18.3
Apr	82	11	1934	2720	1952	786	554	36.1
May	82	5.6	1934	1900	1983	475	410	22.5
Jun	79	2.2	1934	612	1984	143	132	6.6
Jul	78	0.4	1934	182	1983	33	33	1.6
Aug	76	0.0	1934	69	1984	14	13	0.7
Sep	76	0.6	1934	72	1984	13	11	0.6
Ann		15	1934	591	1983	179	117	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	5.8	6.5	7.3	9.1	12	14	16	18	21	23	25	30	34	38	52	76
Nov	7.9	13	17	19	21	23	27	30	34	39	42	45	50	57	78	76
Dec	12	15	17	20	22	25	32	38	44	52	59	68	80	100	123	76
Jan	13	16	20	23	27	30	38	46	54	66	73	87	99	130	307	76
Feb	20	22	32	38	43	48	59	76	97	136	171	215	270	365	590	77
Mar	33	46	59	77	97	118	172	233	313	427	503	602	749	956	1300	80
Apr	85	168	218	277	341	404	497	617	760	938	1060	1200	1370	1620	2040	82
May	35	54	82	116	151	189	254	324	425	557	635	761	921	1140	1440	82
Jun	7.7	15	22	30	39	49	70	96	125	162	183	211	250	333	510	79
Jul	2.1	3.4	5.9	6.6	10	13	19	24	30	37	42	49	61	77	108	78
Aug	1.7	2.4	2.9	4.1	5.4	6.4	7.7	11	13	16	19	22	25	31	46	76
Sep	2.0	3.8	4.6	5.8	6.2	6.6	8.0	10	12	15	16	18	22	30	39	76
Ann	5.0	7.6	10	14	17	21	30	42	60	105	153	227	340	541	886	

DONNER UND BLITZEN RIVER BASIN

10396000 DONNER UND BLITZEN RIVER NEAR FRENCHGLEN, OR

LOCATION.--Lat 42°47'28", long 118°52'00", in NW 1/4 NW 1/4 sec.20, T.32 S., R.32-1/2 E., Harney County, Hydrologic Unit 17120003, Bureau of Land Management land, on left bank 1.5 mi upstream from upper diversions for Malheur National Wildlife Refuge, 2.0 mi downstream from Fish Creek, and 3.5 mi southeast of Frenchglen.

DRAINAGE AREA.--200 mi², approximately.

PERIOD OF RECORD.--March 1911 to September 1913, March 1914 to September 1916, April 1917 to September 1921, August to November 1929, April to September 1930, December 1937 to 1987. Monthly discharge only for some periods, published in WSP 1314. Published as "near Diamond" 1911-21. Records of discharge for January 1909 to September 1910 (published in WSP 270, 290, and 370, for a nonequivalent site as "near Diamond") have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 330: Drainage area (former site). WSP 860: Drainage area (present site). WSP 1564: 1938-39(M), 1942-43(M), 1948(M), 1951(P), 1952-53. WSP 1714: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,254 ft above National Geodetic Vertical Datum of 1929 (levels by Fish and Wildlife Service). Prior to December 1937, nonrecording gage at several sites within 2 mi downstream at different datums. Dec. 6, 1937, to Feb. 14, 1938, nonrecording gage at present site and datum.

REMARKS.--No regulation or diversion upstream from station. Water-quality records for period March 1985 to September 1986 have been collected at this location.

AVERAGE DISCHARGE.--57 years (water years 1912-13, 1915-16, 1918-21, 1939-87), 128 ft³/s, 92,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,270 ft³/s Apr. 26, 1978, gage height, 7.15 ft, from floodmarks, from rating curve extended above 1,900 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 4.2 ft³/s Dec. 9, 1972, result of freezeup.

STATISTICAL SUMMARIES FOR THE PERIOD 1911-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	57	25	1969	86	1985	44	11	3.0
Nov	57	25	1962	94	1985	48	14	3.1
Dec	57	25	1960	181	1965	57	33	3.8
Jan	58	25	1916	239	1971	66	42	4.4
Feb	58	27	1964	310	1921	95	68	5.7
Mar	59	40	1977	392	1984	148	83	9.8
Apr	60	61	1968	666	1952	226	106	14.5
May	61	138	1968	813	1984	380	148	25.2
Jun	61	67	1966	802	1917	294	148	18.9
Jul	61	28	1968	320	1984	99	54	6.6
Aug	61	24	1966	113	1984	48	17	3.2
Sep	61	23	1968	87	1984	42	12	2.8
Ann		55	1966	272	1984	128	43	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	28	30	33	35	37	38	41	44	46	49	51	53	57	61	66	57
Nov	29	32	34	36	38	39	42	46	49	53	55	58	62	66	83	57
Dec	25	28	31	33	35	38	42	45	49	53	57	61	67	79	114	57
Jan	24	27	30	33	35	37	41	45	51	59	64	72	87	105	165	58
Feb	31	35	38	40	43	45	49	54	63	79	89	103	127	169	305	58
Mar	38	44	49	52	57	64	78	93	116	147	172	207	249	313	440	59
Apr	77	92	103	113	123	138	164	191	223	256	278	307	348	404	521	60
May	129	156	184	212	236	258	303	341	384	437	471	517	578	645	773	61
Jun	85	104	127	150	170	187	216	251	287	332	361	396	439	527	709	61
Jul	34	39	45	50	55	60	69	81	93	111	123	137	155	182	236	61
Aug	26	30	31	34	36	38	42	45	50	55	57	60	65	70	80	61
Sep	26	29	31	33	35	37	39	41	45	47	49	52	56	59	66	61
Ann	28	32	35	38	41	44	50	59	77	116	150	197	251	325	447	

DONNER UND BLITZEN LAKES BASIN

10397000 BRIDGE CREEK NEAR FRENCHGLEN, OR

LOCATION.--Lat 42°50'38", Long 118°50'57", in SW 1/4 NW 1/4 sec.33, T.31 S., R.32 1/2 E., Harney County, Hydrologic Unit 17120003, on right bank at mouth of canyon, 3.5 miles northeast of Frenchglen.

PERIOD OF RECORD.--March to August 1911, January 1912 to September 1916, April to June 1930, December 1937 to September 1970. Monthly discharge only April to June 1930, published in WSP 1314. Published as "near Diamond" 1911-1916.

DRAINAGE AREA.--30 mi², approximately.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,184.93 ft above National Geodetic Vertical Datum of 1929 (levels by Fish and Wildlife Service). Prior to Dec. 21, 1937, nonrecording gage at sites within 1 mi upstream at different datums. Dec. 21, 1937, to May 17, 1938, nonrecording gage at site 1,000 ft downstream at different datum. May 18, 1938, to Aug. 22, 1969, nonrecording gage at present site and datum.

REMARKS.--No regulation or diversion upstream from station. Low-water flow is sustained by large springs.

AVERAGE DISCHARGE.--36 years (1912-16, 1938-70), 13.5 ft³/s, 9,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 301 ft³/s May 19, 1953, gage height, 2.73 ft, from rating curve extended above 65 ft³/s; minimum, 4.2 ft³/s Feb. 25, 1962.

STATISTICAL SUMMARIES FOR THE PERIOD 1911-1970

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	36	6.6	1962	14	1944	11	2.1	7.3
Nov	36	1.2	1915	14	1953	11	2.7	6.8
Dec	36	6.2	1962	15	1943	11	2.4	7.1
Jan	38	5.7	1962	17	1912	11	2.8	7.2
Feb	38	5.3	1962	24	1957	12	3.7	6.9
Mar	38	7.8	1962	34	1939	13	4.8	8.4
Apr	40	8.2	1915	37	1952	18	7.1	11.5
May	40	8.5	1961	44	1942	22	10	13.9
Jun	40	8.4	1961	24	1943	14	4.4	8.9
Jul	39	7.9	1961	16	1943	11	1.7	7.4
Aug	39	8.2	1961	16	1943	11	1.7	7.4
Sep	38	7.7	1961	15	1948	11	1.9	7.2
Ann		8.3	1961	19	1943	13	2.5	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	7.8	9.8	10	11	11	12	12	13	13	14	14	14	15	15	--	36
Nov	6.1	7.2	8.5	9.3	--	--	--	--	--	--	--	--	--	--	--	36
Dec	6.5	7.3	8.2	8.7	9.3	11	11	12	12	13	13	14	14	15	15	36
Jan	6.6	7.5	8.0	8.0	8.5	9.1	11	12	12	13	13	14	15	16	17	38
Feb	6.7	7.9	7.9	8.6	8.6	9.3	11	12	12	13	14	14	15	16	21	38
Mar	7.7	7.7	8.5	8.5	9.3	11	12	12	13	14	15	16	17	20	27	38
Apr	8.6	11	12	12	13	14	15	17	19	21	23	25	27	31	37	40
May	9.6	11	12	13	14	15	17	19	22	25	27	29	33	38	47	40
Jun	9.5	10	11	11	12	12	12	13	14	16	17	18	20	22	27	40
Jul	9.4	10	11	11	11	11	12	12	12	13	13	14	14	15	16	39
Aug	8.2	9.6	10	11	11	11	12	12	13	13	13	14	14	14	15	39
Sep	8.3	9.6	10	11	11	12	12	13	13	13	14	14	14	15	15	38
Ann	7.7	8.6	9.5	10	10	11	11	12	13	14	14	15	16	19	25	

MALHEUR AND HARNEY LAKE BASINS

10403000 SILVER CREEK NEAR RILEY, OR

LOCATION.--Lat 43°41'30", long 119°39'30", in E 1/2 sec.1, T.22 S., R.25 E., Harney County, Hydrologic Unit 17120004, on right bank 0.4 mi downstream from Rough Creek, 1.4 mi upstream from Nicoll Creek, and 14 mi northwest of Riley.

DRAINAGE AREA.--228 mi².

PERIOD OF RECORD.--June 1951 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 4,449.70 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--29 years, 42.8 ft³/s, 31,010 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,810 ft³/s Dec. 22, 1964, gage height, 7.49 ft; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1952-1980

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	29	1.9	1962	7.1	1963	3.4	1.3	0.7
Nov	29	2.6	1962	8.8	1974	4.9	1.5	0.9
Dec	29	1.5	1960	202	1965	14	36	2.8
Jan	29	1.3	1960	121	1965	21	29	4.2
Feb	29	1.7	1955	169	1958	44	49	8.0
Mar	29	5.4	1955	414	1972	108	95	21.4
Apr	29	10	1968	711	1952	209	145	40.1
May	29	6.5	1968	209	1975	78	56	15.6
Jun	29	2.6	1968	79	1953	20	13	4.0
Jul	29	0.4	1968	14	1953	6.1	3.5	1.2
Aug	29	0.2	1961	8.0	1976	2.6	1.8	0.5
Sep	29	0.9	1961	4.9	1976	2.3	1.0	0.4
Ann		7.6	1977	85	1952	42	22	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.7	1.9	2.0	2.2	2.4	2.6	2.8	3.1	3.1	3.7	3.7	4.0	4.3	5.1	6.6	29
Nov	2.5	2.7	2.9	3.1	3.3	3.6	3.9	4.1	4.8	5.2	5.6	6.0	6.4	7.5	9.3	29
Dec	1.9	2.3	2.9	2.9	3.6	3.6	4.5	5.1	6.0	7.3	8.4	9.2	11	15	28	29
Jan	1.3	1.6	2.9	3.5	3.5	4.5	5.6	6.9	8.2	11	14	20	33	50	90	29
Feb	2.3	3.3	4.0	4.9	5.7	6.3	8.1	14	24	39	54	68	86	111	192	29
Mar	4.0	6.2	10	16	19	24	37	56	79	112	138	163	200	277	433	29
Apr	14	34	54	68	84	96	127	167	204	260	295	331	374	434	542	29
May	8.8	15	20	24	28	31	41	52	67	88	103	123	150	189	247	29
Jun	3.8	5.8	7.8	9.3	11	13	16	18	21	23	25	28	31	35	43	29
Jul	0.4	1.4	1.8	2.3	2.3	3.0	4.4	5.3	6.2	7.0	8.4	9.3	11	13	16	29
Aug	0.2	0.5	0.6	0.7	1.1	1.4	1.7	2.1	2.1	2.7	3.3	3.3	4.4	4.9	5.9	29
Sep	0.7	0.8	1.1	1.4	1.5	1.6	1.8	2.1	2.3	2.7	2.9	3.1	3.4	4.0	4.4	29
Ann	1.0	1.4	2.0	2.9	3.2	3.6	4.5	6.4	10	20	29	46	76	127	233	

ALVORD LAKE BASIN

10406500 TROUT CREEK NEAR DENIO, NV

LOCATION.--Lat 42°09'20", long 118°27'14", in NW 1/4 SE 1/4 sec.26, T.39 S., R.36 E., Harney County, Hydrologic Unit 17120009, on right bank 0.4 mi upstream from bridge at mouth of canyon, 5 mi east of Trout Creek Ranch, and 14 mi northeast of Denio.

DRAINAGE AREA.--88 mi², approximately.

PERIOD OF RECORD.--March 1911 to March 1912, April 1922 to November 1923, March 1925 to September 1931 (irrigation seasons only), April 1932 to 1987. Prior to Oct. 1, 1961, published as "near Denio, Oreg."

REVISED RECORDS.--WSP 1564: 1932, 1933-34(M), 1938(M). WSP 1714: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,351.52 ft above National Geodetic Vertical Datum of 1929. Mar. 25, 1911, to Mar. 31, 1912, nonrecording gage at bridge 0.4 mi downstream at different datum. Apr. 28, 1922, to June 14, 1932, water-stage recorder at site 10 ft upstream at datum 0.50 ft higher.

REMARKS.--No regulation. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--56 years (water years 1923, 1933-87), 16.8 ft³/s, 12,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 470 ft³/s Aug. 1, 1933, gage height, 5.26 ft, from rating curve extended above 230 ft³/s; minimum discharge observed, 0.10 ft³/s Aug. 4, 1930, Aug. 1, Sept. 12, 28, 1934. Probably no flow at times Sept. 1-19, 1931.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 6.0 ft, caused by cloudburst, probably occurred in 1924 or 1925.

STATISTICAL SUMMARIES FOR THE PERIOD 1932-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	55	1.8	1935	12	1985	5.4	2.0	2.7
Nov	55	3.0	1935	13	1985	6.5	2.1	3.2
Dec	55	2.9	1960	15	1984	6.7	2.5	3.3
Jan	55	2.9	1962	24	1971	7.6	4.0	3.8
Feb	55	3.4	1935	28	1982	9.3	5.4	4.2
Mar	55	4.5	1977	68	1972	15	12	7.7
Apr	56	7.7	1968	105	1952	36	21	17.4
May	56	4.4	1934	204	1984	64	39	32.0
Jun	56	2.5	1934	127	1984	35	26	17.0
Jul	56	1.0	1934	40	1952	10	7.8	5.2
Aug	56	0.1	1934	12	1983	4.0	2.5	2.0
Sep	56	0.1	1934	11	1983	3.9	2.1	1.9
Ann		3.8	1934	49	1984	17	8.6	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.5	3.0	3.0	3.3	3.6	4.0	4.3	5.2	5.6	6.2	6.2	6.7	6.7	8.0	8.8	55
Nov	3.3	3.7	4.0	4.5	4.5	5.2	5.5	5.9	6.3	7.2	7.7	8.2	8.8	9.4	12	55
Dec	2.8	3.5	3.9	4.4	4.4	4.9	5.5	6.1	6.1	6.9	7.7	7.7	9.2	10	13	55
Jan	2.7	3.5	4.0	4.0	4.5	4.5	5.1	5.8	6.6	7.7	8.3	9.0	10	13	19	55
Feb	3.2	4.1	4.7	4.7	5.3	5.3	6.0	7.1	8.1	9.4	11	12	14	17	23	55
Mar	4.5	5.1	5.1	5.8	5.8	6.6	8.7	10	13	17	19	21	25	34	50	55
Apr	7.5	9.1	12	14	16	19	23	28	35	45	50	56	63	72	87	56
May	10	15	21	27	31	36	45	55	65	79	87	96	108	123	151	56
Jun	4.5	7.6	9.1	12	14	16	21	26	32	41	47	55	62	74	101	56
Jul	1.4	2.1	2.5	3.6	4.3	5.2	6.7	8.0	9.8	12	14	16	18	21	27	56
Aug	0.6	1.0	1.4	1.6	1.9	2.2	2.6	3.6	3.6	4.3	5.0	5.0	6.1	6.8	8.7	56
Sep	1.1	1.3	1.7	2.0	2.3	2.3	2.7	3.1	3.6	4.2	4.9	4.9	5.7	6.8	8.5	56
Ann	1.9	2.4	3.0	4.2	4.7	5.2	5.8	6.8	8.6	12	16	21	31	46	70	

GOOSE LAKE BASIN

11339500 DREWS CREEK NEAR LAKEVIEW, OR

LOCATION.--Lat 42°07'10", long 120°34'45", in NW 1/4 NE 1/4 sec.10, T.40 S., R.18 E., Lake County, Hydrologic Unit 18020001, on left bank 10 ft upstream from bridge, 2.0 mi downstream from Willow Creek, 2.7 mi downstream from Drews Dam, and 13 mi southwest of Lakeview.

DRAINAGE AREA.--212 mi².

PERIOD OF RECORD.--January 1909 to September 1930 (yearly estimate only for 1920), March 1931 to September 1936 (irrigation seasons only), April 1937 to September 1938, March 1939 to October 1941, February 1942, April 1942 to September 1952, February 1953 to September 1981. Monthly discharge only October 1921 to September 1925, published in WSP 1315-A. Published as Drew Creek near Lakeview October 1918 to September 1959.

GAGE.--Water-stage recorder. Datum of gage is 4,827.0 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). See WSP 1931 for history of changes prior to July 4, 1953.

REMARKS.--Record herein, except average discharge, not adjusted for diversion by North Drews Canal. Since 1912, flow regulated by Drews Reservoir, capacity, 62,550 acre-ft. Diversion for irrigation upstream from station, and since March 1914, North Drews Canal has diverted upstream from station for irrigation of lands west of Lakeview. Records subsequent to September 1981 in files of Oregon Water Resources Department.

AVERAGE DISCHARGE.--50 years (water years 1913-30, 1938, 1940-41, 1947, 1954-81), 70.6 ft³/s, 51,150 acre-ft/yr, including diversion by North Drews Canal.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 3000 ft³/s Mar. 1, 2, 1910, from rating curve extended above 1,200 ft³/s; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1913-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	55	0.0	1921	24	1915	3.1	4.6	0.5
Nov	55	0.0	1921	42	1914	3.4	6.4	0.5
Dec	55	0.0	1921	209	1938	11	38	2.0
Jan	55	0.0	1921	361	1965	19	59	3.2
Feb	56	0.5	1913	395	1956	41	84	6.2
Mar	60	0.7	1977	589	1972	93	128	15.4
Apr	62	0.6	1977	922	1952	160	210	25.4
May	62	6.9	1977	531	1917	114	117	18.7
Jun	63	1.8	1924	201	1953	55	33	8.8
Jul	64	0.5	1924	80	1938	50	22	8.3
Aug	63	0.0	1924	83	1971	40	22	6.6
Sep	64	0.0	1924	62	1971	21	15	3.4
Ann		3.9	1924	172	1956	51	42	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.5	0.6	0.6	0.7	0.9	0.9	1.1	1.3	2.0	2.5	3.0	4.8	6.4	12	55
Nov	0.1	0.5	0.5	0.6	0.7	0.9	1.1	1.4	1.7	2.1	3.2	3.9	3.9	6.8	12	55
Dec	0.3	0.6	0.8	1.0	1.0	1.0	1.3	1.8	2.4	3.5	3.9	4.7	8.1	12	29	55
Jan	0.3	0.7	0.9	0.9	0.9	1.2	1.6	2.1	2.8	4.9	5.6	7.7	9.9	27	61	55
Feb	0.6	0.8	1.0	1.5	1.8	2.9	3.6	4.9	7.0	13	21	40	56	127	285	56
Mar	1.4	2.8	3.5	3.5	4.8	5.3	7.3	12	20	61	110	174	248	323	484	60
Apr	1.9	3.9	5.0	6.3	8.2	10	13	23	88	192	255	314	385	497	694	62
May	5.2	8.2	14	18	27	33	45	58	78	103	131	178	230	304	460	62
Jun	3.5	8.6	16	23	28	34	43	54	64	74	78	82	86	96	117	63
Jul	1.0	7.0	17	28	34	40	50	58	63	68	71	74	77	80	87	64
Aug	0.8	2.7	7.1	15	21	24	33	42	51	58	61	64	69	74	81	63
Sep	0.0	0.1	0.9	1.7	3.2	6.3	14	20	25	31	34	37	42	47	57	64
Ann	0.5	0.9	0.9	1.2	1.6	3.0	4.9	10	23	44	55	66	77	102	258	

GOOSE LAKE BASIN

11340500 COTTONWOOD CREEK NEAR LAKEVIEW, OR

LOCATION.--Lat 42°14'14", long 120°30'16", in SE 1/4 SW 1/4 sec.29, T.38 S., R.19 E., Lake County, Hydrologic Unit 18020001, on right bank 0.5 mi downstream from Cottonwood Dam and 9 mi northwest of Lakeview.

DRAINAGE AREA.--32.9 mi².

PERIOD OF RECORD.--November 1908 to September 1919, May 1924 to November 1935, March to December 1936, April to December 1937, April 1938 to November 1942, March to November 1943, March to October 1944, February to November 1945, March 1946 to September 1981. Monthly discharge only May 1924 to September 1925, published in WSP 1315-A.

GAGE.--Water-stage recorder. Datum of gage is 4,949.37 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to June 1, 1919, and May 1, 1924, to June 3, 1932, nonrecording gage at several sites within 0.6 mi upstream at different datums. June 1 to Sept. 30, 1919, and June 4, 1932, to Sept. 14, 1961, water-stage recorder at site 0.6 mi upstream at different datums.

REMARKS.--Flow regulated since 1923 by Cottonwood Reservoir, capacity, 7,540 acre-ft. Since October 1961, 240 acre-ft unregulated storage in Cottonwood Meadows, 9 mi upstream. Diversions for irrigation upstream from station. Records subsequent to September 1981 in files of Oregon Water Resources Department.

AVERAGE DISCHARGE.--60 years (water years 1910-19, 1925-35, 1939-42, 1947-81), 21.1 ft³/s, 15,290 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, between 500 and 1,000 ft³/s during period Apr. 26 to May 1, 1927, when natural flow, estimated as 170 ft³/s, was augmented by water escaping from reservoir through break in outlet conduit near control gates; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1909-1919 (BEFORE THE CONSTRUCTION OF COTTONWOOD RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	2.2	1916	4.7	1911	3.4	0.9	1.1
Nov	10	5.0	1919	50	1910	12	13	3.6
Dec	11	2.8	1909	33	1911	10	9.7	3.2
Jan	11	2.0	1917	65	1909	15	18	4.7
Feb	11	3.4	1913	41	1912	15	13	4.3
Mar	11	8.6	1917	130	1910	60	38	18.7
Apr	11	39	1918	156	1914	95	38	28.6
May	11	17	1918	137	1917	71	35	22.2
Jun	11	4.7	1918	88	1917	38	29	11.6
Jul	11	1.7	1918	18	1913	10	5.7	3.1
Aug	11	1.4	1918	7.6	1917	4.1	2.0	1.3
Sep	11	1.5	1918	5.5	1917	2.9	1.2	0.9
Ann		13	1918	40	1911	27	9.3	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.0	2.0	2.0	2.0	2.0	2.0	3.0	3.0	3.6	4.0	4.0	4.5	5.0	5.0	5.4	10
Nov	3.1	3.1	3.6	3.6	4.9	4.9	5.7	7.0	8.0	9.5	11	12	15	17	26	10
Dec	1.9	2.4	3.0	3.8	3.8	3.8	4.9	6.2	6.9	9.5	12	15	18	21	31	11
Jan	2.0	2.0	2.0	2.7	2.7	3.6	3.6	4.9	7.3	11	14	17	20	29	65	11
Feb	2.6	3.7	3.7	3.7	3.7	5.0	8.5	10	11	13	15	18	22	37	55	11
Mar	3.0	5.8	6.7	9.6	10	12	19	35	57	85	100	116	138	162	184	11
Apr	34	39	44	48	58	62	75	87	98	111	121	131	143	163	212	11
May	17	28	32	38	41	44	55	70	78	87	94	102	112	123	144	11
Jun	4.4	7.0	8.4	12	14	16	19	28	34	43	52	66	85	98	116	11
Jul	1.9	1.9	2.6	3.5	3.9	4.8	7.4	8.2	11	13	14	16	17	20	24	11
Aug	1.1	1.4	2.0	2.0	2.0	2.2	2.8	3.2	4.0	4.5	5.1	5.7	6.4	8.1	8.7	11
Sep	1.0	1.2	1.9	1.9	1.9	1.9	1.9	2.9	2.9	3.3	3.7	3.7	3.7	4.6	4.6	11
Ann	1.9	1.9	3.0	3.0	4.0	4.5	6.0	7.8	13	23	35	48	71	93	124	

GOOSE LAKE BASIN

11340500 COTTONWOOD CREEK NEAR LAKEVIEW, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1924-1981 (AFTER THE COMPLETION OF COTTONWOOD RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	57	0.3	1978	15	1963	2.7	2.9	1.2
Nov	52	0.1	1975	25	1928	3.2	4.1	1.3
Dec	50	0.1	1962	45	1956	5.5	9.4	2.4
Jan	50	0.0	1960	61	1965	5.5	11	2.4
Feb	50	0.0	1960	100	1956	7.8	15	3.1
Mar	52	0.0	1960	77	1972	14	20	6.4
Apr	55	0.5	1955	143	1927	41	39	17.0
May	58	1.1	1977	153	1956	54	34	23.3
Jun	58	3.0	1931	99	1974	43	21	18.0
Jul	58	1.0	1931	74	1965	30	16	13.0
Aug	57	0.0	1977	61	1965	20	17	8.7
Sep	57	0.1	1977	39	1971	8.5	9.9	3.5
Ann		2.2	1931	56	1956	19	11	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.2	0.3	0.5	0.7	0.9	1.1	1.4	1.8	1.8	2.3	3.0	3.0	3.0	4.6	5.7	57
Nov	0.1	0.2	0.3	0.5	0.6	0.9	1.1	1.7	2.1	2.5	3.1	3.8	4.9	5.9	7.9	52
Dec	0.1	0.2	0.4	0.6	0.8	1.0	1.0	1.6	2.5	3.2	4.5	5.1	5.8	7.2	13	50
Jan	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.7	2.1	2.6	3.3	4.9	6.7	8.5	20	50
Feb	0.1	0.3	0.5	0.5	0.7	0.9	1.4	1.7	2.1	3.2	4.8	6.5	11	23	42	50
Mar	0.2	0.4	0.5	0.9	1.2	1.5	1.9	2.4	2.4	6.8	13	17	26	40	82	52
Apr	0.9	1.2	2.5	3.2	6.2	8.8	15	21	31	45	54	66	89	116	153	55
May	4.2	8.4	14	19	23	27	35	45	55	69	75	83	94	116	146	58
Jun	3.5	7.3	15	19	23	27	34	41	49	56	60	66	73	81	94	58
Jul	0.8	2.5	6.4	13	17	19	24	29	35	40	44	48	53	60	68	58
Aug	0.3	0.8	1.3	1.7	2.3	3.5	9.9	17	22	29	33	39	45	52	58	57
Sep	0.2	0.6	0.8	1.1	1.4	1.4	1.7	2.2	3.8	8.2	12	16	20	27	38	57
Ann	0.2	0.5	0.6	0.9	1.2	1.6	2.2	4.3	10	22	29	37	47	61	85	

KLAMATH RIVER BASIN

11493500 WILLIAMSON RIVER NEAR KLAMATH AGENCY, OR

LOCATION.--Lat 42°44'25", long 121°50'00", in NW 1/4 SW 1/4 sec.1, T.33 S., R.7 E., Klamath County, Hydrologic Unit 18010201, on right bank 250 ft downstream from highway bridge, 0.6 mi southwest of railroad station at Kirk, 10 mi upstream from Spring Creek, and 10 mi northeast of Klamath Agency.

DRAINAGE AREA.--1,290 mi², approximately.

PERIOD OF RECORD.--March 1908 to January 1909, April 1909 to June 1910, October 1954 to 1987. Monthly discharge only June 1910, published in WSP 1315-B.

REVISED RECORDS.--WSP 1565: 1908-9.

GAGE.--Water-stage recorder. Datum of gage is 4,483.16 ft above National Geodetic Vertical Datum of 1929. Mar. 25, 1908, to June 30, 1910, nonrecording gage or water-stage recorder at two sites about 0.5 mi upstream at different datums. Oct. 1, 1954, to Sept. 30, 1955, water-stage recorder at present site at datum 2.05 ft higher.

REMARKS.--Flow affected by natural storage in Klamath Marsh. Small diversions upstream from station for irrigation in vicinity of marsh.

AVERAGE DISCHARGE.--33 years (water years 1955-87), 212 ft³/s, 153,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 1,590 ft³/s Mar. 13, 1910, gage height, 3.7 ft, site and datum then in use, from rating curve extended above 800 ft³/s; maximum gage height, 5.57 ft Mar. 3, 1958; no flow at times during 1960-74, 1977-81.

STATISTICAL SUMMARIES FOR THE PERIOD 1955-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	33	0.0	1962	255	1958	51	68	2.1
Nov	33	0.0	1965	391	1957	142	116	5.5
Dec	33	56	1981	580	1956	252	124	10.1
Jan	33	62	1977	730	1956	261	161	10.4
Feb	33	60	1969	799	1965	347	182	12.7
Mar	33	128	1969	1040	1986	487	234	19.5
Apr	33	128	1981	1080	1956	493	226	19.1
May	33	28	1981	952	1956	295	197	11.8
Jun	33	0.0	1981	531	1956	141	133	5.5
Jul	33	0.0	1968	332	1958	54	80	2.2
Aug	33	0.0	1960	146	1958	18	34	0.7
Sep	33	0.0	1960	95	1958	14	25	0.6
Ann		62	1981	468	1956	212	97	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	42	76	93	112	135	162	--	33
Nov	0.0	0.0	0.0	0.0	1.0	21	97	139	169	205	224	242	286	332	--	33
Dec	52	87	117	140	157	172	201	236	273	313	334	356	391	434	500	33
Jan	66	76	91	117	149	162	190	218	249	304	343	382	428	489	653	33
Feb	67	92	123	165	204	225	269	309	377	437	465	496	536	605	756	33
Mar	129	220	254	280	313	350	396	434	481	573	624	670	746	873	1000	33
Apr	163	208	244	269	294	323	398	479	555	634	662	688	735	799	908	33
May	46	77	106	130	148	163	201	246	295	377	417	456	494	569	--	33
Jun	4.0	13	24	34	45	54	74	95	122	168	202	241	288	354	--	33
Jul	0.0	0.0	0.0	0.0	0.4	2.4	9.9	19	30	53	72	95	120	168	256	33
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.6	14	21	28	40	68	107	33
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	8.3	20	33	41	53	77	33
Ann	0.0	0.0	0.0	3.2	17	39	90	151	210	285	333	387	455	553	717	

SPRAGUE RIVER BASIN

11497500 SPRAGUE RIVER NEAR BEATTY, OR

LOCATION.--Lat 42°26'50", long 121°14'15", in NW 1/4 SE 1/4 sec.13, T.36 S., R.12 E., Klamath County, Hydrologic Unit 18010202, on right bank 1.6 mi east of Beatty, and 4.6 mi upstream from Sycan River.

DRAINAGE AREA.--513 mi².

PERIOD OF RECORD.--April to September 1912 and November 1912 to September 1913 (fragmentary), October 1913 to September 1915, February to November 1916, March 1917 to June 1918, May 1919 to October 1920, February 1921 to September 1926 (irrigation seasons only), October 1953 to 1987. Monthly discharge only October 1913, published in WSP 1315-B. Prior to October 1917, published as "near Yainax."

REVISED RECORDS.--WSP 1315-B: 1917(M).

GAGE.--Water-stage recorder. Datum of gage is 4,305.35 ft above National Geodetic Vertical Datum of 1929. Apr. 19, 1912, to Feb. 19, 1914, nonrecording gage, Feb. 20, 1914, to Sept. 11, 1917, water-stage recorder, and Sept. 12, 1917, to Sept. 30, 1926, nonrecording gage, at site 2 mi upstream at different datum.

REMARKS.--No regulation. Diversions for irrigation upstream from station in the vicinity of Bly.

AVERAGE DISCHARGE.--37 years (water years 1914-15, 1920, 1954-87), 314 ft³/s, 227,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,980 ft³/s Dec. 23, 1964, gage height, 12.19 ft; minimum discharge, 50 ft³/s Aug. 25, 1981.

STATISTICAL SUMMARIES FOR THE PERIOD 1954-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	34	122	1978	422	1963	169	51	4.4
Nov	34	140	1981	410	1974	196	61	5.0
Dec	34	133	1977	1160	1965	279	205	7.3
Jan	34	128	1977	898	1965	301	205	7.9
Feb	34	151	1977	1100	1958	373	224	8.9
Mar	34	147	1977	1220	1972	460	235	12.1
Apr	34	131	1977	1670	1956	620	312	15.8
May	34	163	1977	1700	1956	700	386	18.4
Jun	34	147	1968	808	1983	363	182	9.2
Jul	34	88	1977	313	1956	169	57	4.4
Aug	34	72	1977	210	1956	122	31	3.2
Sep	34	84	1981	186	1985	133	21	3.4
Ann		131	1977	643	1956	323	122	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	119	129	136	140	144	147	153	158	165	171	176	182	188	200	233	34
Nov	132	140	145	150	154	158	165	172	181	192	199	210	231	255	315	34
Dec	135	143	149	155	160	165	175	186	197	226	248	284	337	420	663	34
Jan	137	145	152	157	162	167	176	186	206	240	268	322	409	593	910	34
Feb	150	160	170	179	187	195	218	249	294	357	418	482	535	651	1130	34
Mar	165	196	209	223	238	256	298	361	420	498	557	629	724	882	1160	34
Apr	237	273	296	319	350	380	449	531	625	737	799	872	970	1090	1320	34
May	207	251	296	340	374	416	488	582	708	854	924	1000	1130	1300	1600	34
Jun	132	149	171	190	204	220	256	291	356	420	457	498	559	655	823	34
Jul	92	102	110	115	119	124	139	156	170	186	198	211	232	257	304	34
Aug	77	87	92	98	102	105	110	115	124	136	141	147	155	166	191	34
Sep	90	103	107	111	114	117	124	130	138	146	151	156	162	168	176	34
Ann	104	118	129	139	148	156	172	191	233	307	368	443	544	704	987	

SPRAGUE RIVER BASIN

11501000 SPRAGUE RIVER NEAR CHILOQUIN, OR

LOCATION.--Lat 42°35'05", long 121°50'55", in NE 1/4 NW 1/4 sec.35, T.34 S., R.7 E., Klamath County, Hydrologic Unit 18010202, on right bank 1.0 mi northeast of Chiloquin, 4.6 mi upstream from Modoc Point Canal intake, and at mile 5.4.

DRAINAGE AREA.--1,580 mi², approximately.

PERIOD OF RECORD.--July to October 1920, March 1921 to 1987. Monthly discharge only July 1920, published in WSP 1315-B. Prior to October 1931, published as "at McCready Ranch, near Chiloquin."

REVISED RECORDS.--WSP 591: 1922(M). WSP 1011: 1943 (M). WSP 1565: 1921-22.

GAGE.--Water-stage recorder. Datum of gage is 4,202.43 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, nonrecording gage at site 12 mi upstream at different datum.

REMARKS.--Minor regulation from irrigation diversions upstream from station.

AVERAGE DISCHARGE.--66 years (water years 1922-87), 589 ft³/s, 426,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,900 ft³/s Dec. 26, 1964, gage height, 10.37 ft; minimum daily discharge, 50 ft³/s May 26, 1926.

STATISTICAL SUMMARIES FOR THE PERIOD 1921-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	66	183	1934	848	1963	301	91	4.3
Nov	66	219	1933	789	1974	349	102	4.9
Dec	66	215	1933	2850	1965	484	383	7.0
Jan	66	196	1937	1960	1965	520	393	7.5
Feb	66	223	1933	2760	1982	685	505	9.0
Mar	67	288	1924	2900	1972	913	556	13.2
Apr	67	263	1977	4250	1956	1300	893	18.1
May	67	184	1934	3210	1956	1170	714	16.9
Jun	67	169	1934	1760	1983	624	372	8.7
Jul	67	141	1981	560	1983	290	106	4.2
Aug	67	113	1981	405	1956	228	55	3.3
Sep	67	141	1934	375	1956	243	50	3.4
Ann		220	1931	1400	1956	589	265	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	200	220	230	239	248	255	271	285	301	323	335	347	359	380	410	66
Nov	221	233	253	273	283	292	311	329	345	367	379	397	420	458	546	66
Dec	218	245	262	280	292	305	330	356	386	423	458	501	595	767	1070	66
Jan	225	246	265	280	295	311	340	365	398	445	485	550	647	880	1520	66
Feb	240	271	293	316	340	364	407	462	546	683	765	891	1040	1250	1710	66
Mar	307	340	380	421	456	496	569	687	818	987	1100	1270	1480	1780	2400	67
Apr	327	434	494	549	596	656	797	1030	1240	1500	1640	1830	2100	2550	3310	67
May	239	334	427	500	588	654	798	1010	1190	1450	1630	1810	2000	2230	2700	67
Jun	178	210	257	295	325	350	403	490	592	715	785	868	1010	1260	1550	67
Jul	149	165	182	194	204	218	243	265	287	319	340	367	397	450	539	67
Aug	131	157	171	183	191	196	207	220	238	255	265	273	282	300	340	67
Sep	157	173	189	199	207	214	226	237	251	267	276	288	302	320	358	67
Ann	178	205	225	243	260	278	314	357	416	533	630	764	979	1300	1840	

WILLIAMSON RIVER BASIN

11502500 WILLIAMSON RIVER BELOW SPRAGUE RIVER, NEAR CHILOQUIN, OR

LOCATION.--Lat 42°34'15", long 121°52'35", in NE 1/4 NE 1/4 sec.4, T.35 S., R.7 E., Klamath County, Hydrologic Unit 18010202, on right bank 0.2 mi downstream from Sprague River and 0.8 mi southwest of Chiloquin.

DRAINAGE AREA.--3,000 mi², approximately.

PERIOD OF RECORD.--June 1917 to 1987.

REVISED RECORDS.--WSP 981: 1938(M). WSP 1565: 1920(M), 1927(M), 1938.

GAGE.--Water-stage recorder. Datum of gage is 4,155.55 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 1, 1923, at different datum.

REMARKS.--Some regulation by diversion dams and logpond operations of Sprague River. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--70 years, 1,061 ft³/s, 768,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s Dec. 26, 1964, gage height, 10.56 ft; minimum discharge, 320 ft³/s Oct. 14, 1920.

STATISTICAL SUMMARIES FOR THE PERIOD 1918-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	69	517	1934	1240	1963	667	142	5.3
Nov	69	561	1937	1350	1974	776	196	6.0
Dec	69	554	1937	3680	1965	972	479	7.8
Jan	69	525	1937	3070	1965	1000	521	8.0
Feb	69	547	1933	3850	1958	1250	670	9.1
Mar	69	669	1931	4260	1972	1600	778	12.8
Apr	69	595	1931	5490	1952	2030	1120	15.7
May	69	472	1931	4380	1956	1700	906	13.6
Jun	69	458	1931	2660	1953	1030	498	8.0
Jul	69	399	1981	1280	1958	629	178	5.0
Aug	69	382	1981	934	1958	555	94	4.4
Sep	69	440	1981	871	1958	577	85	4.5
Ann		548	1931	2190	1956	1060	362	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	517	545	554	564	574	584	603	622	648	683	712	753	793	845	958	69
Nov	564	584	596	610	624	638	661	695	762	838	879	916	956	1060	1230	69
Dec	562	587	611	635	658	684	743	823	906	1010	1080	1160	1240	1430	1710	69
Jan	561	587	612	636	660	693	770	835	893	981	1050	1130	1250	1470	2280	69
Feb	575	615	662	715	767	815	921	1030	1130	1320	1440	1570	1760	2040	2610	69
Mar	693	790	848	916	990	1060	1190	1340	1510	1730	1870	2080	2470	2890	3560	69
Apr	757	886	960	1040	1120	1220	1460	1750	2020	2370	2550	2760	3030	3560	4600	69
May	562	688	782	874	986	1080	1280	1470	1670	2000	2260	2540	2780	3100	3660	69
Jun	469	519	566	609	646	674	749	836	966	1150	1250	1360	1530	1810	2280	69
Jul	434	465	485	499	510	521	548	572	603	642	668	712	788	879	1070	69
Aug	441	463	475	485	493	501	515	529	552	583	599	615	632	675	748	69
Sep	466	484	497	508	517	525	540	555	576	604	618	637	666	701	773	69
Ann	484	516	545	569	592	618	670	771	896	1070	1200	1370	1610	2010	2730	

UPPER KLAMATH LAKE BASIN-OREGON

11503000 ANNIE SPRING NEAR CRATER LAKE, OR

LOCATION.--Lat 42°52'20", long 122°10'00", unsurveyed, Klamath County, Hydrologic Unit 18010203, in Crater Lake National Park, at highway bridge 0.1 mi downstream from source.

DRAINAGE AREA.--Indeterminate, normal flow is entirely from Annie Spring.

PERIOD OF RECORD.--June 1977 to 1987. Discharge measurement and fragmentary gage-height record August to October 1913. Discharge measurements only Oct. 11, 1967, June 26, Sept. 13, 1968.

GAGE.--Water-stage recorder and V-notch sharp-crested weir. Datum of gage is 5,982.65 ft above National Geodetic Vertical Datum of 1929 (National Park Service bench mark).

REMARKS.--Fluctuations caused by pumps 0.1 mi upstream. Diversion for domestic use by National Park Service 0.1 mi upstream.

COOPERATION.--Records of diversion by pumping furnished by National Park Service.

AVERAGE DISCHARGE.--10 years, 3.20 ft³/s, 2,320 acre-ft/yr, adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18 ft³/s July 6, 1984, gage height, 1.56 ft; minimum discharge, 0.33 ft³/s Nov. 20, 22, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1977-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	0.5	1978	3.1	1984	1.9	0.8	5.2
Nov	10	0.6	1978	2.5	1984	1.6	0.6	4.3
Dec	10	1.2	1979	3.4	1978	1.9	0.7	5.2
Jan	10	1.1	1979	2.8	1978	1.8	0.5	5.0
Feb	10	1.1	1979	2.5	1984	1.6	0.4	3.9
Mar	10	1.0	1979	2.9	1986	1.7	0.7	4.6
Apr	10	1.0	1979	2.9	1986	1.8	0.6	4.8
May	10	2.8	1983	6.3	1987	4.0	1.0	10.7
Jun	11	1.8	1977	12	1986	7.4	3.3	19.3
Jul	11	1.0	1977	14	1984	6.3	4.1	17.0
Aug	11	0.7	1977	7.2	1983	3.5	2.0	9.6
Sep	11	0.5	1977	4.1	1983	2.4	1.0	6.3
Ann		2.1	1981	4.5	1984	3.1	0.8	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.5	1.4	1.5	1.5	1.5	1.6	1.9	2.1	2.3	2.5	2.5	2.7	3.1	3.0	--	10
Nov	0.4	1.2	1.2	1.2	1.3	1.3	1.4	1.6	1.7	1.9	2.0	2.1	--	--	--	10
Dec	1.2	1.2	1.3	1.3	1.3	1.4	1.5	1.7	1.9	2.1	2.2	2.3	2.3	2.5	3.8	10
Jan	1.1	1.2	1.3	1.3	1.3	1.4	1.6	1.7	1.9	2.1	2.1	2.4	--	--	--	10
Feb	1.1	1.1	1.2	1.2	1.3	1.3	1.4	1.5	1.5	1.6	1.7	1.9	2.1	2.4	2.5	10
Mar	0.9	1.0	1.0	1.1	1.2	1.2	1.3	1.5	1.8	2.0	2.2	2.2	2.3	2.5	--	10
Apr	1.0	1.0	1.0	1.1	1.1	1.2	1.6	1.7	2.1	2.2	2.3	2.5	2.5	--	--	10
May	1.4	2.1	2.3	2.5	2.6	2.8	3.0	3.4	3.8	4.3	4.9	5.2	6.2	6.6	7.5	10
Jun	1.9	3.5	4.1	4.1	4.9	4.9	5.8	6.3	8.2	9.0	9.0	10	11	13	14	11
Jul	0.9	2.2	2.6	2.6	3.2	3.5	4.2	5.1	6.2	7.5	9.1	11	12	13	15	11
Aug	0.7	1.6	1.7	1.9	2.2	2.4	2.6	3.1	3.4	3.7	4.1	4.9	5.3	6.3	7.5	11
Sep	0.5	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.6	2.8	3.0	3.4	3.6	3.6	3.9	11
Ann	1.0	1.2	1.3	1.3	1.5	1.6	1.8	2.0	2.3	2.9	3.6	4.1	5.1	6.4	9.4	

UPPER KLAMATH RIVER BASIN-OREGON

11504000 WOOD RIVER AT FORT KLAMATH, OR

LOCATION.--Lat 42°42'05", long 121°59'20", in sec.22, T.33 S., R.7-1/2., Klamath County, Hydrologic Unit 18010203, at highway bridge 0.2 mi east of Fort Klamath.

DRAINAGE AREA.--90 mi², approximately.

PERIOD OF RECORD.--April 1913 to September 1916, October 1918 to September 1919, October 1923 to September 1936.

GAGE.--Staff gage. Datum of gage is 4,166.65 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 21, 1923, near described site at datum 0.19 ft lower. Aug. 21 to Sept. 30, 1923, 0.2 mi downstream at different datum. Oct. 1, 1923 to Sept. 30, 1925, at described site at datum 0.81 ft higher.

REMARKS.--Many diversions for irrigation upstream from station. Regulation by diversion dams.

AVERAGE DISCHARGE.--17 years (water years 1914-16, 1919, 1924-36), 215 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 520 ft³/s Nov. 17, 1920, gage height, 2.41 ft, from rating curve extended above 350 ft³/s; minimum, 84 ft³/s in July, August, September, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1914-1936

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	131	1932	300	1923	222	48	8.8
Nov	18	143	1932	310	1915	230	49	8.8
Dec	18	143	1932	308	1923	226	49	8.9
Jan	18	148	1932	312	1914	219	47	8.6
Feb	18	145	1932	323	1915	225	47	8.1
Mar	18	176	1935	338	1915	236	50	9.3
Apr	18	160	1931	363	1914	237	54	9.1
May	18	112	1931	340	1914	211	56	8.3
Jun	18	101	1931	345	1914	208	62	7.9
Jul	18	93	1931	325	1916	189	64	7.5
Aug	18	87	1931	293	1916	176	59	6.9
Sep	18	110	1931	282	1915	199	54	7.6
Ann		141	1931	311	1914	215	47	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	163	170	177	180	186	208	227	242	254	260	266	285	291	--	-- 18
Nov	154	175	180	188	192	196	209	225	232	265	269	287	296	307	312 18
Dec	150	166	172	178	184	189	203	220	239	258	272	288	300	303	307 18
Jan	155	163	168	173	178	188	201	213	227	238	251	262	279	297	310 18
Feb	147	166	170	176	182	195	211	225	241	253	257	263	274	285	318 18
Mar	171	178	185	188	197	202	214	227	233	254	268	275	293	323	346 18
Apr	151	160	169	189	197	201	219	233	247	264	271	279	296	316	348 18
May	131	147	154	163	170	176	186	198	224	238	250	269	281	292	329 18
Jun	110	129	141	150	155	159	177	213	233	255	260	264	269	280	331 18
Jul	103	121	125	129	134	144	152	173	206	224	230	241	255	282	-- 18
Aug	94	115	122	126	131	137	147	160	191	205	209	229	243	278	285 18
Sep	122	130	140	147	153	158	175	199	218	235	241	253	271	280	289 18
Ann	126	142	152	163	170	179	195	212	227	244	256	268	280	296	311

UPPER KLAMATH LAKE BASIN-CALIFORNIA-OREGON

11509500 KLAMATH RIVER AT KENO, OR

LOCATION.--Lat 42°08'00", long 121°57'40", in NW 1/4 SE 1/4 sec.35, T.39 S., R.7 E., Klamath County, Hydrologic Unit 18010206, on left bank 1.7 mi northwest of Keno and 4.5 mi upstream from Spencer Creek.

DRAINAGE AREA.--3,920 mi², approximately (not including Lost River or Lower Klamath Lake basins).

PERIOD OF RECORD.--June 1904 to December 1913, October 1929 to 1987. Monthly discharge only October to December 1929, published in WSP 1315-B.

GAGE.--Water-stage recorder. Datum of gage is 3,961 ft above National Geodetic Vertical Datum of 1929 (from river-profile survey). See WSP 1735 for history of changes prior to Nov. 6, 1954.

REMARKS.--Flow regulated since 1919 by Upper Klamath Lake (station 11507001). Fluctuation by Keno powerplant 0.9 mi upstream. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--67 years, 1,705 ft³/s, 1,235,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,300 ft³/s Feb. 28, 1986, gage height, 12.82 ft, caused by regulation from Keno powerplant 0.9 mi upstream; minimum discharge, 26 ft³/s Sept. 23, 1956; minimum daily, 60 ft³/s May 19, 1934.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 15.3 ft, from floodmark (original datum), about May 10, 1904, discharge, 9,250 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1930-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	58	564	1982	3050	1957	1520	528	7.9
Nov	58	290	1935	4670	1985	1810	861	9.1
Dec	58	391	1935	5730	1984	2040	1060	10.6
Jan	58	542	1935	7700	1965	2020	1310	10.5
Feb	58	324	1931	7560	1965	2160	1520	10.2
Mar	58	229	1931	8200	1972	2540	1990	13.1
Apr	58	166	1931	6590	1956	2200	1710	11.0
May	58	109	1931	5260	1956	1570	1200	8.1
Jun	58	97	1931	3250	1953	899	696	4.5
Jul	58	114	1931	1760	1958	710	416	3.7
Aug	58	202	1931	1900	1958	940	414	4.9
Sep	58	334	1931	2210	1943	1260	410	6.3
Ann		546	1931	3580	1956	1640	698	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	623	865	982	1030	1100	1190	1360	1460	1550	1720	1840	1980	2150	2390	2630	58
Nov	560	823	940	1050	1150	1250	1470	1640	1930	2240	2450	2570	2690	2840	3450	58
Dec	510	754	874	982	1130	1260	1530	1880	2240	2570	2690	2860	3070	3470	4250	58
Jan	530	751	907	1030	1120	1200	1380	1620	2100	2460	2600	2740	2880	3240	5240	58
Feb	438	625	771	882	976	1060	1260	1650	2230	2570	2670	2840	3740	4390	5880	58
Mar	361	497	711	851	943	1090	1330	1810	2340	3150	3700	4330	5110	5920	7060	58
Apr	216	403	530	666	764	838	1080	1410	2120	2760	3190	3830	4560	5300	6190	58
May	254	372	457	537	612	665	806	1020	1340	1890	2190	2510	3000	3560	4790	58
Jun	236	279	305	343	384	421	498	621	747	965	1070	1200	1510	2070	2710	58
Jul	233	254	271	289	314	349	450	544	716	934	1060	1190	1280	1360	1580	58
Aug	305	393	475	599	651	681	739	808	925	1180	1300	1410	1520	1630	1780	58
Sep	494	707	838	911	958	990	1060	1190	1360	1530	1610	1680	1760	1880	2090	58
Ann	290	406	516	644	747	850	1050	1260	1510	1870	2130	2450	2710	3210	4580	

UPPER KLAMATH LAKE BASIN-CALIFORNIA-OREGON

11510700 KLAMATH RIVER BELOW JOHN C. BOYLE POWERPLANT, NEAR KENO, OR

LOCATION.--Lat 42°05'05", long 122°04'20", in SE 1/4 SE 1/4 sec.14, T.40 S., R.6 E., Klamath County, Hydrologic Unit 18010206, on right bank 0.7 mi downstream from John C. Boyle powerplant, 8 mi downstream from Spencer Creek, and 8.5 mi southwest of Keno.

DRAINAGE AREA.--4,080 mi², approximately (not including Lost River or Lower Klamath Lake basins).

PERIOD OF RECORD.-- January 1959 to 1987. Prior to Oct. 1, 1961, published as "below Big Bend powerplant."

GAGE.--Water-stage recorder. Datum of gage is 3,274.82 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Power & Light Co.).

REMARKS.--Flow regulated by Upper Klamath Lake (station 11507001). Large diurnal fluctuation caused by Keno and John C. Boyle powerplants. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--28 years, 1,928 ft³/s, 1,397,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,000 ft³/s Mar. 5, 1972, gage height, 9.33 ft; minimum discharge, 283 ft³/s Feb. 17, 1968; minimum daily, 317 ft³/s July 25, 1968.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	27	786	1982	3160	1985	1700	546	7.3
Nov	27	897	1982	4510	1985	2230	911	9.3
Dec	27	1110	1980	5730	1984	2750	976	11.8
Jan	27	1170	1981	7910	1965	2710	1350	11.6
Feb	26	1090	1977	7780	1965	2810	1570	11.0
Mar	27	634	1977	8750	1972	3210	2040	13.8
Apr	27	723	1977	5650	1974	2610	1500	10.8
May	27	591	1966	3930	1971	1760	994	7.5
Jun	27	550	1976	2330	1983	880	435	3.7
Jul	27	501	1973	1340	1982	653	161	2.8
Aug	27	591	1973	1050	1965	902	122	3.9
Sep	27	776	1973	1880	1965	1270	259	5.3
Ann		1150	1977	3020	1984	1980	561	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	795	1070	1180	1220	1250	1350	1490	1570	1680	1810	1940	2220	2540	2710	2830	27
Nov	882	1120	1200	1290	1450	1540	1740	2280	2620	2750	2790	2840	2880	3430	4290	27
Dec	1150	1310	1480	1630	1900	2200	2540	2730	2840	2950	3150	3470	3810	4210	5020	27
Jan	1160	1340	1450	1510	1610	1820	2310	2580	2720	2830	2890	3200	3490	4210	6140	27
Feb	1030	1150	1250	1350	1440	1520	2230	2540	2660	2800	2880	2960	3930	4690	7680	26
Mar	897	1240	1360	1430	1590	1770	2180	2570	2830	3380	4080	4830	5820	6770	8260	27
Apr	784	942	1030	1110	1180	1260	1660	2220	2750	3090	3380	3830	4390	4990	6500	27
May	608	682	743	805	862	906	1030	1360	1690	2240	2580	2770	3110	3500	3950	27
Jun	384	435	550	578	597	616	643	672	722	798	862	954	1170	1430	2410	27
Jul	365	386	413	469	509	541	593	634	672	712	737	765	802	864	989	27
Aug	391	588	649	682	748	804	897	942	974	1010	1040	1080	1120	1180	1250	27
Sep	680	783	894	1010	1070	1140	1190	1240	1300	1430	1500	1560	1620	1750	1890	27
Ann	545	636	711	805	929	1020	1230	1480	1810	2460	2690	2830	2960	3620	4800	

KLAMATH RIVER BASIN

11514500 KEENE CREEK NEAR ASHLAND, OR

LOCATION.--Lat 42°10'15", long 122°28'40", in NW1/4 sec. 21, T.39 S., R.3 E., Jackson County, Hydrologic Unit 18010206, on right bank 0.3 mi upstream from Burnt Creek, 0.6 mi downstream from Hyatt Dam, and 12 mi east of Ashland.

DRAINAGE AREA.--12.1 mi².

PERIOD OF RECORD.--April to July 1917, December 1917 to July 1920 (no low-flow records), October 1920 to June 1922, October 1948 to September 1965. Monthly discharge only October 1948, published in WSP 1315-B. Published as "at Hyatt Prairie, near Ashland" December 1917 to July 1920, October 1920 to June 1922, October 1948 to September 1958.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,706 ft above National Geodetic Vertical Datum of 1929 (by stadia survey). Apr. 1, 1917, to June 30, 1922, at site 0.5 mi upstream at different datum.

REMARKS.--Flow regulated since December 1922 by Hyatt Reservoir. No diversion upstream from station. Practically entire flow diverted downstream from station by Green Springs powerplant diversion.

AVERAGE DISCHARGE.--17 years (water years 1949-65), 12.7 ft³/s, 9,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 751 ft³/s May 3, 1954, gage height, 5.33 ft, caused by failure of flashboards on spillway of Hyatt Dam, from rating curve extended above 50 ft³/s on basis of computation of peak flow over Columbus-type control; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1949-1965

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	17	0.1	1949	21	1965	2.3	5.4	1.5
Nov	17	0.2	1950	1.9	1964	0.4	0.4	0.3
Dec	17	0.2	1950	2.1	1965	0.6	0.5	0.4
Jan	17	0.2	1949	31	1965	2.4	7.6	1.6
Feb	17	0.3	1949	44	1965	3.5	10	2.2
Mar	17	0.5	1955	9.8	1965	1.5	2.2	1.0
Apr	17	0.9	1955	31	1965	4.8	7.3	3.1
May	17	0.6	1960	38	1963	13	11	8.8
Jun	17	0.4	1952	55	1960	23	16	15.4
Jul	17	6.0	1962	81	1960	39	22	26.4
Aug	17	8.5	1961	65	1952	43	19	29.1
Sep	17	0.5	1960	37	1953	16	11	10.5
Ann		2.8	1961	17	1957	12	3.8	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.8	1.9	--	17
Nov	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.6	17
Dec	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5	0.7	0.8	1.0	1.5	17
Jan	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.7	1.1	9.9	17
Feb	0.3	0.3	0.3	0.3	0.3	0.5	0.6	0.6	0.6	0.7	0.7	1.0	1.2	2.1	34	17
Mar	0.4	0.4	0.4	0.6	0.6	0.6	0.7	0.8	0.8	1.0	1.0	1.2	1.4	1.8	2.4	17
Apr	0.8	0.9	1.0	1.0	1.2	1.2	1.5	1.8	2.0	2.3	2.3	2.7	3.1	16	26	17
May	0.5	0.6	0.7	0.7	1.0	1.0	1.5	2.6	9.1	16	20	26	34	41	49	17
Jun	0.4	0.4	0.6	0.6	2.8	3.9	10	20	32	38	41	43	48	55	63	17
Jul	0.4	0.4	6.4	13	18	21	33	42	50	58	62	65	69	73	78	17
Aug	0.3	5.9	11	15	18	23	39	52	59	63	65	68	72	76	--	17
Sep	0.2	0.2	0.2	0.2	0.2	0.3	2.5	5.2	14	21	28	36	43	50	58	17
Ann	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.8	1.3	5.2	16	26	39	52	63	

MIDDLE SNAKE RIVER BASIN

13181000 OWYHEE RIVER NEAR ROME, OR

LOCATION.--Lat 42°52'02", long 117°38'52", in SE 1/4 NE 1/4 sec.14, T.31 S., R.41 E., Malheur County, Hydrologic Unit 17050107, on right bank 0.5 mi downstream from Jordan Creek, 2.6 mi north of Rome, and at mile 122.4.

DRAINAGE AREA.--About 8,000 mi².

PERIOD OF RECORD.--October 1949 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 3,344.20 ft above National Geodetic Vertical Datum of 1929. Prior to Feb 10, 1960, at datum 0.24 ft lower.

REMARKS.--Flow regulated by Antelope Reservoir, capacity, 70,000 acre-ft, increased in 1970, and Wild Horse Reservoir, capacity, 32,690 acre-ft, and numerous small reservoirs. Diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--38 years, 1,021 ft³/s, 739,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,400 ft³/s Feb. 19, 1986, gage height, 19.09 ft; minimum, 42 ft³/s Aug. 12, 1954, July 28, Aug. 5, 1961, July 31, 1968.

STATISTICAL SUMMARIES FOR THE PERIOD 1950-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	38	85	1955	442	1976	172	77	1.4
Nov	38	107	1955	593	1971	226	114	1.8
Dec	38	103	1955	2900	1965	437	529	3.6
Jan	38	114	1955	4460	1971	732	892	6.1
Feb	38	129	1955	8820	1986	1390	1660	10.5
Mar	38	233	1977	9400	1972	2390	2190	19.9
Apr	38	206	1968	17000	1952	3270	3320	26.3
May	38	124	1968	10500	1984	2120	2120	17.6
Jun	38	157	1966	4870	1984	1000	999	8.1
Jul	38	61	1968	1030	1984	279	193	2.3
Aug	38	63	1954	452	1984	161	79	1.3
Sep	38	62	1955	361	1984	146	63	1.2
Ann		188	1977	3400	1984	1020	686	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	87	95	107	117	124	129	139	151	166	186	196	208	231	259	309	38
Nov	110	123	133	141	151	158	171	183	198	224	243	268	305	350	493	38
Dec	119	136	146	156	166	176	194	210	235	296	343	407	470	633	1350	38
Jan	118	135	151	165	178	188	211	251	330	423	514	646	971	1380	2730	38
Feb	165	197	219	256	302	346	439	538	696	952	1180	1420	1880	2870	5530	38
Mar	223	254	294	357	465	619	877	1240	1770	2620	3170	3760	4790	6340	8550	38
Apr	240	391	520	646	794	1060	1890	2410	2880	3490	3910	4440	5270	6930	10500	38
May	158	200	251	426	662	902	1250	1590	1920	2280	2520	2790	3410	4640	7330	38
Jun	129	177	213	242	277	324	443	577	734	1020	1190	1460	1830	2370	3640	38
Jul	70	88	104	121	139	157	188	212	242	296	321	361	439	539	746	38
Aug	66	76	84	94	103	110	125	142	159	183	194	207	224	258	351	38
Sep	67	77	83	88	93	99	114	131	153	175	184	195	209	224	267	38
Ann	89	110	127	143	159	174	205	252	366	614	863	1280	1870	2700	4440	

LOWER OWYHEE RIVER BASIN

13182000 OWYHEE RIVER ABOVE LAKE OWYHEE, OR

LOCATION.--Lat 43°13'34", long 117°29'47", in SE1/4 sec.7, T.27 S., R.43 E., Malheur County, Hydrologic Unit 17050110, on left bank 3 mi upstream from flow line of Lake Owyhee and 26 mi northeast of Rome.

DRAINAGE AREA.--10,400 mi², approximately.

PERIOD OF RECORD.--April 1929 to September 1951. Monthly discharge only for some periods, published in WSP 1317.

GAGE.--Water-stage recorder. Elevation of gage is 2,690 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Flow regulated by Antelope Reservoir, Wild Horse Reservoir, and numerous small reservoirs. Diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--22 years (water years 1930-51), 851 ft³/s, 616,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,000 ft³/s Mar. 20, 1932, Apr. 19, 1936; maximum gage height, 12.95 ft Mar. 20, 1932; minimum discharge, 99 ft³/s Dec. 18, 1948, gage height, 3.45 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1931-1951

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	21	149	1932	289	1947	200	38	1.9
Nov	21	159	1932	449	1947	252	73	2.4
Dec	21	161	1932	959	1951	335	211	3.2
Jan	21	174	1931	1890	1943	389	375	3.8
Feb	21	197	1933	3550	1951	889	889	7.9
Mar	21	336	1933	4050	1943	1840	1190	17.8
Apr	21	384	1931	7310	1936	3510	2050	32.9
May	21	171	1931	4000	1945	1660	1070	16.1
Jun	21	137	1931	2270	1945	861	566	8.1
Jul	21	115	1931	482	1945	261	90	2.5
Aug	21	117	1931	238	1945	180	38	1.7
Sep	21	132	1933	223	1945	177	32	1.7
Ann		212	1931	1530	1943	875	372	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	146	150	154	159	166	172	183	194	205	219	227	233	240	253	275	21
Nov	165	175	183	189	195	201	213	229	249	265	275	288	305	332	380	21
Dec	168	180	187	193	200	206	219	233	257	291	314	340	405	492	940	21
Jan	172	183	190	198	206	214	232	249	271	299	322	400	479	613	1100	21
Feb	179	195	212	227	239	251	287	393	495	734	885	1090	1380	2120	3340	21
Mar	257	316	389	436	496	581	864	1310	1800	2290	2430	2660	3050	3980	5870	21
Apr	357	793	1060	1300	1540	1860	2420	2800	3580	4190	4720	5290	6010	6720	9460	21
May	183	333	466	577	695	847	1180	1480	1720	2040	2230	2480	2820	3370	4200	21
Jun	150	199	283	320	355	390	471	565	703	926	1110	1350	1610	1960	2640	21
Jul	123	135	157	169	192	206	224	244	264	288	305	324	355	398	462	21
Aug	118	128	131	136	140	146	172	189	199	208	211	216	221	225	241	21
Sep	129	132	134	138	142	153	171	181	192	201	204	207	209	213	225	21
Ann	138	159	173	185	195	205	226	263	334	540	792	1220	1750	2450	3740	

LOWER OWYHEE RIVER BASIN

13183000 OWYHEE RIVER BELOW OWYHEE DAM, OR

LOCATION.--Lat 43°39'17", long 117°15'16", in SE 1/4 sec.18, T.22 S., R.45 E., Malheur County, Hydrologic Unit 17050110, on left bank 0.8 mi downstream from Owyhee Dam, 20 mi southwest of Nyssa, and at mile 27.3.

DRAINAGE AREA.--11,160 mi², approximately.

PERIOD OF RECORD.--February 1929 to 1987.

REVISED RECORDS.--WSP 983: 1941-42. WSP 1397: 1930, 1933, 1946.

GAGE.--Water-stage recorder. Datum of gage is 2,343.67 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Flow regulated since October 1932 by Lake Owyhee (station 13182500), and by many smaller reservoirs. Diversion of up to 457,000 acre-ft from Lake Owyhee during the year for irrigation of lands downstream from station and outside the basin. Many smaller diversions upstream from Lake Owyhee for irrigation upstream from station.

COOPERATION.--Water-stage recorder inspected by irrigation district employees.

AVERAGE DISCHARGE.--55 years (water years 1933-87), 446 ft³/s, 323,100 acre-ft/yr, not adjusted for storage or diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,900 ft³/s Apr. 15, 1952, gage height, 15.70 ft; no flow for part of Aug. 8, 9, 1932, when temporary diversion tunnel at Owyhee Dam was closed.

STATISTICAL SUMMARIES FOR THE PERIOD 1933-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	55	2.8	1955	242	1986	45	47	0.9
Nov	55	1.0	1953	196	1933	9.9	28	0.2
Dec	55	1.7	1978	703	1985	28	109	0.5
Jan	55	1.5	1933	2750	1971	149	513	2.8
Feb	55	1.8	1978	5200	1986	418	1100	7.2
Mar	55	2.0	1955	7800	1972	1170	2030	22.3
Apr	55	28	1955	12800	1984	1890	2690	34.8
May	55	39	1955	8570	1984	900	1500	17.1
Jun	55	45	1948	3250	1984	347	540	6.4
Jul	55	44	1948	618	1933	164	82	3.1
Aug	55	22	1948	312	1933	142	60	2.7
Sep	55	8.0	1948	248	1933	111	54	2.0
Ann		22	1955	3000	1984	446	543	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.3	2.7	2.7	2.7	3.2	3.8	4.5	8.8	27	68	77	94	112	125	162	55
Nov	2.0	2.0	2.3	2.3	2.8	2.8	2.8	3.9	3.9	4.6	6.3	7.0	7.9	9.5	23	55
Dec	2.0	2.0	2.0	2.6	2.6	2.6	2.6	3.3	3.3	4.8	6.3	7.1	7.5	9.3	13	55
Jan	1.6	2.1	2.1	2.1	2.1	2.8	2.8	4.2	4.9	5.7	7.0	7.7	8.6	10	639	55
Feb	1.7	1.7	2.3	2.3	2.3	3.2	3.9	4.7	5.9	7.7	8.6	10	17	1190	2680	55
Mar	1.8	2.4	2.4	2.4	4.0	4.4	5.0	7.5	10	470	1060	1890	2920	4270	6940	55
Apr	3.8	5.7	19	68	89	105	139	239	1040	2130	2740	3560	4450	5470	7690	55
May	55	73	91	116	139	156	187	218	249	521	909	1290	1630	2590	4620	55
Jun	53	69	82	95	111	127	153	172	190	208	217	236	265	623	1530	55
Jul	59	74	85	95	108	130	155	169	181	192	198	206	218	231	249	55
Aug	40	50	55	73	101	117	138	153	166	180	187	194	204	215	226	55
Sep	8.3	25	36	58	70	82	101	115	128	144	151	159	167	187	220	55
Ann	1.8	2.5	2.5	3.6	4.2	5.2	9.6	70	119	162	185	212	259	832	2710	

LOWER OWYHEE RIVER BASIN

13184000 OWYHEE RIVER AT OWYHEE, OR

LOCATION.--Lat 43°46'57", long 117°03'30", in SE 1/4 SE 1/4 sec.35, T.20 S., R.46 E., Malheur County, Hydrologic Unit 17050110, on left bank 0.3 mi upstream from State Highway 201 bridge, 0.9 mi southwest of Owyhee, and at mile 3.1.

DRAINAGE AREA.--11,300 mi², approximately.

PERIOD OF RECORD.--March 1890 to June 1891, February to June 1892, February to July, October to December 1893, January 1895 to May 1897, August 1903 to September 1916, May 1920 to July 1929, July 1979 to September 1982. Monthly discharge only for some periods published in WSP 1317. Published as "at Rigsby", 1890-93; "at Nyssa", 1895-96; and as "at Owyhee" in WSP 370. Records for September, October 1903, May to October 1904, March, April 1905, published in WSP 135 in conjunction with records for Owyhee River near Owyhee and in WSP 370, have been found in error and should not be used.

GAGE.--Water-stage recorder. Elevation of gage is 2,190 ft, from topographic map.

REMARKS.--Flow regulated since October 1932 by Lake Owyhee, and smaller reservoirs. Diversions from Lake Owyhee for irrigation of lands upstream from station and outside the basin. Many smaller diversions upstream from Lake Owyhee for irrigation.

AVERAGE DISCHARGE.--20 years (water years 1896, 1904-16, 1922-27), 1,048 ft³/s, 759,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,000 ft³/s Mar. 2, 1910, gage height, 12.9 ft site and datum then in use, from rating curve extended above 14,000 ft³/s; no flow July 7, 19, Aug. 14-16, 1924, July 5, 6, 1926. Maximum discharge recorded since construction of Owyhee Dam in 1932, 7,790 ft³/s Feb. 23, 1982, gage height, 11.91 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1895-1928

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	31	1906	162	1905	85	41	0.7
Nov	19	69	1911	362	1912	173	79	1.4
Dec	20	135	1923	864	1910	278	159	2.3
Jan	21	141	1924	4740	1909	700	1010	5.9
Feb	21	247	1923	5560	1907	1390	1330	10.6
Mar	21	487	1924	12500	1910	2940	2920	24.7
Apr	23	616	1908	7260	1906	3430	1900	27.9
May	23	114	1926	6070	1912	2180	1590	18.3
Jun	24	5.6	1926	2640	1906	951	758	7.7
Jul	23	3.2	1926	498	1907	130	138	1.1
Aug	24	2.5	1914	170	1896	31	38	0.3
Sep	25	2.5	1914	174	1896	41	40	0.3
Ann		301	1924	1830	1907	1010	498	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	28	33	39	43	47	61	72	88	107	125	136	157	169	201	--	19
Nov	61	67	82	93	99	109	146	166	182	205	217	235	251	283	317	19
Dec	116	133	146	153	160	194	217	239	273	304	321	337	353	368	435	20
Jan	134	149	172	199	222	234	300	345	381	423	445	496	627	913	2580	21
Feb	198	281	301	321	376	424	535	631	847	1190	1380	1670	2390	3640	4740	21
Mar	390	436	499	571	645	739	1040	1290	2040	3590	4230	4980	5910	8000	10500	21
Apr	606	789	1030	1280	1620	1920	2520	3020	3620	4290	4690	5060	5550	6420	7760	23
May	155	431	604	762	902	1060	1450	1770	2090	2510	2890	3320	3830	4690	6360	23
Jun	7.1	23	109	197	270	326	529	733	926	1170	1310	1450	1740	2150	3080	24
Jul	1.7	4.3	5.6	7.9	12	16	27	52	76	136	182	230	292	390	563	23
Aug	2.4	4.0	4.0	4.8	6.2	7.0	9.1	14	19	30	37	46	53	95	130	24
Sep	3.9	6.0	7.1	8.2	9.6	12	17	24	31	43	51	58	86	111	145	25
Ann	4.7	11	23	41	64	97	160	242	379	666	892	1250	1910	3100	5080	

UPPER MALHEUR RIVER BASIN

13214000 MALHEUR RIVER NEAR DREWSEY, OR

LOCATION.--Lat 43°47'05", long 118°19'50", in NE 1/4 SE 1/4 sec.31, T.20 S., R.36 E., Harney County, Hydrologic Unit 17050116, on left bank 300 ft downstream from bridge on U.S. Highway 20, 0.5 mi downstream from Cottonwood Creek, 3.0 mi southeast of Drewsey, and at mile 129.0.

DRAINAGE AREA.--910 mi², approximately.

PERIOD OF RECORD.--June 1920 to September 1921, November, December 1921, March, April 1922, April to September 1923, June 1926 to 1987. Monthly discharge only for some periods, published in WSP 1317. March to September 1914 at site 13 mi upstream; records not equivalent owing to inflow from several creeks.

REVISED RECORDS.--WSP 1093: 1927. WSP 1287: Drainage area. WSP 1397: 1921, 1927-31, 1937, drainage area (former site). WSP 1517: 1952. WDR OR-78-1: 1976(P).

GAGE.--Water-stage recorder. Datum of gage is 3,479.13 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 27, 1923, water-stage recorder or nonrecording gage at site 0.5 mi downstream at different datum. Apr. 27, 1923, to June 6, 1939, water-stage recorder at site 7 mi downstream at different datum.

REMARKS.--Slight regulation by small reservoirs upstream from station. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--61 years (water years 1927-87), 193 ft³/s, 140,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s Dec. 23, 1964, gage height, 13.50 ft, from rating curve extended above 4,500 ft³/s on basis of contracted-opening measurement at gage height 13.20 ft; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1927-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	61	5.3	1933	103	1985	42	22	1.9
Nov	61	5.1	1933	178	1971	70	29	3.0
Dec	61	9.0	1933	739	1965	106	101	4.7
Jan	61	20	1933	817	1970	148	167	6.5
Feb	61	20	1933	1120	1982	271	232	10.9
Mar	61	55	1977	1430	1983	470	331	20.7
Apr	61	44	1934	2290	1952	668	426	28.4
May	61	17	1934	1140	1958	360	274	15.8
Jun	61	8.0	1934	501	1984	143	113	6.1
Jul	61	1.9	1934	158	1982	29	34	1.3
Aug	61	0.0	1934	60	1976	10	11	0.5
Sep	61	0.0	1934	68	1984	15	15	0.6
Ann		34	1934	473	1984	193	107	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	7.3	13	16	20	23	26	33	39	46	54	58	63	69	79	92	61
Nov	30	36	41	45	48	52	58	64	70	78	81	88	96	110	136	61
Dec	30	39	44	48	52	56	64	72	79	92	99	112	128	160	255	61
Jan	31	43	48	51	54	58	66	80	92	104	113	131	173	239	444	61
Feb	52	59	64	70	77	85	103	130	169	225	267	317	402	563	953	61
Mar	73	93	111	134	159	180	233	303	387	518	600	721	876	1110	1430	61
Apr	104	170	226	274	317	359	441	532	648	802	906	1030	1170	1380	1690	61
May	34	60	91	117	138	164	215	273	346	434	478	542	633	773	1020	61
Jun	14	21	26	33	41	51	75	103	134	174	201	234	270	326	424	61
Jul	2.0	2.6	4.6	5.8	6.5	8.6	13	17	22	28	32	39	51	68	113	61
Aug	0.3	1.0	1.4	1.7	2.1	2.6	4.0	6.6	8.0	12	14	16	19	24	36	61
Sep	0.2	1.0	2.0	2.4	3.0	3.8	6.0	8.9	13	18	21	25	30	37	55	61
Ann	2.0	6.4	11	18	25	35	52	70	96	147	198	270	373	535	850	

UPPER MALHEUR RIVER BASIN

13215000 MALHEUR RIVER BELOW WARMSPRINGS RESERVOIR, NEAR RIVERSIDE, OR

LOCATION.--Lat 43°34'29", long 118°12'31", on line between NW 1/4 SW 1/4 and SW 1/4 NW 1/4 sec.17, T.23 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on left bank 0.9 mi downstream from Warm Springs Dam, 3.0 mi upstream from South Fork, 4.0 mi northwest of Riverside, and at mile 113.

DRAINAGE AREA.--1,100 mi², approximately.

PERIOD OF RECORD.--January 1906 to March 1907 and December 1908 (gage heights only), January 1909 to September 1910, December 1914 to July 1917, March 1919 to 1987. Monthly discharge only for some periods, published in WSP 1317. Figures of discharge for January 1906 to March 1907, published in WSP 272 and 370, have been found to be unreliable and should not be used. Published as Middle Fork of Malheur River at Riverside 1906-7, as Middle Fork of Malheur River above South Fork, at Riverside 1909-10, as Malheur River above South Fork, at Riverside in WSP 370, 1906-10, and as Malheur River at Warm Springs reservoir site, near Riverside 1914-17.

REVISED RECORDS.--WSP 833: 1936. WSP 1063: 1942-45. WSP 1397: 1909-10, 1917. WSP 1447: 1955. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 3,305 ft, by barometer. See WSP 1317 or 1737 for history of changes prior to Sept. 29, 1949.

REMARKS.--Flow completely regulated since November 1919 by Warm Springs Reservoir (station 13214500). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--68 years (water years 1920-87), 193 ft³/s, 139,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 7,200 ft³/s Mar. 1, 1910, gage height, 10.7 ft, site and datum then in use, from rating curve extended above 820 ft³/s; maximum discharge since storage began November 1919, 3,150 ft³/s Mar. 22, 1984, gage height, 9.70 ft, from floodmark; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1920-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	67	0.0	1934	138	1953	34	34	1.5
Nov	67	0.0	1933	19	1920	0.9	2.6	0.0
Dec	67	0.0	1933	323	1984	8.6	46	0.4
Jan	67	0.0	1933	452	1971	18	82	0.8
Feb	67	0.0	1933	763	1983	38	139	1.5
Mar	67	0.0	1933	1440	1983	87	266	3.9
Apr	67	0.0	1935	1600	1984	324	396	13.9
May	67	31	1932	1160	1958	442	235	19.5
Jun	67	92	1942	557	1953	344	107	14.7
Jul	67	145	1931	677	1945	435	115	19.2
Aug	67	5.7	1977	575	1946	361	137	16.0
Sep	67	0.1	1961	394	1928	206	110	8.8
Ann		47	1930	566	1983	192	95	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.1	0.1	0.1	0.1	0.3	0.8	5.6	35	71	101	138	199	--	67
Nov	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	1.0	1.0	1.0	1.0	1.0	2.6	67
Dec	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	1.0	1.0	1.0	1.0	2.0	2.0	67
Jan	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.4	0.4	0.8	0.8	0.8	0.8	1.7	3.0	67
Feb	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.5	0.7	1.0	1.0	1.0	1.0	3.2	207	67
Mar	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.5	1.0	1.0	1.0	1.0	3.5	111	602	67
Apr	0.0	0.1	0.1	0.5	0.5	0.9	0.9	98	225	365	437	529	707	50	540	67
May	58	148	206	248	280	312	352	386	438	501	533	564	662	764	1010	67
Jun	91	147	193	224	246	268	304	342	380	423	444	472	503	535	598	67
Jul	167	250	284	321	362	390	421	438	484	520	537	555	573	591	661	67
Aug	37	145	207	270	294	317	355	388	421	455	471	488	505	536	589	67
Sep	0.1	0.8	8.3	41	93	124	173	199	258	294	312	331	360	393	427	67
Ann	0.0	0.1	0.1	0.1	0.1	0.4	0.9	3.8	181	304	353	401	463	525	600	

UPPER MALHEUR RIVER BASIN

13216500 NORTH FORK MALHEUR RIVER ABOVE BEULAH RESERVOIR, NEAR BEULAH, OR

LOCATION.--Lat 43°56'54", long 118°10'24", in NW 1/4 NE 1/4 sec.4, T.19 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on left bank 1,000 ft upstream from Beulah Reservoir, 3.5 mi northwest of Beulah, and at mile 16.8. Prior to Sept. 24, 1985, at site 800 ft upstream.

DRAINAGE AREA.--355 mi².

PERIOD OF RECORD.--January to September 1914 (published as "at Scott's Ranch, near Beulah"), June 1936 to current year. Published as "above Agency Valley Reservoir, near Beulah", June 1936 to September 1968.

REVISED RECORDS.--WSP 1934: 1960(M).

GAGE.--Water-stage recorder. Elevation of gage is 3,320 ft above National Geodetic Vertical Datum of 1929, from topographic map. Jan. 1 to Sept. 30, 1914, nonrecording gage and June 10, 1936, to Oct. 14, 1958, water-stage recorder at site 0.5 mi upstream at different datums. Oct. 15, 1958, to Oct. 8, 1975, water-stage recorder at site 800 ft upstream, datum of gage 3,351.0 ft. Oct. 9, 1975, to Sept. 24, 1985, at site 800 ft upstream, datum of gage 3,349.4 ft.

REMARKS.--No regulation. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--51 years (water years 1937-87), 138 ft³/s, 99,980 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,970 ft³/s Dec. 23, 1964, gage height, 9.90 ft, present datum, from floodmark, from rating curve extended above 1,300 ft³/s, on basis of slope-area measurement of peak flow; maximum gage height, 11.0 ft, present datum, sometime during period Dec. 17-23, 1964 (icejam); minimum discharge, 8.5 ft³/s Dec. 13, 1967, result of freezeup.

STATISTICAL SUMMARIES FOR THE PERIOD 1914-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	51	32	1937	80	1985	53	10	3.3
Nov	51	36	1940	97	1974	58	12	3.5
Dec	51	37	1937	347	1965	69	44	4.3
Jan	52	31	1937	280	1974	77	53	4.8
Feb	52	50	1946	517	1982	123	89	6.9
Mar	52	58	1977	715	1984	227	144	14.0
Apr	52	111	1955	906	1952	390	201	23.2
May	52	91	1977	784	1984	327	176	20.1
Jun	52	50	1987	419	1984	172	98	10.2
Jul	53	33	1936	190	1982	67	30	4.2
Aug	53	24	1939	75	1983	46	12	2.8
Sep	53	28	1936	81	1984	47	10	2.8
Ann		60	1977	298	1984	138	56	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	37	41	43	44	46	47	50	53	55	58	60	62	65	70	76	51
Nov	37	41	44	46	49	50	54	57	60	63	66	69	73	78	89	51
Dec	32	36	39	42	44	46	50	55	60	67	71	76	84	97	132	51
Jan	33	37	40	43	45	47	51	57	62	68	74	83	97	118	190	52
Feb	42	46	50	53	56	59	66	76	90	111	127	147	178	224	342	52
Mar	57	64	74	88	99	109	133	159	191	245	281	335	406	486	637	52
Apr	125	146	165	184	204	225	273	322	382	486	538	590	662	759	865	52
May	110	130	149	169	189	204	241	279	326	376	407	452	507	627	751	52
Jun	54	66	74	83	91	100	117	137	162	197	218	243	279	337	418	52
Jul	35	37	40	44	46	48	53	59	65	72	77	84	95	111	139	53
Aug	28	32	35	37	39	40	42	45	47	51	53	56	59	65	72	53
Sep	31	36	37	39	40	42	44	47	49	53	54	56	58	62	71	53
Ann	35	39	43	45	48	51	57	65	81	121	153	195	252	339	495	

UPPER MALHEUR RIVER BASIN

13217500 NORTH FORK MALHEUR RIVER AT BEULAH, OR

LOCATION.--Lat 43°54'28", long 118°09'08", in NW 1/4 NE 1/4 sec.22, T.19 S., R.37 E., Malheur County, Hydrologic Unit 17050116, on left bank at Beulah, 0.3 mi downstream from Agency Valley Dam, 12 mi northwest of Juntura, and at mile 14.5.

DRAINAGE AREA.--440 mi², approximately.

PERIOD OF RECORD.--June 1926 to 1987. Published as "near Beulah" June 1926 to September 1935.

REVISED RECORDS.--WSP 1397: 1927-32, 1934, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,261.20 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 25, 1926, water-stage recorder at site 1 mi downstream at different datum. Apr. 25, 1936, to Sept. 30, 1949, nonrecording gage at site 20 ft downstream at datum 1.0 ft higher. Oct. 1, 1949, to June 30, 1964, at present site at datum 1.0 ft higher.

REMARKS.--Flow regulated since 1935 by Beulah Reservoir (station 13217000). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--52 years (water years 1936-87), 148 ft³/s, 107,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,000 ft³/s May 7, 1942, gage height, 9.4 ft, present datum, from floodmark, caused by failure of gates at Agency Valley Dam, from rating curve extended above 1,100 ft³/s on basis of computation of peak flow over dam; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	52	0.1	1974	134	1954	39	33	2.2
Nov	52	0.0	1938	35	1936	1.2	4.9	0.1
Dec	51	0.0	1938	62	1943	2.1	9.1	0.1
Jan	51	0.0	1936	287	1943	8.2	41	0.5
Feb	52	0.0	1938	478	1965	25	93	1.3
Mar	52	0.0	1938	936	1983	90	191	5.2
Apr	52	2.3	1981	856	1958	305	235	16.9
May	52	120	1977	810	1983	360	171	20.6
Jun	52	53	1939	510	1974	285	106	15.8
Jul	52	58	1945	402	1979	282	79	16.2
Aug	52	43	1977	399	1980	228	92	13.1
Sep	52	31	1961	341	1945	149	81	8.3
Ann		55	1936	333	1983	148	62	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.1	0.2	0.2	0.2	0.4	0.8	2.0	30	48	56	67	95	120	121	52
Nov	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.4	0.5	0.9	1.1	1.9	35	44	54	52
Dec	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.9	0.9	1.5	30	42	54	51
Jan	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.9	1.3	2.5	40	53	73	51
Feb	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.4	0.8	1.6	2.2	32	53	70	160	52
Mar	0.1	0.2	0.2	0.2	0.2	0.4	0.8	1.0	1.9	48	89	138	221	347	566	52
Apr	0.6	0.8	1.7	14	62	96	168	224	297	380	436	496	591	716	913	52
May	67	109	149	192	214	231	263	294	336	387	415	450	487	592	782	52
Jun	38	60	88	121	161	192	234	273	306	334	347	360	384	414	473	52
Jul	26	34	49	86	172	207	242	275	298	319	338	356	370	383	404	52
Aug	22	26	32	43	55	91	171	226	256	282	297	312	328	345	373	52
Sep	21	27	33	37	43	49	76	115	141	172	193	218	249	284	333	52
Ann	0.1	0.1	0.1	0.3	0.4	0.9	19	50	113	209	250	291	332	374	489	

LOWER MALHEUR RIVER BASIN

13220000 MALHEUR RIVER AT LITTLE VALLEY, NEAR HOPE, OR

LOCATION.--Lat 43°53'08", long 117°30'25", in SE 1/4 SE 1/4 sec.24, T.19 S., R.42 E., Malheur County, Hydrologic Unit 17050117, on right bank 500 ft downstream from highway bridge at Little Valley, 8 mi southwest of Hope, 14 mi southwest of vale, and at mile 45.6.

DRAINAGE AREA.--3,010 mi², approximately.

PERIOD OF RECORD.--April 1949 to September 1979.

GAGE.--Water-stage recorder. Datum of gage is 2,424.03 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by Warm Springs and Baulah reservoirs. Vale-Oregon Canal diverted 163,700 acre-ft upstream from station at Namorf in sec.31, T.20 S., R.41 E., for supplying Bully Creek Reservoir and for irrigation. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--30 years, 192 ft³/s, 139,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--The two greatest floods occurred March 1894 and March 1910, on basis of records for former station near Namorf.

STATISTICAL SUMMARIES FOR THE PERIOD 1949-1979

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	30	18	1956	92	1976	49	16	2.2
Nov	30	13	1978	72	1957	42	13	1.8
Dec	30	10	1978	407	1965	57	67	2.6
Jan	30	27	1977	1120	1971	168	250	7.4
Feb	30	38	1977	887	1957	269	264	10.8
Mar	30	11	1977	1050	1972	268	274	11.8
Apr	30	32	1955	2140	1958	449	570	19.2
May	31	109	1977	1480	1958	344	332	15.2
Jun	31	101	1964	767	1953	195	114	8.3
Jul	31	125	1955	297	1953	216	39	9.5
Aug	31	33	1977	225	1975	155	46	6.9
Sep	31	21	1955	159	1976	96	35	4.1
Ann		61	1977	476	1958	192	115	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	20	24	28	31	34	37	43	48	53	59	62	66	71	77	87	30
Nov	17	19	21	29	36	39	43	46	48	51	52	53	55	57	61	30
Dec	14	18	29	35	37	39	42	45	48	52	55	57	61	69	90	30
Jan	29	33	36	38	40	42	46	51	57	69	83	109	151	245	628	30
Feb	34	42	47	52	58	64	77	96	118	175	216	299	429	618	1030	30
Mar	15	22	31	41	50	58	78	113	149	222	285	373	530	709	1110	30
Apr	20	28	43	60	82	100	131	166	206	283	446	756	1080	1360	1950	30
May	75	106	120	130	140	149	169	193	227	275	315	385	572	829	1290	31
Jun	75	94	109	121	131	140	158	176	194	214	224	237	251	271	311	31
Jul	127	151	163	173	181	188	202	215	228	242	252	263	276	290	309	31
Aug	31	69	98	116	129	140	155	166	176	186	191	196	201	212	234	31
Sep	25	33	47	59	68	73	83	92	104	117	126	135	143	156	179	31
Ann	21	32	39	43	48	53	69	101	140	175	193	213	246	306	695	

MALHEUR RIVER BASIN

13220500 MALHEUR RIVER NEAR HOPE, OR

LOCATION.--Lat 43°56'40", long 117°28'50", in SW1/4 sec.5, T.19 S., R.43 E., Malheur County, Hydrologic Unit 17050117, 0.5 mi upstream from intake of Vines Canal, 5.5 mi west of Hope, and 12 mi west of Vale.

DRAINAGE AREA.--3,030 mi², approximately.

PERIOD OF RECORD.--March 1922 to September 1949.

GAGE.--Water-stage recorder. Elevation of gage is 2,370 ft (from topographic map).

REMARKS.--Since March 1930, Vale-Oregon Canal has diverted at Namorf for irrigation upstream and downstream from station. Many small diversions for irrigation upstream from station. Flow regulated by Warm Springs Reservoir and, since December 1935, by Agency Valley Reservoir.

AVERAGE DISCHARGE.--19 years (water years 1930-49), 187 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,100 ft³/s Feb. 5, 1925, gage height, 8.1 ft, from rating curve extended above 2,800 ft³/s; minimum, 3.5 ft³/s Sept. 2, 1919.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1949

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	9.5	1936	89	1944	51	20	2.1
Nov	14	12	1936	95	1941	48	21	1.9
Dec	14	14	1936	329	1943	81	83	3.3
Jan	14	20	1949	722	1943	113	179	4.6
Feb	14	30	1937	768	1943	286	218	10.5
Mar	14	22	1948	1490	1941	447	416	18.1
Apr	14	54	1948	2040	1943	590	632	23.1
May	14	156	1939	652	1942	292	133	11.8
Jun	14	105	1944	233	1948	169	39	6.6
Jul	14	133	1940	248	1942	190	36	7.7
Aug	14	95	1941	196	1942	151	26	6.1
Sep	14	61	1937	158	1945	116	32	4.5
Ann		86	1937	520	1943	210	123	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	10	21	23	26	29	34	40	46	55	62	65	68	74	81	103	14
Nov	14	22	25	30	33	36	42	49	54	58	60	63	65	67	73	14
Dec	15	26	34	36	37	39	43	47	54	58	61	66	79	125	270	14
Jan	20	22	31	33	36	39	45	49	61	73	79	90	124	223	353	14
Feb	32	39	44	49	58	67	87	104	127	218	269	327	490	710	1100	14
Mar	21	56	65	70	78	94	150	243	377	538	644	736	867	1170	1760	14
Apr	30	49	77	102	121	138	209	290	455	641	815	957	1300	1770	2330	14
May	121	141	160	173	184	193	216	243	267	300	321	348	385	452	662	14
Jun	61	75	90	104	115	128	149	165	181	201	216	230	246	267	301	14
Jul	102	121	129	137	145	157	180	194	207	221	227	235	245	261	289	14
Aug	73	98	112	123	130	138	146	153	162	172	177	183	188	196	209	14
Sep	43	52	59	70	81	88	104	121	136	147	153	159	164	175	186	14
Ann	23	37	46	55	62	70	92	122	160	210	246	294	353	435	642	

MALHEUR RIVER BASIN

13226500 BULLY CREEK AT WARMSPRINGS, NEAR VALE, OR

LOCATION.--Lat 44°01'10", long 117°27'35", in SE 1/4 NW 1/4 sec.9, T.18 S., R.43 E., Malheur County, Hydrologic Unit 17050118, on left bank 400 ft downstream from Cottonwood Creek, 4.7 mi upstream from Bully Creek Dam, 11.4 mi northwest of Vale, and at mile 17.2.

DRAINAGE AREA.--539 mi².

PERIOD OF RECORD.--September 1903 to February 1904, February 1905 to March 1907, February 1910, January 1911 to May 1917, March 1922 to June 1923, October 1963 to September 1985. Monthly discharge only for some periods, published in WSP 1317. Published as "near Vale" 1903, 1907, and as "above Vale" 1904-6, 1910.

GAGE.--Water-stage recorder. Datum of gage is 2,527.21 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to July 1, 1923, nonrecording gages within 0.5 mi downstream at different datums.

REMARKS.--No regulation. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--28 years (water years 1906, 1912-16, 1964-85), 53.6 ft³/s, 38,830 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,800 ft³/s Dec. 22, 1964, gage height, 8.68 ft, from rating curve extended above 200 ft³/s on basis of slope-area measurement of peak flow; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1985

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	0.6	1978	21	1986	6.3	5.4	1.0
Nov	23	2.9	1964	23	1984	8.9	5.7	1.3
Dec	23	3.6	1964	331	1965	39	71	6.1
Jan	23	6.6	1977	330	1965	84	101	13.1
Feb	23	7.7	1977	708	1982	155	176	21.9
Mar	23	0.8	1977	904	1984	200	238	31.0
Apr	23	0.5	1977	367	1969	118	124	17.7
May	23	0.9	1977	105	1978	28	33	4.4
Jun	22	1.9	1966	70	1982	14	15	2.1
Jul	22	0.3	1968	50	1982	8.0	13	1.2
Aug	22	0.3	1966	9.3	1983	2.8	2.3	0.4
Sep	22	0.1	1977	16	1982	3.7	4.1	0.5
Ann		3.4	1977	174	1983	54	45	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.9	1.3	1.8	2.1	2.4	2.8	3.3	3.8	5.1	5.9	7.6	9.4	12	15	19	23
Nov	1.8	2.7	3.1	3.6	4.1	4.7	5.4	7.3	8.5	9.8	11	13	16	19	24	23
Dec	3.3	3.3	4.8	5.6	6.3	6.8	8.2	11	13	18	23	28	36	54	108	23
Jan	5.2	6.2	7.0	8.0	9.4	10	14	19	24	40	56	78	107	153	359	23
Feb	7.3	9.8	13	15	20	23	34	56	73	103	126	157	207	377	703	23
Mar	3.8	11	25	36	48	56	71	94	135	197	233	277	336	424	806	23
Apr	0.8	3.0	4.7	7.5	11	20	35	48	74	121	180	225	258	315	424	23
May	0.7	1.3	2.0	3.1	3.9	4.8	6.4	11	17	24	30	39	56	80	135	23
Jun	1.3	2.0	2.4	3.0	3.6	4.6	5.8	7.1	10	14	17	20	25	31	41	22
Jul	0.2	0.3	0.6	0.8	1.0	1.4	1.8	2.5	4.0	5.2	6.5	7.5	9.0	13	28	22
Aug	0.2	0.4	0.6	0.6	0.7	0.9	1.3	2.0	2.4	3.0	3.6	3.6	4.7	5.4	7.2	22
Sep	0.3	0.5	0.6	1.0	1.0	1.3	1.6	2.0	2.5	3.1	3.8	3.8	5.5	7.7	14	22
Ann	0.5	1.1	1.5	2.2	3.2	3.8	5.2	8.0	12	22	31	48	74	126	257	

MALHEUR RIVER BASIN

13227000 BULLY CREEK NEAR VALE, OR

LOCATION.--Lat 43°57'30", long 117°20'30", in SW1/4 sec.33, T.18 S., R.44 E., Malheur County, Hydrologic Unit 17050118, on right bank 5 mi southwest of Vale and 7 mi upstream from mouth.

DRAINAGE AREA.--570 mi², approximately.

PERIOD OF RECORD.--May 1933 to September 1934, November 1934, March 1935, March, April 1936, June 1937 to September 1962. Monthly discharge only for some periods, published in WSP 1317.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 2,313 ft (by levels to reference point furnished by Union Pacific Railroad). Prior to Mar. 15, 1937, water-stage recorder or staff gage at site 2 mi upstream at different datum. Mar. 15, 1937, to Jan. 1, 1940, water-stage recorder at present site at datum 0.38 ft higher.

REMARKS.--Occasional fluctuations caused by releases from Vale-Oregon Canal which diverts water from Malheur River for irrigation of lands west of Vale; considerable return flow at times enters Bully Creek upstream from station. Diversions for irrigation of about 7,000 acres upstream from station.

AVERAGE DISCHARGE.--26 years (water years 1934, 1938-62), 40.4 ft³/s, 29,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,980 ft³/s Feb. 24, 1957, gage height, 10.5 ft, from floodmarks, from rating curve extended above 2,000 ft³/s on basis of slope-area measurement of peak flow; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1934-1962

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	1.7	1962	53	1941	14	10	2.9
Nov	26	2.0	1962	45	1941	11	8.9	2.4
Dec	26	2.2	1940	54	1943	16	14	3.6
Jan	26	2.4	1934	166	1943	27	41	5.7
Feb	26	1.8	1934	374	1957	95	105	18.2
Mar	26	1.0	1934	519	1941	142	134	29.8
Apr	26	1.1	1934	426	1952	85	104	17.4
May	26	1.9	1934	73	1953	23	18	4.9
Jun	26	3.8	1934	207	1953	28	38	5.9
Jul	26	1.0	1934	29	1952	15	7.1	3.2
Aug	26	1.0	1934	37	1952	14	8.0	3.0
Sep	26	1.0	1934	32	1952	15	7.9	3.1
Ann		2.3	1934	101	1941	40	29	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.9	3.0	4.0	5.5	7.1	10	12	13	14	15	16	17	19	20	24	26
Nov	2.0	2.9	3.3	5.7	6.5	8.1	9.3	11	12	13	15	16	17	19	27	26
Dec	1.8	4.0	4.8	5.9	6.6	7.2	8.4	11	13	14	16	17	20	24	54	26
Jan	2.4	2.8	4.0	6.1	7.1	7.6	10	13	15	19	21	24	30	51	103	26
Feb	2.0	5.8	7.2	8.8	11	14	19	27	41	59	72	89	126	202	438	26
Mar	2.4	5.0	6.6	7.8	12	18	43	65	109	174	209	249	294	358	500	26
Apr	1.8	2.8	3.4	5.7	7.8	9.5	14	30	56	91	110	145	184	258	364	26
May	2.6	5.0	6.4	7.4	8.6	10	13	15	19	24	27	32	38	52	76	26
Jun	3.5	6.4	6.9	8.0	9.7	12	16	18	21	25	28	32	40	52	85	26
Jul	3.9	5.2	6.9	7.6	10	11	13	15	17	19	20	22	24	26	29	26
Aug	2.2	3.5	5.7	7.1	7.9	9.3	12	14	16	18	19	20	22	24	27	26
Sep	1.9	2.2	3.0	7.2	10	12	13	15	17	19	20	21	22	24	27	26
Ann	2.0	3.3	5.5	6.9	7.5	9.5	12	14	16	21	24	31	47	82	185	

LOWER MALHEUR RIVER BASIN

13228000 MALHEUR RIVER AT VALE, OR

LOCATION.--Lat 43°58'50", long 117°14'20", in NW1/4 sec.29, T.18 S., R.45 E., Malheur County, Hydrologic Unit 17050117, at road bridge at Vale and 0.2 mi downstream from Bully Creek.

DRAINAGE AREA.--3,880 mi², approximately.

PERIOD OF RECORD.--April 1890 to September 1891, January 1895 to September 1896, June 1903 to September 1906, June 1908 to September 1914.

GAGE.--Staff gage. Elevation of gage is 2,230 ft (from topographic map). Prior to Mar. 20, 1919, staff or chain gages at different datums.

REMARKS.--Many diversions upstream from station for irrigation upstream and downstream from station. Flow slightly regulated since 1915 by Vale-Oregon Irrigation Co. dam on Bully Creek.

AVERAGE DISCHARGE.--11 years (water years 1896, 1904-1906, 1909-1914), 541 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,800 ft³/s Mar. 2, 1910, gage height, 19.5 ft, datum then in use, from floodmark, from rating curve extended above 3,600 ft³/s; minimum, 4 ft³/s July 19-21, 1895, Aug. 23, 1906.

STATISTICAL SUMMARIES FOR THE PERIOD 1890-1914

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	41	1912	144	1905	90	35	1.5
Nov	12	89	1907	192	1904	145	38	2.3
Dec	12	72	1906	242	1911	139	46	2.3
Jan	13	87	1891	1770	1909	384	440	6.3
Feb	13	263	1895	2250	1904	785	679	11.8
Mar	12	397	1913	3460	1904	1420	978	23.4
Apr	13	511	1891	5700	1904	1780	1610	28.3
May	14	211	1891	2320	1897	850	703	14.0
Jun	15	21	1910	1160	1896	365	295	5.8
Jul	14	12	1895	517	1913	115	137	1.9
Aug	13	8.5	1906	516	1913	64	137	1.1
Sep	13	10	1890	133	1909	50	35	0.8
Ann		185	1891	1230	1904	516	288	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	36	44	46	53	58	64	77	88	100	108	113	124	133	151	158	12
Nov	79	90	96	104	110	115	123	134	146	166	170	175	191	199	213	12
Dec	66	78	86	98	111	116	123	129	138	156	163	170	181	204	232	12
Jan	88	103	115	137	143	149	174	189	200	235	262	299	426	703	1280	13
Feb	137	170	190	205	223	254	289	348	414	593	739	986	1180	1590	2710	13
Mar	249	275	327	366	393	479	682	1000	1300	1610	1860	2230	2620	3190	4180	12
Apr	482	555	610	662	705	793	936	1080	1270	1750	2250	2610	3020	4050	5950	13
May	131	199	220	234	262	307	431	557	739	956	1170	1350	1640	2020	2540	14
Jun	26	52	90	117	136	154	198	251	324	431	491	568	736	874	1040	15
Jul	12	20	22	25	28	32	41	56	73	98	120	146	179	254	359	14
Aug	7.9	9.7	10	11	11	11	16	21	29	33	36	49	60	75	139	13
Sep	11	12	15	18	21	23	30	39	45	61	71	77	87	98	116	13
Ann	14	29	44	62	85	102	127	168	227	335	416	604	858	1240	2150	

BURNT RIVER BASIN

13269300 NORTH FORK BURNT RIVER NEAR WHITNEY, OR

LOCATION.--Lat 44°36'00", long 118°15'10", in NE1/4 sec.23, T.11 S., R.36 E., Baker County, Hydrologic Unit 17050202, Wallowa Whitman National Forest, on right bank 950 ft upstream from Petticoat Creek, 1.0 mi downstream from U.S. Bureau of Reclamation damsite, 4.5 mi southeast of Whitney, and 11.5 mi northwest of Unity.

DRAINAGE AREA.--110 mi², approximately.

PERIOD OF RECORD.--June 1964 to June 1978, January 1979 to June 1980, January to June only, each year.

GAGE.--Water-stage recorder. Elevation of gage is 4,000 ft, from topographic map.

REMARKS.--Some regulations from irrigation and mining operations upstream. A transmountain diversion from headwaters of Middle Fork John Day River delivers as much as 12 ft/s to North Fork Burnt River upstream from station.

AVERAGE DISCHARGE.--13 years (water years 1965-77), 49.8 ft³/s, 36,080 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,190 ft³/s Apr. 6, 1971, gage height, 4.31 ft; maximum gage height, 4.95 ft Jan. 29, 1965 (ice jam); minimum discharge, 0.14 ft³/s Aug. 15, 1977, but may have been less when stage fell below inlets July 19 to Aug. 17, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1980

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	1.1	1967	5.2	1976	2.8	1.1	0.5
Nov	14	3.0	1968	26	1974	7.3	6.3	1.2
Dec	14	3.6	1966	50	1965	14	15	2.5
Jan	16	3.9	1977	95	1974	24	29	4.1
Feb	16	5.3	1977	93	1971	33	31	5.3
Mar	16	8.9	1977	322	1972	109	85	18.6
Apr	16	21	1977	414	1974	214	119	35.3
May	16	9.7	1977	370	1975	144	96	24.5
Jun	17	9.2	1977	68	1975	34	17	5.7
Jul	14	1.0	1977	17	1974	8.7	5.4	1.5
Aug	14	0.3	1966	8.5	1965	2.8	2.6	0.5
Sep	14	0.4	1966	4.8	1965	1.6	1.2	0.3
Ann		6.2	1977	99	1974	49	27	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.0	1.3	1.3	1.5	1.6	1.6	2.0	2.4	2.9	3.5	3.5	3.9	3.9	4.3	5.3	14
Nov	1.8	2.4	2.7	3.0	3.5	3.5	3.9	4.5	5.1	5.8	6.6	7.6	8.8	15	23	14
Dec	1.8	2.6	3.2	3.2	3.8	4.8	5.8	7.1	9.0	11	13	15	21	29	46	14
Jan	4.0	4.7	4.7	5.7	6.1	6.6	7.6	9.0	12	16	19	22	29	51	78	16
Feb	4.8	5.6	7.2	8.0	8.8	9.3	12	15	20	35	45	53	62	72	117	16
Mar	7.4	12	18	23	27	31	47	65	81	109	133	164	195	258	410	16
Apr	30	43	58	75	89	105	145	186	236	285	309	338	376	426	516	16
May	12	23	35	44	53	62	83	112	142	174	196	226	267	307	425	16
Jun	7.3	12	15	17	19	21	25	28	31	37	41	47	62	69	79	17
Jul	0.6	0.9	1.2	1.6	2.4	3.2	5.0	7.1	8.7	12	14	16	18	20	23	14
Aug	0.3	0.4	0.4	0.5	0.7	0.9	1.2	1.4	2.1	3.1	4.0	4.6	5.2	5.9	9.2	14
Sep	0.4	0.4	0.5	0.6	0.7	0.8	1.1	1.3	1.6	1.7	2.1	2.1	2.6	3.3	3.6	14
Ann	0.5	1.1	1.4	2.4	3.0	4.0	5.7	8.8	15	28	40	60	91	158	277	

BURNT RIVER BASIN

13270800 SOUTH FORK BURNT RIVER ABOVE BARNEY CREEK, NEAR UNITY, OR

LOCATION.--Lat 44°24'25", long 118°18'01", in NW1/4SE1/4 sec.28, T.13 S., R.36 E., Baker County, Hydrologic Unit 17050202, Wallowa Whitman National Forest, on right bank 84 ft upstream from Barney Creek and 6 mi southwest of Unity.

DRAINAGE AREA.--38.5 mi².

PERIOD OF RECORD.--March 1963 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 4,341.75 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to July 18, 1963, nonrecording gage at site 220 ft upstream at datum 5.47 ft higher, July 18, 1963, to July 18, 1979, at site 215 ft upstream at datum 5.31 ft higher.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--18 years, 27.2 ft³/s, 19,710 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 186 ft³/s Apr. 29, 1965, gage height, 1.98 ft, site and datum then in use; maximum gage height, 3.57 ft Jan. 10, 1974 (backwater from ice), site and datum then in use; minimum discharge, 11 ft³/s Feb. 12, 1978, but may have been less during period of no gage-height record Nov. 20 to Dec. 5, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1963-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	19	1978	25	1976	21	2.2	6.8
Nov	18	18	1979	26	1966	21	2.3	6.5
Dec	18	17	1969	28	1965	21	2.8	6.6
Jan	18	16	1969	28	1965	21	2.8	6.6
Feb	18	16	1969	30	1965	21	3.0	6.0
Mar	19	19	1977	38	1972	24	4.4	7.6
Apr	19	22	1977	85	1965	36	14	10.9
May	19	22	1977	84	1965	52	18	16.3
Jun	19	21	1977	67	1975	36	12	11.1
Jul	19	19	1977	32	1975	25	3.7	7.9
Aug	19	18	1968	29	1965	22	2.9	7.1
Sep	19	18	1968	27	1965	22	2.4	6.6
Ann		21	1977	39	1965	27	4.7	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	19	19	20	20	20	21	22	23	23	24	24	25	25	26	26	18
Nov	18	19	19	19	20	20	21	22	23	23	24	24	25	26	27	18
Dec	17	18	19	19	20	20	20	21	22	23	23	24	24	25	26	18
Jan	16	17	18	19	19	20	20	21	22	22	23	23	24	25	26	18
Feb	17	18	19	20	20	20	21	21	22	22	23	23	23	25	26	18
Mar	19	20	20	21	21	22	22	23	24	25	26	26	27	31	--	19
Apr	22	23	24	25	26	26	29	31	35	39	42	45	48	53	62	19
May	24	29	30	32	34	37	42	48	55	63	--	--	--	--	--	19
Jun	22	24	25	26	27	28	30	33	36	39	42	46	49	--	--	19
Jul	20	20	21	22	23	24	25	26	27	28	28	29	30	31	32	19
Aug	19	20	20	21	21	22	22	23	24	25	26	26	27	27	28	19
Sep	19	20	20	20	21	21	22	22	23	24	24	25	25	26	27	19
Ann	18	19	19	20	20	21	22	23	24	26	27	29	33	41	56	

BURNT RIVER BASIN

13273000 BURNT RIVER NEAR HEREFORD, OR

LOCATION.--Lat 44°30'14", long 118°10'35", in SE 1/4 sec.21, T.12 S., R.37 E., Baker County, Hydrologic Unit 17050202, on left bank 800 ft downstream from Unity Dam, 0.4 mi upstream from Van Cleve ditch, 7 mi west of Hereford, and at mile 63.5.

DRAINAGE AREA.--309 mi².

PERIOD OF RECORD.--March to September 1915, April to September 1916, October 1928 to 1987. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 903: 1939. WSP 1397: 1916, 1930, 1930(M).

GAGE.--Water-stage recorder. Datum of gage is 3,758.19 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1943, to Oct. 31, 1966, water-stage recorder at site 450 ft downstream at datum 1.44 ft lower. See WSP 1317 or 1737 for history of changes prior to Oct. 1, 1943.

REMARKS.--Flow regulated since 1938 by Unity Reservoir (station 13272500). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--59 years (water years 1929-87), 87.4 ft³/s, 63,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,220 ft³/s Apr. 17, 1943, gage height, 5.91 ft, present datum, from rating curve extended above 1,300 ft³/s; maximum gage height, 9.07 ft Apr. 8, 1971; no flow at times; minimum discharge before construction of Unity Dam, 1.6 ft³/s Aug. 31, 1935.

STATISTICAL SUMMARIES FOR THE PERIOD 1939-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	49	0.2	1978	93	1954	27	23	2.5
Nov	49	0.5	1978	63	1954	15	16	1.4
Dec	49	0.7	1979	66	1942	19	18	1.7
Jan	49	1.7	1945	86	1974	24	23	2.2
Feb	48	0.0	1940	287	1965	40	49	3.4
Mar	49	1.4	1955	485	1983	110	118	9.9
Apr	49	0.2	1955	618	1943	265	176	23.2
May	49	87	1955	484	1975	203	100	18.3
Jun	49	41	1944	326	1953	124	45	10.8
Jul	49	59	1940	135	1957	102	18	9.2
Aug	49	47	1977	148	1971	107	19	9.7
Sep	49	0.2	1977	128	1975	78	28	6.9
Ann		31	1977	167	1965	93	37	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.3	0.8	2.4	3.0	3.7	5.7	8.9	13	24	41	46	54	68	--	--	49
Nov	0.5	0.6	1.1	1.6	2.0	3.0	6.9	8.6	11	19	25	30	36	44	52	49
Dec	0.9	1.5	1.8	2.4	3.3	4.5	6.9	9.2	17	28	30	35	42	49	61	49
Jan	1.7	2.1	2.6	3.3	4.8	5.6	8.6	11	25	32	36	44	52	62	76	49
Feb	1.3	2.5	4.7	6.1	7.8	10	15	23	37	45	51	62	78	101	132	48
Mar	1.2	2.7	5.7	9.0	14	18	32	53	90	140	163	192	229	295	388	49
Apr	2.3	14	36	73	102	130	167	217	278	350	387	439	495	579	698	49
May	79	98	110	118	125	131	144	158	176	212	237	275	330	395	497	49
Jun	60	71	81	91	98	103	111	119	128	138	144	149	156	162	197	49
Jul	62	69	76	81	86	90	95	101	108	117	121	126	130	134	140	49
Aug	67	77	82	87	91	94	101	107	113	121	125	129	133	137	--	49
Sep	4.8	29	40	50	58	65	78	86	93	100	103	107	116	125	134	49
Ann	1.4	3.2	6.0	8.9	13	23	44	72	92	114	125	136	150	197	327	

BURNT RIVER BASIN

13274200 BURNT RIVER NEAR BRIDGEPORT, OR

LOCATION.--Lat 44°32'27", long 117°41'10", in NW1/4NW1/4 sec.10, T.12 S., R.41 E., Baker County, Hydrologic Unit 17050202, on left bank 0.5 mi downstream from Dark Canyon, 4.6 mi upstream from Deer Creek, 5.0 mi northeast of Bridgeport, and at mile 37.1.

DRAINAGE AREA.--650 mi², approximately.

PERIOD OF RECORD.--October 1956 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 3,223.22 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Flow regulated since 1938 by Unity Reservoir. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--24 years, 105 ft³/s, 76,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,600 ft³/s Apr. 9, 1971, gage height, 6.40 ft; minimum, 5.2 ft³/s Dec. 5, 1972.

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1980

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	10	1978	76	1960	44	16	3.6
Nov	24	11	1978	62	1966	28	10	2.2
Dec	24	15	1964	64	1959	31	13	2.5
Jan	24	13	1964	146	1974	43	33	3.5
Feb	24	16	1977	353	1965	82	75	6.1
Mar	24	17	1977	490	1972	134	114	10.8
Apr	24	20	1977	797	1974	311	223	24.3
May	24	38	1977	678	1975	237	168	19.2
Jun	24	26	1977	200	1958	117	51	9.2
Jul	24	29	1977	124	1965	81	25	6.6
Aug	24	25	1977	107	1975	74	21	6.1
Sep	24	11	1977	108	1980	70	26	5.5
Ann		26	1977	209	1965	105	52	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	18	22	26	28	30	31	36	41	46	52	57	64	70	75	83	24
Nov	15	18	20	21	22	23	24	26	29	31	33	36	38	44	55	24
Dec	15	17	18	20	21	22	24	26	29	33	36	39	44	52	64	24
Jan	14	16	17	19	20	22	25	28	33	44	50	59	69	84	114	24
Feb	18	22	24	26	28	30	36	44	55	70	84	114	157	190	322	24
Mar	22	31	35	40	46	52	68	96	116	155	171	205	227	264	363	24
Apr	29	39	52	79	110	134	197	228	303	379	444	503	569	696	878	24
May	41	55	68	76	83	95	134	179	219	275	306	352	421	506	728	24
Jun	40	48	56	63	70	77	92	107	127	145	155	167	186	205	227	24
Jul	36	43	50	56	60	65	72	79	87	94	101	108	115	124	140	24
Aug	35	39	47	51	57	61	71	78	84	90	93	96	100	105	119	24
Sep	23	33	40	45	49	55	67	75	81	88	91	95	99	105	114	24
Ann	17	21	25	28	32	36	48	62	77	95	108	131	166	224	362	

BURNT RIVER BASIN

13275000 BURNT RIVER AT HUNTINGTON, OR

LOCATION.--Lat 44°21'30", long 117°16'20", in NE1/4 sec.13, T.14 S., R.44 E., Baker County, Hydrologic Unit 17050202, on right bank 0.5 mi northwest of Huntington and at mile 2.9.

DRAINAGE AREA.--1,093 mi².

PERIOD OF RECORD.--September 1928 to September 1932, October 1956 to September 1959, June 1962 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 2,104.75 ft above National Geodetic Vertical Datum of 1929. Sept. 13, 1928, to Sept. 30, 1932, nonrecording gage at site 200 ft upstream at different datum. Oct. 1, 1956, to Sept. 30, 1959, water-stage recorder and Oct. 1, 1959, to Aug. 20, 1962, crest-stage gage.

REMARKS.--Flow regulated since 1938 by Unity Reservoir. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--25 years, 132 ft³/s, 95,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,220 ft³/s Dec. 22, 1964, gage height, 5.94 ft; maximum gage height, 6.80 ft Feb. 3, 1963 (ice jam); no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1980

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	21	17	1978	91	1976	63	18	3.7
Nov	21	28	1978	96	1966	57	15	3.2
Dec	21	25	1964	112	1965	61	21	3.6
Jan	21	20	1964	262	1974	89	58	5.3
Feb	21	33	1964	447	1965	160	108	8.5
Mar	21	34	1977	688	1972	229	160	13.4
Apr	21	21	1977	1070	1974	418	302	23.7
May	21	30	1977	820	1975	301	222	17.6
Jun	22	24	1977	271	1958	138	71	7.8
Jul	22	9.0	1977	133	1975	75	33	4.4
Aug	22	13	1977	106	1975	66	25	3.9
Sep	22	12	1977	122	1980	74	31	4.2
Ann		35	1977	280	1958	145	71	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	27	39	43	48	53	55	59	63	68	73	78	82	86	92	101	21
Nov	35	39	42	43	46	49	54	57	60	63	66	69	73	81	92	21
Dec	28	34	39	42	45	47	52	57	61	67	72	79	85	93	112	21
Jan	24	33	37	40	43	45	51	62	74	88	95	106	128	157	280	21
Feb	36	42	49	58	68	77	89	100	116	145	196	239	267	377	484	21
Mar	55	66	74	82	97	106	146	179	229	274	310	339	377	444	531	21
Apr	32	63	84	103	132	173	261	324	407	545	608	683	791	947	1150	21
May	27	37	51	66	85	110	188	234	284	362	413	461	543	778	928	21
Jun	31	42	53	62	73	82	101	128	153	182	196	208	228	257	285	22
Jul	13	25	37	43	49	55	63	74	81	89	96	105	118	135	159	22
Aug	20	27	33	40	47	52	60	68	75	83	87	91	96	102	115	22
Sep	18	26	33	48	53	58	69	76	85	94	99	103	109	116	129	22
Ann	5.0	19	31	39	45	51	61	73	87	112	132	169	231	311	494	

POWDER RIVER BASIN

13275300 POWDER RIVER NEAR SUMPTER, OR

LOCATION.--Lat 44°40'20", long 117°59'40", in NE 1/4 NE 1/4 sec.25, T.10 S., R.38 E., Baker County, Hydrologic Unit 17050203, Wallowa Whitman National Forest, on left bank 1,200 ft downstream from Mason Dam, 1.4 mi upstream from California Gulch, 11.4 mi southeast of Sumpter, and at mile 123.2.

DRAINAGE AREA.--168 mi², approximately. Prior to Oct. 1, 1970, 170 mi² at cableway, 0.5 mi downstream.

PERIOD OF RECORD.--April 1965 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 3,898.47 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to July 29, 1965, nonrecording gage at datum 1.03 ft higher.

REMARKS.--Flow completely regulated since Oct. 31, 1967, by Phillips Lake, active capacity, 90,540 acre-ft. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--22 years, 115 ft³/s, 83,320 acre-ft/yr, not adjusted for storage in Phillips Lake.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 971 ft³/s Apr. 30, 1965, gage height, 4.43 ft; no flow Nov. 12, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 1,600 ft³/s, approximately, Mar. 20, 1910, based on comparison with records for station downstream, near Baker.

STATISTICAL SUMMARIES FOR THE PERIOD 1968-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	20	2.6	1974	19	1981	11	4.7	0.8
Nov	20	0.5	1968	16	1985	9.0	4.3	0.6
Dec	20	0.5	1968	14	1984	8.2	3.9	0.6
Jan	20	0.4	1968	105	1984	15	26	1.1
Feb	20	0.8	1968	67	1984	18	19	1.2
Mar	20	1.1	1968	317	1982	64	91	4.6
Apr	20	11	1978	355	1984	147	117	10.1
May	20	157	1978	519	1975	324	101	23.1
Jun	20	135	1987	546	1983	308	137	21.3
Jul	20	85	1968	411	1984	214	69	15.3
Aug	20	56	1976	301	1974	216	63	15.4
Sep	20	21	1984	171	1974	86	37	6.0
Ann		60	1968	186	1984	119	39	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3.8	5.2	5.2	7.2	7.9	8.5	9.1	10	12	14	15	16	17	19	21	20
Nov	1.2	2.6	3.1	4.9	6.2	7.0	8.2	8.8	9.6	11	12	13	15	16	17	20
Dec	0.7	2.7	3.1	3.1	4.6	5.3	8.1	9.1	9.7	11	12	12	13	14	15	20
Jan	0.3	1.5	2.9	2.9	4.8	5.3	7.2	7.7	9.2	11	12	12	13	15	96	20
Feb	1.2	1.4	3.7	4.5	5.6	6.2	8.0	8.6	10	11	12	14	16	41	103	20
Mar	1.5	2.2	5.5	6.4	7.7	8.3	11	13	14	50	85	118	164	210	345	20
Apr	6.4	9.4	12	13	14	16	56	94	154	204	238	291	343	398	463	20
May	122	156	181	207	227	245	283	317	360	401	429	457	478	500	536	20
Jun	102	127	147	167	186	202	234	275	329	427	452	475	498	528	563	20
Jul	89	115	128	141	150	160	183	206	226	248	259	270	285	309	396	20
Aug	55	98	130	148	165	179	201	221	242	268	278	289	299	321	349	20
Sep	6.5	9.3	15	18	23	31	54	79	102	124	136	149	164	178	199	20
Ann	3.0	5.2	6.9	8.1	9.2	10	13	23	117	181	213	247	290	343	447	

POWDER RIVER BASIN

13275500 POWDER RIVER NEAR BAKER, OR

LOCATION.--Lat 44°39'20", long 117°52'30", in NE1/4 sec.36, T.10 S., R.39 E., Baker County, Hydrologic Unit 17050203, on right bank 700 ft downstream from Stices Gulch, 8.5 mi south of Baker, and at mile 116.2.

DRAINAGE AREA.--219 mi².

PERIOD OF RECORD.--December 1903 to August 1914, July 1926 to September 1968. Monthly discharge only for some periods, published in WSP 1317. Published as "near Baker City" December 1903 to December 1905, and as "at Salisbury" January 1906 to August 1914, October 1928 to September 1951.

GAGE.--Water-stage recorder and concrete-filled bag control. Datum of gage is 3,632.31 ft above National Geodetic Vertical Datum of 1929. Dec. 20, 1903, to Feb. 29, 1912, staff gage at site 400 ft upstream at different datum. Mar. 1, 1912, to Aug. 1, 1914, and June 6, 1926, to Oct. 15, 1933, staff gage at site 0.4 mi downstream at different datum. Oct. 16, 1933, to Sept. 3, 1965, graphic water-stage recorder at present site and datum.

REMARKS.--Flow regulated since Oct. 31, 1967, by Phillips Lake (active capacity, 90,540 acre-ft). Many small diversions for irrigation upstream from station. At times Auburn ditch diverts water into basin upstream from station.

AVERAGE DISCHARGE.--51 years (water years 1905-13, 1927-68), 110 ft³/s, 79,640 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,820 ft³/s Mar. 20, 1910, gage height, 7.05 ft, site and datum then in use; no flow Aug. 31, 1909, Sept. 7, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1905-1967

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	49	1.9	1936	39	1912	15	9.2	1.2
Nov	49	5.6	1936	111	1910	26	17	2.0
Dec	49	10	1912	114	1956	36	24	2.8
Jan	49	8.5	1937	161	1965	37	25	2.9
Feb	49	12	1929	237	1907	60	45	4.2
Mar	49	28	1955	671	1910	153	101	11.8
Apr	49	88	1955	658	1910	344	162	25.7
May	49	51	1934	833	1958	356	148	27.5
Jun	49	21	1934	574	1953	231	126	17.2
Jul	49	3.9	1931	157	1953	46	31	3.6
Aug	48	0.5	1931	48	1965	13	9.8	1.0
Sep	48	0.3	1934	41	1941	8.5	7.1	0.6
Ann		40	1934	192	1965	110	39	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.9	4.4	5.9	7.2	8.0	8.7	10	13	15	18	21	23	27	32	38	49
Nov	6.3	8.5	11	13	14	16	20	23	26	31	34	38	42	46	57	49
Dec	10	12	15	17	18	20	24	27	31	37	42	48	55	64	93	49
Jan	12	15	16	18	20	21	25	29	34	44	48	53	60	70	88	49
Feb	15	19	22	25	27	30	36	46	56	66	74	84	100	126	175	49
Mar	31	41	49	56	64	71	88	106	134	167	187	215	263	319	419	49
Apr	102	117	138	159	181	205	251	297	352	432	485	544	604	681	782	49
May	112	151	175	197	217	238	282	326	378	438	472	510	563	628	728	49
Jun	36	57	74	96	111	129	158	193	233	286	319	356	410	474	597	49
Jul	6.4	10	14	17	20	22	28	36	44	54	61	69	81	101	132	49
Aug	0.8	2.1	3.8	4.7	5.4	6.2	7.9	11	14	16	19	22	25	30	39	48
Sep	0.5	1.2	2.2	3.2	3.9	3.9	6.0	7.2	8.5	9.2	11	12	15	18	24	48
Ann	4.4	7.1	9.3	12	15	18	25	36	55	98	136	187	253	342	489	

POWDER RIVER BASIN

13277000 POWDER RIVER AT BAKER, OR

LOCATION.--Lat 44°46'06", long 117°49'50", in SE 1/4 NE 1/4 sec.20, T.9 S., R.40 E., Baker County, Hydrologic Unit 17050203, on right bank 600 ft upstream from Myrtle Street Bridge in Baker, 0.5 mi downstream from Sutton Creek, and at mile 107.6.

DRAINAGE AREA.--351 mi².

PERIOD OF RECORD.--May to September 1913, April to July 1914, November 1971 to 1987. Monthly discharge only May 1913, April 1914 published in WSP 1317. November 1971 to September 1978 in reports of Oregon Water Resources Department.

REVISED RECORDS.--WSP 1317: 1913.

GAGE.--Water-stage recorder. Datum of gage is 3,441.71 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 19, 1971, nonrecording gage at site 0.7 mi downstream at different datum.

REMARKS.--Flow regulated since Oct. 31, 1967, by Phillips Lake, active capacity, 90,540 acre-ft. Old Settlers Slough diverts from left bank 0.2 mi upstream for irrigation downstream from station.

AVERAGE DISCHARGE.--15 years, 119 ft³/s, 86,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,120 ft³/s Jan. 15, 1974, gage height, 5.55 ft; maximum gage height, 5.57 ft Jan. 5, 1984 (ice jam); minimum discharge, 0.7 ft³/s Oct. 28, 29, 1973.

STATISTICAL SUMMARIES FOR THE PERIOD 1978-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	10	1978	22	1985	16	4.0	1.1
Nov	10	10	1980	28	1985	19	6.0	1.3
Dec	10	11	1979	49	1984	27	10	1.8
Jan	10	11	1979	120	1984	35	30	2.5
Feb	10	28	1987	145	1982	81	47	5.1
Mar	10	28	1987	414	1982	152	148	10.4
Apr	10	49	1979	456	1984	197	164	13.0
May	10	125	1978	455	1982	278	111	19.0
Jun	10	95	1987	480	1984	264	143	17.5
Jul	10	81	1978	335	1984	180	77	12.3
Aug	10	129	1978	206	1984	172	28	11.8
Sep	10	27	1984	107	1981	64	23	4.2
Ann		66	1978	202	1984	124	54	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	8.1	10	12	12	13	16	18	19	20	20	21	21	23	24	--	10
Nov	9.3	12	12	13	14	15	18	20	23	25	26	24	18	12	--	10
Dec	12	14	15	17	18	21	24	25	27	29	30	31	34	37	53	10
Jan	12	14	15	18	20	22	24	26	29	32	34	38	51	89	125	10
Feb	21	23	25	27	30	32	39	45	52	68	100	118	157	212	262	10
Mar	28	31	33	34	36	42	54	73	113	210	227	288	370	413	474	10
Apr	23	29	34	39	45	48	67	141	218	275	319	362	413	485	547	10
May	89	108	125	145	162	180	220	255	297	350	406	440	468	492	516	10
Jun	73	89	106	127	137	146	177	223	279	386	426	450	467	483	506	10
Jul	72	80	87	98	111	120	135	151	171	194	203	212	297	367	427	10
Aug	85	103	113	118	126	135	155	174	187	203	213	221	230	246	273	10
Sep	12	14	19	21	24	28	43	56	70	92	99	106	115	128	143	10
Ann	12	16	19	22	24	28	38	71	119	163	191	224	272	363	467	

POWDER RIVER BASIN

13286700 POWDER RIVER NEAR RICHLAND, OR

LOCATION.--Lat 44°46'40", long 117°17'30", in SE 1/4 sec.14, T.9 S., R.44 E., Baker County, Hydrologic Unit 17050203, on left bank 0.4 mi upstream from Upper Timber Canyon, 6.0 mi west of Richland, and at mile 20.3.

DRAINAGE AREA.--1,310 mi², approximately.

PERIOD OF RECORD.--October 1957 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 2,277.42 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by Phillips Lake since October 1967, usable capacity, 90,540 acre-ft, Wolf Creek Reservoir since April 1975, usable capacity, 10,400 acre-ft, Thief Valley Reservoir since February 1932, usable capacity, 17,400 acre-ft, and Pilcher Creek Reservoir since April 1984, usable capacity, 5,560 acre-ft. Diversions for irrigation upstream and downstream from station.

AVERAGE DISCHARGE.--30 years, 278 ft³/s, 201,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,090 ft³/s Feb. 21, 1982, gage height, 7.50 ft, from floodmark; maximum gage height, 9.29 ft Jan. 15, 1974 (ice jam); minimum discharge, 0.80 ft³/s Aug. 11, 12, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1958-1967 (BEFORE THE CONSTRUCTION OF PHILLIPS LAKE)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	12	1967	75	1966	42	19	1.6
Nov	10	37	1967	72	1963	55	10.0	2.0
Dec	10	32	1961	198	1965	104	53	3.9
Jan	10	27	1961	557	1965	173	165	6.5
Feb	10	87	1964	1080	1965	370	319	12.7
Mar	10	177	1964	909	1960	405	229	15.3
Apr	10	174	1967	1090	1965	592	347	21.6
May	10	40	1966	1530	1958	425	451	16.0
Jun	10	51	1966	917	1964	401	328	14.6
Jul	10	33	1966	128	1965	66	32	2.5
Aug	10	7.7	1966	84	1965	48	19	1.8
Sep	10	10	1966	83	1965	44	24	1.6
Ann		116	1966	460	1965	225	126	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	11	16	21	24	28	30	36	42	45	51	54	56	59	64	93	10
Nov	29	33	38	42	45	47	50	56	59	63	67	71	74	77	84	10
Dec	30	35	40	46	51	61	75	84	93	105	121	143	152	179	271	10
Jan	28	34	51	59	68	76	89	103	123	149	183	236	284	352	465	10
Feb	83	90	100	121	134	145	193	251	325	368	395	448	597	751	1280	10
Mar	127	160	183	198	210	240	280	316	367	421	482	558	629	697	914	10
Apr	99	141	189	219	250	283	385	539	644	721	785	851	936	1240	1550	10
May	40	57	79	105	117	131	170	240	333	438	502	593	723	1110	1750	10
Jun	48	54	59	68	82	99	139	266	399	555	628	728	807	928	1260	10
Jul	26	30	33	36	38	41	47	52	57	64	68	73	84	110	197	10
Aug	7.8	14	30	33	36	39	43	48	52	57	60	64	70	78	92	10
Sep	8.8	13	15	19	22	25	34	42	50	56	62	69	74	84	97	10
Ann	22	30	37	42	47	52	65	85	121	202	268	341	434	618	862	

POWDER RIVER BASIN

13286700 POWDER RIVER NEAR RICHLAND, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1968-1987 (AFTER THE COMPLETION OF PHILLIPS LAKE)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	20	16	1978	202	1985	75	48	2.1
Nov	20	20	1968	224	1985	78	58	2.1
Dec	20	33	1968	306	1983	131	85	3.7
Jan	20	41	1968	750	1971	266	189	7.4
Feb	20	86	1977	1030	1982	410	246	10.4
Mar	20	132	1977	1720	1984	653	433	18.2
Apr	20	37	1977	1520	1984	643	409	17.4
May	20	22	1977	1320	1984	540	376	15.1
Jun	20	24	1977	1470	1984	557	427	15.0
Jul	20	9.2	1977	798	1982	173	195	4.8
Aug	20	14	1973	125	1984	55	27	1.6
Sep	20	15	1977	218	1984	76	43	2.1
Ann		57	1977	676	1984	304	168	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	21	31	36	41	43	46	52	60	69	83	94	101	114	129	213	20
Nov	20	27	34	41	43	45	50	55	61	73	83	93	138	191	240	20
Dec	25	40	47	51	55	59	71	87	128	170	192	218	243	275	341	20
Jan	42	51	62	77	97	118	155	183	216	257	292	337	441	565	774	20
Feb	87	130	157	185	198	209	253	296	343	425	493	561	649	812	1070	20
Mar	153	218	258	285	309	331	404	488	592	768	876	1010	1130	1310	1630	20
Apr	24	79	149	221	284	346	467	634	777	880	948	1020	1110	1220	1370	20
May	25	38	51	72	182	244	359	476	609	759	834	910	1040	1170	1350	20
Jun	32	44	57	71	133	205	311	455	613	786	891	1000	1130	1280	1430	20
Jul	15	22	28	34	40	44	52	61	75	121	162	230	325	517	736	20
Aug	13	18	24	31	34	38	44	50	58	66	70	76	87	106	122	20
Sep	15	21	32	42	52	57	65	72	78	89	96	104	114	126	177	20
Ann	21	33	41	48	54	61	81	129	211	314	401	518	673	872	1160	

POWDER RIVER BASIN

13288200 EAGLE CREEK ABOVE SKULL CREEK, NEAR NEW BRIDGE, OR

LOCATION.--Lat 44°52'50", long 117°15'10", in SE 1/4 sec.7, T.8 S., R.45 E., Baker County, Hydrologic Unit 17050203, Wallowa-Whitman National Forest, on left bank 0.5 mi upstream from Skull Creek, 6.5 mi northwest of New Bridge, and at mile 10.5.

DRAINAGE AREA.--156 mi².

PERIOD OF RECORD.--October 1957 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 2,800 ft, from topographic map.

REMARKS.--No regulation. Some diversions upstream from station for irrigation and one small interbasin diversion for irrigation supply. All diversions are small compared to flow at station during irrigation season.

AVERAGE DISCHARGE.--30 years, 324 ft³/s, 234,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,310 ft³/s July 12, 1975, gage height, 5.06 ft, from rating curve extended above 2,500 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 6.88 ft Jan. 25, 1962 (ice jam); minimum daily discharge, 30 ft³/s Nov. 28, 1976.

STATISTICAL SUMMARIES FOR THE PERIOD 1958-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	30	68	1967	323	1960	112	48	2.9
Nov	30	78	1965	264	1974	127	41	3.2
Dec	30	72	1977	211	1959	117	35	3.1
Jan	30	58	1977	191	1974	113	30	3.0
Feb	30	72	1966	230	1963	127	40	3.0
Mar	30	64	1977	493	1986	188	86	4.9
Apr	30	191	1967	649	1962	409	134	10.4
May	30	253	1977	1750	1958	941	258	24.6
Jun	30	276	1977	2130	1974	1060	405	26.9
Jul	30	84	1977	1010	1975	431	249	11.3
Aug	30	62	1977	253	1983	150	46	3.9
Sep	30	65	1966	172	1978	109	25	2.8
Ann		118	1977	519	1974	324	81	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	70	76	80	86	89	92	96	100	105	111	115	120	125	138	215	30
Nov	77	83	89	94	97	100	105	113	123	135	143	152	164	181	219	30
Dec	67	74	80	84	88	91	97	106	116	128	134	142	157	173	198	30
Jan	63	70	76	81	86	90	97	103	113	122	128	136	148	165	193	30
Feb	69	78	82	86	90	95	103	111	122	137	145	155	170	194	240	30
Mar	75	93	102	110	117	124	141	154	174	198	217	245	277	331	426	30
Apr	163	188	205	230	250	266	309	366	417	474	509	549	619	711	862	30
May	367	457	506	542	589	637	740	846	959	1120	1220	1320	1450	1570	1830	30
Jun	346	455	531	611	685	748	876	1020	1140	1270	1390	1500	1600	1740	1930	30
Jul	128	148	162	176	197	223	269	330	408	501	559	633	765	860	1030	30
Aug	81	93	101	109	115	120	129	139	150	162	171	181	194	220	265	30
Sep	66	73	79	83	87	91	97	103	111	120	124	129	136	145	163	30
Ann	73	82	90	96	102	108	122	142	179	267	362	485	652	880	1240	

POWDER RIVER BASIN

13289500 POWDER RIVER NEAR ROBINETTE, OR

LOCATION.--Lat 44°46'10", long 117°04'10", in E-1/2 sec.22, T.9 S., R.46 E., Baker County, Hydrologic Unit 17050203, on left bank 2.2 mi northwest of Robinette and 2.5 mi upstream from mouth.

DRAINAGE AREA.--1,660 mi², approximately.

PERIOD OF RECORD.--September 1928 to September 1957.

GAGE.--Water-stage recorder. Datum of gage is 1,937.10 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 24, 1936, staff gage at site 0.5 mi upstream at different datum. Aug. 24, 1936, to Oct. 31, 1948, staff gage at site 50 ft upstream at present datum.

REMARKS.--Flow partly regulated by several reservoirs, the largest being Thief Valley Reservoir (capacity, 17,000 acre-ft). Many diversions for irrigation upstream from station. One canal with capacity of about 5 ft³/s diverts around station on left bank.

AVERAGE DISCHARGE.--29 years (water years 1929-57), 534 ft³/s, 386,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,500 ft³/s May 27, 1956, gage height, 6.38 ft; minimum observed, 18 ft³/s Sept. 2-10, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1929-1957

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	29	35	1932	253	1941	139	62	2.2
Nov	29	70	1937	416	1942	184	74	2.8
Dec	29	79	1936	472	1956	229	140	3.6
Jan	29	58	1937	711	1956	240	142	3.8
Feb	29	86	1937	769	1942	377	213	5.5
Mar	29	174	1955	1302	1929	719	352	11.4
Apr	29	379	1955	2978	1929	1250	656	19.2
May	29	490	1930	2824	1929	1450	656	23.0
Jun	29	235	1934	2971	1929	1250	719	19.2
Jul	29	48	1931	1106	1929	358	260	5.7
Aug	29	25	1931	253	1953	109	53	1.7
Sep	29	22	1931	215	1941	107	51	1.6
Ann		216	1930	916	1956	534	212	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	45	55	66	78	87	97	119	132	145	164	179	195	209	226	253	29
Nov	82	94	103	114	129	143	160	175	188	203	215	233	253	282	349	29
Dec	89	105	115	126	139	148	164	178	197	226	246	271	308	365	674	29
Jan	76	97	117	132	141	150	167	190	223	267	292	326	362	417	562	29
Feb	93	116	132	144	155	170	228	272	379	455	508	557	637	744	976	29
Mar	169	228	281	326	371	404	476	568	721	833	952	1080	1220	1370	1700	29
Apr	361	476	543	597	645	691	835	1030	1320	1560	1720	1890	2150	2410	2780	29
May	476	576	675	751	838	941	1120	1320	1530	1780	1910	2050	2240	2480	2780	29
Jun	275	378	472	551	616	673	857	1050	1250	1490	1640	1840	2030	2390	3090	29
Jul	47	78	99	114	130	149	193	246	320	394	448	519	605	756	1110	29
Aug	30	36	49	58	69	77	90	102	115	131	138	149	165	189	217	29
Sep	31	39	45	51	61	72	89	105	117	134	144	152	161	174	205	29
Ann	53	81	99	116	131	146	179	231	343	547	679	863	1120	1470	2000	

BROWNLEE RESERVOIR BASIN

13290190 PINE CREEK NEAR OXBOW, OR

LOCATION.--Lat 44°57'13", long 116°52'21", in NE 1/4 SW 1/4 sec.17, T.7 S., R.48 E., Baker County, Hydrologic Unit 17050201, 1.8 mi south of Oxbow, and at mile 1.9.

DRAINAGE AREA.--230 mi², approximately.

PERIOD OF RECORD.--November 1966 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,850.48 ft above National Geodetic Vertical Datum of 1929 (levels by Idaho Power Co.). Prior to Aug. 24, 1967, nonrecording gage at site 1.7 mi downstream at different datum.

REMARKS.--Diversions upstream from station for irrigation of about 19,000 acres (1966 determination).

AVERAGE DISCHARGE.--20 years, 378 ft³/s, 273,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,110 ft³/s Feb. 21, 1968, gage height, 9.82 ft; minimum discharge, 10 ft³/s Aug. 17-24, 1977, gage height, 2.12 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1967-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	20	39	1978	135	1983	75	20	1.7
Nov	21	65	1977	491	1974	142	92	3.1
Dec	21	58	1979	619	1974	238	159	5.3
Jan	21	51	1979	962	1974	297	244	6.7
Feb	21	65	1977	1040	1986	417	264	8.5
Mar	21	69	1977	1140	1972	627	288	14.0
Apr	21	64	1977	1010	1974	656	265	14.2
May	21	94	1977	1600	1971	921	306	20.6
Jun	21	67	1977	1930	1974	845	442	18.3
Jul	21	20	1977	541	1983	221	177	4.9
Aug	21	14	1977	95	1983	52	24	1.2
Sep	21	20	1987	119	1978	57	24	1.3
Ann		55	1977	674	1974	379	137	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	38	48	52	55	58	61	66	71	76	83	88	94	101	109	129
Nov	61	67	70	74	82	87	97	106	124	143	156	173	198	234	339
Dec	59	68	81	91	99	108	135	161	192	242	278	331	395	488	696
Jan	56	71	89	101	110	121	144	170	205	250	281	332	426	579	892
Feb	70	113	140	154	167	181	215	264	332	412	455	514	628	850	1380
Mar	130	243	281	311	338	373	442	522	616	723	780	846	952	1220	1540
Apr	189	291	339	372	401	430	501	599	709	810	870	950	1030	1130	1290
May	214	411	504	575	631	678	781	875	971	1100	1160	1230	1340	1500	1790
Jun	77	166	266	391	470	532	657	790	937	1080	1170	1280	1410	1530	1830
Jul	26	34	39	44	50	58	81	114	153	227	283	380	492	648	803
Aug	21	27	29	31	33	34	37	42	48	60	68	77	86	96	111
Sep	21	27	30	32	34	38	48	54	61	67	73	80	90	98	112
Ann	32	44	55	63	72	83	112	169	278	455	564	685	822	1010	1300

LOWER SNAKE RIVER BASIN

13292000 IMNAHA RIVER AT IMNAHA, OR

LOCATION.--Lat 45°33'45", long 116°50'00", in SW 1/4 sec.16, T.1 N., R.48 E., Wallowa County, Hydrologic Unit 17060102, on left bank at Imnaha, 0.3 mi downstream from Big Sheep Creek, and at mile 19.3.

DRAINAGE AREA.--622 mi².

PERIOD OF RECORD.--June 1928 to 1987.

REVISED RECORDS.--WSP 833: 1938. WSP 1397: 1929, 1932(M), 1949. WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,941.14 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1934, nonrecording gage at site 0.25 mi upstream at different datum. Aug. 6-31, 1934, nonrecording gage at present site and datum.

REMARKS.--No regulation. Diversions for irrigation upstream from station. Water is diverted from Big Sheep Creek and tributaries upstream from station for irrigation in Wallowa River basin.

AVERAGE DISCHARGE.--59 years, 519 ft³/s, 376,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,100 ft³/s Jan. 17, 1974, gage height, 7.86 ft, from rating curve extended above 3,500 ft³/s; minimum discharge observed, 16 ft³/s Nov. 22, 1931, result of freezeup; minimum daily, 25 ft³/s Nov. 22, 23, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1929-1956

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	59	81	1937	501	1963	161	62	2.6
Nov	59	80	1937	625	1974	190	88	3.0
Dec	59	89	1936	806	1942	215	131	3.5
Jan	59	69	1937	855	1974	204	119	3.3
Feb	59	82	1937	569	1982	245	118	3.9
Mar	59	114	1977	993	1986	401	192	6.4
Apr	59	345	1977	1760	1956	944	332	15.2
May	59	445	1977	2800	1948	1590	528	25.6
Jun	59	417	1987	2610	1974	1360	529	21.9
Jul	59	123	1977	1350	1975	568	314	9.1
Aug	59	79	1931	380	1982	195	72	3.1
Sep	59	83	1931	256	1978	146	40	2.3
Ann		184	1977	896	1974	519	153	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	92	104	114	121	126	130	139	149	158	168	174	181	192	212	273	59
Nov	91	108	120	127	134	139	150	163	177	196	214	232	251	285	359	59
Dec	77	96	108	120	131	139	154	169	193	223	241	266	304	368	501	59
Jan	79	95	106	114	123	131	148	166	190	212	230	254	285	332	417	59
Feb	96	110	121	132	142	153	175	199	226	260	282	315	365	423	536	59
Mar	133	158	184	202	220	237	275	312	371	450	492	545	613	761	1000	59
Apr	314	415	483	533	576	616	709	816	949	1100	1200	1320	1450	1630	2030	59
May	680	824	921	1020	1110	1170	1320	1480	1650	1840	1940	2060	2260	2520	2990	59
Jun	438	592	709	793	870	969	1160	1310	1460	1670	1790	1900	2030	2210	2480	59
Jul	152	189	216	246	277	308	367	445	538	668	741	848	968	1150	1460	59
Aug	85	101	116	127	137	146	162	179	199	221	235	252	274	301	356	59
Sep	85	93	100	107	113	118	129	140	152	164	172	182	192	204	222	59
Ann	95	114	128	139	149	161	190	233	313	503	663	870	1130	1430	1850	

UPPER GRANDE RONDE RIVER BASIN

13318500 GRANDE RONDE RIVER NEAR HILGARD, OR

LOCATION.--Lat 45°19'06", long 118°16'15", near center of sec.11, T.3 S., R.36 E., Union County, Hydrologic Unit 17060104, on right bank half a mile upstream from lower reservoir site of Bureau of Reclamation, 0.8 mi upstream from Spring Creek, and 3 mi southwest of Hilgard.

DRAINAGE AREA.--505 mi².

PERIOD OF RECORD.--January 1938 to September 1956. Monthly discharge only prior to October 1945, published in WSP 1317.

GAGE.--Water-stage recorder. Datum of gage is 3,058.05 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 16, 1946, water-stage recorder at site 800 ft upstream at different datum.

REMARKS.--Several small diversions for irrigation upstream from station. Since 1909, city of La Grande has diverted about 3 ft³/s for municipal use at Beaver Creek Reservoir (capacity, about 900 acre-ft).

AVERAGE DISCHARGE.--18 years (water years 1939-56), 274 ft³/s, 198,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,060 ft³/s May 8, 1956, gage height, 6.48 ft, from rating curve extended above 3,100 ft³/s; minimum, 6 ft³/s Aug. 10, 12-29, Sept. 1-4, 1940.

STATISTICAL SUMMARIES FOR THE PERIOD 1938-1956

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	18	1953	128	1942	35	23	1.1
Nov	19	19	1953	323	1942	72	71	2.2
Dec	19	17	1945	467	1956	145	139	4.5
Jan	19	25	1955	301	1948	118	89	3.7
Feb	19	29	1955	493	1951	200	134	5.7
Mar	20	72	1955	841	1939	449	197	14.0
Apr	20	387	1941	1590	1956	868	316	26.2
May	20	230	1940	1920	1948	781	412	24.4
Jun	20	47	1940	1100	1948	410	278	12.4
Jul	20	13	1940	246	1941	95	63	3.0
Aug	20	7.0	1940	54	1948	27	13	0.9
Sep	20	14	1939	71	1941	24	12	0.7
Ann		129	1944	478	1956	272	100	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	17	19	20	21	22	23	26	29	31	35	37	39	43	52	98	19
Nov	20	24	27	29	31	33	37	42	49	58	67	80	103	162	247	19
Dec	18	23	28	32	37	42	50	63	101	142	171	204	251	333	505	19
Jan	26	30	36	40	42	44	54	72	86	126	154	175	200	246	338	19
Feb	32	43	50	57	64	69	90	125	160	201	236	289	361	497	639	19
Mar	50	68	108	160	187	220	282	340	413	494	554	634	739	920	1330	20
Apr	329	380	437	490	537	577	672	772	894	1040	1140	1240	1350	1490	1710	20
May	207	278	339	404	472	522	623	705	778	886	960	1050	1170	1330	1650	20
Jun	78	114	134	159	177	192	227	284	382	530	598	656	726	821	1060	20
Jul	15	26	30	34	39	45	57	68	83	102	114	133	153	202	288	20
Aug	6.5	11	14	16	17	18	20	23	28	33	37	40	45	52	61	20
Sep	13	14	15	16	17	18	21	23	24	26	27	29	31	35	50	20
Ann	16	20	24	27	32	37	51	82	155	267	360	487	626	802	1120	

UPPER GRANDE RONDE RIVER BASIN

13318800 GRANDE RONDE RIVER AT HILGARD, OR

LOCATION.--Lat 45°20'21", long 118°14'35", in NE 1/4 NE 1/4 sec.1, T.3 S., R.36 E., Union County, Hydrologic Unit 17060104, on left bank 8.8 mi northwest of La Grande, 1.6 mi upstream from Fivepoint Creek, and at mile 171.3.

DRAINAGE AREA.--555 mi².

PERIOD OF RECORD.--October 1966 to September 1982.

GAGE.--Water-stage recorder. Datum of gage is 2,993.62 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Slight regulation by city of La Grande Reservoir on Beaver Creek, capacity, about 900 acre-ft. Diversions for irrigation upstream from station. Since 1909, city of La Grande has diverted about 3 ft³/s from Beaver Creek upstream from station for municipal use.

AVERAGE DISCHARGE.--16 years, 299 ft³/s, 216,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,740 ft³/s Mar. 13, 1972, gage height, 7.18 ft; maximum gage height, 12.25 ft Jan. 15, 1974 (ice jam); minimum discharge, 9.6 ft³/s Aug. 17, 18, 23, 1973.

STATISTICAL SUMMARIES FOR THE PERIOD 1967-1982

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	24	1974	56	1971	35	8.6	1.0
Nov	15	31	1968	236	1974	71	56	1.9
Dec	15	32	1977	481	1974	159	143	4.5
Jan	15	26	1977	681	1974	272	197	7.6
Feb	15	48	1977	521	1971	288	133	7.4
Mar	15	75	1977	1670	1972	544	374	15.3
Apr	15	181	1968	1480	1976	787	389	21.4
May	15	256	1968	1340	1975	882	333	24.8
Jun	15	85	1973	825	1975	421	229	11.5
Jul	15	21	1973	253	1975	101	58	2.8
Aug	15	12	1973	81	1976	35	17	1.0
Sep	15	17	1967	50	1978	30	10.0	0.8
Ann		122	1977	454	1974	302	98	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	21	23	24	26	28	29	32	34	36	38	40	42	45	51	61	16
Nov	25	28	31	32	34	36	40	45	50	58	64	78	113	154	228	15
Dec	24	28	32	37	41	47	65	85	101	159	205	255	317	388	559	15
Jan	29	38	50	60	72	82	102	132	191	260	303	375	474	643	946	15
Feb	51	73	95	113	130	146	182	219	250	312	352	395	456	595	753	15
Mar	82	127	166	192	214	237	294	354	455	653	772	879	997	1190	1430	15
Apr	194	270	317	356	408	467	610	699	827	995	1070	1140	1280	1430	1650	15
May	257	327	376	432	513	581	721	861	997	1130	1190	1250	1340	1480	1700	15
Jun	73	109	155	179	206	236	293	345	408	535	596	648	726	841	1010	15
Jul	20	29	35	41	48	53	62	75	93	118	131	146	167	198	282	15
Aug	14	16	20	22	23	25	28	32	36	41	44	48	53	60	75	15
Sep	16	18	20	21	22	23	25	28	32	37	39	40	43	49	55	15
Ann	21	25	30	34	38	44	64	112	201	316	392	522	682	901	1200	

UPPER GRANDE RONDE RIVER BASIN

13319000 GRANDE RONDE RIVER AT LA GRANDE, OR

LOCATION.--Lat 45°20'47", long 118°07'26", in NW 1/4 SE 1/4 sec.36, T.2 S., R.37 E., Union County, Hydrologic Unit 17060104, on right bank 1.8 mi northwest of La Grande, 5.7 mi downstream from Fivepoint Creek, and at mile 164.0.

DRAINAGE AREA.--678 mi².

PERIOD OF RECORD.--October 1903 to September 1915, February 1918 to September 1923, October 1925 to 1987.
Monthly discharge only for some periods, published in WSP 1317. Published as "at Hilgard" 1903-15.

REVISED RECORDS.--WSP 768: 1933. WSP 1397: 1904-11, 1913, 1915, 1919-20, 1922-23, 1926, 1929-31, 1936-37, 1939, 1942. WSP 1737: Drainage area. WRD Oreg. 1974: 1973(M).

GAGE.--Water-stage recorder. Datum of gage is 2,826.25 ft above National Geodetic Vertical Datum of 1929.
Nov. 6, 1903, to Sept. 30, 1915, nonrecording gage at site 5.5 mi upstream at various datums. Feb. 16, 1918, to June 28, 1923, and Oct. 1, 1925, to Nov. 23, 1931, nonrecording gage at site 0.7 mi downstream at various datums. Nov. 24, 1931, to Oct. 8, 1965, water-stage recorder at site 0.3 mi upstream at datum 4.61 ft higher.

REMARKS.--Since 1915, slight regulation by city of La Grande Reservoir on Beaver Creek, capacity, about 900 acre-ft. Diversions for irrigation upstream from station. Since 1909, city of La Grande has diverted about 3 ft³/s from Beaver Creek upstream from station for domestic water supply.

AVERAGE DISCHARGE.--79 years, 389 ft³/s, 281,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft³/s Jan. 30, 1965, gage height, 11.44 ft, site and datum then in use, from rating curve extended above 7,200 ft³/s; minimum discharge, 3.9 ft³/s Aug. 26, 1940.

STATISTICAL SUMMARIES FOR THE PERIOD 1918-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	67	16	1937	145	1928	43	25	0.9
Nov	67	22	1953	700	1928	97	110	2.1
Dec	67	20	1937	669	1978	187	182	4.1
Jan	67	12	1937	1290	1965	245	251	5.3
Feb	67	25	1937	1380	1958	369	317	7.3
Mar	68	82	1955	2320	1972	768	447	16.8
Apr	68	237	1968	2380	1956	1260	508	26.6
May	68	118	1934	2670	1948	1070	545	23.3
Jun	68	58	1940	1330	1948	458	297	9.7
Jul	68	20	1940	600	1923	104	90	2.3
Aug	68	7.0	1940	87	1976	32	18	0.7
Sep	68	8.8	1935	88	1984	30	14	0.6
Ann		141	1966	717	1984	389	144	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	19	23	24	25	27	29	32	35	39	43	47	52	59	75	104	67
Nov	24	29	32	35	37	40	46	53	61	76	90	114	148	201	350	67
Dec	22	28	34	39	43	50	62	81	116	171	207	262	329	428	662	67
Jan	27	34	42	50	57	66	85	110	147	216	262	321	402	537	855	67
Feb	36	53	64	75	90	99	142	198	276	360	419	511	633	855	1270	67
Mar	86	143	205	256	294	339	445	550	701	867	992	1160	1360	1710	2240	68
Apr	386	501	579	664	738	802	924	1080	1290	1520	1660	1840	2020	2240	2650	68
May	226	315	418	512	588	662	808	976	1140	1350	1450	1560	1720	1920	2270	68
Jun	78	101	129	159	186	214	268	337	420	551	636	732	823	968	1260	68
Jul	22	28	33	37	41	46	56	68	83	105	119	137	167	213	323	68
Aug	9.1	13	15	17	19	21	23	27	31	37	42	47	53	60	73	68
Sep	12	15	17	18	20	21	24	26	29	34	37	40	44	51	64	68
Ann	18	23	28	32	38	44	65	105	205	376	506	675	880	1180	1680	

UPPER GRANDE RONDE RIVER BASIN

13320000 CATHERINE CREEK NEAR UNION, OR

LOCATION.--Lat 45°09'20", long 117°46'26", in NW 1/4 SE 1/4 sec.2, T.5 S., R.40 E., Union County, Hydrologic Unit 17060104, on right bank 3.0 mi downstream from Little Catherine Creek, 5.5 mi southeast of Union, and at mile 25.4.

DRAINAGE AREA.--105 mi².

PERIOD OF RECORD.--May 1906 to May 1907 (gage heights only), August 1911 to December 1912, March to September 1915, February 1918 to September 1919, October 1925 to 1987. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1912-13, 1919, 1926, 1928-33, 1937, 1939, 1940(M), 1941-43, 1950.

GAGE.--Water-stage recorder. Datum of gage is 3,081.76 ft above National Geodetic Vertical Datum of 1929 (Oregon State Highway Department bench mark). Prior to Nov. 28, 1938, nonrecording gage at several sites within 1.8 mi of present site at various datums. Nov. 28, 1938, to May 16, 1939, water-stage recorder at site 400 ft downstream at datum 4.29 ft lower.

REMARKS.--No regulation. Several small diversions for irrigation upstream from station. Since 1937, diversion to Big Creek in Powder River basin provides a small part of the water used for irrigation in that basin.

AVERAGE DISCHARGE.--64 years (water years 1912, 1919, 1926-87), 119 ft³/s, 86,220 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,740 ft³/s May 27, 1948, gage height, 4.57 ft; minimum discharge, 6.5 ft³/s Feb. 4, 1955, result of freezeup; minimum daily, 8 ft³/s Nov. 7, 1925.

STATISTICAL SUMMARIES FOR THE PERIOD 1911-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	65	17	1937	138	1960	33	17	2.4
Nov	65	14	1931	157	1928	39	20	2.7
Dec	65	13	1931	125	1942	44	23	3.2
Jan	64	12	1930	101	1971	45	21	3.3
Feb	64	22	1933	136	1986	56	27	3.6
Mar	65	27	1977	268	1986	95	48	6.8
Apr	65	83	1955	445	1952	238	85	16.4
May	65	121	1977	776	1912	416	140	29.7
Jun	65	65	1934	686	1974	306	155	21.1
Jul	65	25	1926	247	1984	92	47	6.6
Aug	66	11	1930	63	1912	36	11	2.6
Sep	66	15	1930	57	1959	29	8.1	2.0
Ann		49	1977	185	1912	119	31	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	20	21	23	25	25	26	28	29	31	33	35	37	41	45	57	65
Nov	20	22	24	26	27	29	31	33	36	40	43	47	51	59	85	65
Dec	19	21	24	25	27	28	31	35	41	47	51	56	64	80	107	65
Jan	20	23	24	25	26	29	33	38	43	49	52	57	67	81	104	64
Feb	23	24	27	29	32	36	42	47	52	60	65	71	80	95	128	64
Mar	30	36	41	46	51	55	63	74	88	107	117	131	152	180	250	65
Apr	75	91	105	117	128	141	176	209	242	280	307	338	384	443	535	65
May	153	193	228	256	277	296	335	373	424	482	518	561	619	699	816	65
Jun	76	101	129	151	171	192	228	270	312	359	394	433	483	558	694	65
Jul	30	35	40	45	50	54	62	72	84	102	113	129	149	174	223	65
Aug	18	21	23	26	28	29	33	35	38	42	44	46	50	53	59	66
Sep	19	20	21	23	24	25	27	28	30	33	34	35	37	41	47	66
Ann	20	24	26	28	30	33	39	49	65	102	133	186	253	332	461	

UPPER GRANDE RONDE RIVER BASIN

13323500 GRANDE RONDE RIVER NEAR ELGIN, OR

LOCATION.--Lat 45°30'45", long 117°55'35", in NW 1/4 NW 1/4 sec.3, T.1 S., R.39 E., Union County, Hydrologic Unit 17060104, on right bank 700 ft upstream from abandoned highway bridge, 1.5 mi downstream from Willow Creek, 3.6 mi south of Elgin, and at mile 104.2.

DRAINAGE AREA.--1,250 mi², approximately.

PERIOD OF RECORD.--August 1955 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 2,660.31 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--26 years, 668 ft³/s, 484,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,480 ft³/s Feb. 2, 1965, gage height, 13.79 ft; no flow Aug. 20-24, 1973.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	31	1967	325	1960	86	54	1.1
Nov	26	65	1962	469	1974	164	97	2.0
Dec	26	86	1977	1180	1978	398	333	5.1
Jan	26	90	1977	1440	1974	559	408	7.1
Feb	26	106	1977	2760	1965	822	584	9.5
Mar	26	171	1977	3610	1972	1110	687	14.1
Apr	26	487	1968	3390	1956	1760	782	21.6
May	26	439	1966	3390	1956	1880	792	23.9
Jun	26	144	1966	1930	1975	997	475	12.3
Jul	26	10	1973	629	1975	175	136	2.2
Aug	26	1.7	1973	140	1976	39	31	0.5
Sep	26	6.9	1981	117	1978	42	29	0.5
Ann		211	1977	1100	1956	668	253	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	27	38	42	46	50	55	70	79	87	96	101	108	116	136	178	26
Nov	68	77	83	91	96	101	110	120	132	153	170	206	249	298	441	26
Dec	73	85	94	104	117	138	175	214	266	361	449	550	732	927	1340	26
Jan	92	107	117	141	157	173	219	294	399	599	689	783	982	1390	1900	26
Feb	112	147	180	241	309	362	507	611	745	904	1010	1140	1360	1690	2390	26
Mar	228	351	399	449	549	615	723	832	972	1240	1410	1630	1900	2260	2870	26
Apr	503	623	781	898	1040	1170	1440	1610	1900	2210	2360	2540	2750	2990	3590	26
May	507	662	820	1080	1230	1370	1570	1790	2080	2380	2520	2650	2840	3060	3470	26
Jun	140	226	339	450	540	622	777	927	1100	1300	1410	1530	1670	1850	2100	26
Jul	7.8	19	26	32	38	51	73	99	139	205	246	308	377	447	552	26
Aug	2.8	6.6	8.5	11	15	18	23	31	39	47	51	59	72	87	113	26
Sep	2.7	6.6	8.4	12	16	18	25	33	42	54	60	69	80	94	116	26
Ann	15	30	45	64	81	97	142	254	475	788	962	1250	1580	1960	2610	

UPPER GRANDE RONDE RIVER BASIN

13323600 INDIAN CREEK NEAR IMBLER, OR

LOCATION.--Lat 45°26'00", long 117°49'20", S-1/2 sec.33, T.1 S., R.40 E., Union County, Hydrologic Unit 17060104, 600 ft upstream from North Fork and 7 mi southeast of Imbler.

DRAINAGE AREA.--22 mi², approximately.

PERIOD OF RECORD.--March 1938 to September 1950.

GAGE.--Water-stage recorder. Elevation of gage is 3,800 ft, from topographic map.

REMARKS.--No diversion or regulation upstream from station.

COOPERATION.--Records for 1938-45 furnished by Oregon Water Resources Department.

AVERAGE DISCHARGE.--12 years (water years 1939-50), 41.5 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 818 ft³/s May 27, 1948, from rating curve extended above 400 ft³/s; maximum gage height, 4.09 ft sometime during period Jan. 4-7, 1947 (ice jam); minimum observed, 0.1 ft³/s Nov. 15, 1939.

STATISTICAL SUMMARIES FOR THE PERIOD 1938-1950

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	3.1	1945	14	1942	5.6	3.0	1.1
Nov	12	1.7	1940	20	1942	7.7	4.9	1.5
Dec	12	2.1	1940	38	1947	10	10	2.2
Jan	12	3.5	1944	30	1947	8.5	7.4	1.7
Feb	12	4.0	1944	35	1947	9.9	8.4	1.9
Mar	13	6.0	1945	29	1947	14	7.3	3.0
Apr	13	18	1945	140	1942	66	33	13.2
May	13	107	1944	316	1946	195	61	39.9
Jun	13	27	1940	269	1948	137	75	27.1
Jul	13	6.3	1940	94	1943	31	23	6.3
Aug	13	3.3	1940	10	1948	6.6	2.2	1.4
Sep	13	2.8	1949	10	1941	4.7	2.0	0.9
Ann		23	1944	56	1943	41	11	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.8	2.9	2.9	2.9	3.1	3.3	3.9	4.2	5.0	5.9	5.9	7.0	8.4	11	15	12
Nov	1.0	3.3	3.7	3.7	4.1	4.6	4.6	5.2	5.8	7.2	8.0	9.7	13	17	22	12
Dec	1.8	2.8	2.8	3.8	3.8	3.8	4.4	6.0	7.7	9.6	12	15	18	20	30	12
Jan	3.4	3.4	3.4	3.9	3.9	4.5	4.8	6.0	6.8	7.8	9.0	10	13	19	--	12
Feb	4.0	4.0	4.0	4.0	4.9	5.9	5.9	6.7	7.6	8.2	11	12	13	25	--	12
Mar	4.4	5.9	5.9	6.6	7.2	8.8	11	13	15	17	17	21	25	28	35	13
Apr	9.2	14	23	31	33	34	37	44	61	86	100	108	114	134	185	13
May	58	79	90	104	115	126	139	164	203	239	256	281	313	355	409	13
Jun	27	39	47	53	60	70	92	115	133	180	198	222	241	262	318	13
Jul	5.6	7.2	9.0	11	12	13	16	20	25	30	35	41	50	68	97	13
Aug	2.9	3.9	3.9	3.9	4.4	4.7	5.6	6.4	6.8	7.7	7.7	8.1	9.2	11	12	13
Sep	2.4	2.8	3.0	3.0	3.0	3.6	3.8	3.8	4.3	4.8	5.1	5.4	6.1	6.9	10	13
Ann	2.7	3.2	3.9	3.9	5.1	5.7	6.6	9.2	13	26	36	53	92	130	215	

GRANDE RONDE RIVER BASIN

13325001 EAST FORK WALLOWA RIVER NEAR JOSEPH, OR

LOCATION.--Lat 45°16'20", long 117°12'35", in NE 1/4 sec.29, T.3 S., R.45 E., Wallowa County, Hydrologic Unit 17060105, on left bank 0.2 mi upstream from confluence with West Fork, 1.0 mi upstream from Wallowa Lake, 5.5 mi south of Joseph, and at mile 0.2.

DRAINAGE AREA.--10.3 mi².

PERIOD OF RECORD.--July 1924 to September 1983. Prior to October 1952, records published separately as East Fork Wallowa River near Joseph and Wallowa Falls powerplant tailrace near Joseph.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,517.69 ft above National Geodetic Vertical Datum of 1929 (Pacific Power & Light Co. bench mark). Prior to Apr. 8, 1950, nonrecording gage at same site and datum.

REMARKS.--All records present herein include flow in Wallowa Falls powerplant tailrace of Pacific Power & Light Co. Most of low flow is diverted at dam 1.5 mi upstream into a conduit 1.0 mi above Wallowa Falls powerhouse and discharged into West Fork 0.4 mi below powerhouse.

AVERAGE DISCHARGE.--59 years, 21.9 ft³/s, 28.87 in/yr, 15,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 450 ft³/s July 25, 1937 (no flow in powerplant tailrace), from rating curve extended above 80 ft³/s; minimum daily, 4.6 ft³/s Feb. 17, 1978.

STATISTICAL SUMMARIES FOR THE PERIOD 1953-1983

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	10	1978	24	1983	16	3.1	5.9
Nov	31	9.6	1978	20	1983	15	2.5	5.3
Dec	31	9.8	1967	18	1983	13	2.1	5.1
Jan	31	9.4	1978	16	1983	12	1.8	4.7
Feb	31	8.4	1978	14	1963	11	1.7	4.0
Mar	31	7.9	1967	14	1983	11	1.5	4.2
Apr	31	8.6	1967	17	1965	13	2.2	4.7
May	31	17	1975	50	1956	29	8.9	10.7
Jun	31	34	1977	90	1958	64	15	22.9
Jul	31	11	1977	98	1982	48	20	17.9
Aug	31	9.6	1977	37	1953	22	6.6	8.4
Sep	31	9.7	1977	26	1982	17	3.4	6.1
Ann		13	1977	31	1982	23	3.9	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	12	12	13	14	14	15	16	16	17	18	19	19	20	21	23	31
Nov	11	12	13	13	14	14	15	15	16	17	17	18	18	19	21	31
Dec	11	11	12	12	13	13	14	14	15	16	16	16	17	18	19	31
Jan	9.5	10	11	11	12	12	13	13	14	14	15	15	15	16	17	31
Feb	8.8	9.6	10	11	11	11	12	12	13	13	14	14	14	15	15	31
Mar	8.4	9.6	10	11	11	11	12	12	12	13	13	13	14	14	15	31
Apr	9.0	9.7	11	11	11	12	12	13	14	15	15	16	17	18	21	31
May	14	16	17	18	19	20	23	26	29	33	35	39	43	49	61	31
Jun	31	36	40	45	48	52	57	61	66	73	77	83	90	100	--	31
Jul	18	23	27	29	31	34	39	45	50	58	62	66	70	77	--	31
Aug	14	15	16	17	18	19	21	22	24	26	27	29	31	34	38	31
Sep	12	13	14	15	15	16	17	18	19	19	20	20	21	23	25	31
Ann	10	11	11	12	12	13	14	15	17	20	23	28	37	50	67	

WALLOWA RIVER BASIN

13327500 WALLOWA RIVER AT JOSEPH, OR

LOCATION.--Lat 45°20'15", long 117°13'35", in NW 1/4 sec.5, T.3 S., R.45 E., Wallowa County, Hydrologic Unit 17060105, on left bank 0.2 mi downstream from Wallowa Lake dam, 1.1 mi south of Joseph, and at mile 50.0.

DRAINAGE AREA.--50.9 mi².

PERIOD OF RECORD.--November 1903 to August 1907, June 1908 to March 1914, May to September 1915, December 1926 to 1987. Monthly discharge only for some periods, published in WSP 1317. Published as "near Joseph" 1911.

REVISED RECORDS.--WSP 1397: 1906. WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 4,326.86 ft above National Geodetic Vertical Datum of 1929. Nov. 12, 1903, to Sept. 25, 1915, nonrecording gage at several sites at lake outlet or near present site at different datums.

REMARKS.--Silver Lake ditch diverts at Wallowa Lake dam for irrigation northeast of Joseph. City of Joseph diverts less than 1.0 ft³/s from Wallowa Lake for municipal use.

AVERAGE DISCHARGE.--60 years (water years 1928-87), 134 ft³/s, 35.75 in/yr, 97,080 acre-ft/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,550 ft³/s June 10, 1969, gage height, 5.15 ft; no flow at times in some years.

STATISTICAL SUMMARIES FOR THE PERIOD 1904-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	59	5.2	1953	88	1910	36	21	2.8
Nov	60	6.7	1938	159	1907	36	30	2.7
Dec	60	5.4	1956	135	1911	33	26	2.5
Jan	61	6.1	1945	99	1911	30	21	2.3
Feb	61	5.0	1950	97	1984	28	19	1.9
Mar	61	2.8	1938	109	1982	29	23	2.2
Apr	60	3.1	1938	173	1910	35	34	2.6
May	61	16	1948	354	1971	167	77	12.5
Jun	62	159	1950	567	1957	378	112	27.5
Jul	62	91	1955	614	1975	344	100	25.8
Aug	62	22	1937	397	1970	205	84	15.4
Sep	59	9.0	1937	151	1909	61	34	4.5
Ann		51	1937	172	1911	113	31	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	9.2	12	16	20	23	25	27	32	36	41	45	56	62	77	86	59
Nov	8.2	10	12	15	18	21	25	28	31	37	42	54	62	76	108	60
Dec	9.1	11	12	14	17	20	22	24	28	35	41	52	60	73	95	60
Jan	6.4	9.2	11	13	15	18	21	25	29	34	42	51	55	61	72	61
Feb	5.8	9.0	10	11	14	17	20	24	26	31	36	43	51	59	65	61
Mar	6.0	6.8	8.6	10	13	15	20	23	27	32	38	46	54	62	84	61
Apr	5.5	7.3	8.6	11	13	15	20	23	26	35	47	58	68	87	115	60
May	9.5	17	23	29	35	52	90	128	170	230	268	306	355	401	456	61
Jun	121	163	209	241	272	295	334	375	415	454	477	501	532	582	661	62
Jul	119	173	208	234	257	281	316	341	371	405	425	447	471	507	576	62
Aug	40	56	77	98	113	127	152	185	228	270	295	326	350	379	423	62
Sep	17	23	26	29	32	34	39	49	61	77	82	92	106	125	153	59
Ann	7.7	10	14	18	21	23	28	38	58	104	143	215	293	363	443	

WALLOWA RIVER BASIN

13329500 HURRICANE CREEK NEAR JOSEPH, OR

LOCATION.--Lat 45°20'15", long 117°17'30", in NE 1/4 sec.3, T.3 S., R.44 E., Wallowa County, Hydrologic Unit 17060105, on left bank 350 ft upstream from intake of Moonshine Ditch, 3.5 mi southwest of Joseph, and at mile 7.5.

DRAINAGE AREA.--29.6 mi².

PERIOD OF RECORD.--April to September 1915, April 1924 to 1978. Monthly discharge only for some periods, published in WSP 1317.

GAGE.--Water-stage recorder. Elevation of gage is 4,500 ft, by barometer. Apr. 27 to Sept. 3, 1915, nonrecording gage at site 250 ft downstream at different datum. Apr. 23, 1924, to June 13, 1933, water-stage recorder at site 150 ft downstream at different datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--54 years, 74.3 ft³/s, 34.09 in/yr, 53,830 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,110 ft³/s June 9, 1948, gage height, 3.55 ft; maximum gage height, 6.94 ft June 4, 1977, backwater from debris; minimum discharge, 2.8 ft³/s Mar. 2, 1955, result of ice jam upstream; minimum daily, 6.0 ft³/s Jan. 6, Apr. 13, 1945.

STATISTICAL SUMMARIES FOR THE PERIOD 1915-1978

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	54	15	1937	96	1960	32	14	3.7
Nov	54	12	1937	69	1928	31	12	3.4
Dec	54	10	1937	66	1959	26	11	3.1
Jan	54	10	1945	44	1959	22	7.7	2.5
Feb	54	10	1927	37	1971	20	6.9	2.1
Mar	54	9.0	1927	41	1934	19	6.4	2.3
Apr	54	14	1955	111	1934	46	22	5.1
May	56	63	1977	292	1928	167	57	19.1
Jun	56	116	1977	439	1948	262	79	29.0
Jul	56	40	1977	355	1953	162	71	18.5
Aug	56	25	1931	113	1965	59	21	6.8
Sep	56	19	1936	62	1978	35	9.3	3.9
Ann		37	1977	103	1974	74	15	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	18	21	22	23	24	25	27	29	31	34	36	38	42	48	63	54
Nov	16	19	20	22	23	24	25	27	30	34	37	40	44	49	62	54
Dec	14	16	17	19	20	20	22	24	27	30	32	35	39	43	51	54
Jan	12	14	15	16	16	17	19	21	24	26	27	29	31	34	39	54
Feb	11	13	14	15	15	16	18	20	22	24	25	26	28	31	34	54
Mar	11	12	13	14	15	16	18	20	21	23	24	25	27	30	32	54
Apr	14	16	19	22	24	27	30	34	41	52	58	67	81	96	122	54
May	43	55	72	83	93	102	124	148	175	204	222	245	271	306	360	56
Jun	114	138	154	168	181	193	216	242	274	308	330	355	386	426	481	56
Jul	48	60	70	84	95	106	124	145	172	200	214	235	256	282	330	56
Aug	29	32	35	37	41	43	48	53	61	69	73	78	84	95	112	56
Sep	22	24	26	27	28	30	32	34	36	39	41	44	47	51	56	56
Ann	14	16	18	20	22	24	28	33	42	60	81	112	156	210	284	

WALLOWA RIVER BASIN

13330000 LOSTINE RIVER NEAR LOSTINE, OR

LOCATION.--Lat 45°26'20", long 117°25'35", in NW 1/4 sec.34, T.1 S., R.43 E., Wallowa County, Hydrologic Unit 17060105, on left bank 3.5 mi south of Lostine and at mile 10.0.

DRAINAGE AREA.--70.9 mi².

PERIOD OF RECORD.--August 1912 to March 1914, April to September 1915, July 1925 to 1987. Monthly discharge only for some periods, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1913, 1942. WSP 1737: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,650 ft, by barometer. See WSP 1317 or 1737 for history of changes prior to Dec. 16, 1953. Dec. 16, 1953, to Aug. 23, 1977, at datum 1.04 ft higher.

REMARKS.--Minam Lake Reservoir, capacity 440 acre-ft, has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--63 years (water years 1913, 1926-87), 195 ft³/s, 141,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,550 ft³/s June 16, 1974, gage height, 8.59 ft, present datum; minimum discharge, 7.5 ft³/s Mar. 2, 1966, result of freezeup; minimum daily, 10 ft³/s Nov. 28-30, 1936.

STATISTICAL SUMMARIES FOR THE PERIOD 1912-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	64	18	1937	291	1960	57	43	2.5
Nov	64	14	1937	226	1928	63	42	2.7
Dec	64	15	1937	212	1959	58	37	2.6
Jan	64	15	1937	158	1974	49	27	2.2
Feb	64	14	1937	117	1971	46	21	1.8
Mar	64	16	1955	169	1986	54	26	2.4
Apr	64	35	1975	393	1934	159	77	6.7
May	64	203	1977	909	1928	524	157	22.8
Jun	64	332	1926	1430	1913	797	255	33.6
Jul	65	59	1977	913	1975	382	210	16.6
Aug	65	30	1931	180	1943	85	39	3.7
Sep	66	23	1931	104	1978	50	19	2.1
Ann		91	1977	288	1974	195	42	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	24	27	29	32	34	36	39	43	48	56	61	71	83	100	144	64
Nov	23	27	30	32	35	36	41	48	55	64	72	82	95	115	165	64
Dec	21	24	26	28	31	33	38	43	51	61	70	80	92	115	140	64
Jan	21	24	26	28	30	32	37	41	47	56	60	67	74	83	101	64
Feb	19	23	26	28	30	31	37	41	47	52	56	60	64	76	96	64
Mar	22	26	29	33	36	39	44	48	53	60	64	68	76	87	118	64
Apr	39	48	55	62	70	77	92	117	144	178	202	233	280	345	442	64
May	151	187	220	251	285	313	377	456	548	642	699	765	844	956	1150	64
Jun	301	370	435	475	516	558	650	738	837	947	1020	1090	1190	1310	1530	64
Jul	74	96	117	140	165	191	239	306	382	468	523	596	677	775	951	65
Aug	33	38	43	47	51	54	61	70	81	98	107	118	132	152	195	65
Sep	24	27	30	33	36	38	41	45	50	56	60	65	72	80	100	66
Ann	24	28	32	36	39	43	51	63	84	137	193	291	434	610	858	

WALLOWA RIVER BASIN

13330500 BEAR CREEK NEAR WALLOWA, OR

LOCATION.--Lat 45°31'37", long 117°33'05", in NW 1/4 NE 1/4 sec.34, T.1 N., R.42 E., Wallowa County, Hydrologic Unit 17060105, on right bank 30 ft downstream from road bridge, 3.0 mi southwest of Wallowa, and at mile 4.4.

DRAINAGE AREA.--68 mi², approximately.

PERIOD OF RECORD.--April to September 1915, April 1924 to September 1985. Monthly discharge only for some periods, published in WSP 1317.

GAGE.--Water-stage recorder. Elevation of gage is 3,250 ft, by barometer. Apr. 13 to Sept. 16, 1915, non-recording gage at site 1.0 mi upstream at different datum. Apr. 22, 1924, to Nov. 2, 1931, water-stage recorder at site 1.5 mi upstream at different datum.

REMARKS.--No regulation. Diversions for irrigation upstream from station. Water for irrigation in Lostine River basin diverted from Little Bear Creek, a tributary upstream from station, in sec.32, T.1 S., R.43 E.

AVERAGE DISCHARGE.--58 years (water years 1925-82), 114 ft³/s, 82,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,730 ft³/s June 15, 1974; maximum gage height, 3.82 ft Apr. 22, 1936 (from floodmark); minimum daily discharge, 3 ft³/s Jan. 20, Feb. 1, 1937.

STATISTICAL SUMMARIES FOR THE PERIOD 1915-1985

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	61	7.6	1936	160	1928	25	28	1.9
Nov	61	8.2	1953	220	1928	39	35	2.9
Dec	61	7.3	1937	194	1959	48	40	3.6
Jan	61	5.2	1937	141	1984	44	31	3.3
Feb	61	4.5	1937	147	1982	46	30	3.2
Mar	61	11	1977	186	1972	65	33	4.9
Apr	63	49	1975	422	1936	170	72	12.2
May	63	138	1977	682	1928	374	99	27.8
Jun	63	112	1926	869	1974	397	159	28.6
Jul	63	18	1977	388	1943	116	80	8.6
Aug	63	8.1	1940	37	1975	19	8.0	1.5
Sep	63	6.3	1935	44	1941	15	8.4	1.1
Ann		46	1977	178	1974	114	26	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	8.0	8.9	9.7	10	11	12	14	16	18	22	26	33	41	52	75	61
Nov	9.2	12	14	15	17	18	21	26	33	41	45	51	60	79	119	61
Dec	9.1	12	14	16	18	19	24	31	39	51	60	68	78	101	149	61
Jan	9.4	10	14	16	18	21	26	31	41	50	54	61	70	86	122	61
Feb	9.2	13	15	20	23	25	29	33	43	53	58	64	73	91	128	61
Mar	18	23	27	32	37	40	47	54	61	71	79	90	101	125	165	61
Apr	45	56	64	71	80	90	111	134	162	201	225	254	289	337	417	63
May	130	162	190	211	234	254	297	346	399	450	482	521	568	631	742	63
Jun	113	160	195	225	253	276	322	370	417	471	506	548	602	677	807	63
Jul	18	22	27	31	35	41	54	72	99	134	157	189	227	287	371	63
Aug	7.6	8.9	11	12	13	14	16	18	20	22	24	26	29	34	41	63
Sep	6.9	7.5	8.2	8.2	10	11	12	13	15	17	18	19	22	26	37	63
Ann	8.6	11	13	15	18	20	29	42	60	96	133	186	258	351	478	

WALLOWA RIVER BASIN

13331500 MINAM RIVER AT MINAM, OR
(Hydrologic bench-mark station)

LOCATION.--Lat 45°37'12", long 117°43'32", in SW 1/4 SW 1/4 sec.29, T.2 N., R.41 E., Wallowa County, Hydrologic Unit 17060105, on left bank 2.3 mi downstream from Squaw Creek, 0.3 mi west of Minam, and at mile 0.3.

DRAINAGE AREA.--240 mi², approximately.

PERIOD OF RECORD.--June 1912 to March 1914, September 1965 to 1987. Monthly discharge only for some periods, published in WSP 1317.

GAGE.--Water-stage recorder. Datum of gage is 2,540.48 ft above National Geodetic Vertical Datum of 1929. June 1912 to March 1914, nonrecording gage at approximately same site at different datum.

REMARKS.--No regulation. Minam Lake, capacity 440 acre-ft, has stored and diverted flow from Minam River since 1917 for irrigation in Lostine River basin.

AVERAGE DISCHARGE.--23 years, 470 ft³/s, 26.59 in/yr, 340,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,260 ft³/s June 16, 1974, gage height, 6.89 ft; maximum gage height, 7.3 ft May 28, 1913, datum then in use; minimum discharge, 10 ft³/s Dec. 6, 1972, Jan. 10, 1973, result of freezeup.

STATISTICAL SUMMARIES FOR THE PERIOD 1912-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	64	1975	173	1969	102	31	1.8
Nov	24	62	1975	493	1974	155	97	2.7
Dec	24	62	1979	604	1978	190	137	3.4
Jan	24	59	1977	412	1969	216	111	3.9
Feb	24	56	1977	567	1986	251	131	4.1
Mar	24	66	1977	697	1986	318	147	5.7
Apr	23	235	1967	888	1913	506	197	8.8
May	23	484	1977	2020	1971	1310	325	23.7
Jun	24	497	1987	3130	1974	1700	649	29.7
Jul	24	125	1977	1390	1975	675	376	12.2
Aug	24	72	1966	276	1912	161	66	2.9
Sep	25	45	1987	179	1978	102	31	1.8
Ann		189	1977	713	1974	470	127	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	60	66	70	73	76	79	85	92	99	111	119	125	141	157	183	24
Nov	60	70	77	81	85	91	107	128	146	163	173	186	206	252	391	24
Dec	51	61	68	75	83	94	116	129	154	189	213	246	307	396	577	24
Jan	55	65	73	84	95	104	131	166	202	244	267	300	358	429	590	24
Feb	63	81	103	116	127	139	171	191	227	266	286	313	364	435	634	24
Mar	99	146	161	178	197	215	237	263	302	357	388	428	490	552	721	24
Apr	183	215	240	266	294	321	375	430	497	579	633	699	791	892	1130	23
May	408	536	614	690	763	864	1020	1190	1400	1620	1700	1820	1980	2180	2590	23
Jun	509	691	803	971	1120	1240	1430	1590	1790	2060	2190	2320	2540	2820	3290	24
Jul	132	164	192	226	268	311	409	535	667	863	961	1110	1250	1360	1650	24
Aug	63	74	84	91	97	105	120	136	159	183	200	223	249	284	337	24
Sep	50	56	63	70	75	80	88	97	106	119	124	129	137	154	181	25
Ann	62	73	83	94	105	118	154	204	279	417	535	712	992	1350	1850	

LOWER GRANDE RONDE RIVER BASIN

13332500 GRANDE RONDE RIVER AT RONDOWA, OR

LOCATION.--Lat 45°43'36", long 117°46'59", in SW 1/4 NW 1/4 sec.23, T.3 N., R.40 E., Wallowa County, Hydrologic Unit 17060106, on right bank at Rondowa, 500 ft downstream from Wallowa River, 13 mi northeast of Elgin, and at mile 81.4.

DRAINAGE AREA.--2,555 mi².

PERIOD OF RECORD.--October 1926 to 1987.

REVISED RECORDS.--WSP 1093: 1928-29, 1932-33, 1936, 1938, 1939(M), 1943. WSP 1397: 1927. WSP 1447: 1927.

GAGE.--Water-stage recorder. Datum of gage is 2,281.87 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow slightly regulated by Wallowa Lake (station 13326000) and small reservoirs. Diversions for irrigation upstream from station, chiefly in vicinity of La Grande, Enterprise, and Wallowa; one transbasin diversion from Sheep Creek in Immaha River basin for irrigation in Wallowa Valley.

AVERAGE DISCHARGE.--61 years, 2,170 ft³/s, 1,572,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft³/s Jan. 30, 1965, gage height, 10.93 ft; minimum discharge, 179 ft³/s Aug. 24, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1927-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	61	343	1937	1980	1960	649	258	2.5
Nov	61	343	1937	3350	1928	864	473	3.3
Dec	61	358	1936	3940	1978	1220	832	4.8
Jan	61	298	1937	3550	1965	1320	833	5.2
Feb	61	395	1937	5030	1965	1840	1110	6.6
Mar	61	611	1977	7600	1972	2810	1320	11.0
Apr	61	1500	1973	8090	1943	4280	1530	16.2
May	61	1970	1977	10000	1948	5540	1760	21.7
Jun	61	1560	1934	9660	1948	4700	1940	17.8
Jul	61	345	1977	4690	1975	1710	960	6.7
Aug	61	269	1931	1150	1984	597	220	2.3
Sep	61	308	1987	997	1984	550	161	2.1
Ann		855	1977	3420	1974	2170	610	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	386	426	453	477	500	516	550	588	621	662	692	737	821	921	1120	61
Nov	419	460	501	535	566	596	646	701	771	860	930	1040	1170	1430	1820	61
Dec	403	466	506	543	579	618	712	819	966	1240	1390	1570	1830	2370	3250	61
Jan	420	487	530	570	612	659	756	907	1080	1350	1520	1730	2000	2590	3700	61
Feb	490	543	619	714	821	919	1120	1350	1630	1950	2180	2530	2970	3620	4950	61
Mar	804	1100	1270	1450	1580	1720	1990	2290	2700	3200	3510	3860	4300	5130	6930	61
Apr	1740	2020	2310	2590	2830	3010	3410	3840	4370	5110	5540	5940	6430	7110	8380	61
May	2260	2930	3360	3640	3940	4140	4610	5150	5770	6550	6950	7370	7830	8600	9780	61
Jun	1510	1940	2350	2720	2970	3260	3820	4320	4930	5680	6100	6530	7080	7900	9090	61
Jul	428	513	598	684	766	851	1060	1310	1610	2020	2280	2600	3010	3530	4370	61
Aug	280	330	367	401	424	449	496	547	600	670	715	771	845	935	1110	61
Sep	311	341	369	392	417	440	480	520	560	607	636	678	728	796	905	61
Ann	389	459	512	557	605	659	819	1140	1700	2550	3130	3740	4450	5530	7060	

LOWER GRANDE RONDE RIVER BASIN

13333000 GRANDE RONDE RIVER AT TROY, OR

LOCATION.--Lat 45°56'47", long 117°26'54", in NE 1/4 NW 1/4 sec.4, T.5 N., R.43 E., Wallowa County, Hydrologic Unit 17060106, on left bank 500 ft downstream from bridge at Troy, 600 ft downstream from Wenaha River, and at mile 45.2.

DRAINAGE AREA.--3,275 mi².

PERIOD OF RECORD.--August 1944 to 1987. Monthly discharge only August 1944, published in WSP 1317.

REVISED RECORDS.--WSP 1397: 1946(M), 1948-50.

GAGE.--Water-stage recorder. Datum of gage is 1,585.98 ft above National Geodetic Vertical Datum of 1929.

Aug. 17, 1944, to Sept. 30, 1949, nonrecording gage at site 500 ft upstream at datum 10.85 ft lower.

Oct. 1, 1949, to Sept. 5, 1963, water-stage recorder at site 500 ft upstream at datum 1.15 ft higher.

REMARKS.--Flow slightly regulated by Wallowa Lake (station 13326000) and small reservoirs. Diversions for irrigation upstream from station, chiefly in vicinity of La Grande, Enterprise, and Wallowa; one transbasin diversion from Big Sheep Creek and tributaries in Imnaha River basin for irrigation in Wallowa Valley.

AVERAGE DISCHARGE.--43 years, 3,111 ft³/s, 2,254,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,200 ft³/s Dec. 23, 1964, gage height, 11.25 ft; minimum discharge, 344 ft³/s Aug. 19-21, 23, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1945-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	43	603	1945	2560	1960	920	306	2.5
Nov	43	688	1953	3020	1974	1250	496	3.3
Dec	43	685	1945	6290	1978	2050	1490	5.6
Jan	43	702	1979	6280	1974	2220	1330	6.1
Feb	43	769	1977	7390	1982	3120	1660	7.8
Mar	43	888	1977	11500	1972	4140	2000	11.3
Apr	43	2260	1968	10800	1956	6320	2230	16.7
May	43	2370	1977	13800	1948	7500	2440	20.5
Jun	43	1950	1987	11600	1948	5950	2170	15.7
Jul	43	520	1977	4950	1975	2260	1040	6.2
Aug	43	448	1977	1390	1984	874	232	2.4
Sep	43	473	1987	1290	1984	802	160	2.1
Ann		1140	1977	4910	1974	3110	805	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	626	668	701	726	750	765	796	834	878	930	961	1020	1100	1200	1480	43
Nov	701	745	772	802	841	877	943	1020	1130	1290	1390	1530	1750	2080	2600	43
Dec	690	747	798	853	909	973	1140	1310	1540	1910	2140	2440	2980	3690	5720	43
Jan	721	787	842	909	989	1090	1230	1470	1760	2240	2540	2830	3380	4460	6340	43
Feb	821	973	1120	1250	1380	1560	1890	2310	2750	3230	3640	4200	4930	6250	8410	43
Mar	1170	1600	1880	2110	2320	2490	2890	3380	4110	4950	5350	5820	6480	7590	9580	43
Apr	2450	2820	3320	3780	4150	4510	5220	5850	6590	7520	8130	8770	9490	10400	11900	43
May	2850	3950	4610	5030	5440	5790	6400	7080	7920	8760	9210	9780	10500	11400	13200	43
Jun	2140	2730	3280	3740	4120	4440	5020	5610	6260	7070	7490	7990	8580	9400	10900	43
Jul	679	810	919	1030	1150	1260	1540	1840	2220	2740	3030	3390	3800	4360	5260	43
Aug	513	591	625	650	670	700	761	829	899	977	1030	1090	1150	1240	1390	43
Sep	526	598	625	653	681	706	741	777	812	854	883	926	971	1040	1160	43
Ann	646	717	776	835	894	979	1220	1710	2530	3740	4560	5400	6360	7630	9540	

MIDDLE COLUMBIA RIVER BASIN

WALLA WALLA RIVER BASIN

14010000 SOUTH FORK WALLA WALLA RIVER NEAR MILTON-FREEWATER, OR

LOCATION.--Lat 45°49'48", long 118°10'08", in NE 1/4 NE 1/4 sec.15, T.4 N., R.37 E., Umatilla County, Hydrologic Unit 17070102, on right bank 1.0 mi downstream from Elbow Creek, 13 mi southeast of Milton-Freewater, and at mile 59.1.

DRAINAGE AREA.--63 mi², approximately.

PERIOD OF RECORD.--February to October 1903, August 1906 to November 1917, May 1931 to 1987. Monthly discharge only for some periods, published in WSP 1318. Published as "12 mi above Milton" 1903, as "above Pacific Power & Light Co.'s intake near Milton" 1907-10, and as "near Milton" 1911-17, 1931-85.

REVISED RECORDS.--WSP 964: Drainage area. WSP 1398: 1912, 1940, drainage area at former site.

GAGE.--Water-stage recorder. Elevation of gage is 2,050 ft from river-profile map. Prior to Mar. 23, 1934, water-stage recorder or nonrecording gage at several sites within 1.5 mi of present site at various datums.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--66 years (water years 1908-17, 1932-87), 178 ft³/s, 38.37 in/yr, 129,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,530 ft³/s Jan. 29, 1965, gage height, 5.60 ft; minimum discharge, 72 ft³/s Feb. 14, 1932.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage about 6 ft Mar. 31, 1931, present site and datum.

STATISTICAL SUMMARIES FOR THE PERIOD 1903-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	65	84	1943	180	1960	111	18	5.3
Nov	65	88	1940	245	1948	135	32	6.3
Dec	64	92	1945	376	1976	169	63	8.1
Jan	66	91	1937	378	1965	175	59	8.4
Feb	67	102	1937	340	1986	190	55	8.3
Mar	67	111	1917	399	1972	216	52	10.4
Apr	67	147	1941	458	1936	281	59	13.0
May	67	123	1934	569	1948	304	85	14.6
Jun	68	96	1987	484	1974	205	76	9.5
Jul	68	84	1931	193	1974	124	22	5.9
Aug	68	81	1931	158	1903	109	15	5.2
Sep	68	81	1931	177	1903	108	16	5.0
Ann		123	1941	255	1974	177	27	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	87	90	92	94	97	99	104	108	113	119	122	126	129	134	146	65
Nov	91	96	100	103	105	108	116	125	132	141	148	156	167	186	225	65
Dec	97	103	107	112	116	120	129	141	155	172	182	196	217	256	324	64
Jan	100	106	111	117	122	126	135	144	158	175	189	208	227	268	343	66
Feb	104	114	122	128	133	138	149	162	178	200	215	231	259	298	365	67
Mar	121	135	145	152	160	168	184	197	212	232	247	265	289	322	392	67
Apr	163	181	193	202	213	223	243	260	284	313	331	350	373	405	457	67
May	165	183	198	214	227	241	266	287	312	345	367	388	417	450	499	67
Jun	114	121	127	134	140	147	160	178	200	225	242	262	290	323	400	68
Jul	93	99	102	105	107	109	114	118	124	129	135	141	146	154	173	68
Aug	87	92	94	96	99	100	104	108	111	115	118	121	125	129	137	68
Sep	86	90	92	94	96	98	103	106	109	113	115	118	122	127	132	68
Ann	92	98	102	106	111	116	126	139	161	192	211	235	268	309	381	

WALLA WALLA RIVER BASIN

14010500 SOUTH FORK WALLA WALLA RIVER BELOW PACIFIC POWER & LIGHT CO.'S PLANT, NEAR MILTON, OR

LOCATION.--Lat 45°53'00", long 118°16'25", in SE 1/4 NW 1/4 sec. 26, T.5 N., R.36 E., Umatilla County, Hydrologic Unit 17070102, 800 ft downstream from Pacific Power & Light Co. powerplant, 1.2 mi upstream from intake of Milton city powerplant, 2 mi upstream from confluence with North Fork, and 5.8 mi southeast of Milton.

DRAINAGE AREA.--80 mi², approximately. At site 1903-6, 1929-38, 81 mi², approximately.

PERIOD OF RECORD.--October 1904 to May 1906, January 1930 to September 1945.

GAGE.--Water-stage recorder. Datum of gage is 1,490.30 ft above National Geodetic Vertical Datum of 1929 (Pacific Power & Light Co. benchmark). Nov. 1, 1903, to May 29, 1906, staff gage and Dec. 18, 1929, to May 26, 1938, water-stage recorder at several sites within 1.2 mi of described site at various datums.

REMARKS.--Small diversions for irrigation of about 300 acres upstream from station. Since 1905, some diurnal fluctuation caused by powerplant upstream from station.

COOPERATION.--Records for 1929-40, furnished by the Oregon Water Resources Department.

AVERAGE DISCHARGE.--16 years (water years 1905, 1931-45), 169 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, probably occurred during floods of May 30, 31, 1906, or Mar. 31, 1931; maximum daily discharge, 3,000 ft³/s (estimated) May 30, 1906, and Mar. 31, 1931; minimum, 1 ft³/s (regulated) June 23, 1940; minimum daily, 57 ft³/s July 22, 1930.

STATISTICAL SUMMARIES FOR THE PERIOD 1904-1945

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	80	1931	180	1904	101	23	5.1
Nov	18	85	1940	239	1904	126	38	6.1
Dec	18	100	1936	335	1934	160	63	8.0
Jan	19	91	1930	283	1934	158	45	7.9
Feb	19	105	1937	290	1940	169	44	7.7
Mar	19	149	1941	360	1932	237	55	11.9
Apr	19	152	1941	547	1904	316	96	15.4
May	19	123	1934	447	1932	289	90	14.5
Jun	18	97	1940	349	1933	180	64	8.7
Jul	18	78	1930	143	1904	104	18	5.2
Aug	18	73	1931	119	1904	88	11	4.5
Sep	18	74	1942	114	1904	90	11	4.4
Ann		129	1941	230	1904	169	26	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	79	81	84	88	89	90	92	94	97	102	105	111	116	129	--	18
Nov	86	91	94	96	98	99	103	111	117	124	134	146	157	179	236	18
Dec	96	101	104	107	110	113	122	133	146	162	177	195	221	259	329	18
Jan	91	98	103	109	113	119	129	140	151	169	179	194	219	239	290	19
Feb	107	111	116	120	125	128	137	144	159	175	185	204	227	255	312	19
Mar	123	133	141	149	156	170	190	207	223	250	272	311	343	358	439	19
Apr	159	183	199	215	228	239	262	281	310	347	372	386	402	462	569	19
May	137	155	173	188	208	222	246	269	293	323	341	365	395	432	488	19
Jun	96	108	114	120	127	132	144	156	170	193	206	232	261	292	348	18
Jul	76	79	83	86	88	90	96	100	103	109	114	118	125	137	151	18
Aug	74	76	78	80	82	83	87	88	90	93	94	96	99	103	115	18
Sep	75	77	79	82	84	85	88	89	91	94	95	98	101	111	--	18
Ann	80	85	90	93	96	101	111	127	148	182	204	235	269	314	383	

WALLA WALLA RIVER BASIN

14010800 NORTH FORK WALLA WALLA RIVER NEAR MILTON-FREEWATER, OR

LOCATION.--Lat 45°53'06", long 118°11'06", in SE 1/4 NW 1/4 sec.28, T.5 N., R.37 E., Umatilla County, Hydrologic Unit 17070102, on right bank 2.8 mi downstream from Little Meadow Canyon, 8.9 mi southeast of Milton-Freewater, and at mile 5.6.

DRAINAGE AREA.--34.4 mi².

PERIOD OF RECORD.--October 1969 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 1,940 ft, from topographic map.

REMARKS.--No regulation; one diversion upstream from station.

AVERAGE DISCHARGE.--18 years, 52.9 ft³/s, 20.88 in/yr, 38,330 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,240 ft³/s Feb. 23, 1986, gage height, 7.02 ft; minimum discharge, 3.3 ft³/s Aug. 26-28, 1986.

STATISTICAL SUMMARIES FOR THE PERIOD 1970-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	6.3	1974	19	1983	10	3.1	1.7
Nov	18	8.3	1970	86	1974	28	21	4.3
Dec	18	11	1977	170	1976	54	41	8.8
Jan	18	12	1979	175	1975	76	49	12.3
Feb	18	14	1977	181	1982	84	41	12.3
Mar	18	42	1977	236	1972	101	47	16.2
Apr	18	55	1973	222	1974	116	42	18.0
May	18	26	1973	198	1974	94	50	15.2
Jun	18	9.3	1987	136	1974	42	39	6.6
Jul	18	5.1	1986	20	1981	12	4.9	2.0
Aug	18	3.7	1986	12	1984	8.4	2.4	1.3
Sep	18	4.7	1979	11	1985	8.0	2.0	1.2
Ann		22	1977	95	1974	52	17	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	5.3	6.7	7.2	7.2	7.8	7.8	8.5	9.2	10	11	12	13	13	14	17	18
Nov	7.0	7.8	7.8	8.6	10	12	14	17	20	26	30	35	45	61	104	18
Dec	9.8	13	15	17	19	22	27	33	42	53	62	79	95	129	180	18
Jan	12	14	16	18	20	23	33	40	56	80	97	114	145	194	273	18
Feb	15	22	31	36	41	45	52	60	70	89	97	109	132	164	235	18
Mar	33	37	40	45	51	55	70	85	99	116	128	147	164	191	224	18
Apr	45	51	57	63	70	77	85	96	110	135	149	173	192	217	253	18
May	23	27	32	38	44	49	60	76	94	120	136	153	172	193	228	18
Jun	8.9	10	13	14	17	19	23	27	31	37	42	49	63	90	160	18
Jul	4.9	6.0	6.4	6.9	7.3	7.8	9.6	12	13	15	16	17	19	21	26	18
Aug	3.6	5.4	5.4	5.8	6.2	6.6	7.0	7.5	8.6	10	11	11	12	12	13	18
Sep	4.3	4.6	5.1	5.4	6.0	6.7	7.1	7.5	7.9	8.3	9.3	10	11	12	13	18
Ann	5.5	7.1	8.0	9.0	10	11	16	25	38	57	71	87	107	139	193	

WALLA WALLA RIVER BASIN

14011000 NORTH FORK WALLA WALLA RIVER NEAR MILTON, OR

LOCATION.--Lat 45°54'08", long 118°16'55", in NE 1/4 NW 1/4 sec.23, T.5 N., R.36 E., Umatilla County, Hydrologic Unit 17070102, on right bank 5 mi southeast of Milton, and at mile 1.2.

DRAINAGE AREA.--43.8 mi².

PERIOD OF RECORD.--January 1930 to October 1969. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 1,467 ft above National Geodetic Vertical Datum of 1929 (levels by U.S.G.S. National Mapping Division). Prior to Oct. 23, 1948, at several sites 0.7 mi downstream at various datums. Oct. 23, 1948 to Mar. 4, 1968, at site 200 ft downstream at same datum.

REMARKS.--No regulation. Diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--39 years, 47.3 ft³/s, 34,270 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,050 ft³/s Jan. 30, 1965, gage height, 8.05 ft; minimum, 0.90 ft³/s Aug. 17, 1955, Aug. 28, 29, 1961.

STATISTICAL SUMMARIES FOR THE PERIOD 1930-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	40	5.2	1964	37	1960	10	7.5	1.9
Nov	39	7.2	1940	107	1948	26	20	4.7
Dec	39	9.0	1953	195	1947	51	42	9.2
Jan	40	6.9	1937	171	1965	55	38	10.0
Feb	40	13	1937	143	1940	65	33	10.7
Mar	40	24	1941	230	1932	81	37	14.6
Apr	40	23	1941	204	1958	119	39	20.7
May	40	9.6	1934	249	1948	95	49	17.2
Jun	40	4.4	1940	169	1948	40	34	7.1
Jul	40	2.3	1940	28	1948	7.7	6.0	1.4
Aug	40	1.9	1940	7.8	1948	3.5	1.4	0.6
Sep	40	2.1	1931	26	1959	5.2	3.7	0.9
Ann		25	1937	87	1948	47	13	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	5.0	5.0	5.0	5.7	5.7	5.7	6.4	7.3	7.3	9.1	9.9	12	14	19	33 40
Nov	6.5	7.4	8.8	9.4	9.9	11	13	16	20	27	31	37	44	60	89 39
Dec	8.6	10	12	13	15	17	24	31	40	53	60	70	83	108	158 39
Jan	7.7	12	15	17	19	22	27	34	41	52	61	73	88	110	160 40
Feb	16	19	22	26	28	31	38	45	57	70	78	89	105	131	191 40
Mar	25	29	33	36	39	43	52	63	76	94	103	113	131	157	203 40
Apr	34	58	66	72	79	84	96	107	119	136	149	163	179	202	233 40
May	17	24	36	45	51	58	72	85	98	116	126	139	158	181	214 40
Jun	4.4	6.9	8.9	12	15	17	21	25	31	39	46	57	74	95	135 40
Jul	2.0	2.0	2.3	2.7	2.7	3.5	4.0	4.7	5.4	7.3	8.2	9.8	13	16	23 40
Aug	2.0	2.0	2.0	2.0	2.0	2.4	2.6	2.9	3.4	3.7	4.1	4.8	4.8	5.8	5.8 40
Sep	1.8	2.1	2.5	2.9	2.9	2.9	3.9	4.5	4.5	5.3	5.3	6.3	6.7	7.4	8.7 40
Ann	2.4	3.0	4.6	5.8	6.5	7.9	14	22	35	53	66	81	98	123	168

UMATILLA RIVER BASIN

14020000 UMATILLA RIVER ABOVE MEACHAM CREEK, NEAR GIBBON, OR

LOCATION.--Lat 45°43'11", long 118°19'20", in SE 1/4 SW 1/4 sec.21, T.3 N., R.36 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on right bank 0.8 mi downstream from Ryan Creek, 2.2 mi upstream from Meacham Creek, 2.5 mi northeast of Gibbon, and at mile 83.1.

DRAINAGE AREA.--131 mi².

PERIOD OF RECORD.--April 1933 to 1987.

REVISED RECORDS.--WSP 1935: 1946-48 (M), 1950 (M), 1953 (M), 1956-59 (M), drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,854.81 ft above National Geodetic Vertical Datum of 1929. Prior to June 27, 1939, at site 1 mi downstream at datum 43.94 ft lower.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--53 years, 228 ft³/s, 23.64 in/yr, 165,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft³/s Jan. 25, 1975, gage height, 9.18 ft, from rating curve extended above 3,500 ft³/s; maximum gage height, 9.50 ft Jan. 29, 1965; minimum discharge, 16 ft³/s Nov. 9, 1965, momentary regulation from unknown source.

STATISTICAL SUMMARIES FOR THE PERIOD 1933-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	54	39	1936	169	1952	59	24	2.2
Nov	54	40	1936	405	1948	128	78	4.6
Dec	54	44	1966	717	1976	242	170	9.0
Jan	54	45	1937	656	1965	265	162	9.9
Feb	54	71	1977	910	1982	322	173	11.0
Mar	54	189	1955	989	1972	382	152	14.3
Apr	55	162	1941	885	1974	537	178	19.4
May	55	67	1934	1130	1948	449	206	16.8
Jun	55	63	1934	591	1974	197	117	7.1
Jul	55	39	1934	110	1948	66	18	2.5
Aug	55	36	1939	63	1975	47	5.9	1.8
Sep	55	34	1935	81	1959	47	7.9	1.7
Ann		114	1977	415	1974	227	57	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	41	43	44	45	46	47	49	51	53	56	59	62	68	83	106	54
Nov	45	48	51	53	56	58	67	82	100	122	136	157	197	260	401	54
Dec	49	54	61	71	82	96	125	152	186	239	273	310	363	472	758	54
Jan	57	67	79	89	98	108	135	164	203	256	295	351	425	551	826	54
Feb	74	100	116	127	139	152	185	224	263	323	369	426	512	638	936	54
Mar	136	153	167	182	200	219	260	305	357	424	464	520	593	730	945	54
Apr	203	249	286	320	348	369	418	467	541	619	668	732	811	925	1090	55
May	132	166	201	235	265	292	344	398	458	528	575	629	703	799	963	55
Jun	61	69	77	84	94	104	128	151	177	209	233	267	317	390	538	55
Jul	42	46	47	49	50	52	55	58	63	68	72	78	86	97	122	55
Aug	38	40	42	43	44	45	46	47	48	51	52	53	55	58	62	55
Sep	37	39	41	42	43	44	46	47	48	50	51	52	53	56	63	55
Ann	41	45	48	50	53	58	78	121	175	252	304	365	438	550	750	

UMATILLA RIVER BASIN

14020300 MEACHAM CREEK AT GIBBON, OR

LOCATION.--Lat 45°41'20", long 118°21'20", in SE 1/4 SE 1/4 sec.31, T.3. N., R.36 E., Umatilla County, Hydrologic Unit 17070103, on left bank 250 ft downstream from Union Pacific railroad bridge, 0.9 mi southeast of Gibbon, and at mile 1.4.

DRAINAGE AREA.--176 mi².

PERIOD OF RECORD.--August 1975 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,803.05 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--12 years, 205 ft³/s, 15.82 in/yr, 148,500 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,750 ft³/s Feb. 20, 1982, gage height, 6.60 ft, from floodmark, from rating curve extended above 2,600 ft³/s; minimum discharge, 6.6 ft³/s Aug. 29, 1984.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 25, 1975, reached a stage of 7.21 ft, from floodmark, discharge, about 8,200 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1975-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	13	1977	26	1985	18	4.7	0.8
Nov	12	15	1979	200	1987	70	57	2.8
Dec	12	18	1977	582	1976	227	186	9.4
Jan	12	22	1977	502	1984	233	174	9.6
Feb	12	27	1977	950	1986	408	277	15.4
Mar	12	134	1977	804	1984	490	185	20.3
Apr	12	228	1986	956	1985	556	256	22.3
May	12	122	1977	580	1984	312	161	12.9
Jun	12	27	1987	354	1984	111	106	4.4
Jul	12	13	1977	52	1984	25	12	1.1
Aug	13	8.5	1986	19	1976	13	3.1	0.6
Sep	13	9.4	1987	16	1978	13	2.1	0.5
Ann		66	1977	301	1984	205	63	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	10	11	12	13	14	14	15	16	18	20	21	22	24	26	35	12
Nov	15	16	17	19	20	23	30	36	50	61	68	82	117	161	--	12
Dec	19	38	51	62	69	83	105	135	168	214	247	287	344	--	--	12
Jan	24	32	40	47	55	63	86	113	187	245	297	344	--	--	--	12
Feb	26	40	64	102	138	161	198	244	304	391	454	543	654	--	--	12
Mar	144	178	200	226	256	282	356	437	504	583	--	--	--	--	--	12
Apr	190	209	228	249	275	302	365	438	540	663	730	795	--	--	--	12
May	80	105	114	128	141	160	191	240	310	--	--	--	--	--	--	12
Jun	23	27	30	33	36	40	50	62	78	106	132	152	188	250	--	12
Jul	12	13	14	14	15	16	18	20	23	27	30	35	41	--	--	12
Aug	7.8	8.4	9.0	9.3	9.7	11	12	14	15	16	16	17	18	19	21	13
Sep	9.1	9.4	9.4	10	11	11	12	13	14	15	15	16	17	18	19	13
Ann	9.9	12	14	15	18	21	35	69	134	218	272	340	435	566	814	

UMATILLA RIVER BASIN

14021000 UMATILLA RIVER AT PENDLETON, OR

LOCATION.--Lat 45°40'20", long 118°47'30", in NW 1/4 NE 1/4 sec.10, T.2 N., R.32 E., Umatilla County, Hydrologic Unit 17070103, on wingwall 0.3 mi downstream from Main Street bridge at Pendleton, 1.5 mi downstream from Wildhorse Creek, 2.8 mi upstream from McKay Creek, and at mile 55.2.

DRAINAGE AREA.--637 mi².

PERIOD OF RECORD.--February 1891 to July 1892, May 1903 to June 1905 (gage heights and discharge measurements only June to December 1904), October 1934 to 1987. Monthly discharge only February 1891 to July 1892, published in WSP 1318.

REVISED RECORDS.--WSP 1398: 1904, 1937.

GAGE.--Water-stage recorder. Datum of gage is 1,054.3 ft above National Geodetic Vertical Datum of 1929 (levels by Oregon Department of Transportation). Apr. 24 to Aug. 26, 1959, nonrecording gage and Aug. 27, 1959, to Feb. 4, 1965, water-stage recorder at 8th Street Bridge 0.7 mi upstream at datum of 1,067.01 ft above National Geodetic Vertical Datum of 1929. Feb. 5 to Nov. 18, 1965, nonrecording gage at Main Street Bridge 1,600 ft upstream at different datum. Nov. 19, 1965, to Sept. 30, 1969, water-stage recorder at 8th Street Bridge 0.7 mi upstream at datum of 1,067.60 ft above National Geodetic Vertical Datum of 1929 Nov. 19, 1965, to Mar. 28, 1967, and at datum of 1,064.02 ft above National Geodetic Vertical Datum of 1929 Mar. 29, 1967, to Sept. 30, 1969. See WSP 1738 for history of changes prior to Apr. 24, 1959.

REMARKS.--No regulation. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--53 years (water years 1935-87), 505 ft³/s, 365,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,200 ft³/s Feb. 23, 1986, gage height, 10.16 ft, datum then in use; minimum discharge, 10 ft³/s July 13-16, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 17,000 ft³/s 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, 1934-58 site and datum, but before channel was improved, discharge, 15,500 ft³/s, estimated by Corps of Engineers.

STATISTICAL SUMMARIES FOR THE PERIOD 1904-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	53	36	1940	246	1960	74	40	1.2
Nov	54	51	1940	855	1904	245	196	4.0
Dec	54	69	1937	1790	1974	574	436	9.6
Jan	55	69	1937	2090	1970	654	464	11.0
Feb	55	107	1977	2370	1982	860	475	13.2
Mar	55	410	1977	2670	1972	1050	478	17.6
Apr	55	299	1941	3540	1904	1340	558	21.8
May	55	198	1968	2520	1948	866	451	14.6
Jun	53	64	1940	949	1984	318	214	5.2
Jul	53	19	1940	189	1942	75	35	1.3
Aug	53	16	1939	76	1976	38	12	0.7
Sep	53	22	1935	84	1959	45	12	0.7
Ann		190	1977	934	1974	505	154	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	39	43	45	47	50	52	56	59	64	71	76	81	90	109	157	53
Nov	58	62	66	71	75	80	93	124	167	213	241	279	377	533	865	54
Dec	71	80	90	119	154	189	268	357	456	579	655	766	912	1200	1750	54
Jan	97	125	152	175	196	221	287	379	494	666	767	907	1100	1380	2120	55
Feb	156	226	281	316	356	401	501	613	734	892	1010	1170	1400	1780	2520	55
Mar	316	366	408	453	505	563	695	834	991	1160	1270	1420	1670	2040	2580	55
Apr	443	585	667	748	808	856	990	1130	1310	1520	1650	1810	2020	2320	2750	55
May	205	270	335	398	453	501	614	744	869	1020	1130	1250	1390	1600	1990	55
Jun	70	84	98	114	128	147	180	226	277	342	389	462	555	680	876	53
Jul	29	35	38	41	43	46	53	59	68	79	88	99	115	141	179	53
Aug	22	25	27	28	30	31	33	36	39	44	48	51	54	58	67	53
Sep	26	30	33	35	36	38	41	43	46	51	53	56	59	64	73	53
Ann	32	39	45	53	61	71	118	223	371	580	710	853	1040	1310	1850	

UMATILLA RIVER BASIN

14022000 UMATILLA RIVER ABOVE MCKAY CREEK, NEAR PENDLETON, OR

LOCATION.--Lat 45°40'20", long 118°50'00", in NE 1/4 sec.8, T.2 N., R.32 E., Umatilla County, Hydrologic Unit 17070103, 0.2 mi upstream from McKay Creek and 2 mi west of Pendleton.

DRAINAGE AREA.--700 mi², approximately.

PERIOD OF RECORD.--January 1923 to September 1934.

GAGE.--Water-stage recorder. Datum of gage is 997.68 ft above National Geodetic Vertical Datum of 1929. May 8 to Oct. 12, 1921, staff gage, and Oct. 13, 1921, to Mar. 3, 1923, water-stage recorder, 200 ft downstream at different datum. Mar. 6, 1923, to Sept. 30, 1930, at about described datum, and Oct. 1, 1930, to Mar. 31, 1931, at datum about 2.0 ft higher.

REMARKS.--Many diversions for irrigation upstream from station. Slight regulation caused by mills upstream.

AVERAGE DISCHARGE.--11 years (water years 1924-34), 451 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,500 ft³/s (estimated), Apr. 1, 1931; minimum, 7 ft³/s Aug. 14, 1924, gage height, 1.87 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1924-1934

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	46	1930	451	1928	99	119	1.9
Nov	11	57	1930	1470	1928	293	406	5.3
Dec	11	79	1929	886	1934	413	280	7.7
Jan	11	85	1930	1530	1928	565	433	10.6
Feb	11	164	1929	1490	1924	767	416	13.1
Mar	11	510	1924	2470	1932	1130	497	21.2
Apr	11	452	1934	2020	1932	1200	516	21.8
May	11	104	1934	1680	1933	660	494	12.4
Jun	11	50	1926	631	1933	223	179	4.0
Jul	11	22	1934	77	1933	43	18	0.8
Aug	11	14	1931	31	1926	24	5.5	0.5
Sep	11	26	1934	129	1927	45	28	0.8
Ann		293	1926	746	1928	453	154	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	40	42	45	47	49	52	56	60	64	68	73	83	123	162	258 11
Nov	57	60	64	70	75	79	87	99	121	160	193	232	362	628	1350 11
Dec	74	82	95	112	125	135	191	272	394	452	495	528	659	900	1310 11
Jan	73	95	105	117	136	174	277	373	525	653	726	815	955	1300	1760 11
Feb	112	152	185	275	299	336	424	530	563	852	1040	1130	1310	1710	2340 11
Mar	353	405	459	517	604	695	791	889	1010	1190	1390	1530	1730	2030	2700 11
Apr	365	452	589	641	688	739	871	982	1220	1390	1500	1670	1850	2090	2770 11
May	99	130	157	184	216	265	390	494	636	867	966	1080	1160	1500	1810 11
Jun	49	51	53	61	69	75	100	135	182	250	317	368	415	505	703 11
Jul	18	21	23	25	27	28	31	35	40	47	51	55	67	82	103 11
Aug	15	17	18	19	20	21	23	24	25	27	28	29	31	34	40 11
Sep	21	24	26	27	29	30	33	37	44	48	50	51	57	62	75 11
Ann	22	27	33	42	51	59	91	153	313	501	637	785	959	1240	1730

UMATILLA RIVER BASIN

14022200 NORTH FORK MCKAY CREEK NEAR PILOT ROCK, OR

LOCATION.--Lat 45°30'24", long 118°36'57", in NE 1/4 SE 1/4 sec.1, T.1 S., R.33 E., Umatilla County, Hydrologic Unit 17070103, Umatilla Indian Reservation, on left bank 10 mi northeast of Pilot Rock and at mile 0.5.

DRAINAGE AREA.--48.6 mi².

PERIOD OF RECORD.--May 1973 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 1,870 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--14 years, 44.8 ft³/s, 32,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft³/s Jan. 25, 1975, gage height, 8.48 ft, from floodmark, from rating curve extended above 150 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.22 ft³/s June 26, 1985 (result of temporary construction upstream).

STATISTICAL SUMMARIES FOR THE PERIOD 1973-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	1.2	1975	8.5	1983	3.1	2.0	0.6
Nov	14	2.9	1979	72	1974	21	21	3.9
Dec	14	3.1	1977	197	1974	62	48	11.8
Jan	14	5.0	1977	170	1976	81	56	15.4
Feb	14	4.4	1977	213	1982	108	55	18.6
Mar	14	50	1977	223	1984	117	43	22.2
Apr	14	20	1987	200	1974	94	50	17.3
May	15	5.4	1987	61	1984	34	19	6.6
Jun	15	2.1	1973	60	1984	12	17	2.3
Jul	15	0.7	1985	4.0	1981	2.0	1.0	0.4
Aug	15	0.7	1987	1.6	1976	1.1	0.3	0.2
Sep	15	0.8	1987	2.7	1977	1.3	0.5	0.2
Ann		10	1977	72	1974	44	15	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.0	1.1	1.2	1.4	1.4	1.4	1.8	1.8	2.3	2.6	3.0	3.3	3.8	5.5	8.5	14
Nov	1.9	2.5	2.5	3.4	3.4	4.6	6.4	8.6	13	18	23	30	39	55	88	14
Dec	2.9	4.1	14	19	22	25	32	39	49	64	75	89	113	145	204	14
Jan	4.6	8.5	12	14	16	21	28	46	62	90	111	134	161	202	308	14
Feb	3.9	16	31	39	47	53	65	81	98	115	130	149	171	205	327	14
Mar	38	44	52	58	63	69	81	96	112	134	146	160	188	227	282	14
Apr	18	22	28	35	42	49	61	77	92	115	134	153	168	194	231	14
May	4.4	5.7	7.9	9.0	11	13	17	23	32	42	47	54	64	82	102	15
Jun	1.5	1.8	2.1	2.1	2.5	2.9	3.5	4.1	6.2	8.1	8.8	12	18	28	51	15
Jul	0.6	0.7	0.8	0.8	0.9	1.1	1.2	1.5	1.7	2.0	2.4	2.8	3.1	3.7	4.7	15
Aug	0.6	0.7	0.7	0.8	0.8	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.4	1.6	1.8	15
Sep	0.7	0.8	0.8	0.8	0.9	1.0	1.1	1.1	1.3	1.5	1.5	1.6	1.7	1.7	2.0	15
Ann	0.7	0.9	1.1	1.4	1.8	2.3	4.6	11	26	48	61	78	98	130	185	

UMATILLA RIVER BASIN

14022500 MCKAY CREEK NEAR PILOT ROCK, OR

LOCATION.--Lat 45°32'57", long 118°46'24", in NW 1/4 SE 1/4 sec.23, T.1 N., R.32 E., Umatilla County, Hydrologic Unit 17070103, on left bank 500 ft upstream from county road bridge, 5.5 mi northeast of Pilot Rock, and at mile 8.2.

DRAINAGE AREA.--180 mi².

PERIOD OF RECORD.--May to August 1921, October 1926 to June 1928, December 1928 to July 1929, October 1929 to 1987. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1398: 1928-29, 1933, 1940.

GAGE.--Water-stage recorder. Datum of gage is 1,343.60 ft above National Geodetic Vertical Datum of 1929. See WSP 1318 or 1738 for history of changes prior to Apr. 9, 1941. Apr. 9, 1941, to July 24, 1963, at site 1,000 ft downstream at datum 7.92 ft lower.

REMARKS.--No regulation. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--59 years (water years 1927, 1930-87), 102 ft³/s, 73,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,400 ft³/s Jan. 30, 1965, gage height, 8.40 ft; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1921-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	60	0.0	1930	97	1942	7.5	16	0.6
Nov	60	0.5	1930	257	1928	42	52	3.4
Dec	60	3.8	1977	460	1974	119	105	9.8
Jan	61	5.0	1930	716	1965	161	138	13.3
Feb	61	11	1977	556	1986	201	119	15.1
Mar	61	67	1968	757	1932	271	135	22.3
Apr	61	42	1941	782	1958	274	135	21.8
May	62	8.4	1934	500	1948	121	95	10.0
Jun	62	1.0	1931	179	1984	37	48	3.0
Jul	60	0.0	1932	45	1942	4.5	6.9	0.4
Aug	59	0.0	1930	3.7	1975	0.7	0.9	0.1
Sep	59	0.0	1931	28	1941	1.9	3.9	0.2
Ann		27	1977	188	1948	103	40	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equalled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.2	0.6	1.0	1.6	2.6	3.3	4.9	5.8	7.4	8.9	13	24	60
Nov	0.5	1.9	2.5	4.7	6.1	7.9	10	14	22	33	41	51	72	102	191	60
Dec	4.6	6.8	8.9	14	22	29	51	71	93	126	147	172	207	266	415	60
Jan	13	17	24	30	36	43	62	85	113	155	181	218	272	367	579	61
Feb	19	38	49	59	70	80	101	128	166	223	258	299	361	451	628	61
Mar	63	77	93	107	124	143	174	217	260	310	343	383	437	519	689	61
Apr	56	80	104	126	145	160	192	229	272	319	352	390	436	504	613	61
May	9.7	15	21	27	33	39	55	76	102	142	166	192	231	283	389	62
Jun	1.0	1.7	2.3	4.1	5.5	6.2	10	15	20	29	36	48	67	92	151	62
Jul	0.0	0.0	0.2	0.4	0.4	0.7	1.2	1.6	2.7	3.8	4.4	5.3	6.8	11	19	60
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.6	0.9	1.0	1.3	1.5	1.8	2.7	59
Sep	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.9	1.5	1.9	1.9	3.2	4.3	5.9	59
Ann	0.0	0.2	0.5	1.2	1.8	3.6	9.8	26	59	105	135	177	229	297	435	

UMATILLA RIVER BASIN

14023500 MCKAY CREEK NEAR PENDLETON, OR

LOCATION.--Lat 45°36'34", long 118°47'55", in SE 1/4 NW 1/4 sec.34, T.2 N., R.32 E., Umatilla County, Hydrologic Unit 17070103, on right bank 35 ft upstream from diversion dam, 0.2 mi downstream from McKay Dam, 4.5 mi south of Pendleton, and at mile 4.7.

DRAINAGE AREA.--186 mi².

PERIOD OF RECORD.--November 1918 to May 1919, October 1919 to September 1923, October 1924 to September 1927, November 1927 to September 1943, April 1944 to October 1947 (irrigation seasons only), March 1948 to current year. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1154: Drainage area. WSP 1398: 1923.

GAGE.--Water-stage recorder. Concrete control since Mar. 23, 1928. Datum of gage is 1,163.71 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). See WSP 1318 or 1738 for history of changes prior to Nov. 16, 1948.

REMARKS.--Flow completely regulated since 1927 by McKay Reservoir (station 14023000). Many diversions for irrigation upstream from station. From 1932 to 1970, records excluded flow in Elder ditch, which diverts water between the gage and the control. Since 1971, records include flow in Elder ditch. During the irrigation season, from 1953 to 1982, Elder ditch diverted a maximum of 1.5 ft³/s; since 1982, diversion has been less than 1.0 ft³/s.

AVERAGE DISCHARGE.--50 years (water years 1933-43, 1949-87), 98.5 ft³/s, 71,360 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 3,250 ft³/s Feb. 10, 1921, gage height, 4.4 ft, site and datum then in use, from rating curve extended above 1,200 ft³/s; no flow at times each year.

STATISTICAL SUMMARIES FOR THE PERIOD 1928-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	54	0.0	1931	228	1930	9.7	39	0.8
Nov	54	0.0	1930	188	1929	3.7	25	0.3
Dec	54	0.0	1930	103	1943	2.2	14	0.2
Jan	55	0.0	1930	197	1943	16	43	1.4
Feb	55	0.0	1930	501	1965	36	96	2.9
Mar	55	0.0	1929	540	1972	76	135	6.6
Apr	57	0.0	1930	615	1958	129	161	10.9
May	60	5.3	1962	562	1948	99	91	8.7
Jun	60	9.0	1941	339	1963	148	69	12.5
Jul	60	161	1942	418	1961	282	59	24.6
Aug	60	88	1973	383	1959	274	69	23.9
Sep	58	0.0	1934	261	1948	113	71	9.5
Ann		42	1973	177	1984	97	35	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	15	54
Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	54
Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.9	54
Jan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.0	4.2	139	55
Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.0	1.7	4.8	26	126	238	55
Mar	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.8	8.0	46	114	198	301	431	55
Apr	0.0	0.0	0.0	0.8	2.3	4.0	6.5	11	84	158	192	236	311	401	554	57
May	5.1	6.4	7.6	8.2	10	15	32	54	86	117	142	171	205	251	346	60
Jun	6.9	8.6	17	25	40	66	108	139	178	214	230	246	269	293	338	60
Jul	134	177	208	224	238	249	269	288	307	325	337	349	361	379	405	60
Aug	102	135	168	205	232	246	274	295	312	328	337	345	353	365	411	60
Sep	0.0	0.0	0.0	0.0	0.0	0.0	46	107	145	187	209	229	247	266	293	58
Ann	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	41	143	191	235	273	310	391	

UMATILLA RIVER BASIN

14025000 BIRCH CREEK AT RIETH, OR

LOCATION.--Lat 45°39'10", long 118°52'45", in SE 1/4 sec.13, T.2 N., R.31 E., Umatilla County, Hydrologic Unit 17070103, on right bank 600 ft downstream from road bridge, 0.3 mi southwest of Rieth, and at mile 0.2.

DRAINAGE AREA.--291 mi².

PERIOD OF RECORD.--May to August 1921, March to July 1922, April to September 1923, April to September 1927, January to June 1928, November 1928 to August 1929, October 1929 to September 1976. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 951.04 ft above National Geodetic Vertical Datum of 1929. See WSP 1738 for history of changes prior to July 24, 1957.

REMARKS.--No regulation. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--47 years (water years 1930-76), 48.9 ft³/s, 35,430 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,200 ft³/s Jan. 30, 1965, gage height, 6.40 ft; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1921-1976

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	45	0.0	1930	47	1942	3.6	7.7	0.6
Nov	47	0.0	1930	96	1942	14	18	2.4
Dec	47	0.0	1936	172	1965	43	47	7.6
Jan	48	2.5	1937	320	1965	65	68	11.4
Feb	48	12	1933	268	1965	77	57	12.3
Mar	49	18	1935	355	1972	108	59	18.9
Apr	51	3.3	1934	323	1922	159	76	26.9
May	52	0.1	1930	434	1948	97	86	17.0
Jun	52	0.0	1940	161	1950	26	33	4.5
Jul	51	0.0	1930	26	1942	1.9	4.5	0.3
Aug	49	0.0	1927	5.4	1965	0.4	0.8	0.1
Sep	48	0.0	1930	9.5	1941	0.8	2.0	0.1
Ann		11	1968	109	1948	48	26	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	1.9	3.7	6.0	7.5	11	16	45
Nov	0.0	0.0	0.0	0.0	0.2	1.6	5.7	8.7	12	16	18	20	22	30	63	47
Dec	0.0	0.2	3.4	8.5	11	12	16	21	27	44	55	68	89	112	160	47
Jan	4.5	9.3	14	15	17	18	23	29	39	58	72	87	113	150	218	48
Feb	14	16	18	22	26	30	39	53	72	93	105	122	144	172	221	48
Mar	18	27	35	44	52	59	73	86	103	124	135	153	172	202	262	49
Apr	6.2	33	56	70	83	94	115	135	162	195	212	234	256	289	363	51
May	0.2	0.4	1.1	2.5	10	22	42	65	89	122	141	168	200	237	317	52
Jun	0.0	0.1	0.2	0.2	0.3	0.5	1.2	5.1	13	24	31	41	53	70	106	52
Jul	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.7	0.9	1.4	2.8	6.1	51
Aug	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.4	0.4	0.6	49
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.5	0.7	3.9	48
Ann	0.0	0.0	0.1	0.1	0.2	0.2	3.1	12	22	47	66	86	112	151	215	

UMATILLA RIVER BASIN

14026000 UMATILLA RIVER AT YOAKUM, OR

LOCATION.--Lat 45°40'38", long 119°02'09", in SW 1/4 SW 1/4 sec.2, T.2 N., R.30 E., Umatilla County, Hydrologic Unit 17070103, at left bank on downstream side of highway bridge, 0.5 mi northeast of Yoakum, 2.5 mi downstream from abandoned Furnish Reservoir, 12.0 mi downstream from Birch Creek, and at mile 37.7.

DRAINAGE AREA.--1,280 mi², approximately.

PERIOD OF RECORD.--May 1903 to 1987. Records published as "above Furnish Reservoir, near Yoakum" October 1916 to September 1934 are equivalent.

REVISED RECORDS.--WSP 794: 1906(M). WSP 1398: 1904-6, 1908-9, 1922-23, 1926, 1936.

GAGE.--Water-stage recorder. Datum of gage is 768.21 ft above National Geodetic Vertical Datum of 1929. See WSP 1318 or 1738 for history of changes prior to Oct. 21, 1948.

REMARKS.--Slight regulation by Furnish Reservoir, capacity 3,900 acre-ft, beginning in 1910 and continuing until 1934 when reservoir filled with silt. Flow regulated to some extent since 1927 by McKay Reservoir (station 14023000). Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--84 years, 680 ft³/s, 492,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s May 30, 1906, gage height, about 15.0 ft, site and datum then in use, from floodmarks, from rating curve extended about 6,600 ft³/s; minimum discharge, 12 ft³/s Aug. 10-12, 1908, Aug. 4, 1910.

STATISTICAL SUMMARIES FOR THE PERIOD 1904-1926 (BEFORE THE CONSTRUCTION OF MCKAY RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	40	1920	224	1921	91	50	1.1
Nov	23	58	1918	827	1904	263	210	3.1
Dec	23	107	1915	1360	1907	580	425	7.0
Jan	23	123	1915	2760	1918	772	621	9.3
Feb	23	273	1905	2880	1907	1150	785	12.6
Mar	23	450	1917	3580	1910	1640	828	19.7
Apr	23	843	1911	4640	1904	2180	1070	25.3
May	23	230	1926	4790	1917	1270	1030	15.2
Jun	23	47	1926	1620	1917	411	413	4.8
Jul	23	19	1926	255	1913	85	59	1.0
Aug	23	18	1914	109	1913	39	21	0.5
Sep	23	30	1908	92	1907	49	15	0.6
Ann		339	1905	1140	1904	707	242	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	41	45	49	52	54	57	60	70	76	94	107	119	138	159	229	23
Nov	60	67	74	82	88	92	104	118	139	195	242	281	389	592	1110	23
Dec	90	100	117	129	151	173	236	303	416	536	646	766	990	1350	2120	23
Jan	135	166	193	219	235	264	339	439	515	734	914	1120	1370	1970	2790	23
Feb	244	275	325	366	408	453	541	699	881	1230	1500	1810	2180	2740	3650	23
Mar	327	512	593	696	803	888	1070	1240	1480	1910	2130	2340	2690	3190	4020	23
Apr	618	807	916	1030	1160	1280	1550	1840	2170	2580	2810	3110	3550	4070	4950	23
May	224	320	379	431	486	537	664	803	1030	1330	1530	1800	2200	2820	3770	23
Jun	54	73	95	111	121	135	179	229	297	401	450	539	688	876	1360	23
Jul	21	27	30	35	37	40	49	63	81	95	102	116	138	170	238	23
Aug	17	19	20	24	25	27	29	31	37	44	49	54	61	70	95	23
Sep	27	31	34	36	38	39	41	44	49	53	56	60	65	75	94	23
Ann	29	38	46	57	68	87	130	240	419	693	888	1161	1550	2113	3036	

UMATILLA RIVER BASIN

14026000 UMATILLA RIVER AT YOAKUM, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1928-1987 (AFTER THE COMPLETION OF MCKAY RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	60	44	1940	455	1928	97	68	1.2
Nov	60	58	1937	1540	1928	271	250	3.3
Dec	60	75	1937	2050	1965	620	495	7.8
Jan	60	82	1937	2280	1965	760	555	9.6
Feb	60	115	1977	3060	1982	993	591	11.4
Mar	60	413	1977	3650	1972	1310	662	16.5
Apr	60	358	1941	3330	1974	1650	679	20.2
May	60	256	1968	3450	1948	1070	592	13.5
Jun	60	244	1968	1260	1984	492	213	6.0
Jul	60	211	1931	456	1960	354	63	4.5
Aug	60	123	1973	416	1959	306	71	3.9
Sep	60	22	1935	305	1974	163	73	2.0
Ann		248	1977	1240	1974	672	218	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	43	47	51	54	56	59	66	74	81	91	99	108	126	182	246	60
Nov	64	72	79	86	91	97	109	136	190	240	270	311	414	594	975	60
Dec	85	96	108	133	164	195	270	377	490	629	721	837	1010	1330	2000	60
Jan	107	134	166	202	229	261	326	417	575	784	906	1090	1330	1730	2430	60
Feb	164	234	298	341	387	437	536	664	826	1050	1210	1390	1670	2090	2960	60
Mar	357	419	464	520	610	706	866	1040	1210	1460	1630	1850	2150	2600	3360	60
Apr	470	643	769	864	960	1050	1240	1450	1660	1970	2130	2350	2610	2990	3540	60
May	299	350	397	452	505	559	699	871	1070	1290	1430	1570	1750	2040	2570	60
Jun	257	289	312	331	343	354	377	399	427	464	501	566	659	814	1050	60
Jul	215	256	272	290	307	321	342	361	380	400	409	419	430	444	459	60
Aug	134	156	204	245	265	285	305	324	340	358	368	379	389	405	426	60
Sep	33	40	46	51	57	66	116	155	200	243	260	275	292	310	332	60
Ann	59	81	106	148	205	250	317	376	458	661	827	1030	1290	1650	2320	

UMATILLA RIVER BASIN

14032000 BUTTER CREEK NEAR PINE CITY, OR

LOCATION.--Lat 45°32'48", long 119°18'14", in SE 1/4 SW 1/4 sec.22, T.1 N., R.28 E., Morrow County, Hydrologic Unit 17070103, on right bank 0.3 mi downstream from Mattlock Canyon, 6.0 mi southeast of Pine City, 15 mi southwest of Echo, and at mile 28.4.

DRAINAGE AREA.--291 mi².

PERIOD OF RECORD.--April to June 1928, November 1928 to June 1929, October 1929 to September 1930, January 1931 to September 1932, February to June 1933, October 1933 to September 1941, January to June 1942, October 1942 to September 1987 (discontinued). Prior to October 1945, monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1218: 1950(M).

GAGE.--Water-stage recorder. Elevation of gage is 1,400 ft, by barometer. Prior to Oct. 1, 1944, at datum 1.1 ft higher and Oct. 1, 1944, to Sept. 6, 1949, at datum 1.0 ft higher.

REMARKS.--No regulation. Several small diversions for irrigation upstream from station. Water is diverted into headwaters of Butter Creek from Fivemile Creek, a tributary of Camas Creek in John Day River basin, for irrigation downstream from station.

AVERAGE DISCHARGE.--55 years (water years 1930, 1932, 1934-41, 1943-87), 28.6 ft³/s, 20,720 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,800 ft³/s Feb. 21, 1949, gage height, 12.4 ft, present datum, from floodmark, from rating curve extended above 440 ft³/s on basis of computation of peak flow over dam; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1928-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	55	0.0	1930	19	1983	3.2	4.0	1.0
Nov	57	0.0	1930	47	1974	8.4	9.4	2.4
Dec	57	0.0	1936	142	1974	23	29	6.9
Jan	59	0.0	1937	259	1965	39	47	11.7
Feb	60	3.0	1939	215	1986	54	44	14.7
Mar	60	7.8	1935	272	1983	73	45	21.8
Apr	60	4.5	1934	160	1984	76	35	21.9
May	60	0.9	1934	128	1948	45	29	13.6
Jun	60	0.0	1930	54	1984	14	12	4.2
Jul	56	0.0	1930	16	1984	3.4	3.8	1.0
Aug	56	0.0	1930	8.0	1984	1.3	2.1	0.4
Sep	56	0.0	1930	12	1984	1.7	2.8	0.5
Ann		5.1	1934	69	1983	28	16	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.2	0.5	1.0	1.8	2.8	3.5	3.5	4.3	5.9	7.4	13	55
Nov	0.0	0.0	0.0	0.9	2.2	2.8	4.3	5.2	6.2	7.3	8.5	11	15	19	28	57
Dec	0.0	0.0	2.9	4.4	5.4	6.5	7.4	8.9	14	20	24	30	41	57	89	57
Jan	1.0	1.9	4.9	6.1	6.8	7.7	9.8	16	22	34	41	52	67	93	144	59
Feb	3.5	6.8	8.2	10	13	15	24	34	44	60	70	85	102	127	168	60
Mar	11	15	20	24	29	35	47	59	72	88	98	110	127	151	186	60
Apr	14	25	33	41	46	52	62	71	81	95	102	109	119	133	161	60
May	2.8	5.4	8.8	15	18	22	30	39	50	61	67	73	83	94	118	60
Jun	0.0	0.7	2.0	3.2	3.9	5.9	7.7	10	14	18	21	24	27	35	45	60
Jul	0.0	0.0	0.0	0.0	0.1	0.3	0.6	1.4	2.0	3.6	4.6	5.8	7.0	8.7	14	56
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.8	1.4	2.1	2.8	4.3	5.8	56
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.7	1.0	1.6	2.5	3.4	4.7	9.0	56
Ann	0.0	0.0	0.2	0.6	1.1	2.1	4.9	8.4	15	27	38	50	64	84	117	

UMATILLA RIVER BASIN

14033500 UMATILLA RIVER NEAR UMATILLA, OR

LOCATION.--Lat 45°54'11", long 119°19'33", in SW 1/4 NW 1/4 sec.21, T.5 N., R.28 E., Umatilla County, Hydrologic Unit 17070103, on left bank 1.6 mi downstream from West Division main canal of Umatilla project, 1.2 mi southeast of Umatilla, and at mile 2.1.

DRAINAGE AREA.--2,290 mi², approximately.

PERIOD OF RECORD.--October 1903 to 1987.

REVISED RECORDS.--WSP 794: Drainage area. WSP 1398: 1909, 1911, 1914, 1928, 1935.

GAGE.--Water-stage recorder. Datum of gage is 330.47 ft above National Geodetic Vertical Datum of 1929. Oct. 21, 1903, to Jan. 25, 1931, nonrecording gage.

REMARKS.--Some regulation since 1927 by McKay Reservoir (station 14023000). Many diversions upstream from station for irrigation of lands upstream and downstream from station; Brownell Canal diverts downstream from station. Diversions since 1908 to Cold Springs Reservoir, an off-channel reservoir, capacity, 52,380 acre-ft.

AVERAGE DISCHARGE.--60 years (water years 1928-87), 463 ft³/s, 335,400 acre-ft/yr. Water years prior to 1928 not included in computation of average discharge owing to increased regulation and diversion since 1927.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,800 ft³/s Jan. 30, 1965, gage height, 10.75 ft; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1928-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	60	4.2	1978	481	1928	88	82	1.6
Nov	60	40	1932	1300	1928	257	213	4.6
Dec	60	78	1937	1950	1974	557	454	10.2
Jan	60	89	1930	2370	1965	724	579	13.3
Feb	60	86	1977	2990	1982	942	621	15.7
Mar	60	154	1977	3680	1972	1120	698	20.5
Apr	60	4.6	1968	3060	1958	1160	718	20.6
May	60	1.6	1977	3360	1948	556	569	10.2
Jun	60	1.3	1979	805	1950	114	183	2.0
Jul	60	0.8	1985	149	1942	20	20	0.4
Aug	60	1.0	1985	68	1953	21	17	0.4
Sep	60	0.6	1987	124	1946	34	28	0.6
Ann		78	1977	981	1974	463	218	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	2.2	5.7	8.3	11	13	16	27	46	75	122	144	161	179	210	256 60
Nov	41	90	102	113	122	130	145	159	180	209	241	282	353	497	849 60
Dec	95	106	118	128	137	151	208	301	422	553	644	753	914	1230	1900 60
Jan	101	116	132	150	177	212	288	371	503	732	862	1020	1280	1690	2490 60
Feb	107	147	199	252	301	356	477	624	776	1020	1170	1320	1630	2090	3040 60
Mar	93	202	290	356	427	506	691	845	1040	1300	1440	1690	2000	2400	3220 60
Apr	9.9	33	178	292	414	521	721	934	1180	1490	1680	1910	2180	2590	3210 60
May	5.0	7.0	10	13	18	31	133	289	486	697	824	981	1190	1480	2060 60
Jun	1.4	3.0	5.0	6.5	7.4	8.3	12	15	20	38	62	100	175	319	616 60
Jul	1.1	2.1	4.1	5.4	6.7	7.8	8.5	13	15	18	21	25	31	39	62 60
Aug	1.1	1.6	2.9	4.3	5.9	7.7	11	14	17	24	30	36	42	50	64 60
Sep	1.1	2.8	5.1	6.3	7.6	11	15	18	27	42	50	59	68	83	117 60
Ann	3.3	6.8	8.7	12	17	25	74	137	224	429	577	761	994	1330	2090

WILLOW CREEK BASIN

14034500 WILLOW CREEK AT HEPPNER, OR

LOCATION.--Lat 45°21'02", long 119°32'56", in SE 1/4 NW 1/4 sec.35, T.2 S., R.26 E., Morrow County, Hydrologic Unit 17070104, on right bank at Heppner, 100 ft upstream from Court Street bridge, 800 ft southeast of Morrow County courthouse, 0.2 mi downstream from Willow Creek Dam and at mile 52.2.

DRAINAGE AREA.--96.8 mi².

PERIOD OF RECORD.--May 1951 to 1987.

REVISED RECORDS.--WDR OR-83-1: Drainage area.

GAGE.--Water-stage recorder. Concrete control since September 1985. Datum of gage is 1,952.73 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by Willow Creek Lake, 0.2 mi upstream, since Feb. 16, 1983. Many diversions for irrigation upstream from station. Part of flow of Ditch Creek (John Day River basin) is diverted to Willow Creek upstream from station.

AVERAGE DISCHARGE.--31 years (water years 1951-82), 19.1 ft³/s, 13,840 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 812 ft³/s May 10, 1957, gage height, 6.15 ft, from rating curve extended above 230 ft³/s; maximum gage height, 6.46 ft May 25, 1971, backwater from Shobe Canyon; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, about 36,000 ft³/s June 14, 1903, result of slope-area measurement (see WSP 96). Discharge for flood of Feb. 22, 1949, was 1,700 ft³/s, result of slope-area measurement.

STATISTICAL SUMMARIES FOR THE PERIOD 1952-1982 (PRIOR TO CONSTRUCTION OF WILLOW CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	0.0	1978	8.3	1958	1.6	1.6	0.7
Nov	31	1.4	1977	26	1974	5.8	4.5	2.5
Dec	31	2.0	1977	82	1974	18	20	8.2
Jan	31	1.7	1977	102	1974	28	27	12.7
Feb	31	1.2	1977	89	1958	32	23	13.0
Mar	31	6.6	1977	83	1982	38	23	17.0
Apr	31	3.6	1968	127	1979	48	27	21.0
May	31	1.0	1968	120	1979	40	26	17.9
Jun	31	0.9	1968	40	1954	13	9.6	5.7
Jul	31	0.1	1968	6.9	1982	2.3	1.8	1.0
Aug	31	0.0	1961	1.2	1965	0.3	0.2	0.1
Sep	31	0.0	1960	3.6	1965	0.4	0.7	0.2
Ann		2.6	1968	37	1958	19	9.7	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.1	0.1	0.1	0.2	0.4	0.7	1.1	1.8	2.2	2.8	2.8	3.5	5.7	31
Nov	0.7	1.2	1.6	2.1	2.7	2.7	3.8	4.3	4.9	5.5	6.2	6.6	8.3	11	17	31
Dec	2.3	3.4	3.4	4.2	5.0	5.4	6.4	7.9	11	16	20	25	32	41	69	31
Jan	3.5	4.2	4.2	5.5	6.1	6.6	8.1	13	18	27	33	41	52	67	97	31
Feb	4.3	5.9	7.1	8.7	11	14	18	24	30	37	42	48	56	69	95	31
Mar	6.5	7.9	9.5	12	14	16	24	32	39	47	52	60	70	80	98	31
Apr	9.0	15	21	24	27	30	36	42	48	55	61	68	76	87	107	31
May	1.7	6.9	11	15	18	21	27	33	39	47	52	58	65	77	117	31
Jun	1.1	1.4	2.0	3.6	4.8	5.9	7.3	8.8	13	15	17	19	23	29	38	31
Jul	0.1	0.1	0.2	0.3	0.4	0.5	0.6	1.0	1.3	2.0	2.5	3.2	4.7	6.5	9.5	31
Aug	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.5	0.8	31
Sep	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.4	0.5	0.6	1.0	1.8	31
Ann	0.0	0.1	0.3	0.4	0.7	1.3	3.9	6.6	11	20	26	33	42	54	77	

WILLOW CREEK BASIN

14034800 RHEA CREEK NEAR HEPPNER, OR

LOCATION.--Lat 45°15'46", long 119°36'51", in NW 1/4 SW 1/4 sec.32, T.3 S., R.26 E., Morrow County, Hydrologic Unit 17070104, on left bank 150 ft downstream from road bridge, 0.8 mi downstream from Sanford Canyon, 8 mi southwest of Heppner, and at mile 25.6. Prior to Nov. 4, at site 1,000 ft downstream.

DRAINAGE AREA.--120 mi², approximately.

PERIOD OF RECORD.--August 1960 to 1987.

REVISED RECORD.--WDR OR-84-1: 1983.

GAGE.--Water-stage recorder. Elevation of gage is 2,320 ft, from topographic map. Prior to May 28, 1976, at site 0.6 mi downstream at different datum and May 28, 1976 to Nov. 3, 1982, at site 1,000 ft downstream at datum 10.5 ft lower.

REMARKS.--No regulation. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--27 years, 23.4 ft³/s, 16,950 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,280 ft³/s June 10, 1969, gage height, 7.05 ft, site and datum then in use, from rating curve extended above 130 ft³/s on basis of slope-area measurement at gage height 6.72 ft; maximum gage height, 7.41 ft Dec. 22, 1964, site and datum then in use; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	27	0.8	1977	12	1985	3.8	3.2	1.4
Nov	27	2.5	1977	48	1974	9.1	9.4	3.2
Dec	27	2.9	1977	86	1974	25	24	9.1
Jan	27	3.2	1977	124	1974	39	33	14.4
Feb	27	3.2	1977	132	1986	48	34	16.0
Mar	27	7.2	1968	201	1983	58	45	21.3
Apr	27	4.7	1968	155	1984	48	37	17.0
May	27	2.4	1968	90	1983	30	25	11.2
Jun	27	0.7	1973	52	1984	11	11	3.9
Jul	27	0.1	1973	19	1984	3.6	4.1	1.3
Aug	27	0.0	1967	9.7	1984	1.8	2.3	0.7
Sep	27	0.2	1967	10	1984	2.2	2.4	0.8
Ann		3.6	1968	59	1984	23	13	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.7	1.0	1.2	1.4	1.7	1.7	2.1	2.5	2.5	3.7	3.7	4.5	6.7	8.5	12	27
Nov	1.6	2.1	2.5	2.5	3.0	3.0	3.5	4.1	5.9	8.0	9.3	12	15	20	31	27
Dec	2.3	3.2	3.8	4.5	5.6	6.4	8.3	12	17	24	27	34	47	66	89	27
Jan	3.5	4.2	6.0	6.8	7.8	9.3	14	19	26	35	42	53	68	94	148	27
Feb	5.7	7.3	9.2	13	15	17	24	31	43	54	63	74	88	105	148	27
Mar	7.2	9.3	12	14	16	21	28	42	57	72	81	90	106	127	165	27
Apr	6.1	9.4	16	19	22	25	30	36	45	52	56	63	74	91	137	27
May	2.4	3.6	6.2	9.9	13	14	18	20	25	32	36	43	53	68	107	27
Jun	0.6	1.3	1.9	2.8	3.4	4.1	5.7	6.9	8.3	12	14	15	18	25	41	27
Jul	0.0	0.0	0.2	0.2	0.4	0.5	1.4	1.7	2.8	4.5	5.0	5.5	6.5	8.6	11	27
Aug	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.8	1.5	1.8	2.3	2.8	3.5	5.1	6.3	27
Sep	0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.2	1.6	2.4	2.4	3.0	4.8	5.8	7.8	27
Ann	0.2	0.6	1.1	1.6	2.2	3.3	4.9	7.6	13	21	26	34	47	63	97	

WILLOW CREEK BASIN

14036000 WILLOW CREEK NEAR ARLINGTON, OR

LOCATION.--Lat 45°45'12", long 120°00'35", in NE 1/4 SW 1/4 sec.12, T.3 N., R.22 E., Gilliam County, Hydrologic Unit 17070104, on right bank at bridge on abandoned highway, 3.8 mi downstream from Eightmile Canyon, 10 mi east of Arlington, and at mile 3.7.

DRAINAGE AREA.--850 mi², approximately.

PERIOD OF RECORD.--March to July 1906, August 1960 to September 1979. Records for March to August 1905 at site just upstream from Eightmile Canyon not equivalent owing to diversions and inflow.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 291.26 ft above National Geodetic Vertical Datum of 1929. Mar. 1 to July 21, 1906, nonrecording gage at site 2.6 mi upstream at different datum. Aug. 24, 1960 to July 1, 1964, water-stage recorder at site 430 ft downstream at same datum.

REMARKS.--No regulation. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--19 years, 31.3 ft³/s, 22,680 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft³/s probably occurred Jan. 14, 1974, gage height, 11.18 ft, from floodmark, from rating curve extended above 1,900 ft³/s on basis of slope-area measurement at gage height 11.05 ft; maximum gage height, 13.50 ft Feb. 7, 1979, from floodmarks; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1979

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	0.0	1964	2.8	1966	0.7	0.7	0.2
Nov	19	0.1	1969	85	1974	6.6	19	1.7
Dec	19	0.6	1968	311	1965	41	81	11.2
Jan	19	0.7	1968	478	1974	84	124	22.9
Feb	19	0.5	1968	430	1979	73	103	18.1
Mar	19	0.1	1977	129	1972	49	50	13.4
Apr	19	0.0	1968	211	1963	62	65	16.4
May	19	0.0	1968	194	1979	46	56	12.6
Jun	19	0.0	1968	75	1969	10	18	2.7
Jul	19	0.0	1961	10	1978	1.3	2.4	0.3
Aug	19	0.0	1963	11	1965	1.7	3.5	0.5
Sep	19	0.0	1961	3.3	1965	0.7	0.9	0.2
Ann		0.4	1968	93	1974	31	28	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.4	0.6	0.9	1.2	1.2	1.5	1.5	2.2	19
Nov	0.0	0.0	0.1	0.3	0.5	0.5	0.6	0.8	1.1	1.9	1.9	2.5	3.4	5.2	14	19
Dec	0.0	0.5	0.6	0.9	1.2	1.2	2.1	4.6	8.9	17	24	34	51	75	177	19
Jan	0.5	1.0	2.3	3.8	5.6	7.9	14	21	35	54	74	96	133	192	317	19
Feb	0.2	0.4	1.9	3.7	5.2	7.3	19	36	48	65	75	88	111	141	213	19
Mar	0.1	0.2	0.4	0.9	1.6	3.3	8.1	22	37	56	71	92	117	--	--	19
Apr	0.0	0.1	0.2	0.4	1.8	7.3	24	38	53	69	81	97	114	145	214	19
May	0.0	0.0	0.0	0.2	0.7	2.1	9.8	21	34	46	55	65	81	124	--	19
Jun	0.0	0.0	0.0	0.0	0.1	0.2	0.4	1.0	2.8	4.2	5.4	8.2	14	23	33	19
Jul	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.6	0.7	1.0	1.2	2.0	5.1	19
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.6	1.0	1.4	2.6	19
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.6	0.7	1.4	2.1	3.3	19
Ann	0.0	0.0	0.0	0.1	0.2	0.2	0.5	1.1	3.8	13	24	37	54	82	147	

UPPER JOHN DAY RIVER BASIN

14037500 STRAWBERRY CREEK ABOVE SLIDE CREEK, NEAR PRAIRIE CITY, OR

LOCATION.--Lat 44°20'30", long 118°39'20", in SE 1/4 NW 1/4 sec.20, T.14 S., R.34 E., Grant County, Hydrologic Unit 17070201, on left bank 100 ft upstream from Slide Creek, 8.5 mi south of Prairie City, and at mile 9.0.

DRAINAGE AREA.--7.00 mi².

PERIOD OF RECORD.--October 1930 to 1987. Prior to October 1944, published as "above South Fork, near Prairie City."

REVISED RECORDS.--WSP 1488: 1932-33. WSP 1738: Drainage area.

GAGE.--Water-stage recorder and log control. Datum of gage is 4,909.57 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow affected by natural storage in Strawberry Lake. No diversion upstream from station.

AVERAGE DISCHARGE.--57 years, 13.0 ft³/s, 25.22 in/yr, 9,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 354 ft³/s May 31, 1983, gage height, 2.45 ft, from rating curve extended above 190 ft³/s; maximum gage height, 3.23 ft May 24, 1956 (backwater from logs); minimum discharge, 1.0 ft³/s Mar. 20, 1955.

STATISTICAL SUMMARIES FOR THE PERIOD 1931-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	57	1.4	1932	7.0	1963	3.3	1.1	2.2
Nov	57	1.7	1932	10	1974	3.6	1.6	2.3
Dec	57	1.6	1932	14	1938	4.2	2.5	2.7
Jan	57	1.7	1931	8.4	1965	3.7	1.7	2.4
Feb	57	1.5	1937	12	1963	3.5	2.0	2.1
Mar	57	1.3	1955	16	1986	3.8	2.3	2.5
Apr	57	1.9	1955	22	1934	9.4	4.7	5.9
May	57	9.6	1977	71	1956	37	13	24.3
Jun	57	16	1934	130	1974	53	22	34.0
Jul	57	6.7	1977	65	1984	21	13	14.2
Aug	57	2.8	1977	15	1984	7.4	2.7	4.8
Sep	57	1.6	1931	7.1	1984	4.0	1.2	2.6
Ann		4.8	1977	22	1974	13	3.6	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	1.9	2.2	2.4	2.5	2.5	2.8	3.0	3.0	3.2	3.6	3.8	3.8	4.0	4.5	5.4 57
Nov	1.7	2.0	2.2	2.4	2.4	2.8	3.0	3.2	3.5	3.8	3.8	4.1	4.4	5.1	6.5 57
Dec	1.7	2.1	2.3	2.3	2.5	2.8	2.8	3.4	3.4	3.7	4.1	4.5	5.0	6.7	10 57
Jan	1.7	1.8	2.1	2.1	2.4	2.4	2.8	3.0	3.2	3.7	4.0	4.6	5.3	6.5	7.5 57
Feb	1.5	1.8	1.8	2.1	2.1	2.3	2.7	2.7	3.2	3.5	3.8	4.1	4.8	5.7	7.9 57
Mar	1.6	1.8	1.9	2.1	2.4	2.4	2.6	2.9	3.5	3.9	4.3	4.7	5.2	6.3	7.7 57
Apr	2.2	2.4	3.0	3.3	4.1	4.6	5.7	6.4	7.9	11	13	15	17	21	26 57
May	8.6	12	15	17	20	23	28	32	38	46	51	56	60	68	84 57
Jun	19	23	29	32	36	38	45	51	56	63	67	73	79	89	108 57
Jul	7.2	7.9	8.8	11	12	13	14	17	19	24	27	31	36	43	56 57
Aug	3.3	3.9	4.2	4.6	5.0	5.4	5.9	6.4	7.5	8.2	8.9	8.9	11	12	14 57
Sep	2.2	2.6	2.8	2.9	3.1	3.3	3.6	3.9	4.1	4.3	4.6	4.8	5.1	5.7	6.4 57
Ann	1.9	2.2	2.2	2.6	2.6	3.1	3.6	4.2	6.1	8.8	12	17	26	38	57

JOHN DAY RIVER BASIN

14038500 JOHN DAY RIVER AT PRAIRIE CITY, OR

LOCATION.--Lat 44°27'15", long 118°43'00", in SE 1/4 NE 1/4 sec.10, T.13 S., R.33 E., Grant County, Hydrologic Unit 17070201, on right bank 600 ft upstream from outlet of Prairie power canal, 0.3 mi downstream from Dixie Creek, 0.8 mi southwest of Prairie City, and at mile 262.0.

DRAINAGE AREA.--231 mi².

PERIOD OF RECORD.--October 1916 to September 1917 (gage heights only), March 1925 to September 1968. Monthly discharge only March 1925 published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 3,494.59 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 30, 1926, staff gage at site 600 ft downstream, just below outlet of Prairie power canal, at different datum. Mar. 30, 1926, to Aug. 23, 1943, staff gage at various sites and datums just above outlet of Prairie power canal. Aug. 24, 1943, to Sept. 22, 1965, water-stage recorder at datum 2.07 ft higher. Sept. 23, 1965, to July 27, 1966, water-stage recorder at present site and datum.

REMARKS.--No regulation. Several diversions upstream including Prairie power canal (not used for power since February 1952) which diverts upstream from station in SE 1/4 sec.7, T.13 S., R.34 E., for irrigation upstream and downstream from station.

AVERAGE DISCHARGE.--27 years (water years 1926-52), 113 ft³/s, including flow of Prairie power canal, 81,810 acre-ft/yr; 15 years (water years 1953-68), 114 ft³/s, river only, 82,530 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,400 ft³/s Dec. 22, 1964, gage height, 8.07 ft, present datum, from rating curve extended above 1,400 ft³/s; minimum, 2 ft³/s Dec. 8, 21, 22, 1932, Aug. 10, 1934.

STATISTICAL SUMMARIES FOR THE PERIOD 1926-1951

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	8.7	1945	108	1926	42	26	4.0
Nov	26	6.5	1940	124	1928	50	29	4.7
Dec	25	8.4	1945	163	1938	66	37	6.4
Jan	26	12	1944	220	1928	67	45	6.4
Feb	26	12	1939	174	1926	84	43	7.4
Mar	26	27	1944	310	1932	136	74	13.0
Apr	26	45	1941	304	1943	180	74	16.6
May	26	38	1944	531	1948	198	114	18.9
Jun	26	21	1939	392	1948	134	99	12.4
Jul	26	9.5	1940	87	1927	33	19	3.2
Aug	26	4.0	1940	47	1927	19	12	1.9
Sep	26	10	1943	77	1927	28	18	2.6
Ann		42	1940	161	1928	89	33	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	8.3	11	12	14	17	21	29	41	49	60	63	66	71	81	98	26
Nov	10	13	17	21	24	28	41	53	59	64	68	71	79	93	115	26
Dec	8.3	13	22	29	34	41	52	60	66	75	84	92	104	119	145	25
Jan	9.8	14	19	24	29	34	46	59	68	78	83	93	105	119	164	26
Feb	14	20	23	30	38	48	61	69	79	99	111	126	145	170	222	26
Mar	20	43	54	67	73	78	91	107	135	160	172	188	209	247	302	26
Apr	44	61	82	99	114	129	147	169	190	220	237	257	275	304	363	26
May	41	57	70	81	95	112	155	184	212	248	268	287	312	344	429	26
Jun	18	25	32	38	47	57	81	107	129	160	181	203	230	274	365	26
Jul	7.2	11	12	14	15	18	22	26	33	42	47	51	58	68	82	26
Aug	6.4	7.0	8.5	8.5	10	11	13	15	17	22	26	33	37	42	50	26
Sep	7.9	9.8	11	12	13	14	17	22	28	36	41	45	50	58	71	26
Ann	9.2	12	15	20	25	31	46	59	73	96	115	138	172	213	281	

JOHN DAY RIVER BASIN

14038500 JOHN DAY RIVER AT PRAIRIE CITY, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1952-1968

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	17	45	1965	102	1958	67	13	5.0
Nov	17	61	1962	90	1963	74	8.1	5.3
Dec	17	24	1952	274	1965	98	56	7.2
Jan	17	15	1952	316	1965	103	65	7.6
Feb	17	64	1955	264	1965	134	63	9.0
Mar	17	81	1955	293	1956	149	57	11.0
Apr	17	79	1968	377	1952	209	88	14.9
May	17	64	1966	438	1958	229	111	16.9
Jun	17	71	1966	315	1953	186	65	13.3
Jul	17	24	1968	105	1953	58	23	4.3
Aug	17	19	1961	81	1965	33	14	2.5
Sep	17	26	1962	66	1959	39	9.8	2.8
Ann		72	1966	193	1965	115	33	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	39	44	49	54	58	61	65	68	71	75	77	79	81	88	96	17
Nov	61	63	64	66	67	68	71	73	76	80	81	83	84	88	94	17
Dec	29	55	60	64	66	69	74	79	84	91	97	105	114	134	201	17
Jan	21	55	62	65	67	70	76	81	90	101	107	118	133	156	214	17
Feb	66	69	73	76	80	84	97	105	116	134	150	169	193	224	322	17
Mar	73	81	87	93	98	102	110	121	134	147	157	171	189	224	328	17
Apr	86	98	110	117	126	136	158	177	206	239	264	296	321	363	427	17
May	51	78	103	117	127	138	169	208	249	295	317	345	372	403	473	17
Jun	42	67	87	101	114	124	144	170	193	230	252	275	302	328	363	17
Jul	25	29	31	33	36	39	46	54	61	69	73	79	86	98	120	17
Aug	14	16	18	19	20	21	24	27	32	37	42	48	54	63	76	17
Sep	19	22	25	26	28	29	32	36	40	46	49	52	55	61	72	17
Ann	22	30	37	47	57	63	72	80	95	119	136	158	192	247	332	

UPPER JOHN DAY RIVER BASIN

14038530 JOHN DAY RIVER NEAR JOHN DAY, OR

LOCATION.--Lat 44°25'07", long 118°54'19", in SW 1/4 SE 1/4 sec.19, T.13 S., R.32 E., Grant County, Hydrologic Unit 17070201, on left bank 1,200 ft downstream from Dog Creek, 2.5 mi east of John Day, and at mile 250.8.

DRAINAGE AREA.--386 mi².

PERIOD OF RECORD.--October 1968 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 3,130.56 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation upstream. Many diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--19 years, 220 ft³/s, 159,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,830 ft³/s June 9, 1969, gage height, 10.80 ft, from floodmark; minimum discharge, 3.5 ft³/s Aug. 26-28, 1969.

STATISTICAL SUMMARIES FOR THE PERIOD 1969-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	73	1974	156	1983	98	24	3.8
Nov	19	87	1979	244	1974	132	40	4.9
Dec	19	92	1977	385	1974	171	71	6.6
Jan	19	88	1977	514	1971	227	107	8.8
Feb	19	88	1977	689	1982	262	141	9.2
Mar	19	88	1977	746	1984	340	174	13.1
Apr	19	88	1977	718	1984	350	140	13.1
May	19	108	1977	845	1984	455	189	17.6
Jun	19	73	1977	810	1982	376	221	14.0
Jul	19	25	1973	314	1982	124	87	4.8
Aug	19	10	1973	116	1976	46	32	1.8
Sep	19	25	1987	145	1984	60	30	2.2
Ann		74	1977	393	1984	220	80	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	67	71	73	76	79	81	87	94	101	107	110	115	125	141	154 19
Nov	82	87	90	93	96	100	106	115	129	144	152	161	173	190	227 19
Dec	88	95	100	107	113	117	128	140	155	176	187	204	236	286	376 19
Jan	82	92	101	109	118	126	142	159	182	217	248	292	349	419	585 19
Feb	94	109	120	130	142	153	172	197	224	257	273	290	327	425	686 19
Mar	107	129	160	174	185	199	228	271	332	393	427	471	543	652	825 19
Apr	120	149	197	215	238	259	299	329	365	405	430	463	503	567	684 19
May	122	177	219	247	273	300	351	410	477	552	593	643	707	796	916 19
Jun	64	85	106	125	151	181	252	313	394	501	563	614	691	761	858 19
Jul	30	36	47	53	58	62	70	82	100	139	163	184	221	260	342 19
Aug	7.3	9.7	12	17	21	23	28	35	45	58	63	69	77	92	118 19
Sep	15	19	22	24	29	33	42	52	66	78	84	93	104	117	137 19
Ann	25	45	65	77	87	96	116	144	185	251	296	348	414	513	682

UPPER JOHN DAY RIVER BASIN

14040500 JOHN DAY RIVER AT PICTURE GORGE, NEAR DAYVILLE, OR

LOCATION.--Lat 44°31'15", long 119°37'30", in SW 1/4 sec.17, T.12 S., R.26 E., Grant County, Hydrologic Unit 17070201, on right bank 0.7 mi upstream from Rock Creek, 5.5 mi northwest of Dayville, and at mile 205.1.

DRAINAGE AREA.--1,680 mi², approximately.

PERIOD OF RECORD.--April 1926 to 1987. Monthly discharge only April 1926, published in WSP 1318.

REVISED RECORDS.--WSP 1218: 1950. WSP 1348: Drainage area. WSP 1448: 1926, 1928, 1932(M), 1936.

GAGE.--Water-stage recorder. Datum of gage is 2,229.84 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 11, 1926, nonrecording gage and Oct. 11, 1926, to Sept. 30, 1930, water-stage recorder at same site at datum 2.50 ft higher. Oct. 1, 1930, to Aug. 28, 1970, at datum 2.00 ft higher.

REMARKS.--No regulation. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--61 years, 503 ft³/s, 364,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,170 ft³/s Dec. 22, 1964, gage height, 14.97 ft; minimum discharge, 1.0 ft³/s for several days in August and September 1930, Aug. 8, 9, 1936, Sept. 9, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1927-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	61	14	1936	337	1985	146	68	2.5
Nov	61	74	1937	640	1985	234	98	3.8
Dec	61	105	1937	1380	1965	375	253	6.3
Jan	61	97	1937	1710	1965	477	360	8.0
Feb	61	136	1929	2490	1982	671	463	10.3
Mar	61	196	1977	3080	1983	974	585	16.4
Apr	61	146	1934	3310	1952	1250	641	20.4
May	61	79	1934	2950	1948	1070	619	18.1
Jun	61	78	1931	1900	1948	610	399	10.0
Jul	61	7.2	1936	577	1982	138	132	2.3
Aug	61	1.6	1936	228	1984	48	51	0.8
Sep	61	2.6	1934	319	1984	64	60	1.1
Ann		124	1934	1210	1984	503	237	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	14	45	66	86	99	107	122	140	159	181	193	207	221	244	281 61
Nov	103	124	141	153	163	173	192	208	226	246	264	285	310	359	445 61
Dec	116	143	161	174	188	201	233	268	311	376	417	463	533	649	941 61
Jan	127	155	173	189	205	220	260	306	374	462	525	613	737	962	1330 61
Feb	150	184	222	247	279	315	410	485	572	723	809	908	1060	1300	1850 61
Mar	233	284	358	421	476	526	645	761	900	1100	1220	1380	1590	1840	2590 61
Apr	234	427	552	649	722	793	950	1110	1290	1520	1650	1810	2040	2350	2720 61
May	163	293	387	478	567	650	796	951	1120	1310	1420	1580	1760	2020	2400 61
Jun	64	126	169	219	262	308	402	502	622	756	831	908	1050	1230	1530 61
Jul	5.3	7.9	13	21	30	38	58	83	112	154	186	226	276	351	481 61
Aug	2.1	3.6	5.6	7.6	12	15	22	30	39	54	62	73	94	123	165 61
Sep	3.2	6.2	9.0	14	17	21	28	39	54	77	91	109	129	164	208 61
Ann	11	27	50	84	115	144	196	258	368	551	678	832	1030	1290	1780

JOHN DAY RIVER BASIN

14041500 NORTH FORK JOHN DAY RIVER NEAR DALE, OR

LOCATION.--Lat 44°59'55", long 118°56'25", in SE 1/4 SE 1/4 sec.35, T.6 S., R.31 E., Grant County, Hydrologic Unit 17070202, on right bank 0.2 mi downstream from Desolation Creek and 0.8 mi northeast of Dale.

DRAINAGE AREA.--525 mi².

PERIOD OF RECORD.--October 1929 to September 1958.

GAGE.--Water-stage recorder. Datum of gage is 2,775.63 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--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 upstream from station. Several small diversions for irrigation and mining upstream from station. Since 1865 water has been diverted upstream from station at times to North Fork Burnt River.

AVERAGE DISCHARGE.--29 years (water years 1929-58), 404 ft³/s, 292,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,170 ft³/s May 26, 1948, gage height, 10.48 ft; minimum, 6 ft³/s Nov. 3, 1936, gage height, 1.40 ft, result of freezeup; minimum daily, 10 ft³/s Nov. 11, Nov. 29 to Dec. 1, 1936, Jan. 7, 8, 1937.

STATISTICAL SUMMARIES FOR THE PERIOD 1930-1958

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	29	39	1937	147	1942	70	27	1.5
Nov	29	31	1937	274	1942	96	48	1.9
Dec	29	37	1937	463	1942	145	111	3.0
Jan	29	28	1937	343	1956	130	64	2.7
Feb	29	35	1937	496	1958	178	96	3.4
Mar	29	83	1955	593	1934	276	128	5.8
Apr	29	198	1955	2050	1943	1010	457	20.5
May	29	253	1934	3300	1958	1710	766	35.8
Jun	29	212	1931	2590	1948	905	557	18.4
Jul	29	60	1931	544	1953	206	120	4.3
Aug	29	27	1931	131	1953	69	28	1.5
Sep	29	31	1934	117	1941	55	19	1.1
Ann		191	1944	682	1956	405	139	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	37	40	43	45	47	50	54	59	67	77	85	92	101	114	143	29
Nov	33	43	51	55	59	64	74	81	92	103	113	125	139	159	213	29
Dec	36	44	51	58	65	71	85	97	116	145	170	196	231	292	419	29
Jan	35	52	67	73	77	83	96	111	124	138	151	172	196	225	281	29
Feb	54	69	83	96	103	111	124	133	156	200	218	239	268	305	398	29
Mar	83	98	116	130	147	164	187	214	245	295	325	367	452	545	711	29
Apr	197	247	308	361	439	544	672	797	989	1230	1380	1580	1850	2130	2460	29
May	428	587	716	858	956	1050	1320	1560	1810	2090	2280	2490	2730	3020	3570	29
Jun	188	254	317	385	433	494	602	711	845	1050	1140	1320	1530	1840	2270	29
Jul	57	70	80	89	98	108	129	153	184	225	252	285	330	400	546	29
Aug	30	35	40	43	46	49	56	65	72	81	87	94	101	113	131	29
Sep	30	32	35	38	41	44	49	53	58	63	65	71	74	82	97	29
Ann	37	46	53	60	68	77	99	128	180	277	381	573	816	1200	1920	

JOHN DAY RIVER BASIN

14042000 CAMAS CREEK NEAR LEHMAN, OR

LOCATION.--Lat 45°10'16", long 118°43'53", in SW 1/4 sec.33, T.4 S., R.33 E., Umatilla County, Hydrologic Unit 17070202, on left bank 2.1 mi downstream from Bowman Creek, 3.5 mi northwest of Lehman, and at mile 25.5.

DRAINAGE AREA.--60.7 mi².

PERIOD OF RECORD.--October 1950 to September 1970.

GAGE.--Water-stage recorder. Datum of gage is 3,969.53 ft above National Geodetic Vertical Datum of 1929 (levels by State Highway Department).

REMARKS.--No regulation. A few small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--20 years, 43.3 ft³/s, 31,370 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,880 ft³/s Dec. 21, 1955, gage height, 4.56 ft, from rating curve extended above 900 ft³/s; minimum, 0.23 ft³/s Aug. 24, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1951-1970

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	20	1.2	1953	10	1960	3.2	2.4	0.6
Nov	20	1.8	1953	36	1969	10	10	2.0
Dec	20	1.9	1966	155	1956	34	38	6.7
Jan	20	2.7	1955	156	1965	41	43	8.2
Feb	20	2.5	1966	207	1958	62	53	11.1
Mar	20	5.9	1955	196	1960	81	47	15.9
Apr	20	27	1968	269	1969	167	71	31.7
May	20	13	1968	203	1956	91	51	17.9
Jun	20	6.4	1968	75	1953	23	18	4.4
Jul	20	1.4	1968	10	1969	4.3	2.7	0.8
Aug	20	0.5	1966	2.2	1954	1.4	0.5	0.3
Sep	20	0.9	1967	2.7	1970	1.5	0.5	0.3
Ann		18	1968	81	1956	43	15	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.2	1.2	1.4	1.5	1.5	1.7	1.7	2.0	2.2	2.8	3.1	3.5	4.0	5.0	6.4	20
Nov	1.8	1.8	2.1	2.4	2.4	2.7	3.1	4.0	5.3	7.7	10	15	21	31	45	20
Dec	1.5	1.8	2.2	2.2	3.4	4.8	9.5	14	20	30	36	43	51	70	116	20
Jan	2.4	2.9	4.5	5.0	5.9	7.0	11	15	23	34	41	50	68	97	148	20
Feb	2.5	3.6	6.1	9.5	14	20	26	34	47	66	76	87	104	143	244	20
Mar	5.0	10	15	19	25	31	39	50	65	91	105	124	151	194	269	20
Apr	32	59	68	77	83	92	113	139	168	203	229	256	292	321	389	20
May	12	18	25	32	38	46	58	71	88	109	122	137	153	175	217	20
Jun	4.5	5.1	5.7	6.5	8.4	9.3	12	15	19	24	28	32	37	46	78	20
Jul	1.1	1.3	1.5	1.7	1.9	1.9	2.4	2.8	3.6	4.0	4.6	5.2	5.9	8.7	13	20
Aug	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.4	1.5	1.7	1.8	2.0	2.1	2.5	20
Sep	0.7	0.8	0.9	1.0	1.1	1.1	1.1	1.3	1.5	1.6	1.6	1.9	2.1	2.3	2.5	20
Ann	1.0	1.3	1.3	1.7	2.2	2.2	4.5	9.4	19	35	48	66	91	128	201	

NORTH FORK JOHN DAY RIVER BASIN

14042500 CAMAS CREEK NEAR UKIAH, OR

LOCATION.--Lat 45°09'25", long 118°49'10", in SE 1/4 SE 1/4 sec.3, T.5 S., R.32 E., Umatilla County, Hydrologic Unit 17070202, on right bank 1.2 mi upstream from Cable Creek, 5.8 mi east of Ukiah, and at mile 18.7.

DRAINAGE AREA.--121 mi².

PERIOD OF RECORD.--May 1914 to September 1917, November 1919 to July 1920, November 1920 to June 1924, March 1932 to June 1940 (fragmentary), November 1940 to 1987. Monthly discharge only for some periods, published in WSP 1318. Published as "above Cable Creek, near Ukiah" 1914-17, 1919-24.

REVISED RECORDS.--WSP 1448: 1916, 1920, 1922(M), 1924.

GAGE.--Water-stage recorder. Datum of gage is 3,588.61 ft above National Geodetic Vertical Datum of 1929 (levels by State Highway Department). May 1, 1914, to June 30, 1924, nonrecording gage and Mar. 1, 1932, to July 2, 1940, water-stage recorder at site 1.2 mi downstream at different datum.

REMARKS.--No regulation. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--51 years (water years 1915-17, 1922-23, 1942-87), 96.9 ft³/s, 70,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,840 ft³/s Jan. 30, 1965, gage height, 5.21 ft; maximum gage height, 5.92 ft Jan. 24, 1982 (ice jam); minimum discharge recorded, 1.0 ft³/s Aug. 9, 1932, June 24 to July 2, 1940.

STATISTICAL SUMMARIES FOR THE PERIOD 1914-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	52	3.4	1975	39	1942	9.2	6.1	0.8
Nov	55	4.4	1917	140	1974	28	29	2.4
Dec	55	4.7	1955	263	1956	65	60	5.8
Jan	55	3.5	1915	339	1965	76	79	6.7
Feb	56	5.0	1915	384	1916	115	102	9.2
Mar	62	5.0	1917	575	1972	190	125	16.7
Apr	63	52	1968	658	1920	336	142	28.5
May	65	18	1934	925	1917	238	158	20.9
Jun	65	4.9	1940	314	1917	79	65	6.7
Jul	57	3.1	1932	77	1923	15	12	1.3
Aug	54	2.2	1973	10	1976	5.1	2.0	0.4
Sep	54	2.4	1967	14	1941	5.5	2.3	0.5
Ann		36	1966	171	1948	96	33	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3.5	3.9	4.3	4.8	4.8	5.3	5.9	6.6	7.4	9.0	10	12	14	16	21	52
Nov	4.9	6.1	6.7	7.2	7.7	8.3	10	13	16	23	30	39	49	66	118	55
Dec	4.8	5.8	7.0	8.6	13	18	24	34	47	65	76	88	111	146	220	55
Jan	5.6	8.5	11	13	17	19	24	33	46	66	80	97	121	171	259	55
Feb	6.8	12	15	21	25	29	47	60	83	114	134	159	200	263	429	56
Mar	15	29	44	55	64	72	91	123	162	214	252	299	356	444	595	62
Apr	80	111	137	160	179	199	239	286	342	410	454	503	561	633	755	63
May	33	53	77	93	108	123	151	183	232	283	313	354	402	471	636	65
Jun	11	14	17	20	23	27	36	46	61	86	103	126	154	199	261	65
Jul	3.1	4.2	4.2	4.9	5.7	6.8	8.1	9.9	12	15	18	21	25	33	45	57
Aug	2.2	2.7	2.9	3.2	3.2	3.5	3.9	4.3	4.7	5.6	6.2	6.2	7.4	8.2	11	54
Sep	2.6	2.9	2.9	3.3	3.6	3.6	4.0	4.5	5.0	5.5	5.5	6.2	6.8	8.5	11	54
Ann	3.2	4.2	5.0	5.8	6.9	8.4	13	24	47	86	118	158	211	287	434	

MIDDLE FORK JOHN DAY RIVER BASIN

14044000 MIDDLE FORK JOHN DAY RIVER AT RITTER, OR

LOCATION.--Lat 44°53'20", long 119°08'25", in SW 1/4 NW 1/4 sec.8, T.8 S., R.30 E., Grant County, Hydrologic Unit 17070203, on left bank 0.2 mi south of Ritter, 0.8 mi downstream from Twelvemile Creek, and at mile 14.9.

DRAINAGE AREA.--515 mi².

PERIOD OF RECORD.--October 1929 to 1987.

REVISED RECORDS.--WSP 739: 1931. WSP 1218: 1950. WSP 1448: 1930-32, 1937, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,544.56 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--58 years, 256 ft³/s, 185,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,730 ft³/s Jan. 30, 1965, gage height, 8.39 ft, from rating curve extended above 2,200 ft³/s; maximum gage height, 9.13 ft Feb. 1, 1963, ice jam; minimum discharge, 0.90 ft³/s Aug. 19, 20, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1930-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	58	17	1937	99	1983	44	17	1.5
Nov	58	20	1937	231	1974	73	43	2.4
Dec	58	29	1933	482	1956	128	101	4.2
Jan	58	23	1937	580	1965	161	137	5.3
Feb	58	31	1937	707	1958	244	166	7.4
Mar	58	69	1977	1210	1972	457	260	15.2
Apr	58	175	1968	1430	1984	754	316	24.2
May	58	79	1934	1460	1984	706	326	23.4
Jun	58	80	1931	1130	1984	363	236	11.6
Jul	58	17	1973	285	1984	81	54	2.7
Aug	58	3.8	1966	98	1984	30	18	1.0
Sep	58	10	1935	108	1984	31	16	1.0
Ann		85	1977	539	1984	256	102	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	22	25	27	29	31	32	36	39	43	50	53	57	63	73	88	58
Nov	25	32	36	39	42	45	50	56	63	74	82	91	103	129	184	58
Dec	21	32	39	45	49	53	64	77	101	135	155	178	213	264	369	58
Jan	31	39	47	52	58	64	77	94	116	151	170	204	244	314	492	58
Feb	41	54	67	80	94	107	138	167	208	261	291	337	416	516	714	58
Mar	87	129	164	188	203	225	280	343	418	509	571	655	767	915	1250	58
Apr	234	292	340	385	439	489	583	674	776	899	984	1100	1200	1350	1600	58
May	208	263	323	373	419	467	555	648	747	862	930	1000	1110	1220	1410	58
Jun	66	89	112	137	157	179	226	283	348	430	486	547	624	764	955	58
Jul	17	23	29	33	38	42	50	59	72	88	100	114	132	160	221	58
Aug	6.2	9.0	12	15	17	19	23	27	32	37	40	44	50	59	72	58
Sep	12	15	17	19	20	21	24	28	31	36	39	43	47	53	64	58
Ann	17	24	30	35	41	47	63	93	156	260	335	435	563	734	1020	

NORTH FORK JOHN DAY RIVER BASIN

14044500 FOX CREEK AT GORGE, NEAR FOX, OR

LOCATION.--Lat 44°37'30", long 119°15'10", in SW 1/4 sec.8, T.11 S., R.29 E., Grant County, Hydrologic Unit 17070202, on left bank 0.5 mi upstream from head of gorge and 6 mi southwest of Fox.

DRAINAGE AREA.--90.2 mi²; at site used prior to June 12, 1952, 91.5 mi².

PERIOD OF RECORD.--October 1930 to September 1958.

GAGE.--Water-stage recorder. Elevation of gage is 4,240 ft National Geodetic Vertical Datum of 1929 (from topographic map). Prior to June 12, 1952, at site 0.5 mi downstream at different datum.

REMARKS.--Diversion for irrigation of 4,800 acres upstream from station.

AVERAGE DISCHARGE.--28 years (water years 1931-58), 25.9 ft³/s, 18,750 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,860 ft³/s Mar. 25, 1952, gage height, 5.85 ft, former site and datum, from rating curve extended above 200 ft³/s on basis of slope-area measurement of peak flow; no flow at times in each year.

STATISTICAL SUMMARIES FOR THE PERIOD 1931-1958

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	28	0.0	1931	3.1	1942	0.6	0.9	0.2
Nov	28	0.0	1932	12	1942	2.3	3.0	0.7
Dec	28	0.0	1931	60	1956	10.0	14	3.3
Jan	28	0.1	1932	95	1956	16	25	5.3
Feb	28	0.1	1933	130	1958	34	33	10.4
Mar	28	3.0	1955	232	1956	74	54	24.5
Apr	28	1.8	1934	180	1952	86	44	27.4
May	28	0.3	1934	293	1948	65	59	21.4
Jun	28	0.1	1931	141	1948	18	28	5.9
Jul	28	0.0	1931	14	1948	1.9	3.0	0.6
Aug	28	0.0	1931	3.1	1948	0.2	0.6	0.1
Sep	28	0.0	1931	1.8	1941	0.2	0.5	0.1
Ann		1.8	1934	67	1948	25	15	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.5	0.6	1.3	2.4	2.9	28
Nov	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.8	1.3	2.1	2.1	2.7	3.6	4.7	7.8	28
Dec	0.0	0.1	0.1	0.1	0.3	0.4	1.0	1.6	3.2	6.7	8.6	12	17	23	42	28
Jan	0.1	0.1	0.4	0.8	1.0	1.0	1.7	3.9	5.4	8.6	10	15	24	38	76	28
Feb	0.1	0.2	0.9	1.5	2.7	3.8	5.3	9.1	18	32	39	49	67	98	152	28
Mar	1.6	3.7	5.7	8.8	15	21	31	43	57	81	94	109	133	167	249	28
Apr	17	28	34	40	46	52	63	76	91	108	118	130	146	165	197	28
May	1.1	3.5	5.9	11	15	21	33	46	64	82	92	103	120	142	178	28
Jun	0.1	0.3	0.7	1.3	2.1	2.7	5.0	7.8	13	17	21	25	32	42	78	28
Jul	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.8	1.4	2.0	2.4	3.4	4.9	8.4	28
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.6	1.1	28
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.9	1.5	28
Ann	0.0	0.0	0.0	0.1	0.1	0.2	0.7	1.9	4.7	15	25	39	58	86	129	

NORTH FORK JOHN DAY RIVER BASIN

14046000 NORTH FORK JOHN DAY RIVER AT MONUMENT, OR

LOCATION.--Lat 44°48'50", long 119°25'50", in SE 1/4 sec.2, T.9 S., R.27 E., Grant County, Hydrologic Unit 17070202, on right bank just downstream from entrance to canyon, 0.7 mi downstream from Cottonwood Creek, 0.8 mi west of Monument, and at mile 15.3.

DRAINAGE AREA.--2,520 mi², approximately.

PERIOD OF RECORD.--March 1925 to 1987. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 754: 1932(M). WSP 1448: 1927, 1931(M), 1949.

GAGE.--Water-stage recorder. Datum of gage is 1,959.64 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1925, nonrecording gage and Nov. 24, 1925, to Oct. 16, 1928, water-stage recorder at datum 1.10 ft higher. Oct. 17, 1928, to Sept. 30, 1930, water-stage recorder at datum 1.00 ft higher.

REMARKS.--Very slight regulation by small reservoirs upstream. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--62 years, 1,293 ft³/s, 936,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,400 ft³/s Jan. 30, 1965, gage height, 18.45 ft, from rating curve extended above 17,000 ft³/s; minimum discharge, 6 ft³/s sometime during period Nov. 2-13, 1936 (result of freezeup); minimum daily, 17 ft³/s Dec. 12, 1932.

STATISTICAL SUMMARIES FOR THE PERIOD 1929-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	59	58	1937	420	1983	165	75	1.1
Nov	59	64	1937	1620	1974	325	272	2.1
Dec	59	96	1937	3370	1965	736	727	4.8
Jan	59	75	1937	4130	1965	950	895	6.2
Feb	59	134	1929	4970	1982	1430	1110	8.5
Mar	59	345	1977	6460	1983	2360	1350	15.4
Apr	59	822	1968	6690	1943	3630	1470	22.9
May	59	378	1934	8790	1948	3610	1700	23.6
Jun	59	326	1931	5230	1948	1740	1060	11.0
Jul	59	97	1973	1210	1982	391	258	2.6
Aug	59	36	1931	345	1984	131	71	0.9
Sep	59	45	1934	423	1984	122	63	0.8
Ann		441	1977	2610	1984	1300	531	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	72	87	95	100	105	112	127	141	158	179	192	209	236	279	352	59
Nov	78	107	125	140	150	159	182	209	240	285	325	391	491	631	1040	59
Dec	82	111	137	159	182	210	262	349	507	728	878	1060	1280	1650	2360	59
Jan	126	164	192	216	243	272	355	470	606	903	1050	1250	1530	2050	3190	59
Feb	160	211	252	332	428	506	751	926	1190	1520	1740	2020	2380	3030	4500	59
Mar	404	652	815	914	1020	1130	1410	1750	2150	2660	3100	3570	4120	4960	6390	59
Apr	1150	1400	1650	1880	2110	2330	2770	3260	3810	4480	4850	5260	5790	6460	7490	59
May	938	1300	1570	1860	2130	2360	2780	3260	3830	4390	4780	5210	5730	6300	7310	59
Jun	323	442	554	665	793	909	1130	1430	1720	2100	2330	2620	3050	3520	4350	59
Jul	88	114	133	149	168	186	226	270	336	419	489	568	662	820	1150	59
Aug	43	54	60	68	79	84	99	113	129	147	160	179	202	237	291	59
Sep	50	58	65	71	77	84	93	103	116	132	146	160	177	203	256	59
Ann	73	95	114	136	159	184	264	437	837	1380	1780	2260	2900	3790	5190	

LOWER JOHN DAY RIVER BASIN

14046500 JOHN DAY RIVER AT SERVICE CREEK, OR

LOCATION.--Lat 44°47'38", long 120°00'20", in NW 1/4 NE 1/4 sec.18, T.9 S., R.23 E., Wheeler County, Hydrologic Unit 17070204, on left bank 0.2 mi downstream from bridge on State Highway 207, 0.8 mi downstream from Service Creek, 0.5 mi southwest of town of Service Creek, and at mile 156.7.

DRAINAGE AREA.--5,090 mi², approximately.

PERIOD OF RECORD.--March 1925 to September 1926, October 1929 to 1987. Monthly discharge only March 1925 to September 1926, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 1,632.42 ft above National Geodetic Vertical Datum of 1929. See WSP 1738 for history of changes prior to Feb. 24, 1957.

REMARKS.--Slight regulation by several small reservoirs upstream from station. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--59 years, 1,941 ft³/s, 1,406,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,200 ft³/s Dec. 23, 1964, gage height, 17.85 ft, from rating curve extended above 14,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 6.0 ft³/s Aug. 23, 24, 1973.

STATISTICAL SUMMARIES FOR THE PERIOD 1930-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	58	70	1937	811	1985	330	162	1.4
Nov	58	152	1937	2280	1974	606	391	2.5
Dec	58	216	1936	5540	1965	1230	1090	5.3
Jan	58	195	1937	6330	1965	1600	1390	6.9
Feb	58	358	1937	7930	1982	2380	1720	9.4
Mar	58	597	1977	9770	1983	3660	2140	15.8
Apr	58	1010	1968	10300	1984	5290	2230	22.2
May	58	491	1934	12100	1948	4970	2430	21.5
Jun	58	416	1931	8330	1948	2510	1560	10.5
Jul	58	90	1973	1850	1982	579	423	2.5
Aug	58	15	1973	594	1984	180	135	0.8
Sep	58	31	1935	862	1984	187	140	0.8
Ann		621	1977	4120	1984	1960	835	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	74	123	155	176	201	220	258	297	341	391	420	460	511	579	677	58
Nov	203	238	277	314	343	369	411	455	517	595	646	729	860	1090	1580	58
Dec	229	283	337	374	413	459	551	690	942	1240	1460	1690	1990	2540	3670	58
Jan	298	368	420	455	489	539	675	859	1120	1520	1770	2110	2540	3320	5190	58
Feb	406	470	574	722	827	967	1300	1610	2040	2560	2900	3330	3920	4800	7200	58
Mar	715	1020	1300	1480	1640	1820	2240	2780	3400	4150	4720	5340	6070	7280	10000	58
Apr	1560	2010	2400	2760	3120	3470	4060	4750	5530	6460	7030	7670	8470	9460	10900	58
May	1200	1620	2060	2510	2870	3190	3860	4590	5340	6130	6620	7180	7910	8770	10100	58
Jun	433	617	807	992	1160	1310	1630	2030	2460	3150	3450	3860	4360	4980	6050	58
Jul	87	119	153	189	220	247	312	388	494	637	743	867	1040	1270	1760	58
Aug	31	44	55	65	78	91	116	140	167	207	232	267	312	380	493	58
Sep	40	56	66	76	86	97	118	139	169	204	232	267	314	396	484	58
Ann	81	133	186	243	304	366	508	777	1330	2130	2680	3390	4230	5470	7510	

LOWER JOHN DAY RIVER BASIN

14047390 ROCK CREEK ABOVE WHYTE PARK, NEAR CONDON, OR

LOCATION.--Lat 45°15'53", long 120°01'15", in NE 1/4 SW 1/4 sec.36, T.3 S., R.22 E., Gilliam County, Hydrologic Unit 17070204, on left bank 0.2 mi upstream from Whyte Park, 8.0 mi northeast of Condon, and at mile 40.8.

DRAINAGE AREA.--297 mi².

PERIOD OF RECORD.--October 1975 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,714.50 ft above National Geodetic Vertical Datum of 1929 (Soil Conservation Service temporary bench mark).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--12 years, 63.4 ft³/s, 45,930 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,360 ft³/s May 5, 1983, gage height, 9.17 ft; maximum gage height, 9.4 ft Feb. 6, 1979; minimum discharge, 0.08 ft³/s Aug. 17, 19, 20, 22, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1975-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	0.4	1978	13	1985	5.8	4.6	0.8
Nov	12	3.5	1977	54	1985	16	14	2.1
Dec	12	3.9	1977	186	1982	50	49	6.8
Jan	12	4.6	1977	145	1984	75	54	10.1
Feb	12	5.7	1977	435	1986	171	127	20.9
Mar	12	11	1977	467	1983	219	147	29.3
Apr	12	21	1977	396	1984	136	111	17.6
May	12	14	1977	298	1983	65	81	8.8
Jun	12	3.0	1977	83	1984	19	22	2.5
Jul	12	0.3	1977	14	1984	4.6	3.9	0.6
Aug	12	0.3	1977	6.6	1979	2.7	2.2	0.4
Sep	12	0.1	1977	9.5	1984	3.1	2.7	0.4
Ann		6.0	1977	125	1983	63	36	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.4	0.5	0.5	0.9	2.0	2.0	2.3	3.7	6.0	8.5	8.9	10	12	13	15	12
Nov	0.8	2.5	2.9	2.9	3.4	4.0	7.2	11	14	17	20	24	29	41	57	12
Dec	3.8	7.2	8.9	12	15	17	24	30	37	47	56	65	82	116	168	12
Jan	4.4	8.1	11	13	15	18	30	44	63	89	101	125	145	181	262	12
Feb	6.1	15	22	33	50	62	78	93	130	170	197	247	311	405	602	12
Mar	13	30	42	66	94	104	138	166	205	263	300	347	411	511	600	12
Apr	19	32	38	42	47	54	71	90	115	147	177	204	241	343	446	12
May	8.5	11	14	17	19	20	25	31	38	51	59	74	95	145	207	12
Jun	1.9	3.1	3.7	4.3	5.3	6.1	7.9	10	14	17	20	24	33	47	79	12
Jul	0.2	0.4	0.7	1.2	1.3	1.6	2.1	2.9	3.4	4.7	6.0	6.9	8.0	9.6	16	12
Aug	0.1	0.4	0.5	0.6	0.7	0.9	1.2	1.7	1.7	2.1	2.5	3.5	4.2	4.2	6.7	12
Sep	0.1	0.4	0.6	0.8	1.0	1.4	1.8	2.1	2.4	3.2	3.8	5.0	5.8	7.9	9.1	12
Ann	0.4	1.1	1.9	1.9	3.7	4.8	8.7	14	26	47	65	90	126	182	294	

LOWER JOHN DAY RIVER BASIN

14048000 JOHN DAY RIVER AT McDONALD FERRY, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°35'16", long 120°24'30", in NE 1/4 NW 1/4 sec.11, T.1 N., R.19 E., Sherman County, Hydrologic Unit 17070204, on left bank at McDonald Ferry, 0.8 mi downstream from Rock Creek, 10 mi east of Klondike, and at mile 20.9.

GAGE AREA.--7,580 mi², approximately.

PERIOD OF RECORD.--December 1904 to 1987. Prior to Oct. 1, 1930, published as "at McDonald."

REVISED RECORDS.--WSP 1094: 1894(M), 1932(M). WSP 1448: 1908-9, 1912, 1916, 1920(M), 1922, 1932.

GAGE.--Water-stage recorder. Datum of gage is 392.27 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 30, 1930, nonrecording gage at same site and datum.

REMARKS.--No regulation. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--82 years (water years 1906-87), 2,103 ft³/s, 1,524,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,800 ft³/s Dec. 24, 1964, gage height, 13.59 ft, from floodmark, from rating curve extended above 11,000 ft³/s on basis of slope-area measurement of peak flow; no flow for part of Sept. 2, 1966, Aug. 15 to Sept. 16, 1973, Aug. 13, 14, 19-25, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1894 reached a stage of 12.8 ft, from floodmarks, discharge, 39,100 ft³/s, from rating curve extended above 22,000 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1905-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	82	59	1937	892	1985	331	160	1.3
Nov	82	157	1937	2310	1974	622	406	2.4
Dec	83	221	1937	7030	1965	1220	1160	4.9
Jan	83	217	1937	6400	1965	1700	1440	6.9
Feb	83	374	1933	8880	1982	2660	2030	9.8
Mar	83	557	1977	11500	1983	3950	2340	16.0
Apr	83	964	1968	11900	1984	5710	2410	22.3
May	83	533	1934	13200	1917	5210	2750	21.1
Jun	83	376	1926	9530	1948	2760	1770	10.8
Jul	83	88	1926	2130	1984	664	485	2.7
Aug	83	5.7	1973	700	1984	194	148	0.8
Sep	83	23	1934	923	1984	187	139	0.7
Ann		603	1977	4730	1984	2100	901	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	81	133	164	192	216	236	270	299	330	376	403	444	519	591	695	82
Nov	224	278	319	347	364	381	417	457	520	597	642	706	816	1040	1580	82
Dec	253	323	368	405	441	478	557	668	852	1170	1350	1600	1950	2440	3680	83
Jan	327	395	450	498	546	594	729	936	1190	1670	1940	2280	2820	3710	5570	83
Feb	452	571	677	779	885	1010	1370	1760	2260	2850	3230	3800	4570	5650	8030	83
Mar	812	1100	1410	1600	1820	2040	2440	3000	3660	4480	5090	5890	6810	8030	10500	83
Apr	1710	2270	2650	2990	3390	3700	4400	5160	6020	6950	7580	8300	9120	10100	11600	83
May	1320	1750	2200	2610	2930	3220	3880	4560	5380	6280	6920	7630	8390	9360	11200	83
Jun	478	670	883	1080	1250	1400	1820	2210	2670	3310	3650	4140	4710	5530	7120	83
Jul	90	136	177	217	247	279	352	443	571	746	851	990	1190	1490	2030	83
Aug	24	40	58	73	87	100	124	148	184	227	251	287	335	420	554	83
Sep	34	54	65	75	84	94	122	145	176	217	243	279	322	396	497	83
Ann	86	142	201	262	324	390	537	825	1420	2320	2930	3640	4690	6050	8060	

UPPER DESCHUTES RIVER BASIN

14050000 DESCHUTES RIVER BELOW SNOW CREEK, NEAR LA PINE, OR

LOCATION.--Lat 43°48'51", long 121°46'33", in NW 1/4 sec.28, T.20 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, in Deschutes National Forest, on left bank at flow line of Crane Prairie Reservoir, 20 ft downstream from Snow Creek, 200 ft upstream from highway bridge, and 17 mi northwest of La Pine.

DRAINAGE AREA.--132 mi², including Sparks, Elk, and Mud Lake basins, which have no surface outflow to Deschutes River; hydrologic drainage boundary uncertain because of interbasin ground-water exchange.

PERIOD OF RECORD.--October 1937 to 1987. Monthly discharge only October 1937, published in WSP 1318. Published as "near Lapine" 1937-64.

REVISED RECORDS.--WSP 1248: 1951.

GAGE.--Water-stage recorder. Elevation of gage is 4,445 ft, from elevation of Crane Prairie Reservoir when slack water extended to gage. Prior to Sept. 10, 1938, nonrecording gage at site 450 ft downstream at different datum.

REMARKS.--No regulation. Crater Creek Canal diverts water to Tumalo Creek basin from tributaries of Soda Creek. Stream is spring fed and peak discharge may occur several months after the precipitation which caused it.

AVERAGE DISCHARGE.--50 years, 151 ft³/s, 109,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480 ft³/s Aug. 19, 1974, gage height, 3.17 ft; maximum gage height, 4.12 ft Jan. 21, 1943 (ice jam); minimum discharge, 40 ft³/s sometime during period Dec. 22, 1959, to Mar. 2, 1960, result of freezeup; minimum daily, 55 ft³/s for many days April to June 1941.

STATISTICAL SUMMARIES FOR THE PERIOD 1938-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	50	64	1942	315	1975	177	68	9.9
Nov	50	61	1978	236	1973	149	51	8.1
Dec	50	61	1942	205	1951	133	41	7.5
Jan	50	59	1942	192	1951	117	33	6.6
Feb	50	61	1942	173	1965	107	26	5.5
Mar	50	59	1941	166	1951	99	23	5.6
Apr	50	58	1941	195	1951	104	27	5.7
May	50	58	1941	267	1956	135	49	7.6
Jun	50	56	1941	331	1956	162	67	8.8
Jul	50	58	1941	419	1956	184	83	10.3
Aug	50	60	1941	457	1972	227	106	12.8
Sep	50	62	1941	408	1974	213	92	11.6
Ann		66	1941	243	1972	151	45	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equalled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	80	86	95	112	119	127	153	173	199	223	235	247	258	270	288	50
Nov	77	84	87	95	106	112	130	145	166	186	193	201	209	219	233	50
Dec	77	82	85	89	95	100	109	132	147	160	168	175	183	192	203	50
Jan	76	80	84	86	89	92	99	112	125	141	146	151	157	165	176	50
Feb	74	80	82	84	86	88	94	100	109	120	127	131	137	146	162	50
Mar	71	78	80	82	84	86	91	94	98	106	110	118	125	133	153	50
Apr	74	80	83	85	87	88	92	97	101	110	114	123	132	142	159	50
May	78	84	87	89	92	95	105	123	141	158	170	183	197	214	241	50
Jun	79	84	87	89	93	102	127	161	198	206	216	227	238	251	267	50
Jul	78	83	89	95	107	123	150	179	209	229	239	250	269	291	331	50
Aug	78	92	104	123	129	138	185	224	263	299	315	327	337	355	420	50
Sep	80	91	103	124	133	140	180	211	243	278	288	299	314	336	372	50
Ann	76	81	85	88	92	97	110	128	148	175	192	209	230	258	304	

UPPER DESCHUTES RIVER BASIN

14050500 CULTUS RIVER ABOVE CULTUS CREEK, NEAR LA PINE, OR

LOCATION.--Lat 43°49'06", long 121°47'40", near line between secs.20 and 29, T.20 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, Deschutes National Forest, on left bank at highway culvert, 2 mi upstream from Cultus Creek, and 18 mi northwest of La Pine.

DRAINAGE AREA.--16.5 mi², hydrologic drainage boundry uncertain owing to ground-water exchange.

PERIOD OF RECORD.--October 1922 to September 1925, October 1937 to 1987. Monthly discharge only October 1937, published in WSP 1318. Prior to Oct. 1, 1964, published as "near Lapine."

REVISED RECORDS.--WSP 1448: 1923-25, 1947.

GAGE.--Water-stage recorder and cement bag control. Elevation of gage is 4,450 ft, by barometer. Oct 1, 1922, to Sept. 30, 1925, nonrecording gage at site 0.5 mi upstream at different datum.

REMARKS.--No regulation or diversions upstream from station.

AVERAGE DISCHARGE.--53 years, 63.2 ft³/s, 45,790 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 178 ft³/s May 31, 1956, gage height, 1.04 ft; maximum gage height, 1.32 ft May 16, 1972 (backwater from Crane Prairie Reservoir); minimum discharge, 26 ft³/s May 26-31, Nov. 23 to Dec. 4, 1959.

STATISTICAL SUMMARIES FOR THE PERIOD 1923-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	53	32	1942	93	1957	64	17	8.7
Nov	53	31	1942	90	1957	60	16	7.9
Dec	53	33	1942	88	1951	56	14	7.6
Jan	53	32	1942	85	1951	53	12	7.2
Feb	53	30	1942	84	1951	50	10	6.2
Mar	53	31	1941	80	1951	50	10	6.8
Apr	53	30	1941	96	1957	54	12	7.1
May	53	35	1941	142	1956	71	23	9.6
Jun	53	34	1941	136	1956	74	22	9.7
Jul	53	37	1941	127	1956	75	20	10.2
Aug	53	38	1941	117	1951	74	20	10.0
Sep	53	33	1941	103	1956	69	18	9.0
Ann		36	1941	97	1951	63	13	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	38	42	45	49	51	52	60	65	71	78	81	84	88	90	93	53
Nov	36	40	44	46	49	50	55	63	68	72	74	76	80	85	90	53
Dec	37	41	42	43	45	46	51	57	62	67	69	73	75	79	83	53
Jan	37	39	41	42	43	44	47	53	58	63	65	67	68	71	75	53
Feb	35	39	40	41	43	45	48	50	56	60	61	63	64	65	67	53
Mar	36	38	40	43	44	45	48	50	54	57	59	61	63	64	68	53
Apr	39	42	44	45	47	48	50	54	56	60	62	64	67	72	84	53
May	43	45	48	50	52	54	61	68	78	87	92	96	102	107	116	53
Jun	45	49	51	53	55	57	63	74	85	91	93	96	99	102	111	53
Jul	49	53	55	57	58	61	66	76	84	90	92	94	98	102	109	53
Aug	43	49	52	55	57	59	66	74	83	91	93	95	97	103	107	53
Sep	41	46	50	53	55	57	63	68	76	84	87	89	91	94	98	53
Ann	38	41	44	46	48	50	54	60	64	71	76	82	87	92	98	

UPPER DESCHUTES RIVER BASIN

14051000 CULTUS CREEK ABOVE CRANE PRAIRIE RESERVOIR, NEAR LA PINE, OR

LOCATION.--Lat 43°49'17", long 121°49'22", in SW 1/4 sec.19, T.20 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, on left bank 1,000 ft upstream from highway bridge, 1.0 mi downstream from Cultus Lake, and 19 mi northwest of La Pine.

DRAINAGE AREA.--33.2 mi², hydrologic drainage boundary uncertain because of interbasin ground-water exchange.

PERIOD OF RECORD.--March to September 1924 (published as "above Crane Prairie, near Lapine"), October 1937 to 1987. Monthly discharge only October 1937 to September 1949, published in WSP 1318. Records for October 1923 to February 1924, published in WSP 594, have been found to be unreliable and should not be used. Published as "near Lapine" 1937-64.

REVISED RECORDS.--WSP 1568: 1957. WRD Oreg. 1973: 1972. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Elevation of gage is 4,545 ft, by barometer. Mar. 1 to Sept. 30, 1924, nonrecording gage at site 100 ft upstream at different datum.

REMARKS.--Some regulation by fish screens at Cultus Lake since 1962. No diversion upstream from station.

AVERAGE DISCHARGE.--50 years (water years 1938-87), 22.6 ft³/s, 16,370 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 336 ft³/s Dec. 25, 1964, gage height, 4.15 ft, from floodmark, from rating curve extended above 90 ft³/s; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1924-1962 (BEFORE THE INSTALLATION OF FISH SCREENS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	0.0	1946	9.0	1924	1.2	2.0	0.4
Nov	26	0.0	1945	48	1951	6.0	9.8	2.2
Dec	26	0.0	1945	51	1943	17	17	6.4
Jan	26	0.0	1945	67	1943	18	16	7.0
Feb	26	2.4	1941	57	1953	20	12	6.8
Mar	26	2.7	1941	37	1957	17	8.7	6.5
Apr	26	5.6	1941	51	1962	22	10	8.0
May	26	14	1944	127	1956	62	31	23.4
Jun	26	17	1941	143	1950	73	36	26.3
Jul	26	3.9	1940	65	1950	27	17	10.1
Aug	26	0.2	1959	15	1953	5.8	4.3	2.1
Sep	26	0.0	1944	6.0	1953	1.5	1.8	0.5
Ann		5.1	1941	43	1956	22	9.9	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.6	1.0	1.2	1.6	2.3	2.7	4.4	--	26
Nov	0.0	0.0	0.0	0.1	0.2	0.2	0.7	1.8	2.7	4.0	5.8	7.8	12	17	34	26
Dec	0.0	0.0	0.2	1.3	3.8	5.6	7.6	12	15	19	23	30	41	51	58	26
Jan	0.0	0.2	1.0	5.5	6.2	7.5	12	16	21	25	27	31	35	39	51	26
Feb	1.9	3.7	5.5	7.3	10	12	15	18	22	26	27	32	37	41	46	26
Mar	2.9	5.9	10	11	12	13	15	17	19	22	23	25	28	31	36	26
Apr	6.4	8.3	10	12	13	15	17	19	22	25	28	30	33	37	45	26
May	16	22	26	29	33	36	44	53	63	80	86	93	102	120	139	26
Jun	18	22	27	33	40	47	58	71	83	94	101	112	121	130	144	26
Jul	3.6	5.6	7.6	9.0	11	13	17	22	27	34	40	45	52	61	71	26
Aug	0.0	0.4	1.0	1.2	1.7	2.0	2.8	4.0	4.7	7.3	8.1	9.3	12	14	17	26
Sep	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.9	1.6	1.9	2.1	2.5	3.3	5.0	26
Ann	0.0	0.1	0.4	1.0	2.0	3.3	7.2	13	18	25	30	37	47	63	93	

UPPER DESCHUTES RIVER BASIN

14051000 CULTUS CREEK ABOVE CRANE PRAIRIE RESERVOIR, NEAR LA PINE, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1963-1987 (AFTER THE INSTALLATION OF FISH SCREENS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	25	0.0	1982	6.2	1963	1.0	1.6	0.4
Nov	25	0.2	1981	16	1969	4.2	4.7	1.6
Dec	25	0.4	1977	79	1978	19	20	7.6
Jan	25	0.1	1977	75	1965	24	17	9.3
Feb	25	0.0	1977	54	1965	22	11	7.9
Mar	25	0.0	1977	68	1972	21	15	8.2
Apr	25	1.8	1977	46	1972	17	9.6	6.7
May	25	12	1977	82	1972	46	18	18.0
Jun	25	17	1977	176	1975	72	46	27.1
Jul	25	2.5	1977	70	1975	26	21	10.4
Aug	25	0.0	1977	16	1983	5.9	5.4	2.3
Sep	25	0.0	1980	6.1	1982	1.4	1.7	0.5
Ann		3.0	1977	38	1971	21	10	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4	0.8	1.0	1.4	1.8	2.7	4.1	25
Nov	0.0	0.0	0.1	0.2	0.3	0.4	0.6	1.3	2.1	3.5	5.3	7.6	8.9	12	18	25
Dec	0.5	1.8	2.9	4.8	5.4	6.3	9.0	13	18	24	26	28	30	35	50	25
Jan	3.4	5.8	6.4	8.1	9.1	11	15	20	24	28	31	35	40	51	70	25
Feb	5.2	7.9	10	12	14	15	17	21	24	27	29	31	35	39	52	25
Mar	5.4	7.4	8.7	9.9	11	12	15	18	21	24	26	29	33	40	--	25
Apr	6.4	7.1	8.5	8.9	11	13	15	17	19	21	23	25	27	32	42	25
May	12	16	19	22	25	27	31	38	46	58	63	70	78	89	112	25
Jun	17	20	25	27	31	34	46	64	76	95	105	114	124	142	--	25
Jul	2.2	4.4	6.8	7.9	9.3	11	14	18	24	33	39	45	52	63	--	25
Aug	0.0	0.2	0.5	0.6	1.0	1.3	2.2	3.5	4.9	6.7	8.8	11	13	16	20	25
Sep	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.8	1.5	1.9	2.3	2.8	3.5	5.2	25
Ann	0.0	0.2	0.4	1.0	1.9	3.9	8.1	13	18	24	28	32	41	57	85	

UPPER DESCHUTES RIVER BASIN

14052000 DEER CREEK ABOVE CRANE PRAIRIE RESERVOIR, NEAR LA PINE, OR

LOCATION.--Lat 43°48'48", long 121°50'18", in SE 1/4 SW 1/4 sec.25, T.20 S., R.7 E., Deschutes County, Hydrologic Unit 17070301, on right bank 150 ft downstream from highway bridge, 1.2 mi downstream from Little Cultus Lake, and 19 mi northwest of La Pine.

DRAINAGE AREA.--21.5 mi², hydrologic drainage boundary uncertain because of interbasin ground-water exchange.

PERIOD OF RECORD.--February to September 1924 (published as "above Crane Prairie, near Lapine"). October 1937 to 1987. Monthly discharge only October 1937 to September 1949, published in WSP 1318. Records for October 1923 to January 1924, published in WSP 594, have been found to be unreliable and should not be used. Published as "near Lapine" 1937-64.

REVISED RECORDS.--See PERIOD OF RECORD.

GAGE.--Water-stage recorder and sharp-crested weir control. Elevation of gage is 4,520 ft, by barometer. Feb. 1 to Sept. 30, 1924, nonrecording gage at site 75 ft upstream at various datums. Oct. 1, 1937, to Sept. 30, 1938, water-stage recorder at bridge 150 ft upstream at different datum. Oct. 1, 1938, to Aug. 13, 1968, water-stage recorder and wooden weir control at present site and datum 0.60 ft higher.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--50 years (water years 1938-87), 7.48 ft³/s, 5,420 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 200 ft³/s, estimated, Dec. 25, 1964; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1924-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	50	0.0	1940	2.0	1951	0.4	0.4	0.4
Nov	50	0.0	1940	14	1951	2.2	2.6	2.4
Dec	50	0.1	1941	30	1943	6.9	7.1	7.8
Jan	50	0.1	1941	20	1943	6.5	5.5	7.3
Feb	50	0.1	1941	24	1982	6.5	4.9	6.7
Mar	50	0.6	1977	31	1972	6.3	5.2	7.2
Apr	51	1.4	1977	32	1943	11	5.9	12.8
May	51	6.1	1977	54	1946	28	13	32.2
Jun	51	0.6	1940	60	1974	17	14	18.8
Jul	51	0.0	1924	7.4	1974	2.3	2.1	2.6
Aug	51	0.0	1924	1.2	1976	0.4	0.3	0.4
Sep	51	0.0	1924	1.0	1968	0.2	0.2	0.2
Ann		1.2	1977	15	1943	7.5	3.3	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.7	1.0	50
Nov	0.0	0.1	0.2	0.2	0.3	0.4	0.6	1.0	1.3	1.7	2.2	2.9	2.9	5.3	8.6	50
Dec	0.2	0.4	0.6	1.2	1.4	1.8	2.2	3.3	5.3	7.1	8.3	10	13	16	24	50
Jan	0.4	0.7	1.2	1.5	1.8	1.8	2.6	3.8	5.6	7.2	8.3	9.0	12	14	--	50
Feb	0.5	0.9	1.6	2.0	2.4	3.0	3.6	4.9	5.9	7.3	8.3	8.8	11	14	18	50
Mar	1.0	1.8	2.2	2.6	3.1	3.1	3.7	4.5	5.9	6.8	7.2	8.1	9.3	12	--	50
Apr	2.6	3.4	3.9	4.5	5.8	5.8	8.1	9.3	12	15	16	18	20	25	--	51
May	6.1	8.6	11	13	15	18	22	27	32	38	41	--	--	--	--	51
Jun	0.8	1.4	2.2	2.7	4.1	4.9	7.6	11	16	23	--	--	--	--	--	51
Jul	0.0	0.1	0.2	0.3	0.4	0.5	0.8	1.1	1.4	2.0	3.0	3.7	4.8	6.4	--	51
Aug	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.5	0.6	0.6	0.8	1.1	51
Sep	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.5	0.5	51
Ann	0.0	0.1	0.2	0.2	0.4	0.5	1.4	2.5	4.5	6.5	8.6	11	15	22	35	

UPPER DESCHUTES RIVER BASIN

14052500 QUINN RIVER NEAR LA PINE, OR

LOCATION.--Lat 43°47'03", long 121°50'06", in SW 1/4 NW 1/4 sec.1, T.21 S., R.7 E., Deschutes County, Hydrologic Unit 17070301, Deschutes National Forest, on left bank at flow line of Crane Prairie Reservoir, 150 ft downstream from springs at head of river, and 18 mi northwest of La Pine.

DRAINAGE AREA.--Indeterminate, normal flow is entirely from springs 150 ft upstream.

PERIOD OF RECORD.--June 1922 to September 1925, October 1937 to 1987. Published as "above Crane Prairie Reservoir near Lapine" 1922-25, and as "near Lapine" 1937-64. Monthly discharge only October 1937, published in WSP 1318.

REVISED RECORDS.--WSP 1448: 1939, 1941.

GAGE.--Water-stage recorder and log control. Datum of gage is 4,442.1 ft above National Geodetic Vertical Datum of 1929, based on elevation of Crane Prairie Reservoir when slack water reached station. June 1, 1922, to Sept. 30, 1925, nonrecording gage at site 150 ft downstream at different datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--53 years, 24.3 ft³/s, 17,610 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59 ft³/s July 4, 1949, gage height, 1.97 ft; maximum gage height, 3.92 ft June 25, 1943 (backwater from Crane Prairie Reservoir); practically no flow Nov. 14, 1941.

STATISTICAL SUMMARIES FOR THE PERIOD 1938-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	50	1.8	1942	38	1952	22	10.0	7.7
Nov	50	0.8	1942	36	1952	19	8.9	6.6
Dec	50	2.2	1942	30	1951	19	7.7	6.6
Jan	50	4.0	1941	32	1951	19	7.1	6.7
Feb	50	4.0	1941	37	1965	20	7.2	6.3
Mar	50	5.0	1941	38	1965	20	7.4	7.1
Apr	50	5.4	1941	42	1951	22	8.0	7.6
May	50	6.4	1941	49	1951	27	9.8	9.5
Jun	50	7.3	1941	52	1951	32	11	10.9
Jul	50	7.0	1941	54	1956	33	11	11.5
Aug	50	4.7	1941	51	1956	31	11	10.8
Sep	50	3.5	1941	44	1951	26	10	8.9
Ann		5.0	1941	41	1951	24	7.8	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	5.3	9.3	11	13	14	16	20	23	27	30	32	33	35	36	38	50
Nov	3.7	7.3	9.1	11	12	14	17	21	24	26	28	29	31	32	33	50
Dec	6.0	8.2	11	12	13	15	17	20	23	25	26	27	28	29	31	50
Jan	5.9	11	12	14	15	16	18	20	22	25	26	27	28	29	31	50
Feb	7.8	12	13	15	16	17	19	20	22	24	25	26	27	30	34	50
Mar	8.7	12	13	15	16	17	19	20	22	26	26	27	28	31	35	50
Apr	12	14	15	16	17	18	20	23	26	28	29	30	32	33	37	50
May	14	16	17	19	20	21	24	27	31	34	35	36	38	41	46	50
Jun	16	19	20	22	24	25	28	32	38	41	43	45	47	49	51	50
Jul	16	19	21	22	23	25	31	35	39	43	44	46	47	49	51	50
Aug	13	16	18	20	22	24	29	32	36	40	42	44	45	46	49	50
Sep	8.3	13	15	16	18	20	25	28	31	35	37	39	40	41	43	50
Ann	8.6	11	13	15	17	18	20	24	26	30	32	34	37	40	45	

UPPER DESCHUTES RIVER BASIN

14054000 DESCHUTES RIVER BELOW CRANE PRAIRIE RESERVOIR, NEAR LA PINE, OR

LOCATION.--Lat 43°45'13", long 121°46'57", in SW 1/4 NW 1/4 sec.16, T.21 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, Deschutes National Forest, on left bank 0.1 mi downstream from Crane Prairie Dam, 15 mi northwest of La Pine, and at mile 238.2.

DRAINAGE AREA.--254 mi², hydrologic drainage boundary uncertain because of interbasin ground-water exchange.

PERIOD OF RECORD.--August 1907 to November 1908 and August 1912 to September 1913 (fragmentary), October 1913 to September 1917, February 1922 to 1987. Monthly discharge only for some periods, published in WSP 1318. Prior to October 1949, published as "at Crane Prairie, near Lapine." Published as "near Lapine" 1949-64.

REVISED RECORDS.--WSP 1218: Drainage area. WSP 1318: 1929(M).

GAGE.--Water-stage recorder. Datum of gage is 4,419.78 ft above National Geodetic Vertical Datum of 1929 (Pacific Power & Light Co. bench mark). Aug. 15, 1907, to Sept. 30, 1917, and Feb. 23 to June 8, 1922, nonrecording gage at site 0.5 mi upstream at different datums. June 9, 1922, to May 9, 1932, nonrecording gage or water-stage recorder at present site and datum.

REMARKS.--Flow regulated since 1922 by Crane Prairie Reservoir (station 14053500). No diversion upstream from station.

AVERAGE DISCHARGE.--69 years, 214 ft³/s, 155,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,170 ft³/s July 28, 1947, gage height, 3.34 ft; no flow Nov. 15, 1978, when gates in Crane Prairie Dam were closed.

STATISTICAL SUMMARIES FOR THE PERIOD 1922-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	65	12	1978	675	1950	209	117	8.4
Nov	65	5.2	1943	700	1953	147	156	5.7
Dec	65	3.3	1978	489	1952	113	98	4.6
Jan	65	3.4	1978	334	1928	105	80	4.2
Feb	65	5.6	1941	380	1924	103	76	3.8
Mar	66	5.0	1941	273	1922	101	72	4.1
Apr	66	7.7	1942	370	1924	136	83	5.3
May	66	14	1943	750	1950	258	122	10.4
Jun	66	107	1942	782	1950	344	128	13.5
Jul	66	119	1943	647	1956	361	125	14.6
Aug	66	109	1949	709	1956	345	125	13.9
Sep	66	19	1948	635	1971	297	136	11.6
Ann		101	1942	323	1956	210	57	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	18	52	68	103	115	126	155	186	227	260	284	311	343	379	452	65
Nov	7.3	11	17	31	42	49	69	108	134	153	184	208	242	294	567	65
Dec	6.9	13	19	23	35	40	53	87	122	147	160	177	197	220	322	65
Jan	7.8	16	24	29	36	41	60	89	116	151	166	180	195	214	260	65
Feb	9.6	19	24	31	37	42	58	87	108	141	155	170	187	205	225	65
Mar	8.0	17	23	29	36	43	59	83	110	136	149	162	175	195	218	66
Apr	8.8	20	27	38	52	63	91	122	143	165	187	205	228	274	346	66
May	24	79	127	147	167	189	221	244	274	315	339	368	402	445	505	66
Jun	135	183	211	236	254	266	291	319	348	402	433	461	489	518	592	66
Jul	171	192	229	248	262	279	305	344	379	427	449	477	500	552	603	66
Aug	131	173	193	228	250	280	308	344	383	415	430	446	471	495	580	66
Sep	46	110	145	161	182	211	256	297	334	369	397	425	453	487	545	66
Ann	12	25	40	53	76	100	141	178	224	277	307	345	384	439	520	

UPPER DESCHUTES RIVER BASIN

14054500 BROWN CREEK NEAR LA PINE, OR

LOCATION.--Lat 43°42'57", long 121°48'10", in NE 1/4 SW 1/4 sec.29, T.21 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, in Deschutes National Forest, on right bank at highway crossing and 15 mi northwest of La Pine.

DRAINAGE AREA.--21 mi², approximately, hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--May 1922 to September 1925, July 1938 to 1987. Monthly discharge only July 1938 to September 1949, published in WSP 1318. Prior to Oct. 1, 1964, published as "near Lapine."

REVISED RECORDS.--WSP 1448: 1922-24. WDR OR-78-1: 1977.

GAGE.--Water-stage recorder. Elevation of gage is 4,370 ft, from topographic map. May 24, 1922, to Sept. 30, 1925, nonrecording gage, and July 1, 1938, to Nov. 1, 1945, water-stage recorder at site 0.4 mi downstream at different datums. Nov. 2, 1945, to Aug. 25, 1971, water-stage recorder at site 0.8 mi upstream at datum of 4,372.94 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. No diversion upstream from station.

AVERAGE DISCHARGE.--52 years, 38.8 ft³/s, 28,110 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 104 ft³/s Aug. 4, 1956, gage height, 1.64 ft; maximum gage height, 3.50 ft Jan. 30, 1980, backwater from ice; minimum discharge, 16 ft³/s July 22-25, 1941, and at times December 1941 to March 1942.

STATISTICAL SUMMARIES FOR THE PERIOD 1923-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	52	18	1942	70	1957	42	12	9.3
Nov	52	17	1942	66	1957	40	12	8.6
Dec	52	16	1942	61	1957	38	11	8.4
Jan	52	16	1942	55	1957	36	9.4	7.9
Feb	52	16	1942	52	1957	34	8.6	7.0
Mar	52	16	1942	53	1957	34	8.8	7.6
Apr	52	17	1941	56	1951	37	9.6	7.9
May	52	17	1941	68	1956	37	11	8.3
Jun	52	17	1941	71	1956	38	12	8.2
Jul	53	16	1941	74	1956	39	12	8.7
Aug	53	17	1941	77	1956	42	13	9.3
Sep	53	17	1941	70	1956	43	13	9.1
Ann		18	1942	59	1951	38	9.8	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	25	27	29	30	32	34	38	42	47	52	54	56	57	59	63	52
Nov	24	27	28	29	31	33	36	41	46	50	51	52	54	58	60	52
Dec	23	25	27	29	30	32	34	39	42	46	48	49	51	54	58	52
Jan	23	24	25	28	29	30	33	36	41	43	45	46	47	48	50	52
Feb	22	24	25	27	29	30	32	34	38	42	43	44	45	47	49	52
Mar	22	25	27	28	29	30	31	35	38	41	43	44	46	48	51	52
Apr	21	25	26	29	31	32	34	38	41	43	44	46	49	52	54	52
May	22	25	26	28	30	31	33	36	41	44	46	47	50	55	61	52
Jun	23	26	27	28	29	30	34	36	41	45	48	49	53	57	61	52
Jul	26	27	28	29	30	32	35	37	43	48	50	51	53	57	63	53
Aug	26	28	29	30	32	33	37	40	47	52	54	56	58	62	69	53
Sep	26	27	29	30	31	35	39	41	48	53	55	57	59	61	66	53
Ann	22	25	27	28	29	31	34	37	41	45	47	49	52	55	60	

DESCHUTES RIVER BASIN

14055500 ODELL CREEK NEAR CRESCENT, OR

LOCATION.--Lat 43°32'51", long 121°57'41", in SW 1/4 SW 1/4 sec.25, T.23 S., R.6 E., Klamath County, Hydrologic Unit 17070301, on left bank 1,000 ft downstream from Odell Lake, 3 mi north of town of Crescent Lake, and 14 mi northwest of Crescent.

DRAINAGE AREA.--39.0 mi².

PERIOD OF RECORD.--August, September 1911, August, September 1912, January, February, May to November 1913, April to August 1914, December 1923 to June 1924, May 1933 to September 1976. Gage heights and discharge measurements only August, September 1911, January 1913. Published as Odell Lake outlet near Crescent 1911-12. Records for January to July 1912, published in WSP 332, have been found to be unreliable and should not be used.

GAGE.--Water-stage recorder. Datum of gage is 4,799.05 ft above National Geodetic Vertical Datum of 1929. Prior to June 7, 1924, nonrecording gage at several sites within 700 ft of present site at various datums.

REMARKS.--Flow affected occasionally in winter by ice jams at outlet of Odell Lake, and slightly affected at times by seiches in Odell Lake. No diversion upstream from station.

AVERAGE DISCHARGE.--43 years (water years 1933-76), 82.5 ft³/s, 28.73 in/yr, 59,770 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,100 ft³/s Dec. 25, 1964, gage height, 2.60 ft, from rating curve extended above 250 ft³/s; minimum, 9 ft³/s sometime during period Sept. 7-30, 1934.

STATISTICAL SUMMARIES FOR THE PERIOD 1913-1976

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	44	21	1943	112	1951	52	19	5.4
Nov	44	29	1937	185	1951	82	29	8.2
Dec	44	42	1945	337	1965	102	51	10.5
Jan	44	46	1960	218	1965	102	38	10.5
Feb	44	45	1935	160	1953	89	25	8.4
Mar	44	38	1935	177	1972	78	24	8.1
Apr	44	45	1941	111	1952	79	16	7.9
May	45	57	1924	180	1949	111	28	11.4
Jun	46	48	1934	220	1974	132	45	13.1
Jul	46	27	1968	139	1971	76	31	7.9
Aug	45	19	1973	78	1952	44	18	4.6
Sep	45	16	1942	69	1952	41	14	4.1
Ann		46	1941	120	1965	82	20	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	23	27	29	31	35	39	44	51	56	61	64	67	72	82	97	44
Nov	36	43	47	51	54	58	65	73	82	93	99	106	119	133	163	44
Dec	43	48	53	58	63	67	75	87	99	114	124	133	144	161	197	44
Jan	48	54	59	63	68	72	81	91	99	111	120	129	144	163	202	44
Feb	50	56	60	65	69	72	78	85	92	101	106	111	116	129	149	44
Mar	43	49	55	60	63	66	71	76	81	86	90	94	100	110	132	44
Apr	49	53	57	61	64	67	72	77	83	90	94	98	104	112	123	44
May	61	72	76	80	85	90	99	109	120	130	137	144	152	163	179	45
Jun	56	67	78	88	96	104	116	129	141	153	160	168	181	196	224	46
Jul	30	34	39	44	48	52	61	70	79	92	101	108	118	130	145	46
Aug	21	23	25	26	28	30	34	41	50	57	60	64	67	71	78	45
Sep	19	23	25	27	29	30	34	38	45	52	55	57	60	64	68	45
Ann	27	33	41	47	52	57	64	73	83	96	104	112	125	141	167	

UPPER DESCHUTES RIVER BASIN

14056500 DESCHUTES RIVER BELOW WICKIUP RESERVOIR, NEAR LA PINE, OR

LOCATION.--Lat 43°41'10", long 121°41'13", in NW 1/4 NE 1/4 sec.7, T.22 S., R.9 E., Deschutes County, Hydrologic Unit 17070301, on left bank 1,000 ft downstream from Wickiup Dam, 9 mi west of La Pine, and at mile 226.4.

DRAINAGE AREA.--483 mi², hydrologic drainage boundary uncertain because of interbasin ground-water exchange.

PERIOD OF RECORD.--June 1938 to 1987. Monthly discharge only June 1938, published in WSP 1318. Published as "near Lapine" 1938-64.

REVISED RECORDS.--WSP 1448: 1944(m), 1947-51(m).

GAGE.--Water-stage recorder. Datum of gage is 4,257.41 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--Flow regulated by Crane Prairie Reservoir (station 14053500), and since 1942 by Wickiup Reservoir (station 14056000). Some leakage from Crane Prairie and Wickiup Reservoirs does not pass station. Some spill bypassed station in 1955. Crater Creek canal diverts water upstream from station to Tumalo Creek basin.

AVERAGE DISCHARGE.--49 years, 743 ft³/s, 538,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,280 ft³/s July 28 to Aug. 1, 1956, July 31, Aug. 1, 2, 1962; minimum, 1.9 ft³/s Nov. 10, 1973; minimum daily, 10 ft³/s Jan. 17, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1943-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	45	112	1978	1200	1947	578	251	6.5
Nov	45	14	1960	1050	1944	168	212	1.8
Dec	45	16	1960	887	1985	175	218	2.0
Jan	45	17	1980	851	1944	221	255	2.5
Feb	45	16	1961	779	1975	259	257	2.7
Mar	45	17	1961	735	1972	275	237	3.1
Apr	45	268	1971	990	1959	556	199	6.1
May	45	476	1945	1540	1973	1040	220	11.7
Jun	45	638	1948	1790	1952	1350	297	14.7
Jul	45	922	1943	2080	1962	1650	298	18.6
Aug	45	908	1944	2120	1951	1520	268	17.1
Sep	45	803	1985	1700	1950	1220	200	13.3
Ann		552	1945	997	1957	754	115	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	25	45	126	241	301	424	516	582	648	751	839	908	977	1070	1180	45
Nov	20	21	23	24	26	29	44	70	124	248	321	425	471	509	752	45
Dec	20	22	23	24	26	28	40	72	143	295	414	442	470	514	601	45
Jan	20	21	23	24	26	29	43	82	233	425	486	530	571	662	736	45
Feb	21	23	24	26	29	32	59	182	373	502	540	572	616	668	722	45
Mar	23	25	27	28	31	34	159	253	389	472	524	563	602	667	722	45
Apr	31	170	260	350	400	437	499	558	617	673	714	756	822	901	1010	45
May	544	619	677	712	740	787	879	982	1080	1190	1250	1310	1380	1460	1530	45
Jun	626	721	847	902	960	1040	1220	1360	1470	1570	1620	1670	1740	1800	1880	45
Jul	835	973	1110	1220	1320	1430	1560	1650	1760	1850	1890	1930	1980	2040	2110	45
Aug	748	949	1060	1170	1240	1310	1420	1510	1580	1650	1690	1740	1810	1920	2020	45
Sep	613	700	775	863	936	1000	1110	1190	1290	1380	1420	1450	1510	1570	1650	45
Ann	22	26	32	64	173	299	507	635	820	1070	1220	1370	1500	1630	1840	

UPPER DESCHUTES RIVER BASIN

14057000 DESCHUTES RIVER AT PRINGLE FALLS, NEAR LAPINE, OR

LOCATION.--Lat 43°44'20", long 121°36'50", in SW 1/4 sec.23, T.21 S., R.9 E., Deschutes County, Hydrologic Unit 17070301, on left bank 0.5 mi upstream from bridge at Pringle Falls, 7 mi northwest of Lapine, and at mile 217.

DRAINAGE AREA.--507 mi², hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--October 1915 to September 1917, June 1922 to September 1952. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 4,243.26 ft above National Geodetic Vertical Datum of 1929 (Forest Service bench mark). Prior to June 6, 1922, staff gage at practically same site at datum 3.09 ft higher. June 6, 1922, to Nov. 9, 1947, water-stage recorder at present site at datum 2.00 ft higher.

REMARKS.--Flow regulated since 1922 by Crane Prairie Reservoir, and since 1942 by Wickiup Reservoir. Crater Creek Canal diverts water above station to Tumalo Creek basin.

AVERAGE DISCHARGE.--32 years (water years 1916-17, 1923-52), 727 ft³/s, 526,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,160 ft³/s Sept. 4, 8, 1951, gage height, 5.94 ft; minimum, 27 ft³/s Jan. 19, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1923-1941 (BEFORE THE CONSTRUCTION OF WICKIUP RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	527	1932	947	1939	715	132	8.5
Nov	19	473	1941	861	1926	657	128	7.6
Dec	19	469	1941	883	1928	629	118	7.5
Jan	19	433	1932	882	1928	616	114	7.4
Feb	19	427	1932	929	1924	636	132	6.9
Mar	19	419	1932	836	1924	626	116	7.5
Apr	19	448	1931	881	1924	637	115	7.4
May	19	545	1931	871	1928	701	92	8.4
Jun	19	687	1931	988	1925	811	94	9.4
Jul	19	661	1931	1170	1938	866	142	10.3
Aug	19	589	1941	1220	1938	864	176	10.3
Sep	19	533	1931	1090	1938	773	154	8.9
Ann		541	1931	872	1928	711	87	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	536	559	598	610	617	644	697	761	798	826	857	885	905	942	--	19
Nov	473	511	521	533	544	555	602	627	681	737	780	794	822	851	877	19
Dec	471	484	506	515	533	555	599	609	632	669	742	757	765	789	847	19
Jan	445	456	473	527	548	560	585	606	642	655	699	720	733	744	828	19
Feb	439	457	472	534	553	566	592	617	659	702	713	725	737	785	878	19
Mar	437	453	466	537	551	573	600	618	636	677	700	714	736	775	798	19
Apr	449	460	534	554	562	581	594	616	655	690	705	721	745	787	839	19
May	554	565	571	577	601	629	682	704	731	753	771	790	814	867	891	19
Jun	672	686	697	709	721	734	760	805	835	878	888	916	935	982	996	19
Jul	648	676	703	717	737	765	826	858	930	968	980	989	1010	1050	1110	19
Aug	615	634	660	685	693	703	831	933	955	977	990	1000	1020	1060	1160	19
Sep	536	556	604	627	642	666	712	772	824	884	909	921	943	977	1030	19
Ann	488	534	557	579	595	611	647	693	733	787	820	863	902	955	1000	

UPPER DESCHUTES RIVER BASIN

14057000 DESCHUTES RIVER AT PRINGLE FALLS, NEAR LAPINE, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1943-1952 (AFTER THE COMPLETION OF WICKIUP RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	509	1950	1170	1947	802	227	9.1
Nov	10	56	1951	1010	1944	353	301	3.9
Dec	10	50	1949	857	1944	282	251	3.2
Jan	10	56	1949	841	1944	278	239	3.1
Feb	10	98	1948	740	1944	329	228	3.4
Mar	10	68	1948	654	1951	382	210	4.3
Apr	10	273	1946	944	1952	511	219	5.6
May	10	475	1945	1110	1950	808	201	9.1
Jun	10	624	1948	1760	1952	1070	382	11.7
Jul	10	922	1943	2000	1952	1420	418	16.0
Aug	10	907	1944	2070	1951	1450	425	16.4
Sep	10	825	1944	1710	1950	1310	303	14.3
Ann		554	1945	955	1952	752	128	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	134	228	327	451	545	578	665	829	909	1050	1080	1110	1140	1170	1230	10
Nov	23	27	31	52	56	60	90	108	131	311	391	436	497	567	937	10
Dec	27	30	35	52	56	59	89	111	133	227	290	335	425	467	774	10
Jan	27	32	50	57	62	65	104	151	242	322	350	389	499	563	784	10
Feb	29	37	51	64	75	118	196	259	377	499	540	567	594	648	718	10
Mar	37	47	81	124	185	204	253	358	441	509	549	604	656	691	748	10
Apr	217	250	329	364	388	423	488	537	645	712	740	778	829	897	1030	10
May	527	604	638	679	722	769	826	885	1020	1110	1170	1230	1280	1340	1440	10
Jun	581	648	745	813	865	916	1010	1190	1450	1640	1690	1750	1800	1840	1910	10
Jul	933	967	1080	1170	1250	1320	1690	1820	1910	1940	1970	1990	2010	2040	2080	10
Aug	970	1040	1120	1180	1270	1400	1540	1610	1730	1820	1890	1940	1990	2030	2090	10
Sep	820	916	973	1020	1130	1180	1240	1350	1390	1470	1520	1560	1590	1630	1710	10
Ann	45	63	104	159	244	327	523	694	881	1100	1210	1360	1540	1740	1940	

UPPER DESCHUTES RIVER BASIN

14057500 FALL RIVER NEAR LA PINE, OR

LOCATION.--Lat 43°47'48", long 121°34'18", in NW 1/4 SE 1/4 sec.31, T.20 S., R.10 E., Deschutes County, Hydrologic Unit 17070301, on left bank 50 ft downstream from pond spillway at State fish hatchery, 9 mi northwest of La Pine, and at mile 4.8.

DRAINAGE.AREA.--45.1 mi², hydrologic drainage boundary uncertain because of interbasin ground-water exchange.

PERIOD OF RECORD.--July 1938 to 1987. Records for May to September 1912 at site 3 mi downstream not equivalent owing to difference in drainage area. Prior to Oct. 1, 1964, published as "near Lapine."

REVISED RECORDS.--WSP 984: 1938-42(M,m).

GAGE.--Water-stage recorder. Elevation of gage is 4,220 ft, by barometer.

REMARKS.--Diversion only to ponds at fish hatchery 50 ft upstream from station, from which water returns to river upstream from station. Stream is spring fed and momentary extremes are caused by operation of fish hatchery.

AVERAGE DISCHARGE.--49 years, 150 ft³/s, 108,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 254 ft³/s June 5, 1965, gage height, 2.02 ft; minimum discharge, 67 ft³/s sometime during period Sept. 20-30, 1969.

STATISTICAL SUMMARIES FOR THE PERIOD 1938-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	49	83	1943	207	1952	148	30	8.4
Nov	49	80	1942	199	1952	146	29	8.0
Dec	49	79	1942	198	1952	144	28	8.1
Jan	49	78	1942	191	1952	143	27	8.1
Feb	49	78	1942	187	1957	142	27	7.3
Mar	49	77	1942	193	1954	145	28	8.2
Apr	49	79	1942	218	1954	153	31	8.4
May	49	80	1942	233	1951	159	35	9.0
Jun	49	82	1942	233	1951	158	34	8.7
Jul	50	87	1942	224	1951	156	32	8.8
Aug	50	86	1942	218	1951	154	30	8.7
Sep	50	85	1942	208	1951	150	30	8.2
Ann		82	1942	202	1952	150	28	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	100	110	115	120	127	131	144	150	154	166	173	177	180	188	199	49
Nov	100	109	113	119	126	130	141	148	155	166	170	174	177	185	194	49
Dec	100	106	112	119	124	128	139	145	154	163	168	171	174	177	191	49
Jan	101	106	113	118	123	125	139	144	152	161	164	168	173	180	187	49
Feb	100	106	110	116	122	127	137	143	153	161	165	169	173	179	185	49
Mar	97	104	115	117	125	131	139	144	155	166	170	173	177	182	188	49
Apr	103	114	118	125	130	136	145	154	163	173	176	182	186	193	201	49
May	102	116	119	128	137	143	151	158	171	178	182	187	194	207	222	49
Jun	97	117	121	131	137	141	148	158	166	175	179	189	196	204	217	49
Jul	105	118	123	131	134	138	147	156	165	173	177	186	193	202	211	50
Aug	106	116	121	127	132	136	146	152	161	169	177	183	189	198	208	50
Sep	102	114	117	125	130	132	144	150	156	169	176	180	184	191	204	50
Ann	99	109	116	121	128	133	143	150	158	168	173	177	183	189	200	

LITTLE DESCHUTES RIVER BASIN

14060000 CRESCENT CREEK AT CRESCENT LAKE, NEAR CRESCENT, OR

LOCATION.--Lat 43°30'11", long 121°58'20", in SE 1/4 SW 1/4 sec.11, T.24 S., R.6 E., Klamath County, Hydrologic Unit 17070302, Deschutes National Forest, on left bank 400 ft downstream from Crescent Lake Dam, 0.5 mi south of town of Crescent Lake, 14 mi west of Crescent, and at mile 29.9.

DRAINAGE AREA.--60.7 mi², hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--January to September 1911 (gage heights and discharge measurements only), January 1912 to July 1915, July to September 1927, May 1928 to 1987. Published as Crescent Lake outlet near Crescent January 1911 to September 1912, and as Crescent Creek at outlet of Crescent Lake, near Crescent October 1913 to July 1915.

REVISED RECORDS.--WSP 1218: Drainage area.

GAGE.--Water-stage recorder and Parshall flume. Datum of gage is 4,819.96 ft above National Geodetic Vertical Datum of 1929. See WSP 1935 for history of changes prior to Sept. 11, 1956.

REMARKS.--Flow regulated since 1922 by Crescent Lake (station 14059500). No diversion upstream from station.

AVERAGE DISCHARGE.--61 years (water years 1913-14, 1929-87), 58.2 ft³/s, 42,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 313 ft³/s July 9, 1929, Aug. 9, 1936; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1928-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	59	0.0	1929	233	1957	21	44	3.2
Nov	59	0.0	1929	135	1952	13	26	1.9
Dec	59	0.0	1929	146	1951	16	33	2.4
Jan	59	0.0	1929	147	1951	18	35	2.7
Feb	59	0.0	1929	147	1951	20	35	2.7
Mar	59	0.0	1929	167	1954	24	39	3.5
Apr	59	0.0	1929	148	1954	24	35	3.5
May	59	0.0	1931	173	1957	57	54	8.4
Jun	60	0.0	1931	261	1957	108	76	15.3
Jul	60	14	1956	287	1958	165	60	24.1
Aug	60	10	1931	277	1958	152	63	22.2
Sep	60	0.0	1930	250	1956	71	65	10.1
Ann		8.2	1931	148	1957	58	32	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.0	1.0	2.6	3.7	6.0	9.4	19	28	37	61	137	59
Nov	0.0	0.0	0.0	0.0	0.0	1.0	2.6	3.7	4.4	6.8	9.1	12	20	34	91	59
Dec	0.0	0.0	0.0	0.0	0.0	0.9	2.3	4.0	5.4	6.5	7.6	11	22	50	109	59
Jan	0.0	0.0	0.0	0.0	0.0	0.6	2.9	4.1	5.9	7.1	7.9	13	43	91	110	59
Feb	0.0	0.0	0.0	0.0	0.0	0.7	2.9	4.8	6.7	7.5	9.2	43	60	83	107	59
Mar	0.0	0.0	0.0	0.0	0.0	1.3	2.9	5.7	7.0	12	23	48	67	87	118	59
Apr	0.2	0.4	0.5	0.7	0.9	1.4	3.4	6.7	8.8	21	26	43	68	87	109	59
May	0.3	0.5	0.8	1.0	2.8	5.7	10	38	68	94	103	112	138	148	158	59
Jun	0.5	0.9	2.8	7.0	25	46	78	100	142	160	171	190	209	229	254	60
Jul	6.9	62	86	109	127	140	161	180	196	208	214	221	234	248	266	60
Aug	7.9	33	56	88	105	120	148	166	182	198	206	218	230	241	264	60
Sep	0.0	0.0	0.0	1.1	2.7	3.9	20	38	63	113	134	154	173	193	233	60
Ann	0.0	0.0	0.0	0.0	1.8	2.9	5.7	8.7	35	83	105	133	159	186	223	

LITTLE DESCHUTES RIVER BASIN

14061000 BIG MARSH CREEK AT HOEY RANCH, NEAR CRESCENT, OR

LOCATION.--Lat 43°28'40", long 121°54'50", NW 1/4 SW 1/4 in sec.20, T.24 S., R.7 E., Klamath County, Hydrologic Unit 17070302, about 0.5 mi upstream from mouth, 2 mi east of Crescent Lake, and 11 mi west of Crescent.

DRAINAGE AREA.--51.5 mi², hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--April 1912 to December 1914, May 1928 to September 1930, May 1931 to September 1958.

GAGE.--Water-stage recorder. Elevation of gage is about 4,630 ft (from topographic map). Prior to Sept. 8, 1939, staff gages or water-stage recorder at several sites within 0.2 mi of present site at various datums.

REMARKS.--No diversion or regulation upstream from station.

COOPERATION.--Records for 1924, 1928-50, furnished by Oregon Water Resources Department.

AVERAGE DISCHARGE.--21 years (water years 1913, 1930, 1932-50), 64.8 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 581 ft³/s Apr. 20, 1943, gage height, 3.79 ft; maximum gage height, 4.56 ft Dec. 28, 30, 31, 1945 (backwater from ice); no flow Mar. 27, 1935, result of unusual regulation, but cause unknown.

STATISTICAL SUMMARIES FOR THE PERIOD 1912-1958

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	10	1943	67	1951	25	12	3.0
Nov	31	10	1937	133	1951	43	27	4.9
Dec	31	12	1932	243	1943	64	54	7.6
Jan	30	4.7	1937	179	1956	51	40	6.1
Feb	30	10	1929	162	1953	53	39	5.7
Mar	30	25	1955	280	1933	72	46	8.5
Apr	33	41	1955	336	1943	141	61	16.1
May	33	55	1934	329	1952	182	80	21.4
Jun	33	31	1934	263	1912	123	67	14.0
Jul	33	15	1934	94	1953	50	25	6.0
Aug	33	10	1931	47	1953	27	11	3.2
Sep	33	8.5	1934	38	1912	21	8.3	2.5
Ann		31	1941	133	1943	72	26	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	11	13	14	14	15	17	20	23	26	29	31	33	37	44	52	31
Nov	13	15	17	19	21	23	27	32	37	44	48	57	68	89	116	31
Dec	13	16	21	24	27	30	34	39	47	60	70	88	118	154	238	31
Jan	12	15	19	21	24	26	30	33	43	57	64	85	99	114	136	30
Feb	12	16	20	22	24	27	33	40	51	60	65	73	82	111	148	30
Mar	23	29	32	37	41	44	51	59	68	79	86	94	102	122	176	30
Apr	43	49	56	62	72	83	104	124	144	169	183	203	237	269	308	33
May	59	70	84	96	113	124	155	182	201	225	237	251	276	305	331	33
Jun	30	39	46	52	63	75	97	111	129	151	165	178	196	238	279	33
Jul	16	19	21	24	29	33	38	44	53	61	67	73	81	94	115	33
Aug	11	13	14	15	17	19	23	27	31	36	38	39	42	45	50	33
Sep	10	12	13	14	14	15	19	21	25	29	30	31	32	34	37	33
Ann	13	15	18	21	24	27	34	42	55	76	93	115	140	180	240	

LITTLE DESCHUTES RIVER BASIN

14063000 LITTLE DESCHUTES RIVER NEAR LA PINE, OR

LOCATION.--Lat 43°41'21", long 121°30'06", in SW 1/4 SW 1/4 sec.2, T.22 S., R.10 E., Deschutes County, Hydrologic Unit 17070302, on right bank 10 ft downstream from highway bridge, 1.1 mi north of La Pine, and at mile 26.8.

DRAINAGE AREA.--859 mi², hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--September 1910 to January 1911, March, April, August 1911, March to September 1912, June to October 1913, June to November 1918, August to October 1920, May 1924 to 1987. Monthly discharge only for some periods, published in WSP 1318. Published as Deschutes River near Lapine 1910-12, as East Fork Deschutes River near Lapine 1913-20, and as Little Deschutes River near Lapine 1924-64.

REVISED RECORDS.--WSP 1218: 1950.

GAGE.--Water-stage recorder. Datum of gage is 4,192.81 ft above National Geodetic Vertical Datum of 1929. Sept. 1, 1910, to Aug. 31, 1911, nonrecording gage at present site at different datum. Mar. 1 to Sept. 30, 1912, nonrecording gage at site 1.2 mi downstream at different datum. June 1, 1913, to Sept. 28, 1928, nonrecording gage and Sept. 29, 1928, to Sept. 30, 1931, water-stage recorder at present site at different datums.

REMARKS.--Flow regulated since 1922 by Crescent Lake (station 14059500). Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--63 years (water years 1925-87), 208 ft³/s, 150,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,660 ft³/s Dec. 25, 1964, gage height, 8.18 ft; minimum discharge, 8 ft³/s Sept. 2, 3, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1924-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	63	17	1932	350	1957	85	58	3.5
Nov	63	27	1932	356	1951	116	61	4.6
Dec	63	32	1940	712	1965	160	123	6.5
Jan	63	35	1929	656	1965	158	109	6.4
Feb	63	30	1929	562	1951	188	109	7.0
Mar	63	60	1933	709	1972	207	120	8.4
Apr	63	67	1977	716	1943	296	147	11.7
May	64	82	1926	990	1956	385	198	15.7
Jun	64	63	1931	788	1974	333	175	13.1
Jul	64	92	1931	470	1974	243	79	9.9
Aug	64	30	1931	342	1976	196	69	8.0
Sep	64	11	1931	319	1956	119	72	4.7
Ann		66	1931	374	1956	208	82	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	27	33	37	41	47	52	61	70	81	93	100	109	121	152	224	63
Nov	40	48	55	61	67	72	82	93	106	125	138	157	178	217	273	63
Dec	40	51	62	70	76	83	99	114	135	165	184	210	243	309	425	63
Jan	43	54	65	71	76	84	102	121	143	167	183	204	250	308	450	63
Feb	45	67	73	84	101	112	129	157	186	216	236	264	295	338	444	63
Mar	74	92	106	116	126	137	152	170	188	219	244	278	319	377	469	63
Apr	106	125	144	161	176	189	216	249	291	344	373	413	469	545	645	63
May	98	136	162	192	222	251	315	357	413	486	522	561	611	659	737	64
Jun	111	142	163	180	194	208	248	287	332	399	437	475	538	618	728	64
Jul	107	129	153	173	188	197	216	234	252	276	294	310	330	361	408	64
Aug	64	93	106	122	141	157	181	201	219	240	251	264	280	299	319	64
Sep	25	36	44	51	58	66	81	95	116	152	171	190	215	247	287	64
Ann	42	58	70	82	93	105	136	170	201	244	271	304	344	415	546	

UPPER DESCHUTES RIVER BASIN

14064500 DESCHUTES RIVER AT BENHAM FALLS, NEAR BEND, OR

LOCATION.--Lat 43°55'49", long 121°24'39", in SW 1/4 NE 1/4 sec.16, T.19 S., R.11 E., Deschutes County, Hydrologic Unit 17070301, Deschutes National Forest, on right bank 0.5 mi upstream from Benham Falls, 10 mi southwest of Bend, and at mile 181.4.

DRAINAGE AREA.--1,759 mi².

PERIOD OF RECORD.--April 1906 to September 1913, April to September 1914, August to December 1920, April to September 1921, February 1924 to 1987. Monthly discharge only for some periods, published in WSP 1318. Published as "at West's ranch, near Lava" April 1906 to February 1909, April to September 1914. Records for January 1905 to March 1906 and October 1913 to September 1914, published under present name in WSP 370 and 394, have been found to be unreliable and should not be used.

REVISED RECORDS.--See PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 4,142.10 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). See WSP 1738 for history of changes prior to Nov. 20, 1958.

REMARKS.--Flow regulated by Crane Prairie Reservoir, Crescent Lake, and Wickiup Reservoir. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--70 years (water years 1907-13, 1925-87), 1,418 ft³/s, 1,027,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s, estimated, Nov. 27, 1909 (gage height not determined); minimum discharge, 363 ft³/s Jan. 20, 1962.

STATISTICAL SUMMARIES FOR THE PERIOD 1925-1941 (BEFORE THE CONSTRUCTION OF WICKIUP RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	17	829	1932	1400	1928	1100	173	7.8
Nov	17	850	1932	1450	1928	1070	190	7.4
Dec	17	843	1932	1520	1928	1060	183	7.6
Jan	17	797	1932	1420	1928	1030	166	7.3
Feb	17	799	1932	1450	1925	1070	189	7.0
Mar	17	865	1941	1450	1928	1110	167	7.9
Apr	17	837	1941	1510	1925	1200	183	8.3
May	17	940	1931	1760	1938	1340	235	9.6
Jun	17	1040	1931	1610	1925	1370	178	9.5
Jul	17	1030	1931	1650	1938	1400	181	10.0
Aug	17	931	1931	1670	1938	1340	244	9.6
Sep	17	850	1941	1520	1938	1170	202	8.1
Ann		920	1931	1460	1928	1190	151	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	582	670	753	836	927	989	1100	1190	1270	1410	1470	1590	1660	1750	1900	17
Nov	511	546	562	576	590	607	654	708	817	893	918	956	1030	1180	1390	17
Dec	520	547	570	591	611	631	685	762	862	962	1010	1070	1150	1280	1410	17
Jan	530	549	570	587	604	620	680	829	927	1050	1120	1280	1340	1430	1480	17
Feb	544	588	620	648	673	699	769	868	1010	1190	1230	1340	1430	1500	1610	17
Mar	574	619	640	662	685	710	792	965	1080	1200	1280	1420	1510	1630	1780	17
Apr	671	801	893	962	1070	1160	1280	1400	1500	1600	1660	1710	1790	1880	2000	17
May	1300	1460	1560	1620	1670	1740	1870	1980	2070	2170	2210	2280	2350	2430	2540	17
Jun	1470	1660	1770	1900	1990	2050	2170	2270	2350	2450	2490	2540	2590	2650	2760	17
Jul	1610	1880	2030	2110	2150	2230	2350	2430	2510	2580	2630	2680	2730	2830	2920	17
Aug	1580	1780	1890	1970	2020	2080	2160	2220	2280	2370	2430	2510	2580	2660	2750	17
Sep	1290	1360	1450	1530	1610	1690	1820	1900	1980	2050	2100	2160	2220	2290	2440	17
Ann	846	890	929	968	1010	1040	1100	1160	1240	1320	1360	1420	1470	1540	1610	

UPPER DESCHUTES RIVER BASIN

14064500 DESCHUTES RIVER AT BENHAM FALLS, NEAR BEND, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1944-1987 (AFTER THE COMPLETION OF WICKIUP RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	44	646	1978	2090	1957	1200	311	6.9
Nov	44	487	1970	1540	1944	794	248	4.4
Dec	44	520	1970	1660	1985	845	269	4.8
Jan	44	543	1949	1540	1975	892	311	5.1
Feb	44	515	1969	1620	1951	971	332	5.1
Mar	44	542	1969	2070	1972	1030	391	5.9
Apr	44	902	1948	2100	1952	1370	335	7.6
May	44	1200	1945	2520	1956	1950	307	11.2
Jun	44	1260	1945	3020	1952	2210	343	12.3
Jul	44	1490	1944	2940	1957	2370	341	13.6
Aug	44	1400	1944	2790	1952	2210	309	12.7
Sep	44	1260	1944	2490	1956	1860	275	10.3
Ann		1020	1945	1970	1957	1480	231	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	826	854	894	919	950	962	1040	1070	1100	1150	1230	1260	1340	1370	1410 44
Nov	817	847	866	883	897	911	948	1010	1100	1200	1230	1260	1330	1360	1410 44
Dec	824	844	861	876	896	914	960	995	1060	1140	1180	1210	1250	1310	1460 44
Jan	793	813	833	844	887	925	972	1000	1040	1110	1130	1170	1210	1250	1390 44
Feb	798	831	844	854	900	937	969	1030	1050	1140	1190	1240	1290	1340	1420 44
Mar	834	859	879	905	928	980	1050	1110	1140	1220	1240	1270	1300	1320	1370 44
Apr	863	916	962	1010	1060	1090	1130	1160	1210	1270	1300	1340	1410	1500	1550 44
May	940	1030	1070	1100	1130	1160	1220	1260	1370	1450	1500	1550	1640	1710	1760 44
Jun	1040	1070	1090	1170	1230	1260	1310	1370	1430	1490	1520	1550	1560	1590	1660 44
Jul	1050	1130	1210	1250	1270	1290	1340	1420	1480	1530	1560	1580	1610	1630	1650 44
Aug	911	993	1050	1070	1110	1170	1270	1380	1470	1530	1550	1580	1610	1630	1680 44
Sep	848	870	943	972	1010	1030	1080	1150	1180	1290	1320	1370	1420	1460	1500 44
Ann	567	615	667	742	852	950	1190	1420	1660	1950	2070	2180	2300	2440	2610

DESCHUTES RIVER BASIN

14066000 DESCHUTES RIVER BELOW LAVA ISLAND, NEAR BEND, OR

LOCATION.--Lat 44°00'00", long 121°22'30", in SW 1/4 sec.23, T.18 S., R.11 E., Deschutes County, Hydrologic Unit 17070301, on right bank 0.8 mi downstream from Lava Island, 1.5 mi downstream from intake of Arnold Canal, 5 mi southwest of Bend, and at mile 173.0.

DRAINAGE AREA.--1,829 mi².

PERIOD OF RECORD.--March 1925 to September 1965.

GAGE.--Water-stage recorder. Elevation of gage is 3,825 ft (by barometer). Prior to May 4, 1927, at site 0.2 mi upstream at different datum. May 4, 1927, to Nov. 11, 1947 and Nov. 12, 1947, to Oct. 24, 1959, at present site at datums 2.00 and 1.00 ft higher, respectively.

REMARKS.--Flow regulated by Crescent Lake and Crane Prairie Reservoir and, since 1942, by Wickiup Reservoir. Small diversions for irrigation upstream from station. Arnold Canal diverts upstream from station for irrigation near Bend.

AVERAGE DISCHARGE.--40 years, 1,237 ft³/s, 895,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,360 ft³/s Dec. 26, gage height, 5.14 ft; minimum, 390 ft³/s Jan. 20, 1962.

STATISTICAL SUMMARIES FOR THE PERIOD 1926-1941 (BEFORE THE CONSTRUCTION OF WICKIUP RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	15	734	1932	1240	1939	959	147	7.8
Nov	15	773	1932	1260	1928	956	157	7.5
Dec	15	753	1932	1370	1928	955	165	7.7
Jan	14	709	1932	1300	1928	926	155	7.5
Feb	14	727	1932	1240	1928	942	146	6.9
Mar	15	806	1941	1330	1928	999	150	8.1
Apr	16	739	1941	1430	1928	1060	167	8.3
May	16	808	1931	1590	1938	1140	210	9.2
Jun	16	909	1931	1410	1938	1180	146	9.2
Jul	16	899	1931	1450	1938	1230	154	9.9
Aug	16	817	1931	1520	1938	1190	212	9.6
Sep	16	738	1931	1380	1938	1020	171	8.0
Ann		830	1931	1300	1928	1050	139	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	747	784	817	839	849	865	900	925	976	1010	1080	1100	1150	1200	1240 15
Nov	777	792	804	816	830	842	875	899	939	1030	1060	1110	1160	1220	1280 15
Dec	750	780	799	814	823	832	872	900	973	1050	1080	1100	1120	1190	1330 15
Jan	721	753	781	794	815	832	877	913	933	959	985	1050	1080	1140	1290 14
Feb	746	781	799	813	844	853	871	895	936	1020	1050	1090	1130	1170	1210 14
Mar	791	809	826	845	871	904	958	986	1020	1060	1100	1140	1180	1210	1320 15
Apr	748	863	907	932	950	965	993	1030	1080	1130	1160	1180	1220	1290	1430 16
May	863	896	931	955	981	1010	1050	1090	1160	1230	1260	1330	1410	1470	1570 16
Jun	927	956	995	1050	1080	1110	1140	1180	1230	1270	1300	1330	1350	1370	1440 16
Jul	913	990	1070	1110	1130	1150	1200	1240	1290	1340	1370	1400	1410	1430	1450 16
Aug	824	881	930	980	1010	1040	1140	1240	1280	1340	1370	1400	1420	1450	1510 16
Sep	742	777	843	874	908	931	966	1000	1050	1110	1160	1190	1220	1260	1330 16
Ann	772	811	841	865	891	920	974	1040	1115	1189	1227	1264	1311	1370	1437

DESCHUTES RIVER BASIN

14066000 DESCHUTES RIVER BELOW LAVA ISLAND, NEAR BEND, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1943-1965 (AFTER THE COMPLETION OF WICKIUP RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	762	1943	1840	1957	1200	292	7.4
Nov	23	553	1950	1490	1944	783	232	4.7
Dec	23	539	1949	1270	1944	806	223	5.0
Jan	23	515	1949	1290	1954	811	236	5.0
Feb	23	544	1964	1570	1951	916	298	5.1
Mar	23	543	1948	1820	1957	982	341	6.0
Apr	23	809	1948	1970	1952	1300	335	7.7
May	23	975	1945	2310	1956	1750	377	10.8
Jun	23	1060	1945	2720	1952	1960	430	11.7
Jul	23	1330	1944	2660	1952	2170	425	13.3
Aug	23	1250	1944	2540	1952	2060	373	12.7
Sep	23	1110	1944	2220	1956	1750	284	10.4
Ann		902	1945	1790	1957	1380	232	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	663	709	760	844	889	944	1070	1170	1300	1440	1500	1580	1640	1740	1850	23
Nov	537	549	562	576	594	617	662	715	779	841	873	909	972	1130	1370	23
Dec	525	544	559	576	594	619	668	745	820	896	926	968	1090	1200	1270	23
Jan	516	531	542	553	566	583	711	790	858	945	991	1030	1100	1200	1250	23
Feb	534	563	609	635	662	695	768	836	944	1050	1120	1170	1250	1390	1550	23
Mar	540	596	628	654	680	707	784	969	1030	1120	1170	1260	1400	1550	1630	23
Apr	763	795	857	898	971	1050	1180	1300	1400	1540	1580	1650	1730	1810	1970	23
May	1050	1220	1320	1360	1410	1480	1660	1790	1890	2010	2070	2130	2200	2260	2440	23
Jun	1200	1280	1380	1480	1580	1670	1900	2090	2200	2290	2320	2360	2410	2460	2610	23
Jul	1340	1400	1570	1680	1990	2110	2230	2310	2390	2460	2490	2530	2580	2620	2660	23
Aug	1290	1490	1550	1710	1840	1930	2040	2120	2240	2340	2370	2400	2440	2490	2580	23
Sep	1170	1220	1360	1460	1530	1610	1720	1780	1850	1950	1990	2040	2100	2210	2280	23
Ann	552	608	679	747	817	902	1080	1290	1500	1760	1890	2040	2180	2320	2470	

UPPER DESCHUTES RIVER BASIN

14070500 DESCHUTES RIVER BELOW BEND, OR

LOCATION.--Lat 44°04'59", long 121°18'24", in SE 1/4 SE 1/4 sec.20, T.17 S., R.12 E., Deschutes County, Hydrologic Unit 17070301, on right bank 0.4 mi downstream from North Canal, at city limits of town of Bend, and at mile 164.4.

DRAINAGE AREA.--1,899 mi².

PERIOD OF RECORD.--October 1914 to 1987.

REVISED RECORDS.--WSP 1318: 1916-18 (M), 1926 (M), 1931 (M).

GAGE.--Water-stage recorder. Datum of gage is 3,503.96 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1931, water-stage recorder at site 200 ft downstream at datum 1.00 ft higher.

REMARKS.--Flow regulated by powerplant at Bend, Crescent Lake, Crane Prairie Reservoir, and Wickiup Reservoir. Six large canals and several small ditches divert water upstream from station for irrigation.

AVERAGE DISCHARGE.--73 years, 501 ft³/s, 363,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,820 ft³/s Dec. 27, 1964, gage height, 4.90 ft; maximum gage height, 5.38 ft Dec. 15, 1932 (backwater from ice); minimum discharge, 1.0 ft³/s Aug. 25, 1930.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge near this site since 1905, 4,820 ft³/s Nov. 27, 1909.

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	30	1965	661	1985	225	184	5.1
Nov	31	357	1965	1130	1973	613	221	13.4
Dec	31	338	1970	1550	1985	685	267	15.4
Jan	31	435	1981	1370	1975	757	310	17.0
Feb	31	465	1981	1340	1957	820	313	16.8
Mar	31	270	1968	1770	1957	807	406	18.2
Apr	31	22	1968	1190	1984	329	282	7.2
May	31	21	1968	300	1957	68	58	1.5
Jun	31	23	1968	301	1958	66	56	1.4
Jul	31	24	1968	128	1958	51	26	1.1
Aug	31	21	1964	153	1976	54	35	1.2
Sep	31	19	1968	280	1972	71	63	1.6
Ann		205	1968	711	1984	377	153	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	24	26	30	32	33	39	53	86	150	295	352	413	509	584	801	31
Nov	229	291	359	415	455	489	529	573	634	708	753	817	887	961	1100	31
Dec	247	345	413	458	490	518	560	608	678	805	862	921	1000	1100	1300	31
Jan	297	398	459	491	517	533	567	615	819	913	982	1110	1230	1310	1400	31
Feb	353	465	491	518	544	570	628	709	870	1030	1110	1190	1270	1350	1460	31
Mar	192	323	432	497	534	565	617	681	788	998	1090	1200	1330	1490	1670	31
Apr	27	31	35	38	43	49	78	138	227	402	516	606	703	922	1310	31
May	24	27	29	31	33	35	39	45	52	60	68	84	103	124	199	31
Jun	23	25	26	28	29	30	34	38	45	55	63	75	94	131	225	31
Jul	24	26	27	28	30	31	33	36	41	51	58	65	75	96	134	31
Aug	21	23	25	26	27	28	31	33	45	53	60	75	93	117	165	31
Sep	21	23	25	26	28	29	33	39	47	63	86	107	133	161	237	31
Ann	24	27	30	33	38	45	71	163	418	552	604	682	823	992	1258	

UPPER DESCHUTES RIVER BASIN

14073001 TUMALO CREEK NEAR BEND, OR

LOCATION.--Lat 44°05'16", long 121°22'18", in NW 1/4 SE 1/4 sec.23, T.17S. R.11 E., Deschutes County, Hydrologic Unit 17070301, on left bank 0.25 mi upstream from diversion to Tumalo feed canal, 3.0 mi northwest of Bend, and at mile 3.1.

DRAINAGE AREA.--47.3 mi².

PERIOD OF RECORD.--October 1913 to December 1921, February, April to November 1922, March 1923 to September 1987 (discontinued). Published as "below Bend" 1949-50.

REVISED RECORDS.--WSP 864: 1937. WSP 1218: Drainage area. WSP 1448: 1923(M), 1927-29(M), 1935(M), 1942(M). WDR OR-75-1: 1974(M).

GAGE.--Water-stage recorder. Datum of gage is 3,566.82 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 27, 1915, nonrecording gage and Apr. 27, 1915, to Sept. 30, 1918, water-stage recorder or nonrecording gage at same site and datum.

REMARKS.--All records given herein include flow in Columbia Southern Canal, which diverts 8 mi upstream from station for irrigation of land near Tumalo. Crater Creek Canal diverts flow of tributaries of Soda Creek into head of Tumalo Creek. Diversion upstream from station for municipal supply of Bend since Dec. 15, 1926.

AVERAGE DISCHARGE.--69 years (water years 1914, 1917-21, 1924-35, 1937-87), 102 ft³/s, 73,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,140 ft³/s Nov. 9, 1968 (no flow in canal), from rating curve extended above 780 ft³/s on basis of slope-area measurement at 3.45 ft; minimum daily, 25 ft³/s Jan. 3, 1924.

STATISTICAL SUMMARIES FOR THE PERIOD 1924-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	64	44	1932	119	1948	67	14	5.7
Nov	64	44	1932	149	1951	76	19	6.2
Dec	64	44	1932	175	1956	79	27	6.7
Jan	64	37	1949	131	1971	71	18	6.0
Feb	64	41	1932	143	1982	72	20	5.6
Mar	64	44	1933	148	1934	70	18	6.0
Apr	64	51	1967	153	1943	92	24	7.5
May	64	72	1977	332	1956	176	47	14.8
Jun	64	94	1931	409	1974	227	75	18.5
Jul	64	39	1977	291	1943	136	62	11.4
Aug	64	39	1977	128	1953	73	19	6.1
Sep	64	43	1977	88	1954	64	12	5.2
Ann		62	1977	151	1956	101	19	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	48	51	53	55	56	58	61	65	69	73	75	78	81	87	98	64
Nov	50	53	56	58	60	62	66	69	73	78	81	85	90	102	137	64
Dec	47	51	54	57	59	62	65	69	74	80	84	91	100	113	141	64
Jan	43	50	53	55	58	60	64	68	72	77	81	85	91	98	110	64
Feb	44	50	53	55	57	60	64	67	71	75	79	84	90	99	119	64
Mar	49	52	55	57	60	61	64	66	70	75	79	83	87	93	109	64
Apr	55	60	62	65	68	71	76	82	90	101	106	115	129	150	171	64
May	82	95	103	111	119	128	146	163	183	205	217	232	251	275	323	64
Jun	92	106	126	140	155	169	194	219	245	270	286	303	323	352	396	64
Jul	58	63	68	72	77	83	98	112	131	160	177	198	222	252	288	64
Aug	48	50	52	54	56	59	63	69	76	84	88	92	95	101	111	64
Sep	46	48	50	53	54	56	59	63	68	72	74	77	80	83	88	64
Ann	48	52	55	58	61	63	68	74	82	96	107	126	156	196	257	

UPPER DESCHUTES RIVER BASIN

14075000 SQUAW CREEK NEAR SISTERS, OR

LOCATION.--Lat 44°14'02", long 121°33'57", in SE 1/4 SW 1/4 sec.29, T.15 S., R.10 E., Deschutes County, Hydrologic Unit 17070301, on right bank 800 ft upstream from intake of McAllister ditch, 4 mi south of Sisters, and at mile 26.8.

DRAINAGE AREA.--45.2 mi², not including 12.6 mi² of Pole Creek. See REMARKS.

PERIOD OF RECORD.--July 1906 to October 1918, June to August 1919, October 1919 to September 1920, May 1921 to September 1924 (no winter records), April 1925 to 1987. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WDR OR-83-1: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 3,490 ft, by barometer. July 1, 1906, to May 29, 1913, nonrecording gage at site 1,000 ft downstream at different datum, below intake of McAllister ditch (records include flow in McAllister ditch). May 30, 1913, to Sept. 2, 1915, nonrecording gage and Mar. 24, 1916, to Oct. 5, 1928, water-stage recorder at site 300 ft downstream at different datum. Oct. 6, 1928, to Nov. 7, 1967, water-stage recorder at site 200 ft downstream at datum 2.64 ft lower.

REMARKS.--No regulation. A canal near mouth of Pole Creek has diverted the entire flow of that creek since 1885. Prior to Oct. 1, 1982, drainage area of 57.8 mi² included that of Pole Creek. Water is diverted from Snow Creek, a tributary upstream from station, for irrigation in Three Creek basin.

AVERAGE DISCHARGE.--75 years (water years 1907-18, 1920, 1926-87), 105 ft³/s, 76,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge since 1909, 2,000 ft³/s Dec. 25, 1980, from rating curve extended above 690 ft³/s on basis of slope-area measurement of peak flow; a maximum gage height of 9.2 ft from water-borne ice was observed on Jan. 11, 1979, and probably occurred on Jan. 10, 1979; previous maximum gage height, about 8.75 ft, over top of gage Nov. 22, 1909, site and datum then in use (discharge not determined); minimum discharge, 14 ft³/s Mar. 2, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1906-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	76	39	1978	132	1948	65	16	5.3
Nov	76	36	1940	255	1910	79	38	6.2
Dec	75	35	1932	219	1965	81	41	6.6
Jan	75	23	1937	180	1971	70	30	5.7
Feb	75	24	1937	220	1907	69	34	5.1
Mar	75	33	1966	158	1972	62	23	5.0
Apr	75	36	1929	133	1934	76	21	6.0
May	80	57	1977	279	1956	143	41	11.6
Jun	80	113	1977	390	1933	224	66	17.5
Jul	82	69	1977	347	1917	193	60	15.6
Aug	81	67	1944	209	1916	121	33	9.8
Sep	81	50	1944	136	1913	81	18	6.4
Ann		61	1977	164	1956	105	20	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	41	45	48	50	53	54	57	61	66	70	72	76	81	86	101	76
Nov	39	42	46	49	52	54	59	64	70	76	80	87	100	119	185	76
Dec	38	43	46	49	51	53	57	63	71	81	90	99	110	131	172	75
Jan	36	40	43	46	49	52	57	61	66	74	80	87	97	109	137	75
Feb	35	39	42	46	48	50	55	59	64	70	73	81	92	108	138	75
Mar	36	39	42	44	46	48	52	56	62	67	71	76	82	92	108	75
Apr	42	47	51	54	57	60	65	71	78	86	92	99	107	121	135	75
May	68	76	84	90	95	102	118	133	147	166	178	188	204	224	261	80
Jun	113	126	138	148	157	167	190	213	238	261	276	292	311	334	374	80
Jul	97	111	120	128	138	150	168	185	204	225	234	247	264	288	327	82
Aug	71	78	84	88	92	97	106	115	126	136	143	152	162	172	195	81
Sep	51	56	60	62	65	68	73	79	84	90	93	96	102	110	121	81
Ann	40	46	50	54	57	60	68	79	93	114	130	148	173	206	258	

UPPER DESCHUTES RIVER BASIN

14076500 DESCHUTES RIVER NEAR CULVER, OR

LOCATION.--Lat 44°29'56", long 121°19'12", in NW 1/4 SE 1/4 sec.29, T.12 S., R.12 E., Jefferson County, Hydrologic Unit 17070301, on right bank 2.5 mi downstream from Squaw Creek, 6.0 mi southwest of Culver, and at mile 120.6.

DRAINAGE AREA.--2,705 mi².

PERIOD OF RECORD.--July 1952 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 1,980 ft above National Geodetic Vertical Datum of 1929 (river-profile survey). July 14, 1952, to Sept. 30, 1961, at site 4.1 mi downstream at different datum.

REMARKS.--Flow regulated by Crescent Lake and Crane Prairie and Wickiup Reservoirs. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--35 years, 929 ft³/s, 673,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,680 ft³/s Dec. 24, 1964, gage height, 10.00 ft, from rating curve extended above 2,200 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 418 ft³/s July 7, 8, 1964.

STATISTICAL SUMMARIES FOR THE PERIOD 1953-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	35	470	1964	1170	1985	705	184	6.4
Nov	35	837	1965	1710	1985	1180	226	10.4
Dec	35	953	1964	2130	1985	1320	308	12.1
Jan	35	1010	1963	2010	1975	1390	324	12.7
Feb	35	1010	1967	2030	1975	1450	323	12.1
Mar	35	839	1964	2360	1972	1390	420	12.7
Apr	35	510	1968	1800	1984	870	302	7.7
May	35	457	1964	1230	1956	591	143	5.4
Jun	35	455	1964	1020	1956	641	150	5.7
Jul	35	430	1964	766	1975	553	83	5.1
Aug	35	441	1964	741	1953	531	66	4.9
Sep	35	455	1963	782	1953	558	89	4.9
Ann		677	1964	1290	1984	929	171	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	477	493	502	510	520	530	554	591	668	760	803	860	949	1080	1280	35
Nov	750	846	918	971	1020	1040	1090	1150	1220	1310	1360	1400	1470	1570	1710	35
Dec	824	927	998	1040	1070	1100	1160	1230	1310	1420	1500	1570	1680	1830	2060	35
Jan	880	997	1050	1080	1110	1140	1200	1320	1460	1590	1710	1800	1880	1950	2040	35
Feb	955	1040	1070	1110	1140	1180	1260	1390	1530	1690	1760	1840	1920	2000	2090	35
Mar	749	904	998	1060	1090	1130	1190	1280	1420	1560	1640	1800	1940	2120	2270	35
Apr	495	508	519	529	539	553	594	684	802	1010	1100	1200	1300	1530	1880	35
May	466	477	488	494	501	507	524	542	561	589	608	633	673	736	913	35
Jun	458	472	483	493	504	515	536	569	606	674	726	770	841	912	1050	35
Jul	453	466	475	481	487	493	505	516	534	557	582	615	662	705	772	35
Aug	453	463	470	477	484	490	500	511	525	546	559	576	601	645	739	35
Sep	463	471	477	483	489	496	509	523	547	580	597	623	663	725	818	35
Ann	468	485	500	513	527	547	605	754	1001	1142	1215	1319	1457	1643	1906	

SOUTH FORK BEAVER CREEK BASIN

14077500 NORTH FORK BEAVER CREEK NEAR PAULINA, OR

LOCATION.--Lat 44°10'00", long 119°44'00", in SW 1/4 sec.21, T.16 S., R.25 E., Crook County, Hydrologic Unit 17070303 on left bank 2 mi upstream from confluence with South Fork and 12 mi east of Paulina.

DRAINAGE AREA.--64.4 mi².

PERIOD OF RECORD.--January 1942 to September 1954. Prior to October 1945 monthly discharge only, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 3,848.83 ft above National Geodetic Vertical Datum of 1929 (survey by Bureau of Reclamation).

REMARKS.--Several small reservoirs upstream from station store water for irrigation and stock watering. Most of summer flow is diverted for irrigation 1,000 acres upstream from station.

AVERAGE DISCHARGE.--12 years (1942-54), 27.2 ft³/s, (19,690 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD. --Maximum discharge, 955 ft³/s Mar. 25, 1952, gage height, 5.85 ft, from rating curve extended above 330 ft³/s; no flow July 30 to Aug. 7, Aug. 19, 20, 1951.

STATISTICAL SUMMARIES FOR THE PERIOD 1943-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	0.3	1944	1.0	1943	0.5	0.2	0.1
Nov	12	0.3	1953	19	1943	5.6	6.5	1.7
Dec	12	0.9	1953	68	1943	22	26	7.1
Jan	12	1.0	1949	60	1953	23	21	7.4
Feb	12	9.1	1944	109	1951	58	29	16.5
Mar	12	20	1948	189	1943	78	48	24.5
Apr	12	23	1944	218	1952	96	50	29.0
May	12	1.9	1944	116	1948	35	31	11.0
Jun	12	1.2	1949	29	1948	8.4	9.5	2.5
Jul	12	0.1	1947	1.3	1948	0.4	0.3	0.1
Aug	12	0.1	1951	1.0	1943	0.2	0.1	0.1
Sep	12	0.2	1950	1.0	1943	0.3	0.1	0.1
Ann		6.3	1944	44	1943	27	10	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	12
Nov	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.7	0.7	1.0	1.2	1.5	1.9	5.5	28	12
Dec	0.6	0.7	0.9	0.9	1.2	1.2	2.3	4.8	6.5	13	17	22	29	47	95	12
Jan	0.7	0.9	0.9	1.1	1.3	1.6	5.0	7.3	12	18	21	26	37	53	99	12
Feb	1.9	2.8	5.5	6.9	13	17	22	30	42	56	66	81	109	159	270	12
Mar	7.1	9.7	15	18	23	29	39	50	68	89	102	116	136	166	243	12
Apr	19	25	30	39	45	52	68	80	99	123	137	148	164	185	208	12
May	0.5	1.8	2.3	3.6	6.4	8.9	15	22	32	43	48	56	65	82	117	12
Jun	0.4	0.4	0.4	0.5	0.9	1.0	1.8	2.6	3.7	5.6	7.1	12	17	28	38	12
Jul	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.7	1.4	12
Aug	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	12
Sep	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	12
Ann	0.2	0.2	0.3	0.3	0.4	0.4	0.7	1.4	6.2	19	28	40	57	84	141	

SOUTH FORK BEAVER CREEK BASIN

14078000 BEAVER CREEK NEAR PAULINA, OR

LOCATION.--Lat 44°09'50", long 119°55'20", in NE 1/4 sec.26, T.16 S., R.23 E., Crook County, Hydrologic Unit 17070303, on right bank 0.7 mi downstream from Paulina Creek, 1.7 mi downstream from Wolf Creek, 2.7 mi northeast of Paulina, and at mile 10.0.

DRAINAGE AREA.--450 mi², approximately.

PERIOD OF RECORD.--October 1942 to September 1975. Prior to October 1945 monthly discharge only, published in WSP 1318.

GAGE.--Water-stage recorder. Elevation of gage is 3,690 ft (by barometer). Oct. 1, 1942, to July 7, 1965 at datum 1.00 ft higher.

REMARKS.--No regulation. Diversions for irrigation upstream from station. Two small ditches divert upstream from station for irrigation below.

AVERAGE DISCHARGE.--33 years, 89.1 ft³/s, 64,550 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,800 ft³/s Dec. 22, 1964, gage height, 14.20 ft, from floodmark, present datum, from rating curve extended above 1,600 ft³/s, on basis of slope-area measurement of peak flow; no flow Oct. 13-29, 1945.

STATISTICAL SUMMARIES FOR THE PERIOD 1943-1975

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	33	0.4	1969	12	1949	5.3	2.8	0.5
Nov	33	5.6	1968	129	1974	22	27	2.0
Dec	33	8.0	1968	433	1965	83	109	7.9
Jan	33	10	1960	589	1970	120	139	11.4
Feb	33	15	1955	858	1958	198	165	17.2
Mar	33	35	1968	889	1943	279	194	26.6
Apr	33	1.5	1968	796	1952	251	162	23.1
May	33	0.4	1968	298	1948	92	82	8.8
Jun	33	0.5	1973	124	1948	17	26	1.6
Jul	33	0.7	1968	29	1948	4.9	5.7	0.5
Aug	33	0.4	1966	7.1	1948	1.6	1.4	0.1
Sep	33	0.4	1972	6.1	1965	2.3	1.8	0.2
Ann		15	1968	215	1943	89	48	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.3	0.6	1.1	2.1	3.0	3.5	4.2	5.3	5.8	6.5	6.8	7.2	7.6	8.5	12	33
Nov	4.2	5.1	5.7	6.2	6.5	6.8	7.8	8.3	10	13	15	17	20	27	77	33
Dec	7.4	8.0	9.3	11	12	14	19	24	34	50	59	73	101	154	292	33
Jan	10	12	14	15	17	19	25	36	52	74	89	111	149	256	470	33
Feb	18	22	26	35	42	50	73	97	139	192	228	280	341	438	761	33
Mar	33	46	62	76	91	108	146	184	244	308	344	403	494	585	824	33
Apr	14	50	75	92	106	123	162	205	253	309	344	384	437	508	655	33
May	0.9	1.5	2.6	3.4	8.7	16	31	49	79	113	133	162	199	250	317	33
Jun	0.4	0.5	0.8	1.2	1.2	1.5	1.9	3.5	7.2	14	18	22	30	48	93	33
Jul	0.4	0.4	0.5	0.6	0.7	0.9	1.2	1.7	2.9	4.1	4.9	7.1	9.8	15	19	33
Aug	0.3	0.4	0.5	0.5	0.5	0.5	0.7	0.8	1.0	1.5	1.7	2.2	2.9	3.8	4.9	33
Sep	0.3	0.4	0.5	0.5	0.5	0.5	0.7	0.9	1.6	3.5	4.0	4.5	5.2	5.9	5.9	33
Ann	0.5	0.7	0.9	1.2	2.3	4.2	7.2	13	25	59	87	125	181	263	418	

UPPER CROOKED RIVER BASIN

14078500 NORTH FORK CROOKED RIVER ABOVE DEEP CREEK, OR

LOCATION.--Lat 44°19'55", long 120°04'55", in NE 1/4 sec.28, T.14 S., R.22 E., Crook County, Hydrologic Unit 17070304, on left bank 0.8 mi upstream from Deep Creek, 15 mi northwest of Paulina, and 38 mi east of Prineville.

DRAINAGE AREA.--159 mi².

PERIOD OF RECORD.--November 1941 to December 1942, October 1943 to September 1954. Prior to October 1945 monthly discharge only, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 4,356.00 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Oct. 1, 1946, at datum 0.33 ft higher.

REMARKS.--No regulation. Several diversions for irrigation of about 3,600 acres upstream from station.

AVERAGE DISCHARGE.--11 years (water years 1943-54), 97.0 ft³/s, 70,230 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,060 ft³/s Apr. 7, 1943, gage height, 4.17 ft, from rating curve extended above 950 ft³/s; maximum gage height, 8.01 ft, last used datum, Jan. 1, 1943 (ice jam); minimum discharge, 0.5 ft³/s Aug. 14, 15, 1942, Aug. 3 to Sept. 24, 1951.

STATISTICAL SUMMARIES FOR THE PERIOD 1944-1954

[n = number of values used to compute statistics; montha are abbreviated; Ann = annual]

Monthly and annual atatictics baased on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	1.3	1945	10	1949	4.9	3.1	0.4
Nov	11	4.0	1945	37	1954	16	10	1.4
Dec	11	4.7	1945	152	1951	45	52	4.0
Jan	11	9.4	1949	187	1946	55	60	4.9
Feb	11	18	1949	210	1954	94	70	7.6
Mar	11	58	1945	488	1946	189	122	16.6
Apr	11	160	1947	911	1952	465	239	39.4
May	11	24	1947	457	1948	213	127	18.7
Jun	11	14	1949	262	1948	74	78	6.3
Jul	11	1.4	1951	23	1948	5.8	6.3	0.5
Aug	11	0.5	1951	5.5	1948	2.0	1.5	0.2
Sep	11	0.6	1951	4.7	1948	1.9	1.2	0.2
Ann		37	1944	173	1945	96	40	100.0

Flow duration statistica based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.0	1.1	1.3	1.5	1.9	1.9	2.7	3.1	4.0	5.1	5.8	6.6	8.4	9.3	13	11
Nov	2.7	3.2	3.2	3.6	4.2	4.8	6.7	8.7	11	14	17	20	25	38	53	11
Dec	4.2	5.4	6.2	6.7	7.8	11	14	17	21	31	40	53	62	73	154	11
Jan	4.9	6.4	7.4	8.8	10	12	16	20	31	44	53	75	117	145	226	11
Feb	7.6	12	14	17	21	26	32	61	83	102	118	140	176	247	347	11
Mar	24	35	39	47	53	64	78	106	149	234	255	300	381	475	592	11
Apr	133	157	163	168	184	219	307	391	523	625	668	712	773	871	1110	11
May	12	39	44	57	80	109	145	195	231	287	312	345	386	441	503	11
Jun	4.9	6.4	7.6	10	13	17	26	37	48	63	76	103	166	218	284	11
Jul	1.0	1.0	1.2	1.4	1.5	1.8	2.0	2.3	3.4	3.9	4.4	5.8	8.2	13	26	11
Aug	0.5	0.8	0.8	0.9	1.0	1.0	1.5	1.5	1.9	2.0	2.0	2.2	2.5	3.9	5.2	11
Sep	0.5	0.9	0.9	1.0	1.0	1.1	1.4	1.4	1.9	2.0	2.0	2.6	2.9	3.1	3.7	11
Ann	1.0	1.3	1.7	2.2	2.8	4.5	7.6	15	31	64	100	146	212	312	499	

UPPER CROOKED RIVER BASIN

14079500 CROOKED RIVER NEAR POST, OR

LOCATION.--Lat 44°07'00", long 120°15'00", in NE 1/4 sec.7, T.17 S., R.21 E., Crook County, Hydrologic Unit 17070304, on left bank 0.3 mi downstream from North Fork, 12 mi southeast of Post, and at mile 113.7.

DRAINAGE AREA.--2,160 mi², approximately, of which 500 mi² is probably noncontributing.

PERIOD OF RECORD.--November 1908 to May 1911, December 1939 to September 1960, July 1968 to July 1973. Records for June to August 1911, published in WSP 312, have been found unreliable and should not be used.

GAGE.--Water-stage recorder. Datum of gage is 3,476.25 ft above National Geodetic Vertical Datum of 1929. Nov. 9, 1908, to Aug. 31, 1911, nonrecording gage at site 0.2 mi downstream at different datum. Dec. 30, 1939, to Sept. 30, 1960, water-stage recorder at site .7 mi downstream at different datum.

REMARKS.--No regulation. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--24 years (water years 1941-60, 1969-72), 337 ft³/s, 244,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s Jan. 18, 1971, gage height, 9.61 ft, from rating curve extended above 4,800 ft³/s, on basis of slope-area measurement of peak flow; minimum, 2.7 ft³/s Aug. 7, 1970.

STATISTICAL SUMMARIES FOR THE PERIOD 1941-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	27	28	1953	81	1958	42	12	1.1
Nov	27	50	1970	259	1971	103	56	2.6
Dec	27	55	1960	753	1956	205	182	5.3
Jan	27	60	1949	1490	1970	334	346	8.6
Feb	27	81	1955	2000	1958	508	378	11.9
Mar	27	188	1955	2070	1972	815	451	20.9
Apr	27	430	1947	2690	1952	1180	587	29.3
May	27	77	1947	1300	1948	487	293	12.5
Jun	26	18	1973	635	1948	140	133	3.5
Jul	27	4.7	1968	108	1948	29	21	0.8
Aug	26	5.6	1971	37	1948	13	6.7	0.4
Sep	26	10	1960	41	1941	19	7.2	0.5
Ann		129	1944	553	1943	331	123	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	19	22	25	27	30	32	37	41	44	49	52	55	58	64	77	27
Nov	48	51	54	57	59	62	67	72	77	84	91	102	113	142	238	27
Dec	50	59	65	69	73	78	92	109	139	174	198	225	264	339	606	27
Jan	55	61	67	72	77	85	114	145	189	259	306	372	489	653	1070	27
Feb	76	92	112	140	168	197	242	302	392	502	561	684	864	1100	1690	27
Mar	146	193	229	258	294	342	441	599	754	953	1070	1230	1370	1620	2250	27
Apr	296	367	435	495	549	608	768	993	1190	1510	1670	1850	2080	2410	2720	27
May	69	104	144	179	208	239	299	379	480	575	644	735	842	962	1320	27
Jun	17	26	31	38	45	52	69	88	109	131	146	174	222	317	505	26
Jul	7.0	9.2	12	13	14	15	18	22	26	31	36	40	50	61	89	27
Aug	5.3	6.3	7.5	7.5	8.2	8.9	11	13	14	16	17	18	19	21	29	26
Sep	8.5	9.7	11	13	14	14	16	18	20	23	24	26	27	31	37	26
Ann	10	14	18	24	32	42	62	89	150	269	364	498	672	956	1500	

UPPER CROOKED RIVER BASIN

14080500 CROOKED RIVER NEAR PRINEVILLE, OR

LOCATION.--Lat 44°06'50", long 120°47'40", in SW 1/4 NE 1/4 sec.10, T.17 S., R.16 E., Crook County, Hydrologic Unit 17070304, on right bank 0.4 mi downstream from Prineville Dam, 13.6 mi south of Prineville, and at mile 72.1.

DRAINAGE AREA.--2,700 mi², approximately, of which 500 mi² is probably noncontributing.

PERIOD OF RECORD.--November 1908 to September 1914, March 1941 to 1987. Published as "near Prineville" 1908-12, as "at Hoffman's ranch, near Prineville" 1913-14, and as "above Hoffman Dam, near Prineville" March 1941 to September 1960. The estimate of monthly mean discharge for October 1908, published in WSP 370, has been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1448: 1909-13, 1914(M), drainage area (at sites prior to Apr. 24, 1961). See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 3,070.85 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to September 1914, nonrecording gage at several sites from 9 mi to 23 mi downstream at various datums. Mar. 26, 1941, to Apr. 23, 1961, water-stage recorder at site 5.5 mi downstream at different datum.

REMARKS.--Flow completely regulated since December 1960 by Prineville Reservoir (station 14080400). Diversions for irrigation upstream from station. Discharge not adjusted for storage or release from Prineville Reservoir as evaporation from reservoir at times exceeds natural flow.

AVERAGE DISCHARGE.--24 years (water years 1910-14, 1942-60), 378 ft³/s, 273,900 acre-ft/yr; 27 years (water years 1961-87), 374 ft³/s, 271,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,410 ft³/s Mar. 26, 1952, gage height, 8.2 ft, from floodmark, site and datum then in use; no flow Aug. 13-21, 1959, Jan. 3-5, 1961.

STATISTICAL SUMMARIES FOR THE PERIOD 1942-1959 (BEFORE THE CONSTRUCTION OF PRINEVILLE RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	25	1943	86	1958	46	16	1.0
Nov	18	62	1953	207	1943	110	44	2.3
Dec	18	69	1955	768	1956	260	221	5.7
Jan	18	64	1949	830	1956	304	240	6.7
Feb	18	97	1955	2350	1958	647	517	12.9
Mar	18	197	1955	1880	1943	901	497	19.8
Apr	18	455	1947	3060	1952	1510	724	32.0
May	18	72	1947	1460	1948	638	370	14.0
Jun	18	33	1959	771	1948	202	192	4.3
Jul	18	7.6	1949	101	1948	40	27	0.9
Aug	18	1.4	1959	37	1948	11	9.6	0.2
Sep	18	2.4	1955	36	1953	15	10	0.3
Ann		139	1944	650	1943	387	159	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	17	22	24	27	30	34	40	45	50	57	60	63	68	74	90	18
Nov	50	56	61	65	68	71	77	83	90	99	105	112	122	145	217	18
Dec	61	71	75	80	86	93	106	128	159	209	242	286	342	461	856	18
Jan	58	64	72	79	85	95	122	163	213	278	335	387	472	634	1040	18
Feb	81	98	111	138	189	223	282	365	449	571	703	888	1120	1500	2720	18
Mar	141	219	247	280	330	394	515	637	813	987	1100	1280	1540	1870	2550	18
Apr	341	435	528	606	663	789	1030	1290	1600	1960	2150	2380	2680	2970	3350	18
May	62	103	147	212	264	313	430	539	645	762	846	955	1100	1320	1640	18
Jun	23	32	40	48	58	69	98	122	147	183	218	280	359	531	726	18
Jul	5.5	7.2	9.3	13	15	17	22	28	34	44	49	59	71	94	129	18
Aug	1.3	2.0	2.4	3.6	3.6	4.5	5.6	6.7	9.0	14	16	18	22	26	32	18
Sep	2.1	3.4	4.3	4.8	5.4	6.8	9.3	14	17	20	23	26	29	32	37	18
Ann	5.6	10	18	25	36	48	73	103	172	342	462	621	820	1158	1898	

UPPER CROOKED RIVER BASIN

14080500 CROOKED RIVER NEAR PRINEVILLE, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1987 (AFTER THE COMPLETION OF PRINEVILLE RESERVOIR)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	27	26	1961	315	1985	164	86	3.7
Nov	27	13	1980	791	1985	151	160	3.3
Dec	27	26	1964	1040	1965	277	319	6.3
Jan	27	0.2	1961	1680	1965	373	382	8.5
Feb	27	2.7	1961	1630	1965	535	471	11.1
Mar	27	13	1961	2030	1972	638	666	14.5
Apr	27	18	1961	3000	1984	839	641	18.4
May	27	66	1961	2000	1984	589	481	13.4
Jun	27	72	1961	679	1984	264	109	5.8
Jul	27	87	1961	331	1983	242	51	5.5
Aug	27	86	1961	306	1977	230	42	5.2
Sep	27	88	1961	351	1987	208	50	4.6
Ann		46	1961	885	1984	374	197	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	33	39	46	59	66	109	146	171	193	229	248	258	268	278	308	27
Nov	12	24	30	34	38	42	60	81	106	136	156	171	185	258	488	27
Dec	9.2	22	28	33	37	50	70	99	140	176	239	384	481	818	1350	27
Jan	13	33	42	52	63	76	115	150	211	308	364	464	686	1160	1890	27
Feb	27	38	48	63	98	123	198	280	398	533	603	846	1160	1600	2100	27
Mar	32	36	43	55	74	108	152	223	427	751	1020	1310	1510	1820	2550	27
Apr	37	85	135	172	201	258	449	642	880	1090	1210	1450	1720	1890	2310	27
May	105	172	190	213	235	255	298	346	412	552	736	910	1180	1420	1940	27
Jun	161	181	199	206	211	217	227	237	250	271	284	297	315	350	412	27
Jul	144	167	197	209	215	221	231	240	257	271	278	289	298	309	324	27
Aug	142	180	194	205	216	222	229	235	243	253	256	260	267	277	293	27
Sep	89	113	168	175	182	190	203	214	223	230	234	239	245	250	279	27
Ann	30	41	63	92	126	151	192	219	246	297	336	413	594	997	1628	

LOWER CROOKED RIVER BASIN

14087400 CROOKED RIVER BELOW OPAL SPRINGS, NEAR CULVER, OR

LOCATION.--Lat 44°29'33", long 121°17'50", in NW 1/4 NE 1/4 sec.33, T.12 S., R.12 E., Jefferson County, Hydrologic Unit 17070305, on right bank 0.2 mi downstream from Opal Springs, 4.8 mi southwest of Culver, and at mile 6.7.

DRAINAGE AREA.--4,300 mi², approximately, of which 500 mi² is probably noncontributing.

PERIOD OF RECORD.--October 1961 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,953.60 ft above National Geodetic Vertical Datum of 1929 (Portland General Electric Co. bench mark).

REMARKS.--Flow regulated since December 1960 by Prineville Reservoir (station 14080400) and Ochoco Reservoir, capacity, 47,500 acre-ft. Dam and powerplant 500 ft upstream, completed in 1985, causes brief fluctuations in flow. Many diversions for irrigation upstream from station. Practically all of the summer flow comes from Opal Springs and other springs within 15 mi upstream from station. Simultaneous records (1961-63) at former gaging station 5.6 mi downstream indicated over 15 percent increase to summer flow from springs downstream from this station.

AVERAGE DISCHARGE.--26 years, 1,609 ft³/s, 1,166,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,660 ft³/s Dec. 24, 1964, gage height, 9.36 ft; minimum daily discharge, 1,090 ft³/s May 11, 1981.

STATISTICAL SUMMARIES FOR THE PERIOD 1962-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	1240	1969	1650	1970	1450	121	7.6
Nov	26	1230	1962	2070	1985	1400	175	7.1
Dec	26	1180	1964	2690	1965	1560	407	8.2
Jan	26	1180	1964	3550	1965	1680	509	8.9
Feb	26	1250	1977	3490	1965	1910	590	9.2
Mar	26	1230	1977	4210	1972	2060	860	10.9
Apr	26	1190	1977	4790	1984	2210	776	11.3
May	26	1170	1964	3290	1984	1750	576	9.2
Jun	26	1200	1977	1780	1984	1330	136	6.8
Jul	26	1120	1981	1470	1983	1280	91	6.7
Aug	26	1130	1980	1590	1976	1310	98	6.9
Sep	26	1190	1980	1540	1965	1390	96	7.1
Ann		1280	1977	2200	1984	1610	245	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	1240	1280	1300	1340	1360	1380	1420	1460	1500	1530	1550	1580	1610	1640	1680 26
Nov	1210	1240	1260	1280	1290	1300	1330	1350	1380	1410	1420	1440	1470	1550	1650 26
Dec	1190	1220	1250	1270	1280	1300	1330	1370	1410	1460	1540	1630	1790	2160	2780 26
Jan	1190	1230	1260	1290	1310	1330	1370	1420	1490	1600	1680	1790	2110	2640	3390 26
Feb	1230	1270	1300	1340	1370	1410	1530	1630	1760	1880	2040	2370	2680	3090	3660 26
Mar	1230	1250	1270	1310	1350	1390	1490	1590	1820	2130	2560	2880	3120	3620	4460 26
Apr	1210	1260	1330	1440	1510	1590	1800	2000	2220	2510	2700	2910	3220	3410	3910 26
May	1170	1200	1230	1250	1280	1300	1360	1450	1570	1770	2000	2230	2460	2880	3250 26
Jun	1160	1170	1190	1200	1210	1220	1260	1310	1350	1380	1400	1430	1460	1510	1630 26
Jul	1140	1170	1180	1190	1200	1210	1230	1270	1300	1340	1360	1380	1400	1430	1470 26
Aug	1150	1180	1190	1210	1240	1260	1300	1320	1340	1360	1370	1390	1410	1440	1490 26
Sep	1190	1230	1260	1290	1330	1350	1380	1410	1440	1460	1470	1490	1510	1540	1570 26
Ann	1170	1200	1230	1260	1280	1300	1350	1400	1450	1530	1600	1700	1920	2380	3120

LOWER CROOKED RIVER BASIN

14087500 CROOKED RIVER NEAR CULVER, OR

LOCATION.--Lat 44°33'40", long 121°16'10", in sec.3 (50 ft west of 1/4 -corner on line between sec.2 and 3), T.12 S., R.12 E., Jefferson County, Hydrologic Unit 17070305, on right bank 1 mi upstream from mouth, 1.2 mi downstream from Cove powerplant, and 4 mi northwest of Culver.

DRAINAGE AREA.--4,330 mi², approximately, of which 500 mi is probably noncontributing.

PERIOD OF RECORD.--October 1917 to September 1963.

GAGE.--Water-stage recorder. Datum of gage is 1,664.86 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 2, 1945, staff gage at several sites within 1.2 mi of present site at various datums.

REMARKS.--Flow slightly regulated (since 1919) by Ochoco Reservoir (capacity, 47,500 acre-ft) and since Dec. 13, 1960, by Prineville Reservoir (capacity, 152,800 acre-ft); occasional diurnal fluctuation caused by powerplant 1.2 mi upstream from station. Water is diverted for irrigation of land upstream from station. The area served increased from about 30,000 acres in 1918 to 37,000 acres in 1946. Several hundred cubic feet per second of water diverted from Deschutes River for irrigation of other lands upstream from station. Opal Springs and several other springs within about 17 mi upstream from station contribute about 1,000 ft³/s to flow.

AVERAGE DISCHARGE.--46 years, 1,553 ft³/s, 1,124,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 8,260 ft³/s Mar. 30, 31, 1943, gage height, 6.70 ft, site and datum then in use; minimum recorded, 920 ft³/s Oct. 14, 1945.

STATISTICAL SUMMARIES FOR THE PERIOD 1920-1960

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	41	1060	1920	1550	1957	1290	131	7.0
Nov	41	1120	1920	1520	1947	1320	125	6.9
Dec	41	1160	1921	2200	1956	1410	242	7.7
Jan	41	1150	1922	2330	1956	1470	273	8.0
Feb	41	1170	1929	3980	1958	1750	532	8.7
Mar	41	1290	1934	3390	1943	2100	590	11.4
Apr	41	1200	1934	4820	1952	2550	838	13.4
May	41	1130	1924	2970	1956	1740	464	9.5
Jun	41	1060	1920	2460	1948	1380	269	7.3
Jul	41	995	1921	1490	1953	1240	114	6.7
Aug	41	970	1921	1410	1953	1230	112	6.7
Sep	41	1030	1921	1440	1955	1260	117	6.6
Ann		1230	1931	2070	1956	1560	237	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1110	1140	1160	1170	1190	1200	1220	1250	1310	1380	1410	1430	1450	1480	1510	41
Nov	1130	1160	1180	1190	1200	1210	1250	1310	1370	1410	1430	1440	1460	1490	1520	41
Dec	1140	1160	1190	1210	1230	1260	1290	1330	1410	1450	1480	1520	1570	1660	1910	41
Jan	1160	1190	1210	1230	1250	1270	1320	1370	1420	1460	1520	1580	1670	1830	2140	41
Feb	1210	1240	1270	1300	1330	1370	1420	1500	1600	1760	1840	1970	2180	2520	3220	41
Mar	1280	1350	1400	1440	1470	1560	1670	1870	2070	2330	2470	2610	2810	3070	3680	41
Apr	1280	1440	1560	1670	1780	1880	2040	2310	2560	2850	3030	3310	3600	4040	4780	41
May	1170	1190	1220	1240	1300	1380	1490	1600	1720	1900	2010	2120	2300	2540	2830	41
Jun	1100	1140	1160	1170	1190	1200	1250	1310	1370	1420	1450	1490	1560	1670	1940	41
Jul	1080	1120	1140	1150	1160	1170	1190	1210	1270	1310	1340	1360	1380	1400	1430	41
Aug	1080	1110	1130	1140	1150	1170	1180	1200	1240	1320	1340	1360	1370	1390	1410	41
Sep	1110	1130	1150	1160	1170	1180	1210	1240	1290	1350	1380	1400	1420	1430	1450	41
Ann	1120	1160	1180	1200	1220	1240	1300	1360	1420	1500	1580	1710	1940	2300	2830	

UPPER DESCHUTES RIVER BASIN

14088000 LAKE CREEK NEAR SISTERS, OR

LOCATION.--Lat 44°25'35", long 121°43'30", in NE 1/4 SW 1/4 sec.24, T.13 S., R.8 E., Deschutes County, Hydrologic Unit 17070301, on left bank 300 ft downstream from Suttle Lake and 13 mi northwest of Sisters.

DRAINAGE AREA.--22.2 mi².

PERIOD OF RECORD.--June to November 1911, March to September 1912, May to October 1913, April 1915 to 1987.
Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1124: 1943, 1947. WSP 1218: Drainage area. WSP 1448: 1916(M), 1925. WDR OR-81-1: 1974(M), 1978(M).

GAGE.--Water-stage recorder. Datum of gage is 3,431.68 ft above National Geodetic Vertical Datum of 1929. Prior to Apr. 1, 1916, nonrecording gage at two sites 400 ft upstream at different datums. Apr. 1, 1916, to Oct. 12, 1928, nonrecording gage or water-stage recorder at site 640 ft downstream at different datum. Oct. 13, 1928, to Aug. 13, 1967, water-stage recorder at site 600 ft downstream at datum 1.61 ft lower.

REMARKS.--Flow occasionally regulated by Suttle Lake 150 ft upstream from station.

AVERAGE DISCHARGE.--72 years (water years 1916-87), 52.5 ft³/s, 38,040 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded discharge, 446 ft³/s Dec. 15, 1977, gage height, 4.78 ft, but may have been higher during period of no gage-height record Dec. 23, 1964; minimum discharge, 1.0 ft³/s Nov. 4, 5, 1940; minimum daily, 8 ft³/s Nov. 5, 1940, Oct. 6, 1942.

STATISTICAL SUMMARIES FOR THE PERIOD 1918-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	70	17	1943	67	1927	32	7.0	5.4
Nov	70	24	1945	97	1951	40	12	6.4
Dec	70	23	1945	178	1978	59	31	9.7
Jan	70	23	1941	147	1923	64	28	10.5
Feb	70	27	1931	132	1953	62	24	9.4
Mar	70	26	1937	169	1972	57	21	9.4
Apr	70	33	1977	111	1931	62	14	9.9
May	70	38	1934	157	1949	79	24	12.9
Jun	70	28	1940	162	1933	65	28	10.4
Jul	70	22	1941	69	1917	39	9.0	6.4
Aug	70	21	1942	42	1954	32	5.4	5.3
Sep	71	19	1941	40	1954	31	5.0	4.9
Ann		27	1941	77	1956	52	10	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	23	25	26	27	28	29	31	33	34	36	37	38	39	42	-- 70
Nov	25	27	28	30	31	33	35	37	39	43	44	48	52	61	76 70
Dec	26	30	33	35	37	39	43	47	53	62	68	75	85	99	129 70
Jan	29	33	35	38	42	44	48	53	59	70	76	82	93	110	135 70
Feb	32	35	37	39	42	44	51	56	63	71	75	80	85	95	119 70
Mar	33	36	38	41	44	46	50	53	58	61	64	68	74	82	97 70
Apr	37	42	45	48	49	51	56	60	65	70	72	76	81	87	100 70
May	42	45	48	51	56	62	71	78	86	94	98	102	108	--	-- 70
Jun	32	35	37	39	41	45	51	58	66	76	81	88	97	108	131 70
Jul	26	28	30	31	33	34	36	38	40	43	45	47	49	53	59 70
Aug	23	25	27	28	29	29	31	33	34	36	37	38	33	22	11 70
Sep	23	25	26	27	28	29	30	32	33	35	35	36	37	38	-- 71
Ann	25	28	30	32	33	35	38	43	49	57	62	69	76	87	106

UPPER DESCHUTES RIVER BASIN

14091500 METOLIUS RIVER NEAR GRANDVIEW, OR

LOCATION.--Lat 44°37'33", long 121°28'55", in SE 1/4 SW 1/4 sec.12, T.11 S., R.10 E., Jefferson County, Hydrologic Unit 17070301, Deschutes National Forest, on right bank 1.0 mi upstream from maximum controlled pool of Lake Billy Chinook, 15.0 mi northwest of Culver, and at mile 13.6.

DRAINAGE AREA.--316 mi², at cableway 1.0 mi downstream, where all discharge measurements are made. Hydrologic drainage boundary uncertain because of interbasin ground-water exchange.

PERIOD OF RECORD.--April 1910 to February 1912 (gage heights and discharge measurements only), March 1912 to December 1913, October 1921 to 1987. Published as "at Hubbard's ranch, near Sisters" 1910, and as "at Hubbard's ranch, near Grandview" 1910-13.

REVISED RECORDS.--WSP 1448: 1913.

GAGE.--Water-stage recorder. Datum of gage is 1,974.36 ft above National Geodetic Vertical Datum of 1929 (levels by Portland General Electric Co.). Prior to Dec. 31, 1913, nonrecording gage at site 2.3 mi upstream at different datum. Oct. 1, 1921, to May 3, 1949, nonrecording gage and May 4, 1949, to June 18, 1963, water-stage recorder at site 2.7 mi downstream at datum 64 ft lower.

REMARKS.--No regulation. Many small diversions for irrigation upstream from station. Stream is spring fed. Records herein are for measuring site.

AVERAGE DISCHARGE.--67 years (water years 1913, 1922-87), 1,497 ft³/s, 1,085,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,530 ft³/s Dec. 24, 1964, gage height, 6.81 ft; minimum discharge, 1,080 ft³/s Feb. 17, 1932, Oct. 2-31, Nov. 6, 7, 10-14, 1942.

STATISTICAL SUMMARIES FOR THE PERIOD 1912-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	68	1080	1943	1620	1914	1350	122	7.6
Nov	68	1140	1940	1820	1922	1400	144	7.7
Dec	68	1110	1945	2450	1965	1490	242	8.4
Jan	67	1150	1932	2250	1923	1520	256	8.6
Feb	67	1150	1932	2330	1982	1560	272	8.0
Mar	68	1160	1941	2500	1972	1540	225	8.7
Apr	68	1160	1941	1960	1956	1550	175	8.5
May	68	1240	1941	2090	1956	1610	183	9.1
Jun	68	1200	1941	2120	1974	1640	217	9.0
Jul	68	1170	1941	1910	1972	1520	184	8.6
Aug	68	1140	1931	1750	1972	1420	150	8.0
Sep	68	1100	1942	1630	1913	1370	131	7.5
Ann		1170	1941	1840	1956	1500	156	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1150	1190	1230	1250	1270	1290	1310	1350	1410	1430	1460	1480	1500	1520	1570	68
Nov	1150	1200	1230	1260	1280	1300	1350	1400	1430	1460	1480	1510	1540	1600	1720	68
Dec	1170	1210	1250	1300	1320	1340	1380	1420	1460	1530	1580	1630	1710	1810	1990	68
Jan	1160	1210	1250	1290	1320	1350	1410	1450	1510	1580	1630	1690	1770	1880	2120	67
Feb	1190	1240	1280	1330	1350	1380	1440	1490	1560	1640	1690	1750	1820	1940	2190	67
Mar	1210	1280	1330	1360	1390	1410	1450	1490	1550	1630	1680	1720	1770	1820	1940	68
Apr	1260	1330	1360	1380	1410	1420	1480	1560	1610	1650	1670	1710	1750	1800	1860	68
May	1320	1380	1410	1430	1460	1490	1550	1610	1650	1710	1740	1780	1830	1870	1960	68
Jun	1280	1360	1390	1410	1450	1500	1590	1650	1710	1770	1800	1830	1870	1940	2030	68
Jul	1210	1290	1330	1360	1390	1410	1460	1520	1570	1620	1670	1710	1740	1790	1860	68
Aug	1180	1240	1280	1300	1320	1340	1370	1410	1460	1510	1530	1570	1600	1650	1690	68
Sep	1170	1210	1240	1260	1280	1300	1330	1360	1410	1450	1470	1490	1530	1560	1610	68
Ann	1180	1240	1280	1310	1330	1360	1410	1460	1510	1590	1630	1680	1730	1800	1910	

LOWER DESCHUTES RIVER BASIN

14092500 DESCHUTES RIVER NEAR MADRAS, OR

LOCATION.--Lat 44°43'34", long 121°14'45", in SE 1/4 SW 1/4 sec.1, T.10 S., R.12 E., Jefferson County, Hydrologic Unit 17070306, on right bank 400 ft downstream from reregulating dam, 2.7 mi downstream from Pelton Dam, 8.5 mi northwest of Madras, and at mile 100.1.

DRAINAGE AREA.--7,820 mi², approximately.

PERIOD OF RECORD.--October 1923 to 1987.

REVISED RECORDS.--WSP 1398: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,390.25 ft above National Geodetic Vertical Datum of 1929 (levels by Portland General Electric Co.). See WSP 1738 for history of changes prior to Nov. 23, 1957.

REMARKS.--Diurnal fluctuation caused by Lake Simtustus and reregulating reservoir since 1957, combined capacity for normal operation, 6,500 acre-ft. Some winter and spring runoff stored in Ochoco Reservoir, capacity, 47,500 acre-ft, in Crescent Lake, Crane Prairie and Wickiup Reservoirs, combined capacity, 354,600 acre-ft, and since 1960, in Prineville Reservoir, capacity, 152,800 acre-ft, and since 1964, in Lake Billy Chinook, capacity, 534,700 acre-ft. Large diversions in upper basin for irrigation.

AVERAGE DISCHARGE.--64 years, 4,553 ft³/s, 3,299,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,500 ft³/s July 16, 1983, accidental release from Pelton Dam, gage height, 7.70 ft, from floodmarks; minimum discharge, 916 ft³/s July 4, 1982, caused by power company testing control gates on dam.

STATISTICAL SUMMARIES FOR THE PERIOD 1925-1956 (BEFORE THE CONSTRUCTION OF PELTON DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	32	3100	1932	4770	1952	3710	415	7.2
Nov	32	3570	1932	5100	1951	4230	438	7.9
Dec	32	3730	1932	6520	1956	4620	646	8.9
Jan	32	3840	1932	6970	1956	4740	750	9.2
Feb	32	3900	1932	8190	1951	5060	962	8.9
Mar	32	4130	1931	7150	1951	5410	916	10.5
Apr	32	3720	1934	8490	1952	5500	1280	10.3
May	32	3430	1931	6950	1956	4440	806	8.6
Jun	32	3240	1931	5760	1948	4140	698	7.7
Jul	32	3090	1931	4500	1952	3720	406	7.2
Aug	32	3010	1931	4310	1951	3580	383	6.9
Sep	32	3020	1931	4370	1956	3630	387	6.8
Ann		3590	1931	5630	1956	4390	542	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3160	3240	3290	3330	3350	3380	3440	3620	3810	3940	4020	4120	4200	4270	4540	32
Nov	3440	3640	3720	3770	3830	3900	4050	4190	4360	4480	4540	4610	4740	4920	5160	32
Dec	3780	3890	3970	4040	4100	4160	4300	4410	4530	4730	4830	4980	5190	5530	6050	32
Jan	3880	3990	4050	4110	4180	4260	4370	4480	4610	4790	4930	5220	5480	5670	6280	32
Feb	3920	4030	4110	4200	4280	4360	4550	4800	4980	5350	5490	5770	6180	6570	7150	32
Mar	4050	4220	4330	4480	4570	4680	4910	5180	5470	5820	5990	6150	6380	6800	7610	32
Apr	3620	3810	4040	4190	4360	4530	4890	5240	5630	6060	6280	6520	6870	7640	8580	32
May	3410	3490	3550	3610	3680	3770	4020	4300	4560	4730	4850	5000	5170	5500	6060	32
Jun	3280	3340	3410	3470	3520	3590	3810	3960	4120	4320	4430	4590	4850	5260	5740	32
Jul	3140	3240	3290	3330	3380	3440	3540	3640	3740	3920	4000	4080	4170	4330	4540	32
Aug	3110	3150	3230	3270	3290	3330	3400	3490	3580	3690	3750	3860	4110	4220	4360	32
Sep	3140	3210	3260	3290	3320	3340	3410	3480	3660	3830	3910	4020	4110	4230	4410	32
Ann	3249	3339	3426	3523	3632	3746	3958	4151	4356	4580	4747	4953	5231	5668	6346	

LOWER DESCHUTES RIVER BASIN

14092500 DESCHUTES RIVER NEAR MADRAS, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1987 (AFTER THE COMPLETION OF ROUND BUTTE DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	3090	1965	5100	1973	4200	447	7.5
Nov	24	3520	1965	6120	1985	4760	520	8.2
Dec	24	3950	1970	6650	1982	5260	696	9.4
Jan	24	3310	1964	8100	1965	5580	1030	10.0
Feb	24	3090	1964	8180	1965	5490	1340	8.9
Mar	24	3450	1964	9590	1972	5670	1610	10.1
Apr	24	3600	1968	8990	1984	5230	1230	9.0
May	24	3550	1964	6350	1984	4480	746	8.0
Jun	24	3490	1964	5130	1974	4310	458	7.5
Jul	24	3060	1964	4790	1974	4080	401	7.3
Aug	24	3060	1964	4720	1976	3970	333	7.1
Sep	24	3080	1964	4550	1984	4010	324	6.9
Ann		3550	1964	5880	1984	4750	566	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3130	3600	3750	3830	3880	3930	4010	4110	4270	4430	4510	4620	4750	4990	5230	24
Nov	3700	4030	4140	4260	4360	4420	4560	4720	4890	5080	5180	5260	5370	5620	5940	24
Dec	3480	3930	4210	4390	4540	4660	4880	5110	5360	5650	5790	6030	6290	6680	7260	24
Jan	3230	3680	4040	4280	4500	4810	5240	5530	5860	6240	6400	6650	6950	7390	8250	24
Feb	3130	3390	3740	4080	4360	4580	5060	5380	5700	5970	6130	6450	6850	7290	8600	24
Mar	3520	3650	3820	4190	4410	4620	4880	5240	5690	6230	6460	6790	7350	8550	9720	24
Apr	3560	3620	3670	3850	4000	4320	4640	4960	5330	5810	6080	6390	6690	7020	8150	24
May	3550	3610	3680	3810	3890	3950	4070	4210	4370	4630	4810	5020	5430	5910	6340	24
Jun	3600	3700	3780	3840	3890	3940	4030	4160	4330	4530	4660	4780	4920	5160	5420	24
Jul	3490	3650	3700	3750	3790	3830	3910	4010	4150	4260	4330	4430	4550	4700	4900	24
Aug	3500	3650	3710	3740	3780	3810	3870	3940	4020	4160	4200	4260	4340	4420	4550	24
Sep	3480	3660	3700	3750	3810	3850	3910	3970	4050	4160	4230	4320	4390	4450	4640	24
Ann	3454	3631	3740	3827	3914	4002	4189	4418	4684	5060	5292	5547	5901	6348	7133	

LOWER DESCHUTES RIVER BASIN

14092885 SHITKE CREEK BELOW WOLFORD CANYON, NEAR WARM SPRINGS, OR

LOCATION.--Lat 44°46'20", long 121°18'15", in NW 1/4 SE 1/4 sec.21, T.9 S., R.12 E., Jefferson County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on left bank at bridge crossing 2.3 mi upstream from Tenino Creek, and 2.1 mi northwest of Warm Springs.

DRAINAGE AREA.--75.8 mi².

PERIOD OF RECORD.--October 1974 to 1987. Records for June 1911 to October 1916, April 1923 to September 1928, and October 1972 to September 1974 (station 14093000) at sites downstream not equivalent owing to difference in drainage areas.

GAGE.--Water-stage recorder. Elevation of gage is 1,600 ft, from topographic map.

REMARKS.--No regulation. Some diversion for irrigation and Warm Springs water supply.

AVERAGE DISCHARGE.--13 years, 98.1 ft³/s, 17.58 in/yr, 71,070 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,980 ft³/s Feb. 23, 1986, gage height, 6.40 ft, from rating curve extended above 860 ft³/s; maximum gage height, 7.35 ft Dec. 13, 1977; minimum daily discharge, 17 ft³/s Oct. 12-15, 17-22, 24-27, Nov. 12, 1978.

STATISTICAL SUMMARIES FOR THE PERIOD 1975-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	13	17	1979	76	1983	51	15	4.4
Nov	13	29	1979	134	1985	77	31	6.5
Dec	13	43	1986	238	1978	122	73	10.6
Jan	13	40	1979	183	1976	105	52	9.1
Feb	13	39	1977	324	1982	145	92	11.4
Mar	13	40	1977	263	1986	122	60	10.6
Apr	13	50	1977	147	1983	103	27	8.6
May	13	56	1977	173	1982	128	34	11.1
Jun	13	65	1978	217	1982	132	47	11.1
Jul	13	37	1977	147	1982	88	38	7.6
Aug	13	29	1978	86	1983	57	20	5.0
Sep	13	25	1978	68	1982	48	13	4.1
Ann		46	1977	144	1982	98	27	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	19	34	36	38	41	43	46	50	52	55	58	60	64	69	84	13
Nov	32	42	46	48	50	53	58	64	73	83	88	95	104	122	169	13
Dec	42	46	50	55	60	64	68	79	93	120	140	169	195	238	318	13
Jan	39	45	50	54	56	59	67	81	97	118	129	143	165	200	259	13
Feb	40	49	59	63	68	74	89	97	106	122	134	154	192	286	472	13
Mar	42	56	68	77	82	86	94	105	116	135	146	164	181	214	253	13
Apr	47	54	71	77	81	84	91	99	108	119	123	129	135	147	168	13
May	54	62	77	87	95	100	110	123	140	154	162	171	184	197	222	13
Jun	61	70	76	82	88	93	103	119	136	154	164	174	193	219	243	13
Jul	36	42	48	52	56	60	69	78	93	110	115	123	132	147	170	13
Aug	30	33	35	38	41	44	48	56	61	72	76	79	83	88	94	13
Sep	27	31	34	35	36	38	44	52	55	58	60	62	64	66	69	13
Ann	34	40	45	49	54	57	66	78	92	108	117	130	148	174	221	

LOWER DESCHUTES RIVER BASIN

14093000 SHITKE CREEK NEAR WARM SPRINGS, OR

LOCATION.--Lat 44°45'41", long 121°13'57", in NW 1/4 NW 1/4 sec.30, T.9 S., R.13 E., Jefferson County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on left bank 1.9 mi east of Warm Springs and at mile 0.3.

DRAINAGE AREA.--105 mi².

PERIOD OF RECORD.--October 1911 to September 1916, October 1923 to September 1928, October 1972 to September 1974.

GAGE.--Nonrecording gage. Elevation of gage is 1,380 ft, from topographic map.

REMARKS.--No regulation. Some water is diverted for mill pond at point 0.3 mi upstream from station.

AVERAGE DISCHARGE.--12 years, 110 ft³/s, 79,695 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 2,300 ft³/s Jan. 15, 1974; minimum daily, 20 ft³/s Dec. 8-15, 1972.

STATISTICAL SUMMARIES FOR THE PERIOD 1912-1974

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	41	1916	82	1928	59	14	4.5
Nov	11	50	1926	167	1928	96	33	7.1
Dec	11	63	1912	204	1974	110	40	8.4
Jan	12	54	1926	433	1974	132	99	10.1
Feb	12	60	1915	261	1916	135	64	9.4
Mar	12	64	1973	209	1916	118	38	9.0
Apr	12	66	1973	200	1916	131	40	9.7
May	12	86	1973	237	1974	155	45	11.9
Jun	12	68	1924	315	1974	148	77	11.0
Jul	12	46	1924	213	1916	105	52	8.0
Aug	12	36	1924	107	1916	67	24	5.1
Sep	12	36	1924	83	1916	59	17	4.4
Ann		71	1926	175	1974	111	34	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	38	41	42	43	46	50	55	58	60	64	66	68	74	85	91	11
Nov	50	54	56	57	59	61	66	72	83	94	101	111	125	159	245	11
Dec	48	57	60	62	65	70	76	83	93	109	121	136	155	193	283	11
Jan	52	56	60	66	73	77	88	98	106	114	123	133	147	177	330	12
Feb	56	63	69	74	78	81	90	103	123	136	148	171	205	255	321	12
Mar	65	67	71	79	86	92	99	105	118	131	141	146	159	167	202	12
Apr	67	75	85	94	103	108	115	121	129	142	152	166	189	201	223	12
May	78	92	101	109	114	120	128	145	160	175	183	193	211	225	263	12
Jun	63	66	71	74	81	89	111	123	156	181	193	206	224	254	318	12
Jul	45	46	49	52	57	67	81	95	114	131	143	151	156	167	216	12
Aug	37	38	40	41	42	46	60	64	68	77	83	90	96	103	126	12
Sep	34	37	41	42	43	46	51	57	64	75	76	77	79	85	94	12
Ann	41	47	54	58	62	67	76	89	105	121	133	147	164	189	247	

LOWER DESCHUTES RIVER BASIN

14097100 WARM SPRINGS RIVER NEAR KAHNEETA HOT SPRINGS, OR

LOCATION.--Lat 44°51'24", long 121°08'55", in SE 1/4 SW 1/4 sec.23, T.8 S., R.13 E., Wasco County, Hydrologic Unit 17070306, Warm Springs Indian Reservation, on right bank 25 ft upstream from bridge, 2.5 mi east of Kahneeta Hot Springs, and at mile 4.6.

DRAINAGE AREA.--526 mi².

PERIOD OF RECORD.--October 1972 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 1,400 ft, from topographic map.

REMARKS.--No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--15 years, 453 ft³/s, 11.70 in/yr, 328,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,240 ft³/s Feb. 23, 1986, gage height, 10.54 ft; minimum daily discharge, 160 ft³/s Jan. 1, 2, 1979.

STATISTICAL SUMMARIES FOR THE PERIOD 1973-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	15	220	1978	318	1973	270	30	5.1
Nov	15	244	1980	570	1985	332	78	6.0
Dec	15	264	1986	1210	1978	534	274	10.0
Jan	15	201	1979	1520	1974	618	368	11.6
Feb	15	264	1977	1730	1986	763	412	13.0
Mar	15	275	1977	1290	1986	663	270	12.4
Apr	15	278	1977	805	1974	550	146	10.0
May	15	278	1977	819	1974	514	164	9.6
Jun	15	246	1977	803	1974	400	149	7.3
Jul	15	216	1977	401	1974	286	54	5.4
Aug	15	211	1977	323	1974	261	36	4.9
Sep	15	215	1977	301	1974	259	30	4.7
Ann		259	1977	660	1974	453	114	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	220	225	232	236	244	249	261	270	281	289	294	299	304	316	322	15
Nov	232	242	254	266	275	281	290	302	314	329	340	355	382	451	555	15
Dec	252	263	273	284	295	305	335	383	436	516	592	676	784	922	1270	15
Jan	213	248	269	283	296	312	349	408	491	614	679	757	929	1190	1690	15
Feb	258	295	336	371	400	448	511	582	660	740	780	855	968	1300	1960	15
Mar	280	351	386	434	475	512	564	606	654	708	753	794	878	996	1300	15
Apr	285	334	354	398	437	467	516	553	586	615	633	660	701	746	827	15
May	286	300	312	327	347	386	456	524	559	605	632	654	681	749	810	15
Jun	239	257	264	272	279	288	309	345	404	453	487	514	540	585	737	15
Jul	219	228	233	236	239	244	255	276	293	313	324	335	348	368	388	15
Aug	214	219	222	226	228	231	240	261	273	288	293	296	302	312	323	15
Sep	216	221	224	226	228	232	248	265	275	281	286	290	293	299	304	15
Ann	224	236	248	258	269	279	300	328	385	492	544	593	653	742	928	

LOWER DESCHUTES RIVER BASIN

14097200 WHITE RIVER NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°10'40", long 121°34'30", in NE 1/4 SW 1/4 sec.32, T.4 S., R.10 E., Wasco County, Hydrologic Unit 17070306, in Mount Hood National Forest, on left bank at Faith Spring, 1.4 mi upstream from Klip Creek, and at mile 33.3.

DRAINAGE AREA.--40.7 mi².

PERIOD OF RECORD.--July 1969 to October 1979, July 1980 to September 1981.

GAGE.--Water-stage recorder. Elevation of gage is 2,740 ft from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--11 years, 165 ft³/s, 55.05 in/yr, 119,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,650 ft³/s Dec. 13, 1977, gage height, 6.63 ft; minimum, 20 ft³/s Jan. 6, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1969-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	45	1981	123	1978	70	22	3.6
Nov	11	58	1970	359	1978	117	87	5.8
Dec	11	49	1977	593	1978	229	155	11.8
Jan	11	44	1977	378	1975	224	118	11.5
Feb	11	48	1977	299	1971	185	82	8.7
Mar	11	59	1977	515	1972	183	123	9.4
Apr	11	127	1975	251	1974	182	40	9.1
May	11	126	1981	500	1972	307	145	15.8
Jun	11	75	1973	571	1974	231	143	11.5
Jul	13	58	1973	215	1974	109	44	5.6
Aug	13	46	1973	122	1978	71	22	3.7
Sep	13	44	1981	124	1978	63	19	3.2
Ann		74	1977	234	1974	165	51	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	45	47	49	50	52	52	55	59	65	79	82	86	95	114	144
Nov	51	54	56	58	60	64	72	78	87	98	112	149	203	246	319
Dec	49	52	60	75	93	105	120	142	170	223	268	327	385	455	644
Jan	44	54	81	96	110	119	137	150	183	245	275	314	370	456	632
Feb	48	62	79	90	101	114	141	158	178	199	213	232	259	320	442
Mar	58	85	97	102	106	109	123	141	160	187	209	235	259	315	497
Apr	103	111	121	132	138	144	156	170	185	205	212	221	240	264	302
May	111	122	132	143	155	167	211	300	339	392	430	461	499	548	602
Jun	76	83	88	103	119	133	158	187	220	273	301	326	362	469	539
Jul	59	63	65	68	74	78	84	95	108	132	142	150	157	165	191
Aug	44	48	50	53	56	58	62	69	74	79	83	88	94	111	122
Sep	41	46	47	49	50	52	56	60	63	66	69	74	78	93	121
Ann	48	53	57	63	69	77	95	117	143	170	193	224	273	343	469

LOWER DESCHUTES RIVER BASIN

14101500 WHITE RIVER BELOW TYGH VALLEY, OR

LOCATION.--Lat 45°14'30", long 121°05'38", in NE 1/4 NE 1/4 sec.7, T.4 S., R.14 E., Wasco County, Hydrologic Unit 17070306, on left bank 200 ft downstream from former Pacific Power & Light Co. powerplant at White River Falls, 3.9 mi east of town of Tygh Valley, and at mile 2.0.

DRAINAGE AREA.--417 mi².

PERIOD OF RECORD.--October 1917 to 1987.

REVISED RECORDS.--WSP 1448: 1920, 1923, 1927-28, drainage area. WSP 1935: 1956.

GAGE.--Water-stage recorder. Datum of gage is 870.15 ft above National Geodetic Vertical Datum of 1929 (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.

REMARKS.--No regulation. Diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--70 years, 426 ft³/s, 308,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft³/s Jan. 6, 1923, gage height, about 13.3 ft, site and datum then in use, from rating curve extended above 5,000 ft³/s; minimum discharge, 7.5 ft³/s Aug. 31, 1961.

STATISTICAL SUMMARIES FOR THE PERIOD 1918-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	70	87	1943	286	1960	153	43	3.0
Nov	70	113	1940	622	1922	269	134	5.2
Dec	70	120	1977	1680	1965	504	378	10.0
Jan	70	117	1977	2000	1923	602	397	12.0
Feb	70	128	1977	1600	1986	665	360	12.0
Mar	70	129	1977	1430	1972	591	253	11.7
Apr	70	223	1941	1450	1943	693	252	13.3
May	70	202	1934	1820	1949	743	337	14.8
Jun	70	132	1940	1220	1974	459	259	8.8
Jul	70	96	1941	392	1974	197	67	3.9
Aug	70	80	1941	190	1950	134	25	2.7
Sep	70	85	1977	183	1959	127	22	2.4
Ann		139	1977	726	1956	427	129	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	96	103	107	112	117	121	129	139	148	158	168	179	196	218	263	70
Nov	115	125	135	143	149	155	170	191	219	261	302	348	413	495	676	70
Dec	133	154	174	191	207	223	261	312	376	464	532	639	781	997	1490	70
Jan	140	178	204	226	244	268	332	397	489	625	724	834	974	1190	1670	70
Feb	188	223	248	285	331	367	441	523	615	720	787	873	1020	1240	1720	70
Mar	242	290	319	347	377	410	473	524	584	655	704	769	850	994	1190	70
Apr	273	330	387	429	462	491	557	622	694	800	859	940	1030	1140	1310	70
May	225	268	339	404	461	512	597	693	789	918	989	1060	1150	1250	1420	70
Jun	140	165	190	212	235	258	313	380	451	541	595	661	750	865	1080	70
Jul	110	119	127	135	141	148	162	177	193	213	227	246	275	309	358	70
Aug	94	100	104	108	113	118	126	133	141	149	154	159	165	171	183	70
Sep	90	95	100	105	110	113	119	125	131	137	142	147	152	160	172	70
Ann	106	118	128	138	150	163	205	271	372	497	570	650	756	920	1180	

LOWER DESCHUTES RIVER BASIN

14103000 DESCHUTES RIVER AT MOODY, NEAR BIGGS, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°37'20", long 120°54'05", in SW 1/4 SE 1/4 sec.26, T.2 N., R.15 E., Sherman County, Hydrologic Unit 17070306, on right bank at Moody, 4.0 mi southwest of Biggs, and at mile 1.4.

DRAINAGE AREA.--10,500 mi², approximately.

PERIOD OF RECORD.--October 1897 to December 1899 (published as "near Moro"), July 1906 to 1987. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 754: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 167.54 ft above National Geodetic Vertical Datum of 1929. Oct. 19, 1897, to Dec. 31, 1899, nonrecording gage at site 10 mi upstream at different datum. July 22, 1906, to July 18, 1930, nonrecording gage at site 300 ft downstream at datum 0.50 ft lower.

REMARKS.--Some fluctuation caused by regulation at Lake Simtustus since 1957. Some winter and spring runoff stored in Ochoco Reservoir, capacity, 46,420 acre-ft, in Crescent Lake, Crane Prairie, and Wickiup Reservoirs, combined capacity, 323,390 acre-ft, and since 1960, in Prineville Reservoir (station 14080400), and since 1964 in Lake Billy Chinook (station 14092100). Large diversions in upper river basin for irrigation.

AVERAGE DISCHARGE.--83 years, 5,869 ft³/s, 4,252,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 75,500 ft³/s Dec. 22, 1964, gage height, 11.80 ft, from rating curve extended above 47,000 ft³/s; minimum discharge, 2,400 ft³/s Dec. 5, 1957.

STATISTICAL SUMMARIES FOR THE PERIOD 1898-1956 (BEFORE CONSTRUCTION OF UPSTREAM RESERVOIRS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	53	3510	1932	6490	1900	4570	683	6.6
Nov	53	3990	1932	9380	1910	5340	999	7.5
Dec	53	4180	1932	10300	1956	6090	1510	8.8
Jan	52	4260	1931	11100	1956	6450	1680	9.4
Feb	52	4310	1931	13900	1907	7070	2060	9.3
Mar	52	4710	1931	14300	1910	7270	1840	10.5
Apr	52	4690	1930	11900	1907	7730	1880	10.9
May	52	4110	1930	10600	1899	6680	1680	9.7
Jun	52	3810	1931	10700	1899	5750	1450	8.1
Jul	53	3570	1931	8700	1899	4810	1030	7.0
Aug	53	3430	1931	6750	1899	4390	703	6.4
Sep	53	3400	1931	6500	1899	4410	662	6.2
Ann		4190	1931	7920	1907	5850	1010	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3720	3780	3830	3900	4010	4330	4470	4760	4980	5060	5230	5320	5500	5790	--	53
Nov	4010	4160	4280	4400	4520	4640	4860	5040	5270	5590	5810	6040	6270	6590	7220	53
Dec	4290	4460	4610	4770	4900	5000	5190	5410	5670	6050	6460	6860	7750	8590	10000	53
Jan	4440	4580	4720	4860	5010	5120	5370	5700	6200	6780	7160	7540	8030	8790	10500	52
Feb	4540	4810	4990	5140	5280	5450	5810	6200	6680	7350	7750	8320	9320	10500	12600	52
Mar	4900	5140	5310	5520	5730	5920	6260	6760	7200	7790	8120	8600	9440	10200	11300	52
Apr	4680	5080	5380	5650	5970	6250	6940	7480	8200	8710	9030	9410	10100	10700	11800	52
May	4120	4390	4630	4990	5300	5660	6190	6560	6980	7400	7670	8030	8430	9040	10100	52
Jun	3840	3950	4050	4320	4490	4700	5070	5500	6020	6510	6660	6940	7300	7760	8440	52
Jul	3650	3740	3820	3890	3980	4090	4300	4580	4870	5210	5390	5540	5730	6070	6730	53
Aug	3560	3610	3690	3750	3790	3880	4020	4220	4470	4830	4930	5070	5210	5320	5470	53
Sep	3600	3650	3700	3750	3810	3880	4100	4320	4530	4790	4950	5060	5130	5280	5450	53
Ann	3710	3880	4090	4280	4460	4640	4950	5250	5640	6220	6620	7040	7550	8400	9830	

LOWER DESCHUTES RIVER BASIN

14103000 DESCHUTES RIVER AT MOODY, NEAR BIGGS, OR--Continued
(National stream quality accounting network station)

STATISTICAL SUMMARIES FOR THE PERIOD 1965-1987 (AFTER THE COMPLETION OF UPSTREAM RESERVOIRS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	3390	1965	5590	1973	4740	519	6.7
Nov	23	3910	1965	7810	1985	5500	738	7.5
Dec	23	4610	1970	13100	1965	6870	1950	9.7
Jan	23	5000	1987	11300	1974	7640	1760	10.8
Feb	23	4400	1977	13100	1986	7710	2200	9.9
Mar	23	5060	1977	13600	1972	7590	2340	10.7
Apr	23	4470	1977	10900	1984	6850	1640	9.4
May	23	4140	1977	8270	1984	6020	1140	8.5
Jun	23	4200	1968	7640	1974	5400	899	7.4
Jul	23	3990	1968	5920	1974	4720	520	6.7
Aug	23	3980	1968	5360	1976	4470	377	6.3
Sep	23	3960	1968	5190	1984	4540	349	6.2
Ann		4680	1977	7380	1984	6000	822	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3450	4040	4230	4320	4380	4430	4570	4710	4860	5040	5130	5230	5360	5610	5860	23
Nov	4180	4540	4700	4840	4950	5060	5250	5440	5600	5800	5920	6060	6240	6490	7160	23
Dec	4340	4760	4950	5140	5320	5500	5840	6160	6510	7040	7300	7610	8070	8930	10700	23
Jan	4370	4810	5170	5450	5820	6190	6660	7160	7660	8290	8780	9300	9890	10900	12900	23
Feb	4350	4810	5250	5630	6070	6340	6760	7200	7620	8110	8430	8780	9380	10300	13500	23
Mar	4790	5130	5390	5650	5830	6010	6450	6850	7370	7990	8440	8950	9840	12000	13700	23
Apr	4350	4520	4800	5190	5520	5700	6070	6460	7080	7830	8130	8440	8790	9170	10600	23
May	4250	4490	4680	4900	5040	5170	5470	5750	6140	6630	6980	7180	7470	7830	8430	23
Jun	4210	4350	4440	4520	4610	4680	4900	5150	5490	5750	5990	6220	6480	6800	7480	23
Jul	3970	4050	4110	4200	4270	4330	4450	4560	4780	4980	5070	5230	5410	5600	5810	23
Aug	3930	4030	4080	4130	4170	4210	4320	4390	4500	4640	4740	4840	4920	5010	5170	23
Sep	3930	4030	4100	4170	4240	4340	4430	4500	4610	4750	4810	4880	4940	5050	5290	23
Ann	4030	4200	4340	4480	4610	4750	5030	5390	5830	6400	6760	7210	7780	8460	9750	

MOSIER CREEK BASIN

14113200 MOSIER CREEK NEAR MOSIER, OR

LOCATION.--Lat 45°38'55", long 121°22'35", in NW 1/4 NW 1/4 sec.19, T.2 N., R.12 E., Wasco County, Hydrologic Unit 17070105, on left bank 0.1 mi downstream from West Fork Mosier Creek, 2.5 mi southeast of Mosier, and at mile 3.0.

DRAINAGE AREA.--41.5 mi².

PERIOD OF RECORD.--April 1963 to September 1981.

GAGE.--Water-stage recorder. Elevation of gage is 425 ft, from topographic map. Prior to July 22, 1976, water-stage recorder at site 20 ft upstream at datum 3.57 ft higher. July 22, 1976, to Dec. 12, 1977, water-stage recorder at site 20 ft upstream at datum 1.57 ft higher.

REMARKS.--No regulation. Several small pumping diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--18 years, 28.5 ft³/s, 20,650 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,790 ft³/s Dec. 23, 1964, gage height, 8.9 ft, from flood profile, from rating curve extended above 1,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.35 ft³/s July 25, 26, Aug. 6, 7, 1978.

STATISTICAL SUMMARIES FOR THE PERIOD 1963-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	2.4	1981	3.7	1976	3.0	0.5	0.9
Nov	18	3.6	1979	29	1974	7.7	6.2	2.2
Dec	18	3.7	1977	169	1978	42	52	12.5
Jan	18	3.7	1977	241	1974	95	70	28.6
Feb	18	3.8	1977	129	1981	70	36	19.1
Mar	18	5.4	1977	144	1972	64	43	19.3
Apr	18	4.7	1977	95	1969	37	27	10.7
May	19	3.1	1973	26	1975	12	7.3	3.7
Jun	19	1.7	1977	9.1	1981	4.3	1.8	1.2
Jul	19	1.0	1978	3.7	1974	2.1	0.8	0.6
Aug	19	1.0	1971	2.6	1976	1.6	0.4	0.5
Sep	19	1.1	1974	2.6	1972	1.9	0.4	0.5
Ann		3.0	1977	53	1974	28	13	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.9	2.1	2.1	2.3	2.3	2.4	2.5	2.7	2.9	3.1	3.3	3.5	3.9	3.9	4.7	18
Nov	2.9	2.9	3.3	3.3	3.6	3.6	4.0	4.4	4.9	5.4	6.6	8.1	12	16	26	18
Dec	3.4	3.4	4.1	4.1	5.4	6.2	9.0	13	18	26	31	39	55	86	138	18
Jan	3.0	5.6	8.6	15	19	23	29	40	52	79	101	128	169	223	419	18
Feb	3.8	14	19	25	30	34	45	53	62	80	90	104	120	143	197	18
Mar	6.4	13	16	20	25	28	40	52	64	77	86	97	116	133	195	18
Apr	4.7	5.3	6.7	13	15	19	25	28	35	47	53	59	71	84	100	18
May	2.9	3.5	4.2	5.1	5.6	6.2	7.5	9.0	11	14	16	18	22	28	36	19
Jun	1.6	1.9	2.2	2.4	2.6	2.9	3.4	3.8	4.5	4.9	5.3	5.3	5.8	6.4	7.0	19
Jul	0.9	1.0	1.1	1.2	1.4	1.5	1.8	1.9	2.2	2.5	2.7	2.7	2.9	3.3	3.9	19
Aug	0.8	0.9	1.0	1.1	1.2	1.2	1.4	1.6	1.7	1.7	1.9	2.0	2.1	2.4	2.6	19
Sep	1.1	1.3	1.4	1.5	1.5	1.5	1.7	1.8	1.9	2.1	2.1	2.3	2.4	2.5	2.7	19
Ann	1.0	1.3	1.7	1.7	2.2	2.2	3.8	5.1	9.3	20	27	38	53	74	118	

HOOD RIVER BASIN

14113400 DOG RIVER NEAR PARKDALE, OR

LOCATION.--Lat 45°24'30", long 121°31'10", in SW 1/4 sec.11, T.2 S., R.10 E., Hood River County, Hydrologic Unit 17070105, Mount Hood National Forest, on right bank 100 ft upstream from city of The Dalles municipal diversion to Mill Creek basin, and 8.8 mi south of Parkdale.

DRAINAGE AREA.--4.50 mi².

PERIOD OF RECORD.--October 1959 to September 1971.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,347 ft above National Geodetic Vertical Datum of 1929 (levels by city of The Dalles).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--12 years, 7.09 ft³/s, 21.40 in/yr, 5,140 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 100 ft³/s May 29, 1969, gage height, 3.92 ft, from rating curve extended above 30 ft³/s; minimum, 0.03 ft³/s Dec. 1, 1967, result of freezeup.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1971

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	2.1	1967	3.6	1963	2.5	0.4	2.9
Nov	11	2.1	1970	5.6	1963	3.5	1.1	4.0
Dec	11	2.0	1966	13	1965	4.5	3.6	5.3
Jan	11	2.1	1962	11	1965	5.5	2.8	6.5
Feb	11	1.8	1966	17	1968	8.7	5.2	9.4
Mar	11	2.0	1966	12	1968	6.1	3.4	7.3
Apr	11	3.0	1964	10	1961	6.4	2.6	7.3
May	11	8.4	1968	39	1969	15	8.7	18.4
Jun	11	7.5	1968	36	1969	18	8.4	20.8
Jul	11	3.8	1968	18	1971	8.3	3.9	9.8
Aug	11	2.9	1968	7.2	1971	4.2	1.2	5.0
Sep	11	2.2	1968	4.6	1971	2.9	0.7	3.3
Ann		4.6	1966	10	1969	7.2	1.9	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.5	2.5	2.7	2.7	3.0	3.3	11
Nov	1.9	2.0	2.0	2.0	2.2	2.2	2.4	2.5	2.7	2.9	3.4	3.7	4.3	5.8	7.9	11
Dec	1.6	1.6	2.0	2.0	2.0	2.0	2.6	2.6	3.2	4.1	4.5	4.9	6.3	8.3	11	11
Jan	1.6	1.9	1.9	2.4	2.8	2.8	3.2	4.1	5.4	6.2	7.2	8.0	9.5	11	13	11
Feb	1.8	2.7	3.3	3.7	4.1	4.1	5.0	7.6	8.5	9.4	11	12	13	17	23	11
Mar	2.0	2.4	2.8	3.0	3.5	3.8	4.1	5.7	6.2	6.7	7.2	7.8	8.5	11	13	11
Apr	2.6	3.0	3.0	3.3	4.0	4.8	5.4	5.8	6.1	6.5	6.9	9.3	11	12	13	11
May	4.4	5.9	6.5	7.1	8.6	11	13	14	15	17	17	19	21	24	45	11
Jun	6.5	8.2	9.5	12	13	13	15	17	18	20	21	22	26	30	37	11
Jul	3.8	4.1	4.6	4.9	5.2	5.6	6.3	7.1	8.0	9.1	9.7	11	12	14	19	11
Aug	2.7	2.8	3.0	3.2	3.3	3.3	3.6	3.8	4.1	4.5	4.7	4.9	5.1	5.8	6.3	11
Sep	2.1	2.3	2.3	2.4	2.4	2.5	2.6	2.7	2.8	3.0	3.1	3.4	3.7	4.0	4.3	11
Ann	1.6	2.1	2.1	2.6	2.6	2.6	3.3	4.6	5.8	7.3	8.9	10	13	15	20	

HOOD RIVER RIVER BASIN

14118500 WEST FORK HOOD RIVER NEAR DEE, OR

LOCATION.--Lat 45°35'55", long 121°38'05", in SE 1/4 sec.1, T.1 N., R.9 E., Hood River County, Hydrologic Unit 17070105, on left bank 0.3 mi upstream from Dead Point Creek, 0.8 mi northwest of Dee, and at mile 0.4.

DRAINAGE AREA.--95.6 mi².

PERIOD OF RECORD.--September 1913 to February 1916 (incomplete), June 1932 to 1987.

REVISED RECORDS.--WDR OR-80-1: 1972(M).

GAGE.--Water-stage recorder. Datum of gage is 802.1 ft above National Geodetic Vertical Datum of 1929. Sept. 1, 1913, to Feb. 12, 1916, nonrecording gage at site 0.5 mi upstream at different datum.

REMARKS.--No regulation. Dee Irrigation District canal diverts from right bank about 6 mi upstream from station for irrigation upstream from station and in Middle Fork Basin. Diversions from Green Point Creek basin upstream from station for irrigation near Oak Grove; water from two of these diversions is carried in Hood River Irrigation District canal.

AVERAGE DISCHARGE.--56 years (water years 1914, 1933-87), 554 ft³/s, 401,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge not determined, Dec. 22, 1964, gage height, 27.0 ft, from floodmarks; maximum daily discharge, 15,000 ft³/s Dec. 23, 1964; minimum, 93 ft³/s Aug. 22, 1941.

STATISTICAL SUMMARIES FOR THE PERIOD 1933-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	55	125	1953	817	1948	281	167	4.3
Nov	55	109	1937	1500	1956	640	339	9.5
Dec	55	202	1977	2590	1934	908	518	13.9
Jan	55	191	1937	2360	1953	849	477	13.0
Feb	55	229	1977	1920	1961	791	367	11.0
Mar	55	386	1981	1390	1972	691	210	10.6
Apr	55	287	1941	1330	1943	747	225	11.1
May	55	312	1934	1310	1949	685	233	10.5
Jun	55	195	1940	1130	1933	470	215	7.0
Jul	55	141	1940	496	1955	258	83	4.0
Aug	55	109	1941	267	1950	176	37	2.7
Sep	55	109	1942	378	1959	171	44	2.5
Ann		267	1977	837	1974	554	119	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	117	125	130	135	141	147	163	182	208	252	282	344	430	541	731	55
Nov	140	172	194	222	246	271	337	418	521	676	785	926	1120	1390	1910	55
Dec	198	248	302	348	385	417	491	584	709	879	1000	1180	1390	1760	2660	55
Jan	224	257	287	321	354	386	458	551	659	832	966	1160	1400	1780	2540	55
Feb	242	289	323	355	386	418	482	556	646	787	887	1020	1220	1550	2220	55
Mar	330	363	392	417	442	467	524	580	642	743	802	891	1010	1160	1470	55
Apr	377	419	453	482	510	539	599	667	737	818	878	957	1050	1150	1380	55
May	320	373	410	446	478	507	571	636	708	789	838	891	960	1050	1220	55
Jun	212	236	257	276	292	310	349	400	454	528	574	641	696	784	942	55
Jul	148	161	171	182	191	199	216	233	253	281	300	324	351	387	464	55
Aug	119	127	134	138	144	149	159	170	181	194	201	210	220	236	259	55
Sep	113	119	125	131	135	139	148	157	167	178	186	194	205	225	277	55
Ann	132	150	168	187	209	237	314	403	493	608	676	758	882	1080	1480	

HOOD RIVER RIVER BASIN

14120000 HOOD RIVER AT TUCKER BRIDGE, NEAR HOOD RIVER, OR

LOCATION.--Lat 45°39'20", long 121°32'50", in SE 1/4 sec.15, T.2 N., R.10 E., Hood River County, Hydrologic Unit 17070105, on right bank 25 ft downstream from Tucker Bridge, 0.5 mi upstream from Odell Creek, 4.0 mi, southwest of town of Hood River, and at mile 6.1.

DRAINAGE AREA.--279 mi².

PERIOD OF RECORD.--October 1897 to December 1899, September 1913 to September 1914, August 1915 to September 1917, January 1965 to 1987. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1318: 1899. WSP 1935: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 383.2 ft above National Geodetic Vertical Datum of 1929 (Oregon State Highway Department bench mark). Prior to July 23, 1915, nonrecording gage at bridge at various datums. July 23 to Dec. 21, 1915, water-stage recorder at site 0.8 mi upstream at different datum. January 1916 to September 1917, nonrecording gage at bridge at different datum. Jan. 16 to July 23, 1965, nonrecording gage at bridge.

REMARKS.--Some daily fluctuation caused by diversion dam upstream from station and sawmill at Dee. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--27 years (water years 1898-99, 1914, 1916-17, 1966-87), 1,062 ft³/s, 769,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,300 ft³/s Dec. 13, 1977, gage height, 15.59 ft; minimum discharge recorded, 136 ft³/s Sept. 16, 1915, caused by temporary storage behind dam at Dee.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 20.6 ft, present datum, discharge, 33,200 ft³/s, from rating curve extended above 1,500 ft³/s on basis of slope-area measurement of peak flow.

STATISTICAL SUMMARIES FOR THE PERIOD 1898-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	28	301	1987	929	1900	498	162	4.0
Nov	28	431	1977	1990	1898	1070	456	8.3
Dec	28	438	1977	4110	1978	1530	899	12.3
Jan	28	363	1979	3310	1974	1650	820	13.2
Feb	28	430	1977	3370	1982	1640	737	12.0
Mar	28	681	1977	2910	1972	1390	524	11.1
Apr	28	704	1973	2360	1916	1310	397	10.2
May	28	559	1973	2420	1969	1260	464	10.1
Jun	28	445	1987	2440	1899	1020	531	7.9
Jul	28	256	1977	1690	1899	642	358	5.1
Aug	28	252	1987	1090	1899	430	182	3.4
Sep	29	229	1987	804	1899	409	123	3.2
Ann		465	1977	1660	1899	1060	292	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	281	303	315	325	335	347	378	404	436	509	551	610	685	826	986	28
Nov	389	434	464	504	546	591	679	773	917	1080	1210	1390	1640	1960	2740	28
Dec	440	506	588	653	715	775	889	1050	1230	1510	1700	1990	2410	3020	4270	28
Jan	389	516	624	707	775	834	953	1140	1320	1590	1860	2210	2730	3480	4800	28
Feb	560	689	746	792	863	949	1100	1260	1450	1690	1870	2110	2390	2810	4340	28
Mar	679	758	809	867	921	973	1080	1190	1330	1500	1600	1740	1910	2240	2860	28
Apr	698	773	839	889	939	978	1080	1180	1320	1490	1570	1690	1840	2010	2380	28
May	580	657	743	845	912	958	1060	1160	1280	1460	1550	1640	1770	1960	2320	28
Jun	392	441	515	570	614	653	735	837	949	1100	1270	1410	1660	2010	2240	28
Jul	289	317	347	367	387	408	469	527	587	680	764	854	927	1160	1640	28
Aug	236	253	267	282	298	312	340	369	413	467	507	554	600	683	841	28
Sep	231	256	276	292	308	321	347	378	411	453	481	500	524	587	743	29
Ann	292	337	377	421	470	530	671	819	975	1180	1300	1460	1680	1970	2550	

LOWER COLUMBIA RIVER BASIN

14131000 LITTLE ZIGZAG RIVER AT TWIN BRIDGES, NEAR RHODODENDRON, OR

LOCATION.--Lat 45°18'50", long 121°48'30", in NW 1/4 sec.15, T.3 S., R.8 E., Clackamas County, Hydrologic Unit 17080001, 0.1 mi upstream from mouth and the upper of Twin Bridges on the Mount Hood Loop Highway and 5.5 mi east of Rhododendron.

DRAINAGE AREA.--3.7 mi², approximately.

PERIOD OF RECORD.--April 1926 to September 1936.

GAGE.--Water-stage recorder. Datum of gage is 2,905.16 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--10 years (water years 1927-36), 25.3 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 250 ft³/s Mar. 31, 1931, gage height not determined, from area-velocity study and comparison with discharge of nearby streams; maximum gage height, 3.5 ft Oct. 7, 1930 (probably backwater from debris); minimum, 15 ft³/s Feb. 1-13, 16-18, 1932.

STATISTICAL SUMMARIES FOR THE PERIOD 1926-1936

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	19	1932	24	1931	22	1.6	7.4
Nov	10	19	1932	29	1933	23	2.9	7.6
Dec	10	19	1932	43	1934	26	7.1	8.8
Jan	10	19	1932	41	1934	25	6.5	8.7
Feb	10	16	1932	30	1934	24	4.5	7.5
Mar	10	23	1935	36	1934	26	4.1	8.9
Apr	11	23	1926	31	1934	28	2.9	9.1
May	11	22	1926	36	1932	29	4.9	10.0
Jun	11	22	1926	41	1933	27	5.3	8.9
Jul	11	20	1926	29	1933	23	2.6	7.9
Aug	11	18	1931	24	1928	21	1.8	7.3
Sep	11	17	1932	23	1928	21	2.0	7.0
Ann		22	1931	29	1934	25	2.1	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	19	20	20	20	21	21	22	22	23	23	24	25	25	26	29	10
Nov	20	20	21	21	22	22	22	23	24	25	25	26	26	29	32	10
Dec	19	20	21	22	22	22	23	24	25	27	28	30	31	33	--	10
Jan	20	21	21	22	22	23	23	24	25	27	30	31	31	37	--	10
Feb	16	20	21	21	22	22	23	24	26	28	29	29	30	31	33	10
Mar	20	21	22	23	23	23	24	25	26	29	29	30	32	34	36	10
Apr	23	24	25	26	26	27	27	28	30	31	32	32	33	34	36	11
May	24	25	25	26	27	28	29	31	33	34	34	35	36	38	40	11
Jun	23	24	24	25	25	26	26	27	28	29	29	31	32	36	41	11
Jul	21	21	22	22	23	23	23	24	25	25	26	26	27	27	30	11
Aug	19	20	20	20	21	21	22	22	23	23	24	24	25	18	--	11
Sep	17	20	20	21	21	21	22	22	23	24	24	24	24	25	26	11
Ann	19	20	20	21	22	22	23	24	25	27	28	29	30	32	35	

SANDY RIVER BASIN

14134000 SALMON RIVER NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°15'55", long 121°43'00", in SE 1/4 NW 1/4 sec.31, T.3 S., R.9 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank near lower end of Red Top Meadows and 3.0 mi southeast of Government Camp.

DRAINAGE AREA.--8.00 mi².

PERIOD OF RECORD.--May 1910 to May 1912, April 1926 to 1987. Published as "near Rowe" 1910-12.

REVISED RECORDS.--WSP 1398: 1911-12, 1926-27, 1933(M), 1949. WDR OR-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,445.53 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 21, 1910, nonrecording gage at site 0.2 mi upstream at different datum. Nov. 21, 1910, to May 31, 1912, and Apr. 21, 1926, to Sept. 30, 1933, at site 75 ft upstream from former site at different datums. Oct. 1, 1933, to Sept. 30, 1960, at datum 1.00 ft higher.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--62 years (water years 1911, 1927-87), 44.4 ft³/s, 75.37 in/yr, 32,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,300 ft³/s Dec. 23, 1964, gage height, 4.75 ft, from rating curve extended above 310 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 10 ft³/s Nov. 27, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1910-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	63	13	1979	52	1928	25	8.3	4.9
Nov	63	13	1937	90	1956	38	16	7.2
Dec	63	15	1953	135	1978	48	25	9.3
Jan	63	16	1937	97	1934	43	18	8.3
Feb	63	15	1929	109	1968	42	18	7.4
Mar	63	21	1977	89	1972	39	13	7.6
Apr	63	26	1967	82	1962	51	12	9.6
May	64	32	1941	125	1949	75	21	14.3
Jun	64	24	1926	163	1974	69	29	12.9
Jul	64	17	1941	96	1974	42	16	8.2
Aug	64	16	1941	54	1974	28	7.8	5.4
Sep	64	15	1931	37	1927	23	4.9	4.4
Ann		24	1941	63	1956	44	8.3	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	15	17	17	18	19	19	21	22	24	26	28	30	35	41	51	63
Nov	15	18	20	21	22	24	26	30	35	41	46	52	59	70	90	63
Dec	18	21	23	26	28	30	33	38	43	51	56	62	70	83	108	63
Jan	20	22	24	25	27	28	32	36	41	47	50	55	63	75	94	63
Feb	19	22	24	25	27	29	33	37	41	46	49	53	59	68	89	63
Mar	21	24	26	28	29	30	33	36	39	43	46	50	55	62	75	63
Apr	27	30	33	36	39	41	46	49	54	59	62	66	71	79	90	63
May	37	42	46	51	55	60	67	73	80	88	92	97	103	111	123	64
Jun	28	33	37	42	46	50	57	65	73	83	89	95	103	113	129	64
Jul	21	24	26	29	30	32	35	39	43	49	52	57	62	70	82	64
Aug	17	19	20	22	23	24	25	27	29	32	33	35	37	40	46	64
Sep	16	18	19	20	20	21	22	23	24	26	27	28	30	32	35	64
Ann	18	20	21	23	25	27	31	36	42	50	55	61	70	81	100	

SANDY RIVER BASIN

14134500 SALMON RIVER BELOW LINNEY CREEK, OR

LOCATION.--Lat 45°13'20", long 121°51'40", in SW 1/4 sec.17, T.4 S., R.8 E., Clackamas County, Hydrologic Unit 17080001, 200 ft downstream from Linney Creek, 8 mi southwest of Government Camp, and 9 mi southeast of Welches.

DRAINAGE AREA.--54 mi², approximately.

PERIOD OF RECORD.--October 1927 to September 1950.

GAGE.--Water-stage recorder. Elevation of gage is 2,500 ft, from topographic map. Prior to Oct. 18, 1934, 25 ft downstream at same datum.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--23 years (water years 1928-50), 205 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,670 ft³/s Mar. 31, 1931, gage height, 5.81 ft, site then in use, from rating curve extended above 1,500 ft³/s by logarithmic plotting; minimum, 37 ft³/s Nov. 2, 1936, gage height, 0.22 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1928-1950

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	52	1937	243	1928	90	47	3.7
Nov	23	47	1937	446	1948	182	120	7.3
Dec	23	78	1945	676	1934	250	163	10.4
Jan	23	72	1937	528	1934	212	114	8.8
Feb	23	81	1929	395	1930	197	76	7.4
Mar	23	129	1941	483	1932	248	82	10.3
Apr	23	119	1941	632	1943	370	119	14.8
May	23	125	1934	776	1949	414	181	17.1
Jun	23	86	1934	585	1933	242	131	9.7
Jul	23	63	1940	198	1950	117	38	4.8
Aug	23	49	1940	117	1933	76	17	3.2
Sep	23	52	1940	103	1933	65	10	2.6
Ann		109	1941	286	1943	205	45	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	49	51	53	54	56	58	62	66	73	83	90	101	125	157	246	23
Nov	51	56	61	68	72	78	94	110	133	175	217	259	309	405	556	23
Dec	65	77	90	102	113	123	145	172	209	256	282	316	372	456	664	23
Jan	79	90	98	104	110	120	139	158	187	228	251	288	334	409	523	23
Feb	84	98	108	113	120	127	140	160	184	213	233	262	294	350	437	23
Mar	118	127	136	147	159	169	190	210	236	269	293	321	362	423	510	23
Apr	141	177	199	223	236	258	293	325	367	427	462	506	554	619	731	23
May	132	152	182	210	239	269	335	407	482	541	560	583	623	680	743	23
Jun	89	109	119	130	141	150	172	198	232	279	307	339	370	427	527	23
Jul	62	68	74	80	85	88	98	108	118	130	138	148	163	177	206	23
Aug	51	54	58	61	64	66	69	74	78	84	89	92	96	103	112	23
Sep	50	52	54	55	56	58	61	64	66	69	71	73	77	82	95	23
Ann	54	60	66	73	80	91	114	141	178	229	263	304	359	449	569	

SANDY RIVER BASIN

14135000 SALMON RIVER AT WELCHES, OR

LOCATION.--Lat 45°19'10", long 121°57'10", in S-1/2 sec.9, T.3 S., R.7 E., Clackamas County, Hydrologic Unit 17080001, 1,200 ft downstream from Cheeney Creek and 0.8 mi southeast of Welches.

DRAINAGE AREA.--100 mi².

PERIOD OF RECORD.--September 1913 to September 1914, August 1920 to September 1921, April 1925 to September 1936.

GAGE.--Staff gage. Elevation of gage is 1,350 ft, from topographic map. Aug. 15, 1913, to Sept. 30, 1914, 0.8 mi downstream at different datum. July 26, 1920, to Sept. 15, 1921, Apr. 1, 1925, to May 2, 1931, about 500 ft downstream at various datums.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--13 years (water years 1914, 1921, 1926-36), 438 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft³/s Mar. 31, 1931, gage height, 9.80 ft, site and datum then in use, from rating curve extended above 4,600 ft³/s; minimum, 65 ft³/s Dec. 3-6, 1929, Aug. 31 to Sept. 3, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1914-1936

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	13	79	1926	519	1928	222	140	4.3
Nov	13	73	1930	1360	1928	481	358	9.0
Dec	13	219	1936	1640	1934	576	384	11.2
Jan	13	275	1930	1070	1934	618	263	12.0
Feb	13	183	1929	1110	1930	545	300	9.6
Mar	13	469	1926	1320	1932	707	255	13.7
Apr	14	298	1926	955	1921	697	189	13.1
May	14	231	1926	1050	1933	646	276	12.5
Jun	14	132	1926	1070	1933	377	236	7.1
Jul	14	85	1926	277	1933	159	48	3.1
Aug	15	74	1934	155	1913	106	22	2.1
Sep	15	75	1930	296	1927	123	62	2.3
Ann		284	1926	589	1921	438	93	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	71	74	77	79	81	85	99	128	182	234	267	301	345	447	715	13
Nov	74	81	105	130	163	182	222	273	343	488	561	660	790	1020	1450	13
Dec	118	162	184	207	230	253	299	358	423	562	652	748	886	1100	2050	13
Jan	180	217	254	278	297	315	371	440	535	679	764	871	1010	1180	1600	13
Feb	164	197	213	240	266	283	321	378	450	541	617	717	855	1050	1550	13
Mar	285	322	345	366	402	432	485	564	644	728	793	874	964	1150	1550	13
Apr	293	342	373	405	427	464	534	641	714	836	897	966	1020	1090	1250	14
May	206	227	262	328	380	418	536	655	754	834	881	939	996	1050	1110	14
Jun	129	149	173	189	200	212	256	298	355	412	477	525	594	665	808	14
Jul	87	94	103	113	118	125	134	145	162	175	185	202	216	237	279	14
Aug	71	76	79	84	88	92	97	102	106	112	119	126	134	145	154	15
Sep	70	73	74	76	79	81	86	92	100	117	124	138	169	197	255	15
Ann	77	86	98	115	136	165	222	294	376	492	576	675	785	929	1160	

SANDY RIVER BASIN

14135500 SALMON RIVER ABOVE BOULDER CREEK, NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°21'40", long 122°00'40", in SW 1/4 SE 1/4 sec.25, T.2 S., R.6 E., Clackamas County, Hydrologic Unit 17080001, on left bank 1.1 mi upstream from Boulder Creek, 1.2 mi south of Brightwood, and 2.0 mi upstream from mouth.

DRAINAGE AREA.--106 mi².

PERIOD OF RECORD.--August 1936 to September 1952.

GAGE.--Water-stage recorder. Datum of gage is 1,089.2 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--16 years (water years 1937-52) 452 ft³/s, 327,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s Dec. 14, 1946, gage height, 7.08 ft, from rating curve extended above 4,100 ft³/s by logarithmic plotting; minimum, 59 ft³/s Nov. 30, Dec. 1, 1936, Sept. 25, 26, 1940.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1952

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	73	1937	581	1948	224	159	4.2
Nov	16	69	1937	1060	1943	527	318	9.6
Dec	16	175	1945	1670	1947	713	374	13.4
Jan	16	143	1937	1030	1951	518	268	9.7
Feb	16	253	1941	956	1943	629	218	10.8
Mar	16	228	1941	900	1950	572	163	10.7
Apr	16	228	1941	1060	1937	738	225	13.4
May	16	270	1947	1290	1949	715	292	13.4
Jun	16	142	1940	907	1950	399	187	7.3
Jul	16	94	1940	313	1950	184	59	3.5
Aug	16	71	1940	161	1950	112	23	2.1
Sep	17	76	1939	140	1941	103	19	1.9
Ann		246	1941	617	1943	452	112	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	71	74	77	80	85	90	101	121	142	194	263	304	371	482	745	16
Nov	73	87	121	142	164	186	229	287	427	598	698	840	1040	1250	1640	16
Dec	144	216	258	296	331	364	417	492	584	706	796	926	1090	1370	1750	16
Jan	161	198	213	229	247	266	307	347	410	522	597	697	853	1060	1450	16
Feb	198	228	250	272	307	329	373	441	545	668	748	844	1020	1310	1630	16
Mar	224	276	300	322	346	372	436	497	562	635	688	762	859	992	1220	16
Apr	268	393	445	485	535	571	628	688	755	842	891	944	1000	1100	1280	16
May	235	308	361	415	476	513	595	666	743	822	882	958	1040	1150	1430	16
Jun	159	191	211	226	249	269	308	346	385	442	489	534	599	693	829	16
Jul	94	104	114	125	132	140	156	170	185	206	220	236	258	284	329	16
Aug	73	82	86	90	94	96	101	109	117	125	130	134	140	147	159	16
Sep	69	74	78	80	83	86	92	97	102	107	111	117	124	140	168	17
Ann	80	94	105	121	141	169	235	316	407	537	608	692	800	955	1254	

SANDY RIVER BASIN

14137000 SANDY RIVER NEAR MARMOT, OR

LOCATION.--Lat 45°23'30", long 122°07'40", in SE 1/4 sec.13, T.2 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, on right bank 0.7 mi southwest of Marmot, 0.8 mi upstream from Sandy River Dam of Portland General Electric Co., 6.6 mi downstream from Salmon River, and at mile 30.9.

DRAINAGE AREA.--262 mi².

PERIOD OF RECORD.--August 1911 to 1987. Published as "at Marmot" October 1912 to September 1913. Records for 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.

REVISED RECORDS.--WSP 594: Drainage area. WSP 1288: 1912(M), 1915, 1922, 1924, 1934(M). WSP 1318: 1932(M).

GAGE.--Water-stage recorder. Elevation of gage is 730 ft, from river-profile map. Aug. 15, 1911, to Dec. 20, 1915, and July 2, 1919, to Oct. 19, 1933, nonrecording gage at site 1.0 mi upstream at different datum. Oct. 20, 1933, to Sept. 30, 1958, water-stage recorder at site 0.6 mi upstream at different datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--76 years, 1,362 ft³/s, 70.60 in/yr, 986,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,400 ft³/s Dec. 22, 1964, gage height, 17.05 ft, from rating curve extended above 7,000 ft³/s; maximum gage height, 17.10 ft, Feb. 23, 1986; minimum, 195 ft³/s Nov. 27, 28, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1911-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	75	260	1953	2170	1960	665	390	4.2
Nov	75	236	1937	3700	1956	1580	879	9.5
Dec	75	445	1977	6280	1965	2090	1170	13.0
Jan	74	498	1937	4750	1953	2020	1010	12.6
Feb	74	464	1977	4690	1961	1850	830	10.5
Mar	74	631	1941	3980	1972	1650	563	10.3
Apr	74	658	1941	3130	1962	1880	498	11.4
May	74	744	1926	3440	1949	1850	624	11.5
Jun	74	496	1926	3460	1917	1250	575	7.5
Jul	75	355	1926	1390	1917	652	192	4.1
Aug	75	268	1940	663	1974	433	84	2.7
Sep	76	265	1942	1060	1959	428	153	2.6
Ann		766	1977	1930	1974	1360	268	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	254	275	293	310	326	340	373	422	501	640	742	876	1040	1300	1820 75
Nov	307	370	440	513	585	657	823	1030	1280	1650	1900	2270	2740	3470	4810 75
Dec	484	624	762	858	941	1020	1200	1410	1700	2080	2340	2700	3250	4130	5960 75
Jan	590	690	764	838	913	990	1150	1390	1670	2050	2340	2690	3230	3970	5460 74
Feb	607	731	806	878	952	1030	1180	1360	1590	1910	2120	2400	2890	3580	4810 74
Mar	766	861	926	983	1040	1110	1230	1370	1560	1770	1920	2110	2350	2710	3430 74
Apr	862	1010	1120	1230	1320	1420	1590	1740	1920	2130	2250	2400	2590	2820	3210 74
May	772	968	1080	1170	1260	1360	1550	1730	1930	2170	2310	2460	2640	2890	3210 74
Jun	557	630	690	742	792	838	929	1040	1190	1370	1500	1650	1820	2030	2630 74
Jul	390	424	453	475	496	518	556	592	641	700	741	790	862	949	1110 75
Aug	299	321	340	353	362	372	390	411	436	464	481	503	531	566	623 75
Sep	269	286	297	309	318	327	347	368	392	427	451	477	515	585	770 76
Ann	311	357	403	456	520	598	792	1000	1240	1540	1720	1950	2230	2660	3520

SANDY RIVER BASIN

14138800 BLAZED ALDER CREEK NEAR RHODODENDRON, OR

LOCATION.--Lat 45°27'10", long 121°53'25", in NW 1/4 SE 1/4 sec.25, T.1 S., R.7 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 600 ft below the confluence of Bedrock and Hickman Creeks and 8.6 mi north of Rhododendron.

DRAINAGE AREA.--8.17 mi².

PERIOD OF RECORD.--October 1963 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 2,540 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--24 years, 58.8 ft³/s, 97.74 in/yr, 42,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,610 ft³/s Dec. 22, 1964, gage height, 8.25 ft, from rating curve extended above 330 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 1.5 ft³/s Sept. 5-10, 28, 29, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	2.4	1975	82	1968	31	22	4.5
Nov	24	15	1977	177	1978	84	43	11.9
Dec	24	22	1977	288	1965	110	69	15.9
Jan	24	19	1985	207	1974	109	55	15.8
Feb	24	17	1969	183	1982	81	44	10.8
Mar	24	29	1978	167	1972	64	30	9.3
Apr	24	33	1983	116	1985	71	24	10.0
May	24	26	1987	165	1969	79	36	11.5
Jun	24	10	1986	115	1964	42	28	5.9
Jul	24	4.0	1965	35	1983	11	7.2	1.7
Aug	24	2.4	1967	27	1968	6.2	5.6	0.9
Sep	24	2.4	1974	35	1977	13	10	1.9
Ann		34	1977	88	1974	58	12	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.0	2.8	3.9	4.6	5.4	6.6	8.9	14	19	27	33	45	59	81	124	24
Nov	13	18	20	23	26	30	39	50	64	87	102	123	152	200	279	24
Dec	16	21	24	28	32	35	46	56	71	99	116	145	191	250	394	24
Jan	15	18	22	25	28	32	44	56	72	100	118	140	197	267	432	24
Feb	13	17	22	25	28	31	39	48	58	74	85	104	136	182	300	24
Mar	20	24	27	29	31	34	39	45	52	64	75	87	104	140	185	24
Apr	22	28	32	36	41	45	54	63	73	85	92	100	112	128	153	24
May	23	31	37	42	47	50	59	67	77	93	102	113	128	146	182	24
Jun	8.1	10	12	14	16	18	22	28	35	48	57	65	75	90	116	24
Jul	3.7	4.1	4.5	4.5	5.1	5.6	6.2	7.7	9.6	13	14	16	19	23	32	24
Aug	1.9	2.2	2.5	2.5	2.5	2.9	3.2	3.2	3.7	4.2	4.8	5.5	6.2	9.2	18	24
Sep	1.7	2.0	2.0	2.4	2.8	2.8	3.8	5.1	8.2	12	15	18	23	32	55	24
Ann	2.8	3.5	5.5	7.3	11	15	23	33	45	60	70	82	100	132	200	

SANDY RIVER BASIN

14138850 BULL RUN RIVER NEAR MULTNOMAH FALLS, OR

LOCATION.--Lat 45°29'50", long 122°00'50", near center of sec.12, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 1.2 mi upstream from North Fork, 7.0 mi southeast of Multnomah Falls, and at mile 14.8.

DRAINAGE AREA.--47.9 mi².

PERIOD OF RECORD.--August 1966 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,080 ft, from topographic map.

REMARKS.--Regulation at times since 1915 by Bull Run Lake, usable capacity, 12,270 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--21 years, 416 ft³/s, 117.94 in/yr, 301,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,610 ft³/s Jan. 20, 1972, gage height, 13.22 ft; minimum discharge, 33 ft³/s Sept. 27, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1966-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	21	53	1975	535	1968	253	148	5.2
Nov	21	147	1977	1050	1978	582	272	11.5
Dec	21	193	1977	1430	1978	737	351	15.0
Jan	21	177	1985	1240	1975	724	360	14.8
Feb	21	185	1969	1210	1972	624	303	11.6
Mar	21	235	1981	1120	1972	488	197	10.0
Apr	21	242	1967	743	1974	474	142	9.4
May	21	206	1987	885	1969	463	181	9.4
Jun	21	111	1986	699	1974	299	164	5.9
Jul	21	54	1977	292	1983	119	59	2.4
Aug	22	43	1967	231	1968	90	48	1.8
Sep	22	42	1967	294	1977	142	69	2.8
Ann		249	1977	643	1974	416	90	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	48	54	58	63	70	76	96	124	175	237	284	361	471	602	891 21
Nov	110	142	165	188	214	239	298	383	471	601	714	855	1030	1400	1820 21
Dec	152	188	214	238	262	291	362	437	540	731	861	1050	1330	1720	2390 21
Jan	126	148	169	195	221	251	329	404	499	663	781	1020	1320	1780	2710 21
Feb	121	159	193	213	239	264	317	382	463	581	685	823	1020	1340	2180 21
Mar	181	206	225	243	261	279	321	367	418	491	553	657	766	941	1220 21
Apr	209	234	252	265	283	306	372	426	484	547	583	635	697	789	928 21
May	189	220	239	260	282	308	355	389	452	525	586	638	702	808	949 21
Jun	89	102	116	129	144	158	185	217	259	331	369	417	483	583	721 21
Jul	54	60	64	68	72	76	84	94	107	129	142	156	177	209	266 21
Aug	42	46	48	50	51	53	57	63	73	85	95	105	122	148	222 22
Sep	41	45	49	53	58	63	76	90	110	137	153	178	224	305	458 22
Ann	52	65	80	98	121	147	205	261	339	428	487	567	682	874	1340

SANDY RIVER BASIN

14138870 FIR CREEK NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°28'56", long 122°01'36", in NE 1/4 SE 1/4 sec.14, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, on right bank, 6.4 mi north of Brightwood and 0.6 mi above Bull Run Reservoir Number One.

DRAINAGE AREA.--5.46 mi².

PERIOD OF RECORD.--October 1975 to 1987.

REVISED RECORDS.--WDR OR-78-1: 1976. WDR OR-82-2: 1976(P), 1978-79(P), 1981.

GAGE.--Water-stage recorder. Elevation of gage is 1,440 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--12 years, 34.4 ft³/s, 85.56 in/yr, 24,920 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,290 ft³/s Dec. 2, 1977, gage height, 5.64 ft; minimum discharge, 1.9 ft³/s Aug. 17-23, 1977, Sept. 16-18, 1981.

STATISTICAL SUMMARIES FOR THE PERIOD 1976-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	5.8	1977	40	1976	19	12	4.7
Nov	12	11	1977	85	1978	50	25	12.0
Dec	12	15	1977	133	1978	66	37	16.3
Jan	12	16	1979	96	1976	51	29	12.7
Feb	12	16	1977	126	1982	58	28	13.2
Mar	12	20	1978	61	1984	42	14	10.5
Apr	12	28	1983	56	1976	43	11	10.5
May	12	16	1987	53	1977	33	10	8.4
Jun	12	8.6	1986	58	1981	23	15	5.5
Jul	12	4.7	1977	27	1983	8.8	6.2	2.2
Aug	12	3.0	1987	13	1978	5.7	3.2	1.4
Sep	12	2.6	1987	27	1977	11	7.5	2.8
Ann		23	1977	47	1976	34	6.3	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.8	3.6	4.1	4.7	4.7	5.4	6.2	9.2	15	20	24	28	37	46	67	12
Nov	8.8	12	14	16	19	21	26	31	40	54	64	74	90	112	144	12
Dec	12	16	19	22	24	26	30	37	48	61	73	92	116	152	231	12
Jan	11	12	14	15	17	19	25	31	37	46	51	60	75	111	196	12
Feb	9.1	12	16	19	22	25	30	38	45	56	64	75	95	125	201	12
Mar	17	19	21	22	23	25	30	34	39	46	50	56	64	74	105	12
Apr	17	19	21	24	28	30	35	40	46	53	56	59	64	73	89	12
May	14	16	18	20	22	24	27	29	33	37	40	45	51	58	77	12
Jun	5.4	6.8	7.7	7.7	9.4	11	13	16	20	24	28	31	36	46	60	12
Jul	3.7	4.1	4.1	4.5	4.5	5.0	5.5	6.1	6.7	8.1	9.2	11	13	16	21	12
Aug	2.4	2.6	2.9	2.9	3.1	3.1	3.4	3.7	4.0	4.7	5.1	6.0	7.7	12	18	12
Sep	2.1	2.4	2.6	2.9	3.3	4.0	5.0	6.2	7.7	12	14	17	22	29	42	12
Ann	3.2	3.8	5.4	6.6	8.3	11	16	22	28	36	41	48	57	70	108	

SANDY RIVER BASIN

14138900 NORTH FORK BULL RUN RIVER NEAR MULTNOMAH FALLS, OR

LOCATION.--Lat 45°29'40", long 122°02'05", near line between SE 1/4 and SW 1/4 sec.11, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, Mount Hood National Forest, on left bank 7.0 mi southeast of Multnomah Falls and at mouth.

DRAINAGE AREA.--8.32 mi².

PERIOD OF RECORD.--August 1965 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 1,060 ft, from topographic map. Prior to Oct. 1, 1978, at site 700 ft upstream at datum 18.7 ft higher.

REMARKS.--Regulation at times since 1958 by North Fork Reservoir, capacity, about 1,030 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--22 years, 76.0 ft³/s, 124.05 in/yr, 55,060 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,700 ft³/s, probably affected by surge from release of water temporarily impounded by landslide upstream from station, Jan. 20, 1972, gage height, 9.89 ft, from floodmark, from rating curve extended above 850 ft³/s on basis of estimate of peak flow from slope-area survey; minimum discharge, 9.1 ft³/s Oct. 2-14, 1979.

STATISTICAL SUMMARIES FOR THE PERIOD 1965-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	22	15	1975	93	1976	46	24	5.2
Nov	22	27	1977	199	1974	105	50	11.4
Dec	22	33	1977	285	1976	135	71	15.1
Jan	22	32	1979	309	1975	139	74	15.5
Feb	22	40	1977	216	1982	112	51	11.4
Mar	22	40	1978	200	1972	87	35	9.8
Apr	22	49	1967	127	1966	83	23	9.0
May	22	33	1987	137	1972	79	31	8.9
Jun	22	18	1979	111	1974	52	26	5.6
Jul	22	13	1977	62	1983	26	11	3.0
Aug	23	11	1987	35	1968	18	5.6	2.1
Sep	23	10	1987	54	1977	27	12	2.9
Ann		46	1977	121	1974	75	18	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	13	15	16	17	18	19	22	26	34	46	54	65	82	108	153	22
Nov	22	27	33	37	41	46	57	72	88	114	130	155	184	238	299	22
Dec	25	35	40	45	50	55	68	84	103	129	156	183	223	277	433	22
Jan	27	30	34	39	44	49	65	81	103	134	162	200	254	319	428	22
Feb	27	34	38	42	46	52	62	71	86	105	120	147	186	233	363	22
Mar	33	38	42	46	49	53	59	67	77	91	100	117	136	167	218	22
Apr	37	41	45	49	53	57	68	76	83	94	101	112	122	137	161	22
May	29	34	39	44	48	53	60	68	80	94	100	109	123	139	160	22
Jun	18	20	22	24	25	27	32	39	47	56	62	72	84	98	127	22
Jul	14	15	16	17	17	18	19	21	23	27	30	33	39	48	63	22
Aug	11	12	13	14	14	15	15	16	17	18	19	20	22	26	34	23
Sep	11	12	13	14	15	15	17	19	21	26	29	34	40	54	77	23
Ann	14	16	18	20	24	28	38	49	62	78	88	103	122	156	231	

SANDY RIVER BASIN

14139500 BULL RUN RIVER BELOW LAKE BEN MORROW, OR

LOCATION.--Lat 45°29'00", long 122°04'50", in SE 1/4 sec.16, T.1 S., R.6 E., Multnomah County, Hydrologic Unit 17080001, in gatehouse at Bear Creek Dam on Bull Run River, 500 ft downstream from Bear Creek, 1,000 ft upstream from Fivemile Creek, and 8.5 mi northeast of Bull Run.

DRAINAGE AREA.--74 mi², approximately.

PERIOD OF RECORD.--October 1929 to September 1954. Published as "below Bull Run Reservoir near Bull Run" in 1930 and as "below Bull Run Reservoir" 1931-37.

GAGE.--Water-stage recorder upstream from crest of spillway and scales indicating number of turns outlet needle valves are open. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Portland Water Bureau). Prior to Oct. 1, 1934, at site 0.5 mi downstream at different datum.

REMARKS.--Discharge determined by combining discharge through valves near base of dam and discharge over crest of spillway (elevation, 1,036 ft). Leakage at dam is less than 1 ft³/s and is disregarded. Flow regulated by Bull Run Lake and Lake Ben Morrow (since 1928); flow from Bull Run Lake is not artificially regulated but reaches river through surface and underground channels.

AVERAGE DISCHARGE.--25 years (water years 1930-54), 582 ft³/s, 421,400 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge at dam, 16,100 ft³/s, Mar. 31, 1931, elevation, 1,047.40 ft (with 1 valve open 30 turns); no flow Oct. 27, 1939, Oct. 2, 1951, Dec. 11-13, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1930-1954

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	25	76	1941	1090	1948	326	291	4.8
Nov	25	93	1937	2010	1943	817	513	11.5
Dec	25	225	1953	2630	1934	1020	544	14.9
Jan	25	163	1937	2580	1953	877	541	12.8
Feb	25	290	1941	1730	1930	826	373	11.0
Mar	25	233	1941	1830	1932	764	320	11.1
Apr	25	211	1941	1260	1937	778	253	11.0
May	25	233	1947	1280	1949	686	287	10.0
Jun	25	110	1940	1310	1933	443	273	6.3
Jul	25	89	1930	359	1954	187	71	2.7
Aug	25	88	1934	184	1950	132	27	1.9
Sep	25	79	1934	385	1933	137	71	1.9
Ann		349	1941	789	1943	582	119	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	66	75	80	85	90	93	100	107	128	188	285	424	590	796	1390	25
Nov	93	101	109	151	203	243	333	435	640	946	1130	1360	1590	2000	2700	25
Dec	149	206	260	316	359	402	513	642	814	1050	1220	1450	1760	2260	3120	25
Jan	152	195	231	264	302	341	425	537	665	874	1050	1280	1600	2050	2870	25
Feb	191	227	255	292	317	346	416	508	664	853	976	1160	1480	1970	2620	25
Mar	227	274	302	325	355	387	474	564	660	798	890	1040	1220	1510	1960	25
Apr	250	316	371	428	476	535	634	714	794	888	947	1010	1080	1190	1470	25
May	189	260	315	364	412	466	546	626	705	798	858	932	1020	1150	1450	25
Jun	111	137	170	194	220	248	298	342	402	471	519	585	687	866	1090	25
Jul	91	99	107	116	124	133	149	160	177	196	208	225	263	316	403	25
Aug	91	98	102	103	105	109	119	127	133	150	155	159	166	175	189	25
Sep	78	83	86	90	94	97	104	111	121	134	142	151	161	172	268	25
Ann	86	98	112	127	147	170	249	347	471	630	732	848	1014	1282	1912	

SANDY RIVER BASIN

14139700 CEDAR CREEK NEAR BRIGHTWOOD, OR

LOCATION.--Lat 45°27'30", long 122°01'50", in NE 1/4 sec.26, T.1 S., R.6 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 5.8 mi north of Brightwood and at mile 2.5.

DRAINAGE AREA.--7.93 mi².

PERIOD OF RECORD.--July to November 1964, June 1965 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 1,960 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--22 years, 67.0 ft³/s, 114.74 in/yr, 48,540 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,990 ft³/s Dec. 22, 1964, gage height, 7.20 ft, from rating curve extended above 320 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 6.9 ft³/s Oct. 9-13, 1979.

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	12	1981	86	1968	40	23	5.1
Nov	22	24	1977	166	1978	90	42	11.1
Dec	22	29	1977	232	1978	114	55	14.4
Jan	22	31	1981	218	1975	119	58	15.1
Feb	22	31	1977	196	1982	100	45	11.5
Mar	22	39	1978	181	1972	83	31	10.6
Apr	22	46	1967	130	1974	82	23	10.2
May	22	34	1987	136	1969	67	26	8.6
Jun	22	18	1986	115	1981	43	24	5.4
Jul	23	12	1970	53	1983	21	9.3	2.8
Aug	24	8.7	1970	38	1968	16	7.4	2.1
Sep	24	7.8	1987	51	1977	25	12	3.1
Ann		42	1977	105	1974	67	14	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	9.2	11	12	13	13	15	18	23	29	38	46	58	73	94	140	23
Nov	19	23	27	30	34	37	47	59	76	96	109	129	163	208	275	22
Dec	23	29	33	37	41	45	56	70	87	111	136	159	204	251	360	22
Jan	22	26	30	34	38	44	54	66	86	114	135	166	226	285	408	22
Feb	22	28	32	35	39	44	55	65	77	98	110	132	163	221	341	22
Mar	31	35	38	41	44	47	55	64	75	87	97	110	131	161	209	22
Apr	35	40	43	47	51	56	65	75	85	95	101	111	123	138	171	22
May	27	30	33	36	39	42	50	58	68	80	88	96	105	118	148	22
Jun	17	18	19	21	22	23	26	31	37	46	52	60	68	84	109	22
Jul	13	14	14	15	15	16	17	18	20	23	24	27	31	35	43	23
Aug	8.5	9.4	11	11	12	12	13	14	15	16	18	20	22	26	36	24
Sep	7.5	9.0	9.8	11	12	12	14	16	19	25	28	32	39	51	78	24
Ann	11	13	15	17	20	24	32	42	54	70	81	93	110	141	213	

SANDY RIVER BASIN

14139800 SOUTH FORK BULL RUN RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°26'38", long 122°06'20", in NE 1/4 NE 1/4 sec.31, T.1 S., R.6 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on right bank 6.2 mi northeast of Bull Run, and at mile 0.6.

DRAINAGE AREA.--15.4 mi².

PERIOD OF RECORD.--October 1974 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 990 ft from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--13 years, 108 ft³/s, 95.24 in/yr, 78,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,520 ft³/s Dec. 2, 1977, gage height, 8.32 ft, from rating curve extended above 1,200 ft³/s; minimum discharge, 7.8 ft³/s Sept. 10, 1987.

STATISTICAL SUMMARIES FOR THE PERIOD 1975-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	13	17	1975	136	1976	59	38	4.7
Nov	13	40	1977	250	1978	151	67	11.5
Dec	13	50	1977	379	1978	191	97	15.0
Jan	13	58	1979	315	1975	173	91	13.6
Feb	13	54	1977	302	1982	177	68	12.7
Mar	13	63	1981	197	1987	137	41	10.8
Apr	13	89	1983	215	1976	136	38	10.3
May	13	47	1987	162	1977	103	32	8.1
Jun	13	28	1986	180	1981	71	43	5.5
Jul	13	18	1977	91	1983	32	18	2.6
Aug	13	13	1987	53	1978	24	12	1.9
Sep	13	10	1987	93	1977	41	24	3.1
Ann		75	1977	149	1976	108	18	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	13	16	17	18	19	20	24	31	41	59	70	88	111	144	215 13
Nov	31	40	46	54	64	72	89	110	135	169	186	210	246	308	413 13
Dec	38	52	61	69	75	81	102	125	155	199	230	271	315	395	578 13
Jan	33	40	45	51	57	67	93	114	141	168	190	221	275	360	570 13
Feb	31	46	58	70	80	88	107	130	155	183	206	231	291	363	504 13
Mar	53	62	69	74	80	86	100	117	134	151	166	182	208	243	311 13
Apr	55	60	68	73	83	92	109	124	145	164	178	190	206	229	259 13
May	39	44	50	56	63	67	78	90	106	123	131	143	157	179	217 13
Jun	24	26	28	30	32	35	40	50	61	77	87	98	114	143	192 13
Jul	17	18	19	20	21	22	24	26	29	33	35	39	44	54	73 13
Aug	12	13	14	14	15	15	17	18	19	22	24	28	32	43	72 13
Sep	9.1	11	13	15	17	18	23	27	33	41	48	58	76	102	131 13
Ann	15	18	21	26	31	37	53	72	94	121	137	157	183	222	313

SANDY RIVER BASIN

14141500 LITTLE SANDY RIVER NEAR BULL RUN, OR

LOCATION.--Lat 45°24'55", long 122°10'20", in NE 1/4 NE 1/4 sec.10, T.2 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, in Mount Hood National Forest, on left bank 0.25 mi upstream from Portland General Electric Co. dam and tunnel from Sandy River, 3.0 mi east of Bull Run, and at mile 1.95.

DRAINAGE AREA.--22.3 mi².

PERIOD OF RECORD.--May to July 1911, October 1911 to March 1912, June 1912 to April 1913, July 1919 to 1987. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1154: 1949. WSP 1248: Drainage area. WSP 1288: 1912, 1920-21(M), 1922-23, 1931, 1945. WSP 1318: 1920. WDR OR-82-2: 1972(P), 1974-76(P), 1978-81(P).

GAGE.--Water-stage recorder. Elevation of gage is 720 ft, from topographic map. May 23, 1911, to Apr. 29, 1913, nonrecording gage at site 0.85 mi downstream at different datum, 0.5 mi downstream from Sandy River diversion tunnel. July 1, 1919, to Sept. 30, 1931, water-stage recorder at site 0.1 mi downstream at different datum. Oct 1, 1931, to Nov. 3, 1967, at site 0.1 mi downstream at datum 712 ft above National Geodetic Vertical Datum of 1929. Nov. 4, 1967, to Aug. 8, 1971, water-stage recorder at site 0.1 mi downstream at datum 697.44 ft above National Geodetic Vertical Datum of 1929 (Portland General Electric Co. bench mark).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--68 years (water years 1920-87), 145 ft³/s, 88.30 in/yr, 105,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,320 ft³/s Nov. 20, 1921, gage height, 9.18 ft, site and datum then in use, from rating curve extended above 2,200 ft³/s; minimum discharge, 8 ft³/s Aug. 20, Sept. 16, 17, 1940.

STATISTICAL SUMMARIES FOR THE PERIOD 1911-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	70	13	1953	271	1956	89	59	5.2
Nov	70	14	1930	588	1956	209	118	11.8
Dec	70	57	1977	585	1965	244	112	14.3
Jan	70	45	1937	589	1953	239	127	14.0
Feb	70	59	1977	452	1961	209	91	11.1
Mar	69	49	1941	407	1932	187	67	10.9
Apr	69	54	1941	325	1920	196	55	11.1
May	69	55	1947	328	1945	168	63	9.8
Jun	70	20	1940	267	1933	104	57	5.9
Jul	71	13	1940	121	1983	39	18	2.3
Aug	70	10	1940	96	1968	23	13	1.4
Sep	70	12	1938	184	1927	41	34	2.3
Ann		88	1944	223	1974	145	29	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	14	17	19	22	25	27	36	47	62	86	103	126	156	210	299	70
Nov	23	38	48	59	68	78	100	128	167	221	258	306	381	481	646	70
Dec	50	66	80	91	101	112	134	160	195	243	279	333	400	509	739	70
Jan	54	66	76	84	93	104	127	152	185	235	274	326	394	507	723	70
Feb	57	69	78	87	96	104	123	147	176	217	245	282	330	420	595	70
Mar	69	79	87	95	102	110	131	151	174	202	219	241	272	329	422	69
Apr	77	93	103	116	130	142	161	178	196	218	230	245	263	300	364	69
May	52	68	80	91	101	111	130	152	177	202	216	234	255	282	331	69
Jun	31	36	41	45	50	55	66	78	93	115	128	146	167	197	260	70
Jul	17	20	21	23	24	26	28	32	35	41	45	51	57	68	89	71
Aug	12	14	15	16	16	17	18	20	21	23	25	27	29	35	47	70
Sep	12	13	14	15	16	17	19	22	26	34	40	49	63	88	140	70
Ann	15	19	23	29	37	48	72	97	127	164	185	210	246	304	436	

SANDY RIVER BASIN

14142500 SANDY RIVER BELOW BULL RUN RIVER, NEAR BULL RUN, OR

LOCATION.--Lat 45°26'57", long 122°14'38", in SW 1/4 sec.30, T.1 S., R.5 E., Clackamas County, Hydrologic Unit 17080001, on left bank 0.1 mi downstream from Bull Run River, 0.2 mi downstream from Dodge Park, 400 ft below city of Portland water conduit crossing Sandy River, and at mile 18.4.

DRAINAGE AREA.--436 mi².

PERIOD OF RECORD.--April 1910 to September 1914, October 1929 to September 1966, May 1984 to 1987.
Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Elevation of gage is 240 ft, from topographic map. April 1910 to September 1914, staff gage at present site at different datum. October 1929 to September 1966, water-stage recorder at site 0.8 mi downstream at different datum.

REMARKS.--Flow regulated since 1915 by Bull Run Lake, since 1929 by Bull Run Reservoir Number One (station 14139000), and since 1961 by Bull Run Reservoir Number Two (station 14139900). Some fluctuation caused by Bull Run powerplant of Portland General Electric Company.

AVERAGE DISCHARGE.--44 years (water years 1911-14, 1930-66, 1985-87) 2,327 ft³/s, 1,686,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 84,400 ft³/s Dec. 22, 1964, gage height, 22.3 ft, site and datum then in use; minimum discharge, 45 ft³/s Sept. 26, 1962, minimum daily, 63 ft³/s Oct. 12, Nov. 9, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1931-1961

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	326	1953	4090	1960	1300	1010	4.6
Nov	31	294	1953	6950	1956	3140	1890	10.8
Dec	31	991	1953	9440	1934	3920	2020	14.0
Jan	31	791	1937	8950	1953	3460	1850	12.3
Feb	31	1250	1941	7680	1961	3340	1420	10.9
Mar	31	997	1941	6430	1932	3170	1100	11.3
Apr	31	980	1941	5180	1937	3440	905	11.9
May	31	1050	1947	5360	1949	3040	1110	10.8
Jun	31	571	1940	4890	1933	1930	1030	6.7
Jul	31	407	1940	1760	1955	841	294	3.0
Aug	31	322	1940	713	1956	512	102	1.8
Sep	31	358	1940	1950	1959	564	314	1.9
Ann		1370	1941	3360	1956	2380	468	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	271	324	348	373	401	429	502	623	803	1140	1440	1790	2200	2920	4690	31
Nov	356	513	688	874	1010	1130	1470	1910	2540	3580	4120	4920	5930	7300	9550	31
Dec	802	1050	1270	1520	1700	1870	2180	2660	3220	3940	4480	5160	6410	7990	11400	31
Jan	910	1110	1240	1360	1490	1620	1920	2340	2900	3730	4240	4960	6010	7210	9640	31
Feb	992	1180	1320	1460	1580	1690	1950	2350	2920	3560	4030	4600	5430	6860	8900	31
Mar	1190	1390	1510	1630	1740	1910	2260	2600	2970	3520	3880	4290	4830	5680	6990	31
Apr	1410	1710	1920	2160	2380	2560	2870	3150	3470	3830	4030	4290	4570	5040	6130	31
May	976	1300	1570	1820	2040	2230	2560	2880	3220	3620	3810	4050	4330	4770	5750	31
Jun	642	799	913	993	1090	1200	1360	1560	1800	2160	2380	2620	2890	3400	4280	31
Jul	389	444	508	557	591	622	675	744	816	910	976	1060	1170	1330	1710	31
Aug	251	335	369	393	412	431	466	498	536	577	606	637	670	721	800	31
Sep	189	299	330	349	369	388	425	467	517	585	620	655	719	823	1150	31
Ann	358	430	510	599	705	842	1240	1660	2140	2780	3150	3550	4130	5030	6940	

MIDDLE FORK WILLAMETTE RIVER BASIN

14144800 MIDDLE FORK WILLAMETTE RIVER NEAR OAKRIDGE, OR

LOCATION.--Lat 43°35'50", long 122°27'20", in NW 1/4 NE 1/4 sec.9, T.23 S., R.3 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank 0.2 mi upstream from Windfall Creek, 8.3 mi upstream from Hills Creek Dam, 10.2 mi south of Oakridge, and at mile 240.8.

DRAINAGE AREA.--258 mi².

PERIOD OF RECORD.--October 1958 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,556.83 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 21, 1967, at site 0.5 mi upstream at different datums. June 22, 1967, to June 23, 1971, water-stage recorder at same site at datum 5.00 ft higher.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--29 years, 817 ft³/s, 43.00 in/yr, 592,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,800 ft³/s Dec. 22, 1964, gage height, 16.96 ft, from floodmark, site and datum then in use, from rating curve extended above 5,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 187 ft³/s Sept. 15, 16, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1959-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	29	238	1979	636	1963	348	96	3.6
Nov	29	296	1979	1810	1974	831	426	8.4
Dec	29	271	1977	3920	1965	1240	808	12.9
Jan	29	273	1977	2730	1970	1240	641	12.9
Feb	29	271	1977	2510	1986	1190	537	11.3
Mar	29	432	1977	2840	1972	1030	464	10.7
Apr	29	518	1968	1470	1960	1020	269	10.3
May	29	557	1968	1750	1971	1120	333	11.6
Jun	29	371	1987	1540	1974	796	348	8.0
Jul	29	253	1977	740	1971	415	124	4.3
Aug	29	215	1977	415	1976	301	54	3.1
Sep	29	218	1987	377	1971	288	46	2.9
Ann		359	1977	1200	1972	816	197	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	219	229	238	246	254	264	280	294	309	346	366	395	439	512	671	29
Nov	250	274	293	314	341	372	437	516	649	839	968	1110	1330	1730	2510	29
Dec	280	341	429	504	556	596	715	856	1030	1290	1440	1680	1920	2310	3230	29
Jan	327	406	472	538	580	629	754	879	1030	1200	1340	1520	1750	2130	3190	29
Feb	431	514	594	636	680	726	802	905	1030	1190	1280	1410	1650	2120	3110	29
Mar	478	541	582	609	639	674	746	830	933	1090	1190	1310	1480	1730	2280	29
Apr	523	583	626	679	723	781	870	955	1050	1150	1210	1290	1410	1560	1810	29
May	557	649	707	764	802	838	920	1020	1160	1290	1350	1450	1590	1760	1940	29
Jun	359	393	424	457	493	525	581	680	804	902	965	1050	1190	1400	1660	29
Jul	258	275	287	298	309	319	344	373	403	448	479	516	558	625	745	29
Aug	228	238	246	253	258	264	274	285	300	325	342	359	372	386	411	29
Sep	213	223	231	237	242	248	258	271	293	312	322	332	345	358	389	29
Ann	239	262	282	306	332	368	476	609	754	912	1010	1130	1290	1530	1980	

WILLAMETTE RIVER BASIN

14144900 HILLS CREEK ABOVE HILLS CREEK LAKE, NEAR OAKRIDGE, OR

LOCATION.--Lat 43°40'50", long 122°22'10", in NW 1/4 NW 1/4 sec.8, T.22 S., R.4 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank 0.2 mi downstream from Tufti Creek, 0.7 mi upstream from Hills Creek Lake, 6.5 mi southeast of Oakridge, and at mile 4.1.

DRAINAGE AREA.--52.7 mi².

PERIOD OF RECORD.--October 1958 to September 1981. Prior to October 1971, published as "Hills Creek above Hills Creek Reservoir".

GAGE.--Water-stage recorder. Datum of gage is 1,630.80 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--23 years, 150 ft³/s, 38.65 in/yr, 108,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,700 ft³/s Dec. 22, 1964, gage height, 12.23 ft, from rating curve extended above 1,800 ft³/s on basis of slope-area measurement of peak flow; minimum, 14 ft³/s Nov. 1, 1958.

STATISTICAL SUMMARIES FOR THE PERIOD 1959-1982

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	23	1959	105	1963	43	19	2.5
Nov	23	28	1977	441	1974	153	102	8.4
Dec	23	23	1977	1000	1965	247	201	14.0
Jan	23	26	1977	574	1970	264	164	14.9
Feb	23	23	1977	425	1972	200	95	10.3
Mar	23	69	1977	633	1972	198	117	11.2
Apr	23	99	1968	308	1972	204	59	11.2
May	23	108	1968	367	1972	236	75	13.4
Jun	23	53	1973	341	1964	145	74	7.9
Jul	23	27	1977	92	1971	52	20	3.0
Aug	23	20	1973	61	1976	32	9.6	1.8
Sep	23	21	1960	89	1978	31	13	1.7
Ann		60	1977	254	1972	150	45	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	19	21	22	23	24	25	27	30	35	43	49	55	64	80	113	23
Nov	25	28	31	35	39	45	59	80	106	150	177	209	256	343	553	23
Dec	29	41	50	67	82	97	133	164	201	249	281	332	404	503	688	23
Jan	38	53	66	76	92	107	135	169	200	248	292	351	429	530	816	23
Feb	56	74	87	97	108	119	136	156	174	210	231	258	297	361	497	23
Mar	71	85	93	99	105	112	126	140	165	214	238	259	305	372	521	23
Apr	85	101	112	120	129	139	169	194	215	238	254	273	295	327	390	23
May	105	121	132	141	155	165	186	213	241	275	295	321	350	389	440	23
Jun	49	54	61	68	76	83	99	118	141	166	183	208	246	288	341	23
Jul	27	29	31	33	34	36	41	45	50	59	64	70	78	88	108	23
Aug	21	22	23	24	25	26	28	30	33	36	37	39	43	46	54	23
Sep	19	20	21	22	22	23	25	27	28	30	32	36	39	47	66	23
Ann	22	25	28	32	37	45	69	99	132	171	195	224	263	318	430	

MIDDLE FORK WILLAMETTE RIVER BASIN

14145500 MIDDLE FORK WILLAMETTE RIVER ABOVE SALT CREEK, NEAR OAKRIDGE, OR

LOCATION.--Lat 43°43'20", long 122°26'15", in NW 1/4 NE 1/4 sec.27, T.21 S., R.3 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank 90 ft upstream from highway bridge, 0.4 mi upstream from Salt Creek, 1.1 mi downstream from Hills Creek Dam, 2.3 mi southeast of Oakridge, and at mile 231.4.

DRAINAGE AREA.--392 mi².

PERIOD OF RECORD.--October 1913 to September 1914, September 1935 to 1987. Monthly discharge only September 1935, published in WSP 1318.

REVISED RECORDS.--WSP 1248: 1914.

GAGE.--Water-stage recorder. Datum of gage is 1,208.01 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Oct. 3, 1913, to Sept. 30, 1914, nonrecording gage and Sept. 1, 1935, to Aug. 18, 1960, water-stage recorder at sites 400 ft and 1,000 ft downstream, respectively, at different datum.

REMARKS.--Flow regulated since 1961 by Hills Creek Lake (station 14145100). No diversions upstream from station.

AVERAGE DISCHARGE.--53 years, 1,156 ft³/s, 40.05 in/yr, 837,500 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 34,000 ft³/s Dec. 28, 1945, gage height, 12.06 ft, site and datum then in use, from rating curve extended above 13,000 ft³/s; minimum observed discharge, 0.70 ft³/s Sept. 8-11, 13, 1961.

STATISTICAL SUMMARIES FOR THE PERIOD 1914-1960 (BEFORE THE CONSTRUCTION OF HILLS CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	221	1937	1850	1951	464	331	3.5
Nov	26	212	1937	2830	1943	1100	736	7.9
Dec	26	324	1937	4780	1956	1640	1240	12.2
Jan	26	260	1937	3900	1953	1730	989	12.9
Feb	26	625	1937	3310	1958	1740	697	11.8
Mar	26	554	1941	2700	1957	1530	533	11.4
Apr	26	615	1941	2750	1937	1610	469	11.6
May	26	738	1940	2430	1949	1560	490	11.6
Jun	26	343	1940	2000	1937	1150	466	8.3
Jul	26	272	1940	884	1953	523	167	3.9
Aug	26	233	1940	441	1952	343	59	2.6
Sep	26	246	1942	389	1914	317	44	2.3
Ann		630	1941	1730	1956	1140	297	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	226	236	248	261	275	288	312	332	356	385	415	456	513	650	925	26
Nov	236	276	305	324	357	397	471	576	736	991	1170	1370	1790	2280	3590	26
Dec	308	381	434	473	521	575	716	941	1150	1550	1820	2230	2740	3510	5190	26
Jan	405	536	591	642	691	755	933	1130	1400	1800	2020	2380	2870	3740	5200	26
Feb	552	641	700	782	863	943	1100	1300	1540	1890	2080	2330	2750	3330	4330	26
Mar	614	739	814	872	922	976	1120	1290	1490	1750	1900	2070	2310	2600	3310	26
Apr	724	807	882	991	1110	1200	1360	1520	1700	1870	1970	2100	2250	2440	2760	26
May	718	831	935	1020	1090	1170	1330	1470	1620	1810	1930	2060	2200	2390	2640	26
Jun	471	546	611	661	707	758	881	1030	1180	1330	1430	1550	1730	1930	2260	26
Jul	294	321	342	359	378	393	427	460	501	556	595	644	720	816	991	26
Aug	252	264	271	279	288	300	322	344	364	378	387	397	410	428	458	26
Sep	238	246	252	259	267	277	297	317	329	341	349	357	367	383	419	26
Ann	256	291	321	348	383	428	581	791	1029	1310	1482	1690	1941	2291	3034	

MIDDLE FORK WILLAMETTE RIVER BASIN

14145500 MIDDLE FORK WILLAMETTE RIVER ABOVE SALT CREEK, NEAR OAKRIDGE, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1962-1987 (AFTER THE COMPLETION OF HILLS CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	1.1	1962	1960	1963	1250	414	9.1
Nov	26	9.4	1962	3490	1985	1730	709	12.2
Dec	26	513	1966	4580	1965	2160	1080	15.8
Jan	26	370	1977	5310	1965	1780	1030	13.0
Feb	26	10	1962	4390	1972	969	923	6.5
Mar	26	139	1977	2040	1986	709	562	5.2
Apr	26	92	1977	1490	1974	771	438	5.5
May	26	91	1977	1990	1963	992	487	7.3
Jun	26	109	1977	1980	1974	925	468	6.5
Jul	26	371	1968	1170	1979	587	189	4.3
Aug	26	293	1966	1430	1981	805	325	5.9
Sep	26	793	1965	2280	1966	1230	301	8.7
Ann		576	1977	1820	1974	1160	315	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	96	673	837	943	1050	1130	1270	1410	1490	1580	1620	1660	1700	1750	1790	26
Nov	508	797	919	1030	1130	1220	1390	1560	1740	1960	2060	2220	2560	3020	3840	26
Dec	475	591	711	852	1050	1340	1620	1840	2050	2580	2940	3370	3810	4190	4820	26
Jan	308	415	619	735	874	1000	1310	1530	1700	1960	2090	2350	2710	3290	4970	26
Feb	108	191	243	267	288	298	318	337	390	1010	1430	1660	1830	2660	3740	26
Mar	108	124	233	276	286	294	312	330	379	708	869	1190	1420	1610	2190	26
Apr	103	219	271	295	312	327	403	622	770	1110	1300	1370	1420	1470	1660	26
May	221	282	305	344	404	511	734	949	1200	1350	1400	1490	1590	1810	2080	26
Jun	306	393	429	477	519	587	675	796	941	1090	1190	1300	1460	1680	2040	26
Jul	307	350	372	395	418	440	482	516	571	648	685	724	824	950	1140	26
Aug	287	313	353	384	440	494	618	671	736	1200	1300	1330	1370	1440	1540	26
Sep	476	636	697	827	1010	1090	1230	1320	1370	1420	1450	1480	1510	1560	1640	26
Ann	242	310	346	397	476	581	730	1010	1250	1440	1550	1660	1770	2100	3120	

WILLAMETTE RIVER BASIN

14146000 SALT CREEK NEAR OAKRIDGE, OR

LOCATION.--Lat 43°43'45", long 122°25'35", in SW 1/4 sec.23, T.21 S., R.3 E., Lane County, Hydrologic Unit 17090001, on right bank 0.7 mi upstream from mouth and 2 mi southeast of Oakridge.

DRAINAGE AREA.--113 mi².

PERIOD OF RECORD.--July 1913 to September 1914, October 1933 to September 1951.

GAGE.--Water-stage recorder. Datum of gage is 1,245.67 ft above National Geodetic Vertical Datum of 1929. July 19, 1913, to Sept. 30, 1914, staff gage 0.5 mi downstream at different datum.

REMARKS.--No regulation. Since spring of 1948, there has been a small intermittent, unmeasured diversion around gage to millpond downstream.

AVERAGE DISCHARGE.--19 years (water years 1914, 1934-51), 293 ft³/s, 212,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft³/s Oct. 29, 1950, gage height, 8.00 ft, from rating curve extended above 2,600 ft³/s by logarithmic plotting; minimum, 55 ft³/s Jan. 8, 1937, result of freezeup; minimum daily, 66 ft³/s Jan. 8, 1937.

STATISTICAL SUMMARIES FOR THE PERIOD 1913-1951

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	82	1945	393	1951	150	72	4.3
Nov	19	93	1937	635	1951	289	159	8.1
Dec	19	115	1945	912	1943	355	208	10.3
Jan	19	97	1937	649	1943	350	157	10.1
Feb	19	169	1941	640	1951	343	115	9.1
Mar	19	149	1941	486	1939	350	94	10.1
Apr	19	186	1941	541	1937	423	98	11.9
May	19	173	1934	729	1949	483	148	14.0
Jun	19	115	1940	732	1950	376	156	10.5
Jul	20	90	1940	347	1913	182	66	5.3
Aug	20	80	1940	175	1913	121	24	3.5
Sep	20	85	1934	154	1914	118	20	3.3
Ann		173	1941	426	1943	293	71	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	84	89	93	98	102	106	114	123	133	144	153	165	188	219	266	19
Nov	95	104	117	123	130	142	165	193	231	313	346	401	487	570	783	19
Dec	110	122	140	161	176	190	219	258	302	359	397	457	546	642	960	19
Jan	114	156	173	184	194	205	232	270	323	387	426	466	527	644	815	19
Feb	157	176	185	196	213	233	263	292	337	385	415	440	490	549	681	19
Mar	167	190	218	235	248	267	295	328	361	404	427	454	485	528	607	19
Apr	191	234	261	293	321	350	382	417	449	480	499	524	562	603	657	19
May	191	252	294	332	365	385	434	482	518	561	597	630	667	709	784	19
Jun	129	176	210	230	250	271	304	341	387	440	474	510	549	606	760	19
Jul	96	110	117	123	129	136	149	160	173	191	203	219	243	285	353	20
Aug	86	91	96	100	103	105	111	116	125	134	137	142	148	156	168	20
Sep	84	88	92	98	101	104	109	117	124	130	133	136	142	150	165	20
Ann	94	104	113	123	133	146	180	227	287	355	395	438	489	554	676	

WILLAMETTE RIVER BASIN

14146500 SALMON CREEK NEAR OAKRIDGE, OR

LOCATION.--Lat 43°45'45", long 122°22'18", in NE 1/4 sec.7, T.21 S., R.4 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank 190 ft upstream from Salmon Creek Falls, 0.1 mi upstream from Needle Creek, 4.6 mi east of Oakridge, and at mile 5.84.

DRAINAGE AREA.--117 mi², at measuring cable 0.25 mi downstream from gage.

PERIOD OF RECORD.--October to November 1909 (gage heights and one discharge measurement only), February 1913 to October 1919, October 1933 to September 1985, October 1986 to September 1987. Monthly discharge only for some periods, published in WSP 1318. Published as Kelsey River near Hazeldell and Salmon Creek near Hazeldell, 1909.

REVISED RECORDS.--WSP 794: 1934(M). WSP 814: Drainage area. WSP 1124: 1935, 1942(M), 1943, 1946(M). WSP 1248: 1915, 1918. WDR OR-71-1: 1968, 1969(M,P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,462.36 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1914, nonrecording gage at several sites within 4 mi of present site at various datums. Oct. 1, 1914, to Oct. 14, 1919, water-stage recorder at site 1.8 mi downstream at different datum. Nov. 5, 1933, to Oct. 27, 1964, water-stage recorder at site 0.8 mi downstream at datum 40.53 ft lower. Oct. 28, 1964, to Aug. 27, 1965, nonrecording gage at site 0.6 mi downstream at different datum.

REMARKS.--No regulation or diversion upstream from station. All records given herein are for measuring cable site.

AVERAGE DISCHARGE.--59 years (water years 1914-19, 1934-85, 1987), 427 ft³/s, 49.56 in/yr, 309,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,600 ft³/s Dec. 22, 1964, gage height, 9.15 ft, from floodmark, site and datum then in use, from rating curve extended above 2,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 63 ft³/s Jan. 8, 1937.

STATISTICAL SUMMARIES FOR THE PERIOD 1913-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	60	107	1945	477	1951	190	69	3.8
Nov	59	101	1937	955	1978	421	234	8.1
Dec	59	139	1977	1890	1965	625	380	12.4
Jan	60	111	1937	1300	1971	601	295	11.9
Feb	61	138	1977	1280	1982	595	246	10.8
Mar	60	180	1941	1530	1972	538	212	10.7
Apr	60	203	1941	1090	1919	603	183	11.6
May	60	215	1934	1070	1917	600	191	11.9
Jun	60	138	1940	1070	1917	440	195	8.5
Jul	60	112	1940	636	1917	234	88	4.7
Aug	60	96	1940	240	1917	163	33	3.2
Sep	60	108	1962	201	1978	150	23	2.9
Ann		217	1941	681	1974	427	106	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	110	114	119	125	131	136	146	155	168	187	199	213	236	279	371	60
Nov	117	138	150	163	175	186	216	264	339	437	503	584	703	867	1220	59
Dec	152	177	202	226	252	286	358	440	529	667	764	876	1010	1200	1670	59
Jan	185	225	247	272	298	322	377	452	532	637	713	812	928	1130	1500	60
Feb	218	260	286	314	346	378	430	482	544	631	686	758	866	1030	1340	61
Mar	253	293	316	335	353	370	405	447	511	594	640	695	767	856	1090	60
Apr	280	314	344	377	408	449	517	562	625	694	735	780	837	917	1030	60
May	248	313	359	390	423	459	523	574	627	693	738	784	834	918	1050	60
Jun	184	211	232	253	271	289	335	387	439	485	530	575	622	711	905	60
Jul	134	148	156	163	170	176	189	204	223	243	258	279	310	354	414	60
Aug	115	122	127	131	135	139	148	159	171	181	186	192	200	208	224	60
Sep	109	114	118	122	126	130	139	149	157	163	167	171	177	184	197	60
Ann	121	137	150	163	177	195	246	320	402	496	553	621	705	827	1050	

WILLAMETTE RIVER BASIN

14147000 WALDO LAKE OUTLET NEAR OAKRIDGE, OR

LOCATION.--Lat 43°46'05", long 122°03'10", in SE 1/4 NW 1/4 sec.7, T.21 S., R.6 E., Lane County, Hydrologic Unit 17090001, in Willamette National Forest, on right bank of artificial outlet channel of Waldo Lake forming the headwaters of the North Fork of the Middle Fork of Willamette River, 20 mi east of Oakridge, and at mile 43.5.

DRAINAGE AREA.--30.5 mi², of which about 10.5 mi² is Waldo Lake.

PERIOD OF RECORD.--October 1936 to September 1953, October 1969 to October 1982, October 1983 to September 1984.

GAGE.--Water-stage recorder and modified v-notch weir. Elevation of gage is 5,410 ft, from topographic map. October 1936 to September 1953, at site 120 ft upstream on left bank at same datum.

REMARKS.--At times seiches from Waldo Lake cause rapid changes in stage at gage many times each hour. No regulation. Diversion tunnel into head of Black Creek, near south end of lake, built about 1914, is sealed off, but there was leakage of 0.51 ft³/s past control gates, measured Oct. 1, 1981.

AVERAGE DISCHARGE.--30 years, 34.2 ft³/s, 24,780 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 150 ft³/s Jan. 20, 1971, from rating curve extended above 77 ft³/s and adjusted for overbank flow; maximum gage height, 2.98 ft Jan. 2, 1943; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1937-1984

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	0.0	1939	27	1972	4.4	5.7	1.0
Nov	31	0.0	1940	65	1951	11	13	2.7
Dec	31	0.0	1941	90	1951	32	26	7.6
Jan	31	1.3	1977	118	1943	47	32	11.3
Feb	30	0.5	1977	98	1943	57	28	12.4
Mar	30	6.9	1977	129	1972	57	26	13.7
Apr	31	2.4	1941	100	1972	51	21	11.7
May	31	10	1941	76	1972	48	15	11.5
Jun	31	13	1941	88	1984	51	18	11.8
Jul	31	3.2	1940	73	1974	37	18	8.9
Aug	31	0.0	1940	37	1974	15	10	3.8
Sep	31	0.0	1940	18	1971	6.4	6.2	1.5
Ann		7.0	1977	67	1972	35	14	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.0	0.1	0.9	1.5	3.6	5.9	7.0	7.5	9.0	10	16	31
Nov	0.0	0.0	0.0	0.1	0.9	1.7	3.9	6.3	8.2	15	19	23	27	31	40	31
Dec	0.0	0.0	1.3	5.1	10	12	18	25	35	48	52	57	66	77	--	31
Jan	1.5	2.2	5.7	16	19	25	35	44	56	67	71	76	84	96	113	31
Feb	9.7	20	26	30	34	38	49	60	68	75	79	84	90	--	--	30
Mar	20	25	32	34	37	41	50	58	64	71	75	80	87	96	107	30
Apr	11	28	32	35	37	39	44	53	57	63	67	71	75	79	88	31
May	23	29	33	36	38	41	48	52	55	58	59	61	64	67	72	31
Jun	19	27	31	35	38	42	48	53	57	62	65	69	72	77	84	31
Jul	7.6	13	17	20	23	25	31	36	42	49	53	58	62	67	--	31
Aug	0.1	1.2	2.6	3.7	5.9	7.4	11	14	19	23	25	28	31	34	37	31
Sep	0.0	0.0	0.0	0.1	0.4	0.8	1.8	4.1	6.7	10	12	13	15	17	19	31
Ann	0.0	1.0	2.5	6.2	9.5	14	23	32	42	52	57	62	69	76	89	

WILLAMETTE RIVER BASIN

14147500 NORTH FORK OF MIDDLE FORK WILLAMETTE RIVER NEAR OAKRIDGE, OR

LOCATION.--Lat 43°45'25", long 122°30'15", in SW 1/4 sec.7, T.21 S., R.3 E., Lane County, Hydrologic Unit 17090001, on left bank 2.5 mi northwest of Oakridge, and at mile 1.0.

DRAINAGE AREA.--246 mi², at measuring section 0.5 mi downstream.

PERIOD OF RECORD.--October 1909 to March 1916, September 1935 to September 1985, October 1986 to September 1987. Monthly discharge only for some periods, published in WSP 1318. Prior to October 1912, published as "near Hazeldell."

REVISED RECORDS.--WSP 1248: 1914-16.

GAGE.--Water-stage recorder. Datum of gage is 1,029.6 ft above National Geodetic Vertical Datum of 1929 (river profile survey). Oct. 1, 1909, to Mar. 31, 1916, water-stage recorder or nonrecording gage at several sites within 0.8 mi of present site at various datums. Sept. 10, 1935, to Oct. 3, 1938, nonrecording gage at present site and datum.

REMARKS.--Slight regulation by Waldo Lake; occasional fluctuations during low-water periods caused by log-ponds upstream from station. No diversions upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--57 years (water years 1910-15, 1936-85, 1987), 791 ft³/s, 43.67 in/yr, 573,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,400 ft³/s Dec. 22, 1964, gage height, 19.14 ft, from floodmark, from rating curve extended above 7,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 22 ft³/s Aug. 20, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1910-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	58	114	1945	904	1951	267	154	2.9
Nov	58	119	1937	2290	1910	868	530	9.0
Dec	58	163	1977	4240	1965	1280	828	13.7
Jan	58	182	1977	2710	1912	1260	694	13.5
Feb	58	163	1977	2540	1982	1240	518	12.1
Mar	58	330	1941	2970	1972	1110	464	11.9
Apr	57	373	1941	2070	1937	1150	361	11.9
May	57	431	1968	1890	1949	1040	370	11.2
Jun	57	201	1940	1390	1950	668	318	6.9
Jul	57	124	1940	650	1913	298	100	3.2
Aug	57	97	1940	298	1976	183	41	2.0
Sep	57	116	1939	307	1978	167	34	1.7
Ann		349	1977	1200	1972	791	201	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	115	124	133	140	145	151	164	183	214	251	280	310	359	470	672	58
Nov	144	166	192	220	251	289	367	489	680	897	1030	1230	1520	1960	2850	58
Dec	221	291	348	411	492	575	729	885	1080	1370	1590	1840	2150	2590	3510	58
Jan	316	403	464	514	559	615	744	886	1090	1330	1470	1700	1990	2470	3360	58
Feb	405	510	573	630	686	740	828	940	1110	1340	1470	1620	1870	2290	3010	58
Mar	485	552	602	641	683	728	815	926	1080	1240	1340	1460	1610	1840	2300	58
Apr	496	591	652	716	771	823	954	1080	1220	1380	1450	1540	1650	1760	1980	57
May	406	505	572	628	688	750	878	996	1110	1250	1340	1420	1500	1620	1830	57
Jun	249	290	322	352	383	414	482	567	665	772	855	948	1070	1190	1380	57
Jul	160	176	185	198	208	219	243	266	291	323	347	385	429	476	565	57
Aug	122	129	137	142	147	152	163	174	190	205	213	224	235	251	272	57
Sep	117	122	126	130	135	139	147	155	164	175	182	191	206	221	258	57
Ann	134	152	171	193	225	265	393	566	735	934	1064	1210	1392	1640	2153	

MIDDLE FORK WILLAMETTE RIVER BASIN

14148000 MIDDLE FORK WILLAMETTE RIVER BELOW NORTH FORK, NEAR OAKRIDGE, OR

LOCATION.--Lat 43°48'05", long 122°33'35", in SW 1/4 sec.27, T.20 S., R.2 E., Lane County, Hydrologic Unit 17090001, on left bank 0.5 mi downstream from Whitehead Creek, 4.2 mi downstream from North Fork of Middle Fork Willamette River, 7.0 mi northwest of Oakridge, and at mile 220.2.

DRAINAGE AREA.--924 mi².

PERIOD OF RECORD.--March 1911 to September 1912, July 1923 to 1987. Monthly discharge only for some periods, published in WSP 1318. Published as "near Hazeldell" 1911-12 and as "at Eula" 1923-50.

REVISED RECORDS.--WSP 694: 1925-28. WSP 814: Drainage area at Eula. WSP 1248: 1924, 1925(M), 1926-28, 1929(M), 1930, 1933, 1946(M). WSP 1398: 1927(M). WSP 1638: 1936(M).

GAGE.--Water-stage recorder. Datum of gage is 934.76 ft above National Geodetic Vertical Datum of 1929. Mar. 22, 1911, to Sept. 30, 1912, nonrecording gage at site 4.0 mi upstream, just downstream from North Fork at different datum. July 1, 1923, to Aug. 11, 1935, nonrecording gage and Aug. 12, 1935, to Sept. 30, 1950, water-stage recorder at site 4.0 mi downstream at different datum.

REMARKS.--Flow regulated since 1961 by Hills Creek Lake (station 14145100); slight regulation at times by logponds upstream from station. No diversion upstream from station.

AVERAGE DISCHARGE.--65 years, 2,785 ft³/s, 2,018,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 81,800 ft³/s Dec. 28, 1945, gage height, 18.8 ft, from floodmark, site and datum then in use, from rating curve extended above 39,000 ft³/s; minimum discharge, 322 ft³/s Aug. 30, 1961, caused by closing outlet gates at Hills Creek Dam.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1861 and March 1911, 17.0 ft in February 1890 at site used 1923-50, from information by local resident, discharge, about 55,000 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1912-1960 (BEFORE THE CONSTRUCTION OF HILLS CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	38	541	1945	4190	1951	1090	670	3.4
Nov	38	500	1930	6700	1943	2680	1810	8.1
Dec	38	959	1937	11600	1956	3790	2520	11.8
Jan	38	771	1937	8990	1953	4000	2110	12.5
Feb	38	1350	1931	7860	1958	4260	1800	12.1
Mar	38	1290	1941	8420	1932	3770	1480	11.8
Apr	38	1450	1941	6790	1937	3980	1200	12.0
May	38	1290	1934	6410	1949	3710	1350	11.6
Jun	38	837	1940	7100	1933	2740	1380	8.3
Jul	39	591	1926	2140	1933	1230	418	3.8
Aug	39	491	1931	1090	1956	798	163	2.5
Sep	39	494	1931	1130	1912	752	149	2.3
Ann		1520	1931	4320	1956	2720	717	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	560	588	612	637	667	730	790	869	992	1090	1220	1400	1600	2200	--	38
Nov	563	652	727	797	868	942	1150	1410	1870	2670	3100	3720	4750	6080	8870	38
Dec	831	1010	1130	1250	1380	1610	2050	2510	2950	3650	4320	5160	6290	7680	10700	38
Jan	1110	1430	1600	1740	1880	2030	2400	2890	3450	4300	4780	5390	6310	7840	10400	38
Feb	1360	1560	1730	1950	2170	2370	2770	3280	3840	4650	5230	5750	6640	7890	10300	38
Mar	1600	1830	2050	2190	2310	2420	2660	3030	3590	4160	4480	4970	5470	6220	8010	38
Apr	1670	1950	2150	2360	2580	2800	3280	3750	4190	4710	4970	5260	5600	6100	6780	38
May	1380	1740	2010	2300	2530	2770	3200	3500	3870	4320	4670	4990	5380	5820	6630	38
Jun	870	1030	1250	1430	1580	1730	2010	2440	2880	3270	3460	3720	4080	4640	5610	38
Jul	610	660	754	828	879	919	1020	1120	1230	1350	1410	1520	1690	1980	2320	39
Aug	516	558	602	638	665	691	736	785	836	888	923	957	999	1050	1110	39
Sep	515	543	567	590	618	647	693	741	776	817	843	872	910	964	1090	39
Ann	585	671	743	816	905	1028	1383	1892	2487	3179	3587	4082	4727	5590	7154	

MIDDLE FORK WILLAMETTE RIVER BASIN

14148000 MIDDLE FORK WILLAMETTE RIVER BELOW NORTH FORK, NEAR OAKRIDGE, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1962-1987 (AFTER THE COMPLETION OF HILLS CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	625	1962	2930	1963	1890	530	5.6
Nov	26	1470	1979	7310	1985	3480	1490	10.0
Dec	26	1070	1977	13500	1965	5120	2800	15.1
Jan	26	874	1977	10100	1965	4660	2180	13.8
Feb	26	711	1977	8090	1972	3490	1780	9.4
Mar	26	1290	1977	7800	1972	2920	1520	8.6
Apr	26	1460	1968	4570	1974	2990	965	8.6
May	26	1380	1968	5040	1963	3200	1070	9.5
Jun	26	1010	1987	4970	1974	2420	1150	6.9
Jul	26	766	1968	1900	1971	1320	362	3.9
Aug	26	700	1966	1750	1982	1300	346	3.8
Sep	26	1260	1965	2640	1966	1690	338	4.8
Ann		1410	1977	4300	1974	2870	739	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	653	1060	1330	1410	1520	1630	1820	1920	2000	2110	2170	2260	2360	2540	3030	26
Nov	1090	1460	1600	1770	1990	2170	2470	2770	3130	3610	4190	4980	5950	6760	8190	26
Dec	1150	1630	1980	2290	2580	2860	3500	4140	5090	6310	6830	7400	8080	9040	10900	26
Jan	1100	1450	1780	2110	2390	2660	3440	3940	4510	5400	5940	6600	7700	8810	10700	26
Feb	1110	1360	1490	1600	1700	1820	2120	2560	3100	3950	4510	5130	5800	6890	8630	26
Mar	1330	1440	1530	1600	1670	1760	1950	2200	2550	3060	3420	3930	4500	5530	7350	26
Apr	1390	1510	1620	1730	1910	2200	2590	2850	3200	3560	3740	3980	4200	4570	5130	26
May	1360	1610	1820	1960	2160	2330	2650	3060	3540	3940	4140	4370	4600	4840	5240	26
Jun	960	1070	1180	1320	1430	1560	1810	2110	2400	2760	2990	3310	3740	4270	5100	26
Jul	733	813	886	951	1010	1050	1140	1240	1350	1480	1560	1670	1810	1970	2260	26
Aug	692	745	823	894	976	1050	1120	1200	1310	1640	1720	1820	1870	1920	2010	26
Sep	957	1090	1140	1230	1360	1470	1560	1770	1830	1910	1950	2000	2070	2150	2280	26
Ann	944	1110	1250	1400	1520	1650	1890	2140	2540	3140	3570	4030	4620	5560	7440	

MIDDLE FORK WILLAMETTE RIVER BASIN

14150000 MIDDLE FORK WILLAMETTE RIVER NEAR DEXTER, OR

LOCATION.--Lat 43°56'45", long 122°50'10", in SE 1/4 NW 1/4 sec.5, T.19 S., R.1 W., Lane County, Hydrologic Unit 17090001, on right bank 0.6 mi upstream from Lost Creek, 2.0 mi northwest of Dexter, 2.6 mi downstream from Dexter Dam, and at mile 201.2.

DRAINAGE AREA.--1,001 mi².

PERIOD OF RECORD.--October 1946 to September 1954 (published as "at Lowell"), June 1955 to 1987. Monthly discharge only for October 1954 to June 1955, published in WSP 1738.

REVISED RECORDS.--WSP 1638: 1948(P).

GAGE.--Water-stage recorder. Datum of gage is 592.30 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Aug. 23, 1950, nonrecording gage and Aug. 23, 1950, to Sept. 30, 1954, at site 4.0 mi upstream at different datum, and June 9, 1955, to Feb. 18, 1977, at datum 3.00 ft higher.

REMARKS.--Flow regulated since 1953 by Lookout Point Lake (station 14149000), since 1955 by Dexter Lake (re-regulating), and since 1961 by Hills Creek Lake (station 14145100).

AVERAGE DISCHARGE.--41 years, 3,163 ft³/s, 2,292,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 62,600 ft³/s Jan. 18, 1953, gage height, 12.46 ft, site and datum then in use, from rating curve extended above 33,000 ft³/s; minimum daily discharge, 100 ft³/s Nov. 25, 1960.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 13.9 ft Dec. 28, 1945, former site and datum.

STATISTICAL SUMMARIES FOR THE PERIOD 1962-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	1850	1962	5270	1963	3320	646	9.2
Nov	26	2080	1979	8780	1985	4840	1570	13.0
Dec	26	1230	1977	11300	1965	5780	2680	16.1
Jan	26	1050	1977	13500	1965	4940	2600	13.7
Feb	26	668	1977	7630	1972	2720	1950	6.9
Mar	26	525	1977	7360	1972	2200	1560	6.1
Apr	26	437	1977	4070	1974	1920	1050	5.2
May	26	526	1977	5090	1963	2430	1260	6.8
Jun	26	816	1977	5070	1984	2270	1200	6.1
Jul	26	1090	1966	1940	1975	1540	265	4.3
Aug	26	1080	1966	2380	1971	1850	334	5.1
Sep	26	1410	1968	3930	1972	2760	742	7.4
Ann		1390	1977	4590	1972	3050	815	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1870	2090	2400	2720	2890	3000	3160	3360	3600	3750	3830	3900	3970	4040	4240	26
Nov	1470	2260	2950	3210	3410	3590	3780	4010	4370	5160	5840	6780	8020	8890	10300	26
Dec	1230	1510	1870	2230	2630	3130	3940	4700	6340	8170	8640	9180	9830	10900	12400	26
Jan	1120	1250	1500	1760	2070	2380	3240	3900	4600	5960	7060	8110	8890	9820	12700	26
Feb	1060	1140	1170	1190	1210	1230	1270	1320	1390	1800	2640	3820	5060	7950	9860	26
Mar	1080	1150	1180	1200	1210	1230	1260	1290	1360	1690	2240	2900	3690	4330	6460	26
Apr	609	1100	1140	1190	1210	1230	1260	1290	1330	1580	2400	2910	3460	3970	4610	26
May	627	962	1130	1160	1200	1230	1310	1460	2480	3150	3540	3910	4320	4880	5600	26
Jun	1000	1130	1170	1210	1240	1280	1420	1700	2170	2560	2860	3240	3750	4270	5290	26
Jul	1050	1150	1200	1240	1280	1330	1420	1500	1580	1640	1680	1760	1860	1970	2340	26
Aug	1140	1320	1420	1480	1540	1590	1670	1750	1860	2010	2110	2260	2380	2480	2660	26
Sep	1270	1590	1710	1810	1920	2020	2450	2890	3080	3350	3550	3790	3900	4000	4120	26
Ann	1070	1180	1230	1280	1320	1410	1730	2190	2910	3540	3810	4110	4690	6240	8980	

MIDDLE FORK WILLAMETTE RIVER BASIN

14150300 FALL CREEK NEAR LOWELL, OR

LOCATION.--Lat 43°58'15", long 122°38'15", in SW 1/4 sec.25, T.18 S., R.1 E., Lane County, Hydrologic Unit 17090001, on right bank 0.1 mi downstream from North Fork, 8.0 mi northeast of Lowell, and at mile 14.4.

DRAINAGE AREA.--118 mi².

PERIOD OF RECORD.--August 1963 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 844.42 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--24 years, 413 ft³/s, 47.53 in/yr, 299,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,100 ft³/s Jan. 21, 1972, which may have been caused by release from breakup of temporary logjam 12 mi upstream, gage height, 11.84 ft; minimum discharge, 16 ft³/s Oct. 3, 4, 1965.

STATISTICAL SUMMARIES FOR THE PERIOD 1963-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	30	1975	311	1983	132	93	2.7
Nov	24	82	1977	1390	1974	563	377	11.2
Dec	24	60	1977	2280	1965	863	503	17.7
Jan	24	102	1977	1850	1972	916	488	18.8
Feb	24	91	1977	1690	1986	703	344	13.2
Mar	24	194	1978	1330	1972	611	288	12.6
Apr	24	220	1987	862	1979	501	176	10.0
May	24	98	1966	602	1984	314	131	6.5
Jun	24	53	1966	661	1984	186	136	3.7
Jul	24	45	1979	163	1983	72	30	1.5
Aug	24	25	1966	99	1968	45	19	0.9
Sep	25	24	1974	188	1986	61	43	1.2
Ann		182	1977	645	1972	413	116	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	23	27	30	33	37	40	46	55	71	95	121	159	220	306	520	24
Nov	52	68	86	101	119	151	237	314	416	573	665	784	1010	1410	2080	24
Dec	80	158	209	253	300	349	456	588	760	936	1090	1250	1460	1870	2530	24
Jan	138	206	246	286	323	364	467	567	687	917	1130	1280	1540	2060	2940	24
Feb	142	192	228	265	305	339	414	487	589	708	786	904	1120	1480	2040	24
Mar	178	213	243	272	305	333	408	473	566	665	721	806	926	1090	1560	24
Apr	161	189	218	248	283	317	372	424	486	576	644	710	784	899	1150	24
May	99	124	143	159	176	193	225	266	310	353	385	419	470	560	717	24
Jun	59	70	77	82	88	95	107	123	143	172	190	213	250	327	542	24
Jul	37	40	42	44	47	49	54	59	66	75	82	90	101	118	144	24
Aug	24	26	27	29	31	32	34	37	41	46	49	53	59	69	97	24
Sep	22	24	25	26	27	29	32	37	41	48	53	63	80	117	189	25
Ann	28	35	42	50	61	79	135	215	310	430	509	607	739	966	1466	

WILLAMETTE RIVER BASIN

14150800 WINBERRY CREEK NEAR LOWELL, OR

LOCATION.--Lat 43°54'50", long 122°41'15", in NE 1/4 SE 1/4 sec.16, T.19 S., R.1 E., Lane County, Hydrologic Unit 17090001, on right bank 0.9 mi upstream from Nelson Creek, 4.6 mi east of Lowell, and at mile 4.4.

DRAINAGE AREA.--43.9 mi².

PERIOD OF RECORD.--August 1963 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 863.70 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--18 years, 118 ft³/s, 36.50 in/yr, 85,490 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,500 ft³/s Dec. 22, 1964, gage height, 8.07 ft; minimum, 1.5 ft³/s Sept. 4, 5, 8-10, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1963-1982

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	7.9	1975	82	1969	27	20	2.0
Nov	18	21	1977	429	1974	146	116	10.2
Dec	18	16	1977	668	1965	235	148	16.9
Jan	18	32	1977	512	1971	277	140	19.9
Feb	18	19	1977	311	1979	162	72	10.6
Mar	18	57	1978	399	1972	182	92	13.1
Apr	18	80	1968	362	1979	166	65	11.6
May	18	35	1966	258	1977	122	51	8.8
Jun	18	14	1966	170	1964	63	48	4.4
Jul	18	8.6	1973	46	1969	17	9.3	1.3
Aug	18	3.8	1967	33	1978	11	8.5	0.8
Sep	19	4.3	1974	73	1978	15	15	1.1
Ann		61	1977	182	1972	118	35	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	4.2	4.8	5.5	6.3	7.6	8.3	9.8	13	17	22	28	36	49	66	111	18
Nov	14	17	19	21	26	31	44	76	104	145	170	199	250	374	556	18
Dec	18	30	46	60	77	91	124	166	206	250	280	326	383	477	699	18
Jan	31	52	67	76	88	102	138	171	220	300	337	389	458	603	888	18
Feb	28	47	54	66	75	83	104	125	152	184	200	221	259	315	432	18
Mar	47	55	67	79	88	96	119	140	169	201	223	249	279	328	430	18
Apr	51	62	72	82	97	108	125	144	164	195	211	232	252	282	343	18
May	31	42	50	58	66	74	92	105	117	139	151	163	190	218	304	18
Jun	15	17	19	21	23	25	30	38	47	60	68	80	99	126	202	18
Jul	7.3	7.3	8.1	9.0	10	11	13	14	16	19	21	23	26	32	41	18
Aug	3.4	3.8	4.3	4.8	5.4	5.4	6.1	6.8	7.7	10	12	13	16	22	34	18
Sep	3.0	3.5	4.0	4.6	5.2	5.2	6.0	7.6	8.9	12	13	16	22	35	65	19
Ann	5.2	6.8	8.3	12	15	20	36	62	94	129	153	182	220	282	404	

MIDDLE FORK WILLAMETTE RIVER BASIN

14151000 FALL CREEK BELOW WINBERRY CREEK, NEAR FALL CREEK, OR

LOCATION.--Lat 43°56'40", long 122°46'25", in NW 1/4 SE 1/4 sec.2, T.19 S., R.1 W., Lane County, Hydrologic Unit 17090001, on right bank 10 ft upstream from highway bridge, 1.1 mi downstream from Fall Creek Dam, 2.3 mi southeast of town of Fall Creek, and at mile 6.1.

DRAINAGE AREA.--186 mi².

PERIOD OF RECORD.--October to December 1911 (published as Big Fall Creek near Fall Creek; gage heights and discharge measurements only), September 1935 to 1987.

REVISED RECORDS.--WSP 1094: 1946(M). WSP 1248: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 637.81 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Oct. 1 to Dec. 31, 1911, nonrecording gage at site 0.25 mi downstream at different datum. Sept. 9, 1935, to Aug. 3, 1950, nonrecording gage at present site and datum.

REMARKS.--Flow regulated since 1966 by Fall Creek Lake (station 14150900). No diversion upstream from station.

AVERAGE DISCHARGE.--52 years, 583 ft³/s, 42.56 in/yr, 422,400 acre-ft/yr, adjusted for storage in Fall Creek Lake since January 1965.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,700 ft³/s Dec. 11, 1956, gage height, 18.80 ft, from rating curve extended above 9,700 ft³/s; minimum discharge, 1.5 ft³/s Oct. 7, 8, 1965.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1965 (BEFORE THE CONSTRUCTION OF FALL CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	30	26	1937	1000	1951	207	228	3.0
Nov	30	25	1937	1590	1943	751	487	10.5
Dec	30	139	1945	3180	1965	1130	811	16.3
Jan	30	169	1937	2270	1965	1040	630	15.0
Feb	30	254	1941	2330	1961	1160	432	15.3
Mar	30	149	1941	1810	1957	1020	432	14.7
Apr	30	214	1941	1730	1937	765	350	10.7
May	30	151	1939	1150	1960	520	266	7.5
Jun	30	67	1940	667	1937	294	160	4.1
Jul	30	38	1940	169	1963	99	38	1.4
Aug	30	22	1940	79	1947	51	13	0.7
Sep	30	31	1965	121	1959	54	23	0.8
Ann		309	1940	923	1956	588	136	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	26	29	31	34	37	42	55	71	97	139	169	222	306	437	733	30
Nov	32	47	68	99	130	152	221	318	484	762	955	1180	1440	1870	2770	30
Dec	110	169	208	245	293	349	458	600	797	1060	1280	1610	2020	2630	3890	30
Jan	180	229	267	309	355	407	503	623	793	1020	1210	1470	1810	2380	3270	30
Feb	265	340	403	465	521	569	669	817	1010	1280	1470	1620	1940	2260	3250	30
Mar	251	338	385	435	487	529	654	816	968	1190	1330	1500	1720	1980	2500	30
Apr	210	264	308	349	384	425	501	604	758	925	1010	1110	1230	1390	1760	30
May	137	164	189	216	244	272	335	402	479	577	639	720	839	983	1320	30
Jun	86	107	119	130	141	153	183	218	256	307	349	393	443	524	778	30
Jul	44	51	55	60	63	67	77	84	93	107	117	130	144	168	212	30
Aug	29	33	36	38	39	41	44	48	52	58	60	63	68	73	85	30
Sep	27	30	31	33	34	35	38	41	45	50	54	59	68	85	133	30
Ann	33	40	49	60	79	106	185	298	433	613	741	903	1120	1450	2140	

MIDDLE FORK WILLAMETTE RIVER BASIN

14151000 FALL CREEK BELOW WINBERRY CREEK, NEAR FALL CREEK, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1967-1987 (AFTER THE COMPLETION OF FALL CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	21	127	1967	1400	1974	727	337	10.6
Nov	21	312	1970	2000	1985	979	484	13.8
Dec	21	183	1977	2310	1974	1230	616	18.0
Jan	21	153	1977	2090	1972	1020	566	14.9
Feb	21	23	1977	1390	1970	494	397	6.6
Mar	21	10	1977	1620	1972	413	446	6.0
Apr	21	43	1978	1010	1979	368	282	5.2
May	21	40	1987	721	1984	289	182	4.2
Jun	21	63	1987	961	1984	265	205	3.7
Jul	21	28	1987	970	1967	252	271	3.7
Aug	21	32	1986	933	1968	314	286	4.6
Sep	21	115	1967	913	1978	617	234	8.7
Ann		235	1977	935	1974	581	181	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	26	29	31	34	37	42	55	71	97	139	169	222	306	437	733	21
Nov	32	47	68	99	130	152	221	318	484	762	955	1180	1440	1870	2770	21
Dec	110	169	208	245	293	349	458	600	797	1060	1280	1610	2020	2630	3890	21
Jan	180	229	267	309	355	407	503	623	793	1020	1210	1470	1810	2380	3270	21
Feb	265	340	403	465	521	569	669	817	1010	1280	1470	1620	1940	2260	3250	21
Mar	251	338	385	435	487	529	654	816	968	1190	1330	1500	1720	1980	2500	21
Apr	210	264	308	349	384	425	501	604	758	925	1010	1110	1230	1390	1760	21
May	137	164	189	216	244	272	335	402	479	577	639	720	839	983	1320	21
Jun	86	107	119	130	141	153	183	218	256	307	349	393	443	524	778	21
Jul	44	51	55	60	63	67	77	84	93	107	117	130	144	168	212	21
Aug	29	33	36	38	39	41	44	48	52	58	60	63	68	73	85	21
Sep	27	30	31	33	34	35	38	41	45	50	54	59	68	85	133	21
Ann	39	45	54	76	102	125	169	314	502	711	805	945	1120	1390	2090	

WILLAMETTE RIVER BASIN

14151500 LITTLE FALL CREEK NEAR FALL CREEK, OR

LOCATION.--Lat 43°58'10", long 122°45'20", in S-1/2 sec.25, T.18 S., R.1 W., Lane County, Hydrologic Unit 17090001, 4 mi east of Fall Creek Post Office and 4.5 mi upstream from mouth.

DRAINAGE AREA.--52.5 mi².

PERIOD OF RECORD.--October 1935 to September 1948.

GAGE.--Staff gage. Elevation of gage is 715 ft, by barometer.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--13 years (water years 1936-48), 179 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,110 ft³/s Dec. 28, 1945, gage height, 8.20 ft, from rating curve extended above 2,400 ft³/s on basis of velocity-area study; minimum observed, 10 ft³/s Dec. 1, 1936, Aug. 26, 27, 30, 31, Sept. 1, 1940.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1948

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	13	15	1937	223	1948	55	56	2.6
Nov	13	13	1937	477	1948	231	166	10.6
Dec	13	52	1945	865	1943	304	241	14.4
Jan	13	67	1937	680	1936	329	194	15.6
Feb	13	110	1941	490	1945	358	117	15.5
Mar	13	76	1941	627	1938	319	163	15.1
Apr	13	75	1941	611	1937	249	147	11.4
May	13	49	1939	227	1945	130	57	6.2
Jun	13	37	1940	195	1937	93	47	4.3
Jul	13	20	1940	67	1937	44	15	2.1
Aug	13	13	1940	36	1937	25	7.8	1.2
Sep	13	14	1939	44	1941	24	9.3	1.1
Ann		109	1941	271	1943	179	52	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	14	15	16	16	17	17	18	21	28	38	48	59	84	138	224 13
Nov	14	18	24	36	54	63	82	109	164	257	301	382	469	601	807 13
Dec	32	45	65	81	94	106	149	189	239	299	346	410	512	635	899 13
Jan	67	89	106	117	131	145	172	206	261	351	401	462	562	695	913 13
Feb	97	114	135	151	169	197	243	298	350	426	465	507	558	624	806 13
Mar	78	115	127	138	150	163	209	264	305	375	413	485	545	628	700 13
Apr	73	82	90	104	115	128	163	204	243	288	309	354	400	475	556 13
May	49	54	59	65	72	79	94	113	132	156	167	183	204	234	270 13
Jun	37	41	44	47	51	55	67	81	92	99	108	119	131	144	205 13
Jul	22	24	25	28	30	32	37	41	45	51	55	59	64	69	81 13
Aug	14	16	17	18	19	20	22	25	29	31	31	32	35	38	41 13
Sep	13	15	15	16	17	17	20	22	24	26	27	29	35	42	58 13
Ann	15	19	23	27	34	42	64	94	133	188	229	277	342	445	613

MIDDLE FORK WILLAMETTE RIVER BASIN

14152000 MIDDLE FORK WILLAMETTE RIVER AT JASPER, OR

LOCATION.--Lat 43°59'55", long 122°54'20", in SW 1/4 SW 1/4 sec.14, T.18 S., R.2 W., Lane County, Hydrologic Unit 17090001, on right bank 25 ft downstream from highway bridge at Jasper, 0.1 mi downstream from Hills Creek, and at mile 195.0.

DRAINAGE AREA.--1,340 mi².

PERIOD OF RECORD.--September 1905 to February 1912, July 1913 to March 1917, October 1952 to 1987.
Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1288: 1907-8, 1910-12, 1914-16, drainage area.

GAGE.--Water-stage recorder. Datum of gage is 513.45 ft above National Geodetic Vertical Datum of 1929.
September 1905 to February 1912 and July 1913 to March 1917, nonrecording gage at approximately same site at datum about 1.5 ft higher Oct. 22, 1952, to Sept. 30, 1953, nonrecording gage at site 25 ft upstream at same datum.

REMARKS.--Flow regulated since 1953 by Lookout Point Lake (station 14149000), since 1961 by Hills Creek Lake (station 14145100), and since 1966 by Fall Creek Lake (station 14150900).

AVERAGE DISCHARGE.--44 years (water years 1906-11, 1914-16, 1953-87), 4,115 ft³/s, 2,981,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 94,000 ft³/s Nov. 23, 1909, gage height, 17.4 ft, datum then in use, from graph based on gage readings, from rating curve extended above 42,000 ft³/s; minimum discharge, 366 ft³/s Dec. 5, 1954.

STATISTICAL SUMMARIES FOR THE PERIOD 1967-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	21	2950	1973	5390	1985	4240	584	8.6
Nov	21	2940	1979	12700	1985	6480	2450	12.8
Dec	21	1520	1977	14600	1978	8160	3520	16.6
Jan	21	1330	1977	11500	1976	6730	2900	13.7
Feb	21	787	1977	9460	1972	4230	2520	7.8
Mar	21	1110	1977	10500	1972	3560	2360	7.2
Apr	21	729	1977	5600	1974	2910	1550	5.7
May	21	844	1973	5740	1984	2920	1340	5.9
Jun	21	1190	1977	6750	1984	2810	1430	5.5
Jul	21	1250	1978	2560	1969	1930	386	3.9
Aug	21	1770	1984	3340	1971	2360	384	4.8
Sep	21	1830	1968	4820	1984	3660	858	7.2
Ann		1870	1977	6210	1972	4170	1160	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2920	3310	3470	3680	3800	4010	4270	4490	4740	4870	5000	5120	5340	5590	--	21
Nov	2770	3600	3910	4160	4380	4590	5040	5450	5920	6750	7330	8660	10200	12100	13900	21
Dec	1970	2860	3230	3800	4280	4780	6130	7820	9200	10300	11400	12400	13400	14900	16800	21
Jan	1580	2030	2640	3070	3640	4140	5180	5740	6640	8290	9150	9990	11000	12700	15800	21
Feb	1450	1540	1620	1680	1740	1830	2130	2590	3400	4330	5080	6080	7880	9800	13100	21
Mar	1420	1540	1590	1640	1700	1750	1880	2120	2590	3580	4370	5020	6140	7570	11200	21
Apr	916	1370	1470	1520	1570	1630	1800	2030	2410	3280	3760	4230	4820	5880	7020	21
May	921	1290	1360	1460	1550	1630	1860	2380	3080	3720	4040	4470	4880	5470	6160	21
Jun	1200	1300	1370	1470	1570	1670	1890	2270	2700	3160	3540	3930	4290	4970	5880	21
Jul	1230	1330	1410	1510	1560	1630	1750	1860	1990	2150	2230	2300	2410	2540	2890	21
Aug	1660	1780	1840	1900	1960	2020	2140	2270	2380	2530	2640	2820	3000	3090	3390	21
Sep	1690	2090	2410	2700	2850	3050	3300	3560	4150	4430	4560	4700	4890	5110	5320	21
Ann	1368	1546	1679	1807	1962	2132	2564	3214	3964	4687	5089	5606	6534	8675	11880	

COAST FORK WILLAMETTE RIVER BASIN

14152500 COAST FORK WILLAMETTE RIVER AT LONDON, OR

LOCATION.--Lat 43°38'30", long 123°05'05", in SW 1/4 sec.20, T.22 S., R.3 W., Lane County, Hydrologic Unit 17090002, on left bank 0.6 mi north of London, 11.0 mi south of Cottage Grove, and at mile 35.9.

DRAINAGE AREA.--72.1 mi².

PERIOD OF RECORD.--September 1935 to September 1987 (discontinued).

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 852.58 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Sept. 18 to Oct. 17, 1935, nonrecording gage at same site and datum.

REMARKS.--No regulation. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--52 years, 201 ft³/s, 37.86 in/yr, 145,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft³/s Dec. 22, 1964, gage height, 13.37 ft, from rating curve extended above 3,200 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 6.8 ft³/s Aug. 18, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	52	11	1937	472	1951	61	73	2.6
Nov	52	11	1937	847	1974	243	177	10.0
Dec	52	26	1977	1330	1965	404	283	17.1
Jan	52	34	1977	852	1953	414	250	17.6
Feb	52	45	1977	827	1961	401	165	15.5
Mar	52	83	1941	700	1938	348	156	14.8
Apr	52	86	1939	611	1937	244	115	10.0
May	52	44	1939	416	1963	146	76	6.2
Jun	52	26	1966	240	1937	77	43	3.2
Jul	52	17	1973	73	1983	33	12	1.4
Aug	52	11	1973	38	1968	20	6.5	0.9
Sep	52	9.2	1965	58	1978	22	9.5	0.9
Ann		64	1977	343	1956	200	56	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	13	15	16	17	18	20	23	27	32	44	54	67	85	118	194	52
Nov	18	23	32	42	50	58	76	105	149	224	280	356	448	625	910	52
Dec	34	55	77	98	116	137	185	243	316	428	501	588	712	901	1240	52
Jan	60	84	106	126	145	164	200	244	311	408	496	587	704	931	1340	52
Feb	96	120	139	159	178	194	233	276	357	448	500	569	662	795	1080	52
Mar	104	120	137	152	168	186	224	270	325	388	436	495	567	673	861	52
Apr	78	91	104	116	127	139	167	198	231	277	307	342	386	438	551	52
May	48	58	65	72	79	85	97	112	130	153	170	189	215	260	364	52
Jun	29	34	37	41	44	47	53	60	68	79	86	95	108	130	187	52
Jul	17	19	20	21	22	24	27	30	32	36	39	42	47	53	64	52
Aug	12	13	14	15	15	16	17	19	20	22	24	25	27	29	35	52
Sep	10	12	13	14	14	15	16	18	19	22	24	26	29	35	51	52
Ann	14	17	20	23	28	35	59	94	139	200	239	293	372	493	737	

COAST FORK WILLAMETTE RIVER BASIN

14153500 COAST FORK WILLAMETTE RIVER BELOW COTTAGE GROVE DAM, OR

LOCATION.--Lat 43°43'15", long 123°02'55", in NE 1/4 sec.28, T.21 S., R.3 W., Lane County, Hydrologic Unit 17090002, on right bank at bridge 0.3 mi downstream from Cottage Grove Dam, 5.5 mi south of Cottage Grove, and at mile 29.4.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--January 1939 to 1987. Prior to October 1944, published as "near Cottage Grove."

REVISED RECORDS.--WSP 1448: 1949(M).

GAGE.--Water-stage recorder. Datum of gage is 711.00 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Jan. 1 to Oct. 12, 1939, nonrecording gage and Oct. 13, 1939, to Sept. 30, 1944, water-stage recorder at several sites and datums 0.8 mi downstream.

REMARKS.--Flow regulated since 1942 by Cottage Grove Lake (station 14153000). Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--48 years, 273 ft³/s, 35.65 in/yr, 197,800 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,910 ft³/s Dec. 24, 1964, gage height, 11.83 ft; no flow July 5-7, 1945, and for part of Aug. 24, 1947.

STATISTICAL SUMMARIES FOR THE PERIOD 1943-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	45	23	1943	761	1948	211	134	6.4
Nov	45	31	1953	1000	1951	348	240	10.3
Dec	45	34	1977	1630	1956	583	362	17.8
Jan	45	48	1977	1370	1956	601	376	18.3
Feb	45	29	1977	1140	1961	437	241	12.2
Mar	45	23	1944	1060	1957	340	236	10.4
Apr	45	29	1977	684	1963	208	143	6.1
May	45	48	1946	503	1963	137	101	4.2
Jun	45	44	1987	283	1943	94	48	2.8
Jul	45	24	1944	89	1967	56	13	1.7
Aug	45	26	1944	399	1957	110	92	3.4
Sep	45	45	1947	465	1948	213	94	6.3
Ann		76	1977	467	1956	278	79	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	22	44	51	56	68	80	108	146	196	241	264	293	340	411	519	45
Nov	30	41	52	60	67	77	103	142	220	336	404	482	627	906	1420	45
Dec	45	69	104	125	152	187	261	349	458	623	767	951	1190	1500	1910	45
Jan	73	102	126	149	185	208	263	325	423	572	669	825	1070	1490	2170	45
Feb	57	69	78	86	96	119	176	254	343	479	561	671	842	1160	1610	45
Mar	42	56	73	78	83	90	116	187	273	392	474	550	671	844	1160	45
Apr	48	55	65	73	76	79	85	100	145	214	252	298	361	463	657	45
May	43	54	62	67	69	72	76	82	93	120	141	171	215	289	418	45
Jun	43	48	53	57	60	63	68	73	78	85	93	107	127	161	215	45
Jul	23	38	44	46	47	49	51	53	55	58	62	66	73	79	85	45
Aug	25	30	39	43	46	47	51	55	59	78	100	134	185	261	359	45
Sep	23	41	48	51	57	65	103	162	202	258	276	303	345	443	532	45
Ann	34	46	51	56	62	70	85	111	173	253	304	378	478	651	1090	

COAST FORK WILLAMETTE RIVER BASIN

14154500 ROW RIVER ABOVE PITCHER CREEK, NEAR DORENA, OR

LOCATION.--Lat 43°44'10", long 122°52'20", in NE 1/4 sec.24, T.21 S., R.2 W., Lane County, Hydrologic Unit 17090002, on right bank 0.5 mi upstream from Pitcher Creek, 1.2 mi northwest of Dorena, and at mile 13.2.

DRAINAGE AREA.--211 mi².

PERIOD OF RECORD.--September 1935 to 1987. Prior to October 1949, published as "at Star."

GAGE.--Water-stage recorder. Datum of gage is 856.16 ft above National Geodetic Vertical Datum of 1929. Sept. 16, 1935, to Oct. 17, 1938, nonrecording gage at site 450 ft upstream at datum 1.00 ft higher.

REMARKS.--Slight regulation caused by upstream logponds. No diversion upstream from station.

AVERAGE DISCHARGE.--52 years, 601 ft³/s, 38.68 in/yr, 435,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,100 ft³/s Dec. 22, 1964, gage height, 18.19 ft, from rating curve extended above 12,000 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 10 ft³/s Sept. 24, 25, 1951, Oct. 7, 8, 1958.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	52	19	1937	1150	1951	170	192	2.4
Nov	52	19	1937	2570	1974	768	560	10.5
Dec	52	58	1977	4110	1965	1190	842	16.8
Jan	52	86	1977	2610	1971	1170	711	16.5
Feb	52	81	1977	2320	1986	1140	486	14.7
Mar	52	189	1941	2170	1972	1010	465	14.3
Apr	52	290	1941	2160	1937	820	355	11.2
May	52	117	1987	1330	1963	549	280	7.8
Jun	52	52	1987	839	1984	267	176	3.6
Jul	52	26	1940	236	1983	76	39	1.1
Aug	52	15	1940	107	1976	38	19	0.5
Sep	52	15	1951	259	1978	48	41	0.7
Ann		231	1977	1010	1974	601	165	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	19	21	23	25	29	33	41	54	73	106	136	183	253	366	675	52
Nov	31	50	69	92	113	141	221	330	483	741	890	1100	1440	1970	3170	52
Dec	80	138	190	240	295	353	487	666	888	1210	1430	1750	2080	2810	3890	52
Jan	127	195	248	305	359	412	533	677	861	1130	1350	1640	2040	2640	4020	52
Feb	215	283	335	389	445	503	628	781	961	1210	1380	1610	1940	2340	3380	52
Mar	269	328	371	416	461	510	627	767	918	1140	1270	1430	1620	1970	2610	52
Apr	230	275	331	382	423	472	588	709	832	964	1060	1160	1280	1450	1760	52
May	123	160	191	221	250	279	357	445	534	655	711	788	894	1060	1350	52
Jun	60	73	82	92	105	118	147	180	217	273	315	368	426	506	749	52
Jul	29	33	36	39	42	45	53	59	67	79	88	100	117	143	179	52
Aug	17	20	21	23	25	26	29	32	36	40	43	47	51	58	76	52
Sep	16	18	19	20	22	23	26	29	33	39	42	48	58	77	142	52
Ann	22	28	35	44	58	79	160	280	430	630	750	900	1120	1440	2200	

COAST FORK WILLAMETTE RIVER BASIN

14155500 ROW RIVER NEAR COTTAGE GROVE, OR

LOCATION.--Lat 43°47'35", long 122°59'25", in NE 1/4 sec.36, T.20 S., R.3 W., Lane County, Hydrologic Unit 17090002, on right bank 1.7 mi upstream from Mosby Creek, 2.1 mi downstream from Dorena Dam, 3.5 mi east of Cottage Grove, and at mile 5.5.

DRAINAGE AREA.--270 mi².

PERIOD OF RECORD.--January 1939 to 1987. Prior to October 1947, published as "near Dorena."

GAGE.--Water-stage recorder. Datum of gage is 685.24 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Jan. 5 to Oct. 12, 1939, nonrecording gage at site 180 ft upstream at datum 1.00 ft higher.

REMARKS.--Flow regulated since October 1949 by Dorena Lake (station 14155000). No diversion upstream from station.

AVERAGE DISCHARGE.--48 years, 754 ft³/s, 37.92 in/yr, 546,300 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft³/s Dec. 28, 1945, gage height, 18.20 ft; minimum discharge, 0.20 ft³/s Sept. 25 to Oct. 7, 1958.

STATISTICAL SUMMARIES FOR THE PERIOD 1940-1949 (BEFORE THE CONSTRUCTION OF DORENA DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	35	1945	842	1948	185	240	2.3
Nov	10	40	1940	1950	1943	1050	687	12.5
Dec	10	171	1945	3480	1943	1380	1030	17.0
Jan	10	438	1949	2260	1943	1130	696	13.9
Feb	10	370	1941	1940	1949	1370	509	15.4
Mar	10	222	1941	1620	1946	1050	431	13.0
Apr	10	353	1941	1720	1945	925	455	11.0
May	10	169	1947	1100	1942	632	354	7.8
Jun	10	80	1940	833	1943	364	236	4.3
Jul	10	36	1940	174	1942	98	47	1.2
Aug	10	19	1940	85	1947	47	20	0.6
Sep	10	33	1946	148	1941	60	34	0.7
Ann		424	1941	1080	1943	688	224	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	27	29	30	31	33	35	43	55	73	109	143	172	266	457	716	10
Nov	37	58	112	147	176	204	295	426	715	1150	1420	1740	2150	2670	4090	10
Dec	96	136	203	251	358	432	579	729	958	1270	1530	1970	2420	3310	4650	10
Jan	228	268	299	332	367	412	505	639	778	999	1240	1520	1800	2210	3350	10
Feb	248	307	380	430	508	590	767	1000	1300	1720	1940	2210	2590	2890	3620	10
Mar	185	361	433	483	551	623	797	1020	1160	1340	1460	1610	1820	2170	2730	10
Apr	236	277	309	367	430	461	564	708	860	1070	1230	1380	1530	1710	2070	10
May	121	142	165	197	221	246	303	407	546	695	785	877	992	1220	1540	10
Jun	68	90	102	118	134	150	190	238	303	387	439	501	552	622	945	10
Jul	34	40	44	48	51	58	70	77	87	99	109	126	149	174	222	10
Aug	20	24	26	28	30	31	35	42	47	55	59	63	67	72	85	10
Sep	23	26	27	29	30	31	34	38	42	50	56	64	80	102	140	10
Ann	29	35	45	57	74	102	191	316	478	694	851	1060	1340	1770	2520	

COAST FORK WILLAMETTE RIVER BASIN

14155500 ROW RIVER NEAR COTTAGE GROVE, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1950-1987 (AFTER THE COMPLETION OF DORENA DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	38	28	1959	1290	1952	472	285	5.2
Nov	38	57	1953	2960	1951	948	708	10.1
Dec	38	108	1977	4280	1965	1630	984	18.0
Jan	38	100	1977	3340	1956	1550	889	17.1
Feb	38	68	1977	2570	1961	1220	630	12.3
Mar	38	54	1977	2740	1957	974	637	10.7
Apr	38	178	1987	1590	1963	735	404	7.9
May	38	114	1987	1510	1963	516	334	5.7
Jun	38	89	1987	1090	1984	319	201	3.4
Jul	38	92	1987	569	1957	197	109	2.2
Aug	38	49	1951	899	1955	346	239	3.8
Sep	38	89	1951	705	1978	353	169	3.8
Ann		286	1977	1230	1974	769	207	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	91	100	110	119	155	212	299	395	489	586	638	690	743	877	1120	38
Nov	61	89	103	119	158	214	342	472	661	947	1110	1400	2010	2760	4120	38
Dec	118	216	285	338	402	485	677	955	1400	2080	2510	3050	3620	4160	4720	38
Jan	156	215	303	399	489	558	762	991	1300	1730	2070	2570	3320	4190	5030	38
Feb	172	193	204	219	239	307	492	651	939	1320	1680	2060	2560	3590	4530	38
Mar	176	188	199	209	222	235	394	579	820	1120	1300	1590	1840	2320	3360	38
Apr	172	184	192	199	207	220	340	524	681	915	1020	1130	1330	1600	2120	38
May	158	176	185	195	200	206	217	280	406	563	655	758	910	1160	1530	38
Jun	115	155	167	177	183	190	201	210	219	261	319	370	451	552	861	38
Jul	91	95	98	102	106	113	125	134	152	192	205	231	272	368	597	38
Aug	91	94	97	99	104	143	200	258	367	449	502	557	635	752	926	38
Sep	90	108	117	126	136	180	251	315	368	424	459	494	529	642	873	38
Ann	98	117	143	180	199	215	257	378	521	702	866	1070	1360	1960	3410	

WILLAMETTE RIVER BASIN

14156000 MOSBY CREEK NEAR COTTAGE GROVE, OR

LOCATION.--Lat 43°44'40", long 122°59'00", in NW 1/4 sec.18, T.21 S., R.2 W., Lane County, Hydrologic Unit 17090002, on right bank 0.2 mi upstream from Kizer Creek and 5 mi southeast of Cottage Grove.

DRAINAGE AREA.--85 mi, approximately.

PERIOD OF RECORD.--February 1936 to September 1946.

GAGE.--Staff gage. Elevation of gage is 750 ft, from topographic map.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--10 years (water years 1937-46), 191 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,520 ft³/s Dec. 28, 1945, gage height, 10.4 ft from floodmark, from rating curve extended above 2,400 ft³/s; minimum, 3 ft³/s Aug. 15, to Sept. 2, 1940.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1946

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	5.5	1937	77	1944	27	24	1.2
Nov	10	6.3	1937	626	1946	252	228	10.8
Dec	10	45	1937	1140	1943	383	368	17.0
Jan	10	70	1937	779	1943	323	238	14.4
Feb	11	110	1941	685	1938	428	166	17.3
Mar	11	60	1941	689	1938	352	205	15.6
Apr	11	66	1939	644	1937	249	179	10.7
May	11	28	1939	264	1942	133	76	5.9
Jun	11	16	1940	258	1937	93	79	4.0
Jul	11	7.6	1940	39	1937	22	10	1.0
Aug	11	4.0	1940	17	1943	10	4.0	0.5
Sep	11	7.2	1939	33	1941	11	7.4	0.5
Ann		113	1944	314	1943	191	69	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	5.0	5.7	5.7	6.8	7.1	7.4	8.5	10	14	17	21	27	35	53	115	10
Nov	6.1	6.7	9.1	13	28	34	48	69	106	184	250	351	505	726	1250	10
Dec	15	26	35	41	50	62	97	145	203	328	402	535	706	1030	1560	10
Jan	40	60	75	89	100	110	141	175	225	307	366	438	539	685	1090	10
Feb	89	108	125	146	165	191	236	308	418	487	553	627	732	959	1160	11
Mar	46	80	94	108	124	143	174	220	286	385	466	535	609	755	973	11
Apr	48	54	61	74	82	92	128	171	209	287	326	376	439	488	663	11
May	26	31	39	46	52	62	76	99	125	155	173	197	221	254	353	11
Jun	16	21	25	29	32	36	42	52	68	89	105	122	147	195	321	11
Jul	7.0	7.6	11	13	14	16	18	20	22	24	27	30	35	43	57	11
Aug	4.0	5.0	5.7	5.7	5.7	7.1	8.8	11	12	12	13	14	15	16	18	11
Sep	4.8	4.8	5.5	5.5	6.2	6.9	7.8	7.8	9.5	11	12	14	17	21	27	11
Ann	6.2	7.5	8.3	11	15	20	37	63	106	168	209	269	361	508	780	

WILLAMETTE RIVER BASIN

14156500 MOSBY CREEK AT MOUTH, NEAR COTTAGE GROVE, OR

LOCATION.--Lat 43°46'35", long 122°59'55", in SE 1/4 NW 1/4 sec.1, T.21 S., R.3 W., Lane County, Hydrologic Unit 17090002, on left bank 3.5 mi southeast of Cottage Grove and at mile 1.0.

DRAINAGE AREA.--95.3 mi².

PERIOD OF RECORD.--September 1946 to September 1981. Monthly discharge only September 1946, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 676.62 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--35 years, 241 ft³/s, 34.34 in/yr, 174,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft³/s Dec. 22, 1964, gage height, 13.37 ft, from rating curve extended above 4,600 ft³/s on basis of slope-area measurement of peak flow; minimum, 2.8 ft³/s Aug. 15, 1973, Sept. 24, 1974.

STATISTICAL SUMMARIES FOR THE PERIOD 1946-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	34	9.4	1953	550	1951	77	103	2.7
Nov	34	15	1953	1070	1974	303	226	10.3
Dec	34	28	1977	1650	1965	518	343	18.2
Jan	34	37	1977	1010	1953	554	320	19.5
Feb	34	50	1977	1010	1961	459	216	14.7
Mar	34	112	1965	779	1972	426	189	15.0
Apr	34	98	1968	596	1963	271	122	9.2
May	34	41	1947	485	1963	167	102	5.9
Jun	34	20	1966	183	1953	70	38	2.4
Jul	34	8.7	1973	52	1952	22	9.1	0.8
Aug	34	5.1	1967	34	1976	12	6.5	0.4
Sep	35	4.6	1965	80	1978	16	13	0.6
Ann		82	1977	392	1974	241	65	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	6.8	8.8	11	12	14	15	18	23	30	45	56	75	98	146	283 34
Nov	17	21	29	37	45	52	76	115	172	268	335	421	564	745	1290 34
Dec	34	64	89	110	132	156	219	292	382	533	644	764	959	1230	1700 34
Jan	55	74	92	120	152	180	227	291	378	532	676	822	989	1330	2000 34
Feb	79	106	125	152	174	191	235	290	370	494	570	649	775	995	1410 34
Mar	102	125	145	162	182	207	261	312	380	470	528	600	713	864	1130 34
Apr	72	91	106	117	128	143	175	214	257	314	351	390	447	525	670 34
May	38	47	55	63	71	80	95	117	142	176	202	226	258	324	467 34
Jun	21	25	29	32	35	37	43	50	60	71	78	88	103	129	193 34
Jul	8.9	10	12	13	14	15	17	19	22	25	27	30	33	37	45 34
Aug	4.8	5.3	5.9	6.6	7.3	7.3	9.0	10	12	14	15	17	19	22	29 34
Sep	4.2	4.8	5.5	6.6	7.3	7.3	8.7	10	13	15	16	18	21	29	51 35
Ann	7.0	9.1	13	16	21	28	52	92	147	224	274	341	441	610	960

WILLAMETTE RIVER BASIN

14157000 COAST FORK WILLAMETTE RIVER AT SAGINAW, OR

LOCATION.--Lat 43°50'05", long 123°02'30", in NW 1/4 sec.15, T.20 S., R.3 W., Lane County, Hydrologic Unit 17090002, on right bank at Saginaw, 1.0 mi downstream from Row River.

DRAINAGE AREA.--529 mi².

PERIOD OF RECORD.--October 1923 to September 1951. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 595.76 ft above National Geodetic Vertical Datum of 1929. Prior to May 10, 1930, chain gage at site 50 ft upstream at different datum and May 10, 1930, to Oct. 12, 1938, at present datum.

REMARKS.--Small diversions and regulation by log ponds upstream from station; regulation by Cottage Grove Reservoir since Oct. 31, 1942, and Dorena Reservoir since Oct. 11, 1949.

AVERAGE DISCHARGE.--28 years (water years 1924-51), 1,236 ft³/s, 894,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,900 ft³/s Dec. 28, 1945, gage height, 12.38 ft, from rating curve extended above 24,000 ft³/s; minimum observed, 15 ft³/s Aug. 1, Sept. 4, 1928.

STATISTICAL SUMMARIES FOR THE PERIOD 1924-1942

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	42	1937	1080	1925	251	258	2.0
Nov	18	44	1937	5680	1925	1310	1450	9.9
Dec	18	396	1937	3850	1942	1750	916	13.6
Jan	18	516	1937	5440	1936	2100	1280	16.4
Feb	18	660	1934	5390	1926	2440	1340	17.3
Mar	18	459	1941	4510	1938	2000	1240	15.6
Apr	18	509	1926	4390	1937	1590	976	12.0
May	18	247	1931	1900	1933	887	484	6.9
Jun	18	115	1924	1530	1937	515	388	3.9
Jul	18	52	1926	348	1937	137	80	1.1
Aug	18	32	1940	114	1937	65	25	0.5
Sep	18	37	1935	241	1941	76	48	0.6
Ann		621	1934	1720	1925	1090	355	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	35	40	44	48	53	60	74	93	115	166	204	244	311	451	835	18
Nov	44	54	66	88	116	161	291	418	621	962	1340	1880	2760	3690	5700	18
Dec	134	224	325	406	502	640	860	1070	1360	1780	2110	2640	3440	4310	5970	18
Jan	390	554	667	766	857	953	1210	1480	1790	2180	2470	2890	3480	4250	6220	18
Feb	454	576	697	837	982	1140	1390	1740	2250	2720	3120	3740	4320	5070	6660	18
Mar	341	478	615	714	795	942	1160	1430	1680	2030	2320	2700	3420	4260	5700	18
Apr	365	418	463	513	586	688	887	1250	1510	1740	1900	2150	2510	2990	3820	18
May	223	262	277	311	371	445	645	795	907	1080	1190	1330	1470	1700	2040	18
Jun	112	119	133	153	174	201	265	349	432	557	641	751	913	1140	1490	18
Jul	52	58	64	67	70	76	93	114	132	149	167	179	203	255	332	18
Aug	31	33	35	38	41	45	51	55	64	80	85	90	95	110	132	18
Sep	29	34	37	39	41	43	49	57	67	79	84	98	106	125	167	18
Ann	39	49	60	76	98	126	241	469	770	1150	1400	1680	2090	2820	4260	

COAST FORK WILLAMETTE RIVER BASIN

14157500 COAST FORK WILLAMETTE RIVER NEAR GOSHEN, OR

LOCATION.--Lat 43°58'50", long 122°57'55", in NW 1/4 sec.29, T.18 S., R.2 W., Lane County, Hydrologic Unit 17090002, on right bank at downstream side of bridge on State Highway 58, 2.5 mi southeast of Goshen, and at mile 6.4.

DRAINAGE AREA.--642 mi².

PERIOD OF RECORD.--August 1905 to February 1912, October 1950 to 1987. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1218: Drainage area. WSP 1248: 1905-12. WSP 1935: 1956.

GAGE.--Water-stage recorder. Datum of gage is 473.80 ft above National Geodetic Vertical Datum of 1929. Aug. 23, 1905, to Feb. 7, 1912, nonrecording gage at site 600 ft upstream at different datum.

REMARKS.--Flow regulated since 1942 by Cottage Grove Lake (station 14153000) and since 1949 by Dorena Lake (station 14155000). Several small diversions for logponds and irrigation upstream from station.

AVERAGE DISCHARGE.--43 years (water years 1906-11, 1951-87), 1,640 ft³/s, 1,188,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,500 ft³/s Nov. 22, 1909, gage height, 19.5 ft, site and datum then in use, from rating curve extended above 15,000 ft³/s; minimum discharge, 36 ft³/s Sept. 29, 30, Oct. 11, 12, 1908.

STATISTICAL SUMMARIES FOR THE PERIOD 1951-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	37	204	1959	3120	1951	811	535	4.2
Nov	37	121	1953	6310	1974	2030	1540	10.2
Dec	37	196	1977	9820	1965	3640	2250	18.8
Jan	37	200	1977	7240	1956	3570	2060	18.5
Feb	37	203	1977	6890	1961	2900	1450	13.7
Mar	37	510	1978	5720	1957	2330	1350	12.1
Apr	37	459	1987	4020	1963	1560	880	7.8
May	37	247	1987	3290	1963	983	674	5.1
Jun	37	129	1987	1660	1984	536	320	2.7
Jul	37	159	1979	588	1957	284	111	1.5
Aug	37	142	1985	1110	1955	481	298	2.5
Sep	37	171	1957	1060	1978	578	231	2.9
Ann		509	1977	2690	1956	1640	460	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	186	216	246	293	343	433	529	634	762	890	959	1020	1100	1360	1930	37
Nov	176	222	269	315	388	484	677	927	1330	1950	2420	3310	4730	5970	7820	37
Dec	255	487	696	841	993	1200	1710	2470	3640	5000	5710	6430	7170	8100	9490	37
Jan	405	604	821	1020	1240	1410	1870	2370	3210	4460	5290	6250	7300	8440	9970	37
Feb	512	607	688	790	937	1080	1400	1820	2460	3360	4030	4730	5860	7140	8770	37
Mar	493	562	632	703	815	923	1170	1500	2030	2710	3090	3550	4300	5400	7190	37
Apr	424	466	499	537	583	643	839	1120	1420	1790	2050	2330	2620	3160	4270	37
May	314	348	371	396	425	459	532	616	761	993	1140	1330	1590	2010	2820	37
Jun	210	255	278	289	300	311	338	372	422	491	544	619	745	940	1370	37
Jul	147	157	164	171	178	187	209	230	252	281	303	329	397	497	664	37
Aug	141	148	155	161	184	235	271	377	534	623	716	798	867	969	1120	37
Sep	168	190	217	245	283	311	492	546	601	658	702	804	876	994	1210	37
Ann	173	219	266	317	379	452	575	740	987	1420	1785	2307	3115	4578	6871	

UPPER WILLAMETTE RIVER BASIN

14158000 WILLAMETTE RIVER AT SPRINGFIELD, OR

LOCATION.--Lat 44°02'45", long 123°01'40", in SE 1/4 sec.34, T.17 S., R.3 W., Lane County, Hydrologic Unit 17090003, near center of span on downstream side of bridge on U.S. Highway 126 at Springfield, and at mile 185.6.

DRAINAGE AREA.--2,030 mi², approximately.

PERIOD OF RECORD.--October 1911 to December 1913, June 1919 to September 1957. Monthly discharge only for October 1911, published in WSP 1318. Published as "at Eugene" June 1919 to September 1928; gage-height records collected at site at Eugene since 1878 are contained in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 423.77 ft above National Geodetic Vertical Datum of 1929. Nov. 27, 1911, to Dec. 31, 1913, chain gage on bridge 0.2 mi upstream at different datum. June 1, 1919, to Nov. 24, 1928, staff gage at site 3.4 mi downstream at datum 23.92 ft lower than described gage.

REMARKS.--Flow regulated by Cottage Grove (since 1942), Dorena (since 1949), and Lookout Point Reservoirs (since 1954). Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--40 years (water years 1912-13, 1920-57), 5,453 ft³/s, 3,948,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 140,000 ft³/s Dec. 29, 1945, gage height, 20.9 ft, from rating curve extended above 93,000 ft³/s; minimum, 500 ft³/s Aug. 11, 1926.

STATISTICAL SUMMARIES FOR THE PERIOD 1912-1942

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	25	659	1937	5000	1921	1410	907	2.4
Nov	25	629	1937	15200	1925	5220	3890	8.7
Dec	25	1720	1937	15300	1921	7180	3480	12.4
Jan	25	1960	1937	17200	1912	8980	4870	15.5
Feb	25	2730	1931	18200	1926	8890	4640	14.0
Mar	25	2220	1941	16900	1932	7630	3510	13.2
Apr	25	2710	1926	15300	1937	7080	3050	11.8
May	25	2010	1934	8980	1933	5400	2230	9.3
Jun	25	1120	1940	9710	1933	3930	2280	6.6
Jul	25	725	1940	4400	1913	1600	811	2.8
Aug	25	547	1940	1480	1913	913	239	1.6
Sep	25	613	1934	2670	1920	989	451	1.7
Ann		2790	1931	7290	1921	4910	1390	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	636	676	719	749	776	839	931	1140	1280	1360	1560	1890	2660	4090	--	25
Nov	688	770	872	993	1170	1370	1810	2430	3160	4770	6100	8120	9950	13600	18900	25
Dec	1150	1700	2110	2470	2850	3230	4150	5100	6280	7710	8600	10000	12000	15000	20500	25
Jan	2230	2610	3030	3530	3930	4330	5220	6410	8000	10100	11300	12600	14600	17700	25100	25
Feb	2330	2850	3410	3760	4120	4510	5580	6860	8210	9750	11000	12400	14200	16000	24000	25
Mar	2390	3000	3390	3830	4230	4620	5390	6070	7030	8260	8970	9850	11400	13700	17400	25
Apr	2500	2840	3110	3480	4170	4610	5320	6160	7180	8410	9040	9700	10400	11500	13400	25
May	1720	2130	2610	2920	3290	3730	4480	5090	5820	6570	7030	7460	8130	8800	10200	25
Jun	1090	1200	1400	1680	1920	2200	2710	3340	3950	4640	5000	5490	6080	7100	8940	25
Jul	715	763	820	907	1000	1080	1200	1330	1500	1700	1820	2010	2280	2630	3260	25
Aug	576	616	645	687	730	758	813	870	937	1020	1050	1110	1190	1280	1430	25
Sep	579	615	645	671	693	714	750	785	867	976	1050	1130	1250	1380	1810	25
Ann	657	742	838	961	1114	1316	2035	3009	4219	5605	6468	7540	8805	10780	14801	

MCKENZIE RIVER BASIN

14158500 MCKENZIE RIVER AT OUTLET OF CLEAR LAKE, OR

LOCATION.--Lat 44°21'40", long 121°59'40", in SE 1/4 sec.8, T.14 S., R.7 E., Linn County, Hydrologic Unit 17090004, Willamette National Forest, on west bank of Clear Lake in narrow channel, 150 ft upstream from outlet and at mile 89.6.

DRAINAGE AREA.--92.4 mi², hydrologic drainage boundary uncertain owing to ground-water exchange.

PERIOD OF RECORD.--June 1912 to September 1915, October 1947 to 1987. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1288: 1949. WSP 1318: 1915(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,015.32 ft above National Geodetic Vertical Datum of 1929 (levels by Eugene Water and Electric Board). June 20, 1912, to July 31, 1915, nonrecording gage at site 1.0 mi north at different datum.

REMARKS.--Flow regulated by natural storage in lake. At high stages an undetermined flow enters numerous sinkholes in lava rock along south edge of lake upstream from station.

AVERAGE DISCHARGE.--43 years, 467 ft³/s, 68.63 in/yr, 338,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,300 ft³/s Dec. 23, 1964, gage height, 8.15 ft; minimum discharge, 137 ft³/s Sept. 23, 1977, Nov. 4, 1980.

STATISTICAL SUMMARIES FOR THE PERIOD 1913-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	43	145	1981	429	1951	262	66	4.8
Nov	43	163	1979	829	1951	388	136	6.8
Dec	43	209	1977	1210	1965	552	241	10.0
Jan	43	191	1977	999	1974	525	210	9.5
Feb	43	180	1977	986	1961	536	210	8.9
Mar	43	224	1977	1210	1972	499	189	9.1
Apr	43	341	1955	815	1972	576	129	10.1
May	43	370	1980	1180	1949	701	213	12.7
Jun	43	290	1987	1200	1974	592	244	10.4
Jul	43	173	1977	737	1950	403	133	7.3
Aug	43	149	1977	499	1974	312	93	5.7
Sep	43	143	1977	392	1974	261	65	4.6
Ann		241	1977	683	1972	467	99	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	160	175	186	197	207	216	237	258	273	292	305	319	332	349	384	43
Nov	193	211	228	243	257	273	305	334	366	428	453	495	563	648	781	43
Dec	226	266	294	320	348	369	412	463	528	638	700	765	833	921	1070	43
Jan	229	266	291	318	342	363	397	438	495	603	642	690	758	866	1040	43
Feb	239	268	287	316	346	380	426	475	530	595	634	690	778	905	1110	43
Mar	247	276	310	343	367	383	419	453	496	543	585	636	695	759	923	43
Apr	364	377	397	418	437	456	504	553	607	649	675	713	770	829	904	43
May	369	393	428	457	504	560	619	682	744	813	859	912	976	1040	1140	43
Jun	295	324	348	371	393	417	462	524	599	672	746	814	878	964	1130	43
Jul	221	236	254	270	287	313	353	395	431	460	479	508	545	584	658	43
Aug	181	195	204	218	232	246	270	308	338	368	384	401	418	442	487	43
Sep	166	171	188	201	208	217	236	258	282	298	305	315	328	349	383	43
Ann	194	221	246	268	288	312	357	403	453	531	582	638	709	806	955	

MCKENZIE RIVER BASIN

14158790 SMITH RIVER ABOVE SMITH RIVER RESERVOIR, NEAR BELKNAP SPRINGS, OR

LOCATION.--Lat 44°20'05", long 122°02'45", in SW 1/4 SW 1/4 sec.24, T.14 S., R.6 E., Linn County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank 200 ft upstream from Smith River Reservoir, 0.7 mi downstream from Browder Creek, 10 mi north of town of Belknap Springs, and at mile 4.4.

DRAINAGE AREA.--16.2 mi².

PERIOD OF RECORD.--October 1960 to 1987.

REVISED RECORDS.--WDR OR 80-2: 1978(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,610.00 ft above National Geodetic Vertical Datum of 1929 (levels by Eugene Water and Electric Board). Prior to Sept. 10, 1964, at datum 1.56 ft higher.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--27 years, 91.0 ft³/s, 76.28 in/yr, 65,930 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,160 ft³/s Dec. 22, 1964, gage height, 11.9 ft, from floodmark, from rating curve extended above 560 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 2.5 ft³/s Sept. 15-18, 1980.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	27	4.3	1975	75	1969	26	21	2.4
Nov	27	13	1977	218	1985	119	66	10.7
Dec	27	9.9	1977	403	1965	158	90	14.7
Jan	27	13	1977	293	1970	135	69	12.6
Feb	27	12	1977	309	1961	140	84	11.9
Mar	27	47	1981	321	1972	108	59	10.1
Apr	27	50	1967	260	1962	132	51	11.9
May	27	49	1987	319	1971	163	77	15.2
Jun	27	15	1986	260	1974	80	61	7.3
Jul	27	7.1	1986	51	1971	18	12	1.7
Aug	27	3.9	1986	11	1968	7.0	2.5	0.7
Sep	27	3.8	1987	23	1978	8.3	4.9	0.7
Ann		39	1977	136	1974	91	22	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3.5	4.0	4.0	4.6	4.6	5.3	6.1	9.8	14	21	26	35	46	66	111	27
Nov	8.5	12	19	26	32	40	58	77	100	133	154	180	212	279	400	27
Dec	21	33	42	51	57	64	81	102	129	169	193	223	278	347	489	27
Jan	19	28	36	41	47	54	71	90	112	144	162	182	217	297	463	27
Feb	23	31	39	49	56	63	75	89	108	137	155	181	223	289	461	27
Mar	32	39	44	49	54	58	67	79	96	120	134	154	180	222	291	27
Apr	45	52	59	66	75	87	103	118	134	154	165	177	198	234	288	27
May	43	56	67	78	88	98	118	142	168	195	214	238	274	317	368	27
Jun	14	17	21	24	27	31	42	54	72	94	106	121	152	184	247	27
Jul	5.4	5.9	6.5	7.1	7.8	8.5	10	12	15	19	22	26	32	40	56	27
Aug	3.8	3.8	4.1	4.1	4.5	4.8	5.2	6.0	6.5	7.0	8.2	8.8	9.5	12	14	27
Sep	3.4	3.4	3.8	3.8	4.2	4.2	4.6	5.2	5.7	6.3	7.0	7.8	12	16	27	27
Ann	3.7	5.4	6.7	8.4	11	17	35	55	77	105	123	146	174	216	313	

MCKENZIE RIVER BASIN

14158850 MCKENZIE RIVER BELOW TRAIL BRIDGE DAM, NEAR BELKNAP SPRINGS, OR

LOCATION.--Lat 44°16'05", long 122°02'55", in T.15 S., R.6 E., (unsurveyed), Linn County, Hydrologic Unit 17090004, in Willamette National Forest, on left bank 0.4 mi downstream from Trail Bridge Dam, 0.5 mi upstream from Anderson Creek, 5 mi north of town of Belknap Springs, and at mile 81.5.

DRAINAGE AREA.--184 mi².

PERIOD OF RECORD.--October 1959 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,980.00 ft above National Geodetic Vertical Datum of 1929 (levels by Eugene Water and Electric Board). Prior to Oct. 11, 1963, at datum 5.60 ft higher.

REMARKS.--Flow regulated since 1963 by Smith River Reservoir (station 14158795). Diurnal fluctuations by powerplants and by Trail Bridge reregulating reservoir upstream. Water is diverted from McKenzie River in SW 1/4 sec.20, T.14 S., R.7 E., to Smith River Reservoir and returned to river upstream from station.

AVERAGE DISCHARGE.--28 years, 1,027 ft³/s, 75.80 in/yr, 744,100 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s Dec. 22, 1964, gage height, 12.45 ft, from rating curve extended above 3,700 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 185 ft³/s Feb. 3, 1963; minimum daily, 425 ft³/s Nov. 23, 1964.

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	520	1981	858	1972	690	84	5.7
Nov	24	614	1979	1450	1985	952	231	7.7
Dec	24	633	1977	2500	1965	1270	439	10.6
Jan	24	601	1977	1930	1974	1250	344	10.4
Feb	24	580	1977	1810	1982	1210	323	9.2
Mar	24	731	1977	2330	1972	1150	343	9.6
Apr	24	885	1967	1570	1972	1140	186	9.2
May	24	834	1981	1900	1972	1280	314	10.7
Jun	24	728	1980	1890	1974	1090	322	8.8
Jul	24	585	1977	1270	1974	852	187	7.1
Aug	24	552	1977	1030	1972	745	140	6.2
Sep	24	535	1980	913	1971	692	108	5.6
Ann		700	1977	1400	1972	1020	168	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	533	563	579	593	607	623	658	688	711	738	756	771	792	828	875	24
Nov	581	634	673	697	724	751	805	858	936	1040	1100	1180	1270	1380	1600	24
Dec	659	744	804	847	898	939	1010	1110	1250	1410	1500	1600	1720	1860	2190	24
Jan	699	783	837	877	917	958	1040	1140	1260	1360	1410	1490	1600	1770	2200	24
Feb	664	732	793	864	920	966	1050	1130	1210	1310	1380	1470	1570	1730	2020	24
Mar	703	765	820	867	915	954	1010	1080	1160	1260	1320	1380	1480	1580	1810	24
Apr	815	877	917	950	977	1000	1050	1100	1160	1240	1280	1310	1390	1470	1570	24
May	819	888	928	957	989	1020	1130	1240	1330	1440	1540	1610	1690	1780	1910	24
Jun	730	751	773	794	813	838	920	1010	1100	1220	1290	1360	1460	1610	1790	24
Jul	599	635	666	691	706	719	748	822	880	928	958	1010	1070	1140	1260	24
Aug	556	573	596	616	636	660	681	714	772	813	831	852	885	976	1040	24
Sep	542	555	571	588	609	628	652	677	705	736	755	773	806	873	919	24
Ann	580	632	672	707	740	773	849	936	1030	1150	1220	1310	1400	1550	1760	

MCKENZIE RIVER BASIN

14159000 MCKENZIE RIVER AT MCKENZIE BRIDGE, OR

LOCATION.--Lat 44°10'45", long 122°07'45", on line between NE 1/4 and NW 1/4 sec.18, T.16 S., R.6 E., Lane County, Hydrologic Unit 17090004, Willamette National Forest, on left bank 1.0 mi upstream from Glen Creek, 1.7 mi east of town of McKenzie Bridge, and at mile 69.9.

DRAINAGE AREA.--348 mi² at cableway 1.2 mi upstream, where all discharge measurements are made.

PERIOD OF RECORD.--August 1910 to 1987. Monthly discharge only for some periods, published in WSP 1318. Published as "near McKenzie Bridge" August 1910 to September 1911 and October 1914 to September 1916.

REVISED RECORDS.--WSP 1248: 1911-16, 1920-25. WSP 1448: 1919. WSP 1638: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,419.04 ft above National Geodetic Vertical Datum of 1929. Prior to June 2, 1932, nonrecording gage at several sites within 2 mi of present site at various datums.

REMARKS.--Flow regulated since March 1963 by Smith River Reservoir (Carmen-Smith Project) 12 mi upstream (station 14158795). No diversion upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--77 years, 1,686 ft³/s, 1,222,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,100 ft³/s Dec. 22, 1964, gage height, 10.36 ft, from rating curve extended above 7,100 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 805 ft³/s Oct. 20, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1911-1962 (BEFORE THE CONSTRUCTION OF SMITH RIVER AND TRAIL BRIDGE DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	52	833	1943	1900	1951	1170	239	6.0
Nov	52	883	1940	2950	1951	1570	473	7.8
Dec	52	952	1945	3970	1956	1900	667	9.7
Jan	52	936	1937	3560	1953	1910	604	9.8
Feb	52	1020	1937	3440	1961	1930	600	9.0
Mar	52	1110	1941	3020	1932	1790	400	9.2
Apr	52	1070	1941	2630	1962	1970	387	9.7
May	52	1200	1941	3420	1949	2070	487	10.6
Jun	52	1040	1940	3810	1933	1840	564	9.1
Jul	52	954	1940	2330	1917	1450	318	7.4
Aug	52	871	1941	1660	1917	1230	196	6.3
Sep	52	864	1931	1500	1917	1140	164	5.6
Ann		1100	1941	2390	1956	1660	264	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	853	884	927	967	998	1020	1070	1130	1180	1230	1270	1320	1380	1470	1670	52
Nov	908	958	1010	1060	1110	1140	1230	1320	1440	1600	1720	1920	2150	2510	3080	52
Dec	990	1100	1180	1250	1320	1390	1520	1640	1820	2030	2150	2330	2590	2970	3640	52
Jan	1140	1210	1270	1320	1370	1420	1540	1650	1810	2080	2190	2380	2610	2820	3480	52
Feb	1140	1230	1290	1340	1390	1450	1590	1710	1880	2050	2160	2320	2510	2850	3520	52
Mar	1220	1300	1360	1410	1460	1510	1590	1660	1760	1880	1990	2090	2210	2370	2730	52
Apr	1320	1390	1460	1530	1600	1660	1800	1930	2050	2190	2280	2370	2460	2610	2820	52
May	1260	1320	1400	1590	1710	1810	1940	2060	2200	2330	2410	2490	2590	2730	2920	52
Jun	1110	1170	1260	1380	1450	1510	1590	1730	1870	2040	2160	2280	2400	2610	2980	52
Jul	994	1060	1120	1190	1260	1290	1350	1390	1450	1540	1600	1660	1730	1860	2130	52
Aug	898	956	998	1050	1100	1130	1180	1220	1260	1320	1360	1400	1450	1510	1580	52
Sep	871	893	949	979	1020	1050	1100	1140	1180	1220	1250	1270	1320	1370	1440	52
Ann	947	1033	1108	1160	1212	1264	1366	1483	1623	1826	1953	2090	2247	2480	2840	

MCKENZIE RIVER BASIN

14159000 MCKENZIE RIVER AT MCKENZIE BRIDGE, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1987 (AFTER THE COMPLETION OF SMITH RIVER AND TRAIL BRIDGE DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	929	1981	1390	1983	1150	131	5.6
Nov	24	1070	1979	2720	1985	1640	441	7.7
Dec	24	1080	1977	4370	1965	2240	804	10.9
Jan	24	1050	1977	3370	1970	2240	635	10.9
Feb	24	1030	1977	3380	1982	2130	620	9.5
Mar	24	1330	1977	3970	1972	1980	569	9.7
Apr	24	1400	1967	2630	1972	1920	344	9.1
May	24	1410	1968	3040	1972	2060	513	10.0
Jun	24	1270	1987	3030	1974	1770	484	8.4
Jul	24	1060	1977	2050	1974	1420	277	6.9
Aug	24	988	1977	1670	1972	1230	201	6.0
Sep	24	954	1980	1450	1972	1140	148	5.4
Ann		1200	1977	2380	1972	1740	291	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	934	959	987	1010	1030	1050	1090	1120	1170	1220	1240	1280	1310	1350	1460	24
Nov	991	1080	1130	1170	1210	1240	1330	1440	1590	1760	1860	2010	2200	2500	3020	24
Dec	1120	1260	1350	1430	1500	1580	1730	1910	2150	2500	2670	2880	3130	3470	4110	24
Jan	1240	1390	1460	1520	1590	1660	1800	2010	2210	2390	2510	2680	2910	3300	4390	24
Feb	1080	1260	1390	1500	1570	1640	1770	1920	2080	2280	2410	2620	2820	3110	3800	24
Mar	1310	1410	1470	1520	1560	1590	1680	1790	1940	2130	2240	2390	2550	2760	3170	24
Apr	1390	1450	1520	1580	1620	1650	1720	1840	1970	2100	2180	2270	2370	2510	2690	24
May	1370	1420	1480	1530	1580	1630	1820	1980	2170	2340	2440	2550	2710	2900	3120	24
Jun	1240	1280	1310	1330	1360	1390	1480	1610	1780	1970	2060	2210	2380	2530	2800	24
Jul	1090	1120	1150	1170	1190	1210	1260	1370	1480	1540	1590	1650	1740	1850	2000	24
Aug	991	1020	1040	1050	1070	1080	1110	1170	1280	1350	1390	1420	1450	1530	1630	24
Sep	952	964	976	993	1020	1030	1060	1120	1180	1230	1250	1280	1320	1370	1450	24
Ann	1000	1060	1120	1190	1250	1310	1420	1550	1710	1930	2060	2220	2400	2650	3100	

MCKENZIE RIVER BASIN

14159200 SOUTH FORK MCKENZIE RIVER ABOVE COUGAR LAKE, NEAR RAINBOW, OR

LOCATION.--Lat 44°02'50", long 122°13'00", in T.17 S., R.5 E., (unsurveyed), Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank 100 ft upstream from Tipsoo Creek, 8.0 mi south of Rainbow, 9.0 mi southeast of town of Blue River, and at mile 10.4.

DRAINAGE AREA.--160 mi² at cableway 0.2 mi downstream, where all discharge measurements are made.

PERIOD OF RECORD.--October 1957 to September 1987 (discontinued). Prior to October 1971, published as South Fork McKenzie River above Cougar Reservoir.

REVISED RECORDS.--WSP 1638: Drainage area. WSP 1935: 1958(M).

GAGE.--Water-stage recorder. Datum of gage is 1,709.51 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--No regulation or diversion upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--30 years, 638 ft³/s, 54.15 in/yr, 462,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,400 ft³/s Dec. 22, 1964, gage height, 20.06 ft, from floodmark, from rating curve extended above 7,600 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 171 ft³/s Sept. 16, 17, 1981.

STATISTICAL SUMMARIES FOR THE PERIOD 1958-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	30	188	1981	475	1983	291	77	3.9
Nov	30	261	1977	1310	1985	633	293	8.2
Dec	30	231	1977	2910	1965	979	557	13.0
Jan	30	234	1977	1830	1971	935	421	12.5
Feb	30	232	1977	1780	1982	922	394	11.2
Mar	30	410	1977	2070	1972	773	318	10.3
Apr	30	445	1968	1390	1962	828	221	10.7
May	30	426	1968	1380	1969	910	273	12.1
Jun	30	270	1987	1420	1974	612	291	7.9
Jul	30	221	1973	457	1975	303	67	4.0
Aug	30	196	1973	338	1976	243	33	3.2
Sep	30	195	1987	304	1978	238	27	3.1
Ann		346	1977	917	1972	637	137	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	194	203	208	214	218	223	231	242	256	279	297	319	362	441	580	30
Nov	226	243	259	276	295	318	364	434	540	667	743	844	972	1230	1730	30
Dec	268	322	385	437	475	505	582	690	829	1030	1170	1330	1550	1870	2510	30
Jan	295	349	413	448	483	523	613	710	811	964	1080	1210	1370	1670	2280	30
Feb	333	403	453	500	544	579	642	708	804	936	1020	1150	1320	1600	2230	30
Mar	404	444	466	489	512	534	581	640	701	808	880	977	1110	1280	1580	30
Apr	436	473	497	533	583	628	699	773	855	941	990	1070	1150	1260	1450	30
May	426	491	563	621	666	704	786	865	959	1050	1120	1190	1280	1400	1560	30
Jun	271	290	309	330	353	375	425	498	607	707	760	821	923	1070	1390	30
Jul	218	226	231	236	243	249	264	279	297	317	331	352	381	421	495	30
Aug	196	203	207	211	214	218	227	239	252	262	266	273	279	288	301	30
Sep	190	196	201	205	209	213	222	231	240	248	252	258	267	280	306	30
Ann	206	221	236	250	267	290	374	483	596	727	806	902	1030	1220	1560	

MCKENZIE RIVER BASIN

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR

LOCATION.--Lat 44°08'10", long 122°14'50", in NE 1/4 sec.31, T.16 S., R.5 E., Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on right bank 0.2 mi upstream from Cougar Creek, 0.6 mi downstream from Cougar Dam, 2.1 mi south of Rainbow, and at mile 3.9.

DRAINAGE AREA.--208 mi².

PERIOD OF RECORD.--October 1947 to 1987.

REVISED RECORDS.--WSP 1638: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,236.42 ft above National Geodetic Vertical Datum of 1929 (Federal Highway Administration bench mark). Oct. 1 to Nov. 4, 1947, nonrecording gage at site 40 ft upstream at datum 0.80 ft higher.

REMARKS.--Flow regulated since 1963 by Cougar Lake (station 14159400), usable capacity, 165,000 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--40 years, 863 ft³/s, 56.34 in/yr, 625,200 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,600 ft³/s Dec. 11, 1956, gage height, 8.66 ft, from rating curve extended above 8,100 ft³/s; maximum gage height, 8.90 ft Dec. 22, 1955 (backwater from debris); minimum discharge, 17 ft³/s Nov. 18, 1965; minimum daily, 85 ft³/s Apr. 26-28, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 24,500 ft³/s Dec. 28, 1945, gage height, 8.8 ft, from floodmarks, at Corps of Engineers gage at site 40 ft upstream at datum 0.80 ft higher; gage height at present site and datum, about 9.3 ft, computed by Corps of Engineers.

STATISTICAL SUMMARIES FOR THE PERIOD 1948-1962 (BEFORE THE CONSTRUCTION OF COUGAR DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	15	242	1953	1080	1951	472	256	4.3
Nov	15	265	1953	1800	1951	967	495	8.6
Dec	15	444	1960	3480	1956	1330	794	12.2
Jan	15	465	1949	2810	1953	1210	702	11.1
Feb	15	759	1956	2280	1961	1430	518	11.9
Mar	15	756	1958	1920	1957	1140	374	10.4
Apr	15	979	1953	1830	1962	1380	289	12.2
May	15	861	1954	2170	1949	1400	371	12.8
Jun	15	457	1951	1800	1950	914	394	8.1
Jul	15	272	1961	543	1950	373	85	3.4
Aug	15	228	1959	323	1956	280	26	2.6
Sep	15	220	1957	314	1954	265	27	2.3
Ann		750	1955	1300	1956	927	137	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	226	236	246	255	264	273	291	319	353	412	466	514	625	784	1070 15
Nov	243	267	293	327	359	389	490	627	809	1020	1210	1370	1600	1880	2670 15
Dec	372	420	464	511	573	621	738	853	1050	1320	1600	1930	2210	2640	3690 15
Jan	388	426	462	498	538	571	655	815	982	1230	1400	1630	2000	2490	3160 15
Feb	440	524	608	672	726	774	869	1020	1230	1510	1690	1920	2230	2840	3890 15
Mar	561	593	624	664	709	742	829	979	1110	1260	1350	1510	1690	1890	2330 15
Apr	665	765	840	919	975	1040	1170	1310	1440	1570	1690	1800	1920	2100	2390 15
May	737	874	937	997	1050	1100	1190	1300	1430	1570	1650	1750	1890	2080	2300 15
Jun	369	420	468	502	540	585	671	789	922	1070	1140	1200	1330	1560	1930 15
Jul	259	274	282	289	296	303	315	330	352	378	401	438	481	543	636 15
Aug	231	238	244	250	256	261	271	281	289	297	301	306	312	319	336 15
Sep	214	222	228	231	235	240	249	257	267	275	280	285	289	302	339 15
Ann	240	260	277	296	324	364	501	671	858	1088	1218	1372	1572	1873	2388

MCKENZIE RIVER BASIN

14159500 SOUTH FORK MCKENZIE RIVER NEAR RAINBOW, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1987 (AFTER THE COMPLETION OF COUGAR DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	185	1964	1950	1966	929	282	9.6
Nov	24	276	1966	2400	1969	1230	477	12.4
Dec	24	210	1966	3220	1978	1440	759	14.9
Jan	24	267	1977	3250	1965	1230	586	12.8
Feb	24	157	1977	2030	1965	716	536	6.8
Mar	24	101	1977	2570	1972	544	494	5.6
Apr	24	90	1977	885	1964	456	220	4.6
May	24	158	1973	1490	1969	742	426	7.7
Jun	24	250	1968	1580	1974	682	360	6.8
Jul	24	251	1978	513	1971	419	66	4.3
Aug	24	397	1965	846	1985	613	143	6.4
Sep	24	560	1966	1080	1965	807	112	8.1
Ann		452	1977	1240	1972	818	208	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	296	534	724	784	824	856	884	913	945	980	998	1020	1060	1100	1370	24
Nov	299	569	687	831	922	985	1030	1080	1140	1220	1340	1530	1730	2010	2770	24
Dec	261	388	506	550	642	740	974	1090	1190	1520	1820	2200	2590	3120	4200	24
Jan	246	302	432	510	544	614	864	1020	1090	1210	1310	1610	1940	2470	3560	24
Feb	169	220	265	281	287	292	304	319	350	555	860	988	1060	1430	3070	24
Mar	151	205	246	261	277	284	299	314	338	420	617	841	926	985	1320	24
Apr	109	196	241	267	284	291	307	327	349	452	629	731	796	859	929	24
May	116	228	268	290	302	313	407	653	767	912	1060	1170	1330	1550	1820	24
Jun	260	294	315	339	367	391	429	519	652	791	856	991	1140	1220	1610	24
Jul	262	288	308	322	341	352	388	406	422	446	462	483	523	596	661	24
Aug	318	351	390	410	420	436	491	676	760	787	800	811	822	833	844	24
Sep	459	547	676	752	765	778	804	825	845	865	879	896	914	931	982	24
Ann	212	274	293	313	342	394	495	700	822	920	981	1060	1150	1450	2090	

MCKENZIE RIVER BASIN

14161100 BLUE RIVER BELOW TIDBITS CREEK, NEAR BLUE RIVER, OR

LOCATION.--Lat 44°13'05", long 122°15'50", in SE 1/4 NE 1/4 sec.36, T.15 S., R.4 E., Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on left bank 0.2 mi downstream from Tidbits Creek, 5.5 mi northeast of town of Blue River, and at mile 8.5.

DRAINAGE AREA.--45.8 mi².

PERIOD OF RECORD.--September 1963 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,386.90 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--24 years, 257 ft³/s, 76.20 in/yr, 186,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,400 ft³/s Dec. 22, 1964, gage height, 15.32 ft, from floodmarks, from rating curve extended above 2,800 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 7.1 ft³/s Sept. 9, 23-25, 30, 1987.

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	12	1975	180	1969	78	54	2.6
Nov	23	46	1977	731	1974	352	208	11.2
Dec	23	33	1977	1470	1965	556	335	18.2
Jan	23	48	1977	1030	1970	509	270	16.7
Feb	23	65	1977	934	1986	454	240	13.6
Mar	23	128	1978	995	1972	353	189	11.6
Apr	23	147	1968	529	1969	323	115	10.2
May	23	74	1987	521	1971	267	123	8.7
Jun	23	38	1987	320	1974	128	84	4.1
Jul	23	22	1970	90	1983	40	17	1.3
Aug	23	13	1970	51	1968	22	8.9	0.7
Sep	24	8.6	1987	82	1978	30	20	1.0
Ann		106	1977	404	1974	259	70	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	10	12	14	16	17	19	25	32	41	62	83	105	140	201	320	23
Nov	29	39	53	64	80	105	160	207	268	358	424	509	652	850	1200	23
Dec	49	112	142	165	185	204	248	308	400	549	633	792	1010	1290	1750	23
Jan	75	103	125	147	167	189	241	309	385	486	568	665	828	1100	1710	23
Feb	77	114	143	165	183	202	241	283	337	415	474	570	725	958	1560	23
Mar	120	134	149	166	183	194	221	254	293	359	410	462	545	693	941	23
Apr	117	137	151	162	174	190	234	279	325	379	412	456	506	571	692	23
May	72	91	107	119	134	152	189	236	277	329	357	388	435	491	605	23
Jun	36	42	48	53	58	62	72	86	105	129	150	178	214	255	379	23
Jul	19	21	22	24	26	27	30	34	38	44	49	54	60	69	85	23
Aug	13	14	14	15	16	16	18	19	21	23	24	26	29	34	41	23
Sep	9.9	12	12	13	14	14	16	18	20	24	28	33	43	60	101	24
Ann	14	17	21	27	34	46	89	144	199	269	315	372	450	582	894	

MCKENZIE RIVER BASIN

14161500 LOOKOUT CREEK NEAR BLUE RIVER, OR

LOCATION.--Lat 44°12'35", long 122°15'20", in T.15 or 16 S., R.5 E. (unsurveyed), Lane County, Hydrologic Unit 17090004, in Willamette National Forest, on left bank 6.0 mi northeast of town of Blue River, and at mile 0.5.

DRAINAGE AREA.--24.1 mi².

PERIOD OF RECORD.--August 1949 to September 1955, September 1963 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,377.76 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--30 years, 125 ft³/s, 70.44 in/yr, 90,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,660 ft³/s Dec. 22, 1964, gage height, 8.88 ft, from rating curve extended above 1,300 ft³/s, on basis of slope-area measurement of peak flow; minimum discharge, 4.8 ft³/s Sept. 16, 17, 1981.

STATISTICAL SUMMARIES FOR THE PERIOD 1950-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	30	8.9	1953	179	1951	41	39	2.8
Nov	30	10	1953	322	1978	152	94	10.0
Dec	30	19	1977	794	1965	243	158	16.5
Jan	30	25	1977	591	1953	248	133	16.8
Feb	30	27	1977	449	1986	223	107	13.8
Mar	30	60	1965	420	1972	165	78	11.2
Apr	30	69	1968	282	1952	162	56	10.6
May	30	40	1987	255	1950	140	58	9.5
Jun	30	22	1987	212	1950	77	49	5.1
Jul	30	15	1985	46	1983	26	9.8	1.8
Aug	30	9.6	1970	22	1976	15	3.7	1.0
Sep	31	6.8	1987	40	1978	16	7.6	1.1
Ann		49	1977	182	1972	125	31	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	8.1	9.1	9.7	11	12	13	15	18	22	31	40	50	63	94	140	30
Nov	13	19	23	29	35	45	65	87	114	161	189	225	275	366	528	30
Dec	31	53	69	81	91	101	121	146	192	259	299	348	416	508	720	30
Jan	47	63	74	84	94	108	130	159	199	248	287	339	412	525	767	30
Feb	50	71	83	91	99	107	125	145	172	217	252	299	365	469	700	30
Mar	60	68	76	83	90	96	111	127	144	172	191	222	260	317	412	30
Apr	60	72	82	88	95	105	127	149	170	198	214	230	250	275	317	30
May	45	56	64	71	79	89	113	131	148	170	182	196	217	240	286	30
Jun	24	27	30	34	37	40	47	57	70	85	96	107	124	153	201	30
Jul	14	15	16	17	18	19	21	23	26	30	32	35	39	45	55	30
Aug	8.5	9.5	11	12	12	13	14	15	16	18	18	19	20	21	24	30
Sep	6.9	8.5	9.4	10	11	12	13	13	15	16	17	18	22	27	39	31
Ann	10	13	15	18	21	27	50	77	104	137	158	185	223	281	409	

MCKENZIE RIVER BASIN

14162000 BLUE RIVER NEAR BLUE RIVER, OR

LOCATION.--Lat 44°10'55", long 122°16'45", in NW 1/4 sec.13, T.16 S., R.4 E., Lane County, Hydrologic Unit 17090004, on right bank 2.5 mi downstream from Lookout Creek, 3.3 mi upstream from Quartz Creek, 3.5 mi northeast of town of Blue River, at at mile 5.1.

DRAINAGE AREA.--75.0 mi².

PERIOD OF RECORD.--September 1935 to September 1964. Monthly discharge only September 1935, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 1,231.62 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--29 years (water years 1936-64), 393 ft³/s, 284,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft³/s Dec. 26, 1945, gage height, 9.80 ft, from rating curve extended above 7,400 ft³/s; minimum discharge, 11 ft³/s Aug. 21, 22, 1961.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1964

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	30	18	1953	621	1948	149	167	3.2
Nov	30	17	1937	1360	1943	513	333	10.7
Dec	30	139	1945	2400	1965	747	530	16.1
Jan	29	68	1937	1820	1953	641	399	13.8
Feb	29	238	1941	1460	1961	705	310	13.9
Mar	29	165	1941	1060	1957	580	221	12.5
Apr	29	164	1941	1090	1937	623	207	13.0
May	29	123	1947	819	1949	461	212	10.0
Jun	29	49	1940	553	1950	225	135	4.7
Jul	29	26	1940	137	1955	69	25	1.5
Aug	29	18	1940	53	1953	35	9.6	0.8
Sep	30	19	1939	121	1959	37	21	0.8
Ann		219	1944	587	1956	393	86	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	18	20	21	23	25	28	35	44	66	100	126	176	247	363	608	30
Nov	25	33	51	71	92	119	175	254	362	507	616	749	923	1270	1920	30
Dec	93	130	161	198	231	259	323	405	520	703	818	968	1200	1560	2540	30
Jan	105	142	164	190	212	242	314	383	484	606	725	898	1140	1440	2090	29
Feb	152	202	229	255	281	313	373	445	582	738	856	1020	1200	1540	2080	29
Mar	186	217	245	271	294	318	377	461	552	653	734	824	928	1080	1400	29
Apr	207	252	304	346	377	412	486	564	640	726	774	832	905	1000	1240	29
May	127	165	193	222	250	280	334	408	479	554	594	652	721	816	986	29
Jun	67	82	94	103	113	122	144	169	202	246	271	303	346	418	575	29
Jul	31	37	40	43	45	47	54	60	68	78	84	92	100	113	142	29
Aug	19	23	25	26	28	28	30	33	36	40	42	45	49	51	57	29
Sep	18	20	21	22	23	24	26	28	30	33	36	40	48	59	91	30
Ann	22	28	33	42	54	75	141	225	315	435	512	606	728	919	1321	

MCKENZIE RIVER BASIN

14162200 BLUE RIVER AT BLUE RIVER, OR

LOCATION.--Lat 44°09'45", long 122°19'55", in NW 1/4 SE 1/4 sec.21, T.16 S., R.4 E., Lane County, Hydrologic Unit 17090004, on right bank 0.3 mi upstream from Simmonds Creek, 0.7 mi north of town of Blue River, 0.8 mi downstream from Blue River Dam, and at mile 0.9.

DRAINAGE AREA.--87.7 mi².

PERIOD OF RECORD.--February 1966 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,056.53 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 25, 1966, nonrecording gage at datum 0.80 ft higher.

REMARKS.--Flow regulated since October 1968 by Blue River Lake (station 14162100). No diversion upstream from station. Discharge not adjusted for storage or release from Blue River Lake as losses from reservoir at times exceed natural flow.

AVERAGE DISCHARGE.--21 years, 466 ft³/s, 337,600 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,270 ft³/s Feb. 23, 1968, gage height, 8.93 ft; minimum discharge, 0.80 ft³/s Oct. 8, 10, 11, 1968; minimum daily, 3.7 ft³/s Oct. 8, 1968.

STATISTICAL SUMMARIES FOR THE PERIOD 1969-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	71	1969	612	1985	265	136	4.7
Nov	19	130	1977	1460	1974	669	370	11.6
Dec	19	63	1977	2190	1978	1080	569	19.3
Jan	19	68	1977	1370	1972	841	391	15.0
Feb	19	32	1977	1170	1982	475	364	7.7
Mar	19	12	1977	1770	1972	383	420	6.8
Apr	19	12	1977	620	1985	295	199	5.1
May	19	35	1973	676	1971	346	206	6.2
Jun	19	63	1973	549	1984	249	140	4.3
Jul	19	89	1984	626	1979	364	166	6.5
Aug	19	302	1987	765	1971	476	106	8.5
Sep	19	82	1979	536	1972	240	117	4.2
Ann		190	1977	726	1972	475	131	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	17	51	55	59	90	108	151	190	240	326	358	396	458	529	784	19
Nov	67	111	147	193	240	294	392	504	613	769	870	984	1230	1540	2000	19
Dec	71	164	257	296	348	399	507	698	1080	1500	1770	1960	2250	2650	2990	19
Jan	58	80	143	215	262	298	400	569	755	953	1100	1390	1650	2080	2670	19
Feb	43	48	49	51	52	54	59	72	228	441	604	793	1110	1540	2180	19
Mar	17	42	46	49	52	54	58	85	192	348	423	560	751	1040	1700	19
Apr	14	26	31	46	50	54	62	178	283	392	442	512	632	747	952	19
May	39	50	54	59	65	157	231	299	375	455	501	554	629	732	887	19
Jun	59	72	91	100	114	129	146	182	218	268	305	346	413	489	617	19
Jul	61	77	93	107	118	144	228	429	515	554	571	588	606	633	661	19
Aug	109	202	266	312	427	456	485	515	541	563	575	594	614	639	672	19
Sep	50	52	54	57	63	79	137	199	243	288	392	458	479	500	552	19
Ann	46	51	56	68	97	129	217	306	422	524	568	647	776	1065	1743	

MCKENZIE RIVER BASIN

14162500 MCKENZIE RIVER NEAR VIDA, OR

LOCATION.--Lat 44°07'30", long 122°28'10", in NE 1/4 NE 1/4 sec.5, T.17 S., R.3 E., Lane County, Hydrologic Unit 17090004, on right bank 0.4 mi downstream from Mason Creek, 5.4 mi east of Vida, and at mile 47.7.

DRAINAGE AREA.--930 mi² at cableway 0.4 mi downstream, where all discharge measurement are made.

PERIOD OF RECORD.--July 1910 to March 1911 (published as "at Martins Rapids, near Vida"), September 1924 to 1987. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 855.71 ft above National Geodetic Vertical Datum of 1929 (levels by Eugene Water and Electric Board). July 1, 1910, to Mar. 31, 1911, nonrecording gage at site 3 mi downstream at different datum. Sept. 1, 1924, to Nov. 16, 1928, nonrecording gage at site 20 ft upstream at datum 0.15 ft lower. Nov. 17, 1928, to Sept. 23, 1968, water-stage recorder at present site on left bank at datum 0.15 ft lower.

REMARKS.--Flow regulated since 1963 by Smith River Reservoir (station 14158795) and Cougar Lake (station 14159400), and since 1968 by Blue River Lake (station 14162100). No diversion upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--63 years (water years 1925-87), 4,051 ft³/s, 2,935,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64,400 ft³/s Dec. 28, 1945, gage height, 17.70 ft, site and datum then in use, from rating curve extended above 32,000 ft³/s; minimum discharge, 1,260 ft³/s Nov. 7, 1930, Sept. 17, Oct. 4, 8, 9, 1931.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in January 1923 reached a stage of 17.2 ft, from floodmarks, discharge, 62,000 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1925-1962 (BEFORE CONSTRUCTION OF SMITH RIVER, COUGAR, AND BLUE LAKE DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	38	1330	1945	5060	1951	2170	876	4.6
Nov	38	1370	1930	8570	1951	4140	2110	8.5
Dec	38	1840	1945	13800	1956	5390	2740	11.4
Jan	38	1660	1937	11600	1953	5330	2390	11.3
Feb	38	2340	1931	10600	1961	5660	2210	10.9
Mar	38	2250	1941	9750	1932	5180	1540	11.0
Apr	38	2310	1941	7500	1937	5370	1320	11.0
May	38	2530	1926	8390	1949	5020	1510	10.7
Jun	38	1750	1940	8990	1933	3850	1530	7.9
Jul	38	1510	1940	3590	1950	2370	547	5.0
Aug	38	1360	1940	2580	1956	1890	317	4.0
Sep	38	1310	1931	2370	1927	1760	268	3.6
Ann		2480	1941	6200	1956	4000	843	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1320	1380	1430	1490	1540	1600	1680	1760	1860	2070	2190	2380	2690	3170	4250	38
Nov	1410	1550	1660	1810	1960	2100	2410	2820	3330	4230	4760	5620	6520	8240	11500	38
Dec	1770	2080	2350	2540	2790	3080	3600	4040	4590	5450	6170	7080	8260	10300	13800	38
Jan	2140	2460	2730	2920	3070	3200	3530	4000	4670	5680	6240	6910	8090	9640	12600	38
Feb	2330	2670	2860	3020	3230	3470	3930	4390	5070	6010	6600	7400	8330	9600	12700	38
Mar	2650	2970	3220	3420	3590	3750	4170	4530	5080	5660	6020	6420	6890	7780	9610	38
Apr	2700	2990	3280	3610	3950	4290	4810	5310	5690	6100	6390	6720	7070	7520	8440	38
May	2440	2720	3000	3310	3770	4070	4600	4960	5360	5830	6060	6350	6710	7220	7970	38
Jun	1880	2100	2320	2520	2680	2820	3090	3430	3830	4290	4590	4970	5410	5840	7120	38
Jul	1540	1630	1750	1860	1960	2050	2160	2270	2420	2550	2640	2780	2920	3170	3590	38
Aug	1380	1440	1510	1580	1640	1730	1800	1880	1960	2060	2110	2160	2240	2330	2460	38
Sep	1340	1410	1460	1500	1540	1600	1670	1720	1790	1870	1920	1980	2050	2120	2250	38
Ann	1470	1630	1750	1890	2030	2180	2600	3120	3790	4580	5040	5580	6210	7110	9000	

MCKENZIE RIVER BASIN

14162500 MCKENZIE RIVER NEAR VIDA, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1969-1987 (AFTER CONSTRUCTION OF SMITH RIVER, COUGAR, AND BLUE LAKE DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	2180	1981	3700	1985	2890	417	5.8
Nov	19	2800	1979	8710	1985	4870	1740	9.5
Dec	19	1870	1977	12400	1978	6700	2640	13.5
Jan	19	1750	1977	9290	1971	6170	2180	12.4
Feb	19	1540	1977	8770	1982	5020	2000	9.2
Mar	19	2410	1977	11200	1972	4510	2080	9.1
Apr	19	2670	1977	5680	1974	4000	975	7.8
May	19	2420	1973	6570	1969	4450	1410	8.9
Jun	19	2180	1973	6600	1974	3710	1290	7.2
Jul	19	2290	1980	3530	1974	2790	355	5.6
Aug	19	2130	1987	3510	1971	2860	394	5.8
Sep	19	2040	1987	3360	1972	2680	366	5.2
Ann		2440	1977	5820	1972	4220	879	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1940	2180	2320	2380	2460	2540	2690	2770	2880	3030	3110	3200	3310	3680	4210	19
Nov	2490	2690	2830	2940	3070	3240	3640	4030	4590	5280	5710	6500	7670	8810	10300	19
Dec	2050	2770	3230	3520	3860	4210	4920	6050	7100	8720	9330	10000	10900	11900	12600	19
Jan	1950	2580	3070	3320	3600	3900	4550	5330	6000	7280	8100	8930	10200	11300	12800	19
Feb	1800	2360	2620	2830	2990	3120	3500	3970	4610	5440	5910	6750	7800	9390	11900	19
Mar	2360	2500	2610	2710	2830	2970	3330	3670	4080	4710	5230	5900	6630	7530	9640	19
Apr	2420	2590	2740	2870	2960	3100	3460	3870	4150	4570	4780	4990	5270	5530	6120	19
May	2360	2520	2700	2900	3170	3400	3790	4220	4690	5150	5480	5920	6350	6760	7500	19
Jun	2160	2250	2340	2430	2520	2610	2900	3320	3750	4140	4450	4910	5210	5820	6720	19
Jul	2250	2330	2410	2450	2480	2510	2580	2690	2850	3000	3050	3130	3220	3360	3580	19
Aug	2110	2300	2380	2460	2560	2620	2770	2940	3020	3120	3180	3260	3310	3370	3490	19
Sep	2010	2140	2210	2270	2350	2460	2580	2710	2790	2880	2930	2990	3060	3200	3380	19
Ann	2170	2340	2470	2580	2690	2790	3020	3290	3740	4400	4880	5400	6190	7440	9720	

MCKENZIE RIVER BASIN

14163000 GATE CREEK AT VIDA, OR

LOCATION.--Lat 44°08'45", long 122°34'15", in SW 1/4 sec.28, T.16 S., R.2 E., Lane County, Hydrologic Unit 17090004, on right bank 300 ft downstream from bridge on State Highway 126, at Vida, and at mile 0.2.

DRAINAGE AREA.--47.6 mi².

PERIOD OF RECORD.--June 1951 to September 1957; annual maximums, water years 1958-65; August 1966 to 1987.

REVISED RECORDS.--WDR OR-83-2: 1976 (M,P), 1978 (M,P), 1979 (M,P), 1980 (M), 1981 (M,P), 1982 (M,P).

GAGE.--Water-stage recorder. Datum of gage is 764.56 ft above National Geodetic Vertical Datum of 1929.

June 11, 1951, to Sept. 30, 1957, water-stage recorder, and Oct. 1, 1957, to Aug. 1, 1966, crest-stage gage at same site and datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--27 years (water years 1952-57, 1967-87), 212 ft³/s, 60.48 in/yr, 153,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,140 ft³/s Dec. 22, 1964, gage height, 12.18 ft, from slope-area measurement of peak flow; minimum discharge, 12 ft³/s Nov. 26, 27, 1952, Sept. 6, 7, 23, 1987.

STATISTICAL SUMMARIES FOR THE PERIOD 1952-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	27	17	1953	253	1952	73	53	2.9
Nov	27	18	1953	704	1974	261	173	10.1
Dec	27	32	1977	927	1956	444	213	17.8
Jan	27	53	1977	879	1953	427	219	17.1
Feb	27	59	1977	787	1986	399	177	14.6
Mar	27	110	1978	643	1972	341	144	13.7
Apr	27	112	1987	515	1955	259	86	10.0
May	27	60	1987	274	1953	154	62	6.2
Jun	27	34	1987	289	1984	94	53	3.7
Jul	27	28	1985	92	1969	44	16	1.8
Aug	27	17	1986	61	1968	28	9.4	1.1
Sep	27	14	1987	82	1986	31	16	1.2
Ann		92	1977	318	1972	212	55	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	16	17	19	21	23	24	28	34	42	58	72	94	128	172	269	27
Nov	26	35	44	56	69	79	113	151	196	261	309	370	481	631	955	27
Dec	54	92	127	152	173	199	260	326	419	509	579	674	783	916	1210	27
Jan	95	124	145	164	181	198	237	283	345	443	511	599	743	909	1280	27
Feb	97	125	147	166	186	207	254	297	346	400	447	533	666	842	1140	27
Mar	121	139	159	173	186	200	228	260	309	365	406	461	527	651	854	27
Apr	100	116	129	144	158	171	200	227	256	297	325	361	399	444	523	27
May	60	68	76	84	90	97	111	129	149	174	193	216	241	282	335	27
Jun	42	46	51	54	56	59	65	71	78	90	100	113	133	162	230	27
Jul	24	27	28	30	32	33	36	40	43	48	52	55	59	67	84	27
Aug	17	18	19	21	21	22	24	26	28	30	31	33	36	41	49	27
Sep	15	16	17	18	19	20	22	23	25	29	31	35	41	54	80	27
Ann	19	23	27	32	38	48	75	120	170	231	269	318	386	499	742	

MCKENZIE RIVER BASIN

14165000 MOHAWK RIVER NEAR SPRINGFIELD, OR

LOCATION.--Lat 44°05'34", long 122°57'20", in SE 1/4 NW 1/4 sec.17, T.17 S., R.2 W., Lane County, Hydrologic Unit 17090004, on left bank 50 ft downstream from bridge, 1.3 mi northeast of Springfield, and at mile 1.59.

DRAINAGE AREA.--177 mi².

PERIOD OF RECORD.--September 1935 to September 1952, October 1963 to 1987. Prior to October 1935 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1248: 1939. WSP 1738: Drainage area. WDR OR-86-2: 1985(m).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 442.47 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1935, to Sept. 30, 1952, nonrecording gage at same site and datum.

REMARKS.--Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--41 years, 536 ft³/s, 41.12 in/yr, 388,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,000 ft³/s Dec. 22, 1964, gage height, 22.60 ft; minimum discharge, 8.2 ft³/s Sept. 9, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1955, reached at stage of 22.9 ft, from floodmark, probably affected by backwater from McKenzie River, discharge, 9,200 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	41	26	1975	719	1951	124	155	2.0
Nov	41	26	1937	1650	1951	628	467	9.6
Dec	41	52	1977	3200	1955	1160	712	18.4
Jan	41	84	1977	2460	1955	1240	654	19.6
Feb	41	126	1977	2380	1986	1160	486	16.7
Mar	41	281	1965	1970	1972	884	391	14.0
Apr	41	242	1942	1550	1937	577	272	8.8
May	41	118	1966	709	1949	336	144	5.3
Jun	41	54	1966	752	1984	193	134	3.0
Jul	41	34	1940	190	1983	76	39	1.2
Aug	41	14	1966	91	1968	38	18	0.6
Sep	42	18	1967	111	1968	42	22	0.6
Ann		164	1977	847	1972	536	151	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equalled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	22	26	29	32	34	36	41	48	63	86	103	127	169	243	408 41
Nov	42	54	79	105	125	146	203	297	441	659	846	1050	1300	1660	2250 41
Dec	106	170	272	353	430	503	643	811	1040	1350	1550	1770	2030	2460	3290 41
Jan	262	330	401	464	519	571	685	843	1070	1350	1550	1760	2110	2640	3720 41
Feb	285	364	435	494	540	590	709	849	1090	1340	1490	1710	1960	2330	2940 41
Mar	286	347	392	432	468	508	598	705	829	1000	1110	1240	1430	1680	2060 41
Apr	203	241	274	299	322	347	404	472	552	652	708	778	865	1030	1290 41
May	123	142	161	178	197	213	244	283	324	378	412	450	500	580	721 41
Jun	63	75	85	93	101	109	125	143	165	193	215	239	267	323	470 41
Jul	28	32	36	39	42	46	54	63	72	84	92	102	115	137	174 41
Aug	15	18	20	22	24	25	29	32	36	42	47	52	58	67	82 41
Sep	16	18	20	22	24	25	29	32	37	43	46	52	62	78	107 42
Ann	23	30	37	46	61	80	147	253	389	564	673	828	1050	1400	2020

MCKENZIE RIVER BASIN

14165500 MCKENZIE RIVER NEAR COBURG, OR

LOCATION.--Lat 44°06'45", long 123°02'45", in NW 1/4 NE 1/4 sec.9, T.17 S., R.3 W., Lane County, Hydrologic Unit 17090004, on left bank at downstream side of Armitage Bridge, 2 mi southeast of Coburg, and at mile 7.1.

DRAINAGE AREA.--1,337 mi².

PERIOD OF RECORD.--October 1944 to September 1972.

GAGE.--Water-stage recorder. Datum of gage is 392.32 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1944, nonrecording gage at same site at datum 4.00 ft higher. Nov. 25, 1944, to Feb. 28, 1965, water-stage recorder at same site at datum 4.00 ft higher.

REMARKS.--Flow regulated since 1963 by Smith River Reservoir and Cougar Lake, and since 1968 by Blue River Lake. Slight diurnal fluctuation caused by logponds and powerplants upstream. Water supply for city of Eugene is diverted 10 mi upstream; small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--28 years, 5,916 ft³/s, 60.09 in/yr, 4,286,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 88,200 ft³/s Dec. 29, 1945, gage height, 21.36 ft, from rating curve extended above 59,000 ft³/s; minimum, 1,080 ft³/s Aug. 19, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1945-1963

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	1420	1945	6680	1951	3110	1500	4.4
Nov	19	1930	1953	12200	1951	6310	2940	8.6
Dec	19	2060	1945	20700	1956	9200	4570	13.0
Jan	19	3310	1963	18000	1953	8760	4060	12.4
Feb	19	5610	1962	17200	1961	10200	3140	13.1
Mar	19	5570	1963	13300	1957	8300	2170	11.7
Apr	19	5790	1946	9910	1960	7860	1220	10.7
May	19	3600	1947	10100	1949	7050	1670	9.9
Jun	19	3200	1951	7380	1950	4730	1330	6.5
Jul	19	2040	1945	3770	1955	2810	512	4.0
Aug	19	1660	1945	2680	1956	2150	280	3.0
Sep	19	1610	1945	2440	1954	2020	221	2.8
Ann		4620	1945	8260	1956	6020	836	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1440	1580	1750	1810	1880	1950	2120	2290	2520	2890	3140	3540	4240	5110	7010	19
Nov	1870	1980	2170	2350	2530	2730	3410	4180	5380	6870	7800	9150	10700	12700	16700	19
Dec	2540	3030	3410	3910	4450	4880	5630	6560	7770	9520	10700	12400	14700	18200	25200	19
Jan	3080	3690	4040	4350	4600	4820	5400	6420	7690	9580	10600	12000	14200	16700	21200	19
Feb	4050	4680	5090	5430	5750	6180	7140	8240	9660	11200	12200	13400	15600	18100	23500	19
Mar	4420	4820	5060	5360	5650	5940	6510	7270	8350	9450	9900	10600	11400	13000	15800	19
Apr	4770	5160	5520	5740	6080	6410	7070	7670	8230	8780	9100	9490	9970	10700	12100	19
May	3980	4500	4890	5250	5560	5830	6370	6830	7240	7790	8140	8560	9150	9810	10700	19
Jun	2830	3000	3200	3360	3490	3610	3920	4300	4760	5260	5550	6090	6440	7040	7960	19
Jul	2040	2160	2230	2290	2350	2400	2540	2670	2830	2980	3080	3230	3400	3730	4220	19
Aug	1720	1800	1850	1880	1910	1940	2020	2090	2220	2320	2390	2440	2490	2570	2670	19
Sep	1630	1700	1740	1780	1810	1840	1910	1960	2020	2150	2210	2250	2300	2360	2530	19
Ann	1830	2025	2207	2385	2610	2880	3595	4528	5468	6584	7267	8129	9362	11147	15154	

UPPER WILLAMETTE RIVER BASIN

14166000 WILLAMETTE RIVER AT HARRISBURG, OR

LOCATION.--Lat 44°16'14", long 123°10'21", in NW 1/4 NE 1/4 sec.16, T.15 S., R.4 W., Linn County, Hydrologic Unit 17090003, on right bank 75 ft north of intersection of First Street and Kesling Street in Harrisburg and at mile 161.0.

DRAINAGE AREA.--3,420 mi², approximately.

PERIOD OF RECORD.--October 1944 to 1987. Gage-height records collected at same site in 1927-28, 1931, 1934, are contained in reports of National Weather Service.

GAGE.--Water-stage recorder. Datum of gage is 288.39 ft above National Geodetic Vertical Datum of 1929. Oct 1 to Nov. 14, 1944, nonrecording gage at bridge 1,110 ft upstream at different datum. Nov. 15, 1944, to Aug. 15, 1973, at site 1,100 ft upstream at datum 2.00 ft higher.

REMARKS.--Flow regulated by 8 reservoirs upstream from station. Many small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--43 years, 12,150 ft³/s, 8,803,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 210,000 ft³/s Dec. 29, 1945, gage height, 19.69 ft, from rating curve extended above 115,000 ft³/s; minimum discharge, 1,990 ft³/s Oct. 30, 1944.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood stage of 20.5 ft was reached in December 1861, and 20.1 ft in February 1890 (information from Corps of Engineers). Flood of Jan. 1, 1943, reached a stage of 19.1 ft from National Weather Service.

STATISTICAL SUMMARIES FOR THE PERIOD 1969-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	6980	1981	11000	1985	8430	1190	6.0
Nov	19	6580	1979	30900	1985	15400	7200	10.6
Dec	19	3850	1977	43000	1978	23500	10000	16.8
Jan	19	3690	1977	36700	1971	21300	9720	15.2
Feb	19	2860	1977	26900	1986	15900	7040	10.3
Mar	19	5900	1978	36100	1972	13500	7460	9.6
Apr	19	4820	1977	17500	1974	10700	4000	7.4
May	19	4010	1987	14900	1984	9370	3080	6.7
Jun	19	3660	1987	16100	1984	7610	3270	5.3
Jul	19	3880	1978	6280	1969	4970	794	3.5
Aug	19	4250	1987	7120	1971	5390	744	3.8
Sep	19	4870	1987	8990	1972	7190	1230	5.0
Ann		5230	1977	17800	1972	11900	3170	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	6220	6530	6850	7030	7180	7620	8020	8470	8900	9140	9430	9860	10800	12600	--	19
Nov	6010	6910	7440	8020	8650	9290	10500	11800	13200	15500	17700	23100	27700	32800	37000	19
Dec	4540	7490	8300	9690	11400	13200	18700	23100	27900	31900	33600	35600	38000	41500	45800	19
Jan	4920	6390	8030	9150	10400	11700	14700	18200	21700	25800	28700	32700	37100	42200	48300	19
Feb	3750	5770	6440	7070	7720	8370	9940	12600	15000	18500	20200	24200	28500	32800	39000	19
Mar	5500	5890	6260	6690	7250	7640	8520	9760	12000	14700	16500	18800	22000	26500	34800	19
Apr	4950	5310	5580	5890	6460	7080	8320	9400	10600	12100	13100	14100	15500	17400	21600	19
May	4030	4670	5210	5810	6570	7230	7980	9250	10300	11200	11700	12200	13000	14000	15600	19
Jun	3680	3900	4290	4570	4800	5040	5680	6520	7260	8200	9280	10300	11200	12800	15200	19
Jul	3770	3930	4050	4160	4270	4350	4550	4810	5040	5240	5370	5560	5720	6100	6990	19
Aug	4330	4490	4570	4710	4790	4870	5040	5200	5430	5670	5810	5960	6260	6620	7140	19
Sep	4820	5020	5360	5590	5990	6290	6720	7060	7630	8120	8300	8510	8780	9080	9650	19
Ann	3550	4090	4480	4830	5220	5680	6900	8260	10000	12700	14500	16900	20400	26200	35800	

UPPER WILLAMETTE RIVER BASIN

14166500 LONG TOM RIVER NEAR NOTI, OR

LOCATION.--Lat 44°03'00", long 123°25'30", in SE 1/4 NW 1/4 sec.33, T.17 S., R.6 W., Lane County, Hydrologic Unit 17090003, on left bank 0.2 mi upstream from Southern Pacific Railroad bridge, 0.8 mi downstream from Noti Creek, 1.3 mi southeast of Noti, and at mile 37.4.

DRAINAGE AREA.--89.3 mi².

PERIOD OF RECORD.--October 1935 to 1987.

REVISED RECORDS.--WSP 1318: 1936(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 389.05 ft above National Geodetic Vertical Datum of 1929 (levels by National Weather Service). Prior to Nov. 6, 1940, nonrecording gage at same site and datum.

REMARKS.--Slight regulation caused by logpond upstream from Noti. No diversion upstream from station.

AVERAGE DISCHARGE.--52 years, 233 ft³/s, 35.43 in/yr, 168,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,990 ft³/s Dec. 22, 1955, gage height, 20.17 ft; minimum discharge, 0.04 ft³/s Aug. 13, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	52	12	1975	300	1948	42	47	1.5
Nov	52	16	1937	708	1974	211	177	7.4
Dec	52	23	1977	1430	1956	474	329	17.3
Jan	52	25	1977	1260	1956	583	342	21.2
Feb	52	62	1977	1090	1949	570	245	18.9
Mar	52	137	1941	923	1938	421	193	15.3
Apr	52	57	1977	683	1937	254	134	9.0
May	52	54	1977	340	1963	126	52	4.6
Jun	52	24	1977	164	1937	64	24	2.3
Jul	52	6.2	1977	65	1937	29	10	1.1
Aug	52	3.6	1977	33	1937	16	6.4	0.6
Sep	52	7.4	1967	31	1978	17	5.7	0.6
Ann		45	1977	426	1974	233	74	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	13	15	16	17	18	20	22	26	32	37	44	55	77	122	0.0	52
Nov	19	22	28	34	40	46	62	83	119	186	238	305	399	528	863	52
Dec	42	68	88	113	137	162	221	287	370	494	591	691	831	1040	1510	52
Jan	88	128	157	188	216	242	301	379	482	619	719	833	990	1230	1800	52
Feb	149	187	218	243	267	292	351	424	512	629	713	824	982	1180	1520	52
Mar	134	158	180	199	218	236	279	324	381	450	504	580	668	795	1060	52
Apr	95	110	122	131	141	153	175	201	229	273	301	334	378	449	581	52
May	57	68	74	79	83	88	98	108	119	136	146	158	174	202	257	52
Jun	31	37	41	44	47	49	54	58	63	71	75	79	85	96	117	52
Jul	11	15	17	19	21	23	26	29	32	35	37	40	43	48	56	52
Aug	5.7	7.4	9.6	11	12	13	15	16	18	20	21	22	25	27	33	52
Sep	7.4	8.2	10	12	13	14	15	16	18	20	22	23	25	28	36	52
Ann	11	15	18	22	25	33	55	94	149	228	283	349	443	610	919	

UPPER WILLAMETTE RIVER BASIN

14167000 COYOTE CREEK NEAR CROW, OR

LOCATION.--Lat 44°01'19", long 123°15'17", in SW 1/4 NE 1/4 sec.11, T.18 S., R.5 W., Lane County, Hydrologic Unit 17090003, on right bank 1.0 mi downstream from Spencer Creek, 4.3 mi northeast of Crow, and at mile 3.8.

DRAINAGE AREA.--95.1 mi².

PERIOD OF RECORD.--July 1940 to September 1987 (discontinued).

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 374.0 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 31, 1940, nonrecording gage near same site at different datums.

REMARKS.--No regulation. Several small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--47 years, 176 ft³/s, 25.13 in/yr, 127,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s Feb. 10, 1961, gage height, 14.43 ft, from rating curve extended above 4,700 ft³/s; no flow at times most years.

STATISTICAL SUMMARIES FOR THE PERIOD 1940-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	47	0.0	1967	378	1951	18	62	0.9
Nov	47	2.5	1953	881	1951	162	180	7.6
Dec	47	3.1	1977	1930	1956	459	378	22.1
Jan	47	4.0	1977	1070	1954	505	325	24.4
Feb	47	11	1977	1170	1961	440	253	19.3
Mar	47	67	1978	683	1961	303	174	14.6
Apr	47	18	1977	536	1963	151	112	7.0
May	47	13	1987	301	1963	62	54	3.0
Jun	47	2.9	1987	60	1953	16	10	0.8
Jul	48	0.1	1973	11	1983	3.7	2.8	0.2
Aug	48	0.0	1959	4.6	1947	0.8	1.1	0.0
Sep	48	0.0	1964	5.3	1978	1.1	1.2	0.1
Ann		16	1977	361	1956	176	65	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.2	0.3	0.5	0.7	1.0	1.5	2.9	4.1	5.8	8.2	13	21	39	47
Nov	1.8	3.3	4.5	5.6	7.1	8.9	17	32	52	102	149	216	316	474	752	47
Dec	6.8	29	52	72	90	109	157	214	298	447	546	669	841	1080	1560	47
Jan	48	69	87	107	126	146	192	255	352	494	611	754	930	1230	1790	47
Feb	63	83	101	118	135	153	198	257	342	468	545	656	798	1010	1380	47
Mar	56	69	83	94	107	122	153	187	231	301	367	439	541	673	1010	47
Apr	30	37	42	47	52	58	74	92	117	149	173	202	244	334	498	47
May	13	17	20	22	24	27	32	39	47	57	63	74	89	114	188	47
Jun	2.4	4.1	5.9	7.1	8.3	9.0	11	13	16	18	20	22	25	30	43	47
Jul	0.0	0.1	0.2	0.4	0.6	1.0	1.7	2.8	3.8	4.6	5.1	5.6	6.4	8.1	11	48
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.8	1.0	1.5	1.9	2.3	3.5	48
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.8	1.2	1.5	1.9	2.3	2.9	3.7	48
Ann	0.0	0.2	0.6	1.4	2.7	4.0	12	32	69	125	168	229	322	495	852	

WILLAMETTE RIVER BASIN

14169001 LONG TOM RIVER NEAR ALVADORE, OR

LOCATION.--Lat 44°07'25", long 123°17'55", in SW 1/4 NE 1/4 sec.4, T.17 S., R.5 W., Lane County, Hydrologic Unit 17090003, on left bank 0.2 mi downstream from Fern Ridge Dam, 1.7 mi west of Alvadore, and at mile 25.5.

DRAINAGE AREA.--252 mi², not including Amazon Creek basin.

PERIOD OF RECORD.--August 1939 to 1985. Prior to October 1943, published as "at Smithfield," and October 1943 to September 1959, as "below Fern Ridge Dam, near Smithfield."

REVISED RECORDS.--WSP 1248: 1940-41, 1948.

GAGE.--Water-stage recorder and masonry control. Datum of gage is 332.00 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 21, 1939, nonrecording gage and Sept. 21, 1939, to Sept. 30, 1943, water-stage recorder at site 2.5 mi downstream at datum 11.09 ft lower.

REMARKS.--Flow regulated since 1941 by Fern Ridge Lake (station 14168000). Several small diversions for irrigation upstream from station. Records include diversion to Coyote Creek Channel. Point of diversion is 500 ft upstream and point of return, 2.3 mi downstream. Discharge not adjusted for storage or release from Fern Ridge Lake 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 into Fern Ridge Lake.

COOPERATION.--Gage-height record for Coyote Creek diversion furnished by Corps of Engineers.

AVERAGE DISCHARGE.--46 years, 536 ft³/s, 388,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,500 ft³/s Jan. 1, 1943, gage height, 15.12 ft, site and datum then in use; minimum daily discharge, 2 ft³/s Aug. 7, 1941.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1985

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	25	193	1965	1130	1963	826	225	13.4
Nov	25	268	1965	2180	1974	774	472	12.1
Dec	25	45	1977	3030	1982	1330	783	21.5
Jan	25	31	1977	3270	1965	1300	888	21.1
Feb	25	12	1977	2550	1961	847	646	12.5
Mar	25	4.3	1977	1520	1961	469	486	7.6
Apr	25	4.0	1977	1580	1963	321	404	5.0
May	25	10	1977	825	1963	160	173	2.6
Jun	25	24	1965	136	1984	61	29	1.0
Jul	25	25	1965	69	1979	48	12	0.8
Aug	25	23	1965	176	1977	55	28	0.9
Sep	25	34	1961	916	1964	105	175	1.6
Ann		145.0	1977	996	1974	524	185	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	41	65	258	393	514	619	783	879	956	1060	1120	1190	1300	1410	1590	25
Nov	47	58	109	191	266	353	496	649	820	927	978	1060	1170	1590	2190	25
Dec	51	112	206	278	343	426	584	845	1160	1740	2060	2430	2880	3460	4000	25
Jan	46	58	114	225	288	368	514	722	1050	1500	1870	2300	2860	3740	4310	25
Feb	28	44	46	48	50	54	63	215	559	993	1210	1550	2050	2810	3640	25
Mar	31	40	44	47	49	50	53	56	100	426	631	909	1100	1580	2330	25
Apr	25	35	40	43	46	48	52	56	85	234	305	386	509	824	1550	25
May	24	29	35	43	46	50	54	58	93	151	175	209	256	313	481	25
Jun	27	36	38	40	42	44	47	49	51	54	56	59	65	83	145	25
Jul	26	28	30	33	37	40	45	49	53	58	60	62	65	67	74	25
Aug	26	30	33	37	39	42	50	55	59	62	64	66	68	70	79	25
Sep	31	36	38	39	41	42	49	55	59	63	66	68	72	90	402	25
Ann	28	36	41	45	48	50	57	68	208	488	697	910	1110	1510	2540	

WILLAMETTE RIVER BASIN

14169300 AMAZON CREEK AT EUGENE, OR

LOCATION.--Lat 44°00'45", long 123°04'35", in SW 1/4 SE 1/4 sec.8, T.18 S., R.3 W., Lane County, Hydrologic Unit 17090003, on right bank 145 ft south of intersection of 39th Street and E. Amazon Drive in Eugene, and at mile 20.3.

DRAINAGE AREA.--3.35 mi².

PERIOD OF RECORD.--October 1962 to September 1975.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 442.33 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--13 years, 5.24 ft³/s, 21.24 in/yr, 3,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 527 ft³/s Jan. 19, 1964, gage height, 7.29 ft; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1963-1975

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	13	0.1	1965	2.2	1969	0.7	0.6	1.1
Nov	13	1.1	1968	22	1974	5.8	5.8	9.1
Dec	13	4.5	1964	32	1965	13	7.9	22.5
Jan	13	2.3	1963	27	1970	17	7.7	28.7
Feb	13	2.6	1965	20	1969	8.4	5.5	12.3
Mar	13	1.2	1965	18	1974	8.8	5.4	14.3
Apr	13	0.8	1968	12	1963	4.3	3.5	6.7
May	13	0.3	1966	8.7	1963	1.9	2.3	3.0
Jun	13	0.2	1964	1.2	1969	0.5	0.3	0.8
Jul	13	0.1	1965	1.0	1963	0.3	0.1	0.5
Aug	13	0.1	1964	1.0	1963	0.4	0.3	0.6
Sep	13	0.2	1965	1.0	1963	0.3	0.2	0.5
Ann		2.3	1973	8.8	1974	5.2	1.7	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.5	0.7	1.2	1.8	3.1	13
Nov	0.1	0.2	0.2	0.4	0.5	0.6	1.0	1.6	2.5	4.6	5.8	7.2	13	18	26	13
Dec	0.4	0.8	1.1	1.4	2.0	2.5	3.6	6.0	8.3	13	16	21	28	39	55	13
Jan	0.9	1.5	1.8	2.6	2.6	3.1	4.5	6.7	10	16	19	24	33	46	72	13
Feb	1.4	1.5	2.0	2.3	2.3	2.6	3.4	3.9	5.1	6.7	8.9	12	16	20	29	13
Mar	1.0	1.3	1.5	2.1	2.1	2.5	3.4	4.7	6.1	8.2	9.6	12	15	22	30	13
Apr	0.4	0.6	0.7	0.8	0.9	1.1	1.5	2.0	2.6	3.5	4.1	5.5	7.6	11	17	13
May	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	1.0	1.3	1.5	1.9	2.8	4.1	13
Jun	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.8	1.4	13
Jul	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	13
Aug	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.8	13
Sep	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.4	0.8	1.5	13
Ann	0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.8	1.8	3.2	4.2	5.6	8.2	13	25	

WILLAMETTE RIVER BASIN

14170000 LONG TOM RIVER AT MONROE, OR

LOCATION.--Lat 44°18'50", long 123°17'45", in NE 1/4 sec.33, T.14 S., R.5 W., Benton County, Hydrologic Unit 17090003, on left bank in canalized river channel at Monroe, 110 ft upstream from bridge on State Highway 99W, 0.1 mi downstream from Shafer Creek, and at mile 6.8.

DRAINAGE AREA.--391 mi².

PERIOD OF RECORD.--November 1920 to July 1921, October 1921 to April 1926, November 1926 to May 1927, October 1927 to 1987. Prior to October 1930, published as "near Monroe."

REVISED RECORDS.--WSP 654: Drainage area. WSP 1248: 1923, 1927, 1928(M). WSP 1288: 1952.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 270.57 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1944, nonrecording gage at various sites ranging from present site to 1.5 mi downstream at different datums.

REMARKS.--Flow regulated since 1941 by Fern Ridge Lake (station 14168000). Several small diversions upstream from station.

AVERAGE DISCHARGE.--64 years (water years 1922-25, 1928-87), 770 ft³/s, 557,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,300 ft³/s 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 discharge observed prior to regulation, 7 ft³/s Sept. 29, Oct. 1, 1939.

STATISTICAL SUMMARIES FOR THE PERIOD 1922-1940 (BEFORE THE CONSTRUCTION OF FERN RIDGE DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	15	1937	150	1928	40	31	0.5
Nov	18	19	1940	4270	1925	666	1090	7.8
Dec	18	75	1937	2720	1938	1240	804	15.0
Jan	18	485	1937	4660	1923	1920	1270	23.2
Feb	18	535	1934	4400	1926	2090	1260	23.0
Mar	18	359	1924	3240	1938	1200	731	14.5
Apr	18	165	1926	2330	1937	797	622	9.3
May	17	90	1924	535	1933	240	116	2.9
Jun	17	55	1924	445	1937	123	93	1.4
Jul	17	23	1924	127	1937	50	24	0.6
Aug	17	12	1939	44	1937	24	8.7	0.3
Sep	17	12	1939	39	1933	20	7.1	0.2
Ann		311	1924	1250	1925	703	260	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	13	15	15	16	17	17	20	23	27	32	34	39	58	105	152	18
Nov	18	20	22	24	29	35	57	94	130	200	258	378	663	1390	2380	18
Dec	29	68	90	121	163	200	313	517	779	1090	1430	1830	2510	3740	4970	18
Jan	231	326	417	497	599	737	1040	1310	1660	2030	2270	2600	3140	3760	4590	18
Feb	376	447	524	612	697	821	1160	1590	1970	2470	2790	3110	3430	3970	5250	18
Mar	279	336	384	441	507	565	702	847	1040	1400	1570	1840	2230	2740	3520	18
Apr	151	189	225	253	273	297	377	511	678	893	1010	1210	1430	1760	2880	18
May	94	109	122	133	146	160	181	209	242	283	317	343	389	470	645	17
Jun	50	59	63	67	71	76	85	97	116	132	142	153	169	210	298	17
Jul	23	27	29	31	33	36	41	46	53	59	62	66	73	83	109	17
Aug	13	14	15	16	17	18	20	22	25	28	30	32	35	39	47	17
Sep	12	13	14	15	15	16	17	18	20	22	24	27	31	36	43	17
Ann	15	18	21	26	32	42	79	152	284	532	737	1010	1450	2040	3200	

WILLAMETTE RIVER BASIN

14170000 LONG TOM RIVER AT MONROE, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1942-1987 (AFTER THE COMPLETION OF FERN RIDGE DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	46	27	1942	1890	1948	764	365	8.1
Nov	46	91	1953	3440	1951	978	710	10.0
Dec	46	55	1977	5350	1956	1860	1220	19.7
Jan	46	43	1977	6220	1956	2210	1400	23.4
Feb	46	44	1977	4030	1961	1730	1020	16.7
Mar	46	136	1978	2760	1957	952	698	10.1
Apr	46	54	1977	2280	1963	488	485	5.0
May	46	50	1987	1190	1963	235	225	2.5
Jun	46	28	1987	258	1953	84	48	0.9
Jul	46	23	1965	119	1943	42	15	0.5
Aug	46	20	1944	523	1951	81	96	0.9
Sep	46	12	1943	960	1955	228	269	2.3
Ann		175	1977	1510	1956	802	274	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	28	43	74	151	324	422	590	736	880	1020	1110	1220	1320	1520	1800	46
Nov	59	82	117	178	231	298	446	661	884	1060	1210	1500	1940	2390	3500	46
Dec	100	188	296	366	470	581	835	1230	1810	2620	3040	3420	3850	4400	5030	46
Jan	150	310	413	520	653	794	1120	1660	2360	3100	3440	3880	4380	4930	5860	46
Feb	157	194	226	262	309	388	690	1070	1590	2390	2980	3510	4000	4470	5070	46
Mar	136	168	189	208	225	244	302	398	593	932	1180	1550	2050	2810	3890	46
Apr	85	103	113	124	135	147	174	213	285	396	499	627	821	1120	1920	46
May	55	67	75	81	87	92	104	119	147	215	253	294	370	483	714	46
Jun	33	38	42	45	49	53	60	64	71	81	88	95	106	131	222	46
Jul	23	25	28	30	31	33	36	39	43	47	51	54	57	61	68	46
Aug	21	25	28	30	32	34	37	40	44	51	56	67	99	195	331	46
Sep	24	30	34	37	39	42	48	56	65	103	353	472	587	680	1090	46
Ann	30	36	43	51	63	77	134	244	417	731	926	1200	1690	2580	3940	

UPPER WILLAMETTE RIVER BASIN

14170500 ROCK CREEK NEAR PHILOMATH, OR

LOCATION.--Lat 44°30'05", long 123°26'20, in SW 1/4 NE 1/4 sec.29, T.12 S., R.6 W., Benton County, Hydrologic Unit 17090003, on left bank 600 ft upstream from bridge on State Highway 34, 4.5 mi southwest of Philomath, and at mile 0.4.

DRAINAGE AREA.--14.6 mi².

PERIOD OF RECORD.--October 1945 to September 1952, water years 1953-60 (annual maximum), October 1974 to September 1979.

GAGE.--Water-stage recorder. Datum of gage is 349.08 ft above National Geodetic Vertical Datum of 1929. Prior to October 1974, at site 0.2 mi downstream at datum 5.08 ft higher.

REMARKS.--Flow regulated by small storage reservoir operated by city of Corvallis, most low-water flow diverted to city of Corvallis water supply system.

AVERAGE DISCHARGE.--12 years, 51.2 ft³/s, 47.62 in/yr, 37,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,190 ft³/s Dec. 21, 1955, gage height, 6.82 ft, at site and datum then in use, from rating curve extended above 810 ft³/s, on basis of slope-area measurement of peak flow; maximum gage height, 13.17 ft Dec. 15, 1977; minimum discharge, 0.2 ft³/s Aug 24, 1946, for several days in summers of 1949 and 1950, Sept. 1-3, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1946-1979

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	0.9	1946	80	1948	17	24	2.9
Nov	12	3.7	1977	148	1951	62	43	10.0
Dec	12	4.1	1977	187	1952	107	56	17.7
Jan	12	3.1	1977	215	1951	114	66	18.9
Feb	12	14	1977	256	1949	137	60	20.7
Mar	12	28	1978	154	1950	89	30	14.8
Apr	12	17	1977	84	1948	45	17	7.3
May	12	12	1947	57	1948	27	14	4.5
Jun	12	6.7	1946	17	1947	10	3.5	1.7
Jul	12	2.5	1949	6.5	1978	4.1	1.3	0.7
Aug	12	0.6	1949	5.9	1976	2.1	1.6	0.3
Sep	12	0.5	1952	6.3	1978	2.3	1.9	0.4
Ann		14	1977	72	1951	51	15	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.7	0.7	0.9	1.3	2.0	2.0	2.5	3.1	4.8	6.3	9.4	14	24	41	83	12
Nov	2.2	3.3	4.2	5.2	6.9	9.9	19	31	41	62	82	103	131	158	236	12
Dec	3.4	18	24	36	43	51	63	78	94	117	133	156	187	231	311	12
Jan	2.3	10	20	26	36	47	62	87	107	137	157	183	214	258	338	12
Feb	1.4	25	35	47	56	64	81	105	129	157	172	197	233	305	403	12
Mar	26	32	38	46	52	58	65	73	84	98	108	123	141	165	206	12
Apr	18	20	23	25	26	28	33	39	45	54	60	66	71	82	97	12
May	8.4	11	12	14	14	15	17	20	24	29	32	37	43	53	74	12
Jun	4.5	5.2	5.6	5.6	6.1	6.5	8.1	8.7	11	12	13	14	15	16	21	12
Jul	1.4	1.8	2.0	2.5	2.5	2.7	3.2	3.5	3.8	4.8	5.2	5.2	6.2	6.7	7.8	12
Aug	0.3	0.4	0.5	0.6	0.6	0.7	1.0	1.6	2.2	2.8	2.8	3.1	3.5	3.9	4.8	12
Sep	0.3	0.4	0.4	0.5	0.5	0.5	0.6	1.5	1.9	2.6	2.6	3.0	3.4	5.3	6.1	12
Ann	0.6	1.2	1.9	2.4	3.1	4.8	9.3	18	32	53	66	83	104	139	208	

WILLAMETTE RIVER BASIN

14171000 MARYS RIVER NEAR PHILOMATH, OR

LOCATION.--Lat 44°31'35", long 123°20'00", in NE 1/4 SE 1/4 sec.18, T.12 S., R.5 W., Benton County, Hydrologic Unit 17090003, on left bank 50 ft downstream from bridge on Bellfountain Road, 0.6 mi downstream from Newton Creek, 2.0 mi southeast of Philomath, and at mile 9.4.

DRAINAGE AREA.--159 mi², including drainage area of Evergreen Creek upstream from Bellfountain Road, 1.4 mi south of station.

PERIOD OF RECORD.--October 1940 to September 1985.

GAGE.--Water-stage recorder. Datum of gage is 224.01 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Oct. 1, 1961, nonrecording gage at bridge 50 ft upstream at same datum.

REMARKS.--Records include flow of Evergreen Creek at Bellfountain Road crossing 1.4 mi south of station, with which overflow from Marys River may at times be mingled. Slight regulation by small storage reservoir on Rock Creek from which municipal supply is diverted for city of Corvallis. Other small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--45 years, 462 ft³/s, 39.46 in/yr, 334,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,600 ft³/s Dec. 22, 1964, gage height, 20.72 ft; maximum gage height, 20.91 ft Jan. 15, 1974; minimum discharge, 0.60 ft³/s Aug. 23, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1941-1986

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	45	8.2	1953	568	1948	72	99	1.3
Nov	45	21	1953	1900	1974	483	426	8.6
Dec	45	29	1977	2360	1982	1070	608	19.7
Jan	45	37	1977	2450	1970	1210	678	22.2
Feb	45	83	1977	2400	1949	1070	487	17.9
Mar	45	190	1941	1740	1961	798	382	14.7
Apr	45	160	1977	1130	1963	466	236	8.3
May	45	90	1966	661	1963	223	121	4.1
Jun	45	43	1966	295	1984	95	45	1.7
Jul	45	16	1973	89	1984	36	14	0.7
Aug	45	4.9	1967	35	1968	18	7.7	0.3
Sep	45	6.0	1967	51	1941	19	10	0.4
Ann		103	1977	819	1974	462	141	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	10	12	14	15	17	18	22	27	33	45	55	71	98	152	242	45
Nov	27	35	43	55	66	80	118	187	273	439	591	789	1010	1310	1970	45
Dec	91	166	225	283	339	397	539	699	921	1260	1460	1720	1980	2360	3020	45
Jan	185	249	310	376	432	491	628	801	1030	1290	1510	1770	2110	2620	3900	45
Feb	227	317	369	413	461	510	617	749	937	1200	1390	1590	1890	2310	3070	45
Mar	211	248	284	330	360	397	489	589	715	890	1000	1170	1370	1670	2020	45
Apr	153	180	199	216	237	258	299	348	412	510	566	649	765	901	1180	45
May	85	98	109	117	125	134	154	175	197	227	248	279	323	402	538	45
Jun	41	48	53	58	62	65	72	81	89	100	107	116	131	151	198	45
Jul	15	17	19	21	23	25	29	33	38	43	46	50	55	60	69	45
Aug	5.9	8.6	9.5	11	12	13	14	17	19	22	23	25	27	30	35	45
Sep	6.5	7.3	8.6	9.4	11	12	15	17	19	22	23	26	30	35	48	45
Ann	10	15	19	25	32	43	84	163	273	441	558	709	931	1290	1920	

UPPER WILLAMETTE RIVER BASIN

14172000 CALAPOOIA RIVER AT HOLLEY, OR

LOCATION.--Lat 44°21'05", long 122°47'10", in SE 1/4 sec.15, T.14 S., R.1 W., Linn County, Hydrologic Unit 17090003, on right bank 200 ft downstream from bridge on State Highway 228, 0.3 mi southwest of Holley, 5.0 mi upstream from Brush Creek, and at mile 45.4.

DRAINAGE AREA.--105 mi².

PERIOD OF RECORD.--September 1935 to 1987. Prior to October 1963, published as Calapooya River at Holley.

REVISED RECORDS.--WSP 1044: 1943. WSP 1218: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 527.58 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 7, 1963, nonrecording gage at present site and datum.

REMARKS.--Slight regulation at times during low-water periods by small dam upstream. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--52 years, 437 ft³/s, 56.52 in/yr, 316,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft³/s Dec. 22, 1964, gage height, 14.60 ft; maximum gage height, 15.30 ft Dec. 22, 1964 (backwater from debris); minimum discharge observed, 13 ft³/s Sept. 8, 1940.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	standard deviation	Percent of annual runoff
Oct	52	21	1937	697	1951	144	146	2.8
Nov	52	19	1937	1420	1974	558	360	10.5
Dec	52	60	1977	2410	1965	888	522	17.2
Jan	52	77	1977	1930	1953	867	468	16.8
Feb	52	102	1977	1890	1961	843	350	14.9
Mar	52	190	1941	1360	1972	705	287	13.7
Apr	52	194	1941	1280	1937	554	212	10.4
May	52	119	1987	727	1963	356	157	6.9
Jun	52	65	1940	549	1984	187	104	3.5
Jul	52	35	1940	173	1983	74	30	1.5
Aug	52	21	1940	106	1968	41	14	0.8
sep	52	21	1965	133	1968	48	27	0.9
Ann		189	1977	671	1956	437	105	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	22	25	26	28	32	36	44	55	76	112	137	182	242	347	547	52
Nov	38	55	83	108	133	159	227	314	426	609	712	853	1070	1320	1940	52
Dec	101	174	228	277	321	366	470	595	748	952	1120	1310	1540	1870	2620	52
Jan	163	217	261	303	349	393	472	566	720	934	1070	1250	1480	1810	2620	52
Feb	202	261	307	348	389	431	514	619	762	937	1040	1190	1380	1660	2310	52
Mar	233	275	310	344	374	406	470	558	671	798	880	984	1110	1300	1670	52
Apr	193	230	261	293	321	356	422	487	558	648	697	753	828	954	1140	52
May	112	136	156	174	193	213	254	298	355	419	455	498	556	638	766	52
Jun	66	77	86	94	101	107	124	144	167	199	217	243	273	326	433	52
Jul	36	40	42	45	48	51	58	65	72	82	88	96	107	122	151	52
Aug	24	26	28	29	30	32	35	38	41	46	48	51	55	60	75	52
Sep	21	23	25	26	28	29	31	34	37	42	46	54	67	86	128	52
Ann	27	33	40	49	63	84	149	243	349	476	560	672	819	1050	1510	

WILLAMETTE RIVER BASIN

14173500 CALAPOOIA RIVER AT ALBANY, OR

LOCATION.--Lat 44°37'15", long 123°07'40", in NW 1/4 sec.13, T.11 S., R.4 W., Linn County, Hydrologic Unit 17090003, near right bank on downstream side of bridge on Riverside Drive at Albany, 0.6 mi downstream from Oak Creek, and at mile 3.0.

DRAINAGE AREA.--372 mi².

PERIOD OF RECORD.--October 1940 to September 1981. Prior to October 1963, published as "Calapooya River at Albany".

GAGE.--Water-stage recorder. Datum of gage is 180.85 ft above National Geodetic Vertical Datum of 1929. Prior to May 11, 1962, nonrecording gage at same site and datum.

REMARKS.--Higher flows are affected by backwater from Willamette River at times. Diurnal fluctuation caused by ponds at flourmills near Shedd. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--41 years, 895 ft³/s, 32.67 in/yr, 648,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 32,700 ft³/s Dec. 22, 1955, gage height, 22.12 ft; maximum gage height, 25.5 ft Jan. 2, 1943, from graph based on gage readings (backwater from Willamette River); minimum discharge, 3.5 ft³/s Sept. 7, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1941-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	41	19	1953	1290	1951	201	282	1.9
Nov	41	34	1953	3410	1951	1040	830	9.5
Dec	41	69	1977	5690	1965	2120	1340	20.1
Jan	41	102	1977	4210	1970	2280	1230	21.6
Feb	41	108	1977	4870	1961	1850	917	16.0
Mar	41	358	1965	3020	1961	1450	730	13.7
Apr	41	279	1942	2140	1955	914	438	8.4
May	41	174	1947	1600	1963	537	299	5.1
Jun	41	84	1966	586	1981	228	107	2.1
Jul	41	38	1967	227	1969	84	37	0.8
Aug	41	15	1967	103	1968	40	16	0.4
Sep	41	17	1967	157	1968	49	33	0.5
Ann		243	1977	1520	1974	896	263	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	19	24	27	30	33	37	47	65	92	132	164	209	282	416	725	41
Nov	49	76	104	137	171	205	296	427	588	897	1160	1540	2090	2730	4230	41
Dec	166	270	393	504	607	714	969	1300	1720	2370	2800	3360	4030	4910	6770	41
Jan	296	428	522	614	711	806	1030	1330	1770	2440	2920	3480	4240	5230	7560	41
Feb	352	476	567	645	721	795	974	1230	1590	2110	2410	2790	3330	4140	5220	41
Mar	345	427	499	566	630	687	838	1010	1250	1530	1790	2110	2490	3130	3960	41
Apr	265	320	375	429	480	522	621	713	838	991	1090	1230	1410	1750	2250	41
May	157	188	217	242	269	299	355	414	483	571	630	700	792	950	1330	41
Jun	84	99	111	121	130	139	160	184	213	249	269	296	336	392	511	41
Jul	29	37	42	46	51	57	66	73	82	94	102	110	121	140	175	41
Aug	15	18	21	23	26	28	31	34	38	46	50	55	62	70	81	41
Sep	15	18	21	23	25	26	30	33	37	46	53	62	75	100	151	41
Ann	24	31	41	55	73	101	194	346	550	806	1000	1270	1700	2380	3780	

WILLAMETTE RIVER BASIN

14174000 WILLAMETTE RIVER AT ALBANY, OR

LOCATION.--Lat 44°38'20", long 123°06'20", in SW 1/4 sec.6, T.11 S., R.3 W., Linn County, Hydrologic Unit 17090003, on right bank 5 ft upstream from bridge on U.S. Highway 20 (Ellsworth Street) in Albany, 0.2 mi downstream from Calapooia River, and at mile 119.31.

DRAINAGE AREA.--4,840 mi², approximately.

PERIOD OF RECORD.--November 1878 to April 1888 (fragmentary), January to June 1892, November 1892 to September 1894, December 1894 to 1987. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--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). WSP 1318 (monthly and annual figures only): 1894, 1897, 1901-3, 1907-8, 1910, 1916, 1918-19, 1923, 1927.

GAGE.--Water-stage recorder. Datum of gage is 167.18 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 27, 1906, nonrecording gage at site 0.2 mi upstream at datum 5.00 ft higher. Sept. 27, 1906, to Nov. 12, 1934, nonrecording gage at site 300 ft upstream at datum 5.00 ft higher. Nov. 14, 1934, to Sept. 30, 1962, at datum 5.00 ft higher.

REMARKS.--Flow regulated by nine reservoirs upstream from station. Albany power canal diverts water from South Santiam River at Lebanon and discharges into Calapooia River near mouth; small diversions for irrigation and municipal water supply.

AVERAGE DISCHARGE.--93 years (water years 1894, 1896-87), 14,480 ft³/s, 40.63 in/yr, 10,490,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 266,000 ft³/s Jan. 14, 1881, gage height, 37.8 ft, present datum; minimum discharge, 1,840 ft³/s Sept. 1, 2, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 4, 1861, reached a stage of 41.0 ft, discharge, 340,000 ft³/s, from rating curve extended above 220,000 ft³/s. Flood of Feb. 4, 1890, reached a stage of 38.9 ft, discharge, 291,000 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1894-1941 (BEFORE THE CONSTRUCTION OF NINE RESERVOIRS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	47	2310	1937	16400	1894	4420	2670	2.8
Nov	47	2240	1937	42900	1897	13500	9780	8.2
Dec	46	5000	1937	41000	1903	20800	9530	13.1
Jan	48	6610	1937	54400	1894	27200	12400	17.1
Feb	48	8540	1931	50100	1907	25000	11300	14.3
Mar	48	6850	1941	51000	1904	21700	9760	13.6
Apr	48	7070	1926	38000	1937	18000	7120	11.0
May	48	5970	1934	28900	1896	13100	4710	8.2
Jun	48	3320	1926	22700	1933	9580	4350	5.8
Jul	48	2500	1926	10800	1916	5210	2020	3.3
Aug	48	2030	1940	5770	1899	3310	776	2.1
Sep	48	2150	1931	6600	1920	3310	898	2.0
Ann		8020	1931	19000	1904	13500	3130	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2420	2570	2720	2830	2940	3110	3250	3500	4010	4410	4960	5640	7180	10300	--	47
Nov	2490	2920	3270	3600	3940	4300	5580	7090	9080	12800	15600	19500	25000	32100	46200	47
Dec	4900	6010	7250	8270	9350	10500	12800	15400	18400	22800	25800	29700	35700	43600	57100	46
Jan	7470	9300	10600	11700	12800	14100	17200	20200	23900	28800	31700	35600	41900	52400	73000	48
Feb	8130	9750	10900	12200	13600	14600	16800	19400	22600	27200	30400	34500	38800	45600	60600	48
Mar	7970	9520	10500	11400	12200	13200	15200	17500	20500	23700	26000	28600	32800	37700	50500	48
Apr	7490	8870	10100	10900	11500	12100	13800	15700	18000	20600	22000	23900	26400	29200	34400	48
May	6070	7070	7860	8570	9240	9840	11100	12400	13900	15500	16500	17600	18900	20900	24100	48
Jun	3910	4840	5390	5820	6320	6690	7520	8390	9480	10900	11900	13000	14400	15900	19100	48
Jul	2720	2990	3260	3460	3660	3860	4210	4610	5010	5580	5930	6450	7210	8350	10600	48
Aug	2240	2440	2570	2650	2790	2860	2970	3170	3320	3580	3730	3890	4090	4460	5030	48
Sep	2210	2320	2400	2500	2610	2700	2870	3030	3220	3390	3570	3900	4120	4450	5210	48
Ann	2530	2880	3180	3510	3880	4490	6690	9360	12100	15300	17400	20000	23500	28900	40400	

WILLAMETTE RIVER BASIN

14174000 WILLAMETTE RIVER AT ALBANY, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1969-1987 (AFTER THE COMPLETION OF NINE RESERVOIRS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	7450	1978	11800	1985	9460	1300	5.4
Nov	19	7130	1979	40900	1985	18300	9620	10.1
Dec	19	4150	1977	55400	1982	31100	14000	17.7
Jan	19	3900	1977	45100	1971	28400	12800	16.2
Feb	19	3210	1977	38600	1986	22400	9820	11.6
Mar	19	6810	1978	43300	1972	18100	9510	10.3
Apr	19	5630	1977	23500	1974	13700	5670	7.6
May	19	4730	1973	17400	1984	10600	3500	6.0
Jun	19	4090	1987	18300	1984	8400	3610	4.6
Jul	19	4080	1978	7330	1969	5370	1040	3.1
Aug	19	4520	1987	7310	1971	5580	748	3.2
Sep	19	5150	1987	8990	1972	7390	1190	4.1
Ann		5810	1977	22600	1974	14900	4200	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	6560	7070	7380	7670	8100	8320	8610	8940	9340	9840	10200	10600	11100	12400	14000	19
Nov	6920	7680	8390	9030	9830	10500	11800	13200	14800	18300	20800	27200	34700	39700	47100	19
Dec	4900	8670	10400	12700	14600	18000	23800	30400	35600	42400	45400	48100	51900	55900	60800	19
Jan	5110	8040	10200	12500	14100	15700	19400	24100	28900	34900	38700	44300	49900	55500	64800	19
Feb	4350	7120	8260	9230	10500	11700	14400	18200	21800	27300	31400	35100	40000	44900	54100	19
Mar	6540	7310	7960	8600	9190	9740	11400	13600	16300	20300	23500	26600	31500	36600	43300	19
Apr	5950	6440	6790	7210	7920	8810	10200	11500	13500	15500	16400	17600	19700	22900	29400	19
May	4520	5560	6280	6790	7540	8130	8970	10200	11600	12500	13000	13600	14400	15800	17600	19
Jun	4040	4300	4660	5040	5310	5590	6460	7280	8050	8900	10100	11100	12400	14100	15900	19
Jul	4090	4160	4240	4310	4400	4500	4870	5150	5370	5610	5760	5980	6310	6710	7790	19
Aug	4350	4620	4820	4910	4980	5070	5270	5420	5570	5810	5970	6130	6510	6910	7340	19
Sep	5050	5310	5590	5810	6060	6460	6910	7340	7950	8350	8510	8700	8920	9190	9710	19
Ann	4490	5110	5510	6020	6570	7150	8310	9520	11600	14600	17000	20600	26200	35200	47200	

NORTH SANTIAM RIVER BASIN

14178000 NORTH SANTIAM RIVER BELOW BOULDER CREEK, NEAR DETROIT, OR

LOCATION.--Lat 44°42'25", long 122°06'00", in SE 1/4 NW 1/4 sec.17, T.10 S., R.6 E., Marion County, Hydrologic Unit 17090005, on right bank 0.5 mi downstream from Boulder Creek, 3.0 mi southeast of Detroit, and at mile 70.7.

DRAINAGE AREA.--216 mi².

PERIOD OF RECORD.--January 1907 to October 1909, October 1928 to 1987. Monthly discharge only January 1907, published in WSP 1318. Prior to October 1952, published as "at Detroit."

REVISED RECORDS.--WSP 814: Drainage area at former site. WSP 1248: 1931. WRD OR-85-2: 1982-82(P).

GAGE.--Water-stage recorder. Datum of gage is 1,590.07 ft above National Geodetic Vertical Datum of 1929. See WSP 1738 for history of changes prior to Oct. 1, 1952.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--61 years, 1,007 ft³/s, 63.31 in/yr, 729,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,700 ft³/s Dec. 22, 1964, slope-area measurement of peak flow, gage height, 13.76 ft, temporary backwater from debris; minimum discharge, 250 ft³/s Sept. 13, 1909.

STATISTICAL SUMMARIES FOR THE PERIOD 1907-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	62	312	1981	1210	1951	521	180	4.4
Nov	61	336	1937	2170	1951	985	471	8.0
Dec	61	432	1977	3840	1965	1390	714	11.7
Jan	62	383	1937	2990	1953	1310	585	11.0
Feb	62	404	1977	2820	1961	1310	575	10.0
Mar	62	616	1941	2870	1972	1160	396	9.7
Apr	62	610	1941	2140	1943	1330	343	10.8
May	62	701	1940	2760	1949	1440	463	12.1
Jun	62	441	1940	2760	1933	1120	490	9.1
Jul	62	375	1940	1100	1950	637	172	5.4
Aug	62	326	1931	663	1974	478	81	4.0
Sep	62	309	1909	595	1971	442	67	3.6
Ann		569	1977	1510	1974	1010	197	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	322	341	356	369	382	394	420	446	476	511	530	570	650	781	1000	25
Nov	358	396	427	462	494	521	589	687	819	1020	1150	1310	1550	1900	2510	25
Dec	454	520	586	649	708	764	871	1000	1190	1410	1570	1770	2040	2590	3620	25
Jan	497	585	640	679	718	759	867	1010	1160	1360	1500	1640	1880	2280	3050	25
Feb	536	596	643	693	747	803	904	1020	1170	1370	1490	1650	1870	2290	3050	25
Mar	619	692	737	771	803	838	913	999	1110	1210	1300	1400	1550	1820	2280	25
Apr	733	801	853	904	946	987	1110	1230	1370	1510	1600	1700	1820	2000	2300	25
May	707	797	877	959	1030	1100	1230	1370	1520	1670	1760	1880	2030	2210	2450	25
Jun	524	575	620	667	712	757	871	995	1110	1260	1360	1490	1640	1820	2170	25
Jul	406	433	457	476	494	513	549	586	629	688	725	771	840	921	1050	25
Aug	348	370	386	400	414	427	450	468	491	520	535	552	578	602	630	25
Sep	331	347	361	374	387	398	417	438	460	477	487	499	518	540	571	25
Ann	371	407	442	475	511	549	658	790	941	1130	1250	1390	1570	1830	2310	

NORTH SANTIAM RIVER BASIN

14179000 BREITENBUSH RIVER ABOVE FRENCH CREEK, NEAR DETROIT, OR

LOCATION.--Lat 44°45'10", long 122°07'40", in SE 1/4 NE 1/4 sec.36, T.9 S., R.5 E., Marion County, Hydrologic Unit 17090005, in Willamette National Forest, on left bank 600 ft upstream from Canyon Creek, 1.5 mi northeast of Detroit, and at mile 2.0.

DRAINAGE AREA.--108 mi², at measuring cable 0.2 mi downstream from gage.

PERIOD OF RECORD.--June 1932 to September 1987 (discontinued). Monthly discharge only June 1932, published in WSP 1318. Published as "above Canyon Creek, near Detroit" from October 1952 to September 1984.

REVISED RECORDS.--WSP 1044: 1943(M). WSP 1248: 1947. WRD OR-85-2: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,573.95 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1952, at site 0.2 mi downstream at datum 13.46 ft lower.

REMARKS.--No regulation or diversion upstream from station. All records given herein are for measuring site 0.2 mi downstream from gage.

AVERAGE DISCHARGE.--55 years, 576 ft³/s, 72.43 in/yr, 417,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,900 ft³/s Dec. 22, 1964, gage height, 14.55 ft; minimum discharge, 87 ft³/s Sept. 2, 1940.

STATISTICAL SUMMARIES FOR THE PERIOD 1932-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	55	104	1945	827	1948	262	159	3.9
Nov	55	106	1937	1500	1943	667	369	9.5
Dec	55	163	1977	2390	1965	921	507	13.6
Jan	55	142	1937	2130	1953	846	449	12.5
Feb	55	175	1977	1870	1982	807	402	10.8
Mar	55	289	1941	1870	1972	679	259	10.0
Apr	55	295	1941	1280	1949	778	254	11.1
May	55	344	1934	1630	1949	785	276	11.6
Jun	56	202	1934	1560	1933	575	271	8.2
Jul	56	129	1940	532	1933	286	105	4.2
Aug	56	98	1940	264	1974	171	41	2.5
Sep	56	103	1934	267	1971	157	36	2.2
Ann		276	1977	892	1974	576	125	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	102	109	117	124	129	134	146	164	188	227	263	310	387	510	748	55
Nov	120	146	185	210	234	259	323	411	526	693	808	951	1170	1500	2030	55
Dec	201	257	311	352	390	427	503	601	730	929	1050	1220	1460	1870	2710	55
Jan	211	258	291	318	346	376	460	575	698	865	989	1130	1340	1670	2440	55
Feb	239	282	320	355	389	423	484	562	667	822	923	1050	1260	1600	2220	55
Mar	301	332	357	378	404	433	494	560	640	729	792	876	1000	1180	1500	55
Apr	339	380	419	461	496	531	606	694	789	895	958	1030	1130	1280	1510	55
May	340	389	443	486	528	568	642	718	804	906	964	1040	1130	1260	1490	55
Jun	240	279	308	333	355	378	439	495	562	649	698	751	826	945	1180	56
Jul	141	156	167	179	188	200	227	257	286	323	349	380	423	473	536	56
Aug	112	120	126	131	136	141	150	159	172	187	196	207	220	238	264	56
Sep	104	111	116	121	125	129	137	144	152	163	170	179	190	206	255	56
Ann	121	138	155	176	205	243	325	410	513	640	721	818	952	1160	1560	

NORTH SANTIAM RIVER BASIN

14181500 NORTH SANTIAM RIVER AT NIAGARA, OR

LOCATION.--Lat 44°45'10", long 122°17'50", in NE 1/4 NE 1/4 sec.34, T.9 S., R.4 E., Linn County, Hydrologic Unit 17090005, on left bank 0.1 mi downstream from Little Sardine Creek, 0.8 mi downstream from Big Cliff Dam, 2.1 mi east of Niagara, and at mile 57.3.

DRAINAGE AREA.--453 mi².

PERIOD OF RECORD.--December 1908 to January 1920, October 1921 to March 1922, October 1938 to 1987.
Monthly discharge only for some periods, published in WSP 1318. Published as "North Fork of Santiam River near Niagara" prior to October 1913, and as "above Mayflower Creek, near Detroit" October 1938 to September 1952.

REVISED RECORDS.--WSP 1288: 1914-18, 1920. WSP 1718: 1953-54.

GAGE.--Water-stage recorder. Datum of gage is 1,093.78 ft above National Geodetic Vertical Datum of 1929 (Federal Highway Administration bench mark). See WSP 1738 for history of changes prior to Oct. 1, 1952.

REMARKS.--Flow regulated since 1953 by Detroit Lake (station 14180500) and Big Cliff Reservoir, usable capacity for re-regulating purposes, 2,930 acre-ft. No diversion upstream from station.

AVERAGE DISCHARGE.--59 years (water years 1910-19, 1939-87), 2,332 ft³/s, 69.91 in/yr, 1,690,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 63,200 ft³/s Nov. 22, 1909, gage height, 16.4 ft, from floodmark, site and datum then in use, from rating curve extended above 35,000 ft³/s; minimum discharge, 19 ft³/s Aug. 21, 1963; minimum daily, 395 ft³/s Mar. 25, 26, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1912-1952 (BEFORE THE CONSTRUCTION OF DETROIT AND BIG CLIFF DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	22	491	1946	2920	1948	1150	717	4.3
Nov	22	511	1940	5230	1943	2650	1330	9.6
Dec	22	955	1945	9570	1918	3240	2030	12.2
Jan	22	1060	1949	6580	1912	2950	1420	11.1
Feb	22	1450	1941	6080	1916	3190	1170	10.9
Mar	22	1230	1941	5350	1916	2660	926	10.0
Apr	22	1180	1941	5260	1919	3180	1060	11.6
May	22	1390	1940	5690	1949	3130	1230	11.8
Jun	22	721	1940	6100	1917	2280	1240	8.3
Jul	22	547	1940	3180	1916	1240	657	4.7
Aug	22	461	1940	1280	1916	761	211	2.9
Sep	22	501	1940	1280	1912	737	219	2.7
Ann		1340	1941	3470	1916	2260	541	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	481	504	528	558	592	657	746	850	1050	1260	1460	1850	2200	2940	--	22
Nov	549	644	829	968	1090	1180	1370	1680	2090	2770	3220	3810	4730	5500	7850	22
Dec	947	1170	1300	1410	1530	1670	1920	2180	2550	3050	3410	3880	4670	5980	9880	22
Jan	1070	1220	1300	1370	1450	1530	1730	2040	2400	2940	3330	3970	4780	5860	7410	22
Feb	1180	1340	1500	1610	1710	1840	2110	2350	2790	3410	3790	4370	5070	6080	7720	22
Mar	1230	1350	1460	1550	1620	1730	1970	2260	2530	2930	3200	3550	3940	4660	5550	22
Apr	1430	1710	1890	2030	2180	2320	2590	2980	3410	3770	3980	4240	4540	4860	5490	22
May	1300	1520	1660	1840	2020	2160	2510	2900	3270	3720	3970	4290	4550	4970	5700	22
Jun	940	1060	1160	1250	1360	1450	1650	1890	2190	2590	2750	3070	3520	4150	5220	22
Jul	586	661	703	754	800	829	918	1010	1140	1290	1370	1450	1660	2130	2750	22
Aug	505	532	552	575	595	619	648	720	767	829	865	894	957	1040	1170	22
Sep	482	500	518	536	574	588	623	669	707	757	790	847	900	1010	1290	22
Ann	534	614	698	786	904	1070	1350	1680	2060	2550	2860	3230	3760	4530	5780	

NORTH SANTIAM RIVER BASIN

14181500 NORTH SANTIAM RIVER AT NIAGARA, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1954-1987 (AFTER THE COMPLETION OF DETROIT AND BIG CLIFF DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	34	1840	1981	3830	1960	2530	502	9.1
Nov	34	2200	1979	6110	1985	3760	1120	13.0
Dec	34	932	1977	9210	1978	4120	1880	14.8
Jan	34	879	1977	7890	1956	3490	1650	12.5
Feb	34	665	1977	5840	1970	2260	1360	7.4
Mar	34	508	1977	6990	1972	1810	1200	6.5
Apr	34	465	1977	3690	1960	1780	772	6.2
May	34	651	1973	4030	1969	2420	964	8.7
Jun	34	681	1973	4260	1955	1930	879	6.7
Jul	34	848	1978	1870	1955	1210	243	4.3
Aug	34	837	1957	1720	1969	1200	225	4.3
Sep	34	1440	1961	2500	1984	1890	307	6.6
Ann		1200	1977	3480	1974	2370	476	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1520	1780	1950	2020	2080	2130	2230	2350	2470	2670	2820	2950	3060	3370	4340	34
Nov	1660	2070	2190	2340	2530	2720	2930	3080	3410	4160	4660	4930	5200	6120	8720	34
Dec	1010	1290	1520	1690	1900	2100	2670	3080	4390	5110	5290	5470	6850	8750	10400	34
Jan	945	1040	1110	1200	1360	1570	2160	2870	3360	4610	4960	5220	5450	6050	9370	34
Feb	896	957	975	993	1010	1030	1080	1160	1420	2040	2600	3030	3870	4950	7390	34
Mar	853	924	946	967	989	1010	1050	1090	1170	1490	1770	2520	3010	3880	4750	34
Apr	712	915	975	997	1020	1040	1100	1230	1550	2060	2280	2640	2880	3170	4150	34
May	764	969	1020	1090	1250	1460	1870	2250	2680	2980	3110	3370	3810	4230	5070	34
Jun	921	988	1020	1050	1100	1180	1330	1510	1810	2160	2400	2660	2970	3430	4190	34
Jul	867	924	957	979	997	1010	1040	1120	1180	1240	1290	1440	1540	1670	1950	34
Aug	863	951	975	994	1010	1030	1060	1120	1180	1230	1270	1330	1400	1530	2050	34
Sep	1010	1080	1210	1260	1410	1500	1730	1980	2100	2230	2320	2410	2520	2670	2890	34
Ann	905	982	1020	1060	1100	1170	1400	1800	2180	2640	2880	3120	3780	4720	5660	

NORTH SANTIAM RIVER BASIN

14182500 LITTLE NORTH SANTIAM RIVER NEAR MEHAMA, OR

LOCATION.--Lat 44°47'30", long 122°34'40", in NW 1/4 sec.16, T.9 S., R.2 E., Marion County, Hydrologic Unit 17090005, on left bank 2.0 mi east of Mehama and at mile 2.0.

DRAINAGE AREA.--112 mi² at cableway 1.2 mi downstream where all discharge measurements are made.

PERIOD OF RECORD.--October 1931 to 1987. Records for July to September 1924 and July to September 1931 at site 4 mi upstream not equivalent owing to difference in drainage areas.

REVISED RECORDS.--WSP 754: 1932. WSP 1218: 1934, 1936, 1949-50. WSP 1935: Maximum only, 1932-34, 1936, 1938, 1943, 1945-49, 1950(M,P), 1951-53(M), 1954(M,P), 1955(M), 1956(M,P), 1957(M), 1958-59(M,P). WSP 2135: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 655.41 ft above National Geodetic Vertical Datum of 1929. Prior to June 12, 1948, nonrecording gage at about same site and datum.

REMARKS.--No regulation or diversion upstream from station. Records herein are for measuring site.

AVERAGE DISCHARGE.--56 years, 764 ft³/s, 92.64 in/yr, 553,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft³/s Dec. 22, 1964, gage height, 16.73 ft, from rating curve extended above 17,000 ft³/s; minimum discharge, 13 ft³/s Aug. 30, 1961.

STATISTICAL SUMMARIES FOR THE PERIOD 1932-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	56	26	1953	1590	1948	417	358	4.6
Nov	56	25	1937	3120	1943	1150	666	12.3
Dec	56	193	1977	3680	1965	1480	757	16.4
Jan	56	218	1937	3610	1953	1350	709	15.0
Feb	56	260	1977	2580	1961	1210	552	12.2
Mar	56	302	1941	2650	1932	1030	435	11.4
Apr	56	268	1941	1710	1937	974	300	10.5
May	56	241	1947	1440	1949	814	303	9.0
Jun	56	80	1940	1680	1933	467	301	5.0
Jul	56	45	1940	547	1983	136	87	1.5
Aug	56	19	1961	432	1968	65	57	0.7
Sep	56	24	1987	490	1959	115	116	1.2
Ann		400	1977	1150	1974	765	161	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	27	33	40	46	54	65	96	141	205	338	440	587	807	1140	1740	56
Nov	91	147	206	254	312	378	527	691	911	1250	1470	1750	2120	2670	3740	56
Dec	226	317	395	478	543	607	740	914	1160	1480	1700	2010	2450	3190	4720	56
Jan	242	313	368	417	469	529	673	822	1030	1370	1600	1880	2290	2960	4260	56
Feb	242	334	393	450	507	562	670	799	972	1220	1380	1610	1990	2620	3930	56
Mar	304	373	425	471	512	561	659	796	947	1150	1280	1440	1650	2010	2460	56
Apr	342	418	473	534	604	655	757	871	981	1120	1190	1280	1410	1600	1970	56
May	253	336	391	434	477	517	615	726	825	945	1030	1130	1240	1410	1710	56
Jun	102	127	153	178	199	222	275	337	411	511	577	647	743	886	1220	56
Jul	44	50	55	61	66	72	85	99	117	144	160	182	214	260	366	56
Aug	27	31	33	35	37	39	42	46	51	59	64	71	80	95	141	56
Sep	25	27	29	31	32	35	40	48	61	83	100	129	171	266	456	56
Ann	33	44	59	83	119	175	324	473	638	834	972	1138	1352	1731	2490	

NORTH SANTIAM RIVER BASIN

14183000 NORTH SANTIAM RIVER AT MEHAMA, OR

LOCATION.--Lat 44°47'20", long 122°37'00", in NW 1/4 sec.18, T.9 S., R.2 E., Marion County, Hydrologic Unit 17090005, on right bank 300 ft downstream from highway bridge at Mehama, 0.5 mi downstream from Little North Santiam River, and at mile 38.71.

DRAINAGE AREA.--655 mi², at cableway 0.8 mi downstream, where all discharge measurements are made.

PERIOD OF RECORD.--July 1905 to March 1907, October 1910 to September 1914, September 1921 to 1987.
Monthly discharge only September 1921, published in WSP 1318. Prior to October 1913, published as North Fork of Santiam River at Mehama.

REVISED RECORDS.--WSP 739: 1922-23(M). WSP 1044: 1943. WSP 1248: 1906, 1911-14, 1924(M), 1926, 1934-36(M), 1937, 1938(M), 1942(M). WSP 2135: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 602.49 ft above National Geodetic Vertical Datum of 1929. Prior to June 15, 1933, nonrecording gage at site 100 ft upstream at same datum.

REMARKS.--Flow regulated since 1953 by Detroit Lake (station 14180500) and Big Cliff Reservoir, usable capacity for re-regulating purposes, 2,930 acre-ft. No diversion upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--71 years (water years 1906, 1911-14, 1922-87), 3,374 ft³/s, 2,444,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 76,600 ft³/s Dec. 28, 1945, gage height, 15.37 ft, from rating curve extended above 36,000 ft³/s, on basis of slope-area measurement 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, 254 ft³/s Aug. 3, 1970; minimum daily, 420 ft³/s Sept. 18, 1924.

STATISTICAL SUMMARIES FOR THE PERIOD 1906-1952 (BEFORE THE CONSTRUCTION OF DETROIT AND BIG CLIFF DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	37	526	1937	5040	1948	1660	1140	4.3
Nov	37	495	1930	10300	1907	4420	2780	11.2
Dec	37	1480	1945	10000	1934	4830	2050	12.6
Jan	37	1030	1937	11200	1912	4870	2450	12.7
Feb	37	1880	1929	11400	1907	4990	2460	11.9
Mar	37	1690	1941	9470	1932	4270	1460	11.2
Apr	36	1600	1941	7560	1937	4540	1450	11.5
May	36	1750	1926	7950	1949	4210	1630	11.0
Jun	36	852	1940	7800	1933	2830	1480	7.2
Jul	36	626	1940	2260	1913	1240	438	3.2
Aug	36	507	1924	1520	1912	781	196	2.0
Sep	37	508	1931	1910	1927	861	352	2.2
Ann		2060	1941	4350	1943	3250	702	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	543	567	600	635	683	797	961	1180	1520	1770	2150	2750	3530	4980	--	37
Nov	533	724	970	1150	1330	1510	1940	2510	3250	4530	5560	6740	8000	10100	14800	37
Dec	1210	1580	1850	2120	2350	2560	2990	3500	4110	4950	5460	6170	7400	9240	13000	37
Jan	1380	1730	1930	2110	2290	2470	2890	3360	4060	5000	5660	6620	8060	9640	12700	37
Feb	1570	1770	1940	2150	2330	2510	2950	3480	4190	5180	5820	6790	8360	10100	13700	37
Mar	1750	2040	2220	2390	2560	2750	3120	3610	4060	4660	5050	5520	6190	7210	9030	37
Apr	1930	2210	2430	2740	3020	3230	3800	4230	4770	5280	5580	5940	6370	6930	7810	36
May	1550	1900	2160	2420	2640	2890	3480	3990	4480	5010	5310	5670	6100	6700	7800	36
Jun	956	1180	1320	1450	1590	1760	2070	2430	2810	3210	3500	3810	4240	4830	6270	36
Jul	638	702	769	817	859	910	1000	1110	1210	1360	1440	1560	1730	1950	2380	36
Aug	512	548	585	613	636	655	711	753	797	842	876	915	957	1010	1140	36
Sep	499	529	557	584	605	626	671	715	761	817	859	922	1050	1300	1770	37
Ann	570	659	748	860	1010	1230	1770	2330	2950	3740	4200	4780	5560	6670	8960	

NORTH SANTIAM RIVER BASIN

14183000 NORTH SANTIAM RIVER AT MEHAMA, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1954-1987 (AFTER THE COMPLETION OF DETROIT AND BIG CLIFF DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	34	1950	1981	5110	1960	2980	848	7.2
Nov	34	2500	1977	9860	1974	5400	1960	12.6
Dec	34	1180	1977	14300	1978	6480	3080	15.7
Jan	34	1210	1977	11400	1956	5610	2580	13.6
Feb	34	1050	1977	9200	1961	4140	2100	9.1
Mar	34	1580	1965	10900	1972	3370	1780	8.1
Apr	34	1620	1973	5710	1960	3200	1110	7.5
May	34	1140	1973	5900	1960	3550	1250	8.6
Jun	34	1020	1973	5520	1955	2590	1220	6.1
Jul	34	1020	1987	2530	1983	1430	358	3.5
Aug	34	918	1957	1830	1968	1310	242	3.2
Sep	34	1490	1966	2800	1959	2040	367	4.8
Ann		1740	1977	5250	1974	3510	751	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1730	1880	2000	2100	2160	2210	2360	2520	2730	3120	3340	3620	4030	4680	6050	34
Nov	2160	2430	2680	2950	3200	3410	3850	4410	5360	6270	6690	7500	8700	10300	12000	34
Dec	1620	2110	2420	2770	3140	3510	4270	5880	6670	7920	8770	9950	11400	12800	14300	34
Jan	1440	1670	1900	2170	2430	2920	3920	4920	6130	6940	7560	8370	9310	10800	12800	34
Feb	1410	1590	1730	1860	1960	2080	2380	2780	3530	4440	5150	6100	7010	8690	12000	34
Mar	1510	1600	1690	1770	1860	1950	2150	2420	2820	3440	3950	4590	5410	6430	8060	34
Apr	1460	1620	1720	1820	1920	2070	2360	2710	3120	3690	4070	4400	4820	5430	6200	34
May	1410	1650	1800	2010	2260	2440	2880	3330	3720	4200	4450	4830	5310	5940	6810	34
Jun	1120	1240	1330	1380	1450	1540	1760	2030	2340	2850	3220	3610	4010	4700	5690	34
Jul	992	1050	1080	1110	1130	1160	1220	1280	1350	1470	1550	1690	1860	2070	2380	34
Aug	957	1000	1030	1060	1080	1110	1170	1240	1290	1360	1420	1470	1530	1650	2100	34
Sep	1070	1250	1330	1440	1540	1610	1850	2010	2170	2350	2460	2570	2710	2920	3170	34
Ann	1110	1230	1360	1500	1650	1820	2150	2480	3020	3780	4280	5030	6010	7090	9700	

SOUTH SANTIAM RIVER BASIN

14185000 SOUTH SANTIAM RIVER BELOW CASCADIA, OR

LOCATION.--Lat 44°23'35", long 122°30'35", in SE 1/4 sec.36, T.13 S., R.2 E., Linn County, Hydrologic Unit 17090006, on left bank 100 ft downstream from bridge at Cascadia ranger station, 0.5 mi downstream from Mouse Creek, 0.5 mi upstream from Deer Creek, 1.5 mi southwest of Cascadia, and at mile 48.5.

DRAINAGE AREA.--174 mi², at cableway 0.7 mi upstream, where all discharge measurements are made.

PERIOD OF RECORD.--September 1935 to 1987. Monthly discharge only September 1935, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 759.88 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 1, 1935, nonrecording gage.

REMARKS.--No regulation or diversion upstream from station. All records given herein are for measuring site.

AVERAGE DISCHARGE.--52 years, 821 ft³/s, 64.08 in/yr, 594,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,600 ft³/s Dec. 22, 1964, gage height, 19.68 ft, from rating curve extended above 14,000 ft³/s; minimum discharge, 23 ft³/s Dec. 1, 2, 1936.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	52	33	1937	1300	1951	319	290	3.3
Nov	52	27	1937	2440	1943	1100	675	11.0
Dec	52	82	1977	4320	1965	1540	906	15.9
Jan	52	107	1977	3280	1953	1440	797	14.9
Feb	52	131	1977	3260	1961	1400	646	13.2
Mar	52	323	1941	2910	1972	1150	474	11.9
Apr	52	356	1941	2050	1937	1110	342	11.1
May	52	282	1987	1640	1960	936	367	9.7
Jun	52	104	1940	1260	1937	524	308	5.2
Jul	52	54	1940	466	1983	173	87	1.8
Aug	52	39	1940	223	1968	81	31	0.8
Sep	53	40	1987	318	1959	101	67	1.0
Ann		359	1977	1280	1972	821	197	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	41	46	52	58	64	71	92	126	172	251	316	419	562	781	1270	52
Nov	73	114	173	223	271	329	465	623	860	1180	1390	1660	2020	2600	3760	52
Dec	188	298	389	476	545	614	764	964	1230	1580	1840	2180	2650	3330	4820	52
Jan	230	322	387	457	519	584	730	908	1130	1470	1690	1980	2420	3060	4590	52
Feb	301	406	478	543	600	661	797	950	1160	1430	1650	1920	2340	2850	4210	52
Mar	410	463	508	560	604	655	769	912	1070	1290	1420	1590	1810	2160	2690	52
Apr	434	496	557	610	693	767	904	1020	1140	1300	1380	1480	1600	1780	2190	52
May	303	386	441	490	541	596	710	846	999	1140	1220	1320	1430	1590	1840	52
Jun	140	174	204	228	253	280	336	399	473	569	628	731	836	1000	1280	52
Jul	69	77	85	91	97	103	118	136	158	186	206	234	270	315	395	52
Aug	45	49	53	56	58	61	66	72	79	87	92	100	109	122	147	52
Sep	41	44	47	49	52	54	59	65	73	85	96	112	140	185	298	53
Ann	52	64	78	99	133	183	341	506	690	925	1070	1250	1480	1840	2650	

WILLAMETTE RIVER BASIN

14185800 MIDDLE SANTIAM RIVER NEAR CASCADIA, OR

LOCATION.--Lat 44°30'55", long 122°22'15", in NE 1/4 sec.19, T.12 S., R.4 E., Linn County, Hydrologic Unit 17090006, on right bank 5.6 mi downstream from Bear Creek, 10 mi northeast of Cascadia, and at mile 17.5.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--August 1963 to September 1981.

GAGE.--Water-stage recorder. Elevation of gage is 1,040 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--18 years, 630 ft³/s, 82.26 in/yr, 456,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,900 ft³/s Dec. 22, 1964, gage height, 15.75 ft, from floodmark, from rating curve extended above 7,000 ft³/s on basis of slope-area measurement of peak flow; minimum, 28 ft³/s Oct. 17, 26, 27, 1974.

STATISTICAL SUMMARIES FOR THE PERIOD 1963-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	39	1975	575	1968	210	159	2.8
Nov	19	167	1977	1740	1974	790	489	10.3
Dec	18	121	1977	3360	1965	1270	795	17.1
Jan	18	169	1977	2240	1965	1260	599	17.0
Feb	18	178	1977	1850	1972	883	435	10.8
Mar	18	354	1978	2220	1972	796	431	10.7
Apr	18	409	1967	1270	1969	807	272	10.5
May	18	342	1980	1300	1969	781	310	10.5
Jun	18	152	1979	986	1974	426	260	5.6
Jul	18	78	1970	241	1971	141	54	1.9
Aug	19	45	1970	165	1968	83	29	1.1
Sep	20	42	1965	218	1968	98	60	1.3
Ann		285	1977	977	1974	630	176	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	39	43	48	53	58	62	72	94	128	179	224	286	352	489	783	19
Nov	91	120	145	179	225	267	367	513	647	849	973	1150	1340	1810	2670	19
Dec	139	222	351	431	478	529	637	783	992	1330	1490	1790	2170	2780	3790	18
Jan	200	281	353	419	482	555	666	830	1030	1250	1430	1700	2100	2560	3920	18
Feb	195	269	369	415	448	477	557	640	740	902	1010	1140	1330	1760	2490	18
Mar	298	351	378	412	437	463	524	596	675	796	865	1020	1230	1490	2070	18
Apr	333	368	405	436	474	520	664	760	854	955	1020	1110	1210	1340	1590	18
May	273	327	385	417	447	485	575	688	820	979	1070	1160	1250	1370	1510	18
Jun	135	153	171	190	207	222	261	299	363	464	528	620	707	849	1100	18
Jul	67	74	81	85	90	95	107	121	136	152	166	185	209	243	291	18
Aug	45	50	53	55	57	60	65	71	78	87	91	97	108	120	165	19
Sep	40	42	44	46	49	51	57	63	72	88	104	125	153	207	302	20
Ann	50	62	76	96	121	156	270	406	534	700	807	943	1119	1378	1966	

SOUTH SANTIAM RIVER BASIN

14185900 QUARTZVILLE CREEK NEAR CASCADIA, OR

LOCATION.--Lat 44°32'25", long 122°26'05", in NW 1/4 sec.10, T.12 S., R.3 E., Linn County, Hydrologic Unit 17090006, on Bureau of Land Management land, on right bank 80 ft downstream from Panther Creek, 10 mi north of Cascadia, and at mile 6.6.

DRAINAGE AREA.--99.2 mi².

PERIOD OF RECORD.--August 1963 to November 1964 (destroyed by flood of December 1964); October 1965 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 1,050 ft, from topographic map. Aug. 13, 1963, to Dec. 22, 1964, water-stage recorder on left bank at present datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--23 years (water years 1964, 1966-87), 674 ft³/s, 92.27 in/yr, 488,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 ft³/s Jan. 20, 1972, gage height, 16.38 ft; minimum discharge, 14 ft³/s Aug. 19-23, 1973.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 36,500 ft³/s Dec. 22, 1964, from slope-area measurement of peak flow.

STATISTICAL SUMMARIES FOR THE PERIOD 1963-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	29	1975	753	1968	284	228	3.6
Nov	24	155	1977	2220	1974	1050	597	12.8
Dec	23	111	1977	2900	1974	1340	737	16.9
Jan	23	157	1977	2450	1970	1310	619	16.5
Feb	23	208	1977	2440	1982	1140	612	13.1
Mar	23	329	1978	2020	1972	925	396	11.6
Apr	23	382	1968	1250	1969	806	268	9.8
May	23	228	1987	1110	1971	638	254	8.0
Jun	23	97	1979	817	1984	333	220	4.1
Jul	23	53	1970	336	1983	107	63	1.3
Aug	24	25	1973	240	1968	63	44	0.8
Sep	24	28	1987	267	1971	103	81	1.3
Ann		311	1977	1110	1974	674	180	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	26	30	36	42	47	52	70	106	143	216	281	360	516	773	1200	24
Nov	83	140	180	216	258	321	476	610	801	1060	1230	1550	1960	2550	3690	24
Dec	138	275	339	401	457	503	610	771	1010	1370	1630	1960	2520	3240	4380	23
Jan	189	255	303	367	429	489	617	756	980	1290	1500	1780	2260	3160	4170	23
Feb	190	253	323	386	436	481	579	681	839	1050	1220	1420	1870	2500	4130	23
Mar	299	337	374	409	450	489	575	675	792	1010	1110	1360	1570	1810	2360	23
Apr	298	349	383	416	446	491	591	704	821	949	1030	1160	1260	1430	1700	23
May	181	225	272	306	342	376	465	552	653	772	845	910	1030	1160	1420	23
Jun	85	96	110	124	138	153	178	221	263	338	389	457	570	641	948	23
Jul	43	48	52	56	60	64	73	83	92	108	122	137	163	195	255	23
Aug	25	28	31	34	36	38	42	47	52	58	63	70	77	101	142	24
Sep	24	27	29	31	34	36	41	46	59	78	93	116	154	228	372	24
Ann	33	43	55	71	96	135	247	377	521	696	814	967	1190	1560	2390	

SOUTH SANTIAM RIVER BASIN

14186000 MIDDLE SANTIAM RIVER NEAR FOSTER, OR

LOCATION.--Lat 44°27'35", long 122°31'25", in SE 1/4 sec.2, T.13 S., R.2 E., Linn County, Hydrologic Unit 17090006, 0.5 mi upstream from Green Peter Creek and 8 mi northeast of Foster.

DRAINAGE AREA.--271 mi².

PERIOD OF RECORD.--August 1931 to September 1947.

GAGE.--Staff gage. Datum of gage is 733.44 ft above National Geodetic Vertical Datum of 1929 (Northern Pacific Railway benchmark). Prior to Sept. 14, 1931, staff gage and Sept. 14, 1931, to Dec. 17, 1946, water-stage recorder, at same site and datum.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--16 years (water years 1932-47), 1,449 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,800 ft³/s Dec. 28, 1945, gage height, 21.6 ft, from rating curve extended above 24,000 ft³/s by logarithmic plotting; minimum, 54 ft³/s Dec. 1, 1936, gage height, 1.25 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1932-1947

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	73	1937	975	1935	421	305	2.5
Nov	16	64	1937	5400	1943	1990	1450	11.3
Dec	16	582	1945	5740	1943	2790	1650	16.3
Jan	16	491	1937	5350	1936	2470	1200	14.5
Feb	16	780	1934	4040	1940	2160	947	11.5
Mar	16	647	1941	6000	1932	2380	1170	13.9
Apr	16	547	1941	4040	1937	2140	909	12.1
May	16	487	1947	3060	1933	1510	802	8.8
Jun	16	220	1940	3530	1933	984	830	5.6
Jul	16	126	1940	614	1933	294	130	1.7
Aug	16	80	1940	199	1947	134	37	0.8
Sep	16	82	1934	581	1941	163	133	0.9
Ann		913	1944	2180	1943	1450	352	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	67	72	76	80	85	91	108	141	189	285	362	460	653	1090	1820	16
Nov	72	182	282	365	454	577	783	1000	1340	1990	2450	3170	4020	5120	6740	16
Dec	360	488	615	729	856	1010	1300	1680	2230	2820	3200	3750	4850	5910	8380	16
Jan	498	709	837	947	1070	1180	1460	1750	2080	2570	3000	3560	3990	4720	6890	16
Feb	685	770	842	929	1020	1100	1290	1500	1820	2380	2670	3060	3590	4290	5770	16
Mar	586	802	908	1010	1120	1260	1590	1930	2310	2750	3020	3350	3710	4300	5600	16
Apr	566	705	875	1080	1250	1440	1760	2020	2230	2500	2660	2870	3090	3390	4040	16
May	367	500	640	729	817	880	1080	1290	1510	1810	1980	2160	2420	2830	3270	16
Jun	216	278	336	393	440	482	588	690	810	959	1060	1190	1400	1690	2770	16
Jul	121	135	148	161	173	184	213	245	283	333	355	387	434	505	674	16
Aug	79	86	93	98	102	106	114	123	135	149	157	166	180	202	229	16
Sep	71	75	79	82	85	90	98	106	116	132	146	163	219	298	526	16
Ann	82	103	126	160	211	300	553	843	1180	1620	1950	2270	2720	3320	4680	

SOUTH SANTIAM RIVER BASIN

14186500 MIDDLE SANTIAM RIVER AT MOUTH, NEAR FOSTER, OR

LOCATION.--Lat 44°25'25", long 122°37'25", in NE 1/4 SE 1/4 sec.24, T.13 S., R.1 E., Linn County, Hydrologic Unit 17090006, on right bank 2.7 mi northeast of Foster, and at mile 0.7.

DRAINAGE AREA.--287 mi².

PERIOD OF RECORD.--October 1950 to September 1966. Prior to January 1951 monthly discharge only, published in WSP 1738.

GAGE.--Water-stage recorder. Datum of gage is 562.14 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 25, 1952, staff gage at same site and datum.

REMARKS.--Slight regulation from construction of Green Peter Dam upstream from station.

AVERAGE DISCHARGE.--16 years, 1,775 ft³/s, 1,285,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 67,800 ft³/s Dec. 22, 1964, gage height, 25.80 ft, from rating curve extended above 34,000 ft³/s on the basis of slope-area measurement of peak flow; minimum, 66 ft³/s Sept. 10, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1951-1966

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	85	1953	2590	1951	899	802	4.3
Nov	16	126	1953	4660	1956	2520	1410	11.7
Dec	16	1070	1966	9080	1965	3490	2220	16.7
Jan	16	758	1963	7270	1953	3190	1860	15.3
Feb	16	1290	1956	6410	1961	3020	1370	13.2
Mar	16	1040	1965	4010	1957	2360	865	11.3
Apr	16	1520	1965	3430	1962	2470	559	11.5
May	16	850	1954	3020	1960	1820	694	8.7
Jun	16	365	1965	2160	1955	907	516	4.2
Jul	16	177	1965	714	1955	325	143	1.6
Aug	16	106	1966	235	1953	168	42	0.8
Sep	16	96	1965	749	1959	203	162	0.9
Ann		1260	1966	2440	1956	1770	265	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	103	123	142	158	179	240	348	493	794	990	1190	1540	2240	3540	--	16
Nov	131	253	374	470	576	684	1030	1420	1930	2710	3130	3750	4480	5610	8400	16
Dec	596	808	969	1130	1230	1340	1610	2020	2590	3360	3880	4560	5360	6600	12200	16
Jan	656	787	890	1010	1160	1370	1670	1990	2580	3460	3920	4530	5350	6550	8830	16
Feb	970	1080	1190	1310	1440	1540	1710	1970	2410	2960	3270	3860	4910	6380	8870	16
Mar	871	941	1050	1150	1230	1310	1490	1820	2160	2680	3030	3400	3850	4470	5300	16
Apr	979	1120	1300	1450	1550	1660	1920	2170	2440	2790	2990	3270	3640	4230	5070	16
May	672	793	881	1010	1100	1160	1360	1650	1900	2190	2360	2550	2730	3060	3650	16
Jun	277	333	381	421	455	489	559	675	811	1070	1190	1300	1450	1700	2250	16
Jul	149	163	176	188	201	215	240	266	304	352	387	426	483	540	666	16
Aug	99	109	116	121	126	130	141	155	168	185	197	209	222	239	280	16
Sep	84	91	96	101	105	109	120	133	150	174	188	213	253	313	571	16
Ann	111	140	171	215	281	404	743	1100	1470	1930	2220	2630	3140	3950	5520	

SOUTH SANTIAM RIVER BASIN

14187000 WILEY CREEK NEAR FOSTER, OR

LOCATION.--Lat 44°22'20", long 122°37'20", in NE 1/4 NE 1/4 sec.12, T.14 S., R.1 E., Linn County, Hydrologic Unit 17090006, on right bank 0.5 mi downstream from Little Wiley Creek, 3.5 mi southeast of Foster, and at mile 4.4.

DRAINAGE AREA.--51.8 mi².

PERIOD OF RECORD.--October 1947 to July 1973.

GAGE.--Water-stage recorder. Elevation of gage is 716.08 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Apr. 6, 1965, water-stage recorder at present site and datum 2.00 ft higher. Apr. 6 to Aug. 17, 1965, nonrecording gage at present site and datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--25 years (1948-72), 224 ft³/s, 58.72 in/yr, 162,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,640 ft³/s Jan. 21, 1972, gage height, 9.28 ft, from rating curve extended above 3,700 ft³/s; maximum gage height, 11.80 ft, present datum, Dec. 21, 1964 (backwater from debris); minimum discharge, 5.6 ft³/s Nov. 26, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1948-1972

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	9.7	1953	397	1951	99	96	3.8
Nov	26	15	1953	620	1951	278	156	10.2
Dec	26	109	1960	1110	1965	429	245	16.3
Jan	26	82	1963	842	1953	475	243	18.0
Feb	26	113	1973	944	1961	404	183	13.9
Mar	26	116	1965	625	1972	349	135	13.2
Apr	26	133	1968	491	1955	270	87	9.9
May	26	62	1973	353	1963	190	81	7.2
Jun	26	27	1966	165	1969	84	38	3.1
Jul	26	16	1951	75	1969	34	17	1.3
Aug	25	9.3	1967	53	1968	18	9.0	0.7
Sep	25	9.5	1965	67	1968	22	14	0.8
Ann		170	1966	318	1956	224	39	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	8.8	12	14	17	20	24	33	45	59	85	108	137	181	245	382	26
Nov	20	35	49	61	71	83	121	171	223	306	355	436	508	612	964	26
Dec	82	103	123	140	157	175	221	273	341	434	490	578	712	902	1320	26
Jan	83	106	127	146	169	192	237	297	376	505	591	698	817	1040	1550	26
Feb	108	135	157	172	188	203	239	282	357	451	503	572	682	815	1100	26
Mar	115	135	151	170	185	199	233	283	335	397	431	472	551	669	860	26
Apr	93	117	135	151	168	184	211	248	284	322	346	377	413	458	545	26
May	56	67	78	88	102	116	142	166	193	224	245	271	310	354	430	26
Jun	28	32	37	42	47	50	58	69	80	94	103	115	131	153	197	26
Jul	15	16	17	18	20	22	25	29	33	38	41	45	51	60	74	26
Aug	8.4	9.3	11	12	12	13	14	16	18	20	22	23	25	28	34	25
Sep	7.5	8.3	9.2	11	11	12	13	15	17	19	22	26	33	42	66	25
Ann	11	14	18	24	32	44	79	127	179	242	284	336	408	518	767	

SOUTH SANTIAM RIVER BASIN

14187100 WILEY CREEK AT FOSTER, OR

LOCATION.--Lat 44°23'55", long 122°39'35", in SW 1/4 NW 1/4 sec.35, T.13 S., R.1 E., Linn County, Hydrologic Unit 17090006, on left bank 1.5 mi downstream from Jackson Creek, 1.0 mi southeast of Foster, and at mile 1.4.

DRAINAGE AREA.--62.3 mi².

PERIOD OF RECORD.--October 1973 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 590 ft, from topographic map. Prior to May 2, 1974, at present site at datum 5.00 ft lower.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--14 years, 233 ft³/s, 50.79 in/yr, 168,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,320 ft³/s Jan. 15, 1974, gage height, 9.28 ft; minimum discharge, 3.1 ft³/s Oct. 19, 1973.

STATISTICAL SUMMARIES FOR THE PERIOD 1974-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	10	1975	122	1983	57	40	2.1
Nov	14	48	1977	823	1974	330	214	11.6
Dec	14	39	1977	877	1978	516	255	18.8
Jan	14	50	1977	768	1974	394	214	14.4
Feb	14	66	1977	779	1986	455	222	15.1
Mar	14	120	1978	650	1974	355	143	12.9
Apr	14	124	1987	444	1974	313	99	11.0
May	14	62	1987	359	1984	201	89	7.3
Jun	14	31	1987	341	1984	110	92	3.9
Jul	14	15	1979	127	1983	37	27	1.4
Aug	14	7.7	1986	40	1983	18	9.7	0.7
Sep	14	6.3	1974	64	1978	22	15	0.8
Ann		106	1977	373	1974	233	65	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	5.2	5.2	8.7	12	16	18	21	26	32	39	46	61	114	152	250 14
Nov	30	40	49	66	89	114	160	204	266	358	423	529	652	804	1080 14
Dec	42	110	142	179	199	220	278	378	487	646	735	833	947	1110	1370 14
Jan	54	87	109	130	151	171	207	253	304	426	493	558	645	872	1170 14
Feb	45	88	114	139	159	188	247	309	405	519	597	707	821	1000	1350 14
Mar	119	136	150	165	179	191	230	282	332	398	447	496	582	680	872 14
Apr	118	132	142	155	168	186	220	258	312	353	383	431	499	583	711 14
May	53	64	74	87	97	105	129	160	192	241	266	299	340	389	493 14
Jun	28	33	37	40	43	47	55	65	79	102	119	138	170	211	324 14
Jul	14	16	17	19	21	22	25	30	34	38	41	45	51	66	99 14
Aug	7.1	7.7	8.4	9.1	10	11	13	15	18	22	23	26	30	35	48 14
Sep	5.6	6.3	7.1	7.1	8.8	10	13	16	18	21	24	28	33	44	63 14
Ann	8.4	13	18	24	31	38	71	127	181	254	302	365	458	604	857

SOUTH SANTIAM RIVER BASIN

14187200 SOUTH SANTIAM RIVER NEAR FOSTER, OR

LOCATION.--Lat 44°24'45", long 122°41'15", in SE 1/4 NE 1/4 sec.28, T.13 S., R.1 E., Linn County, Hydrologic Unit 17090006, on left bank 0.6 mi downstream from Wiley Creek and at mile 37.0.

DRAINAGE AREA.--557 mi².

PERIOD OF RECORD.--August 1973 to 1987. Records for October 1966 to July 1973 (published as South Santiam River at Foster, station 14186700) at site 0.5 mi upstream not equivalent owing to inflow between sites.

GAGE.--Water-stage recorder. Elevation of gage is 560 ft, from topographic map.

REMARKS.--Flow regulated since October 1966 by Green Peter Lake (station 14186100) and since December 1966 by Foster Lake (station 14186600). No diversion upstream from station.

AVERAGE DISCHARGE.--14 years, 2,927 ft³/s, 71.36 in/yr, 2,121,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 18,800 ft³/s Feb. 26, 1982, gage height, 16.61 ft; minimum discharge, 425 ft³/s July 26, 1976.

STATISTICAL SUMMARIES FOR THE PERIOD 1974-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	1430	1981	3080	1986	2300	552	6.7
Nov	14	1780	1977	9270	1985	4990	2350	14.0
Dec	14	1140	1977	12800	1978	7030	3200	20.4
Jan	14	729	1977	8950	1974	5050	2650	14.6
Feb	14	586	1977	8210	1982	3680	2150	9.7
Mar	14	1090	1978	5410	1974	2850	1420	8.3
Apr	14	1180	1986	4500	1974	2660	1060	7.5
May	14	764	1987	3950	1984	2130	966	6.2
Jun	14	703	1979	4100	1984	1630	1060	4.6
Jul	14	559	1976	1510	1983	818	218	2.4
Aug	14	586	1974	894	1977	761	91	2.2
Sep	14	882	1979	2070	1978	1330	339	3.7
Ann		1360	1977	4460	1974	2930	764	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1030	1370	1470	1610	1770	1820	1930	2060	2260	2470	2600	2740	2910	3170	4230	14
Nov	1690	1850	2140	2360	2650	2920	3520	3810	4860	5880	6270	6920	8430	10800	12100	14
Dec	1210	2270	2850	3160	3440	3830	5550	6590	7590	9560	10500	11300	22000	22900	23800	14
Jan	768	1070	1490	1880	2160	2580	3560	4210	5390	6270	6750	7590	8970	11200	12400	14
Feb	586	896	1040	1180	1350	1530	1900	2500	3160	3930	4230	5060	6800	9170	11900	14
Mar	932	997	1070	1150	1260	1360	1560	1900	2510	3330	3700	4290	5140	6180	7530	14
Apr	876	981	1070	1160	1280	1410	1800	2350	2780	3350	3590	3780	4120	4600	5890	14
May	775	848	920	986	1070	1200	1420	1670	1960	2630	2930	3170	3510	3970	4930	14
Jun	667	700	732	753	775	796	899	1030	1270	1540	1650	1930	2470	3230	4340	14
Jul	508	577	633	685	710	726	754	779	805	835	862	889	917	958	1170	14
Aug	508	543	654	671	685	698	734	760	785	818	844	872	897	917	954	14
Sep	766	862	896	909	923	936	1020	1150	1380	1470	1520	1570	1720	2180	2650	14
Ann	675	748	797	868	942	1030	1390	1780	2350	3120	3610	4180	5520	6940	10400	

SOUTH SANTIAM RIVER BASIN

14187500 SOUTH SANTIAM RIVER AT WATERLOO, OR

LOCATION.--Lat 44°29'55", long 122°49'20", in SW 1/4 NW 1/4 sec.28, T.12 S., R.1 W., Linn County, Hydrologic Unit 17090006, on left bank 0.1 mi downstream from highway bridge at Waterloo, 2.1 mi upstream from Hamilton Creek, and at mile 23.3.

DRAINAGE AREA.--640 mi².

PERIOD OF RECORD.--July 1905 to March 1907, October 1910 to December 1911 (gage heights only January to December 1911), July 1923 to 1987. Monthly discharge only for some periods, published in WSP 1318. Published as South Fork of Santiam River at Waterloo 1905-07, 1910-11.

REVISED RECORDS.--WSP 1248: 1907, 1924-30, 1932.

GAGE.--Water-stage recorder. Datum of gage is 370.39 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 31, 1911, nonrecording gage at site 0.5 mi downstream at datum about 5.0 ft lower. July 1, 1923, to Nov. 12, 1934, nonrecording gage, at present site and datum.

REMARKS.--Flow regulated since October 1966 by Green Peter Lake (station 14186100) and since December 1966 by Foster Lake (station 14186600). No diversion upstream from station.

AVERAGE DISCHARGE.--65 years (water years 1906, 1924-87), 2,944 ft³/s, 2,133,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 95,200 ft³/s Dec. 22, 1964, gage height, 24.50 ft; minimum discharge, 61 ft³/s Oct. 12, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1906-1965 (BEFORE THE CONSTRUCTION OF GREEN PETER AND FOSTER DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	45	143	1926	4900	1948	1190	1150	3.5
Nov	45	111	1930	10300	1907	4080	2770	11.5
Dec	45	1070	1945	15500	1965	5310	3090	15.5
Jan	44	898	1937	12200	1953	5110	2730	14.9
Feb	44	1530	1934	12100	1961	5440	2530	14.5
Mar	44	1210	1941	10500	1932	4390	1810	12.8
Apr	43	1060	1926	7930	1937	4050	1420	11.4
May	43	862	1931	5870	1933	3000	1380	8.7
Jun	43	437	1940	5910	1933	1720	1110	4.9
Jul	44	177	1926	1210	1955	550	249	1.6
Aug	44	126	1940	385	1947	261	71	0.8
Sep	44	143	1965	1120	1959	321	235	0.9
Ann		1710	1931	4540	1956	2910	680	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	147	158	176	197	219	317	444	654	991	1240	1530	2000	2880	4640	--	45
Nov	141	304	431	655	827	1010	1440	2050	2960	4370	5410	6620	7970	9940	14800	45
Dec	866	1190	1490	1780	2030	2250	2720	3360	4190	5370	5990	7090	8760	11400	16300	45
Jan	1110	1400	1630	1880	2100	2370	2880	3470	4230	5490	6320	7390	8580	10600	13700	44
Feb	1290	1640	1860	2100	2360	2610	3150	3790	4680	5750	6430	7480	9170	11100	15200	44
Mar	1420	1690	1870	2090	2300	2490	2910	3500	4180	4980	5450	6020	6900	8010	10200	44
Apr	1230	1500	1840	2180	2490	2740	3220	3670	4140	4710	5020	5350	5750	6410	8170	43
May	824	1100	1320	1500	1690	1850	2230	2620	3180	3630	3900	4230	4620	5230	6160	43
Jun	433	533	626	726	805	889	1080	1320	1570	1950	2160	2420	2770	3230	4300	43
Jul	210	249	275	301	326	348	405	453	510	610	668	732	834	969	1220	44
Aug	140	155	168	182	192	201	219	242	265	290	306	327	356	389	442	44
Sep	126	135	143	153	162	173	190	204	229	263	302	351	423	552	952	44
Ann	159	202	255	329	440	619	1160	1790	2480	3340	3880	4540	5410	6730	9680	

SOUTH SANTIAM RIVER BASIN

14187500 SOUTH SANTIAM RIVER AT WATERLOO, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1967-1987 (AFTER COMPLETION OF GREEN PETER AND FOSTER DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	21	666	1967	5530	1969	2250	1010	6.3
Nov	21	1810	1977	9500	1985	4900	2130	13.2
Dec	21	1130	1977	12900	1978	6730	2830	18.8
Jan	21	713	1977	9190	1974	5790	2460	16.2
Feb	21	597	1977	8080	1982	4090	2080	10.4
Mar	21	1110	1978	9650	1972	3250	2050	9.1
Apr	21	1060	1968	4850	1974	2670	1150	7.2
May	21	792	1987	4150	1984	2300	1090	6.4
Jun	21	678	1979	4300	1984	1580	1010	4.3
Jul	21	470	1967	1530	1983	782	233	2.2
Aug	21	475	1967	1240	1969	816	203	2.3
Sep	21	473	1967	2770	1968	1420	515	3.8
Ann		1400	1977	4670	1974	3040	815	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	690	858	1160	1390	1490	1580	1840	2020	2240	2520	2670	2820	3060	3400	5460	21
Nov	1600	1910	2200	2480	2710	2880	3410	3830	4410	5640	6210	6870	8200	10600	12200	21
Dec	1230	2240	2810	3200	3500	3870	5110	6340	7180	8470	9510	10600	11700	12700	13800	21
Jan	1010	1580	1970	2310	2800	3230	4070	5140	6130	7180	8000	9020	10500	11800	12900	21
Feb	980	1070	1220	1370	1540	1760	2260	2930	3630	4650	5390	6290	7600	9910	12000	21
Mar	1050	1130	1210	1300	1380	1470	1770	2150	2740	3440	4050	4730	5840	6900	8930	21
Apr	961	1030	1120	1200	1290	1390	1790	2240	2830	3390	3620	3920	4250	4670	5880	21
May	771	835	899	990	1110	1230	1470	1760	2240	2970	3270	3580	3990	4470	5410	21
Jun	642	671	699	722	744	766	866	988	1260	1600	1800	2060	2450	3000	4050	21
Jul	463	495	550	595	628	654	702	729	773	813	838	873	913	983	1240	21
Aug	484	506	560	614	632	654	695	739	782	824	862	907	1000	1270	1530	21
Sep	628	752	829	863	917	979	1100	1340	1460	1580	1730	1840	2050	2430	2790	21
Ann	612	702	781	877	990	1130	1470	1930	2560	3360	3890	4650	5910	7250	10600	

SOUTH SANTIAM RIVER BASIN

14188800 THOMAS CREEK NEAR SCIO, OR

LOCATION.--Lat 44°42'42", long 122°45'55", in SE 1/4 SE 1/4 sec.11, T.10 S., R.1 W., Linn County, Hydrologic Unit 17090006, on left bank 0.3 mi upstream from bridge on State Highway 226, 1.6 mi upstream from Mill Creek, 4.2 mi east of Scio, and at mile 14.6.

DRAINAGE AREA.--109 mi².

PERIOD OF RECORD.--October 1962 to September 1987 (discontinued).

REVISED RECORDS.--WDR OR-71-1: 1965(P), 1966(P), 1969(P).

GAGE.--Water-stage recorder. Datum of gage is 380.84 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Several small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--25 years, 496 ft³/s, 61.80 in/yr, 359,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,400 ft³/s Dec. 22, 1964, gage height, 18.44 ft, from rating curve extended above 7,200 ft³/s, on basis of slope-area measurement of peak flow; maximum gage height, 19.58 ft Jan. 21, 1972, backwater from debris; minimum discharge, 7.8 ft³/s Aug. 20, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1963-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	25	25	1975	633	1969	177	150	3.0
Nov	25	128	1977	1900	1974	726	406	12.0
Dec	25	104	1977	2310	1965	1090	547	18.7
Jan	25	144	1977	1840	1972	1060	508	18.1
Feb	25	176	1977	1670	1986	866	385	13.5
Mar	25	245	1965	1500	1972	711	291	12.2
Apr	25	298	1968	888	1963	560	170	9.3
May	25	168	1973	745	1963	379	160	6.5
Jun	25	74	1966	682	1984	205	149	3.4
Jul	25	29	1967	407	1983	79	75	1.4
Aug	25	13	1967	203	1968	42	38	0.7
Sep	25	18	1965	251	1968	67	56	1.1
Ann		229	1977	760	1974	496	121	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	21	25	29	33	38	41	52	72	100	149	181	239	340	479	748	25
Nov	80	115	154	181	219	269	374	497	623	798	928	1050	1310	1630	2280	25
Dec	148	265	326	383	433	478	603	763	957	1200	1350	1590	1860	2280	3170	25
Jan	165	227	293	338	393	455	574	701	869	1090	1240	1500	1810	2390	3440	25
Feb	192	270	326	362	398	434	509	594	729	907	1020	1190	1420	1800	2510	25
Mar	241	275	309	346	372	407	483	567	665	788	874	970	1120	1320	1690	25
Apr	222	259	287	313	338	363	418	486	557	632	686	761	837	962	1220	25
May	126	145	161	181	206	222	271	315	359	423	460	506	569	674	854	25
Jun	57	67	73	81	88	96	112	133	163	206	234	268	311	383	612	25
Jul	24	28	31	34	37	40	46	54	64	77	86	98	116	143	230	25
Aug	14	17	18	20	21	23	26	29	32	39	44	49	58	70	104	25
Sep	16	18	20	21	23	25	30	35	43	55	65	82	107	154	237	25
Ann	21	29	38	50	69	94	175	286	396	540	626	746	911	1170	1730	

14189000 SANTIAM RIVER AT JEFFERSON, OR

LOCATION.--Lat 44°42'55", long 122°00'40", in SE 1/4 sec.11, T.10 S., R.3 W., Marion County, Hydrologic Unit 17090005, on right bank 350 ft upstream from Southern Pacific railroad bridge at Jefferson, 2.1 mi downstream from confluence of North and South Santiam Rivers, and at mile 9.62.

DRAINAGE AREA.--1,790 mi², approximately.

PERIOD OF RECORD.--October 1905 to June 1906 (gage heights and discharge measurements only), October 1907 to September 1916, October 1939 to 1987. Gage-height records collected at same site since 1907 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 904: Drainage area. WSP 1094: 1908, 1910, 1912, 1943. WSP 1248: 1911, 1915-16(M). WSP 1935: 1909.

GAGE.--Water-stage recorder. Datum of gage is 199.63 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 22, 1940, nonrecording gages at sites within 350 ft downstream at datum 3.00 ft higher.

REMARKS.--Flow regulated since 1953 by Detroit Lake (station 14180500), since 1966 by Green Peter Lake (station 14186100) and by Foster Lake (station 14186600). Salem Canal diverts from North Santiam River at Stayton for irrigation and power; most of this water reaches Willamette River by way of Mill Creek at Salem. Stayton Canal diverts from North Santiam River at Stayton for irrigation of lands near town of West Stayton; some return flow reaches North Santiam River upstream from station. Albany power canal diverts from South Santiam River at Lebanon; return flow reaches Willamette River at Albany.

AVERAGE DISCHARGE.--57 years (water years 1908-16, 1940-87), 7,795 ft³/s, 5,647,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 197,000 ft³/s Dec. 22, 1964, gage height, 24.22 ft; minimum discharge observed, 260 ft³/s Aug. 15-22, Aug. 24 to Sept. 2, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood stage of 25.0 ft was reached in December 1861, and 23.4 ft in February 1890 (information from Corps of Engineers). On Nov. 21, 1921, the stage reached 19.5 ft at gage on railroad bridge 350 ft downstream, corresponding gage height at present site and datum, 24.4 ft, from curve of relation, discharge, 202,000 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1908-1953 (BEFORE THE CONSTRUCTION OF DETROIT, GREEN PETER, AND FOSTER DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	432	1953	12300	1948	3290	3360	3.7
Nov	23	622	1953	26600	1910	11000	6640	11.9
Dec	23	2910	1945	24500	1943	12300	6450	13.7
Jan	23	4050	1949	30300	1953	13600	6710	15.2
Feb	23	4330	1941	25000	1916	14200	5660	14.5
Mar	23	3230	1941	21600	1916	10900	4460	12.2
Apr	23	2960	1941	16900	1913	9340	3450	10.1
May	23	2950	1947	14700	1949	8270	3250	9.2
Jun	23	1030	1940	9230	1950	4790	2200	5.2
Jul	23	483	1940	7120	1916	1990	1400	2.2
Aug	23	309	1940	1840	1916	811	373	0.9
Sep	23	416	1942	4090	1912	1070	876	1.2
Ann		4260	1944	11700	1916	7600	1860	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	445	483	550	631	702	876	1210	1720	2610	3260	4410	6010	7990	11600	--	23
Nov	684	1040	1420	2120	2820	3530	4710	6000	8300	2400	5200	8200	12100	16900	25100	23
Dec	2130	2980	3960	4720	5300	5870	7060	8570	10400	12900	14700	16800	19800	26000	36000	23
Jan	3560	4140	4660	5310	5900	6420	7740	9240	11200	14700	17200	20600	24200	28200	35700	23
Feb	3790	4640	5250	5810	6360	6890	8500	10200	13200	16200	18100	20900	24800	29800	37100	23
Mar	3800	4440	4950	5400	5820	6260	7290	8580	9680	11600	13100	14700	16800	20500	27200	23
Apr	3650	4370	5130	5590	6000	6650	7560	8730	9810	11200	11900	12600	13300	14500	16600	23
May	2610	3560	4040	4560	5110	5570	6380	7530	8500	9790	10500	11400	12800	14000	16200	23
Jun	1320	1750	2170	2440	2730	2940	3520	4210	4850	5480	5930	6650	7700	8710	10500	23
Jul	544	681	767	879	991	1070	1270	1460	1730	2070	2290	2560	2990	3640	5340	23
Aug	365	444	471	507	538	565	638	702	793	892	946	1010	1130	1270	1600	23
Sep	361	406	432	465	517	565	644	703	779	955	1040	1160	1500	2080	3190	23
Ann	469	607	759	1020	1370	2050	3610	5100	6570	8500	9640	11100	13300	16600	24000	

SANTIAM RIVER BASIN

14189000 SANTIAM RIVER AT JEFFERSON, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1967-1987 (AFTER THE COMPLETION OF DETROIT, GREEN PETER, AND FOSTER DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	21	2910	1973	11900	1969	5220	1980	5.7
Nov	21	4430	1977	23700	1985	11600	4940	12.2
Dec	21	2420	1977	31700	1978	16700	7040	18.2
Jan	21	2180	1977	24500	1974	15000	6370	16.3
Feb	21	1900	1977	21300	1982	11300	5260	11.2
Mar	21	3470	1978	25700	1972	8970	4980	9.8
Apr	21	3870	1968	11900	1974	7010	2540	7.4
May	21	2110	1973	11300	1984	6460	2630	7.0
Jun	21	1730	1973	11100	1984	4410	2590	4.6
Jul	21	1200	1967	4830	1983	1980	791	2.2
Aug	21	1100	1967	2880	1968	1800	450	2.0
Sep	21	1550	1967	5330	1968	3350	833	3.5
Ann		3500	1977	11700	1972	7800	2040	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2430	2940	3120	3330	3560	3730	4050	4370	4780	5440	5790	6230	6870	8070	12200	21
Nov	3800	4380	5000	5550	6200	6970	7940	9410	10900	12800	14000	16100	18700	23900	28800	21
Dec	3890	5640	6700	7880	8870	9780	12300	15200	17800	21100	23200	25800	28000	30800	34600	21
Jan	3100	4540	5270	6170	7110	8520	10600	12900	15200	18300	20500	24000	26600	29400	33300	21
Feb	2810	3460	3990	4490	5110	5700	6900	8470	10500	13000	14300	16000	19500	25800	30900	21
Mar	3380	3660	3980	4300	4590	4850	5570	6600	7980	9570	11000	12400	14700	17600	23400	21
Apr	3070	3360	3650	3930	4180	4480	5090	6230	7210	8200	8750	9370	10200	11700	14200	21
May	2300	2680	3090	3510	3890	4290	4990	5780	6690	7830	8470	9220	10200	11300	12600	21
Jun	1560	1740	1900	2040	2180	2340	2740	3100	3670	4560	5320	6200	7260	8390	10800	21
Jul	1210	1300	1370	1410	1450	1480	1560	1660	1740	1940	2090	2300	2580	2980	3910	21
Aug	1130	1220	1270	1320	1360	1400	1470	1560	1710	1870	2000	2210	2350	2690	3150	21
Sep	1600	1930	2200	2360	2510	2680	2920	3190	3470	3790	3970	4180	4410	4780	--	21
Ann	1420	1650	2000	2430	2920	3320	4130	5130	6610	8580	9900	11800	14200	18000	26100	

WILLAMETTE RIVER BASIN

14189500 LUCKIAMUTE RIVER NEAR HOSKINS, OR

LOCATION.--Lat 44°43'10", long 123°30'10", in NE 1/4 sec.11, T.10 S., R.7 W., Benton County, Hydrologic Unit 17090003, on right bank 0.2 mi downstream from Benton County Line, 3.5 mi northwest of Hoskins, and at mile 43.2.

DRAINAGE AREA.--34.3 mi².

PERIOD OF RECORD.--May 1934 to September 1978.

GAGE.--Water-stage recorder. Datum of gage is 378.7 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--Logponds upstream cause diurnal fluctuation at times. Minor diversion upstream from station by pumping for irrigation.

AVERAGE DISCHARGE.--44 years, 209 ft³/s, 82.75 in/yr, 151,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,560 ft³/s Dec. 14, 1946, Feb. 17, 1949; maximum gage height, 13.22 ft Dec. 14, 1946; minimum discharge, 4.0 ft³/s Sept. 5-8, 1962.

STATISTICAL SUMMARIES FOR THE PERIOD 1934-1978

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	44	7.7	1953	402	1948	69	77	2.8
Nov	44	10	1937	811	1974	294	203	11.6
Dec	44	46	1977	980	1965	475	222	19.3
Jan	44	65	1977	1110	1953	487	242	19.8
Feb	44	109	1973	856	1949	432	177	16.0
Mar	44	83	1941	624	1961	341	138	13.8
Apr	44	67	1939	492	1937	200	93	7.9
May	45	33	1939	220	1960	106	49	4.3
Jun	45	24	1934	168	1937	50	24	2.0
Jul	45	14	1934	55	1937	24	8.2	1.0
Aug	45	8.1	1958	30	1968	14	4.6	0.6
Sep	45	8.2	1952	86	1959	19	14	0.7
Ann		80	1977	336	1974	209	49	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	7.9	10	11	13	14	15	20	25	33	50	63	84	123	171	284	44
Nov	16	27	41	53	64	74	104	146	219	317	377	470	596	733	1040	44
Dec	69	98	127	157	181	204	259	332	415	522	595	691	824	1030	1430	44
Jan	105	136	157	178	198	220	276	337	412	519	602	711	885	1060	1400	44
Feb	102	137	158	178	198	219	265	315	372	473	534	619	731	895	1170	44
Mar	93	119	139	156	173	188	221	258	307	378	428	490	566	681	868	44
Apr	68	79	91	101	110	118	134	156	185	217	241	268	309	368	457	44
May	41	47	52	56	61	65	73	83	94	109	120	136	158	188	261	45
Jun	24	27	29	31	33	34	38	43	47	53	57	61	68	80	103	45
Jul	14	15	16	17	18	19	20	22	25	27	29	31	34	38	43	45
Aug	7.5	8.7	9.4	11	11	12	13	14	15	16	17	19	20	22	26	45
Sep	7.6	8.2	8.8	9.5	10	11	12	13	15	17	19	22	26	34	54	45
Ann	10	13	15	19	24	31	53	89	144	212	259	322	407	542	814	

WILLAMETTE RIVER BASIN

14190000 LUCKIAMUTE RIVER AT PEDEE, OR

LOCATION.--Lat 44°44'35", long 123°25'25", in SE 1/4 sec.33, T.9 S., R.6 W., Polk County, Hydrologic Unit 17090003, on left bank 0.5 mi downstream from Pedee Creek, 1.0 mi southwest of Pedee, and at mile 29.7.

DRAINAGE AREA.--115 mi².

PERIOD OF RECORD.--October 1940 to September 1970.

GAGE.--Water-stage recorder. Datum of gage is 245.47 ft above National Geodetic Vertical Datum of 1929. Prior to July 1, 1949, nonrecording gage at site 1,700 ft downstream at datum 1.85 ft lower.

REMARKS.--Some diurnal fluctuation at low flow caused by logponds upstream from station. Several small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--30 years, 458 ft³/s, 331,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Dec. 22, 1964, gage height, 20.09 ft, from rating curve extended above 8,000 ft³/s; minimum, 7.0 ft³/s Sept. 12, 1944, Aug. 25, 30, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1941-1970

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	30	14	1953	729	1948	131	152	2.4
Nov	30	31	1953	1330	1956	571	388	10.2
Dec	30	233	1945	2410	1965	1040	540	19.3
Jan	30	265	1963	2280	1953	1140	582	21.1
Feb	30	304	1941	2400	1949	1060	452	17.9
Mar	30	189	1941	1380	1961	735	315	13.6
Apr	30	162	1942	1020	1955	424	205	7.6
May	30	103	1966	504	1963	233	113	4.3
Jun	30	50	1966	191	1953	100	33	1.8
Jul	30	22	1967	65	1954	43	11	0.8
Aug	30	11	1967	42	1968	24	8.4	0.5
Sep	30	10	1967	105	1959	30	22	0.5
Ann		237	1941	712	1956	458	103	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	15	18	21	23	25	27	35	49	69	101	129	169	222	296	481	30
Nov	41	63	87	105	118	134	180	265	384	577	707	867	1090	1450	2100	30
Dec	191	239	291	344	392	437	535	691	858	1140	1310	1490	1730	2250	3210	30
Jan	246	308	352	400	446	510	656	787	947	1240	1430	1680	1970	2550	3320	30
Feb	293	352	395	430	468	511	609	736	895	1190	1340	1500	1760	2130	2960	30
Mar	204	263	295	323	353	386	463	562	663	808	935	1070	1250	1470	1820	30
Apr	151	176	198	216	232	248	282	325	390	464	510	571	656	799	1030	30
May	92	103	114	123	132	140	161	183	207	243	267	306	345	416	553	30
Jun	50	57	62	66	69	73	80	89	98	110	119	128	139	156	193	30
Jul	21	24	27	29	31	34	37	42	46	51	53	58	62	67	74	30
Aug	12	14	15	17	18	19	21	23	26	29	31	32	34	37	43	30
Sep	11	12	14	15	16	17	19	22	25	29	32	35	42	51	79	30
Ann	16	21	27	34	45	61	111	192	305	451	554	692	886	1220	1780	

UPPER WILLAMETTE RIVER BASIN

14190500 LUCKIAMUTE RIVER NEAR SUVER, OR

LOCATION.--Lat 44°47'00", long 123°14'00", in SW 1/4 SW 1/4 sec.18, T.9 S., R.4 W., Polk County, Hydrologic Unit 17090003, on right bank 10 ft upstream from highway bridge at Helmick State Park, 3.0 mi northwest of Suver, 4.7 mi downstream from Little Luckiamute River, and at mile 13.5.

DRAINAGE AREA.--240 mi².

PERIOD OF RECORD.--August 1905 to October 1911, July 1940 to 1987.

REVISED RECORDS.--WSP 1044: Drainage area. WSP 1094: 1945-46. WSP 1248: 1905-11.

GAGE.--Water-stage recorder. Datum of gage is 171.92 ft above National Geodetic Vertical Datum of 1929. Aug. 18, 1905, to Oct. 31, 1911, nonrecording gage at present site at different datum, Aug. 20 to Oct. 15, 1940, nonrecording gage at present site and datum.

REMARKS.--Some diurnal fluctuation during periods of low flow caused by millpond upstream from station. A few small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--53 years, 905 ft³/s, 51.20 in/yr, 655,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 32,900 ft³/s Dec. 22, 1964, gage height, 34.52 ft; minimum discharge, 0.65 ft³/s Aug. 13, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1905-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	53	20	1953	1240	1948	190	209	1.8
Nov	53	56	1953	4570	1910	1120	896	10.2
Dec	53	106	1977	5110	1965	2130	1120	20.0
Jan	53	151	1977	4730	1956	2280	1130	21.4
Feb	53	253	1977	4770	1949	2090	919	17.9
Mar	53	391	1941	3000	1961	1460	671	13.7
Apr	53	312	1977	1850	1955	849	406	7.7
May	53	190	1966	1030	1963	420	193	3.9
Jun	53	79	1966	512	1984	198	97	1.8
Jul	54	30	1967	184	1906	79	33	0.7
Aug	55	9.5	1967	85	1906	42	17	0.4
Sep	55	17	1967	191	1959	55	32	0.5
Ann		229	1977	1470	1974	904	244	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	29	33	37	41	44	48	59	76	106	151	183	242	327	451	689	53
Nov	72	107	139	168	197	232	336	516	743	1120	1420	1780	2250	2920	4330	53
Dec	293	444	550	676	778	885	1140	1480	1860	2400	2750	3170	3740	4600	6060	53
Jan	413	566	693	797	900	1010	1270	1550	1920	2460	2830	3300	3900	4880	6770	53
Feb	469	629	731	821	905	994	1200	1450	1760	2300	2690	3080	3630	4450	5850	53
Mar	422	513	575	632	698	765	908	1080	1280	1560	1770	2020	2410	2950	3700	53
Apr	306	355	390	425	459	494	568	652	757	901	979	1100	1250	1560	2050	53
May	171	194	211	228	244	262	302	341	387	448	489	546	619	734	956	53
Jun	82	96	107	115	123	130	146	162	183	207	226	248	278	326	429	53
Jul	27	34	41	45	50	55	63	71	81	92	99	108	118	135	162	54
Aug	15	21	24	27	28	30	35	39	44	50	54	58	65	73	83	55
Sep	20	23	27	29	31	32	36	41	48	56	62	70	81	101	140	55
Ann	28	37	47	61	80	108	195	353	579	881	1086	1375	1780	2443	3706	

MIDDLE WILLAMETTE RIVER BASIN

14190700 RICKREALL CREEK NEAR DALLAS, OR

LOCATION.--Lat 44°54'55", long 123°23'02", in SW 1/4 SE 1/4 sec.35, T.7 S., R.6 W., Polk County, Hydrologic Unit 17090007, on left bank 1.8 mi downstream from Canyon Creek, 3.5 mi west of Dallas, 5.1 mi downstream from Aaron Mercer Reservoir, and at mile 19.1.

DRAINAGE AREA.--27.4 mi².

PERIOD OF RECORD.--August 1957 to September 1978.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 460 ft, from topographic map.

REMARKS.--Low flow regulated since June 1960 by Aaron Mercer Reservoir, usable capacity, 2,010 acre-ft. Diversion for city of Dallas municipal supply from four tributaries and Rickreall Creek upstream from station.

COOPERATION.--Records of diversion, monthend elevations of reservoir, and reservoir capacity curve furnished by city of Dallas.

AVERAGE DISCHARGE.--21 years (water years 1958-78), 148 ft³/s, 73.35 in/yr, 107,200 acre-ft/yr, adjusted for diversion and storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,160 ft³/s Dec. 22, 1964, gage height, 8.78 ft; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1978

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	3.2	1966	81	1969	28	25	1.7
Nov	18	20	1977	638	1974	210	155	11.8
Dec	18	9.6	1977	773	1965	378	190	22.0
Jan	18	13	1977	685	1970	397	197	23.1
Feb	18	60	1977	589	1968	273	150	14.5
Mar	18	72	1965	432	1971	249	121	14.5
Apr	18	51	1977	252	1963	119	59	6.7
May	18	24	1966	139	1963	60	32	3.5
Jun	18	8.5	1966	63	1968	21	11	1.2
Jul	18	3.5	1967	14	1974	7.6	2.9	0.4
Aug	18	1.0	1972	10	1968	4.8	2.6	0.3
Sep	18	1.8	1967	15	1968	6.6	3.9	0.4
Ann		39	1977	255	1974	146	43	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.8	2.3	2.8	3.5	4.8	5.5	7.0	8.6	13	18	22	32	49	78	130	18
Nov	7.4	17	22	26	35	45	72	104	153	223	267	305	391	514	724	18
Dec	12	53	97	116	133	151	189	244	314	403	460	555	662	811	1140	18
Jan	25	74	100	116	133	149	194	246	310	408	474	565	700	940	1290	18
Feb	48	74	95	109	120	129	148	177	215	273	310	365	432	578	888	18
Mar	63	74	85	97	109	121	145	172	215	273	311	362	428	521	702	18
Apr	29	42	50	56	63	71	84	98	112	130	142	156	172	215	313	18
May	22	25	28	30	32	35	41	47	54	64	69	74	85	108	152	18
Jun	7.3	9.1	10	12	13	14	16	18	21	24	26	28	30	35	45	18
Jul	2.8	2.8	3.6	4.1	4.1	4.6	5.2	5.9	6.7	8.7	9.8	11	13	14	17	18
Aug	0.8	1.3	1.6	2.0	2.5	2.5	3.2	4.2	5.1	5.7	6.4	6.7	7.0	8.3	9.6	18
Sep	1.3	1.6	2.1	2.1	2.7	3.8	4.7	5.3	6.2	6.7	7.8	8.6	9.4	12	17	18
Ann	2.5	3.7	5.1	6.3	8.3	11	22	45	87	139	166	217	287	393	633	

WILLAMETTE RIVER BASIN

14191000 WILLAMETTE RIVER AT SALEM, OR

LOCATION.--Lat 44°56'40", long 123°02'30", in SE 1/4 SW 1/4 sec. 22, T.7 S., R.3 W., Marion County, Hydrologic Unit 17090007, on right bank 300 ft upstream from Center Street Bridge in Salem and at mile 84.16.

DRAINAGE AREA.--7,280 mi², approximately.

PERIOD OF RECORD.--October 1909 to December 1916, January 1923 to 1987. Monthly discharge only January 1923 to September 1927, published in WSP 1318. Gage-height records collected at about the same site since 1892 are contained in reports of National Weather Service.

REVISED RECORDS.--WSP 1318: 1915(M).

GAGE.--Water-stage recorder. Datum of gage is 106.14 ft above National Geodetic Vertical Datum of 1929.

Oct. 1, 1909, to Dec. 31, 1916, nonrecording gage at site 0.5 mi upstream at datum 8.00 ft higher.

Jan. 1, 1923, to Nov. 26, 1934, nonrecording gage at Center Street Bridge at datum 8.00 ft higher.

Nov. 27, 1934, to Sept. 30, 1962, water-stage recorder at present site at datum 8.00 ft higher.

REMARKS.--Flow regulated by reservoirs upstream from station. Many small diversions for irrigation upstream from station; part of flow of Salem Canal, which diverts water from North Santiam River, returns to Willamette River downstream from station, through Mill Creek at Salem.

AVERAGE DISCHARGE.--71 years, 23,610 ft³/s, 44.04 in/yr, 17,110,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 348,000 ft³/s Jan. 8, 1923, gage height, 38.3 ft, present datum; minimum discharge, 2,470 ft³/s Aug. 27, 1940, gage height, 3.55 ft, present datum.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 500,000 ft³/s Dec. 4, 1861, gage height, about 47 ft present datum, from rating curve extended above 250,000 ft³/s in 1916. Floods of Jan. 16, 1881, and Feb. 5, 1890, reached stages of 44.3 ft, discharge, 428,000 ft³/s, and 45.1 ft, discharge, 448,000 ft³/s, respectively, from floodmarks and information by Corps of Engineers.

STATISTICAL SUMMARIES FOR THE PERIOD 1910-1941 (BEFORE THE CONSTRUCTION OF 12 UPSTREAM DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	25	3210	1937	14700	1928	6240	3020	2.5
Nov	25	3140	1937	68500	1910	24300	18600	9.4
Dec	25	10000	1937	63500	1916	31600	14800	12.6
Jan	26	10800	1937	97700	1923	43100	21500	17.2
Feb	26	14600	1931	87500	1916	40900	20200	14.9
Mar	26	11100	1941	71500	1916	33800	15600	13.5
Apr	26	10800	1926	63400	1937	28400	13000	11.0
May	26	9710	1926	33500	1916	20300	7260	8.1
Jun	26	5070	1940	37400	1933	14000	7660	5.4
Jul	26	3290	1940	19900	1916	6990	3740	2.8
Aug	26	2650	1940	7770	1916	4130	1120	1.6
Sep	26	2680	1931	9370	1912	4460	1610	1.7
Ann		13700	1941	35400	1916	21300	5670	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2900	3080	3180	3280	3410	3560	4000	4530	5040	5920	6820	7700	8770	11100	16500	25
Nov	3240	3480	3970	4830	5950	6830	10300	13700	17700	24500	29500	35900	46600	62400	86100	25
Dec	6640	9140	10700	12600	14500	16300	19900	23600	27900	33700	38500	47800	54500	67300	86900	25
Jan	11500	14500	17300	19500	21700	23900	28000	32100	38800	48900	54100	61600	69200	81900	107000	26
Feb	12600	15900	17700	19400	21300	23500	26900	31700	37000	45100	50300	56600	65100	76400	95000	26
Mar	12400	14700	16700	18400	19500	20600	23400	26100	30000	36000	39000	44100	51700	63400	82700	26
Apr	10800	12600	14300	16200	17700	18900	20800	23700	27300	31000	33100	35600	39100	44500	55000	26
May	8180	9550	11100	12000	13100	14600	17300	19500	21800	24400	26000	28000	29800	31900	35500	26
Jun	4940	5800	6580	7230	7760	8270	9790	11900	14200	16600	18200	19700	21300	23300	28000	26
Jul	3390	3620	3870	4170	4470	4700	5050	5640	6300	7090	7640	8450	9970	11900	16000	26
Aug	2850	3060	3150	3240	3340	3510	3650	3800	3970	4260	4470	4840	5200	5730	6310	26
Sep	2830	2970	3090	3190	3280	3360	3530	3720	3970	4380	4760	5200	5850	6770	8530	26
Ann	3120	3470	3840	4370	5110	6140	9570	14300	19200	24400	27700	31700	37400	47800	67400	

WILLAMETTE RIVER BASIN

14191000 WILLAMETTE RIVER AT SALEM, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1969-1987 (AFTER THE COMPLETION OF 12 UPSTREAM DAMS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	10900	1973	24400	1969	14900	3220	5.1
Nov	19	12200	1977	70400	1974	32000	16800	10.7
Dec	19	6780	1977	91800	1978	52600	22800	18.1
Jan	19	6380	1977	78400	1974	48000	21300	16.6
Feb	19	5310	1977	62900	1986	37200	16400	11.7
Mar	19	11500	1978	73700	1972	30200	15600	10.4
Apr	19	10300	1977	38700	1974	22800	8820	7.6
May	19	7700	1973	29800	1984	18100	5920	6.2
Jun	19	6380	1987	30900	1984	13600	6320	4.5
Jul	19	6020	1978	12400	1983	7770	1760	2.7
Aug	19	6180	1987	9540	1971	7480	966	2.6
Sep	19	7630	1987	13300	1978	10800	1600	3.6
Ann		9760	1977	38000	1974	24600	6890	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	9910	10400	11000	11500	12000	12400	13000	13600	14200	15100	15700	16800	18100	20300	27500	19
Nov	11500	12800	14300	15600	16600	17800	20400	24200	27300	32600	37300	47600	59900	68900	82600	19
Dec	7890	15900	18800	22800	26200	30600	40800	51100	59900	70800	76500	82200	86800	92500	100000	19
Jan	8310	14200	17100	20600	23700	27000	33200	39900	49600	60300	66900	74500	82900	93400	108000	19
Feb	8610	11900	13500	15700	17600	19900	24500	30400	36100	44700	49900	56900	65500	74300	91300	19
Mar	11500	12500	13600	14500	15500	16600	19100	22700	27600	33700	38700	45000	52500	60900	71200	19
Apr	10000	10900	11800	12500	13800	15100	17200	20000	22200	24900	26700	29100	32600	39500	48300	19
May	7640	9080	10400	11500	12400	13300	15400	17300	19300	21100	22600	24300	26000	27300	30100	19
Jun	6130	6590	7230	7640	8200	8770	9950	11100	12600	14300	16100	18500	20500	23000	28300	19
Jul	5830	5940	6070	6230	6380	6520	6750	7000	7320	7830	8300	8740	9320	10800	12000	19
Aug	5850	6120	6370	6480	6580	6670	6910	7150	7520	7890	8140	8470	8800	9230	10100	19
Sep	7340	7890	8190	8420	8800	9200	9930	10700	11400	12100	12400	12700	13000	13700	14900	19
Ann	6380	6970	7680	8650	9840	10900	12800	15500	19400	25100	29000	34900	44800	59200	79000	

YAMHILL RIVER BASIN

14192500 SOUTH YAMHILL RIVER NEAR WILLAMINA, OR

LOCATION.--Lat 45°02'50", long 123°30'10", in NE 1/4 SE 1/4 sec.14, T.6 S., R.7 W., Polk County, Hydrologic Unit 17090008, on left bank 2.3 mi southwest of Willamina, 2.8 mi upstream from Willamina Creek, and at mile 45.5.

DRAINAGE AREA.--133 mi².

PERIOD OF RECORD.--May 1934 to 1987.

REVISED RECORDS.--WSP 814: Drainage area. WSP 1318: 1934.

GAGE.--Water-stage recorder. Datum of gage is 235.55 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Slight regulation occasionally at low flows by millpond upstream. No diversion upstream from station.

AVERAGE DISCHARGE.--53 years, 620 ft³/s, 63.31 in/yr, 449,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,600 ft³/s Dec. 22, 1964, gage height, 17.07 ft; minimum discharge, 2.6 ft³/s Oct. 11, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1934-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	53	11	1953	846	1948	185	177	2.5
Nov	53	22	1937	2650	1974	898	599	11.9
Dec	53	104	1977	2920	1965	1470	673	20.1
Jan	53	132	1977	3170	1953	1470	729	20.1
Feb	53	278	1977	2870	1949	1340	545	16.7
Mar	53	270	1941	1980	1961	1000	413	13.7
Apr	53	180	1939	1360	1937	576	267	7.6
May	54	68	1939	613	1948	277	134	3.8
Jun	54	47	1934	405	1981	129	81	1.7
Jul	54	18	1967	164	1983	49	25	0.7
Aug	54	6.7	1967	82	1968	25	12	0.3
Sep	54	9.7	1965	281	1959	41	43	0.5
Ann		215	1977	1030	1974	620	149	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	16	18	21	24	27	31	42	59	89	140	185	260	358	479	761	53
Nov	42	77	124	166	201	242	346	487	711	1030	1210	1450	1750	2160	3040	53
Dec	210	298	377	460	526	597	766	966	1270	1680	1900	2190	2570	3230	4400	53
Jan	244	331	399	468	537	615	786	997	1260	1600	1880	2160	2550	3210	4500	53
Feb	283	372	445	508	567	633	775	934	1170	1490	1720	1990	2300	2820	3790	53
Mar	256	332	380	425	470	512	610	734	892	1140	1280	1470	1700	2030	2610	53
Apr	185	227	257	279	302	326	373	434	513	623	689	774	889	1070	1420	53
May	93	110	125	137	149	161	187	215	248	291	318	356	412	506	689	54
Jun	46	53	59	64	68	74	86	98	113	132	144	158	183	219	300	54
Jul	19	22	24	26	28	31	36	42	48	56	61	69	79	90	111	54
Aug	9.1	12	13	14	15	16	19	22	25	28	30	32	36	40	50	54
Sep	9.5	11	13	14	16	17	19	22	26	34	40	48	60	83	133	54
Ann	15	21	27	36	49	71	139	253	403	610	758	953	1250	1690	2470	

YAMHILL RIVER BASIN

14193000 WILLAMINA CREEK NEAR WILLAMINA, OR

LOCATION.--Lat 45°08'35", long 123°29'35", in NE 1/4 NW 1/4 sec.13, T.5 S., R.7 W., Yamhill County, Hydrologic Unit 17090008, on right bank 4.5 mi north of Willamina and at mile 6.2.

DRAINAGE AREA.--64.7 mi².

PERIOD OF RECORD.--June 1934 to 1987.

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 315 ft above National Geodetic Vertical Datum of 1929 (plane-table survey). Prior to Oct. 1, 1939, water-stage recorder at site on left bank at datum 1.00 ft higher. Oct. 1, 1939, to Aug. 5, 1968, water-stage recorder at site on left bank at present datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--53 years, 260 ft³/s, 54.57 in/yr, 188,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,800 ft³/s Dec. 22, 1964, gage height, 13.54 ft, from rating curve extended above 3,400 ft³/s on basis of slope-area measurement at gage height 11.65 ft; minimum discharge, 5.4 ft³/s July 15, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Mar. 31, 1931, reached a stage of about 12 ft, from information by local resident, discharge, 8,200 ft³/s, from rating curve extended above 3,400 ft³/s on basis of slope-area measurement at gage height 11.65 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1934-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	53	12	1953	276	1948	63	56	2.1
Nov	53	14	1937	1080	1974	321	239	10.1
Dec	53	35	1977	1220	1965	586	297	19.1
Jan	53	42	1977	1220	1953	601	311	19.6
Feb	53	85	1977	1120	1949	565	225	16.8
Mar	53	105	1941	929	1956	451	185	14.7
Apr	53	95	1941	544	1937	267	110	8.4
May	53	53	1939	296	1948	135	52	4.4
Jun	54	34	1934	161	1981	67	26	2.1
Jul	54	18	1934	66	1983	32	9.3	1.1
Aug	54	12	1940	38	1968	19	5.5	0.6
Sep	54	11	1939	69	1959	22	10	0.7
Ann		83	1977	461	1974	260	67	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	13	14	15	16	17	19	22	27	35	51	64	83	107	151	232	53
Nov	20	31	43	56	70	81	115	163	243	347	415	502	635	808	1190	53
Dec	86	127	163	192	221	252	310	390	504	649	741	854	1010	1240	1750	53
Jan	125	166	190	218	244	275	345	425	516	647	756	870	1030	1270	1710	53
Feb	139	193	226	253	282	309	361	421	506	621	708	808	945	1130	1470	53
Mar	137	166	192	214	239	260	305	361	428	517	573	617	707	828	1090	53
Apr	97	117	131	143	156	169	194	220	256	302	331	366	404	456	579	53
May	60	68	75	81	86	91	103	114	126	144	157	173	194	227	291	53
Jun	34	38	42	44	46	49	53	59	65	72	76	81	89	102	133	54
Jul	18	20	21	23	24	25	28	31	34	37	39	41	44	49	56	54
Aug	12	13	14	14	15	16	17	19	20	22	23	24	26	28	33	54
Sep	11	12	13	13	14	14	16	17	19	21	23	26	30	37	54	54
Ann	14	17	20	24	30	39	68	116	183	273	332	405	509	659	976	

WILLAMETTE RIVER BASIN

14193300 MILL CREEK NEAR WILLAMINA, OR

LOCATION.--Lat 44°58'15", long 123°26'55", in NE 1/4 NW 1/4 sec.17, T.7 S., R.6 W., Polk County, Hydrologic Unit 17090008, on left bank 0.2 mi upstream from bridge, 0.7 mi downstream from South Branch, 7.5 mi south of Willamina, and at mile 11.5.

DRAINAGE AREA.--27.4 mi².

PERIOD OF RECORD.--July 1958 to September 1973.

GAGE.--Water-stage recorder. Datum of gage is 562.02 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--15 years (water years 1959-73), 140 ft³/s, 69.39 in/yr, 101,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,170 ft³/s Dec. 22, 1964, gage height, 11.47 ft; minimum, 2.6 ft³/s Sept. 8, 1958.

STATISTICAL SUMMARIES FOR THE PERIOD 1959-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	15	6.7	1965	94	1969	39	30	2.4
Nov	15	80	1973	385	1961	194	103	11.4
Dec	15	139	1960	658	1965	330	155	20.0
Jan	15	75	1963	631	1970	376	179	22.8
Feb	15	82	1973	572	1961	269	145	14.9
Mar	15	67	1965	418	1961	241	104	14.6
Apr	15	55	1973	251	1963	120	61	7.0
May	15	23	1966	129	1963	58	30	3.5
Jun	15	12	1966	68	1968	23	13	1.4
Jul	15	6.6	1967	13	1971	9.3	2.1	0.6
Aug	15	3.9	1966	17	1968	6.2	3.3	0.4
Sep	15	3.4	1965	43	1959	11	10	0.6
Ann		89	1973	182	1971	140	22	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3.7	4.3	5.0	6.0	6.4	6.8	8.7	15	23	35	45	55	75	106	170	15
Nov	19	23	29	36	43	50	67	101	148	209	248	296	360	452	634	15
Dec	37	61	76	90	104	119	156	194	254	343	405	493	599	744	1030	15
Jan	50	60	71	85	108	126	170	228	284	374	437	528	691	971	1290	15
Feb	62	80	89	98	107	117	142	166	200	253	290	342	411	593	904	15
Mar	54	67	75	81	94	107	137	164	206	257	299	346	417	497	663	15
Apr	36	40	45	51	56	63	77	87	106	128	143	162	189	233	322	15
May	21	24	27	29	31	33	38	43	50	61	67	74	89	119	152	15
Jun	12	13	14	15	16	16	18	20	21	24	26	27	30	34	45	15
Jul	5.4	5.7	5.9	6.5	6.8	6.8	7.5	8.3	9.1	11	12	12	13	14	16	15
Aug	3.4	3.7	4.0	4.0	4.4	4.4	4.8	5.2	5.2	5.7	6.2	6.2	6.7	7.3	9.5	15
Sep	3.0	3.4	3.4	3.4	3.8	3.8	4.3	4.9	5.5	7.0	9.5	13	17	27	41	15
Ann	3.7	5.2	6.1	7.6	11	15	29	49	80	125	155	195	251	354	565	

YAMHILL RIVER BASIN

14194000 SOUTH YAMHILL RIVER NEAR WHITESON, OR

LOCATION.--Lat 45°10'08", long 123°12'25", in NE 1/4 NW 1/4 sec.5, T.5 S., R.4 W., Yamhill County, Hydrologic Unit 17090008, near left bank on downstream side of Whiteson Bridge on State Highway 99W, 1.3 mi northwest of Whiteson, 1.4 mi downstream from Salt Creek, and at mile 16.71.

DRAINAGE AREA.--502 mi².

PERIOD OF RECORD.--July 1940 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 82.30 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 20, 1940, nonrecording gage at present site and datum.

REMARKS.--Slight regulation during low-water periods by logpond upstream. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--47 years, 1,754 ft³/s, 47.45 in/yr, 1,271,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,200 ft³/s Dec. 23, 1964, gage height, 47.20 ft; minimum discharge, 3.2 ft³/s Aug. 24, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1937 reached a stage of 46.9 ft, from Oregon State Highway Department bridge plans.

STATISTICAL SUMMARIES FOR THE PERIOD 1940-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	47	22	1953	1820	1948	371	374	1.8
Nov	47	105	1953	8090	1974	2150	1650	10.1
Dec	47	188	1977	8490	1956	4250	2150	20.6
Jan	47	242	1977	8880	1971	4470	2400	21.7
Feb	47	423	1977	8890	1949	4060	1830	17.9
Mar	47	699	1941	6240	1951	2940	1390	14.3
Apr	47	545	1942	3620	1982	1650	838	7.7
May	47	269	1966	1740	1948	724	372	3.5
Jun	47	121	1966	910	1981	304	169	1.4
Jul	48	37	1967	309	1983	107	52	0.5
Aug	48	9.7	1967	153	1968	49	25	0.2
Sep	48	18	1967	451	1959	83	76	0.4
Ann		459	1977	3130	1974	1750	507	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	37	43	51	59	66	86	119	177	292	386	521	682	990	1500	--	47
Nov	123	194	268	346	423	499	700	1010	1470	2280	2830	3440	4260	5430	7930	47
Dec	484	783	1010	1220	1440	1670	2130	2830	3760	5060	5810	6650	7680	9570	12800	47
Jan	655	922	1110	1310	1530	1750	2320	2990	3850	5020	5750	6740	8060	10100	14100	47
Feb	779	1070	1290	1480	1670	1860	2250	2750	3460	4520	5350	6220	7210	8710	12200	47
Mar	704	902	1050	1190	1330	1470	1780	2160	2640	3350	3810	4380	5100	6100	7650	47
Apr	518	613	680	753	823	889	1030	1200	1440	1750	1950	2230	2650	3280	4290	47
May	256	296	329	362	394	425	494	560	642	749	825	917	1090	1330	1770	47
Jun	108	131	149	162	175	187	214	240	271	315	345	379	423	509	706	47
Jul	36	42	48	54	60	66	77	90	105	124	137	152	170	194	238	48
Aug	15	20	23	25	28	31	37	43	50	56	61	66	72	82	101	48
Sep	19	23	26	28	31	34	40	46	55	73	85	100	127	175	273	48
Ann	30	42	57	77	111	161	327	622	1047	1647	2079	2701	3562	4938	7527	

YAMHILL RIVER BASIN

14194300 NORTH YAMHILL RIVER NEAR FAIRDALE, OR

LOCATION.--Lat 45°21'55", long 123°22'40", in SW 1/4 sec.25, T.2 S., R.6 W., Yamhill County, Hydrologic Unit 17090008, on right bank 0.4 mi downstream from small tributary, 1.3 mi upstream from Kutch Creek, 2.1 mi west of Fairdale, 9.5 mi west of Yamhill and at mile 28.4.

DRAINAGE AREA.--9.03 mi².

PERIOD OF RECORD.--October 1958 to March 1966, October 1967 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 560 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--27 years (water years 1959-65, 1968-87), 47.0 ft³/s, 70.68 in/yr, 34,050 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,330 ft³/s Dec. 22, 1964, gage height, 6.88 ft, from rating curve extended above 1,000 ft³/s; maximum gage height, 9.7 ft Dec. 23, 1964 (backwater from debris); minimum discharge, 2.3 ft³/s Sept. 23-26, 1965.

STATISTICAL SUMMARIES FOR THE PERIOD 1959-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	28	3.5	1975	31	1960	12	7.9	2.3
Nov	28	5.7	1977	177	1974	62	37	10.9
Dec	28	7.8	1977	202	1965	101	51	18.2
Jan	28	10	1977	228	1972	104	55	18.8
Feb	28	20	1977	179	1961	91	35	15.0
Mar	28	35	1981	151	1961	80	31	14.4
Apr	27	24	1965	91	1974	51	18	9.1
May	27	14	1987	50	1984	29	9.3	5.2
Jun	27	9.1	1987	35	1981	15	6.3	2.7
Jul	27	5.3	1970	13	1983	7.6	2.0	1.4
Aug	27	3.5	1970	7.6	1983	4.9	1.2	0.9
Sep	27	2.7	1965	16	1959	5.6	2.9	1.0
Ann		17	1977	81	1974	47	12	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.8	3.2	3.2	3.6	4.0	4.0	4.5	5.7	7.2	11	14	19	23	29	46	28
Nov	6.3	8.8	12	16	19	22	30	41	55	71	80	94	115	146	206	28
Dec	20	27	33	38	43	48	57	71	90	114	126	143	168	205	276	28
Jan	20	26	32	37	42	48	61	75	90	114	129	147	173	215	300	28
Feb	25	34	40	46	50	54	62	74	86	103	115	131	148	176	229	28
Mar	29	32	38	42	45	48	55	64	75	92	101	113	127	149	186	28
Apr	21	25	27	30	32	35	40	45	51	59	65	70	76	90	116	27
May	14	16	17	19	20	21	23	26	29	32	36	39	43	49	58	27
Jun	7.2	8.6	9.3	9.3	11	11	12	14	15	16	17	19	20	24	33	27
Jul	4.5	4.8	5.0	5.3	5.5	5.8	6.1	6.8	7.5	8.4	8.8	9.3	10	12	13	27
Aug	3.1	3.2	3.4	3.6	3.8	3.8	4.0	4.5	4.8	5.3	5.3	5.6	6.3	6.6	7.8	27
Sep	2.8	3.0	3.0	3.0	3.3	3.3	3.6	4.0	4.3	5.2	5.7	6.2	6.8	9.0	14	27
Ann	3.1	3.7	4.5	5.9	7.1	8.7	15	25	37	51	61	73	90	117	164	

WILLAMETTE RIVER BASIN

14195000 HASKINS CREEK NEAR McMinnville, OR

LOCATION.--Lat 45°18'50", long 123°21'55", in NE 1/4 sec.13, T.3 S., R.6 W., on left bank 150 ft downstream from Idlewild Creek, 0.5 mi upstream from Haskins Creek Dam, and 11 miles northwest of McMinnville.

DRAINAGE AREA.--6.48 mi².

PERIOD OF RECORD.--October 1928 to September 1951.

GAGE.--Water-stage recorder. Wooden control since September 1936. Elevation of gage is 815 ft above National Geodetic Vertical Datum of 1929 (by barometer). Prior to Oct. 1, 1930, at datum 1.00 ft higher.

REMARKS.--No regulation. Since Sept. 2, 1937, a small amount of water (average, 1.4 ft³/s) has been diverted at a point 800 ft upstream for municipal supply of McMinnville.

AVERAGE DISCHARGE.--23 years (1928-51), 26.4 ft³/s (19,110 acre-ft/yr), adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 610 ft³/s Mar. 31, 1931 (gage height, 4.00 ft, before control was built); minimum prior to diversion above station, 1.0 ft³/s Oct. 8, 1932.

STATISTICAL SUMMARIES FOR THE PERIOD 1929-1951

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	1.4	1937	25	1948	5.6	5.7	1.9
Nov	23	1.6	1937	79	1935	26	21	8.7
Dec	23	11	1931	141	1934	52	33	17.6
Jan	23	12	1937	118	1936	54	27	18.3
Feb	23	21	1941	108	1949	58	24	17.6
Mar	23	11	1941	91	1950	49	22	16.4
Apr	23	9.1	1942	69	1937	31	15	10.0
May	23	4.9	1939	37	1933	15	7.5	5.0
Jun	23	2.8	1939	20	1933	7.2	3.5	2.3
Jul	23	0.8	1939	6.8	1933	3.3	1.5	1.1
Aug	23	0.3	1938	3.8	1937	2.0	0.9	0.7
Sep	23	0.3	1938	4.2	1933	2.0	1.0	0.7
Ann		13	1941	38	1933	25	7.4	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.9	1.2	1.2	1.5	1.8	1.8	2.2	2.2	3.1	3.7	3.7	5.7	8.0	12	21	23
Nov	1.6	2.2	3.0	3.5	4.8	5.6	8.3	13	20	30	38	50	64	76	93	23
Dec	6.0	8.3	12	14	17	20	27	36	47	63	74	86	95	112	151	23
Jan	13	17	20	22	25	28	34	41	52	65	73	83	96	116	146	23
Feb	15	19	22	26	29	31	37	44	52	63	71	82	96	118	149	23
Mar	15	18	20	22	26	28	35	42	48	58	65	73	80	90	112	23
Apr	9.0	11	13	15	16	19	23	27	31	36	40	44	48	53	68	23
May	4.9	6.5	7.2	7.9	8.7	8.7	11	13	14	16	18	20	23	29	35	23
Jun	2.9	3.6	4.0	4.4	4.9	4.9	5.4	6.0	6.6	7.4	7.4	8.1	9.7	11	16	23
Jul	0.8	1.5	1.7	1.9	2.1	2.4	2.7	3.0	3.4	3.8	4.3	4.3	4.8	4.8	6.1	23
Aug	0.3	0.4	0.6	1.0	1.4	1.5	1.7	2.0	2.3	2.5	2.7	2.7	3.0	3.3	3.7	23
Sep	0.3	0.6	0.8	0.9	1.1	1.3	1.5	1.7	1.9	2.2	2.5	2.5	2.8	3.2	4.2	23
Ann	1.0	1.6	1.6	2.1	2.6	3.3	6.2	11	18	28	34	42	52	69	97	

WILLAMETTE RIVER BASIN

14196500 NORTH YAMHILL RIVER NEAR PIKE, OR

LOCATION.--Lat 45°22'15", long 123°17'10", in NE 1/4 sec.27, T.2 S., R.5 W., on left bank 1.3 miles west of Pike, 2.3 miles downstream from Haskins Creek, and 5.2 miles northwest of Yamhill.

DRAINAGE AREA.--47.8 mi².

PERIOD OF RECORD.--October 1940 to September 1951.

GAGE.--Water-stage recorder. Datum of gage is 249.22 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 23, 1940, staff gage at same site and datum.

REMARKS.--Occasional diurnal fluctuations caused by small dams upstream; no seasonal regulation. Water supply for city of McMinnville is diverted from Haskins Creek upstream from station.

AVERAGE DISCHARGE.--11 years (1940-51), 184 ft³/s (133,200 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,780 ft³/s Feb. 10, 1949 (gage height, 9.28 ft), from rating curve extended above 2,500 ft³/s by logarithmic plotting; minimum, 4.2 ft³/s Sept.11, 1944; minimum daily, 6.0 ft³/s Sept. 10, 1944.

STATISTICAL SUMMARIES FOR THE PERIOD 1941-1951

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	12	1945	206	1948	53	59	2.5
Nov	11	81	1945	474	1943	245	138	10.9
Dec	11	93	1945	729	1943	418	204	19.3
Jan	11	132	1949	765	1951	384	177	17.7
Feb	11	162	1941	850	1949	477	201	20.1
Mar	11	91	1941	609	1950	297	153	13.7
Apr	11	68	1941	287	1943	172	73	7.7
May	11	47	1947	227	1948	91	50	4.2
Jun	11	29	1951	64	1948	44	11	2.0
Jul	11	14	1941	28	1948	21	4.5	1.0
Aug	11	10	1951	18	1948	13	2.2	0.6
Sep	11	9.3	1950	27	1941	13	5.9	0.6
Ann		104	1941	239	1951	184	50	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																(n)
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	
Oct	9.8	10	11	12	13	14	16	21	28	36	46	62	79	99	226	11
Nov	29	40	47	53	60	67	95	126	192	301	356	433	505	620	795	11
Dec	67	94	119	139	158	186	245	313	394	503	546	620	723	866	1200	11
Jan	101	117	129	143	159	176	218	275	331	422	492	566	690	822	1100	11
Feb	102	126	150	174	190	206	252	316	434	526	592	687	792	944	1370	11
Mar	78	99	110	120	129	141	177	224	275	336	386	429	499	577	775	11
Apr	58	69	76	86	95	103	124	149	172	200	218	239	265	289	337	11
May	43	46	51	53	55	57	63	69	77	90	101	112	130	170	239	11
Jun	26	28	30	32	34	35	38	42	45	49	52	55	59	64	74	11
Jul	13	15	16	17	17	18	19	21	23	25	26	27	28	31	35	11
Aug	8.8	9.4	10	11	11	12	12	13	14	15	15	16	17	18	19	11
Sep	6.9	7.4	8.5	8.5	8.5	8.5	9.7	11	13	14	15	17	21	24	29	11
Ann	9.6	11	14	17	22	28	48	75	121	187	230	287	368	495	719	

WILLAMETTE RIVER BASIN

14197000 NORTH YAMHILL RIVER AT PIKE, OR

LOCATION.--Lat 45°22'10", long 123°15'15", in NW 1/4 sec.25, T.2 S., R.5 W., Yamhill County, on right bank 500 ft downstream from Turner Creek, 0.5 mile southeast of Pike, 4.0 miles northwest of Yamhill, and at mile 20.5.

DRAINAGE AREA.--66.8 mi².

PERIOD OF RECORD.--October 1948 to September 1973.

GAGE.--Water-stage recorder. Datum of gage is 192.66 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Aug. 21, 1950, water-stage recorder at datum 1.02 ft higher.

AVERAGE DISCHARGE.--25 years, 242 ft³/s, 49.20 in/yr, 175,300 acre-ft/yr.

REMARKS.--Seasonal regulation by Haskins Creek Reservoir (station 14195500); occasional diurnal fluctuation caused by Haskins Creek Dam and smaller dams upstream. Water supply for city of McMinnville is diverted from Haskins Creek upstream from station and that for city of Yamhill is diverted from Turner Creek upstream from station. Smaller diversions upstream from station for irrigation.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,530 ft³/s Dec. 21, 1955 (gage height, 12.42 ft), from rating curve extended above 2,600 ft³/s on basis of slope-area measurement of peak flow; minimum, 1.7 ft³/s Sept. 3, 1972.

STATISTICAL SUMMARIES FOR THE PERIOD 1949-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	25	8.5	1953	162	1952	48	42	1.7
Nov	25	17	1953	683	1956	260	166	8.8
Dec	25	187	1953	1020	1956	545	242	19.1
Jan	25	162	1957	1120	1953	636	312	22.3
Feb	25	171	1973	1160	1949	556	257	17.8
Mar	25	143	1965	807	1956	441	180	15.5
Apr	25	77	1965	411	1955	227	86	7.7
May	25	57	1973	214	1963	111	45	3.9
Jun	25	25	1965	85	1968	48	17	1.6
Jul	25	10	1965	33	1955	20	5.9	0.7
Aug	25	5.6	1970	20	1968	11	3.6	0.4
Sep	25	6.9	1967	38	1959	13	6.8	0.5
Ann		158	1973	364	1956	242	47	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	7.6	9.0	10	12	13	14	17	22	31	44	52	62	78	104	155 25
Nov	18	22	34	43	52	61	85	134	196	285	335	413	499	632	906 25
Dec	90	128	158	183	209	234	301	382	489	629	710	791	905	1140	1540 25
Jan	119	146	179	224	261	299	366	436	532	695	813	959	1120	1460	1880 25
Feb	164	203	227	247	267	287	336	397	470	581	662	795	933	1130	1480 25
Mar	146	180	200	218	235	259	307	359	411	487	544	621	700	812	1050 25
Apr	92	103	113	124	137	146	163	186	216	257	289	316	347	402	508 25
May	48	55	60	65	69	73	82	92	104	123	134	149	167	193	236 25
Jun	23	26	29	32	34	36	40	44	49	54	58	62	66	75	90 25
Jul	9.6	11	12	13	14	15	17	19	21	24	25	27	30	33	39 25
Aug	5.5	6.6	7.2	7.9	8.6	8.6	10	11	12	13	14	15	16	17	20 25
Sep	5.9	6.7	6.7	7.7	8.1	8.5	9.2	10	12	14	15	16	18	21	33 25
Ann	8.4	10	12	15	20	28	53	97	166	256	313	381	477	638	941

WILLAMETTE RIVER BASIN

14198000 WILLAMETTE RIVER AT WILSONVILLE, OR

LOCATION.--Lat 45°17'57", long 122°45'00", in SE 1/4 NE 1/4 sec.24, T.3 S., R.1 W., Clackamas County, on left bank, 0.2 miles downstream from Boeckman Creek, 1.1 miles downstream from bridge on Interstate Highway 5 at Wilsonville, and at mile 37.4.

DRAINAGE AREA.--8,400 mi², approximately.

PERIOD OF RECORD.--October 1948 to July 1973.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1954, nonrecording gage at Butteville, 5.9 mi upstream at same datum. Oct. 1, 1954, to Nov. 2, 1970, at site 1.1 mi upstream at same datum.

REMARKS.--Flow regulated by reservoirs upstream from station. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--24 years (1948-72), 28,900 ft³/s, 21,000,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 339,000 ft³/s Dec. 25, 1964, elevation, 94.74 ft; minimum daily, 3,600 ft³/s Nov. 29, 30, 1952. Flood of Dec. 4, 1861 reached a stage of about 105 ft at Wilsonville (discharge not determined).

STATISTICAL SUMMARIES FOR THE PERIOD 1949-1972

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	25	4550	1953	25000	1969	13600	5300	4.0
Nov	25	4220	1953	81000	1951	31100	16600	8.8
Dec	25	17200	1960	123000	1956	54000	28600	15.8
Jan	25	14300	1963	114000	1956	60500	28300	17.7
Feb	25	14300	1973	101000	1961	52600	21200	14.0
Mar	25	15900	1965	83500	1972	40300	19000	11.8
Apr	25	13600	1970	54500	1955	29900	11700	8.5
May	25	8070	1973	41400	1963	23700	8770	6.9
Jun	25	6800	1973	26300	1950	14800	5700	4.2
Jul	25	5540	1965	11700	1969	8020	1910	2.3
Aug	24	4410	1949	8940	1971	6570	1240	1.9
Sep	24	4570	1951	12300	1972	7840	2060	2.2
Ann		21000	1968	43700	1956	29000	5400	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	5850	7240	8140	8680	9070	9430	10000	10900	12300	14000	15000	16900	19000	22400	30800	25
Nov	6240	9030	10400	11700	13300	14900	17700	21600	26400	34200	40300	48300	58100	67300	85700	25
Dec	12900	15600	18000	21000	23900	26700	32500	43200	54200	67500	74500	81700	92100	107000	127000	25
Jan	14600	18800	22400	25500	27700	30400	38900	47800	60700	77200	86400	96800	109000	122000	139000	25
Feb	15800	19300	21600	23500	25600	28300	34000	41900	52200	64400	73500	80200	88300	101000	123000	25
Mar	15600	17300	18700	20100	21500	23000	27300	30900	37000	47100	52900	59600	67900	77600	96200	25
Apr	11600	13600	16100	17500	18300	19400	22900	26800	30400	34500	37700	41100	45100	51900	60000	25
May	9470	12200	13200	14000	15000	16800	19600	22400	24800	27300	28500	30000	32200	36900	42100	25
Jun	6680	7410	7940	8660	9500	10100	11400	13300	14800	17000	18600	20000	22100	24900	28300	25
Jul	5400	5710	5930	6100	6270	6430	7000	7300	7740	8300	8700	9210	10000	11000	13000	25
Aug	4530	5050	5400	5570	5730	6000	6160	6310	6470	6790	6980	7220	7680	8370	9540	24
Sep	4460	5080	5630	5910	6370	6540	6900	7500	7840	8680	8950	9650	10500	11300	12100	24
Ann	5620	6370	7000	7830	8990	10300	13700	18600	24000	30600	35800	42700	53800	69300	94400	

MOLALLA-PUDDING RIVER BASIN

14198500 MOLALLA RIVER ABOVE PINE CREEK, NEAR WILHOIT, OR

LOCATION.--Lat 45°00'35", long 122°28'45", in NE 1/4 NE 1/4 sec.31, T.6 S., R.3 E., Clackamas County, Hydrologic Unit 17090009, on right bank 0.5 mi upstream from Pine Creek, 5 mi southeast of Wilhoit, and at mile 32.5.

DRAINAGE AREA.--97.0 mi², at cableway 0.2 mi downstream.

PERIOD OF RECORD.--October 1935 to 1987.

REVISED RECORDS.--WSP 1738: Drainage area. WDR OR-75-1: 1967(M).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 791.35 ft above National Geodetic Vertical Datum of 1929 (Bureau of Public Roads bench mark). Oct. 1, 1935, to Sept. 30, 1945, and Oct. 1, 1945, to Feb. 9, 1961, water-stage recorder at site 0.3 mi downstream at datums 8.42 ft and 10.44 ft lower, respectively. Feb. 10, 1961, to July 21, 1966, water-stage recorder at site 0.2 mi downstream at datum 5.99 ft lower.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--52 years, 540 ft³/s, 75.60 in/yr, 391,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 24,300 ft³/s Dec. 22, 1964, gage height, 16.3 ft, from floodmark, site and datum then in use, from rating curve extended above 5,200 ft³/s; minimum discharge, 18 ft³/s Oct. 3, 1965.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	52	28	1937	1020	1948	239	218	3.8
Nov	52	24	1937	1800	1974	756	474	11.5
Dec	52	106	1977	2600	1965	1030	534	16.2
Jan	52	119	1977	2570	1953	1010	559	15.9
Feb	52	131	1977	2410	1961	935	440	13.4
Mar	52	257	1941	1710	1972	747	304	11.7
Apr	52	198	1941	1370	1937	706	237	10.7
May	52	147	1947	1060	1945	559	224	8.8
Jun	52	73	1940	726	1937	293	156	4.5
Jul	52	37	1940	325	1983	103	51	1.6
Aug	52	22	1940	193	1968	53	27	0.8
Sep	52	24	1987	240	1978	75	53	1.2
Ann		241	1977	921	1974	540	130	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	29	33	37	42	47	53	72	97	132	198	253	329	428	620	928	52
Nov	56	97	138	170	197	228	320	429	599	831	983	1190	1440	1780	2540	52
Dec	147	227	286	331	378	426	533	667	822	1060	1210	1420	1760	2310	3270	52
Jan	173	221	257	298	345	391	499	612	768	1020	1190	1430	1730	2230	3310	52
Feb	195	259	298	338	382	427	516	619	758	957	1100	1300	1580	2030	2810	52
Mar	250	282	310	338	370	407	479	563	679	832	936	1060	1200	1450	1860	52
Apr	263	308	343	383	426	471	546	624	700	794	860	936	1040	1180	1440	52
May	187	232	264	290	319	345	405	481	567	660	707	772	854	969	1170	52
Jun	90	107	123	137	149	162	192	224	264	319	349	387	445	530	740	52
Jul	44	49	53	58	62	66	74	83	94	112	122	137	152	182	233	52
Aug	27	30	32	34	36	38	42	45	50	55	58	63	69	79	100	52
Sep	24	27	29	31	33	35	39	46	53	66	77	94	118	160	248	52
Ann	34	43	54	69	90	126	221	321	434	589	684	795	957	1240	1820	

WILLAMETTE RIVER BASIN

14200000 MOLALLA RIVER NEAR CANBY, OR

LOCATION.--Lat 45°14'40", long 122°41'10", in NW 1/4 NE 1/4 sec.9, T.4 S., R.1 E., Clackamas County, Hydrologic Unit 17090009, on left bank on upstream side of Goods bridge, 1.5 mi south of Canby, and at mile 6.01.

DRAINAGE AREA.--323 mi².

PERIOD OF RECORD.--August 1928 to September 1959, October 1963 to September 1978.

GAGE.--Water-stage recorder. Datum of gage is 104.00 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 24, 1933, nonrecording gage and Oct. 24, 1933, to Sept. 26, 1955, water-stage recorder at present site and at datum 1.00 ft higher. Sept. 27, 1955, to June 3, 1956, water-stage recorder at site 145 ft downstream at present datum. June 4, 1956, to Sept. 30, 1959, water-stage recorder at site 0.3 mi downstream at datum 1.98 ft lower. Oct. 1, 1963, to May 4, 1964, nonrecording gage at present site and datum.

REMARKS.--No regulation. Numerous small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--46 years, 1,163 ft³/s, 48.90 in/yr, 842,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,600 ft³/s Dec. 22, 1964, gage height, 16.76 ft; minimum, 20 ft³/s Aug. 27, 1959.

STATISTICAL SUMMARIES FOR THE PERIOD 1928-1979

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	47	59	1953	2200	1948	444	466	3.2
Nov	47	52	1937	3860	1974	1500	1080	10.6
Dec	46	211	1977	5830	1965	2290	1270	16.8
Jan	46	303	1977	5120	1953	2430	1220	17.8
Feb	46	270	1977	4270	1949	1920	876	12.8
Mar	46	505	1941	3560	1972	1710	692	12.5
Apr	46	383	1941	2950	1937	1470	520	10.4
May	46	275	1931	2380	1945	1110	445	8.1
Jun	46	164	1940	1690	1933	624	334	4.4
Jul	46	76	1940	491	1952	207	94	1.5
Aug	47	41	1959	378	1968	105	57	0.8
Sep	47	46	1967	555	1978	143	108	1.0
Ann		522	1977	1820	1956	1160	313	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	60	70	80	93	106	117	144	186	239	337	434	571	733	1040	1650	47
Nov	80	132	214	291	347	409	598	818	1150	1690	2010	2430	2920	3670	5280	47
Dec	274	391	517	657	794	929	1210	1570	1990	2540	2880	3380	4010	5180	7000	46
Jan	433	607	740	847	942	1060	1320	1650	2060	2650	3000	3470	4120	5080	7070	46
Feb	441	592	696	800	897	971	1150	1420	1720	2110	2370	2720	3180	3880	5120	46
Mar	542	648	734	810	886	965	1140	1370	1640	1970	2140	2410	2760	3180	3980	46
Apr	503	635	732	828	925	1010	1160	1310	1480	1650	1760	1890	2050	2310	2910	46
May	326	432	512	574	644	720	865	1010	1170	1330	1420	1530	1660	1890	2200	46
Jun	171	216	253	278	306	336	402	489	593	717	796	885	966	1150	1480	46
Jul	79	89	98	109	119	128	146	165	192	228	249	279	310	364	475	46
Aug	46	54	59	63	67	71	79	98	110	117	128	143	164	196	--	47
Sep	50	55	59	62	65	69	78	90	105	128	146	172	213	295	447	47
Ann	66	83	105	134	177	244	444	698	972	1300	1510	1770	2110	2710	3920	

WILLAMETTE RIVER BASIN

14200300 SILVER CREEK AT SILVERTON, OR

LOCATION.--Lat 45°00'34", long 122°47'15", in NE 1/4 sec.34, T.6 S., R.1 W., Marion County, Hydrologic Unit 17090009, on right bank 300 ft downstream from railroad bridge in Silverton, 2.5 mi upstream from Brush Creek, and at mile 3.4.

DRAINAGE AREA.--47.9 mi².

PERIOD OF RECORD.--October 1963 to September 1968, October 1970 to September 1979.

GAGE.--Water-stage recorder. Datum of gage is 218.5 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Several small diversions for irrigation and municipal use upstream from station.

AVERAGE DISCHARGE.--14 years, 208 ft³/s, 58.97 in/yr, 150,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,900 ft³/s Dec. 22, 1964, gage height, 11.15 ft; minimum, 2.0 ft³/s Aug. 20, 21, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1980

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	9.5	1975	135	1968	46	36	1.9
Nov	14	40	1977	937	1974	274	234	10.8
Dec	14	36	1977	973	1974	498	276	20.3
Jan	14	57	1977	785	1971	526	233	21.5
Feb	14	85	1977	614	1979	336	157	12.5
Mar	14	105	1978	584	1972	324	150	13.2
Apr	14	106	1965	411	1974	226	86	8.9
May	14	62	1966	221	1975	136	50	5.5
Jun	14	26	1966	115	1968	64	28	2.5
Jul	14	10	1967	45	1971	24	9.9	1.0
Aug	14	4.0	1967	58	1968	16	14	0.7
Sep	14	5.4	1967	82	1968	30	26	1.2
Ann		96	1977	369	1974	208	68	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	7.3	8.6	10	12	13	14	17	23	31	41	49	61	79	117	177	14
Nov	27	34	41	52	63	76	115	166	218	277	333	398	500	722	1030	14
Dec	30	74	124	162	192	221	290	378	469	573	637	737	876	1070	1390	14
Jan	57	125	171	208	243	275	326	377	463	583	655	745	852	1070	1420	14
Feb	45	110	137	166	186	200	226	260	307	379	426	484	569	673	821	14
Mar	91	111	134	159	174	189	230	264	306	370	415	463	510	613	743	14
Apr	90	105	116	128	139	153	177	197	221	243	269	297	333	391	487	14
May	49	59	66	75	81	88	99	115	131	147	160	179	207	252	318	14
Jun	21	26	29	31	35	38	44	52	64	73	79	87	98	119	153	14
Jul	7.5	8.9	12	13	14	15	18	21	24	29	32	35	38	45	57	14
Aug	3.6	4.1	4.7	5.4	6.2	7.0	8.5	9.8	12	15	17	20	26	32	52	14
Sep	4.6	5.2	5.9	5.9	6.8	7.8	12	14	19	31	38	49	61	81	116	14
Ann	6.6	10	14	19	27	35	63	105	160	224	267	324	405	527	774	

WILLAMETTE RIVER BASIN

14201000 PUDDING RIVER NEAR MOUNT ANGEL, OR

LOCATION.--Lat 45°03'47", Long 122°49'45", in SE 1/4 sec. 8, T.6 S., R.1 W., on left bank on downstream side of Cline Bridge, 1.5 miles west of Mount Angel, 3.5 miles upstream from Little Pudding River, and at mile 40.4.

PERIOD OF RECORD.--October 1939 to September 1965. Monthly discharge only January to September 1945, published in WSP 1318.

DRAINAGE AREA.--204 mi².

GAGE.--Water-stage recorder. Datum of gage is 119.76 ft above National Geodetic Vertical Datum of 1929. Prior to Sept 22, 1945, staff or wire-weight gages at same site and datum.

REMARKS.--No regulation. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--26 years, 711 ft³/s (514,700 acre-ft/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,700 ft³/s Dec. 22, 1964 (gage height, 31.50 ft); minimum discharge, 2.4 ft³/s Aug. 9, 1965.

STATISTICAL SUMMARIES FOR THE PERIOD 1940-1966

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	27	21	1953	1120	1948	246	272	2.9
Nov	27	41	1953	2480	1951	915	619	10.6
Dec	27	297	1945	3400	1965	1430	760	17.1
Jan	27	461	1963	3010	1953	1560	807	18.6
Feb	27	469	1941	2960	1949	1470	637	16.0
Mar	27	331	1941	2190	1961	1140	469	13.6
Apr	26	283	1941	1750	1963	845	372	9.8
May	26	173	1947	1130	1963	539	263	6.4
Jun	26	77	1940	514	1953	237	107	2.7
Jul	26	23	1965	194	1952	76	41	0.9
Aug	26	10	1961	56	1954	30	13	0.4
Sep	26	11	1965	150	1941	43	31	0.5
Ann		410	1941	1040	1956	711	151	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	20	24	30	35	39	44	62	88	126	199	253	330	471	621	916 27
Nov	74	100	141	182	232	275	382	525	764	1050	1290	1560	1790	2170	3030 27
Dec	268	369	477	557	630	707	880	1050	1270	1600	1830	2100	2460	3070	3870 27
Jan	383	466	551	631	695	759	915	1110	1360	1750	2060	2430	2750	3140	4270 27
Feb	430	534	620	674	718	766	883	1090	1370	1750	1990	2190	2460	2750	3400 27
Mar	350	442	493	539	591	639	781	910	1080	1350	1510	1670	1880	2150	2520 27
Apr	260	339	419	472	508	543	611	694	830	971	1050	1140	1270	1470	1840 26
May	156	192	229	261	289	316	370	427	502	598	668	763	868	1000	1250 26
Jun	75	93	111	124	135	144	165	194	231	268	291	324	369	429	533 26
Jul	21	25	29	35	39	43	52	61	72	88	95	107	121	141	187 26
Aug	9.3	12	14	16	17	19	23	27	31	36	39	44	49	57	70 26
Sep	12	15	17	18	20	21	25	30	34	42	47	54	67	98	144 26
Ann	18	27	36	50	74	113	232	399	587	814	963	1160	1430	1860	2590

MOLALLA-PUDDING RIVER BASIN

14201500 BUTTE CREEK AT MONITOR, OR

LOCATION.--Lat 45°06'06", long 122°44'42", in SE 1/4 SE 1/4 sec.25, T.5 S., R.1 W., Marion County, Hydrologic Unit 17090009, on left bank at downstream side of highway bridge at Monitor and at mile 7.7.

DRAINAGE AREA.--58.7 mi².

PERIOD OF RECORD.--January to December 1936, October 1940 to September 1952, October 1966 to September 1985.
Monthly discharge only for January to December 1936, published in WSP 1318.

GAGE.--Water-stage recorder. Elevation of gage is 155 ft, from topographic map. Jan. 20 to Oct. 22, 1936, nonrecording gage at present site at different datum. Oct. 23 to Dec. 19, 1936, nonrecording gage at site 70 ft downstream at different datum. Oct. 1, 1940, to Sept. 30, 1952, nonrecording gage at present site at 151.35 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Diversions for irrigation by pumping upstream from station.

AVERAGE DISCHARGE.--31 years (water years 1941-52, 1967-85), 221 ft³/s, 51.13 in/yr, 160,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,310 ft³/s Jan. 21, 1972, gage height, 15.26 ft, from floodmark; minimum discharge, 0.04 ft³/s July 23, 24, Aug. 26, 1982.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1985

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	32	9.3	1981	485	1948	83	100	3.2
Nov	32	20	1937	779	1974	300	205	11.1
Dec	32	30	1977	942	1981	473	216	18.2
Jan	32	41	1977	870	1972	473	239	18.2
Feb	32	48	1977	977	1949	421	199	14.7
Mar	32	97	1941	593	1972	319	128	12.3
Apr	32	76	1941	430	1943	253	83	9.4
May	32	55	1947	376	1945	174	71	6.7
Jun	32	25	1979	266	1984	87	48	3.3
Jul	32	5.1	1967	138	1983	29	25	1.1
Aug	32	2.1	1967	49	1968	13	9.8	0.5
Sep	32	3.3	1967	72	1968	20	16	0.8
Ann		82	1977	354	1974	221	58	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	7.9	9.5	12	13	15	17	22	30	43	62	78	98	144	209	351 32
Nov	32	47	60	72	86	101	139	182	245	344	403	489	592	732	1020 32
Dec	57	113	152	181	209	234	295	363	431	529	611	706	838	1020	1350 32
Jan	78	109	134	156	178	197	239	289	362	471	549	659	797	1030	1440 32
Feb	77	99	124	146	173	195	243	297	372	461	528	616	725	912	1230 32
Mar	100	117	132	147	163	179	219	258	307	366	406	454	521	611	773 32
Apr	90	115	130	145	160	175	202	230	257	288	306	329	359	400	498 32
May	61	72	79	88	97	105	122	146	170	193	212	235	259	283	355 32
Jun	24	30	35	40	45	50	57	67	79	93	102	114	131	157	209 32
Jul	3.7	5.8	7.8	10	13	14	18	21	25	31	35	41	48	59	85 32
Aug	2.4	2.9	4.0	4.0	4.8	6.1	7.6	9.0	12	14	16	18	20	24	34 32
Sep	3.0	4.7	5.5	6.9	7.6	8.2	9.7	13	16	21	26	31	38	48	67 32
Ann	5.9	9.6	14	19	27	40	77	121	177	245	286	345	425	552	821

WILLAMETTE RIVER BASIN

14202000 PUDDING RIVER AT AURORA, OR

LOCATION.--Lat 45°14'00", long 122°44'56", in SE 1/4 sec.12, T.4 S., R.1 W., on upstream side of bridge on U.S. Highway 99E at Aurora, 0.9 mile upstream from Mill Creek and at mile 8.11.

DRAINAGE AREA.--479 mi².

PERIOD OF RECORD.--October 1928 to September 1964.

GAGE.--Wire-weight gage read once daily. Datum of gage is 72.23 ft above mean sea level, datum of 1929, supplementary adjustment of 1947. Prior to Oct. 2, 1934, and June 1 to Sept. 30, 1961, staff or wire-weight gage at same site and datum 5.00 ft higher. All gage heights given herein are at present datum.

REMARKS.--Slight regulation at high stages by pumping plant at mouth of Little Pudding River and at times, in summer, by mills on tributaries. Small diversions upstream from station.

COOPERATION.--Gage-height record collected in cooperation with U.S. Weather Bureau.

EXTREMES FOR PERIOD OF RECORD.--1928-64: Maximum discharge, 25,400 ft³/s Dec. 30, 1937 (gage height, 29.5 ft, from graph based on gage readings), from rating curve extended above 16,000 ft³/s; minimum, 26 ft³/s Aug. 13, 14, 1961.

Maximum stage known, 30.0 ft Jan. 7, 1923 (discharge, 27,900 ft³/s from rating curve extended above 16,000 ft³/s).

Flood of Dec. 23, 1964, reached a stage of 29.57 ft (discharge, 26,200 ft³/s).

STATISTICAL SUMMARIES FOR THE PERIOD 1929-1964

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	36	63	1953	1770	1948	340	360	2.4
Nov	36	78	1937	4640	1951	1390	1060	9.4
Dec	36	436	1945	5700	1956	2360	1360	16.4
Jan	36	767	1937	5720	1956	2690	1430	18.7
Feb	36	831	1941	5600	1949	2640	1220	16.7
Mar	36	599	1941	4230	1961	2090	879	14.5
Apr	36	456	1941	3350	1963	1560	745	10.5
May	36	242	1939	2190	1963	881	435	6.1
Jun	36	158	1940	1100	1933	419	203	2.8
Jul	36	66	1940	364	1952	151	66	1.1
Aug	36	33	1958	120	1943	72	21	0.5
Sep	36	41	1957	213	1941	91	40	0.6
Ann		694	1941	1970	1956	1220	321	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	59	66	72	77	83	91	113	149	185	262	334	421	566	808	1220	36
Nov	87	124	167	255	322	391	532	733	1110	1560	1930	2440	2870	3470	4870	36
Dec	344	494	595	740	878	1020	1340	1640	2100	2920	3420	3990	4490	5110	6240	36
Jan	601	747	926	1050	1170	1290	1610	2000	2500	3330	3820	4340	4950	5580	6740	36
Feb	670	852	993	1130	1250	1360	1660	2050	2630	3440	3880	4220	4540	4920	5520	36
Mar	672	803	890	974	1060	1160	1410	1680	1980	2550	2870	3200	3650	4090	4750	36
Apr	506	618	706	800	890	942	1060	1230	1430	1690	1840	2030	2320	2810	3790	36
May	267	322	388	439	491	538	636	721	834	978	1100	1200	1350	1570	1930	36
Jun	142	172	195	217	237	254	294	340	400	471	509	556	635	722	899	36
Jul	56	65	74	84	92	98	111	125	142	165	181	200	227	264	331	36
Aug	36	41	48	50	54	57	62	68	73	80	84	90	99	111	128	36
Sep	43	49	53	56	59	61	67	73	81	91	96	106	125	158	219	36
Ann	56	68	82	101	131	184	368	630	942	1340	1620	1970	2540	3420	4660	

WILLAMETTE RIVER BASIN

14202500 TUALATIN RIVER NEAR GASTON, OR

LOCATION.--Lat 45°26'11", long 123°10'07", in SE 1/4 SW 1/4 sec.34, T.1 S., R.4 W., Washington County, Hydrologic Unit 17090010, on right bank 1.5 mi west of Gaston, and at mile 63.9.

DRAINAGE AREA.--48.5 mi².

PERIOD OF RECORD.--October 1940 to September 1956, October 1972 to September 1976, October 1978 to September 1984. October 1976 to September 1978 in reports of Oregon Water Resources Department. Prior to October 1973 published as "at Gaston."

GAGE.--Water-stage recorder. Elevation of gage is 170 ft, by barometer. Prior to May 20, 1942, water-stage recorder at site 1.5 mi downstream at datum 164.18 ft above National Geodetic Vertical Datum of 1929. May 20, 1942, to Sept. 30, 1956, nonrecording gage at present site at different datum.

REMARKS.--Slight diurnal fluctuation caused by logponds upstream. Small diversions for irrigation upstream from station. In 1949 city of Hillsboro began diverting about 5 ft³/s for municipal supply. Some water is diverted from Roaring Creek upstream for Forest Grove municipal supply.

AVERAGE DISCHARGE.--26 years (water years 1941-56, 1973-76, 1979-84), 198 ft³/s, 55.44 in/yr, 143,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,170 ft³/s Dec. 21, 1955, gage height, 13.18 ft, site and datum then in use; minimum discharge, 0.20 ft³/s Sept. 22, 23, 1951, Aug. 14, 15, Sept. 25, Oct. 8, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1951-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	17	2.2	1953	146	1952	54	43	2.2
Nov	17	8.5	1953	642	1974	258	188	10.3
Dec	17	169	1979	843	1956	478	206	19.7
Jan	17	115	1979	871	1953	482	246	19.9
Feb	16	140	1973	842	1954	440	163	16.5
Mar	16	133	1981	677	1956	344	136	14.2
Apr	16	110	1973	374	1955	218	75	8.7
May	16	41	1956	173	1984	90	39	3.7
Jun	16	18	1956	87	1981	42	19	1.7
Jul	16	9.5	1951	36	1983	20	8.2	0.8
Aug	16	2.5	1952	37	1974	15	8.9	0.6
Sep	16	2.1	1952	30	1973	15	8.5	0.6
Ann		118	1973	316	1974	206	59	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	2.8	7.5	10	15	18	20	22	25	30	38	48	63	82	116	214 17
Nov	13	26	34	42	53	67	101	140	205	302	351	428	532	673	855 17
Dec	87	118	151	182	208	239	299	359	434	547	613	702	827	990	1290 17
Jan	101	123	162	182	202	225	274	328	408	516	619	725	894	1070	1300 17
Feb	117	134	161	181	204	231	281	335	402	496	558	636	726	878	1140 16
Mar	116	140	158	173	189	205	247	291	331	378	411	451	529	631	819 16
Apr	90	100	109	119	127	136	160	182	213	257	275	303	329	367	471 16
May	37	42	46	50	54	59	68	77	87	99	108	121	135	163	203 16
Jun	18	22	24	25	27	29	32	36	40	44	47	51	60	74	95 16
Jul	6.6	9.2	12	13	14	15	17	18	21	24	27	29	31	34	37 16
Aug	1.9	3.2	4.4	6.5	8.1	10	13	15	18	20	21	23	25	28	36 16
Sep	1.2	2.5	6.1	7.3	8.3	9.4	12	13	16	19	21	23	26	30	37 16
Ann	7.2	11	15	19	23	28	46	89	148	228	279	338	411	544	788

TUALATIN RIVER BASIN

14202980 SCOGGINS CREEK BELOW HENRY HAGG LAKE, NEAR GASTON, OR

LOCATION.--Lat 45°28'10", long 123°11'56", in SE 1/4 NE 1/4 sec.20, T.1 S., R.4 W., Washington County, Hydrologic Unit 17090010, on left bank 600 ft downstream from Scoggins Dam, 800 ft upstream from small left bank tributary, 3.7 mi northwest of Gaston, and at mile 4.8.

DRAINAGE AREA.--38.8 mi².

PERIOD OF RECORD.--January 1975 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 187.48 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow completely regulated by Henry Hagg Lake since January 1975. Discharge not adjusted for storage or release from Henry Hagg Lake as evaporation from reservoir at times exceeds natural flow.

AVERAGE DISCHARGE.--12 years, 107 ft³/s, 77,520 acre-ft.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,250 ft³/s Dec. 16, 1977, gage height, 13.50 ft; minimum discharge, 1.4 ft³/s Nov. 16, 1978.

STATISTICAL SUMMARIES FOR THE PERIOD 1975-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	26	1978	155	1980	105	48	8.3
Nov	12	24	1977	233	1985	91	65	7.0
Dec	12	14	1977	433	1978	181	147	14.4
Jan	13	12	1977	337	1983	137	105	10.9
Feb	13	9.5	1977	303	1982	92	82	6.7
Mar	13	10	1977	326	1983	139	101	11.0
Apr	13	12	1985	172	1982	67	53	5.2
May	13	19	1977	98	1984	61	24	4.8
Jun	13	14	1977	99	1985	57	23	4.4
Jul	13	53	1983	176	1985	109	40	8.6
Aug	13	83	1977	251	1975	136	43	10.8
Sep	13	72	1977	333	1975	132	68	10.1
Ann		40	1977	172	1983	107	36	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	14	27	29	31	32	62	86	113	132	142	148	154	175	187	202	12
Nov	13	15	17	23	25	28	41	63	86	109	130	145	168	225	312	12
Dec	9.5	13	14	15	19	29	67	123	201	317	342	359	373	388	426	12
Jan	12	13	14	15	17	20	52	79	120	179	208	248	333	362	430	13
Feb	10	12	14	15	18	20	24	36	55	70	89	123	182	289	379	13
Mar	11	13	18	25	36	44	58	78	104	154	201	258	317	367	433	13
Apr	11	12	13	14	18	20	34	48	59	70	82	101	123	143	187	13
May	17	25	28	34	36	38	45	51	59	71	74	77	87	103	137	13
Jun	11	24	26	29	31	35	42	51	63	70	73	77	92	108	143	13
Jul	42	53	70	75	79	81	90	98	111	138	147	154	164	175	185	13
Aug	85	91	96	100	104	108	119	128	138	153	159	164	172	182	227	13
Sep	41	71	79	85	92	96	103	112	124	143	159	177	187	232	318	13
Ann	12	14	20	26	33	41	62	80	99	123	137	155	179	222	342	

WILLAMETTE RIVER BASIN

14203000 SCOGGINS CREEK NEAR GASTON, OR.

LOCATION.--Lat 45°27'32", long 123°09'16", on line between secs. 26 and 27, T.1 S., R.4 W., Washington County, on left bank 100 ft upstream from bridge on State Highway 47, 1.7 mi northwest of Gaston, and at mile 1.71.

DRAINAGE AREA.--43.3 mi².

PERIOD OF RECORD.--October 1940 to September 1974. Prior to October 1973, published as Scoggin Creek near Gaston.

GAGE.--Water-stage recorder. Datum of gage is 168.92 ft above mean sea level. Prior to Oct. 1, 1947, water-stage recorder at site 300 ft upstream at same datum. Oct. 1, 1947, to June 7, 1950, nonrecording gage at site 150 ft upstream at same datum.

REMARKS.--Some diurnal fluctuation caused by logponds upstream from station. Diversions by pumping for irrigation upstream from station. Part of domestic water supply for Hillsboro is diverted from Sain Creek upstream from station.

AVERAGE DISCHARGE.--34 years, 143 ft³/s, 44.85 in/yr, 103,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,320 ft³/s Dec. 21, 1955, gage height, 15.94 ft; minimum, 0.10 ft³/s Aug. 28, Sept. 30, Oct. 1, 3, 1958, Aug. 23, 24, 1961.

STATISTICAL SUMMARIES FOR THE PERIOD 1941-1975

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	35	1.4	1975	139	1948	26	27	1.6
Nov	35	4.8	1975	432	1974	151	112	8.7
Dec	34	51	1945	655	1956	322	157	19.1
Jan	34	89	1957	675	1953	364	177	21.6
Feb	34	115	1973	660	1954	333	140	18.0
Mar	34	74	1941	499	1956	259	118	15.4
Apr	34	54	1942	269	1955	144	59	8.3
May	34	35	1973	167	1948	67	31	4.0
Jun	34	13	1965	53	1953	29	10	1.7
Jul	34	4.1	1970	22	1953	12	4.7	0.7
Aug	34	1.0	1967	14	1953	6.4	3.3	0.4
Sep	34	2.1	1967	16	1959	7.5	3.8	0.4
Ann		71	1944	224	1956	143	36	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.7	4.6	5.4	6.2	7.3	7.7	10	13	17	23	29	34	42	55	92	35
Nov	11	17	22	26	31	35	48	66	102	155	186	245	322	433	586	35
Dec	42	67	86	103	121	138	173	223	294	383	437	495	568	692	943	34
Jan	77	87	104	124	141	158	200	244	305	393	468	559	665	833	1050	34
Feb	92	117	135	147	157	170	198	234	282	365	425	483	551	683	893	34
Mar	77	89	101	115	128	140	169	206	241	290	326	373	422	501	631	34
Apr	55	64	71	77	84	90	104	119	138	160	177	197	219	246	318	34
May	29	34	37	40	43	45	51	57	63	73	80	89	103	119	149	34
Jun	14	17	18	20	21	22	25	28	31	34	36	39	43	48	57	34
Jul	3.7	4.6	5.8	6.5	7.3	8.4	10	12	14	16	17	18	20	22	26	34
Aug	1.0	1.7	2.4	2.9	3.5	3.5	4.2	5.0	6.6	7.9	8.8	9.4	11	12	14	34
Sep	1.2	1.8	2.2	2.6	3.2	3.9	5.0	5.9	7.2	8.5	9.1	11	13	14	20	34
Ann	3.4	4.9	7.6	9.5	13	17	32	57	94	147	179	222	288	392	577	

TUALATIN RIVER BASIN

14203500 TUALATIN RIVER NEAR DILLEY, OR

LOCATION.--Lat 45°28'30", long 123°07'23", in NE 1/4 NW 1/4 sec.24, T.1 S., R.4 W., Washington County, Hydrologic Unit 17090010, on left bank 5 ft upstream from highway bridge, 1.0 mi south of Dilley, 1.2 mi downstream from Scoggins Creek, and at mile 58.81.

DRAINAGE AREA.--125 mi².

PERIOD OF RECORD.--October 1939 to 1987. Prior to October 1940 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1935: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 147.57 ft above National Geodetic Vertical Datum of 1929. Prior to June 16, 1950, nonrecording gage at several sites within 200 ft of present site at datum 4.00 ft higher. June 16, 1950, to Aug. 10, 1966, water-stage recorder at present site at datum 4.00 ft higher.

REMARKS.--Diurnal fluctuation caused by operation of millpond on Scoggins Creek upstream from station and regulation by Henry Hagg Lake since January 1975. Diversions upstream from station of approximately 3,000 acre-ft from J. W. Barney Reservoir on the Middle Fork of North Fork Trask River for municipal water supply and irrigation in Wapato Lake area.

AVERAGE DISCHARGE.--48 years, 397 ft³/s, 287,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,100 ft³/s Dec. 22, 1964, gage height, 19.34 ft, from rating curve extended above 6,000 ft³/s; minimum discharge, 0.08 ft³/s Sept. 3, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1940-1974 (PRIOR TO CONSTRUCTION OF SCOGGINS DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	34	5.5	1953	353	1948	80	74	1.6
Nov	35	18	1953	1710	1974	441	355	8.7
Dec	35	156	1945	2230	1974	962	512	19.6
Jan	35	277	1957	2500	1974	1070	564	21.8
Feb	35	284	1973	1920	1949	989	404	18.3
Mar	35	219	1941	1410	1966	733	339	14.9
Apr	35	143	1965	769	1963	412	179	8.1
May	35	87	1947	437	1948	185	88	3.8
Jun	35	39	1970	132	1953	75	24	1.5
Jul	35	6.1	1970	48	1948	27	12	0.6
Aug	35	0.9	1967	40	1974	15	9.3	0.3
Sep	35	1.8	1967	59	1941	21	13	0.4
Ann		217	1944	841	1974	417	117	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	7.1	12	15	17	19	21	28	38	49	68	87	110	134	184	285	34
Nov	31	42	54	71	85	99	142	210	305	444	537	677	859	1170	1650	35
Dec	131	194	247	306	359	407	511	663	868	1100	1240	1430	1680	2060	2870	35
Jan	229	261	302	361	416	469	610	735	907	1130	1320	1630	1960	2360	2980	35
Feb	263	337	388	439	468	499	595	719	857	1120	1290	1470	1650	1970	2530	35
Mar	208	249	287	321	353	393	483	589	699	823	918	1040	1220	1430	1800	35
Apr	140	167	186	204	225	246	291	336	394	465	511	568	636	725	946	35
May	73	84	92	100	107	115	132	147	167	194	215	245	290	341	439	35
Jun	34	40	45	49	53	56	62	69	76	85	90	98	107	119	142	35
Jul	3.2	6.3	9.0	12	14	17	22	27	31	36	39	42	46	51	60	35
Aug	1.2	2.1	3.0	4.4	6.1	8.0	12	15	18	21	23	24	27	31	39	35
Sep	2.1	4.3	6.1	7.5	9.3	11	14	16	20	24	26	30	35	43	59	35
Ann	6.9	12	18	24	33	46	85	157	274	426	530	653	839	1130	1710	

TUALATIN RIVER BASIN

14203500 TUALATIN RIVER NEAR DILLEY, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1976-1987 (AFTER CONSTRUCTION OF SCOGGINS DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	71	1978	230	1983	163	56	4.0
Nov	12	47	1977	881	1985	362	249	8.6
Dec	12	41	1977	1600	1978	742	476	18.3
Jan	12	31	1977	1180	1980	647	397	15.9
Feb	12	62	1977	1210	1983	667	329	15.0
Mar	12	236	1978	1090	1983	571	294	14.0
Apr	12	99	1977	653	1982	320	173	7.6
May	12	80	1977	337	1984	169	78	4.2
Jun	12	65	1979	183	1984	108	40	2.6
Jul	12	91	1977	195	1985	124	37	3.1
Aug	12	93	1977	199	1981	142	28	3.5
Sep	12	82	1985	229	1978	143	44	3.4
Ann		103	1977	532	1983	345	119	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	42	51	59	68	99	109	129	159	187	206	215	226	247	274	308	12
Nov	45	57	73	104	119	134	168	220	297	385	458	601	764	861	1080	12
Dec	41	110	154	198	255	321	418	587	759	937	1020	1120	1210	1400	1890	12
Jan	33	117	152	185	226	270	364	532	736	875	950	1030	1110	1210	1550	12
Feb	36	132	198	241	276	311	405	518	637	787	891	1020	1230	1500	1770	12
Mar	153	178	200	221	257	285	337	406	508	658	745	849	975	1210	1530	12
Apr	86	107	122	141	159	174	202	241	288	357	409	475	535	641	810	12
May	66	78	87	94	101	108	123	139	152	169	194	222	238	274	388	12
Jun	51	57	62	67	71	75	84	95	107	118	127	141	155	183	206	12
Jul	76	84	87	89	92	94	102	115	126	143	156	168	176	189	198	12
Aug	83	102	111	117	121	124	132	139	147	160	167	171	183	197	202	12
Sep	51	75	96	105	111	116	124	132	144	157	166	186	201	234	275	12
Ann	53	76	91	104	115	124	146	175	219	303	381	503	678	869	1160	

WILLAMETTE RIVER BASIN

14204000 GALES CREEK NEAR GALES CREEK, OR

LOCATION.--Lat 45°38'30", long 123°15'55", in NW 1/4 SE 1/4 sec.23, T.2 N., R.5 W., Washington County, Hydrologic Unit 17090010, on right bank 0.5 mi downstream from Beaver Creek, 4.6 mi northwest of town of Gales Creek, and at mile 17.5.

DRAINAGE AREA.--33.2 mi².

PERIOD OF RECORD.--October 1935 to September 1945, October 1963 to September 1970.

GAGE.--Water-stage recorder. Datum of gage is 449.31 ft above National Geodetic Vertical Datum of 1929. Prior to Feb. 3, 1964, nonrecording gage at same site and datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--17 years, 115 ft³/s, 47.04 in/yr, 83,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,970 ft³/s Dec. 22, 1964, gage height, 8.63 ft; minimum, 1.7 ft³/s Sept. 28, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1936-1970

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	17	8.0	1937	54	1969	18	12	1.4
Nov	17	8.2	1937	298	1938	98	92	7.0
Dec	17	43	1945	551	1938	251	158	18.5
Jan	17	59	1937	614	1964	312	161	23.0
Feb	17	105	1941	496	1968	271	105	18.2
Mar	17	69	1941	359	1966	207	94	15.3
Apr	17	47	1965	275	1937	113	60	8.1
May	17	22	1939	107	1940	54	19	4.0
Jun	17	15	1939	52	1937	29	11	2.1
Jul	17	9.4	1939	27	1937	14	5.1	1.1
Aug	17	4.5	1966	14	1937	9.2	3.1	0.7
Sep	17	3.4	1967	25	1945	9.4	5.6	0.7
Ann		71	1944	167	1938	115	25	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	5.9	6.6	7.5	7.5	7.5	8.6	9.4	10	13	15	17	22	28	42	68	17
Nov	7.8	8.8	12	17	24	28	36	44	59	82	106	150	201	278	374	17
Dec	29	41	49	58	71	88	117	158	201	271	305	345	421	514	784	17
Jan	64	82	95	106	117	129	169	216	266	333	378	454	534	686	917	17
Feb	82	95	111	121	132	144	167	193	231	274	311	360	432	533	742	17
Mar	59	71	81	91	99	108	128	156	189	232	256	278	328	404	534	17
Apr	40	48	54	59	63	68	79	90	107	125	135	146	159	175	214	17
May	25	31	34	36	38	40	45	48	53	59	63	67	73	81	106	17
Jun	15	16	18	19	21	22	25	27	30	32	35	37	40	45	53	17
Jul	7.7	8.2	9.3	10	11	12	13	14	15	17	18	20	22	24	27	17
Aug	3.9	4.6	5.3	6.2	6.2	6.7	7.2	8.4	9.1	11	12	12	13	15	17	17
Sep	3.4	3.7	4.1	5.1	5.7	5.7	7.0	7.7	7.7	8.6	11	13	14	17	20	17
Ann	6.2	7.7	8.3	10	13	16	28	45	70	111	136	172	220	295	447	

WILLAMETTE RIVER BASIN

14204500 GALES CREEK NEAR FOREST GROVE, OR

LOCATION.--Lat 45°33'20", long 123°11'10", in SE 1/4 sec.21, T.1 N., R.4 W., Washington County, Hydrologic Unit 17090010, on left bank 50 ft downstream from Roderick road bridge, 0.1 mi below Kelly Creek, 2.5 mi southeast of town of Gales Creek, 4.5 mi northwest of Forest Grove, and at mile 8.7.

DRAINAGE AREA.--66.1 mi².

PERIOD OF RECORD.--October 1940 to September 1956, October 1970 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 201.81 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 13, 1941, at site 1.4 mi downstream at datum 14.33 ft lower. Sept. 13, 1941, to June 19, 1952, at downstream side of bridge at datum 1.44 ft higher. June 20, 1952, to Jan. 3, 1956, at datum 1.00 ft higher.

REMARKS.--No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--27 years, 225 ft³/s, 46.23 in/yr, 163,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,410 ft³/s Feb. 17, 1949, gage height, 10.90 ft, from floodmark, site and datum then in use; maximum gage height, 12.95 ft, from floodmark, Jan. 21, 1972; minimum discharge, 1 ft³/s Aug. 19, 1947.

STATISTICAL SUMMARIES FOR THE PERIOD 1941-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	27	7.3	1975	198	1948	44	42	1.7
Nov	27	17	1953	718	1956	245	186	8.9
Dec	27	26	1977	1080	1956	531	275	20.0
Jan	27	27	1977	1150	1953	560	310	21.1
Feb	27	61	1977	1110	1954	531	241	18.3
Mar	27	124	1941	904	1956	396	201	14.9
Apr	27	72	1977	398	1974	213	91	7.8
May	27	44	1977	252	1948	99	42	3.7
Jun	27	28	1973	82	1981	46	13	1.7
Jul	27	7.5	1972	33	1955	22	6.8	0.8
Aug	27	4.9	1972	21	1948	14	4.4	0.5
Sep	27	6.8	1974	30	1945	15	6.1	0.6
Ann		51	1977	382	1974	225	76	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	6.7	9.1	11	13	14	15	18	21	26	33	39	49	67	92	160	27
Nov	16	25	33	41	48	56	79	111	160	246	309	385	513	665	899	27
Dec	46	83	112	143	188	228	302	376	486	620	697	790	922	1150	1580	27
Jan	87	122	147	177	212	246	320	392	478	602	694	828	1020	1250	1730	27
Feb	102	141	174	211	235	260	317	380	463	580	653	722	863	1090	1480	27
Mar	120	139	153	167	182	200	244	299	363	445	495	568	655	780	1010	27
Apr	79	92	101	112	122	131	150	172	200	237	261	285	316	376	469	27
May	44	51	57	61	65	68	76	84	93	104	112	122	136	158	216	27
Jun	25	29	31	33	35	36	40	44	48	52	55	58	62	69	80	27
Jul	7.6	9.6	13	14	16	18	20	23	25	27	28	30	32	34	39	27
Aug	5.3	6.4	7.7	8.4	10	11	13	14	16	17	18	19	20	22	24	27
Sep	5.2	6.5	7.3	8.4	9.2	10	12	13	15	18	19	21	23	26	35	27
Ann	8.8	12	15	18	22	28	47	82	135	219	280	350	448	609	890	

WILLAMETTE RIVER BASIN

14205500 EAST FORK DAIRY CREEK AT MOUNTAINDALE, OR

LOCATION.--Lat 45°38'05", long 123°02'35", in NE 1/4 NW 1/4 sec.27, T.2 N., R.3 W., Washington County, Hydrologic Unit 17090010, on left bank at dam site 0.7 mi northwest of village of Mountaindale.

DRAINAGE AREA.--43.0 mi², including two small streams on left bank which enter creek below station.

PERIOD OF RECORD.--October 1940 to September 1951.

GAGE.--Water-stage recorder. Datum of gage is 183.55 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Diurnal fluctuation at low stages caused by logpond upstream. Probably some pumping for irrigation upstream from station.

AVERAGE DISCHARGE.--11 years (water years 1941-51), 107 ft³/s, 77,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,420 ft³/s Feb.17, 1949, gage height, 12.54 ft; minimum, 7 ft³/s Sept. 10-12, 1944.

STATISTICAL SUMMARIES FOR THE PERIOD 1941-1951

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	10	1945	66	1948	23	16	1.8
Nov	11	25	1945	179	1951	103	60	7.9
Dec	11	32	1945	325	1949	206	104	16.3
Jan	11	102	1949	414	1951	218	103	17.3
Feb	11	93	1941	584	1950	306	140	22.1
Mar	11	62	1941	436	1950	191	108	15.2
Apr	11	51	1941	198	1943	110	50	8.4
May	11	36	1947	153	1948	63	31	5.0
Jun	11	26	1951	54	1948	35	8.8	2.7
Jul	11	14	1951	27	1948	19	4.1	1.6
Aug	11	9.8	1951	17	1948	13	2.2	1.1
Sep	11	10.0	1951	17	1941	12	2.1	1.0
Ann		59	1944	153	1950	107	30	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	9.0	11	11	12	12	13	14	15	18	21	23	25	31	39	70	11
Nov	16	18	20	22	24	27	38	50	72	114	135	175	219	270	364	11
Dec	33	51	58	71	80	99	125	161	206	253	279	302	330	413	564	11
Jan	69	80	86	93	103	111	129	153	190	237	271	322	395	493	590	11
Feb	73	88	100	111	118	128	165	203	264	329	390	478	565	704	893	11
Mar	59	67	76	84	88	94	111	138	170	218	250	282	321	384	492	11
Apr	47	55	58	62	66	71	82	91	102	119	128	137	149	173	230	11
May	35	38	40	43	45	46	51	55	60	64	67	72	78	91	125	11
Jun	22	24	26	27	28	29	32	34	37	40	41	43	46	51	57	11
Jul	13	14	15	16	17	17	19	20	21	22	23	24	26	28	31	11
Aug	9.0	11	11	12	12	12	13	14	14	15	15	16	16	18	19	11
Sep	7.8	8.6	11	11	11	12	12	12	13	13	14	14	15	17	20	11
Ann	11	12	13	15	18	21	33	51	73	106	128	159	206	277	407	

WILLAMETTE RIVER BASIN

14206000 MCKAY CREEK NEAR NORTH PLAINS, OR

LOCATION.--Lat 45°37'32", long 122°58'32", in SE 1/4 sec.30, T.2 N., R.2 W., Washington County, Hydrologic Unit 17090010, on downstream end of left timber bent of bridge on Shadybrook Road, 2.0 mi upstream from Jackson Creek, and 2.3 mi northeast of North Plains.

DRAINAGE AREA.--27.6 mi².

PERIOD OF RECORD.--October 1940 to September 1943, October 1948 to September 1956.

GAGE.--Water-stage recorder. Datum of gage is 172.57 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1940, to Sept. 30, 1943, at datum 0.25 ft higher.

REMARKS.--Some diurnal fluctuation in summer caused by pumping for irrigation upstream from station.

AVERAGE DISCHARGE.--11 years (water years 1941-43, 1949-56), 70.7 ft³/s, 51,180 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,100 ft³/s Feb. 17, 1949, gage height, 11.23 ft; maximum gage height, 11.35 ft Dec. 21, 1955; minimum discharge, 0.4 ft³/s Aug. 17, 18, 22, 1951.

STATISTICAL SUMMARIES FOR THE PERIOD 1941-1956

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	2.3	1953	28	1956	10	8.5	1.2
Nov	11	5.0	1953	221	1956	76	63	8.8
Dec	11	26	1953	307	1956	177	81	21.2
Jan	11	56	1949	318	1953	176	84	21.1
Feb	11	49	1941	398	1950	198	104	21.7
Mar	11	28	1941	248	1956	114	68	13.7
Apr	11	21	1942	115	1955	57	35	6.7
May	11	12	1952	42	1953	23	9.5	2.8
Jun	11	6.3	1951	22	1942	11	5.6	1.4
Jul	11	2.6	1952	8.2	1942	5.0	1.8	0.6
Aug	11	1.6	1951	4.5	1942	3.2	0.9	0.4
Sep	11	2.4	1952	5.5	1941	3.3	1.0	0.4
Ann		36	1941	109	1956	70	19	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.2	2.9	3.4	3.8	3.8	4.4	5.0	5.0	6.9	8.4	9.4	12	14	18	33	11
Nov	4.3	5.2	5.9	7.0	8.8	11	16	27	43	73	96	139	174	219	284	11
Dec	24	33	47	56	64	74	98	130	162	213	244	274	305	396	522	11
Jan	35	45	52	59	67	74	93	116	152	205	237	285	335	397	540	11
Feb	31	41	50	55	59	67	84	113	157	223	259	288	356	507	667	11
Mar	22	28	31	35	40	45	55	77	103	124	145	174	210	253	332	11
Apr	17	19	20	22	24	27	33	39	47	57	66	77	89	108	152	11
May	11	12	14	14	15	16	17	20	23	27	29	32	36	44	52	11
Jun	5.8	6.3	6.8	7.4	7.4	8.0	8.6	10	12	13	14	15	16	21	28	11
Jul	1.9	2.2	2.5	2.9	3.1	3.5	4.0	4.6	5.2	5.9	6.3	6.3	7.2	8.2	8.8	11
Aug	1.4	1.8	2.0	2.2	2.2	2.4	2.7	2.9	3.4	3.6	3.9	3.9	4.2	4.5	5.6	11
Sep	1.5	1.8	2.0	2.0	2.2	2.4	2.8	3.0	3.2	3.5	3.5	3.8	4.1	5.1	6.0	11
Ann	1.9	2.9	2.9	3.6	5.2	6.3	12	20	35	58	76	103	144	209	319	

WILLAMETTE RIVER BASIN

14206500 TUALATIN RIVER AT FARMINGTON, OR

LOCATION.--Lat 45°26'50", long 122°56'58", in SE 1/4 SE 1/4 sec.29, T.1 S., R.2 W., Washington County, Hydrologic Unit 17090010, on left bank at Harris bridge at Farmington, 5.0 mi south of Hillsboro, and at mile 33.3.

DRAINAGE AREA.--568 mi².

PERIOD OF RECORD.--October 1939 to September 1958. October 1972 to September 1976 (October, May to September only, each year).

GAGE.--Water-stage recorder. Datum of gage is 100.42 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1940, nonrecording gage at same site at datum 2.00 ft higher. Oct. 1, 1940, to Sept. 30, 1958, nonrecording gage at present site and datum.

REMARKS.--Flow regulated by Henry Hagg Lake since January 1975.

AVERAGE DISCHARGE.--19 years (water years 1940-58), 1,355 ft³/s, 981,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge during period October 1939 to September 1958, 24,200 ft³/s Dec. 22, 1955, gage height, 36.03 ft, from floodmark; no flow Aug. 4-7, Aug. 10 to Sept. 6, 1958.

STATISTICAL SUMMARIES FOR THE PERIOD 1940-1958

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	34	1953	791	1948	212	194	1.3
Nov	19	85	1940	3180	1956	1070	902	6.5
Dec	19	337	1945	7430	1956	2930	1880	18.3
Jan	19	945	1957	7020	1956	3400	1870	21.2
Feb	19	1450	1941	6600	1954	3940	1570	22.4
Mar	19	730	1941	5170	1950	2470	1240	15.4
Apr	19	478	1941	3130	1943	1360	673	8.2
May	19	247	1947	1540	1948	565	299	3.5
Jun	19	134	1951	422	1953	243	75	1.5
Jul	19	38	1951	160	1948	97	38	0.6
Aug	19	0.8	1958	99	1948	49	24	0.3
Sep	19	25	1957	118	1941	61	27	0.4
Ann		655	1944	2320	1956	1360	416	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	45	55	61	65	70	75	85	108	134	179	216	267	319	408	803	19
Nov	78	107	141	170	200	222	280	412	690	1080	1570	1920	2290	2750	4050	19
Dec	241	446	568	747	961	1190	1800	2350	3030	3910	4300	4710	5150	5900	7360	19
Jan	700	865	1010	1210	1430	1650	2160	2720	3290	4040	4710	5460	6270	7120	8660	19
Feb	860	1130	1370	1600	1780	2010	2750	3330	4000	5140	5580	6070	6700	7620	9000	19
Mar	637	807	894	991	1110	1270	1650	2070	2480	2980	3280	3730	4240	4990	6120	19
Apr	431	493	557	628	694	771	943	1100	1310	1560	1700	1860	2060	2340	2980	19
May	232	261	278	296	323	352	404	452	515	586	640	731	830	964	1380	19
Jun	122	138	151	164	175	186	204	221	244	274	291	310	339	382	438	19
Jul	20	32	46	55	61	67	79	90	103	117	126	139	156	176	205	19
Aug	6.4	11	16	21	28	36	45	51	57	62	66	71	77	88	105	19
Sep	18	23	28	33	36	41	49	55	62	73	78	83	93	107	137	19
Ann	34	52	64	80	105	142	245	442	796	1410	1810	2310	3010	4070	5810	

TUALATIN RIVER BASIN

14207500 TUALATIN RIVER AT WEST LINN, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°21'03", long 122°40'30", in SW 1/4 sec.34, T.2 S., R.1 E., Clackamas County, Hydrologic Unit 17090010, on left bank 300 ft upstream from bridge on State Highway 212, 0.4 mi west of West Linn city limits, and at mile 1.8.

DRAINAGE AREA.--706 mi².

PERIOD OF RECORD.--July 1928 to 1987. Prior to October 1960, published as "near Willamette."

REVISED RECORDS.--WSP 1014: 1943. WSP 1184: 1947. WSP 1248: 1941. WSP 1935: Drainage area. WDR OR-75-1: 1974(M). WDR OR-77-1: 1971-73, 1975, 1976(M).

GAGE.--Water-stage recorder. Datum of gage is 85.61 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to June 12, 1941, nonrecording gage at datum 1.02 ft higher.

REMARKS.--October 1951 to September 1970, all records published for this station included the daily flow in Oswego Canal. Oswego Canal diverts at point 5.0 mi upstream from station for development of power between outlet of Lake Oswego and Willamette River. Some regulation in low-water season by flashboards on crest of diversion dam for Oswego Canal and regulation by Henry Hagg Lake since January 1975. Several diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--59 years, 1,531 ft³/s, 29.45 in/yr, 1,109,000 acre-ft/yr, adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,300 ft³/s Dec. 23, 1933, gage height, 17.72 ft; minimum daily discharge, 0.20 ft³/s July 30 to Aug. 2, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1929-1951 (NOT ADJUSTED FOR DIVERSION)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	23	1943	859	1948	140	181	0.9
Nov	23	39	1937	4120	1935	1070	1080	6.5
Dec	23	272	1931	7690	1934	2840	2080	17.7
Jan	23	669	1930	6460	1936	3520	1900	22.0
Feb	23	1080	1929	7090	1949	3570	1560	20.3
Mar	23	740	1941	5380	1950	2620	1280	16.4
Apr	23	506	1941	3640	1937	1590	917	9.6
May	23	175	1939	1870	1948	627	342	3.9
Jun	23	101	1939	587	1933	259	114	1.6
Jul	23	22	1951	213	1933	83	48	0.5
Aug	23	7.7	1939	62	1948	26	15	0.2
Sep	23	8.5	1932	92	1933	32	25	0.2
Ann		671	1930	2050	1938	1360	453	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	18	23	27	31	34	37	44	57	75	94	111	140	189	254	493	23
Nov	47	59	70	130	172	199	270	380	585	1030	1430	1890	2460	3100	4730	23
Dec	199	261	358	482	626	818	1340	1980	2750	3820	4210	4550	5110	6250	8320	23
Jan	618	824	989	1170	1330	1550	2170	3080	3730	4550	5040	5600	6210	7070	8170	23
Feb	833	987	1180	1430	1710	2030	2530	3100	3600	4490	4870	5550	6140	6770	7680	23
Mar	704	862	973	1090	1210	1400	1740	2160	2750	3360	3660	4060	4340	4820	6130	23
Apr	412	521	592	654	719	802	1010	1200	1440	1750	1950	2150	2470	2980	4060	23
May	185	268	309	345	374	401	453	507	574	678	760	851	956	1100	1380	23
Jun	98	112	127	145	161	174	203	230	254	296	322	355	386	419	524	23
Jul	17	22	27	32	36	41	49	64	85	106	118	134	154	175	206	23
Aug	6.6	7.4	10	12	13	14	17	21	25	31	35	40	45	52	67	23
Sep	5.9	7.8	9.1	11	12	13	17	21	27	34	39	46	56	69	93	23
Ann	13	22	32	44	63	99	221	437	801	1380	1810	2400	3200	4170	5750	

TUALATIN RIVER BASIN

14207500 TUALATIN RIVER AT WEST LINN, OR--Continued
(National stream quality accounting network station)

STATISTICAL SUMMARIES FOR THE PERIOD 1952-1970 (ADJUSTED FOR DIVERSION)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	9.2	1965	574	1969	178	169	1.0
Nov	19	87	1953	3230	1956	1060	880	5.7
Dec	19	629	1953	8480	1956	3200	2030	17.8
Jan	19	1070	1957	7800	1956	4350	2180	24.1
Feb	19	1940	1962	7410	1954	4240	1590	21.4
Mar	19	990	1965	6400	1961	2810	1350	15.6
Apr	19	450	1965	3970	1963	1620	818	8.7
May	19	276	1965	1570	1963	691	382	3.8
Jun	19	63	1965	497	1953	247	132	1.3
Jul	19	4.6	1965	137	1963	51	40	0.3
Aug	19	2.0	1966	97	1968	14	22	0.1
Sep	19	3.9	1966	155	1968	30	35	0.2
Ann		1050	1957	2530	1956	1530	348	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	6.1	7.4	8.9	12	16	22	49	80	113	172	219	277	351	475	746 19
Nov	55	87	110	150	180	209	321	444	716	1070	1420	1840	2280	2790	3910 19
Dec	362	524	723	915	1110	1290	1760	2350	2970	4050	4970	5560	6070	6780	8380 19
Jan	855	992	1270	1640	1920	2250	3060	3640	4460	5320	6020	6830	7430	8770	10400 19
Feb	1280	1560	1750	1960	2180	2450	2950	3840	4700	5600	6010	6430	6900	7570	8660 19
Mar	880	1070	1200	1360	1500	1660	2030	2410	2690	3280	3600	3950	4910	5830	6510 19
Apr	515	634	710	777	837	910	1060	1240	1510	1870	2070	2320	2660	3110	3830 19
May	217	260	292	323	355	388	464	562	646	748	845	960	1130	1390	1640 19
Jun	39	56	76	104	123	138	172	208	248	300	329	359	406	487	601 19
Jul	2.9	4.6	6.3	7.8	10	13	19	28	38	56	71	86	116	150	192 19
Aug	1.0	2.0	2.0	2.5	3.2	3.2	4.7	5.7	6.9	8.7	11	14	16	23	35 19
Sep	2.4	3.6	4.3	4.3	6.5	7.6	9.2	11	14	26	34	43	53	77	129 19
Ann	4.0	7.3	12	22	48	97	250	520	972	1660	2140	2750	3550	4810	6460

WILLAMETTE RIVER BASIN

14208000 CLACKAMAS RIVER AT BIG BOTTOM, OR

LOCATION.--Lat 45°01'00", long 121°55'10", in NW 1/4 SE 1/4 sec.26, T.6 S., R.7 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank at lower end of Big Bottom, 0.5 mi downstream from Pot Creek, 28 mi southeast of Estacada, and at mile 65.1.

DRAINAGE AREA.--136 mi².

PERIOD OF RECORD.--April 1920 to September 1970. Monthly discharge only April 1920 published in WSP 1318.

GAGE.--Water-stage recorder. Elevation of gage is 2,040 ft, from topographic map. Prior to Dec. 27, 1962, at site 0.2 mi upstream at different datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--50 years, 477 ft³/s, 47.63 in/yr, 345,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,200 ft³/s Dec. 22, 1964, gage height, 10.55 ft, from rating curve extended above 1,200 ft³/s on basis of slope-area measurement of peak flow; minimum, 184 ft³/s Sept. 12, 1942.

STATISTICAL SUMMARIES FOR THE PERIOD 1920-1970

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	50	208	1931	578	1951	296	83	5.3
Nov	50	208	1930	976	1951	465	200	8.0
Dec	50	225	1931	1510	1965	591	282	10.5
Jan	50	245	1937	1450	1953	601	294	10.7
Feb	50	250	1929	1240	1961	587	241	9.5
Mar	50	331	1941	896	1921	516	143	9.2
Apr	51	316	1941	1110	1943	629	166	10.8
May	51	298	1926	1350	1949	707	227	12.6
Jun	51	243	1926	1170	1933	517	224	8.9
Jul	51	207	1931	488	1950	303	60	5.4
Aug	51	192	1931	334	1950	261	33	4.6
Sep	51	190	1942	378	1920	257	34	4.4
Ann		302	1941	699	1956	477	91	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	205	214	222	231	238	243	253	263	276	294	303	321	354	405	493	50
Nov	220	237	249	261	271	282	301	328	375	450	505	577	684	852	1180	50
Dec	241	276	301	325	346	364	403	454	511	587	645	717	825	979	1380	50
Jan	262	290	316	332	348	363	398	447	507	606	675	766	871	1040	1450	50
Feb	290	314	326	338	356	375	420	473	536	611	676	748	838	982	1260	50
Mar	310	330	349	367	383	398	428	460	498	541	571	612	668	779	930	50
Apr	363	387	404	424	445	466	521	581	644	707	751	797	854	939	1050	51
May	317	365	407	467	522	567	627	687	754	826	869	917	975	1060	1170	51
Jun	248	268	293	313	329	348	390	445	499	579	642	703	770	866	1010	51
Jul	219	227	234	250	263	268	278	288	303	321	332	348	367	393	439	51
Aug	201	215	221	228	235	246	254	260	268	277	284	291	296	305	317	51
Sep	201	213	220	226	234	240	248	253	259	268	275	281	287	297	308	51
Ann	220	237	250	263	275	288	321	370	431	516	571	641	726	839	1040	

WILLAMETTE RIVER BASIN

14208500 OAK GROVE FORK AT TIMOTHY MEADOWS, OR

LOCATION.--Lat 45°07'00", long 121°48'00", in SW 1/4 sec.23, T.5 S., R.8 E., Clackamas County, Hydrologic Unit 17090011, 0.8 mi upstream from Anvil Creek, 10 mi upstream from Oak Grove intake dam, and 26.5 mi southeast of Cazadero.

DRAINAGE AREA.--54 mi², approximately.

PERIOD OF RECORD.--March 1913 to September 1929. Published as "Oak Grove Fork of Clackamas River at Timothy Meadows, near Cazadero", prior to 1922.

GAGE.--Water-stage recorder. Datum of gage is 3,140 ft above National Geodetic Vertical Datum of 1929 (from levels to approximate gage datum).

REMARKS.--No diversion upstream from station. No regulation except natural storage in Clackamas Lake and in meadows upstream from station.

AVERAGE DISCHARGE.--16 years (water years 1914-29), 188 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 970 ft³/s Jan. 7, 1923, gage height, 3.20 ft, from rating curve extended above 460 ft³/s; minimum, 90 ft³/s Oct. 18-26, 28-31, Nov. 1-5, 1926.

STATISTICAL SUMMARIES FOR THE PERIOD 1913-1928

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	93	1927	160	1918	133	19	5.8
Nov	14	120	1926	239	1922	158	38	6.7
Dec	14	121	1926	350	1918	190	66	8.4
Jan	14	123	1926	329	1923	200	65	8.8
Feb	14	158	1914	331	1925	200	48	8.0
Mar	15	147	1922	291	1921	194	37	8.5
Apr	15	171	1922	335	1921	242	48	10.3
May	15	143	1926	388	1921	294	78	12.9
Jun	15	121	1926	540	1917	258	114	11.0
Jul	15	110	1926	281	1916	173	44	7.6
Aug	15	103	1926	185	1916	148	22	6.5
Sep	15	99	1926	170	1919	141	20	6.0
Ann		137	1926	233	1921	193	28	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	95	103	112	117	120	123	132	136	141	146	149	151	154	159	162	14
Nov	105	114	117	120	123	128	135	143	150	159	166	176	182	187	278	14
Dec	119	128	133	136	139	143	155	163	170	205	215	222	255	340	352	14
Jan	122	133	141	148	151	155	162	174	188	207	213	232	279	290	329	14
Feb	149	154	157	160	162	164	176	183	196	205	224	229	234	252	309	14
Mar	148	152	156	158	160	163	172	190	198	207	211	217	231	248	286	15
Apr	163	171	176	184	201	211	224	238	256	272	278	285	293	308	336	15
May	145	167	199	231	236	240	271	300	341	356	363	372	383	397	408	15
Jun	123	139	162	169	179	185	203	223	239	280	302	337	391	450	515	15
Jul	115	125	140	145	150	152	157	162	172	180	186	194	210	251	259	15
Aug	104	114	128	135	138	140	143	148	151	161	163	166	169	179	182	15
Sep	102	107	123	125	128	131	139	146	149	153	160	162	164	168	171	15
Ann	112	123	131	138	144	149	157	166	180	206	221	237	266	301	359	

CLACKAMAS RIVER BASIN

14208700 OAK GROVE FORK NEAR GOVERNMENT CAMP, OR

LOCATION.--Lat 45°06'50", long 121°48'50", in NE 1/4 sec.27, T.5 S., R.8 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank 0.1 mi upstream from Anvil Creek, 0.3 mi downstream from Timothy Lake, 14 mi south of Government Camp, and at mile 15.5.

DRAINAGE AREA.--54.4 mi².

PERIOD OF RECORD.--July 1956 to 1987.

GAGE.--Water-stage recorder and artificial control. Datum of gage is 3,041.83 ft above National Geodetic Vertical Datum of 1929 (Portland General Electric Co. bench mark).

REMARKS.--Flow regulated since 1956 by Timothy Lake (station 14208600). No diversion upstream from station.

AVERAGE DISCHARGE.--31 years, 131 ft³/s, 32.70 in/yr, 94,910 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,110 ft³/s Dec. 24, 1964, gage height, 3.93 ft, from rating curve extended above 290 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 3.7 ft³/s Sept. 23, 1968.

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	42	1982	274	1975	150	66	9.8
Nov	31	84	1985	337	1980	177	62	11.2
Dec	31	67	1982	281	1987	157	52	10.3
Jan	31	44	1977	343	1974	160	73	10.4
Feb	31	41	1987	333	1969	148	75	8.8
Mar	31	30	1957	452	1972	164	95	10.7
Apr	31	35	1957	275	1972	117	77	7.4
May	31	33	1957	364	1971	125	89	8.2
Jun	31	32	1957	301	1974	106	72	6.7
Jul	31	30	1957	168	1972	71	37	4.7
Aug	31	33	1977	171	1986	72	35	4.7
Sep	31	32	1957	237	1975	115	64	7.3
Ann		79	1977	222	1972	130	35	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	36	38	41	45	48	59	92	120	159	226	246	264	287	311	334	31
Nov	43	46	49	53	62	80	137	186	229	252	265	279	295	317	342	31
Dec	42	45	49	53	58	75	115	149	183	213	228	247	277	296	315	31
Jan	42	44	46	49	55	64	116	158	191	221	233	245	261	290	318	31
Feb	41	44	46	48	50	54	78	136	171	202	221	241	262	295	345	31
Mar	38	41	44	46	48	51	97	156	189	228	242	262	289	341	388	31
Apr	37	39	40	42	43	45	48	58	130	162	175	189	212	254	309	31
May	34	35	36	38	39	41	49	94	133	170	183	193	224	270	352	31
Jun	33	35	36	38	39	40	55	82	106	134	148	161	189	232	294	31
Jul	33	34	36	37	38	40	48	58	70	88	92	102	115	134	159	31
Aug	34	35	36	38	40	43	50	58	74	86	94	105	114	130	148	31
Sep	34	36	38	41	47	51	64	86	107	125	145	182	222	262	317	31
Ann	34	37	40	43	46	49	64	97	132	173	194	221	248	281	325	

CLACKAMAS RIVER BASIN

14209000 OAK GROVE FORK ABOVE POWERPLANT INTAKE, OR

LOCATION.--Lat 45°04'20", long 121°57'00", on line between secs.3 and 4, T.6 S., R.7 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank 0.2 mi upstream from Spring Creek, 0.7 mi upstream from Kink Creek, 1.0 mi upstream from Portland General Electric Co. diversion dam, 24 mi southeast of Estacada, and at mile 6.1.

DRAINAGE AREA.--126 mi².

PERIOD OF RECORD.--May 1909 to 1987. Monthly discharge only for some periods, published in WSP 1318.

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 General Electric Power Co. intake, October 1921 to September 1929.

REVISED RECORDS.--WSP 1248: 1909, 1910(M), 1916, 1918, 1923, 1932. WSP 1935: 1914, 1921.

GAGE.--Water-stage recorder. Datum of gage is 2,052.31 ft above National Geodetic Vertical Datum of 1929.

May 21, 1909, to Nov. 17, 1911, nonrecording gage and Mar. 26, 1912, to Sept. 30, 1923, water-stage recorder, at various sites 0.7 mi downstream, below Kink Creek, at different datum.

REMARKS.--Flow regulated since 1956 by Timothy Lake (station 14208600). No diversion upstream from station.

AVERAGE DISCHARGE.--78 years, 500 ft³/s, 362,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,000 ft³/s Jan. 7, 1923, gage height, 5.45 ft, site and datum then in use, from rating curve extended above 2,300 ft³/s on basis of peak discharge for other stations in Clackamas River basin; minimum discharge, 208 ft³/s Aug. 28-31, 1979.

STATISTICAL SUMMARIES FOR THE PERIOD 1910-1955 (BEFORE THE CONSTRUCTION OF TIMOTHY LAKE OUTLET STRUCTURE)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	41	252	1932	478	1952	343	56	5.9
Nov	41	263	1931	811	1910	431	132	7.2
Dec	41	268	1931	1050	1947	514	187	8.8
Jan	41	271	1937	1200	1923	533	211	9.1
Feb	41	281	1937	981	1925	526	168	8.2
Mar	41	357	1941	1050	1910	541	143	9.3
Apr	40	348	1941	1020	1943	659	146	10.9
May	40	389	1934	1330	1949	760	222	13.0
Jun	40	316	1941	1110	1950	578	195	9.6
Jul	40	263	1941	557	1950	395	68	6.8
Aug	40	252	1941	432	1919	349	46	6.0
Sep	40	259	1941	460	1919	335	43	5.6
Ann		325	1941	674	1951	495	83	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	259	269	280	291	298	305	320	334	351	367	374	384	399	417	449	41
Nov	268	281	291	303	316	325	344	368	395	429	460	503	564	645	798	41
Dec	283	303	323	339	354	369	401	443	487	535	570	622	688	782	975	41
Jan	295	326	345	361	376	388	412	447	489	549	592	648	712	826	1010	41
Feb	298	325	346	366	387	405	436	470	517	571	600	642	694	772	921	41
Mar	351	368	385	399	415	433	473	504	538	578	603	631	690	764	909	41
Apr	414	452	473	490	505	520	564	635	696	752	778	808	849	908	999	40
May	386	425	467	514	543	601	712	773	833	885	921	962	1030	1080	1160	40
Jun	329	344	360	387	412	436	477	522	586	657	699	748	799	868	1020	40
Jul	295	309	316	324	333	349	374	388	409	428	440	453	468	487	523	40
Aug	269	281	297	305	315	323	339	355	365	376	382	388	398	410	424	40
Sep	263	271	287	295	304	310	323	339	348	359	365	371	376	385	401	40
Ann	278	298	313	327	340	354	378	410	461	525	571	635	711	800	944	

CLACKAMAS RIVER BASIN

14209000 OAK GROVE FORK ABOVE POWERPLANT INTAKE, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1987 (AFTER THE COMPLETION OF TIMOTHY LAKE OUTLET STRUCTURE)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	237	1982	517	1975	395	75	6.9
Nov	31	359	1965	613	1969	502	71	8.5
Dec	31	325	1977	1050	1965	578	132	10.2
Jan	31	255	1977	1040	1974	590	154	10.4
Feb	31	249	1977	959	1982	587	149	9.4
Mar	31	327	1977	1380	1972	571	197	10.0
Apr	31	311	1978	825	1974	558	116	9.5
May	31	292	1978	1100	1971	590	210	10.4
Jun	31	265	1978	1130	1974	453	179	7.7
Jul	31	241	1978	517	1974	328	66	5.8
Aug	31	225	1979	429	1974	308	53	5.4
Sep	31	247	1957	517	1960	349	75	5.9
Ann		334	1977	711	1974	483	83	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	242	254	261	274	287	304	348	384	420	470	510	527	541	555	572	31
Nov	291	325	359	391	419	450	498	519	535	550	560	574	589	610	667	31
Dec	345	415	456	489	497	506	524	540	556	573	592	612	651	734	890	31
Jan	292	376	443	487	499	508	525	542	559	581	607	645	695	787	1030	31
Feb	315	374	424	479	497	513	531	548	570	600	627	671	729	804	950	31
Mar	339	364	389	420	443	476	518	539	555	587	618	675	732	814	919	31
Apr	337	360	394	430	468	492	522	548	570	597	624	660	701	761	840	31
May	320	347	366	392	424	467	529	554	578	618	657	713	811	960	1100	31
Jun	270	283	295	307	319	331	360	393	448	501	528	556	595	658	867	31
Jul	250	261	268	273	278	283	294	311	327	344	354	371	394	434	473	31
Aug	238	246	254	262	268	272	282	293	307	336	354	362	371	385	418	31
Sep	241	248	253	266	273	279	294	314	345	379	396	420	493	532	563	31
Ann	256	275	292	313	334	356	409	485	521	551	567	583	620	688	840	

CLACKAMAS RIVER BASIN

14209500 CLACKAMAS RIVER ABOVE THREE LYNX CREEK, OR

LOCATION.--Lat 45°07'30", long 122°04'20", in NE1/4 sec.21, T.5 S., R.6 E., Clackamas County, Hydrologic Unit 17090011, Mount Hood National Forest, on right bank 0.1 mi upstream from Three Lynx Creek, 0.25 mi downstream from powerplant, 17 mi southeast of Estacada, and at mile 47.8.

DRAINAGE AREA.--479 mi².

PERIOD OF RECORD.--April 1909 to December 1913, October 1921 to 1987. Prior to October 1911 (monthly discharge only), published in WSP 1318.

REVISED RECORDS.--WSP 1148: Drainage area. WSP 1248: 1910(M), 1912, 1948-50(M).

GAGE.--Water-stage recorder. Datum of gage is 1,091.69 ft above National Geodetic Vertical Datum of 1929 (levels by Portland General Electric Co.). Apr. 23, 1909, to Jan. 4, 1914, nonrecording gage at about same site and datum. Nov. 1, 1921, to Dec. 27, 1924, water-stage recorder at present site at datum 0.91 ft higher.

REMARKS.--Minor regulation since May 1956 by Timothy Lake (station 14208600).

AVERAGE DISCHARGE.--70 years, 1,991 ft³/s, 56.45 in/yr, 1,442,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 68,200 ft³/s Dec. 22, 1964, gage height, 21.7 ft, from floodmark, from rating curve extended above 34,100 ft³/s on basis of slope-area measurement at gage height 15.06 ft; minimum recorded discharge, 275 ft³/s Sept. 23, 1987; minimum daily, 410 ft³/s Sept. 4, 1986.

STATISTICAL SUMMARIES FOR THE PERIOD 1912-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	68	605	1931	2510	1948	1030	398	4.4
Nov	68	573	1930	4350	1951	2170	1060	9.0
Dec	68	786	1977	8270	1965	2900	1480	12.4
Jan	68	739	1937	7160	1953	2890	1450	12.3
Feb	68	734	1977	6210	1982	2800	1240	10.9
Mar	68	1310	1941	6560	1972	2430	862	10.4
Apr	68	1180	1941	4480	1943	2640	725	10.9
May	68	1070	1926	5550	1949	2760	967	11.8
Jun	68	725	1926	4880	1933	1870	906	7.7
Jul	68	603	1926	1780	1950	975	253	4.2
Aug	68	578	1987	987	1950	766	102	3.3
Sep	68	577	1930	1240	1959	777	125	3.2
Ann		1060	1977	3130	1974	1990	418	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	592	626	646	667	688	714	766	823	906	1000	1070	1160	1330	1610	2140	68
Nov	647	751	852	928	1010	1090	1260	1500	1790	2260	2580	2980	3600	4530	6110	68
Dec	860	1080	1230	1350	1470	1590	1810	2070	2390	2880	3220	3650	4290	5370	7700	68
Jan	990	1150	1250	1330	1420	1510	1740	2060	2450	2960	3330	3740	4360	5250	7240	68
Feb	1030	1190	1290	1390	1490	1600	1840	2100	2440	2890	3210	3560	4100	5000	6830	68
Mar	1240	1370	1470	1550	1630	1710	1880	2050	2280	2580	2770	3050	3430	3940	5020	68
Apr	1390	1550	1670	1760	1840	1920	2150	2420	2710	3000	3160	3340	3600	3890	4430	68
May	1180	1380	1520	1700	1900	2080	2380	2630	2880	3190	3400	3610	3850	4250	4850	68
Jun	835	903	967	1040	1100	1170	1350	1560	1800	2070	2280	2550	2820	3190	3880	68
Jul	665	705	729	749	767	786	830	884	947	1030	1080	1150	1230	1360	1570	68
Aug	601	629	643	660	680	695	720	745	773	812	834	855	885	919	970	68
Sep	592	617	635	651	664	676	704	735	769	811	837	866	904	965	1070	68
Ann	647	697	750	805	871	951	1200	1500	1820	2240	2500	2810	3190	3760	4850	

CLACKAMAS RIVER BASIN

14210000 CLACKAMAS RIVER AT ESTACADA, OR

LOCATION.--Lat 45°18'00", long 122°21'10", in NE 1/4 sec.19, T.3 S., R.4 E., Clackamas County, Hydrologic Unit 17090011, on left bank 0.2 mi downstream from River Mill Dam, 1.5 mi northwest of Estacada, and at mile 23.1.

DRAINAGE AREA.--671 mi².

PERIOD OF RECORD.--April 1908 to 1987. Monthly discharge only April 1908, published in WSP 1318. Published as "near Cazadero" January 1909 to September 1957.

REVISED RECORDS.--WSP 1248: 1908-9, 1910(M), 1916, 1917(M), 1922(M), 1923. WSP 1288: Drainage area (former site). WSP 1638: 1919(M).

GAGE.--Water-stage recorder. Datum of gage is 296.93 ft above National Geodetic Vertical Datum of 1929 (levels by Portland General Electric Co.). See WSP 1738 for history of changes prior to Oct. 1, 1957. Oct. 1, 1957, to Feb. 16, 1965, water-stage recorder at same site at datum 2.00 ft higher.

REMARKS.--Large diurnal fluctuations and some regulation caused by powerplants at River Mill Dam and, since 1958, North Fork Dam. Minor regulation since 1956 by Timothy Lake (station 14208600). Two small diversions upstream from station for Oregon City and Estacada municipal water supply.

AVERAGE DISCHARGE.--79 years, 2,753 ft³/s, 55.72 in/yr, 1,995,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 86,900 ft³/s Dec. 22, 1964, gage height, 18.36 ft; minimum discharge, 50 ft³/s Mar. 10, 1961, from rating curve extended below 260 ft³/s; minimum daily, 285 ft³/s Oct. 4, 5, 1958, caused by filling of North Fork dam forebay.

STATISTICAL SUMMARIES FOR THE PERIOD 1909-1957 (BEFORE THE CONSTRUCTION OF NORTH FORK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	49	701	1945	3780	1948	1350	690	4.3
Nov	49	702	1937	8710	1910	3090	1810	9.4
Dec	49	1080	1945	10500	1918	3810	2090	12.0
Jan	49	999	1937	9660	1953	3870	2020	12.2
Feb	49	1360	1929	6710	1916	3630	1530	10.4
Mar	49	1660	1941	6260	1921	3420	1200	10.8
Apr	49	1540	1941	6030	1943	3730	1010	11.4
May	49	1360	1926	7490	1949	3670	1260	11.6
Jun	49	927	1926	6100	1917	2560	1280	7.8
Jul	49	721	1926	3300	1916	1310	488	4.1
Aug	49	693	1940	1460	1916	935	160	3.0
Sep	49	669	1942	1990	1920	939	232	2.9
Ann		1690	1926	3916	1956	2690	575	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	677	717	749	782	816	850	913	979	1060	1250	1390	1570	1860	2340	3180	49
Nov	747	835	964	1070	1170	1290	1540	1890	2320	3110	3750	4510	5340	6640	9070	49
Dec	1030	1240	1420	1590	1750	1930	2280	2640	3120	3860	4340	4900	5710	7250	10600	49
Jan	1280	1510	1640	1760	1870	1990	2240	2620	3180	4030	4600	5300	6130	7520	9870	49
Feb	1410	1580	1700	1820	1940	2090	2380	2710	3150	3870	4330	4910	5720	6890	9120	49
Mar	1580	1770	1910	2040	2160	2280	2550	2870	3190	3620	3930	4310	4840	5690	7050	49
Apr	1880	2140	2330	2470	2630	2810	3180	3500	3890	4270	4470	4710	5010	5390	6020	49
May	1380	1820	2070	2320	2620	2850	3290	3620	3950	4300	4490	4720	5050	5530	6230	49
Jun	1020	1180	1300	1390	1490	1620	1880	2140	2470	2960	3240	3500	3850	4490	5490	49
Jul	780	845	900	950	988	1020	1090	1160	1250	1360	1430	1520	1670	1890	2410	49
Aug	694	727	757	784	815	838	877	920	961	1010	1040	1070	1100	1150	1230	49
Sep	673	701	724	747	771	795	836	878	925	967	988	1030	1070	1150	1390	49
Ann	752	841	910	986	1070	1200	1560	2000	2470	3090	3460	3910	4440	5180	6700	

CLACKAMAS RIVER BASIN

14210000 CLACKAMAS RIVER AT ESTACADA, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1959-1987 (AFTER THE COMPLETION OF NORTH FORK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	29	767	1979	2710	1969	1400	516	4.2
Nov	29	1270	1977	6260	1974	3340	1490	9.6
Dec	29	1030	1977	11200	1965	4680	2290	13.9
Jan	29	1040	1977	8820	1974	4640	2120	13.8
Feb	29	977	1977	8940	1982	4320	1970	11.7
Mar	29	2210	1973	8920	1972	3640	1380	10.8
Apr	29	1870	1967	5180	1962	3510	902	10.1
May	29	1800	1973	6400	1969	3560	1160	10.6
Jun	29	1140	1987	5140	1974	2270	944	6.5
Jul	29	801	1987	2020	1974	1170	332	3.5
Aug	29	660	1987	1210	1974	899	144	2.7
Sep	29	664	1987	1600	1959	992	194	2.8
Ann		1450	1977	4410	1974	2860	613	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	596	705	766	819	870	914	997	1090	1200	1400	1560	1790	2120	2570	3380	29
Nov	944	1170	1280	1400	1550	1730	2060	2460	2830	3560	3970	4470	5360	6740	9130	29
Dec	1140	1670	1990	2200	2390	2580	2890	3300	3860	4640	5360	6070	7290	9320	12400	29
Jan	1160	1640	1870	2070	2260	2470	2890	3390	3960	4620	5190	6010	6970	8390	13100	29
Feb	1390	1730	2030	2300	2440	2580	2880	3260	3730	4300	4690	5240	6180	7920	11500	29
Mar	1780	1980	2120	2230	2350	2500	2800	3110	3450	3920	4270	4660	5250	6020	7410	29
Apr	1820	2050	2270	2440	2560	2690	2940	3300	3630	3950	4150	4410	4740	5320	6030	29
May	1780	2010	2160	2330	2490	2690	2980	3290	3620	4040	4280	4550	4940	5690	6550	29
Jun	1000	1120	1230	1320	1420	1530	1740	1950	2260	2520	2700	2950	3380	3960	4760	29
Jul	743	778	813	851	891	930	996	1070	1150	1250	1310	1430	1550	1730	2110	29
Aug	656	687	712	734	756	776	822	876	930	986	1010	1050	1090	1130	1220	29
Sep	622	670	705	736	767	801	861	925	991	1060	1100	1160	1240	1400	1720	29
Ann	742	832	920	1010	1120	1260	1750	2240	2700	3250	3580	4010	4570	5460	7300	

CLACKAMAS RIVER BASIN

14211000 CLACKAMAS RIVER NEAR CLACKAMAS, OR

LOCATION.--Lat 45°23'36", long 122°31'54", in NE 1/4 SW 1/4 sec.14, T.2 S., R.2 E., Clackamas County, Hydrologic Unit 17090011, on left bank 0.8 mi upstream from Johnson Creek, 2.1 mi southeast of Clackamas, and at mile 4.8.

DRAINAGE.--930 mi³ at gage, 936 mi³ at Gladstone Bridge 3.6 mi downstream, where high-flow discharge measurements were made.

PERIOD OF RECORD.--September 1911 to April 1912 published as "at Park Place" (daily discharge), October 1962 to September 1983.

GAGE.--Water-stage recorder. Datum of gage is 50.68 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Sept. 15, 1911, to Apr. 22, 1912, nonrecording gage at site 3.6 mi downstream at different datum. Oct. 1, 1962, to Sept. 10, 1969, water-stage recorder at site 300 ft downstream at present datum.

REMARKS.--Diurnal fluctuations and some regulation by powerplants and several storage dams upstream, operated by Portland General Electric Co. Small diversions upstream from station for Estacada municipal water supply. All records given herein are for gage site.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 27.0 ft Dec. 22, 1964, from floodmarks; minimum gage height recorded since May 1988, 1.50 ft Oct. 29, 1988.

STATISTICAL SUMMARIES FOR THE PERIOD 1963-1983

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	21	820	1979	3500	1969	1610	700	3.7
Nov	21	1350	1977	8410	1974	3870	2020	8.7
Dec	21	1110	1977	15300	1965	6910	3250	16.0
Jan	21	1190	1977	12200	1970	7020	3080	16.2
Feb	21	1120	1977	11300	1982	5500	2360	11.6
Mar	21	2570	1978	11400	1972	4620	2010	10.7
Apr	21	2140	1967	6490	1974	4300	1120	9.6
May	21	2220	1973	6790	1969	4210	1380	9.7
Jun	21	1450	1979	5720	1974	2660	1150	6.0
Jul	21	854	1977	2410	1983	1360	414	3.1
Aug	21	711	1977	1290	1968	1000	184	2.3
Sep	21	689	1967	1380	1968	1070	192	2.4
Ann		1715	1977	5718	1974	3670	900	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	787	859	920	970	1010	1080	1200	1310	1570	1720	1970	2370	3070	4210	--	21
Nov	1110	1280	1400	1520	1650	1790	2220	2720	3310	4120	4620	5320	6060	7510	11900	21
Dec	1340	1960	2470	2820	3090	3380	4160	4990	6020	7490	8410	9640	11500	14000	18200	21
Jan	1470	2090	2480	2780	3090	3430	4150	4960	5780	7200	8300	9510	11100	13800	21400	21
Feb	1660	2240	2550	2830	3040	3250	3720	4260	5010	5900	6430	6950	7820	9610	14400	21
Mar	2270	2440	2590	2740	2920	3080	3410	3750	4210	4830	5270	5840	6570	7690	10200	21
Apr	2070	2390	2640	2870	3060	3240	3590	4030	4510	5040	5300	5510	5870	6460	7320	21
May	2130	2350	2510	2640	2840	3010	3360	3740	4220	4870	5270	5730	6220	6850	7490	21
Jun	1200	1340	1460	1570	1690	1810	1970	2260	2540	2870	3130	3580	4080	4630	5660	21
Jul	836	890	928	963	1000	1040	1120	1210	1330	1490	1580	1690	1840	2050	2480	21
Aug	686	744	781	803	820	841	908	964	1020	1090	1140	1180	1230	1280	1400	21
Sep	693	749	791	820	851	882	929	977	1050	1130	1200	1260	1320	1430	1840	21
Ann	806	911	997	1100	1230	1390	1970	2610	3250	4050	4540	5170	5900	7130	9950	

LOWER WILLAMETTE RIVER BASIN

14211500 JOHNSON CREEK AT SYCAMORE, OR

LOCATION.--Lat 45°28'40", long 122°30'24", in lot 2, SW 1/4 sec.13, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, on right bank 0.3 mi southwest of Sycamore station, 2.5 mi east of city limits of Portland, and at mile 10.2.

DRAINAGE AREA.--26.5 mi².

PERIOD OF RECORD.--July 1940 to 1987.

REVISED RECORDS.--WSP 1318: 1941(M). WDR OR-75-1: 1974. WDR OR-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 228.47 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Slight diurnal fluctuation at low flow caused by recreational ponds upstream. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--47 years, 54.4 ft³/s, 27.88 in/yr, 39,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,620 ft³/s Dec. 22, 1964, gage height, 14.68 ft; minimum discharge, 0.08 ft³/s Aug. 21, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1941-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	47	1.3	1966	65	1969	10	14	1.6
Nov	47	1.6	1953	239	1951	73	61	11.0
Dec	47	4.3	1977	302	1965	132	72	20.6
Jan	47	9.0	1977	308	1970	143	82	22.3
Feb	47	16	1977	320	1949	121	61	17.2
Mar	47	20	1941	196	1957	87	42	13.6
Apr	47	9.5	1942	130	1955	47	29	7.1
May	47	3.3	1966	90	1963	24	22	3.8
Jun	47	1.5	1966	63	1984	10	12	1.6
Jul	47	0.6	1973	30	1983	3.0	4.3	0.5
Aug	47	0.4	1970	8.0	1968	1.9	1.5	0.3
Sep	47	0.6	1967	11	1972	2.9	2.7	0.4
Ann		15	1977	91	1974	54	16	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	0.8	0.8	1.0	1.2	1.4	1.7	2.1	2.6	3.2	5.4	6.8	9.8	13	20	42 47
Nov	2.1	2.6	4.1	5.5	6.9	9.7	19	30	46	70	87	111	142	191	272 47
Dec	7.9	16	23	29	35	43	59	78	105	139	164	197	243	311	467 47
Jan	14	21	27	33	39	45	63	82	107	151	178	214	263	349	474 47
Feb	18	24	30	35	40	46	59	77	98	127	148	174	209	272	377 47
Mar	17	21	25	28	31	35	44	56	71	93	107	126	156	195	262 47
Apr	7.9	10	13	14	16	18	22	28	36	48	56	66	82	110	158 47
May	3.1	3.8	4.5	5.5	6.2	7.0	8.5	12	16	21	26	31	39	55	90 47
Jun	1.6	2.0	2.4	2.4	2.8	2.8	3.4	4.1	6.2	7.7	8.9	11	15	21	37 47
Jul	0.6	0.7	0.8	1.0	1.2	1.2	1.4	1.7	2.1	2.5	3.0	3.6	3.6	4.3	7.8 47
Aug	0.4	0.4	0.6	0.6	0.6	0.7	1.0	1.2	1.5	1.8	1.8	2.1	2.5	3.1	4.4 47
Sep	0.5	0.6	0.7	0.7	0.8	1.0	1.2	1.4	1.7	2.0	2.4	2.9	3.4	4.1	8.0 47
Ann	0.6	1.1	1.4	1.9	1.9	2.6	6.5	14	26	45	60	79	106	150	243

LOWER WILLAMETTE RIVER BASIN

14211720 WILLAMETTE RIVER AT PORTLAND, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°31'07", long 122°40'00", in NW 1/4 NE 1/4 sec.3, T.1 S., R.1 E., Multnomah County, Hydrologic Unit 17090012, in pier at east end of drawspan, on upstream side of Morrison Bridge, in Portland, and at mile 12.8.

DRAINAGE AREA.--11,100 mi², approximately.

PERIOD OF RECORD.--October 1972 to 1987. Gage-height records collected in this vicinity since 1879 are in reports of the National Weather Service.

GAGE.--Acoustic velocity meter (AVM) with water-stage and velocity-index recorder. Datum of gage is 1.55 ft above National Geodetic Vertical Datum of 1929 (levels by National Weather Service).

REMARKS.--Flow regulated by many reservoirs upstream. Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--15 years, 33,310 ft³/s, 24,130,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 283,000 ft³/s Jan. 18, 1974; maximum gage height, 23.84 ft Jan. 18, 1974; minimum daily discharge, 4,200 ft³/s July 10, 1978.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods of June 7, 1894, and June 1, 1948, reached stages of 33.0 ft and 30.0 ft, respectively, from information by National Weather Service.

STATISTICAL SUMMARIES FOR THE PERIOD 1973-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	15	11800	1981	22100	1976	16900	3540	4.3
Nov	15	14500	1977	98400	1974	43300	25300	10.7
Dec	15	8890	1977	129000	1978	73200	35500	18.7
Jan	15	8790	1977	119000	1974	63000	30600	16.1
Feb	15	8050	1977	94000	1982	54900	26200	12.8
Mar	15	18000	1978	77800	1974	44200	17700	11.3
Apr	15	17600	1977	58800	1974	33800	12900	8.3
May	15	11100	1973	41500	1984	24200	8360	6.2
Jun	15	8350	1973	38700	1984	17400	8520	4.3
Jul	15	6540	1973	15900	1983	9450	2390	2.4
Aug	15	6140	1973	10900	1983	8350	1120	2.1
Sep	15	8580	1973	17300	1978	12100	2300	3.0
Ann		13700	1977	54500	1974	33300	9960	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	11500	12200	12800	13400	13900	14400	15100	15900	17000	17700	19000	20900	24900	29400	--	15
Nov	14100	15500	17300	18900	20400	22700	26400	30800	36600	44200	48800	61800	78000	97500	119000	15
Dec	9290	20400	23600	30600	35100	39500	51700	65900	81600	100000	108000	116000	127000	137000	152000	15
Jan	9440	18200	22200	26200	30800	36800	44900	53400	65500	77400	85800	93700	104000	118000	142000	15
Feb	8210	16000	19500	23100	25500	28500	34700	42800	52200	64800	73600	85000	99700	113000	140000	15
Mar	17500	19200	20900	22600	24100	25400	29100	36300	44400	53600	58900	66100	73700	84600	96100	15
Apr	14800	16400	17900	19600	21000	22300	24600	29300	33400	37500	39600	42200	48100	55100	59100	15
May	10300	12700	14500	15800	17400	18400	20600	22900	25000	28100	29600	30900	32900	37000	42800	15
Jun	7950	8350	9110	9870	10600	11200	12700	14300	16100	17600	19400	21700	25800	30800	38100	15
Jul	6630	7030	7230	7430	7630	7790	8130	8690	9170	9830	10300	11100	12200	13500	15300	15
Aug	6170	6710	6930	7130	7490	7660	7880	8070	8600	8980	9090	9350	9900	10500	11000	15
Sep	7420	8280	8940	9360	9840	10500	11100	11900	12800	13400	14200	14400	14800	15700	18300	15
Ann	7409	8324	9202	10145	11616	13270	16290	20638	26256	34848	40971	49270	61857	80922	108835	

BEAR CREEK BASIN

14248700 BEAR CREEK NEAR SVENSEN, OR

LOCATION.--Lat 46°06'48", long 123°37'55", in NE 1/4 NE 1/4 sec.11, T.7 N., R.8 W., Clatsop County, Hydrologic Unit 17080006, on right bank 0.5 mi upstream from the Astoria Reservoir Dam, 3.8 mi southeast of Svensen, and at mile 5.4.

DRAINAGE AREA.--3.33 mi².

PERIOD OF RECORD.--August 1965 to September 1975.

GAGE.--Water-stage recorder. Elevation of gage is 700 ft, from topographic map.

REMARKS.--Flow regulated by Wickiup Lake and Middle Lake. No diversions upstream from station.

AVERAGE DISCHARGE.--10 years (water years 1966-75), 17.9 ft³/s, 73.00 in/yr, 12,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 342 ft³/s Jan. 11, 1972, gage height, 3.42 ft; minimum, 1.2 ft³/s Sept. 8, 9, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1965-1975

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	5.0	1966	12	1969	7.8	2.3	3.7
Nov	10	7.9	1975	34	1974	16	8.5	7.4
Dec	10	15	1966	49	1972	34	11	16.1
Jan	10	26	1968	68	1971	44	13	21.1
Feb	10	16	1973	38	1974	30	6.2	13.1
Mar	10	14	1973	46	1972	27	9.9	12.8
Apr	10	11	1973	28	1974	18	5.7	8.6
May	10	8.8	1973	17	1974	11	2.7	5.5
Jun	10	6.3	1966	14	1974	8.9	3.1	4.1
Jul	10	3.6	1975	8.7	1974	5.9	1.5	2.8
Aug	11	4.0	1973	6.8	1968	4.8	0.9	2.3
Sep	11	1.6	1967	9.1	1968	5.1	1.8	2.4
Ann		12	1973	24	1974	17	4.1	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.8	3.6	4.3	4.7	4.7	4.7	5.2	6.2	6.7	7.4	8.8	10	12	13	16	11
Nov	4.9	5.4	5.8	6.8	7.4	9.4	11	13	15	18	21	23	28	35	42	10
Dec	8.7	10	12	16	20	24	29	33	37	42	46	50	54	59	71	10
Jan	17	21	23	25	27	29	32	37	44	51	55	61	69	78	95	10
Feb	16	18	20	21	22	23	26	28	31	33	36	38	42	47	59	10
Mar	13	15	16	17	18	19	21	24	27	31	33	36	39	44	55	10
Apr	12	12	13	14	14	15	16	17	19	21	23	24	25	29	33	10
May	7.6	7.9	8.2	8.9	8.9	9.3	11	12	12	14	14	15	16	17	19	10
Jun	5.6	5.9	5.9	6.3	6.3	6.6	7.0	7.4	8.3	8.8	9.3	11	12	14	16	10
Jul	2.4	4.3	4.6	4.6	4.8	4.8	5.1	5.4	6.0	6.4	6.7	7.1	7.5	7.9	8.8	10
Aug	2.4	3.5	3.7	3.7	3.9	4.1	4.1	4.6	4.9	5.1	5.4	5.7	5.7	6.4	7.6	11
Sep	1.6	2.2	2.8	3.1	3.6	3.9	4.2	4.9	5.3	5.7	6.2	6.7	7.2	8.4	9.1	11
Ann	3.8	4.4	4.4	5.1	6.2	6.8	8.7	12	15	21	24	28	33	40	52	

YOUNGS RIVER BASIN

14251500 YOUNGS RIVER NEAR ASTORIA, OR

LOCATION.--Lat 46°04'02", long 123°47'20", in NW 1/4 sec.27, T.7 N., R.9 W., Clatsop County, Hydrologic Unit 17080006, on left bank 50 ft upstream from crest of Youngs River Falls, 2.7 mi southwest of Olney, and 9 mi south of Astoria.

DRAINAGE AREA.--40.1 mi².

PERIOD OF RECORD.--August 1927 to September 1958.

GAGE.--Water-stage recorder. Datum of gage is 63.27 ft above National Geodetic Vertical Datum of 1929. Prior to Mar. 12, 1934, at site 1.2 mi upstream at different datum.

REMARKS.--No regulation. Youngs River-Lewis and Clark Water District has diverted water 4 mi upstream from station for domestic use downstream from station since 1941.

AVERAGE DISCHARGE.--31 years (water years 1928-58), 178 ft³/s, 128,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,750 ft³/s Feb. 10, 1949, gage height, 13.66 ft, from rating curve extended above 2,300 ft³/s; minimum, 3.3 ft³/s Sept. 22, 1951.

STATISTICAL SUMMARIES FOR THE PERIOD 1928-1941 (BEFORE COMPLETION OF THE DIVERSION STRUCTURE)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	8.2	1937	234	1928	81	80	4.1
Nov	14	7.9	1937	638	1938	258	212	12.7
Dec	14	168	1931	1160	1934	381	260	19.4
Jan	14	148	1930	611	1936	356	145	18.1
Feb	14	100	1934	588	1940	305	162	14.1
Mar	14	87	1941	430	1932	279	111	14.2
Apr	14	43	1939	347	1928	177	105	8.7
May	14	22	1939	153	1940	83	40	4.2
Jun	14	18	1938	94	1933	46	28	2.3
Jul	14	8.7	1938	35	1936	17	7.2	0.9
Aug	14	5.7	1938	13	1937	9.0	2.6	0.5
Sep	14	4.9	1939	63	1941	17	17	0.8
Ann		104	1930	233	1933	167	42	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	6.4	7.2	7.8	8.9	11	13	18	25	38	68	92	105	119	147	302	14
Nov	7.5	8.8	19	28	57	69	91	125	167	261	319	412	513	687	912	14
Dec	58	78	95	110	123	137	177	227	281	388	469	575	737	940	1190	14
Jan	82	101	120	136	152	167	199	246	303	406	490	551	584	717	980	14
Feb	71	79	96	101	106	118	154	201	264	357	414	441	509	626	853	14
Mar	66	80	91	105	120	132	159	210	279	315	350	392	457	533	708	14
Apr	43	52	60	65	70	78	96	118	141	185	216	253	296	350	484	14
May	22	28	32	37	39	41	48	58	70	83	91	102	117	150	252	14
Jun	14	16	18	19	20	22	25	29	34	43	51	60	73	93	133	14
Jul	7.5	8.7	9.4	10	11	12	13	15	17	19	21	25	28	33	43	14
Aug	5.0	5.4	5.8	5.8	6.2	6.7	6.7	7.7	8.3	9.0	11	11	12	13	15	14
Sep	3.7	4.6	5.1	5.7	5.7	7.1	7.9	9.7	13	15	20	25	43	73	14	14
Ann	6.2	7.5	9.2	12	15	20	39	71	105	157	202	262	337	443	669	

YOUNGS RIVER BASIN

14251500 YOUNGS RIVER NEAR ASTORIA, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1942-1958 (AFTER THE COMPLETION OF THE DIVERSION STRUCTURE)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	17	5.8	1953	279	1956	109	89	4.9
Nov	17	21	1953	598	1956	291	141	12.7
Dec	17	115	1945	746	1956	433	154	19.5
Jan	17	130	1949	879	1953	405	207	18.3
Feb	17	187	1944	716	1949	412	132	16.9
Mar	17	143	1947	605	1956	276	125	12.5
Apr	17	70	1949	332	1955	178	80	7.8
May	17	26	1947	184	1948	73	40	3.3
Jun	17	16	1951	96	1942	43	20	1.9
Jul	17	8.1	1951	49	1955	21	12	1.0
Aug	17	5.0	1951	20	1956	11	4.5	0.5
Sep	17	5.9	1952	30	1948	13	7.7	0.6
Ann		117	1944	292	1956	188	39	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	5.9	7.1	7.9	9.2	13	16	29	48	67	95	120	149	197	315	490	17
Nov	24	44	60	73	85	95	125	172	254	376	436	496	570	671	894	17
Dec	76	107	125	142	162	185	249	317	400	504	567	646	747	892	1200	17
Jan	75	91	106	123	139	158	219	278	367	470	551	617	723	864	1160	17
Feb	86	112	126	138	152	175	230	267	353	473	545	612	723	864	1230	17
Mar	59	85	100	115	128	140	165	205	254	305	322	390	444	557	745	17
Apr	53	61	70	80	86	94	111	125	148	185	210	245	287	359	490	17
May	26	29	32	37	40	43	49	55	64	76	82	95	112	141	186	17
Jun	15	19	21	24	26	28	31	35	42	49	53	58	63	76	101	17
Jul	7.9	8.6	10	11	12	13	14	16	19	23	27	31	35	42	58	17
Aug	4.7	5.5	5.9	6.4	6.8	7.4	7.9	9.2	11	13	13	14	16	18	22	17
Sep	4.3	5.4	5.4	5.4	6.0	6.0	6.7	7.6	9.0	12	14	17	21	27	40	17
Ann	6.6	8.2	11	14	20	29	50	79	121	182	232	290	386	515	732	

NEHALEM RIVER BASIN

14301000 NEHALEM RIVER NEAR FOSS, OR
(National stream quality accounting network station)

LOCATION.--Lat 45°42'15", long 123°45'15", in NW 1/4 sec.35, T.3 N., R.9 W., Tillamook County, Hydrologic Unit 17100202, on right bank 0.2 mi upstream from Cook Creek, 2.2 mi northeast of Foss, and at mile 13.5.

DRAINAGE AREA.--667 mi².

PERIOD OF RECORD.--October 1939 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 32.60 ft above National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). Prior to Nov. 11, 1939, nonrecording gage.

REMARKS.--No regulation. Several small diversions for irrigation and domestic use upstream from station.

AVERAGE DISCHARGE.--48 years, 2,700 ft³/s, 54.97 in/yr, 1,956,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 46,900 ft³/s Jan. 20, 1972, gage height, 23.11 ft; minimum discharge, 34 ft³/s Aug. 29-31, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1940-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	48	69	1953	2950	1948	849	693	2.7
Nov	48	197	1953	9260	1974	3800	2310	11.6
Dec	48	599	1977	11400	1956	6260	2710	19.7
Jan	48	596	1977	12500	1971	6260	3150	19.7
Feb	48	1070	1977	12500	1949	5890	2430	16.9
Mar	48	1520	1941	8700	1956	4380	1910	13.8
Apr	48	1150	1941	4890	1982	2650	1090	8.1
May	48	535	1947	3030	1948	1260	563	4.0
Jun	48	303	1967	1590	1968	590	276	1.8
Jul	48	137	1967	747	1983	268	113	0.8
Aug	48	62	1967	314	1968	147	49	0.5
Sep	48	63	1967	877	1959	222	183	0.7
Ann		1060	1977	4240	1974	2700	650	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	107	122	136	151	169	227	321	464	692	893	1150	1580	2280	3530	--	48
Nov	266	441	618	777	935	1100	1550	2220	3130	4550	5390	6390	7730	9480	12400	48
Dec	1020	1500	1890	2240	2560	2870	3620	4590	5740	7340	8280	9550	11100	13200	17500	48
Jan	1100	1400	1640	1920	2230	2570	3430	4500	5530	7120	8240	9450	11600	14400	18200	48
Feb	1260	1700	2030	2290	2550	2800	3400	4210	5290	6700	7560	8630	10100	12400	16900	48
Mar	1170	1450	1660	1870	2070	2290	2720	3290	3980	5020	5650	6460	7340	8540	11300	48
Apr	931	1080	1210	1330	1430	1530	1760	2060	2370	2870	3190	3580	4170	5150	6680	48
May	512	572	622	670	719	771	882	991	1140	1340	1470	1640	1870	2270	2950	48
Jun	261	301	328	351	372	394	436	480	538	612	656	724	830	982	1250	48
Jul	126	142	153	164	175	185	208	231	259	293	312	337	375	446	551	48
Aug	73	85	90	96	102	109	123	136	147	161	171	181	192	215	262	48
Sep	70	81	86	92	97	103	115	132	159	194	218	259	331	453	753	48
Ann	100	130	160	204	273	368	665	1150	1820	2750	3410	4330	5540	7390	10700	

WILSON RIVER BASIN

14301500 WILSON RIVER NEAR TILLAMOOK, OR

LOCATION.--Lat 45°29'05", long 123°41'20", in SW 1/4 SE 1/4 sec.8, T.1 S., R.8 W., Tillamook County, Hydrologic Unit 17100203, on right bank 0.2 mi upstream from Negro Jack Creek, 8.0 mi east of Tillamook, and at mile 11.4.

DRAINAGE AREA.--161 mi², at cableway, 2.0 mi downstream, where all discharge measurements are made.

PERIOD OF RECORD.--October 1914 to September 1915, August to November 1916, July 1931 to 1987. Prior to January 1915 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1398: 1953. WSP 1738: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 71.89 ft above National Geodetic Vertical Datum of 1929. Dec. 18, 1914, to Nov. 4, 1916, nonrecording gage at site 2.8 mi downstream at different datum. July 30, 1931, to Sept. 30, 1938, nonrecording gage at site 2.82 mi downstream at datum 28.83 ft lower. Oct. 1, 1938, to Oct. 17, 1968, water-stage recorder at site 2.1 mi downstream at datum 29.76 ft lower.

REMARKS.--No regulation. Small diversions for domestic use upstream from station.

AVERAGE DISCHARGE.--57 years (water years 1915, 1932-87), 1,186 ft³/s, 100.04 in/yr, 859,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,000 ft³/s Jan. 20, 1972, gage height, 16.91 ft; maximum gage height, 20.26 ft Dec. 22, 1964 (site and datum then in use); minimum discharge, 32 ft³/s Sept. 5, 1973, but may have been less for short period following a landslide Jan. 31, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in February 1916 reached a stage of 20.8 ft, from floodmark, site and datum then in use.

STATISTICAL SUMMARIES FOR THE PERIOD 1915-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	58	57	1953	2230	1948	605	510	4.3
Nov	57	87	1937	3970	1935	1900	1000	13.1
Dec	57	378	1977	7990	1934	2680	1270	19.1
Jan	57	344	1977	5780	1953	2500	1210	17.8
Feb	57	641	1973	4620	1961	2230	867	14.5
Mar	57	595	1941	3640	1956	1800	721	12.8
Apr	57	426	1939	2550	1937	1160	450	8.0
May	57	202	1939	1390	1933	624	274	4.5
Jun	57	164	1982	876	1933	334	167	2.3
Jul	57	78	1967	513	1983	171	73	1.2
Aug	58	44	1967	241	1968	108	35	0.8
Sep	59	40	1967	780	1959	164	151	1.1
Ann		524	1977	1700	1974	1190	255	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	66	76	86	96	106	118	163	242	348	514	686	904	1130	1500	2390	58
Nov	171	324	418	501	587	675	898	1240	1580	2150	2530	2980	3570	4430	5950	57
Dec	496	641	776	917	1050	1170	1440	1790	2270	2890	3300	3800	4550	5590	8030	57
Jan	465	600	704	809	913	1020	1320	1670	2090	2630	3100	3760	4530	5480	7690	57
Feb	516	687	774	863	957	1050	1260	1510	1850	2380	2730	3200	3670	4620	6330	57
Mar	494	620	719	797	874	956	1150	1370	1630	2020	2270	2550	2880	3510	4650	57
Apr	395	475	540	599	655	712	813	931	1060	1260	1390	1550	1750	2080	2710	57
May	237	277	305	329	354	380	431	484	556	655	715	798	924	1140	1510	57
Jun	149	163	176	186	197	209	232	259	294	339	370	408	464	563	764	57
Jul	89	97	103	110	116	121	133	146	165	185	197	216	243	278	336	57
Aug	59	66	72	76	79	83	90	97	105	115	122	130	140	153	183	58
Sep	56	62	66	70	73	77	84	94	108	129	147	173	219	322	566	59
Ann	74	92	111	136	173	223	376	587	846	1200	1440	1760	2240	2950	4460	

TRASK RIVER BASIN

14302500 TRASK RIVER NEAR TILLAMOOK, OR

LOCATION.--Lat 45°26'25", long 123°43'00", in NW 1/4 NW 1/4 sec.31, T.1 S., R.8 W., Tillamook County, Hydrologic Unit 17100203, on right bank 0.6 mi upstream from Gold Creek, 6.2 mi east of Tillamook, and at mile 10.4.

DRAINAGE AREA.--145 mi².

PERIOD OF RECORD.--July 1931 to September 1955, October 1961 to June 1972.

GAGE.--Water-stage recorder. Datum of gage is 58 ft above National Geodetic Vertical Datum of 1929 (river-profile survey).

REMARKS.--No regulation. Water diverted from the J. W. Barney Reservoir since July 1, 1972.

AVERAGE DISCHARGE.--34 years (water years 1932-55, 1962-72), 966 ft³/s, 90.47 in/yr, 699,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,000 ft³/s Dec. 22, 1964, gage height, 13.34 ft; minimum, 42 ft³/s Oct. 15-18, 1952, Sept. 28, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1931-1972

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	35	50	1953	1560	1948	450	371	4.0
Nov	35	77	1937	3290	1935	1410	761	12.0
Dec	35	714	1945	5490	1934	2190	978	19.2
Jan	35	644	1949	4380	1953	2190	995	19.2
Feb	35	577	1934	3450	1949	1820	651	14.6
Mar	35	464	1941	2690	1932	1520	565	13.4
Apr	35	383	1939	1950	1937	955	382	8.1
May	35	196	1939	1110	1948	529	207	4.6
Jun	35	161	1967	636	1933	300	127	2.6
Jul	35	90	1967	273	1937	165	47	1.4
Aug	35	58	1967	183	1968	107	26	0.9
Sep	35	55	1967	492	1941	126	82	1.1
Ann		563	1941	1270	1933	966	167	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	66	79	86	94	105	117	150	198	268	388	511	642	801	1030	1690	35
Nov	95	238	303	377	440	499	644	878	1180	1640	1960	2300	2700	3400	4250	35
Dec	497	606	697	794	892	989	1230	1520	1890	2390	2710	3090	3630	4450	6200	35
Jan	516	625	724	806	888	986	1210	1490	1830	2330	2700	3310	3920	4740	6170	35
Feb	549	650	720	791	866	934	1080	1240	1500	1900	2180	2570	3040	3770	4970	35
Mar	442	543	624	709	782	839	995	1200	1400	1750	1950	2200	2490	2980	3750	35
Apr	345	415	468	532	584	625	705	784	896	1060	1160	1280	1450	1660	2020	35
May	233	267	292	316	338	358	397	438	489	560	607	672	747	883	1100	35
Jun	152	164	175	186	196	205	225	251	278	314	336	363	403	461	584	35
Jul	95	103	109	116	121	128	139	150	163	180	190	206	227	251	286	35
Aug	67	74	78	82	85	88	93	100	107	116	122	127	133	142	162	35
Sep	58	64	68	72	75	78	84	92	101	116	130	143	162	200	332	35
Ann	77	93	110	133	163	204	329	501	718	987	1180	1440	1820	2380	3540	

NESTUCCA RIVER BASIN

14302900 NESTUCCA RIVER NEAR FAIRDALE, OR

LOCATION.--Lat 45°18'40", long 123°25'05", in SW 1/4 NW 1/4 sec.15, T.3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, on right bank 100 ft upstream from former Meadow Lake, 0.4 mi downstream from Walker Creek, 5.3 mi southwest of Fairdale, and at mile 49.3.

DRAINAGE AREA.--6.18 mi².

PERIOD OF RECORD.--June 1960 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,778.99 ft above National Geodetic Vertical Datum of 1929 (levels by city of McMinnville).

REMARKS.--Flow regulated since March 1969 by McGuire Lake about 1 mi upstream from station (station 14302800); during winter months lake is empty except when inflow exceeds capacity of outlet tunnel.

AVERAGE DISCHARGE.--27 years (water years 1961-87), 32.1 ft³/s, 70.54 in/yr, 23,260 acre-ft/yr, adjusted for storage and diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 876 ft³/s Dec. 22, 1964, gage height, 10.43 ft; minimum discharge, 0.41 ft³/s Sept. 11, 1986.

STATISTICAL SUMMARIES FOR THE PERIOD 1970-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	3.8	1977	31	1972	15	7.8	4.2
Nov	18	13	1970	133	1984	61	35	16.7
Dec	18	17	1979	153	1978	72	39	20.2
Jan	18	4.4	1977	132	1970	51	34	14.5
Feb	18	8.4	1977	111	1970	46	29	11.9
Mar	18	13	1978	98	1983	47	26	13.2
Apr	18	7.2	1977	62	1982	30	14	8.3
May	18	6.7	1973	30	1984	15	6.9	4.5
Jun	18	4.3	1987	18	1981	8.5	4.3	2.3
Jul	18	2.0	1987	9.5	1975	4.8	2.3	1.4
Aug	18	1.4	1987	9.1	1975	3.9	2.5	1.1
Sep	18	1.0	1987	16	1971	6.6	5.0	1.8
Ann		10	1977	45	1974	30	9.6	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.3	1.9	2.2	3.3	3.8	5.0	7.3	9.7	14	17	22	27	30	36	49	18
Nov	7.4	12	16	19	24	29	39	50	60	74	85	97	112	132	161	18
Dec	8.5	11	14	18	22	27	38	54	70	90	106	123	139	158	197	18
Jan	4.8	7.6	9.1	12	14	18	25	32	40	53	67	81	98	122	172	18
Feb	6.1	9.2	13	15	18	20	25	31	39	51	61	72	91	111	145	18
Mar	10	14	16	18	20	22	27	33	41	51	61	72	86	104	133	18
Apr	6.3	11	14	15	17	18	22	26	30	36	39	42	46	53	73	18
May	5.6	6.6	7.2	7.9	8.6	9.4	12	14	15	17	19	20	23	28	38	18
Jun	3.2	3.5	3.9	4.4	4.9	4.9	6.1	6.7	7.5	9.3	9.3	11	12	14	19	18
Jul	1.8	1.9	2.4	2.8	3.1	3.3	3.6	3.9	4.2	4.9	5.8	7.4	8.0	8.6	8.6	18
Aug	1.2	1.5	2.0	2.2	2.2	2.2	2.7	3.0	3.0	3.4	3.7	5.0	6.2	7.6	8.4	18
Sep	0.9	1.1	1.6	2.1	2.4	2.4	3.0	3.4	5.0	7.7	8.3	9.0	13	17	23	18
Ann	1.9	2.9	3.5	4.4	5.8	7.0	9.9	14	21	30	37	46	60	81	121	

NESTUCCA RIVER BASIN

14303000 NESTUCCA RIVER NEAR MCMINNVILLE, OR

LOCATION.--Lat 45°19'30", long 123°27'00", in E-1/2 sec.8, T.3 S., R.6 W., Yamhill County, Hydrologic Unit 17100203, 0.2 mi downstream from Meadow Lake and 14 mi northwest of McMinnville.

DRAINAGE AREA.--12 mi², approximately.

PERIOD OF RECORD.--October 1928 to September 1944.

GAGE.--Water-stage recorder. Elevation of gage is 1,900 ft, from topographic map.

REMARKS.--No diversion upstream from station. Flow slightly regulated by dam at outlet of Meadow Lake.

AVERAGE DISCHARGE.--16 years (water years 1929-44), 43.6 ft³/s, 31,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,480 ft³/s Dec. 22, 1933, and Dec. 27, 1937, gage height, 5.1 ft, from rating curve extended above 800 ft³/s; minimum, 1.0 ft³/s Oct. 11, 1929.

STATISTICAL SUMMARIES FOR THE PERIOD 1929-1944

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	1.2	1930	33	1935	9.3	9.1	1.8
Nov	16	2.0	1930	188	1935	51	51	9.7
Dec	16	21	1931	310	1934	105	76	20.4
Jan	16	25	1930	224	1936	91	48	17.8
Feb	16	34	1934	164	1940	82	36	14.6
Mar	16	23	1941	139	1932	78	38	15.4
Apr	16	18	1942	132	1937	55	32	10.5
May	16	10	1939	70	1933	26	14	5.1
Jun	16	5.6	1934	33	1933	12	7.2	2.4
Jul	16	3.2	1931	10	1933	5.5	2.2	1.1
Aug	16	1.5	1931	4.6	1943	3.0	1.0	0.6
Sep	16	1.4	1929	11	1941	3.3	2.6	0.6
Ann		25	1930	67	1933	43	13	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.4	1.8	2.2	2.2	2.2	2.5	2.9	4.0	4.0	4.7	6.5	8.3	11	17	37	16
Nov	2.0	2.4	3.4	5.5	8.7	12	17	23	33	51	63	79	109	145	182	16
Dec	13	17	21	25	30	35	43	52	69	100	119	145	174	215	365	16
Jan	20	28	34	39	45	48	57	67	73	90	105	119	140	183	237	16
Feb	26	31	36	40	43	47	51	57	68	88	100	116	136	165	215	16
Mar	22	26	30	33	36	40	49	61	76	92	99	111	127	147	172	16
Apr	15	17	19	22	25	28	36	44	52	61	66	73	84	99	118	16
May	8.7	11	12	14	15	17	19	21	24	27	29	33	40	51	67	16
Jun	4.9	5.4	5.9	7.0	7.6	7.6	9.1	11	12	14	15	17	19	22	30	16
Jul	2.9	3.1	3.1	3.5	3.5	3.8	4.0	4.6	5.2	5.9	6.3	6.8	7.7	8.2	11	16
Aug	1.7	1.9	2.0	2.2	2.2	2.2	2.4	2.6	3.0	3.4	3.7	3.9	4.1	4.7	5.1	16
Sep	1.3	1.7	1.8	1.8	2.0	2.0	2.3	2.3	2.7	3.0	3.2	3.5	4.1	4.8	11	16
Ann	1.9	2.4	2.9	3.6	4.6	5.7	11	19	30	45	54	65	81	108	158	

NESTUCCA RIVER BASIN

14303600 NESTUCCA RIVER NEAR BEAVER, OR

LOCATION.--Lat 45°16'00", long 123°50'45", in SE 1/4 NE 1/4 sec.36, T.3 S., R.10 W., Tillamook County, Hydrologic Unit 17100203, on right bank 150 ft upstream from Saling Creek, 1.2 mi southwest of Beaver, and at mile 13.5.

DRAINAGE AREA.--180 mi².

PERIOD OF RECORD.--October 1964 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 43 ft, from river profile map.

REMARKS.--No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--23 years, 1,068 ft³/s, 80.57 in/yr, 773,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft³/s Jan. 11, 1972, gage height, 22.0 ft, from floodmark; minimum discharge, 32 ft³/s Sept. 14, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1962, reached a stage of 23.4 ft, discharge, 32,500 ft³/s caused by failure of Meadow Lake Dam.

STATISTICAL SUMMARIES FOR THE PERIOD 1965-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	91	1975	842	1982	379	237	3.0
Nov	23	209	1977	3980	1974	1510	850	11.6
Dec	23	257	1977	4440	1978	2580	1130	20.5
Jan	23	273	1977	4890	1972	2400	1250	19.0
Feb	23	453	1977	2980	1968	1910	676	13.8
Mar	23	634	1978	2830	1971	1660	659	13.2
Apr	23	469	1965	1640	1974	1000	336	7.7
May	23	285	1966	1190	1984	562	207	4.5
Jun	23	183	1966	917	1981	371	210	2.8
Jul	23	96	1967	542	1983	191	101	1.5
Aug	23	49	1967	251	1968	111	48	0.9
Sep	23	53	1967	412	1977	168	108	1.3
Ann		467	1977	1640	1974	1070	276	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	71	80	91	100	108	118	148	192	243	342	414	518	708	932	1320	23
Nov	212	311	410	496	576	655	861	1080	1380	1720	1910	2180	2680	3340	4430	23
Dec	441	649	816	971	1110	1240	1540	1910	2390	2890	3210	3560	4230	5140	7180	23
Jan	378	586	710	812	923	1070	1360	1640	2010	2560	3000	3480	4240	5050	6840	23
Feb	396	619	793	925	1040	1150	1330	1540	1790	2130	2340	2670	3190	3660	4770	23
Mar	525	614	716	810	889	972	1140	1310	1580	1860	2060	2320	2590	2950	3910	23
Apr	427	493	552	597	644	689	766	859	970	1120	1200	1290	1420	1740	2230	23
May	272	299	327	351	371	393	440	489	544	615	657	709	781	895	1120	23
Jun	153	167	183	198	210	221	247	276	309	364	410	463	539	694	939	23
Jul	87	99	106	113	118	125	139	155	173	200	218	241	269	333	452	23
Aug	52	61	67	72	76	80	88	95	104	115	123	133	146	165	216	23
Sep	52	60	65	71	75	78	86	103	129	175	198	235	286	353	524	23
Ann	75	94	115	145	183	231	368	563	809	1140	1360	1640	2010	2630	3760	

SILETZ RIVER BASIN

14305500 SILETZ RIVER AT SILETZ, OR

LOCATION.--Lat 44°42'55", long 123°53'10", in NW 1/4 SW 1/4 sec.11, T.10 S., R.10 W., Lincoln County, Hydrologic Unit 17100204, on right bank, 1.8 mi downstream from Baker Creek, 1.5 mi east of Siletz, and at mile 42.6.

DRAINAGE AREA.--202 mi².

PERIOD OF RECORD.--October 1905 to November 1911, January to May 1912, January to June 1924, November 1924 to 1987. Prior to December 1905 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1935: 1943, 1947-49(M), 1953-58(M).

GAGE.--Water-stage recorder. Datum of gage is 102.32 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1905, to Sept 30, 1938, nonrecording gage at various sites within 2.5 mi downstream at different datums.

REMARKS.--Slight regulation from logponds. Small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--68 years (water years 1906-11, 1926-87), 1,550 ft³/s, 104.20 in/yr, 1,123,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD (1905-12, 1924-38).--Maximum discharge, 34,600 ft³/s Nov. 22, 1909, gage height, 24.6 ft, site and datum then in use; minimum observed discharge, 51 ft³/s Dec. 6, 7, 1929.

EXTREMES FOR PERIOD OF RECORD (1938-87).--Maximum discharge, 32,200 ft³/s Jan. 28, 1965, gage height, 27.32 ft, present site and datum; minimum discharge, 48 ft³/s Sept 25, 26, Oct. 4, 1965, Sept. 28, 29, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 20, 1921, reached a stage of 31.6 ft, at site 2.5 mi downstream at different datum, from floodmark, discharge, 40,800 ft³/s, from rating curve extended above 17,000 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1906-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	68	73	1953	3410	1927	760	746	4.2
Nov	68	72	1930	6210	1907	2500	1530	13.4
Dec	68	401	1977	7830	1934	3380	1460	18.7
Jan	70	518	1977	7660	1953	3290	1540	18.3
Feb	70	752	1973	6050	1949	2980	1210	15.1
Mar	70	557	1941	4560	1932	2270	967	12.6
Apr	70	387	1926	3560	1937	1490	692	8.0
May	69	233	1939	2580	1933	840	447	4.7
Jun	68	144	1928	1600	1906	496	343	2.7
Jul	68	105	1967	602	1910	227	108	1.3
Aug	68	64	1967	419	1968	133	53	0.7
Sep	68	58	1965	1140	1959	207	189	1.1
Ann		660	1977	2340	1974	1530	348	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	85	94	106	123	145	199	290	423	665	859	1120	1460	1960	3080	--	68
Nov	137	331	448	555	657	763	1050	1460	2040	2800	3290	3960	4850	5970	8140	68
Dec	605	798	985	1160	1320	1520	1920	2330	2910	3720	4230	4880	5760	7070	10000	68
Jan	694	889	1040	1200	1340	1480	1850	2220	2740	3530	4170	4840	5610	6820	9470	70
Feb	633	843	1010	1130	1280	1440	1740	2080	2510	3240	3710	4330	5050	6380	8470	70
Mar	613	766	873	976	1080	1180	1390	1650	1930	2430	2770	3170	3690	4460	5940	70
Apr	456	561	652	721	786	850	981	1130	1310	1560	1740	1960	2250	2760	3690	70
May	272	324	364	403	442	479	551	636	745	885	998	1130	1290	1580	2070	69
Jun	166	189	210	229	247	264	301	341	392	475	533	619	731	923	1320	68
Jul	107	117	126	134	141	149	166	185	207	241	263	292	333	393	494	68
Aug	72	79	84	88	92	96	105	115	127	140	150	162	176	194	234	68
Sep	65	71	76	81	86	90	99	111	133	168	196	241	315	424	636	68
Ann	87	107	133	166	213	278	469	749	1100	1560	1890	2300	2910	3910	5760	

YAQUINA RIVER BASIN

14306030 YAQUINA RIVER NEAR CHITWOOD, OR

LOCATION.--Lat 44°39'29", long 123°50'15", in NE 1/4 SW 1/4 sec.31, T.10 S., R.9 W., Lincoln County, Hydrologic Unit 17100204, on left bank 200 ft below Thornton Creek and 1.1 mi west of Chitwood, and at mile 29.3.

DRAINAGE AREA.--71.0 mi².

PERIOD OF RECORD.--October 1972 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 28.43 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--15 years, 255 ft³/s, 48.77 in/yr, 184,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,150 ft³/s Nov. 16, 1973, gage height, 14.43 ft; minimum discharge, 2.8 ft³/s Sept. 27, 1974.

STATISTICAL SUMMARIES FOR THE PERIOD 1973-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	15	7.8	1975	83	1976	37	25	1.3
Nov	15	19	1977	1140	1974	361	327	11.6
Dec	15	23	1977	1090	1982	642	323	21.4
Jan	15	34	1977	979	1974	543	296	18.1
Feb	15	90	1977	1010	1986	534	275	16.2
Mar	15	102	1978	807	1974	413	174	13.7
Apr	15	112	1977	515	1982	263	118	8.5
May	15	64	1973	349	1984	137	72	4.6
Jun	15	33	1982	242	1981	85	71	2.8
Jul	15	14	1973	66	1983	30	17	1.0
Aug	15	7.3	1986	26	1983	13	5.6	0.5
Sep	15	6.1	1974	30	1977	16	7.0	0.5
Ann		84	1977	447	1974	255	86	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	6.7	7.5	8.3	9.3	12	13	17	19	22	29	34	42	57	92	163 15
Nov	16	24	33	45	53	68	115	177	258	384	460	609	753	1000	1340 15
Dec	27	74	120	177	239	276	370	450	596	787	881	1010	1150	1410	1870 15
Jan	37	102	137	178	209	233	286	377	471	613	696	785	931	1170	1660 15
Feb	70	111	139	169	191	222	294	356	458	627	702	813	949	1180	1580 15
Mar	105	133	153	172	190	209	250	305	374	481	536	606	714	857	1070 15
Apr	95	106	114	122	132	141	164	189	228	281	311	349	438	545	695 15
May	51	60	68	75	80	84	93	106	120	137	151	174	201	248	347 15
Jun	27	30	32	35	38	41	46	53	60	71	79	102	126	169	268 15
Jul	12	13	15	16	17	18	21	24	27	33	36	40	47	59	76 15
Aug	6.3	7.2	7.7	8.3	8.3	8.9	11	12	14	16	17	19	21	24	30 15
Sep	5.0	6.2	6.8	6.8	8.3	8.3	10	13	15	18	20	22	25	31	43 15
Ann	8.1	11	14	18	22	29	55	101	159	249	309	393	520	711	1037

YAQUINA RIVER BASIN

14306036 MILL CREEK NEAR TOLEDO, OR

LOCATION.--Lat 44°34'35", long 123°54'25", in NW 1/4 NE 1/4 sec.33, T.11 S., R.10 W., Lincoln County, Hydrologic Unit 17100204, on left bank 1,200 ft downstream from diversion dam, and 3.5 mi southeast of Toledo.

DRAINAGE AREA.--4.18 mi².

PERIOD OF RECORD.--October 1959 to September 1973.

GAGE.--Water-stage recorder. Elevation of gage is 80 ft, from topographic map. Prior to July 13, 1968, at site 1,200 ft upstream at different datum.

REMARKS.--Except for average discharge, figures not adjusted for diversion for city of Toledo municipal supply. Occasional fluctuation caused by city of Toledo diversion dam, capacity, 250 acre-ft.

COOPERATION.--Record of monthly diversion furnished by city of Toledo.

AVERAGE DISCHARGE.--14 years, 21.2 ft³/s, 68.87 in/yr, 15,360 acre-ft/yr, adjusted for diversion.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 609 ft³/s Jan. 27, 1965, gage height, 5.83 ft, site and datum then in use, from rating curve extended above 65 ft³/s on basis of slope-area measurement of peak flow; no flow Sept. 27, Oct. 3, 4, 1961, Sept. 26, 1962.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	13	1.0	1965	15	1969	4.8	4.1	1.9
Nov	13	5.7	1973	62	1961	28	16	11.0
Dec	13	17	1961	80	1969	48	20	19.6
Jan	13	13	1963	93	1971	58	28	23.4
Feb	13	9.8	1973	90	1961	39	21	14.3
Mar	13	10.0	1965	71	1961	35	18	14.0
Apr	13	8.7	1969	37	1963	19	9.9	7.4
May	13	4.5	1966	18	1963	9.7	4.3	3.9
Jun	13	1.8	1966	18	1968	5.4	4.2	2.1
Jul	13	0.9	1967	5.9	1969	2.7	1.4	1.1
Aug	13	0.5	1963	3.4	1968	1.6	0.9	0.7
Sep	13	0.4	1967	4.8	1968	1.9	1.4	0.7
Ann		13	1973	28	1972	21	4.3	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	0.5	0.7	0.7	0.9	1.0	1.0	1.3	1.6	2.3	4.2	5.4	7.1	9.8	14	19 13
Nov	1.8	3.0	3.6	4.3	5.7	7.0	13	16	21	31	36	45	56	70	89 13
Dec	8.5	12	14	16	18	20	25	34	44	55	63	75	90	115	156 13
Jan	9.5	14	17	18	20	23	29	38	49	61	69	85	103	145	187 13
Feb	8.8	13	15	16	18	20	23	28	32	39	45	55	67	84	125 13
Mar	9.1	12	14	15	16	17	20	24	30	38	43	50	59	76	93 13
Apr	6.4	7.1	8.8	8.8	10	11	13	15	17	20	22	25	30	38	50 13
May	3.6	4.0	4.8	5.3	5.3	5.9	6.5	7.1	7.9	10	12	14	16	18	23 13
Jun	1.4	1.8	2.4	2.7	3.0	3.0	3.5	3.9	3.9	4.5	4.5	5.1	5.8	7.5	13 13
Jul	0.8	1.1	1.1	1.3	1.5	1.5	2.0	2.4	2.4	2.9	3.2	3.5	4.2	4.7	5.1 13
Aug	0.4	0.5	0.5	0.6	0.8	0.9	1.1	1.4	1.6	2.0	2.0	2.0	2.3	2.5	3.2 13
Sep	0.2	0.4	0.5	0.7	0.7	0.7	1.1	1.1	1.7	2.0	2.0	2.3	3.1	4.2	4.9 13
Ann	0.7	0.9	1.2	1.9	1.9	2.5	4.9	8.7	14	20	24	31	40	56	85

ALSEA RIVER BASIN

14306100 NORTH FORK ALSEA RIVER AT ALSEA, OR

LOCATION.--Lat 44°22'45", long 123°35'40", in SE 1/4 sec.1, T.14 S., R.8 W., Benton County, Hydrologic Unit 17100205, on left bank at Alsea, 0.2 mi upstream from bridge on Lobster Valley Road, 0.7 mi upstream from confluence with South Fork, and at mile 49.4.

DRAINAGE AREA.--63.0 mi².

PERIOD OF RECORD.--October 1957 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 272.31 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Some diversions by pumping upstream from station.

AVERAGE DISCHARGE.--30 years, 279 ft³/s, 60.14 in/yr, 202,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,100 ft³/s Dec. 22, 1964, gage height, 14.57 ft, from rating curve extended above 2,900 ft³/s on basis of slope-area measurement at gage height 11.80 ft; minimum discharge, 8.3 ft³/s June 8, Sept. 19, 1979.

STATISTICAL SUMMARIES FOR THE PERIOD 1958-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	30	19	1981	148	1969	59	37	1.8
Nov	30	33	1977	1140	1974	338	253	10.0
Dec	30	34	1977	1650	1965	628	363	19.1
Jan	30	40	1977	1330	1970	661	370	20.1
Feb	30	107	1977	1210	1961	599	262	16.6
Mar	30	152	1978	947	1961	469	216	14.3
Apr	30	97	1977	566	1963	283	129	8.3
May	30	66	1966	360	1963	152	71	4.6
Jun	30	39	1966	201	1984	77	36	2.3
Jul	30	25	1973	71	1983	38	10	1.2
Aug	30	16	1967	45	1968	25	6.3	0.8
Sep	30	14	1965	66	1959	28	11	0.9
Ann		78	1977	484	1974	279	79	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	17	18	20	21	22	24	27	31	36	50	62	77	102	144	223	30
Nov	30	41	50	58	69	81	116	168	240	337	404	499	630	842	1270	30
Dec	68	119	160	189	215	242	309	399	521	707	823	945	1100	1300	1810	30
Jan	97	134	175	211	245	279	342	416	529	678	777	900	1070	1440	2130	30
Feb	115	171	224	253	279	304	357	419	507	660	753	887	1010	1250	1680	30
Mar	136	163	187	204	220	236	278	336	414	523	591	677	785	942	1230	30
Apr	103	118	131	143	154	165	189	218	254	306	342	384	448	543	688	30
May	65	73	79	85	90	95	109	122	137	159	174	193	222	264	341	30
Jun	39	43	46	49	52	55	60	65	71	78	82	88	97	114	159	30
Jul	24	25	27	28	30	31	33	36	38	42	45	48	52	55	64	30
Aug	17	18	19	20	21	21	23	24	26	28	29	30	31	33	40	30
Sep	15	16	17	18	19	20	21	23	25	28	31	33	39	46	66	30
Ann	19	22	25	30	35	44	70	118	183	270	328	405	520	716	1070	

ALSEA RIVER BASIN

14306400 FIVE RIVERS NEAR FISHER, OR

LOCATION.--Lat 44°20'15", long 123°49'35", W-1/2 sec.19, T.14 S., R.9 W., Lincoln County, Hydrologic Unit 17100205, in Siuslaw National Forest, on left bank at downstream side of abandoned highway bridge, 500 ft downstream from Lobster Creek, 3.2 mi north of Fisher, and at mile 3.3.

DRAINAGE AREA.--114 mi².

PERIOD OF RECORD.--August 1958 to September 1963, October 1967 to 1987.

REVISED RECORDS.--WSP 1718; 1959.

GAGE.--Water-stage recorder. Elevation of gage is 130 ft from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--25 years, 549 ft³/s, 65.40 in/yr, 397,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,200 ft³/s Jan. 21, 1972, gage height, 21.08 ft; minimum discharge, 16 ft³/s Oct. 1, 1967.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 22.3 ft, from floodmarks, discharge, 19,000 ft³/s from rating curve extended above 10,000 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	27	1975	322	1982	134	90	2.1
Nov	23	61	1977	2310	1974	773	557	11.5
Dec	23	72	1977	2390	1974	1330	681	20.4
Jan	23	80	1977	2670	1970	1160	681	17.8
Feb	23	283	1977	2360	1961	1210	527	17.0
Mar	23	298	1978	1850	1961	937	432	14.4
Apr	23	218	1977	1120	1963	540	262	8.0
May	23	133	1985	631	1963	280	139	4.3
Jun	23	83	1987	332	1985	143	70	2.1
Jul	23	44	1973	129	1983	67	19	1.0
Aug	23	28	1970	86	1968	42	13	0.6
Sep	23	24	1987	94	1971	51	20	0.8
Ann		174	1977	939	1974	552	166	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	26	28	30	34	37	39	46	56	73	115	147	195	254	369	535	23
Nov	52	74	101	131	161	191	278	389	558	805	975	1160	1480	2010	2690	23
Dec	123	241	324	408	483	541	715	942	1200	1550	1740	2030	2290	2770	3880	23
Jan	160	241	313	378	442	498	608	748	942	1190	1410	1690	1950	2330	3430	23
Feb	219	301	388	471	523	579	716	849	1050	1340	1520	1770	2050	2660	3610	23
Mar	272	331	374	405	441	477	559	675	827	1030	1150	1350	1560	1870	2360	23
Apr	208	229	248	267	285	306	345	395	471	559	628	717	866	1050	1390	23
May	114	127	139	149	159	168	190	213	246	286	314	347	400	485	657	23
Jun	72	78	83	88	92	96	105	115	125	139	149	161	176	207	293	23
Jul	39	42	44	47	50	53	58	63	67	76	80	85	90	98	112	23
Aug	26	28	29	30	32	34	36	39	41	44	46	48	51	57	65	23
Sep	24	26	27	28	30	31	34	37	42	50	56	62	71	85	122	23
Ann	30	36	43	51	63	81	132	228	355	537	658	832	1070	1470	2170	

ALSEA RIVER BASIN

14306500 ALSEA RIVER NEAR TIDEWATER, OR
(National stream quality accounting network station)

LOCATION.--Lat 44°23'10", long 123°49'50", in NW 1/4 NW 1/4 sec.6, T.14 S., R.9 W., Lincoln County, Hydrologic Unit 17100205, on right bank 0.9 mi downstream from Grass Creek, 2.5 mi upstream from Scott Creek, 3.8 mi southeast of Tidewater, and at mile 21.0.

DRAINAGE AREA.--334 mi².

PERIOD OF RECORD.--October 1939 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 48.16 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 16, 1939, nonrecording gage at present site and datum.

REMARKS.--No regulation. Diversion for irrigation upstream from station.

AVERAGE DISCHARGE.--48 years, 1,514 ft³/s, 61.56 in/yr, 1,097,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,800 ft³/s Dec. 22, 1964, gage height, 27.44 ft; minimum discharge, 45 ft³/s Sept. 26, 27, 1965.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood on or about Feb. 3, 1890, reached a stage of 29.5 ft, from floodmark (discharge not determined).

STATISTICAL SUMMARIES FOR THE PERIOD 1940-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	48	74	1975	2520	1948	404	449	2.3
Nov	48	115	1940	6060	1974	1850	1310	10.1
Dec	48	181	1977	7420	1965	3380	1740	19.0
Jan	48	211	1977	7870	1953	3590	1900	20.2
Feb	48	607	1977	6590	1949	3360	1360	17.2
Mar	48	604	1941	5140	1961	2540	1080	14.3
Apr	48	550	1977	3200	1963	1500	684	8.2
May	48	331	1966	1850	1963	801	378	4.5
Jun	48	178	1966	938	1984	392	169	2.1
Jul	48	117	1966	363	1983	190	49	1.1
Aug	48	65	1966	234	1968	118	31	0.7
Sep	48	60	1965	452	1941	135	72	0.7
Ann		431	1977	2540	1974	1510	399	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	79	86	92	99	106	125	154	205	290	364	485	655	928	1430	--	48
Nov	121	179	261	325	390	462	651	936	1290	1890	2290	2790	3490	4620	6810	48
Dec	444	714	905	1080	1250	1420	1780	2280	2870	3770	4390	5080	5920	7370	10100	48
Jan	659	872	1070	1240	1400	1570	1940	2440	3010	3860	4390	5160	6000	7570	10900	48
Feb	720	1050	1240	1380	1530	1670	1980	2370	2870	3740	4250	4850	5720	7220	9650	48
Mar	745	894	1030	1150	1250	1350	1600	1940	2320	2810	3160	3640	4210	5050	6370	48
Apr	544	633	698	757	817	877	1010	1170	1370	1640	1820	2050	2340	2810	3600	48
May	331	370	409	444	474	501	565	631	712	826	904	1000	1170	1390	1920	48
Jun	197	219	237	251	265	276	301	329	362	405	432	467	518	599	787	48
Jul	111	121	130	137	144	150	162	177	193	210	223	236	252	275	310	48
Aug	70	77	84	89	93	97	103	110	118	127	131	138	147	163	189	48
Sep	64	69	73	77	81	84	92	100	111	125	135	153	181	222	318	48
Ann	84	101	119	142	177	226	380	646	1020	1510	1850	2300	2910	3960	5880	

ALSEA RIVER BASIN

14306600 DRIFT CREEK NEAR SALADO, OR

LOCATION.--Lat 44°30'50", long 123°50'50", in NE 1/4 sec.24, T.12 S., R.10 W., Lincoln County, Hydrologic Unit 17100205, on right bank 0.2 mi downstream from Cape Horn Creek, 4.1 mi southwest of Salado, 8.5 mi southeast of Toledo, and at mile 21.8.

DRAINAGE AREA.--20.5 mi².

PERIOD OF RECORD.--September 1958 to September 1963, June 1965 to September 1970.

GAGE.--Water-stage recorder. Elevation of gage is 460 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--10 years (water years 1959-63, 1966-70), 120 ft³/s, 79.49 in/yr, 86,940 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,500 ft³/s Nov. 25, 1962, gage height, 8.34 ft, from rating curve extended above 1,300 ft³/s on basis of slope-area measurement at gage height 8.11 ft; maximum gage height, 8.79 ft Dec. 4, 1966 (backwater from debris); minimum discharge, 3.8 ft³/s Sept. 7, 8, 1958.

STATISTICAL SUMMARIES FOR THE PERIOD 1959-1970

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	9.7	1966	89	1960	43	28	3.1
Nov	10	73	1968	317	1961	171	88	11.7
Dec	10	108	1961	401	1969	224	95	15.8
Jan	10	75	1963	488	1970	262	143	18.5
Feb	10	154	1966	510	1961	274	109	17.7
Mar	10	88	1970	390	1961	209	90	14.8
Apr	10	60	1966	232	1963	116	52	7.9
May	10	24	1966	135	1960	74	37	5.3
Jun	11	14	1966	69	1968	31	14	2.1
Jul	11	9.2	1967	22	1969	14	4.2	1.0
Aug	11	5.8	1966	19	1968	9.7	3.8	0.7
Sep	12	5.4	1967	61	1959	14	15	1.0
Ann		107	1962	147	1961	120	11	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	5.2	6.0	7.2	8.3	10	13	18	23	31	49	60	73	90	122	153 11
Nov	22	30	35	39	44	50	61	103	141	183	205	252	301	407	527 10
Dec	50	65	76	86	95	102	117	148	190	246	282	327	386	471	657 10
Jan	53	65	72	82	92	105	132	169	207	273	302	370	450	594	892 10
Feb	82	96	106	115	127	137	159	193	226	291	333	379	446	594	791 10
Mar	68	76	84	91	97	103	118	147	182	230	265	298	326	428	557 10
Apr	44	49	54	58	62	68	77	88	101	122	139	157	183	224	299 10
May	25	28	33	36	39	41	47	55	68	83	92	104	117	144	181 10
Jun	14	16	18	19	21	22	24	26	29	33	35	37	41	48	61 11
Jul	7.8	9.1	9.6	10	11	12	13	14	16	17	18	19	21	22	25 11
Aug	5.1	5.8	6.2	6.7	7.1	7.6	8.1	8.7	9.3	10	11	12	12	13	16 11
Sep	4.7	4.7	5.2	5.9	5.9	6.5	7.3	8.2	9.1	12	14	17	20	27	42 12
Ann	6.6	8.5	10	13	17	22	37	59	88	121	145	177	225	297	446

ALSEA RIVER BASIN

14306700 NEEDLE BRANCH NEAR SALADO, OR

LOCATION.--Lat 44°30'55", 123°51'20", in SW 1/4 sec.24, T.12 S., R.10 W., Lincoln County, Hydrologic Unit 17100205, on right bank 500 ft upstream from mouth, 4.6 mi west of Salado, and 8.5 mi southeast of Toledo.

DRAINAGE AREA.--0.27 mi², computed as 174.64 acres on basis of field survey by Oregon State University.

PERIOD OF RECORD.--October 1958 to September 1973.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 440 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--15 years, 1.64 ft³/s, 82.49 in/yr, 1,190 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 64 ft³/s Jan. 11, 1972, gage height, 3.75 ft; minimum, 0.01 ft³/s Sept. 8, 9, 1962, Sept. 18 to Oct. 3, 1965, Aug. 17, Sept. 14, 23-28, 1967, many days in August and September 1970, Aug. 26, 1971, many days in August and September 1972, several days in August and September 1973.

STATISTICAL SUMMARIES FOR THE PERIOD 1959-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	15	0.1	1973	1.9	1968	0.6	0.6	2.9
Nov	15	0.8	1973	4.6	1972	2.6	1.2	13.1
Dec	15	1.2	1961	7.8	1972	3.9	2.0	20.2
Jan	15	0.8	1963	7.1	1972	4.3	2.1	22.4
Feb	15	0.7	1973	6.2	1961	2.9	1.4	13.8
Mar	15	0.7	1965	4.5	1961	2.6	1.1	13.2
Apr	15	0.6	1966	2.7	1971	1.4	0.7	7.0
May	15	0.2	1966	1.8	1960	0.8	0.4	4.0
Jun	15	0.1	1966	1.1	1968	0.3	0.2	1.7
Jul	15	0.1	1970	1.0	1958	0.1	0.1	0.7
Aug	15	0.0	1970	1.0	1958	0.1	0.0	0.3
Sep	15	0.0	1965	1.0	1958	0.1	0.2	0.7
Ann		1.1	1973	2.5	1972	1.6	0.3	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.5	2.2	15
Nov	0.3	0.3	0.5	0.5	0.6	0.7	1.0	1.5	1.8	2.7	3.2	3.9	3.9	6.3	8.7	15
Dec	0.6	0.8	0.9	1.1	1.2	1.4	1.8	2.3	2.9	3.7	4.7	5.3	6.7	9.3	14	15
Jan	0.6	0.8	1.0	1.2	1.2	1.4	1.8	2.4	3.2	4.3	4.9	5.7	7.5	9.5	15	15
Feb	0.5	0.7	0.8	1.0	1.1	1.3	1.5	1.9	2.4	3.0	3.4	3.9	5.0	6.3	8.3	15
Mar	0.5	0.7	0.8	0.9	1.1	1.1	1.4	1.8	2.3	2.7	3.0	3.4	4.3	4.9	6.3	15
Apr	0.4	0.4	0.5	0.6	0.6	0.7	0.8	0.9	1.1	1.4	1.5	1.7	2.1	2.9	3.7	15
May	0.2	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.7	0.8	0.8	1.0	1.2	1.4	1.8	15
Jun	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.7	15
Jul	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	15
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	15
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.3	0.4	15
Ann	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.6	0.9	1.5	1.5	2.0	2.6	4.3	6.2	

ALSEA RIVER BASIN

14306800 FLYNN CREEK NEAR SALADO, OR

LOCATION.--Lat 44°32'20", long 123°51'05", in SW 1/4 sec.12, T.12 S., R.10 W., Lincoln County, Hydrologic Unit 17100205, on right bank 1,000 ft upstream from mouth, 3.4 mi west of Salado, and 6.9 mi southeast of Toledo.

DRAINAGE AREA.--0.78 mi², computed as 501.96 acres on basis of field survey by Oregon State University.

PERIOD OF RECORD.--September 1958 to September 1973.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 685 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--15 years (water years 1959-73), 4.37 ft³/s, 76.08 in/yr, 3,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 139 ft³/s Jan. 11, 1972, gage height, 4.73 ft; minimum, 0.07 ft³/s Sept. 27, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1959-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	15	0.2	1973	3.2	1960	1.0	0.9	1.9
Nov	15	1.0	1973	11	1961	5.7	3.3	10.6
Dec	15	4.4	1961	20	1965	9.6	4.7	18.5
Jan	15	3.2	1963	18	1965	11	5.5	23.0
Feb	15	2.0	1973	19	1961	8.7	4.1	15.3
Mar	15	2.7	1965	14	1961	7.3	3.6	14.0
Apr	15	1.8	1969	8.3	1963	4.2	2.0	7.9
May	15	0.9	1966	5.3	1960	2.4	1.3	4.7
Jun	15	0.5	1966	3.2	1968	1.1	0.7	2.1
Jul	15	0.3	1970	1.2	1969	0.5	0.2	1.0
Aug	15	0.1	1966	1.0	1958	0.3	0.1	0.5
Sep	16	0.1	1965	1.4	1959	0.4	0.3	0.7
Ann		2.7	1973	6.3	1972	4.4	0.8	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equalled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.9	1.3	1.5	2.0	2.3	3.5	15
Nov	0.5	0.6	0.8	0.9	1.1	1.3	1.8	3.0	3.6	6.2	7.4	8.8	12	15	21	15
Dec	1.3	2.5	2.9	3.3	3.8	3.8	4.9	6.4	8.2	10	12	14	17	23	30	15
Jan	2.5	2.9	3.2	3.6	4.5	4.5	5.7	7.2	10	13	15	17	22	27	36	15
Feb	2.1	2.8	3.2	3.5	3.9	4.4	5.4	6.0	7.5	9.3	11	13	15	18	25	15
Mar	1.9	2.4	2.6	2.9	3.2	3.6	4.4	4.9	6.1	7.5	8.4	11	13	15	20	15
Apr	1.4	1.5	1.8	2.0	2.2	2.4	2.6	3.1	3.7	4.4	4.8	5.7	6.7	8.0	12	15
May	0.8	1.0	1.1	1.2	1.3	1.4	1.5	1.8	2.2	2.6	2.9	3.2	3.4	4.1	5.9	15
Jun	0.4	0.5	0.5	0.6	0.7	0.7	0.7	0.8	1.0	1.1	1.1	1.3	1.4	1.7	2.2	15
Jul	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.6	0.6	0.6	0.7	0.8	1.0	15
Aug	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	15
Sep	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.9	16
Ann	0.1	0.2	0.3	0.4	0.5	0.6	1.0	1.9	2.9	4.3	5.3	6.7	8.4	11	17	

ALSEA RIVER BASIN

14306810 DEER CREEK NEAR SALADO, OR

LOCATION.--Lat 44°32'05", long 123°52'35", in SW 1/4 sec.11, T.12 S., R.10 W., Lincoln County, Hydrologic Unit 17100205, Siuslaw National Forest, on right bank 1,000 ft upstream from mouth, 4.6 mi west of Salado, and 6.5 mi southeast of Toledo.

DRAINAGE AREA.--1.17 mi², computed as 749.5 acres on basis of field survey by Oregon State University.

PERIOD OF RECORD.--September 1958 to September 1973.

GAGE.--Water-stage recorder and concrete control. Elevation of gage is 600 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--15 years (water years 1959-73), 6.49 ft³/s, 75.33 in/yr, 4,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 201 ft³/s Jan. 28, 1965, gage height, 4.21 ft; maximum gage height, 4.39 ft Jan. 20, 1972 (backwater from log); minimum discharge, 0.15 ft³/s Sept. 2, 14-16, 1972.

STATISTICAL SUMMARIES FOR THE PERIOD 1959-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	15	0.3	1973	5.0	1960	1.9	1.5	2.5
Nov	15	2.5	1973	16	1961	9.0	4.7	11.4
Dec	15	5.9	1961	30	1965	14	6.7	18.3
Jan	15	4.5	1963	28	1965	17	8.3	22.6
Feb	15	2.9	1973	27	1961	12	5.9	14.5
Mar	15	3.5	1965	20	1961	10	5.2	13.6
Apr	15	2.7	1969	11	1963	6.0	2.8	7.6
May	15	1.2	1966	7.0	1960	3.5	1.7	4.5
Jun	15	0.7	1966	5.1	1968	1.8	1.1	2.2
Jul	15	0.5	1970	1.9	1969	0.8	0.4	1.1
Aug	15	0.3	1966	1.2	1968	0.5	0.2	0.7
Sep	16	0.3	1967	2.7	1959	0.7	0.6	0.9
Ann		4.2	1973	9.1	1972	6.5	1.2	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.9	1.2	1.8	2.4	3.1	3.5	4.5	6.8	15
Nov	1.1	1.3	1.5	1.8	2.1	2.4	3.3	4.6	6.8	9.4	12	14	18	22	31	15
Dec	2.6	3.3	4.3	4.8	5.5	5.5	7.0	9.6	12	15	17	19	23	33	44	15
Jan	3.5	3.9	5.0	5.7	5.7	6.5	8.9	12	14	18	21	24	32	40	54	15
Feb	2.9	3.7	4.6	5.1	5.7	6.4	7.1	8.0	11	13	15	17	20	26	38	15
Mar	2.5	3.2	3.5	4.0	4.4	5.0	5.5	6.9	9.3	12	13	15	18	21	29	15
Apr	2.0	2.2	2.4	2.7	2.9	3.2	3.6	4.3	5.2	6.4	7.0	7.7	9.3	13	15	15
May	1.2	1.4	1.6	1.7	1.9	2.1	2.3	2.5	2.8	3.4	4.1	4.5	5.5	6.0	8.0	15
Jun	0.7	0.8	0.8	0.9	1.0	1.0	1.2	1.3	1.5	1.6	1.8	2.0	2.3	2.8	3.2	15
Jul	0.4	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.9	1.0	1.1	1.3	1.6	15
Aug	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.9	15
Sep	0.2	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.7	0.9	1.0	1.4	2.0	16
Ann	0.3	0.3	0.5	0.6	0.7	1.1	1.6	2.9	4.5	6.4	7.3	8.9	12	16	25	

BIG CREEK BASIN

14306900 BIG CREEK NEAR ROOSEVELT BEACH, OR

LOCATION.--Lat 44°10'05", long 124°03'55", in SE 1/4 SE 1/4 sec.13, T.16 S., R.12 W., Lane County, Hydrologic Unit 17100205, on right bank 1.0 mi downstream from Frying Pan Creek, 2.5 mi east of Roosevelt Beach.

DRAINAGE AREA.--11.9 mi².

PERIOD OF RECORD.--October 1972 to 1987.

GAGE.--Water-stage recorder. Elevation of gage is 141 ft, by barometer.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--15 years, 92.3 ft³/s, 105.33 in/yr, 66,870 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,150 ft³/s Nov. 30, 1975, gage height, 6.90 ft; minimum discharge, 3.8 ft³/s Oct. 15, 1979.

STATISTICAL SUMMARIES FOR THE PERIOD 1973-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	15	5.7	1973	66	1976	30	22	2.8
Nov	15	20	1977	386	1974	148	101	13.2
Dec	15	19	1977	398	1974	218	107	20.0
Jan	15	26	1977	287	1974	175	89	16.1
Feb	15	55	1973	322	1986	186	88	15.6
Mar	15	48	1978	269	1974	143	58	13.1
Apr	15	39	1986	153	1982	84	30	7.5
May	15	27	1982	99	1984	49	22	4.6
Jun	15	13	1982	97	1984	36	24	3.2
Jul	15	8.6	1982	45	1974	19	10	1.8
Aug	15	6.0	1982	18	1974	10	3.3	1.0
Sep	15	6.1	1987	29	1977	13	7.1	1.2
Ann		40	1977	159	1974	92	28	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	5.1	5.7	6.5	6.5	7.3	7.3	9.2	12	18	25	32	46	57	83	119	15
Nov	15	19	24	32	39	46	76	109	141	174	196	229	265	329	431	15
Dec	23	35	50	73	88	99	125	155	201	260	294	335	397	507	617	15
Jan	29	39	50	60	70	77	99	120	148	192	222	263	315	377	490	15
Feb	33	44	51	66	78	89	111	133	168	218	243	268	314	396	550	15
Mar	43	50	59	65	73	80	94	110	136	164	184	209	243	275	346	15
Apr	35	39	42	46	49	52	58	67	77	93	104	118	137	159	190	15
May	22	25	27	29	31	32	36	40	44	51	55	62	72	87	122	15
Jun	14	16	17	19	20	22	24	26	29	34	37	43	52	62	84	15
Jul	7.8	8.6	9.5	11	12	13	14	15	17	20	21	23	27	33	44	15
Aug	5.6	6.0	6.3	6.7	7.2	7.6	8.1	9.1	9.6	12	12	13	14	16	21	15
Sep	5.2	5.7	6.3	6.8	6.8	7.5	8.2	8.9	10	12	13	15	18	23	40	15
Ann	6.8	8.2	10	12	15	19	30	44	64	95	116	143	179	238	343	

SIUSLAW RIVER BASIN

14307500 LAKE CREEK AT TRIANGLE LAKE, OR

LOCATION.--Lat 44°09'40", long 123°34'10", in SW 1/4 sec.20, T.16 S., R.7 W., Lane County, Hydrologic Unit 17100206, on right bank 500 ft downstream from outlet of Triangle Lake and 3.0 mi southwest of Blachly.

DRAINAGE AREA.--52.5 mi².

PERIOD OF RECORD.--August 1931 to September 1955.

GAGE.--Water-stage recorder. Datum of gage is 672.75 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated by natural storage in Triangle Lake. No diversion upstream from station.

AVERAGE DISCHARGE.--24 years (water years 1932-55), 210 ft³/s, 152,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,180 ft³/s Feb. 18, 1949, gage-height, 8.33 ft, from rating curve extended above 2,400 ft³/s by logarithmic plotting; maximum gage height, 8.68 ft Feb. 18, 1949 (backwater from debris); minimum discharge, 2.7 ft³/s Aug. 1, 1944; minimum daily, 4.2 ft³/s Oct. 18, 19, 1952.

STATISTICAL SUMMARIES FOR THE PERIOD 1932-1955

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	5.5	1953	359	1948	52	75	2.1
Nov	24	9.7	1937	573	1938	226	174	8.8
Dec	24	78	1937	927	1934	426	247	17.2
Jan	24	162	1937	912	1936	508	222	20.5
Feb	24	160	1934	939	1949	500	201	18.4
Mar	24	97	1941	794	1938	362	162	14.6
Apr	24	77	1939	551	1937	224	117	8.8
May	24	37	1939	276	1933	117	62	4.7
Jun	24	27	1939	149	1933	57	32	2.3
Jul	24	14	1939	60	1937	26	10	1.1
Aug	24	6.9	1939	29	1953	15	5.7	0.6
Sep	24	8.5	1939	55	1941	16	9.9	0.6
Ann		121	1944	304	1938	210	49	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	7.4	10	11	12	12	13	15	19	24	33	38	50	66	89	155	24
Nov	11	16	24	37	44	56	79	104	148	215	281	355	433	594	874	24
Dec	45	78	98	126	154	182	230	284	351	448	527	633	755	932	1200	24
Jan	122	154	179	211	237	264	316	376	457	557	621	704	809	984	1340	24
Feb	134	169	194	216	236	257	307	372	482	581	653	742	818	971	1250	24
Mar	102	124	142	166	190	211	254	296	340	391	443	515	607	689	847	24
Apr	74	86	95	103	113	127	155	182	211	251	277	310	345	390	482	24
May	44	51	57	62	66	71	80	90	103	122	136	157	185	224	282	24
Jun	26	29	32	33	35	37	41	46	51	60	64	69	78	97	128	24
Jul	14	16	17	18	19	20	21	23	26	30	32	34	38	43	54	24
Aug	8.8	8.8	9.4	11	11	12	13	14	15	17	18	20	22	24	29	24
Sep	7.8	8.5	8.5	9.2	10	11	12	13	15	17	19	21	22	26	39	24
Ann	10	12	15	18	23	30	51	88	143	226	275	333	413	555	806	

SIUSLAW RIVER BASIN

14307580 LAKE CREEK NEAR DEADWOOD, OR

LOCATION.--Lat 44°04'58", long 123°47'05", in NW 1/4 NW 1/4 sec.21, T.17 S., R.9 W., Lane County, Hydrologic Unit 17100206, on right bank 0.2 mi upstream from Indian Creek, 1.5 mi southwest of Deadwood, and at mile 2.6.

DRAINAGE AREA.--174 mi².

PERIOD OF RECORD.--October 1967 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 178.86 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow slightly regulated by natural storage in Triangle Lake. Several diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--20 years, 718 ft³/s, 56.04 in/yr, 520,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,400 ft³/s Dec. 25, 1980, gage height, 15.86 ft; minimum discharge, 12 ft³/s Aug. 14, 15, 17, 18, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1968-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	20	26	1975	391	1969	143	99	1.7
Nov	20	86	1977	2650	1974	872	692	10.0
Dec	20	77	1977	3270	1974	1770	932	20.9
Jan	20	91	1977	3340	1970	1660	902	19.6
Feb	20	338	1977	2870	1986	1620	689	17.5
Mar	20	396	1978	2230	1972	1200	569	14.2
Apr	20	285	1977	1500	1982	707	331	8.1
May	20	169	1985	695	1984	334	146	3.9
Jun	20	101	1973	403	1985	176	91	2.0
Jul	20	34	1977	185	1983	75	30	0.9
Aug	20	23	1973	98	1968	42	17	0.5
Sep	20	24	1987	122	1971	58	26	0.7
Ann		215	1977	1240	1974	718	237	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	27	33	36	39	42	45	51	61	75	113	153	209	277	392	564 20
Nov	64	96	134	162	192	222	296	402	591	865	1070	1340	1730	2460	3270 20
Dec	130	251	374	511	626	745	1030	1330	1700	2200	2490	2790	3140	3660	4940 20
Jan	154	321	429	541	636	720	881	1090	1350	1800	2110	2470	2920	3600	5060 20
Feb	280	381	478	595	678	767	962	1170	1460	1900	2180	2550	2970	3490	4500 20
Mar	357	423	488	539	589	638	743	892	1070	1340	1510	1710	2010	2400	3100 20
Apr	265	302	330	357	383	407	454	522	609	730	816	937	1080	1370	1840 20
May	141	163	179	193	204	216	241	273	306	348	373	406	446	532	710 20
Jun	79	88	96	104	109	115	128	141	157	173	183	195	214	258	394 20
Jul	37	43	46	48	51	55	62	69	76	83	88	94	102	115	136 20
Aug	21	24	26	29	31	32	36	38	41	45	47	50	55	60	73 20
Sep	22	23	25	27	29	31	36	43	51	60	66	77	91	114	154 20
Ann	29	38	46	56	70	92	161	281	443	691	865	1100	1430	2020	2980

SIUSLAW RIVER BASIN

14307620 SIUSLAW RIVER NEAR MAPLETON, OR
(National stream quality accounting network station)

LOCATION.--Lat 44°03'45", long 123°52'55", in SW 1/4 NW 1/4 sec.27, T.17 S., R.10 W., Lane County, Hydrologic Unit 17100206, on right bank 250 ft above Shoemaker Creek, 2.5 mi northwest of Mapleton, and at mile 23.7.

DRAINAGE AREA.--588 mi².

PERIOD OF RECORD.--October 1967 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 41 ft, from topographic map.

REMARKS.--No regulation or diversions upstream from station.

AVERAGE DISCHARGE.--20 years, 2,141 ft³/s, 49.45 in/yr, 1,551,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49,400 ft³/s Jan. 21, 1972, gage height, 28.45 ft; minimum discharge, 45 ft³/s Aug. 18, 19, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of December 1964 reached a stage of about 28 ft, from information by local residents (discharge not determined).

STATISTICAL SUMMARIES FOR THE PERIOD 1968-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	20	94	1975	1220	1969	449	323	1.8
Nov	20	281	1977	7820	1974	2520	2020	9.7
Dec	20	261	1977	9790	1982	5260	2800	20.9
Jan	20	300	1977	10100	1970	5000	2760	19.8
Feb	20	876	1977	9080	1986	4710	2080	17.0
Mar	20	1290	1978	6820	1974	3530	1700	14.0
Apr	20	686	1977	4450	1982	2120	1020	8.1
May	20	541	1985	2100	1984	1040	431	4.1
Jun	20	320	1973	1240	1984	567	255	2.2
Jul	20	127	1977	628	1983	269	106	1.1
Aug	20	77	1973	321	1968	157	61	0.6
Sep	20	86	1987	356	1971	194	83	0.7
Ann		576	1977	3720	1974	2140	724	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	84	93	103	127	147	158	178	204	243	362	468	629	798	1170	1850 20
Nov	215	310	422	504	580	669	881	1200	1670	2450	2910	3680	4930	6750	9550 20
Dec	396	780	1170	1510	1870	2180	2930	3760	4920	6350	7220	8210	9340	1400	4700 20
Jan	531	1070	1380	1660	1870	2100	2540	3160	4000	5320	6180	7200	8240	900	5600 20
Feb	905	1230	1490	1780	2030	2270	2780	3380	4170	5370	6030	7080	8220	100	3300 20
Mar	1140	1320	1480	1630	1740	1860	2170	2570	3110	3870	4430	5090	5900	7090	9040 20
Apr	786	919	1010	1090	1170	1250	1400	1580	1830	2210	2450	2790	3190	3950	5450 20
May	449	508	562	614	654	694	771	863	975	1100	1190	1280	1400	1640	2070 20
Jun	269	291	320	349	371	391	428	476	517	571	605	645	714	844	1220 20
Jul	135	152	166	176	185	195	217	240	268	294	313	338	366	404	473 20
Aug	73	83	93	106	115	121	133	143	154	168	180	190	201	228	278 20
Sep	76	82	87	93	99	104	116	142	172	208	228	258	289	363	497 20
Ann	100	136	167	199	242	311	519	880	1360	2060	2540	3190	4130	5800	8700

SIUSLAW RIVER BASIN

14307645 NORTH FORK SIUSLAW RIVER NEAR MINERVA, OR

LOCATION.--Lat 44°02'50", long 124°00'10", in NW 1/4 SW 1/4 sec.34, T.17 S., R.11 W., Lane County, Hydrologic Unit 17100206, on left bank 10 ft downstream from county road bridge, 0.3 mi upstream from Condon Creek, 2.7 mi southwest of Minerva, and at mile 13.09.

DRAINAGE AREA.--41.2 mi².

PERIOD OF RECORD.--October 1967 to September 1985 (discontinued).

GAGE.--Water-stage recorder. Elevation of gage is 40 ft, from topographic map.

REMARKS.--No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--18 years, 297 ft³/s, 97.89 in/yr, 215,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,400 ft³/s Dec. 25, 1980, gage height, 24.36 ft; minimum discharge, 11 ft³/s Sept. 9-11, 17, 18, 1980.

STATISTICAL SUMMARIES FOR THE PERIOD 1968-1985

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	15	1973	279	1969	99	74	2.8
Nov	18	66	1977	1080	1974	417	289	11.5
Dec	18	56	1977	1300	1982	758	317	21.7
Jan	18	72	1977	1080	1970	636	316	18.2
Feb	18	171	1973	901	1983	578	235	15.1
Mar	18	150	1978	809	1974	450	201	12.9
Apr	18	134	1977	560	1982	274	107	7.6
May	18	76	1985	384	1984	145	76	4.1
Jun	18	41	1982	295	1984	105	69	2.9
Jul	18	26	1970	135	1983	48	26	1.4
Aug	18	15	1970	78	1968	28	14	0.8
Sep	18	16	1980	99	1977	39	22	1.1
Ann		119	1977	445	1974	297	85	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	15	16	17	18	21	26	35	46	59	92	116	142	182	264	406	18
Nov	39	53	74	91	111	130	186	257	369	460	528	626	773	1020	1470	18
Dec	74	133	221	266	318	365	482	598	751	933	1040	1190	1360	1590	2000	18
Jan	99	136	170	206	235	274	345	436	548	723	834	953	1170	1490	1930	18
Feb	116	147	173	208	240	279	351	434	534	674	737	845	998	1260	1660	18
Mar	134	153	181	204	222	238	278	335	414	505	575	653	771	909	1120	18
Apr	110	124	134	145	155	165	188	216	246	290	319	360	422	509	634	18
May	64	71	79	83	87	91	100	109	121	139	151	169	205	254	345	18
Jun	40	45	49	52	55	58	65	72	82	96	106	119	136	165	235	18
Jul	22	24	26	28	30	32	35	39	44	52	55	59	65	74	97	18
Aug	15	16	17	19	20	20	22	24	26	28	30	33	36	41	57	18
Sep	14	16	17	17	19	20	22	25	30	38	43	50	57	74	113	18
Ann	18	22	28	35	45	55	87	132	198	298	370	462	588	789	1170	

SOUTH UMPQUA RIVER BASIN

14307700 JACKSON CREEK NEAR TILLER, OR

LOCATION.--Lat 42°57'15", long 122°49'40", in SW 1/4 NE 1/4 sec.21 T.30 S., R.1 W., Douglas County, Hydrologic Unit 17100302, on right bank 0.5 mi upstream from Chapman Creek, 0.8 mi downstream from Beaver Creek, 6.5 mi northeast of Tiller, and at mile 3.0. Records include flow of Chapman Creek.

DRAINAGE AREA.--152 mi², at cableway 0.6 mi downstream where all discharge measurements are made.

PERIOD OF RECORD.--October 1955 to September 1986.

GAGE.--Water-stage recorder. Datum of gage is 1,240.25 ft above National Geodetic Vertical Datum of 1929 (levels by Douglas County Water Resources Department).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--31 years, 319 ft³/s, 28.50 in/yr, 231,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,100 ft³/s Dec. 22, 1964, gage height, 18.0 ft, from floodmark, from rating curve extended above 5,100 ft³/s and basin runoff comparison; minimum discharge, 11 ft³/s Jan. 6, 1977, Nov. 13, 1978, result of freezeup.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1986

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	18	1965	242	1963	56	46	1.5
Nov	31	22	1977	1200	1974	311	269	8.0
Dec	31	19	1977	2010	1965	635	490	16.9
Jan	31	25	1977	1410	1974	619	386	16.5
Feb	31	26	1977	1330	1986	572	281	13.9
Mar	31	122	1977	1360	1972	531	274	14.1
Apr	31	158	1968	705	1979	453	152	11.7
May	31	121	1968	752	1963	391	155	10.4
Jun	31	51	1968	372	1984	167	97	4.3
Jul	31	21	1968	85	1983	49	17	1.3
Aug	31	16	1973	69	1976	27	10.0	0.7
Sep	31	16	1960	97	1986	29	17	0.7
Ann		85	1977	566	1974	319	107	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	17	18	19	19	20	21	24	27	33	44	52	63	84	114	170	31
Nov	23	26	32	39	46	56	82	115	175	282	356	469	585	800	1230	31
Dec	31	60	90	127	160	187	266	382	531	691	800	929	1060	1360	1880	31
Jan	63	100	132	172	207	239	311	386	492	627	719	827	1030	1280	1980	31
Feb	129	172	205	234	261	287	340	403	494	590	657	745	878	1120	1600	31
Mar	157	194	221	244	266	290	345	422	506	596	651	730	835	957	1200	31
Apr	156	196	229	254	279	305	357	410	466	533	567	607	662	750	882	31
May	137	166	189	210	235	259	302	349	397	461	500	541	587	669	785	31
Jun	47	58	66	72	78	87	103	125	146	175	201	240	276	345	435	31
Jul	23	26	28	30	32	34	38	43	48	54	58	63	71	85	104	31
Aug	17	18	19	20	21	22	23	25	28	30	31	33	35	39	45	31
Sep	15	17	18	19	19	20	21	22	24	26	28	30	32	38	57	31
Ann	18	21	25	29	35	46	90	167	258	361	428	506	596	742	1050	

SOUTH UMPQUA RIVER BASIN

14308000 SOUTH UMPQUA RIVER AT TILLER, OR

LOCATION.--Lat 42°55'50", long 122°56'50", in NE 1/4 sec.33, T.30 S., R.2 W., Douglas County, Hydrologic Unit 17100302, Umpqua National Forest, on left bank 0.3 mi upstream from bridge on State Highway 227 at Tiller, 0.3 mi upstream from Elk Creek, and at mile 187.31.

DRAINAGE AREA.--449 mi².

PERIOD OF RECORD.--October 1910 to December 1911, October 1939 to 1987. Monthly discharge only for some periods, published in WSP 1318. Prior to December 1911, published as South Fork of Umpqua River at Tiller.

REVISED RECORDS.--WSP 1448: 1911(M), 1912, drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 991.8 ft above National Geodetic Vertical Datum of 1929 (river-profile survey). Prior to Oct. 1, 1939, nonrecording gage at site 0.2 mi downstream at different datum.

REMARKS.--No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--49 years, 1,041 ft³/s, 31.48 in/yr, 754,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 60,200 ft³/s Dec. 22, 1964, gage height, 25.72 ft; minimum discharge observed, 20 ft³/s Sept. 3, 4, 1911.

STATISTICAL SUMMARIES FOR THE PERIOD 1911-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	50	43	1945	1790	1951	214	279	1.7
Nov	50	48	1940	3980	1974	1110	883	8.8
Dec	50	66	1977	7480	1965	2060	1580	16.8
Jan	49	89	1977	4510	1972	2090	1290	17.1
Feb	49	95	1977	4910	1986	2070	939	15.4
Mar	49	442	1941	4780	1972	1720	880	14.0
Apr	49	433	1968	2310	1952	1390	481	11.0
May	49	309	1968	2090	1963	1070	471	8.7
Jun	49	111	1987	1640	1953	508	297	4.0
Jul	49	49	1940	301	1953	156	61	1.3
Aug	49	29	1940	205	1976	77	28	0.6
Sep	49	39	1951	364	1986	78	51	0.6
Ann		266	1977	1760	1974	1040	338	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	41	45	49	53	56	60	69	80	100	130	157	191	256	379	639 50
Nov	60	78	96	117	141	178	269	402	622	975	1250	1590	2080	2770	4550 50
Dec	138	221	316	418	528	626	821	1110	1570	2160	2560	3060	3690	4690	6810 50
Jan	294	388	455	556	660	757	983	1260	1570	2030	2420	2880	3590	4560	6740 49
Feb	458	587	693	795	886	981	1200	1460	1790	2190	2470	2830	3340	4190	5900 49
Mar	519	615	692	759	829	908	1080	1330	1600	1940	2150	2400	2740	3220	4070 49
Apr	479	568	645	733	805	899	1070	1260	1440	1650	1770	1920	2100	2340	2710 49
May	314	412	484	535	588	665	801	916	1070	1240	1330	1450	1640	1870	2290 49
Jun	129	169	200	225	247	272	329	397	452	555	621	708	824	987	1260 49
Jul	65	77	83	89	95	103	116	131	148	169	184	203	230	272	334 49
Aug	43	47	51	54	57	60	65	70	76	85	89	95	103	114	134 49
Sep	38	41	44	47	48	50	54	58	64	71	76	83	92	109	162 49
Ann	48	59	70	85	107	141	290	523	785	1100	1320	1590	1940	2490	3650

SOUTH UMPQUA RIVER BASIN

14308500 ELK CREEK NEAR DREW, OR

LOCATION.--Lat 42°53'25", long 122°55'00", in SW 1/4 sec.11, T.31 S., R.2 W., Douglas County, Hydrologic Unit 17100302, on right bank 100 ft downstream from Dixon Creek, 0.1 mi upstream from Drew Creek, 1.3 mi northwest of Drew, 3.3 mi southeast of Tiller, and at mile 4.1.

DRAINAGE AREA.--54.4 mi².

PERIOD OF RECORD.--September 1954 to September 1982, October 1986 to September 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,279.25 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Several diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--29 years (1955-82, 1987), 83.1 ft³/s, 20.74 in/yr, 60,210 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,880 ft³/s Dec. 22, 1964, gage height, 10.61 ft, from rating curve extended above 2,900 ft³/s on basis of slope-area measurement at gage height 10.34 ft; maximum gage height, 10.80 ft Jan. 15, 1974; no flow at times in September 1974, Aug. 16-22, 1977, Aug. 17-24, Sept. 16-19, 1981, Sept. 7, 8, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage, 11.8 ft, from floodmarks, probably for flood in January or November 1953, discharge, about 11,000 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1955-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	29	1.5	1975	62	1963	8.6	12	0.9
Nov	29	3.3	1977	449	1974	73	88	7.3
Dec	29	3.1	1977	651	1965	182	169	18.6
Jan	29	4.9	1977	643	1974	222	160	22.6
Feb	29	5.1	1977	382	1958	174	87	16.2
Mar	29	41	1977	356	1974	162	91	16.5
Apr	29	25	1987	193	1956	104	52	10.3
May	29	6.9	1987	164	1963	51	37	5.3
Jun	29	2.0	1987	51	1958	14	11	1.5
Jul	29	0.7	1973	10	1978	4.1	2.6	0.4
Aug	29	0.1	1973	10	1976	1.7	1.8	0.2
Sep	29	0.1	1974	18	1978	2.1	3.3	0.2
Ann		15	1977	180	1974	83	35	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.7	0.9	1.2	1.5	1.9	1.9	2.4	3.1	3.9	4.8	5.7	7.0	8.9	13	30	29
Nov	2.4	3.0	3.7	4.8	5.8	7.1	10	15	22	39	53	78	117	188	392	29
Dec	4.1	8.1	13	17	23	31	51	79	118	172	203	245	305	398	675	29
Jan	14	20	27	34	43	52	81	111	146	201	245	304	380	496	828	29
Feb	24	40	53	60	68	75	89	106	130	165	189	220	265	361	559	29
Mar	35	45	52	58	66	74	90	113	144	180	203	232	261	314	411	29
Apr	21	26	32	38	45	53	67	87	106	127	140	154	169	191	247	29
May	8.5	12	15	17	19	22	27	33	40	52	60	71	84	108	157	29
Jun	2.5	3.7	4.4	5.8	6.5	7.0	8.2	9.9	13	15	17	19	23	30	43	29
Jul	0.5	0.8	1.2	1.4	1.7	1.7	2.1	2.6	3.1	3.8	4.9	5.6	6.5	7.7	11	29
Aug	0.0	0.2	0.3	0.4	0.6	0.6	0.9	0.9	1.2	1.5	1.9	1.9	1.9	2.4	3.9	29
Sep	0.1	0.2	0.4	0.5	0.5	0.6	0.8	1.1	1.4	1.4	1.8	1.8	2.4	3.1	5.8	29
Ann	0.5	0.8	1.2	1.8	3.1	4.2	9.3	20	39	71	90	119	156	207	343	

SOUTH UMPQUA RIVER BASIN

14308600 SOUTH UMPQUA RIVER AT DAYS CREEK, OR

LOCATION.--Lat 42°58'05", long 123°09'60", in NW 1/4 sec.15, T.30 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on left bank 0.3 mi upstream from Days Creek, 0.4 mi southeast of community of Days Creek, and at mile 170.2.

DRAINAGE AREA.--641 mi².

PERIOD OF RECORD.--March 1975 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 738.55 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--12 years, 1,180 ft³/s, 25.00 in/yr, 854,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,300 ft³/s Dec. 6, 1981, gage height, 22.39 ft; minimum discharge, 31 ft³/s Sept. 15, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1975-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	76	1977	377	1980	230	125	1.7
Nov	12	93	1977	4250	1985	1420	1180	9.9
Dec	12	78	1977	6710	1982	2820	2020	20.3
Jan	12	121	1977	4050	1976	1980	1120	14.2
Feb	12	123	1977	5520	1986	2630	1570	17.2
Mar	13	687	1977	3170	1975	1780	806	12.8
Apr	13	722	1977	2660	1979	1660	689	11.6
May	13	354	1987	2070	1975	1140	498	8.2
Jun	13	146	1987	1230	1984	484	287	3.4
Jul	13	89	1977	311	1983	173	61	1.2
Aug	13	54	1977	228	1976	93	47	0.7
Sep	13	38	1987	419	1986	121	103	0.8
Ann		316	1977	1810	1984	1180	430	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	51	59	68	73	76	80	89	101	120	164	208	280	374	546	834	12
Nov	78	93	115	191	242	289	436	587	922	1390	1760	2210	2600	3450	5130	12
Dec	77	462	628	745	844	945	1260	1840	2400	3100	3610	4200	5010	6470	8560	12
Jan	127	283	395	570	718	877	1170	1450	1700	2090	2380	2690	3300	4090	5750	12
Feb	94	435	606	723	887	1020	1330	1620	2070	2730	3210	3720	4400	5590	7970	12
Mar	672	745	815	867	932	1000	1160	1360	1660	1970	2190	2400	2660	3120	4180	13
Apr	570	642	702	773	922	1010	1220	1430	1650	1890	2070	2260	2500	2880	4020	13
May	335	473	539	580	623	671	831	973	1150	1330	1440	1560	1750	2030	2530	13
Jun	143	177	204	231	256	279	326	384	443	514	561	626	719	838	1170	13
Jul	73	83	92	98	106	114	132	149	165	189	204	226	251	300	370	13
Aug	46	50	53	56	59	61	67	77	88	101	110	120	130	144	193	13
Sep	36	40	43	47	50	55	67	77	86	96	103	113	135	179	267	13
Ann	54	70	83	98	122	160	319	584	863	1240	1470	1770	2180	2770	4260	

UMPQUA RIVER BASIN

14308700 DAYS CREEK AT DAYS CREEK, OR

LOCATION.--Lat 42°58'55", long 123°08'55", in NE 1/4 sec.10, T.30 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on left bank 150 ft downstream from Wood Creek, 1.0 mi northeast of town of Days Creek, and at mile 1.3.

DRAINAGE AREA.--55.3 mi².

PERIOD OF RECORD.--October 1955 to July 1972.

GAGE.--Nonrecording gage and crest-stage gage. Elevation of gage is 810 ft, from topographic map. Prior to Oct. 1, 1962, at site 170 ft upstream at datum 3.06 ft higher.

REMARKS.--No regulation. Several diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--16 years (water years 1956-71), 44.4 ft³/s, 32,170 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,450 ft³/s Feb. 21, 1956, gage height, 11.24 ft, site and datum then in use, from rating curve extended above 1,100 ft³/s on basis of slope-area measurement of peak flow; no flow for many days in July and August 1961.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1972

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	17	1.5	1965	32	1963	7.0	8.1	1.3
Nov	17	3.7	1960	120	1962	41	34	7.7
Dec	17	11	1960	424	1956	119	104	22.7
Jan	17	12	1961	233	1956	124	76	23.7
Feb	17	42	1970	213	1956	96	47	16.9
Mar	17	20	1965	166	1971	84	48	16.2
Apr	17	11	1968	112	1963	35	23	6.6
May	17	4.2	1966	117	1963	24	26	4.7
Jun	17	2.0	1966	25	1958	7.9	6.0	1.5
Jul	17	0.5	1968	4.8	1972	2.2	1.5	0.4
Aug	16	0.1	1961	2.2	1956	1.0	0.7	0.2
Sep	16	0.7	1967	3.0	1963	1.5	0.6	0.3
Ann		19	1968	91	1956	44	16	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.8	1.2	1.4	1.7	1.7	2.1	2.5	3.0	3.6	4.4	5.6	6.6	8.1	11	18	17
Nov	2.2	2.7	3.2	3.8	4.5	5.9	8.3	12	17	28	35	51	69	95	176	17
Dec	5.1	7.1	9.0	13	15	18	29	47	78	110	133	159	211	302	497	17
Jan	9.7	14	20	25	31	37	48	65	92	129	153	177	212	266	417	17
Feb	23	28	31	33	35	38	46	54	66	83	93	107	141	173	332	17
Mar	16	20	24	29	33	37	49	62	77	93	105	120	140	170	227	17
Apr	9.3	12	13	14	16	18	22	27	32	37	41	48	59	75	97	17
May	3.8	4.5	6.2	7.0	8.1	9.8	12	15	18	21	24	27	32	41	68	17
Jun	1.6	1.8	2.1	2.4	2.8	3.2	4.2	5.6	6.5	8.3	9.4	11	13	16	21	17
Jul	0.4	0.5	0.5	0.7	0.7	0.8	1.0	1.4	1.8	2.4	2.8	3.2	4.3	5.0	5.8	17
Aug	0.1	0.2	0.3	0.3	0.4	0.4	0.6	0.7	1.0	1.4	1.5	1.7	1.7	2.0	2.5	16
Sep	0.3	0.4	0.6	0.6	0.6	0.7	0.8	1.1	1.4	1.6	1.8	1.8	2.1	2.7	3.5	16
Ann	0.5	0.6	1.1	1.5	2.0	3.1	5.5	11	19	33	42	55	78	113	180	

SOUTH UMPQUA RIVER BASIN

14309000 COW CREEK NEAR AZALEA, OR

LOCATION.--Lat 42°49'30", long 123°10'40", in N-1/2 sec.4, T.32 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on right bank 0.8 mi upstream from Whitehorse Creek, 4.5 mi northeast of Azalea, and at mile 58.2.

DRAINAGE AREA.--78.0 mi².

PERIOD OF RECORD.--April 1926 to September 1928 (no winter records), April 1929 to December 1931, April 1932 to 1987.

REVISED RECORDS.--WSP 984: 1933-36. WSP 1154: 1946(M), 1948(M). WSP 1448: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,694.32 ft above National Geodetic Vertical Datum of 1929 (Douglas County Road Department bench mark). Prior to July 19, 1949, nonrecording gage at same site and datum.

REMARKS.--Flow regulated since Oct. 7, 1985 by Galesville Reservoir (station 14308995). Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--57 years (water years 1930-31, 1933-87), 111 ft³/s, 19.33 in/yr, 80,420 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,600 ft³/s Jan. 15, 1974, gage height, 16.40 ft, from high-water mark in well; minimum discharge, 1.1 ft³/s Aug. 12, 1981, but may have been less during period of no gage-height record Sept. 4-30, 1970.

STATISTICAL SUMMARIES FOR THE PERIOD 1926-1985 (PRIOR TO CONSTRUCTION OF GALESVILLE DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	56	8.1	1937	294	1951	25	38	1.9
Nov	56	9.1	1937	542	1974	89	96	6.5
Dec	56	14	1937	765	1982	211	183	15.8
Jan	55	15	1937	926	1974	260	204	19.5
Feb	55	17	1977	685	1983	250	139	17.1
Mar	55	35	1934	521	1938	210	117	15.8
Apr	60	25	1926	328	1938	152	77	11.0
May	60	15	1931	268	1963	78	45	5.9
Jun	60	9.1	1926	129	1953	37	19	2.7
Jul	60	6.2	1926	35	1953	17	6.4	1.3
Aug	60	4.9	1931	22	1976	11	3.9	0.9
Sep	60	4.7	1929	30	1978	11	3.8	0.8
Ann		23	1977	269	1974	113	49	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	7.8	9.2	10	11	12	12	14	15	16	19	20	22	26	33	49 56
Nov	10	14	15	17	18	20	24	30	39	56	72	101	150	210	390 56
Dec	16	20	24	29	35	45	67	96	131	187	230	285	363	488	761 56
Jan	26	37	45	52	65	75	99	129	173	229	270	331	422	585	963 55
Feb	40	60	74	90	102	114	139	168	206	261	293	332	400	506	730 55
Mar	55	70	79	89	100	110	133	156	189	236	259	291	334	391	534 55
Apr	38	52	60	69	78	87	108	129	152	180	197	216	243	277	345 60
May	25	32	36	39	43	47	54	62	71	84	92	102	117	142	200 60
Jun	15	18	20	22	24	26	29	33	36	41	44	48	54	63	80 60
Jul	7.1	9.7	11	12	13	13	15	16	18	20	21	23	25	28	33 60
Aug	4.9	6.5	7.2	7.9	7.9	8.7	10	11	12	13	14	15	16	17	20 60
Sep	5.5	6.6	7.2	7.9	8.6	8.6	9.5	11	12	13	14	15	16	17	19 60
Ann	8.3	10	12	13	15	18	26	41	65	102	127	159	203	270	410

SOUTH UMPQUA RIVER BASIN

14309500 WEST FORK COW CREEK NEAR GLENDALE, OR

LOCATION.--Lat 42°48'15", long 123°36'35", in SW 1/4 NE 1/4 sec.11, T.32 S., R.8 W., Douglas County, Hydrologic Unit 17100302, on left bank 1.6 mi downstream from Bear Creek, 11 mi northwest of Glendale, and at mile 0.8.

DRAINAGE AREA.--86.9 mi².

PERIOD OF RECORD.--August 1955 to 1987.

REVISED RECORDS.--WSP 1738: 1956, drainage area (former site). WSP 1935: 1956.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,018.48 ft above National Geodetic Vertical Datum of 1929. Prior to June 8, 1964, at site 0.6 mi upstream at different datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--32 years, 273 ft³/s, 42.66 in/yr, 197,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Dec. 22, 1964, gage height, 18.59 ft, from floodmark, from rating curve extended above 2,600 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 3.7 ft³/s Aug. 17, 19, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	32	8.5	1975	254	1963	48	54	1.5
Nov	32	14	1977	1470	1974	329	311	9.9
Dec	32	13	1977	1670	1956	635	448	19.7
Jan	32	24	1977	1500	1970	675	443	21.0
Feb	32	66	1977	1660	1958	616	335	17.5
Mar	32	116	1965	934	1983	510	238	15.9
Apr	32	78	1977	840	1982	280	172	8.4
May	32	38	1987	477	1963	118	88	3.7
Jun	32	19	1987	79	1960	38	11	1.2
Jul	32	10	1987	29	1983	18	4.3	0.6
Aug	32	6.0	1987	16	1983	10	2.6	0.3
Sep	32	5.0	1987	56	1986	14	11	0.4
Ann		60	1977	499	1974	273	94	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	7.0	7.7	8.1	9.0	9.7	11	14	16	19	28	34	45	62	93	173	32
Nov	14	18	25	32	38	46	66	95	165	269	342	430	631	958	1510	32
Dec	29	49	72	92	115	147	226	320	458	636	812	1010	1210	1510	2100	32
Jan	51	70	98	131	159	178	231	326	450	633	779	983	1240	1580	2570	32
Feb	88	131	164	188	208	229	283	369	480	611	711	860	1080	1430	2140	32
Mar	104	129	148	164	186	212	275	373	470	591	649	723	855	1070	1460	32
Apr	65	78	91	105	118	135	163	195	228	301	338	400	477	568	751	32
May	39	44	49	53	57	62	69	79	90	104	117	134	160	200	299	32
Jun	20	23	25	27	29	30	33	36	39	43	46	49	52	57	67	32
Jul	10	12	12	13	14	14	16	17	19	21	22	23	25	27	30	32
Aug	6.1	6.6	7.2	7.8	8.5	8.5	9.3	10	11	12	12	13	14	15	17	32
Sep	4.9	6.5	6.5	7.4	7.6	7.9	8.3	9.0	9.5	11	12	13	16	21	32	32
Ann	7.3	9.4	11	13	16	22	39	69	127	212	276	374	509	732	1230	

SOUTH UMPQUA RIVER BASIN

14310000 COW CREEK NEAR RIDDLE, OR

LOCATION.--Lat 42°55'25", long 123°25'40", in NE 1/4 sec.32, T.30 S., R.6 W., Douglas County, Hydrologic Unit 17100302, on left bank 0.4 mi upstream from Council Creek, 3.8 mi southwest of Riddle, and at mile 6.7.

DRAINAGE AREA.--456 mi².

PERIOD OF RECORD.--September 1954 to 1987.

REVISED RECORDS.--WSP 1935: 1956(M).

GAGE.--Water-stage recorder. Datum of gage is 682.60 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Regulated since Oct. 7, 1985 by Galesville Reservoir (station 14308995). Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--33 years, 886 ft³/s, 641,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,400 ft³/s Jan. 15, 1974, gage height, 28.17 ft; minimum discharge, 7.4 ft³/s Aug. 17-19, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 29, 1950, reached a stage of about 28.5 ft, present site and datum, from slope-area measurement, discharge, 41,100 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1955-1985 (PRIOR TO CONSTRUCTION OF GALESVILLE DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	40	1975	633	1963	131	126	1.2
Nov	31	59	1977	4710	1974	901	974	8.2
Dec	31	58	1977	6570	1956	2040	1580	19.2
Jan	31	84	1977	5890	1956	2340	1720	22.0
Feb	31	161	1977	5900	1958	2010	1210	17.2
Mar	31	506	1965	3400	1974	1710	918	16.1
Apr	31	199	1977	2720	1982	1010	586	9.2
May	31	172	1973	1940	1963	432	323	4.1
Jun	31	75	1973	264	1958	154	50	1.4
Jul	31	24	1977	135	1983	67	24	0.6
Aug	31	14	1977	79	1983	37	13	0.3
Sep	31	25	1974	156	1978	44	24	0.4
Ann		147	1977	1810	1974	903	382	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	30	34	39	42	45	49	56	61	70	89	103	122	149	215	376 31
Nov	56	67	81	96	113	131	172	244	384	650	837	1200	1620	2650	4180 31
Dec	91	148	197	271	365	468	706	1010	1430	2110	2610	3140	3890	4800	7090 31
Jan	170	251	327	422	515	603	819	1120	1540	2070	2490	3220	4130	5500	9100 31
Feb	329	437	588	681	753	822	965	1140	1480	1930	2210	2640	3400	4710	6770 31
Mar	379	450	521	591	650	735	908	1210	1520	1860	2080	2360	2820	3660	4770 31
Apr	279	327	381	433	482	532	639	740	875	1080	1210	1400	1640	1920	2720 31
May	156	181	202	219	236	252	284	317	353	410	450	499	571	690	963 31
Jun	73	83	92	100	107	114	127	139	153	174	185	199	216	238	295 31
Jul	29	35	39	43	45	48	55	61	68	78	84	90	99	109	127 31
Aug	18	22	24	26	27	29	32	35	38	41	43	46	50	56	68 31
Sep	19	23	25	27	28	29	31	34	38	46	50	54	59	68	95 31
Ann	27	34	42	51	63	79	139	251	432	723	921	1190	1630	2310	3940

UMPQUA RIVER BASIN

14310700 SOUTH MYRTLE CREEK NEAR MYRTLE CREEK, OR

LOCATION.--Lat 43°01'55", long 123°11'30", in SE 1/4 sec.20, T.29 S., R.4 W., Douglas County, Hydrologic Unit 17100302, on left bank 0.6 mi downstream from School Hollow, 5.5 mi east of town of Myrtle Creek, and at mile 7.3.

DRAINAGE AREA.--43.9 mi².

PERIOD OF RECORD.--October 1955 to July 1972.

GAGE.--Nonrecording gage and crest-stage gage. Datum of gage is 775.25 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Several diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--16 years (water years 1956-71), 65.9 ft³/s, 57,740 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,050 ft³/s Dec. 11, 1956, gage height, 7.72 ft, from rating curve extended above 1,100 ft³/s; minimum observed, 0.20 ft³/s Aug. 2, 1961.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1972

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	17	6.2	1965	44	1957	14	10	1.8
Nov	17	8.3	1968	146	1962	61	39	7.7
Dec	17	18	1960	434	1965	151	121	19.4
Jan	17	21	1963	345	1956	177	115	22.8
Feb	17	63	1966	230	1958	136	52	16.0
Mar	17	38	1968	274	1957	133	77	17.1
Apr	17	25	1968	149	1963	65	29	8.2
May	17	12	1968	159	1963	45	33	5.9
Jun	17	5.6	1968	32	1956	16	8.0	2.1
Jul	17	1.2	1968	12	1963	5.6	3.2	0.7
Aug	16	1.3	1961	5.6	1956	3.2	1.4	0.4
Sep	16	2.8	1967	8.1	1971	5.0	1.5	0.6
Ann		28	1968	120	1956	65	21	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3.7	4.3	5.0	5.7	5.7	6.6	7.8	9.0	11	13	14	16	19	23	37	17
Nov	6.9	7.8	8.6	10	12	14	20	25	35	51	63	82	104	130	222	17
Dec	15	19	22	24	27	32	46	71	106	147	175	214	263	381	582	17
Jan	18	23	36	44	50	55	71	102	139	185	221	267	314	389	592	17
Feb	42	47	52	58	64	68	77	89	103	128	144	163	197	246	441	17
Mar	32	38	43	50	56	64	81	98	122	150	172	190	229	260	309	17
Apr	23	27	32	36	40	43	48	53	62	71	78	89	99	117	146	17
May	10	16	18	20	23	26	30	35	39	44	48	51	59	76	107	17
Jun	3.1	5.2	7.2	7.8	9.1	9.8	13	15	17	20	21	24	27	31	40	17
Jul	1.2	1.4	1.9	2.2	2.6	2.9	3.4	3.9	5.2	6.0	6.0	7.8	9.3	12	15	17
Aug	0.6	0.9	1.2	1.3	1.5	1.7	2.2	2.5	3.2	3.7	4.2	4.7	5.4	6.1	6.9	16
Sep	1.3	2.0	2.3	2.6	2.6	3.0	3.4	3.9	4.5	5.2	6.0	6.0	7.6	9.1	11	16
Ann	1.8	2.4	4.2	5.1	6.2	8.4	15	25	40	58	71	88	116	163	258	

SOUTH UMPQUA RIVER BASIN

14311000 NORTH MYRTLE CREEK NEAR MYRTLE CREEK, OR

LOCATION.--Lat 43°02'30", long 123°15'30", in SW 1/4 sec.14, T.29 S., R.5 W., Douglas County, Hydrologic Unit 17100302, on left bank 300 ft downstream from Bilger Creek, 1.5 mi northeast of town of Myrtle Creek, and at mile 2.2.

DRAINAGE AREA.--54.2 mi².

PERIOD OF RECORD.--October 1955 to September 1986.

GAGE.--Water-stage recorder. Datum of gage is 642.81 ft above National Geodetic Vertical Datum of 1929 (levels by City Engineer of Myrtle Creek). Oct. 1, 1955, to Aug. 31, 1977, at site 340 ft downstream on right bank. Oct. 1, 1955, to Sept. 30, 1975, at datum 1.63 ft lower and Oct. 1, 1975, to Aug. 31, 1977, at datum 1.33 ft lower.

REMARKS.--No regulation. Several diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--31 years, 73.2 ft³/s, 53,030 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,700 ft³/s Dec. 6, 1981, gage height, 10.08 ft, from floodmark, from rating curve extended above 1,300 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 11.58 ft Dec. 26, 1955 (backwater from debris), site and datum then in use; no flow at times in July 1973 and August 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1986

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	32	4.6	1965	38	1963	11	7.1	1.4
Nov	31	9.1	1977	376	1974	72	74	8.2
Dec	31	9.5	1977	482	1965	172	124	20.0
Jan	31	11	1977	384	1964	180	118	20.9
Feb	31	9.1	1977	363	1958	165	89	17.5
Mar	31	37	1978	294	1957	132	79	15.3
Apr	31	18	1977	207	1963	78	45	8.8
May	31	11	1966	188	1963	40	32	4.7
Jun	31	5.2	1966	33	1958	15	7.0	1.7
Jul	31	1.6	1977	15	1983	5.8	3.1	0.7
Aug	31	1.1	1973	9.9	1976	3.5	2.0	0.4
Sep	31	2.6	1965	12	1986	5.1	2.2	0.6
Ann		13	1977	133	1974	73	25	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	3.3	3.8	4.3	4.9	5.6	5.6	7.2	8.1	9.1	11	13	15	17	22	30
Nov	7.2	8.3	8.9	11	13	14	19	26	36	59	72	97	131	202	337
Dec	12	19	26	31	37	45	73	105	138	187	218	259	310	391	566
Jan	18	23	32	44	52	60	79	105	137	180	208	254	307	395	601
Feb	33	43	50	58	64	72	87	104	130	165	186	215	254	320	475
Mar	33	37	42	48	54	61	73	87	109	141	166	195	227	281	375
Apr	23	27	30	33	37	41	49	59	70	86	96	111	129	152	200
May	13	15	17	19	20	22	26	30	34	39	42	47	56	68	98
Jun	4.8	5.9	7.2	8.0	9.0	9.6	12	14	16	18	19	21	23	27	33
Jul	1.6	1.9	2.2	2.6	3.1	3.1	3.7	4.4	5.5	6.7	7.5	8.3	9.7	12	15
Aug	0.8	1.2	1.4	1.7	1.7	2.0	2.4	2.9	2.9	3.5	4.2	4.2	5.3	6.1	7.8
Sep	1.3	1.8	2.3	2.3	2.7	3.1	3.5	3.5	4.0	5.3	5.3	6.1	7.5	8.6	11
Ann	2.0	3.2	4.0	4.8	6.1	8.2	14	24	39	63	80	103	136	191	304

UMPQUA RIVER BASIN

14311200 OLALLA CREEK NEAR TENMILE, OR

LOCATION.--Lat 43°02'20", long 123°32'35", in NW 1/4 sec.21, T.29 S., R.7 W., Douglas County, Hydrologic Unit 17100302, on left bank 0.5 mi downstream from Berry Creek, 4.4 mi south of Tenmile, and at mile 11.7.

DRAINAGE AREA.--61.3 mi².

PERIOD OF RECORD.--October 1956 to September 1973.

GAGE.--Water-stage recorder. Datum of gage is 749.53 ft above National Geodetic Vertical Datum of 1929. Prior to June 21, 1957, nonrecording gage at site 0.3 mi downstream at datum 7.83 ft lower.

REMARKS.--No regulation. Some diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--17 years, 102 ft³/s, 73,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,160 ft³/s Jan.3, 1966, gage height, 11.98 ft, from floodmark; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	17	0.9	1973	51	1963	8.9	14	0.7
Nov	17	3.4	1960	253	1962	79	70	6.4
Dec	17	11	1960	660	1965	239	175	19.9
Jan	17	24	1963	613	1965	328	214	27.3
Feb	17	56	1973	755	1958	242	177	18.4
Mar	17	44	1965	463	1971	205	126	17.1
Apr	17	19	1968	283	1963	78	68	6.3
May	17	6.9	1966	247	1963	36	57	3.1
Jun	17	2.8	1973	28	1958	8.6	6.5	0.7
Jul	17	0.4	1973	5.8	1958	2.0	1.6	0.2
Aug	17	0.0	1973	1.5	1963	0.5	0.4	0.0
Sep	17	0.1	1970	1.8	1971	0.8	0.5	0.1
Ann		42	1973	170	1958	102	30	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.3	0.5	0.5	0.7	0.7	0.9	1.2	1.6	2.2	4.1	4.9	6.9	9.4	13	23	17
Nov	1.7	2.6	3.2	4.0	5.4	6.9	10	17	28	47	71	92	120	178	330	17
Dec	5.4	8.8	15	22	27	35	55	89	136	213	283	354	475	690	926	17
Jan	18	27	39	50	58	67	91	130	189	283	349	447	589	819	1380	17
Feb	38	47	57	62	69	76	92	114	151	202	240	309	409	565	859	17
Mar	28	34	42	50	57	63	84	119	152	219	262	296	363	455	664	17
Apr	16	18	21	24	26	29	35	43	55	71	82	104	135	186	304	17
May	6.5	8.1	9.3	11	12	14	16	19	22	26	29	31	36	43	93	17
Jun	1.8	2.4	2.7	3.1	3.5	3.5	4.6	6.0	7.7	9.4	11	12	14	16	22	17
Jul	0.2	0.3	0.4	0.5	0.6	0.6	1.0	1.2	1.6	1.9	2.4	2.4	3.0	4.5	6.2	17
Aug	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.5	0.6	0.7	0.7	1.0	1.4	1.6	17
Sep	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.5	0.6	0.8	1.2	1.2	1.6	1.9	17
Ann	0.2	0.4	0.5	1.1	1.7	2.7	6.8	16	31	58	81	114	170	266	508	

SOUTH UMPQUA RIVER BASIN

14311500 LOOKINGGLASS CREEK AT BROCKWAY, OR

LOCATION.--Lat 43°07'50", long 123°27'50", in SE 1/4 SE 1/4 sec.13, T.28 S., R.7 W., Douglas County, Hydrologic Unit 17100302, on left bank 1.7 mi northwest of Brockway and at mile 2.85.

DRAINAGE AREA.--158 mi².

PERIOD OF RECORD.--October 1955 to 1987.

REVISED RECORDS.--WSP 2135: Drainage area (former site).

GAGE.--Water-stage recorder. Elevation of gage is 540 ft, from topographic map. Prior to Oct. 5, 1967, water-stage recorder at site 2.3 mi downstream at different datum. Oct. 5, 1967, to Oct. 5, 1976, water-stage recorder, at datum 1.00 ft lower.

REMARKS.--Some regulation by Ben Irving Reservoir 17 mi upstream on Berry Creek, capacity, 11,200 acre-ft since January 1980. Many diversions by pumping for irrigation upstream from station. Discharge not adjusted for storage or release from Ben Irving Reservoir as losses from reservoir at times exceed natural flow.

AVERAGE DISCHARGE.--24 years (water years 1956-79), 282 ft³/s, 204,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 35,000 ft³/s Dec. 26, 1955, gage height, 24.93 ft, site and datum then in use, from rating curve extended above 7,200 ft³/s on basis of slope-area measurement of peak flow; maximum gage height, 25.28 ft Dec. 23, 1964 (backwater from South Umpqua River, site and datum then in use); no flow at times each year prior to January 1980, Aug. 6, 7, 1987.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1979

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	0.0	1965	97	1963	14	25	0.4
Nov	24	5.3	1977	1440	1974	256	330	7.5
Dec	24	4.9	1977	3320	1956	741	726	22.3
Jan	24	10	1977	1810	1956	873	585	26.3
Feb	24	29	1977	1950	1958	674	444	18.5
Mar	24	110	1965	1110	1971	519	320	15.6
Apr	24	33	1977	751	1963	207	163	6.0
May	24	19	1966	631	1963	87	126	2.6
Jun	24	3.9	1973	57	1958	16	13	0.5
Jul	24	0.0	1977	10	1958	1.8	2.4	0.1
Aug	24	0.0	1956	2.6	1976	0.1	0.5	0.0
Sep	24	0.0	1956	9.1	1978	0.9	2.1	0.0
Ann		27	1977	626	1956	282	125	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.7	3.9	6.4	7.9	11	16	23	44	24
Nov	3.5	4.6	6.1	8.5	12	15	21	33	62	133	204	274	381	661	1400	24
Dec	5.7	19	36	52	81	114	190	301	445	669	847	1080	1380	1850	2590	24
Jan	25	65	98	132	162	192	276	366	509	730	915	1190	1610	2150	3490	24
Feb	63	124	150	175	201	227	282	357	482	637	751	922	1170	1460	2050	24
Mar	81	98	115	136	152	169	219	292	379	529	637	757	946	1180	1840	24
Apr	42	49	56	64	74	86	107	128	152	198	226	269	325	450	700	24
May	18	22	25	28	31	34	40	47	56	66	73	81	96	118	196	24
Jun	0.6	1.9	3.5	4.7	6.1	7.1	9.7	13	16	19	21	23	26	31	43	24
Jul	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	1.7	2.1	2.7	3.5	5.8	8.6	24
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	24
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	1.6	4.9	24
Ann	0.0	0.0	0.0	0.0	0.7	3.3	12	34	81	165	231	323	460	737	1350	

SOUTH UMPQUA RIVER BASIN

14312000 SOUTH UMPQUA RIVER NEAR BROCKWAY, OR

LOCATION.--Lat 43°08'00", long 123°23'50", in SW 1/4 sec.15, T.28 S., R.6 W., Douglas County, Hydrologic Unit 17100302, on right bank 10 ft upstream from Winston Bridge on State Highway 99, 2.5 mi northeast of Brockway, 4.2 mi downstream from Lookingglass Creek, and at mile 132.8.

DRAINAGE AREA.--1,670 mi².

PERIOD OF RECORD.--December 1905 to June 1912, October 1923 to September 1926, January 1942 to 1987.
Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1248: 1946(M), 1948(M), 1951. WSP 1448: Drainage area. WDR OR 72-1: 1965(M).

GAGE.--Water-stage recorder. Datum of gage is 462.52 ft above National Geodetic Vertical Datum of 1929 (State Highway Department bench mark). Prior to June 24, 1949, nonrecording gage at several sites within 400 ft of present site at various datums. June 24, 1949, to Oct. 1, 1970, at datum 461.84 ft National Geodetic Vertical Datum of 1929 (State Highway Department bench mark).

REMARKS.--Regulation from Ben Irving Reservoir, since January 1980, on Berry Creek during summer months. Many small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--53 years (water years 1907-11, 1924-26, 1943-87), 2,877 ft³/s, 23.40 in/yr, 2,084,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 125,000 ft³/s Dec. 23, 1964, gage height, 34.28 ft; minimum discharge, 16 ft³/s Aug. 23, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 21, 1927, reached a stage of about 31.2 ft, present site and datum, discharge (revised), 89,500 ft³/s. Discharge for flood of February 1890, which reached a stage 1.9 ft higher, according to local resident who lived nearby at time of both floods, has been found to be in error and should not be used.

STATISTICAL SUMMARIES FOR THE PERIOD 1906-1979

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	46	103	1945	6050	1951	509	915	0.8
Nov	46	190	1953	13600	1974	2820	2720	6.9
Dec	47	184	1977	19500	1956	5600	4480	23.2
Jan	48	262	1977	16000	1956	7440	4540	24.3
Feb	48	341	1977	15400	1958	6550	2660	16.7
Mar	48	1370	1924	10900	1974	4930	2610	15.5
Apr	48	589	1926	7380	1963	3170	1500	6.5
May	48	446	1926	6910	1963	2020	1230	4.1
Jun	48	142	1926	3310	1953	886	566	1.2
Jul	47	52	1926	576	1953	260	122	0.3
Aug	47	40	1973	331	1976	131	58	0.1
Sep	47	69	1967	478	1978	139	65	0.3
Ann		559	1977	5570	1974	2870	1040	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	92	105	116	127	138	148	171	198	236	293	328	383	481	663	1050	46
Nov	171	200	237	273	315	369	529	778	1240	1990	2780	3610	4930	7350	3100	46
Dec	323	565	734	911	1130	1430	2030	2830	3930	5450	6500	8140	10900	14200	--	47
Jan	770	1110	1510	1900	2200	2470	3170	4200	5420	7410	8830	10600	13400	17400	25900	48
Feb	1390	1900	2260	2580	2870	3160	3800	4590	5680	7050	7940	8960	10600	13500	18500	48
Mar	1380	1630	1830	2020	2230	2440	2950	3630	4470	5440	6070	6780	7930	9710	13100	48
Apr	919	1160	1390	1580	1740	1900	2220	2580	3060	3620	3980	4370	4890	5540	6930	48
May	526	698	837	955	1060	1180	1370	1610	1840	2110	2280	2490	2820	3340	4700	48
Jun	201	286	343	389	432	473	577	677	800	971	1080	1230	1400	1730	2210	48
Jul	71	102	120	134	149	163	193	222	253	294	321	354	394	462	567	47
Aug	45	61	74	82	89	94	104	116	128	148	165	178	192	209	253	47
Sep	61	71	76	81	86	90	101	114	135	154	162	173	186	214	273	47
Ann	85	110	135	170	209	267	533	1050	1790	2690	3310	4160	5260	7190	11800	

UMPQUA RIVER BASIN

14312200 DEER CREEK NEAR ROSEBURG, OR

LOCATION.--Lat 43°13'10", long 123°16'35", in NE 1/4 SW 1/4 sec.15, T.27 S., R.5 W., Douglas County, Hydrologic Unit 17100302, on right bank 0.6 mi upstream from Shick Creek, 3.3 mi east of Roseburg, and at mile 4.0.

DRAINAGE AREA.--53.2 mi².

PERIOD OF RECORD.--October 1955 to September 1973.

GAGE.--Water-stage recorder. Datum of gage is 498.95 ft above National Geodetic Vertical Datum of 1929 (Douglas County Highway Department). Prior to July 3, 1969, nonrecording gage at site 0.5 mi downstream at datum 12.85 ft lower.

REMARKS.--No regulation. Diversions upstream from station for logponds and many small diversions by pumping for irrigation upstream from station.

AVERAGE DISCHARGE.--18 years, 77.4 ft³/s, 56,080 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,910 ft³/s Dec. 28, 1965, gage height, 14.76 ft, from floodmark, from rating curve extended above 2,200 ft³/s on basis of slope-area measurements at gage heights 13.38 and 13.67 ft; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	2.8	1968	31	1957	7.6	7.9	0.8
Nov	18	4.0	1968	239	1962	64	58	6.9
Dec	18	10	1960	706	1956	212	182	23.2
Jan	18	20	1963	459	1964	222	138	24.3
Feb	18	42	1973	359	1958	167	95	16.7
Mar	18	31	1965	320	1961	141	84	15.5
Apr	18	19	1966	224	1963	61	47	6.5
May	18	5.3	1966	220	1963	37	49	4.1
Jun	18	3.3	1966	51	1958	11	10	1.2
Jul	18	0.6	1968	7.2	1971	2.8	2.0	0.3
Aug	18	0.3	1967	2.5	1971	1.3	0.7	0.1
Sep	18	0.5	1965	17	1973	2.9	3.7	0.3
Ann		33	1973	151	1956	77	26	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.3	1.6	1.9	1.9	2.3	2.7	2.7	3.2	3.8	4.6	6.6	7.8	9.1	14	21	18
Nov	2.4	2.9	3.5	4.9	5.6	6.6	9.9	14	22	40	57	76	103	156	275	18
Dec	4.9	10	15	20	26	33	53	82	123	185	236	300	398	524	718	18
Jan	16	22	37	46	54	62	81	109	144	201	240	307	399	552	791	18
Feb	32	38	45	51	57	62	71	87	105	145	175	208	258	319	533	18
Mar	26	31	36	40	45	51	67	84	109	147	182	211	251	318	444	18
Apr	15	18	20	22	25	29	35	41	50	61	71	85	106	128	173	18
May	6.0	7.0	8.3	9.8	12	14	16	19	23	28	31	35	41	57	110	18
Jun	2.1	2.5	3.0	3.7	4.5	5.9	7.0	8.5	11	13	14	17	20	29	29	18
Jul	0.2	0.4	0.6	0.8	1.0	1.0	1.4	1.7	2.1	2.6	3.1	3.1	3.8	6.0	9.1	18
Aug	0.1	0.2	0.2	0.4	0.4	0.4	0.6	0.9	1.4	1.7	1.7	2.0	2.0	2.0	3.0	18
Sep	0.2	0.4	0.5	0.6	0.8	0.8	1.2	1.6	2.0	2.0	2.0	2.5	3.2	4.4	6.1	18
Ann	0.5	1.1	1.6	1.6	2.9	3.7	7.8	16	30	52	69	93	130	199	348	

UMPQUA RIVER BASIN

14312500 LAKE CREEK NEAR DIAMOND LAKE, OR

LOCATION.--Lat 43°11'10", long 122°09'55", in NW 1/4 SW 1/4 sec.30, T.27 S., R.6 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, on right bank 260 ft downstream from outlet of Diamond Lake, 1.6 mi northwest of town of Diamond Lake, and at mile 10.7.

DRAINAGE AREA.--54.9 mi².

PERIOD OF RECORD.--May 1922 to September 1925 (no winter records), October 1926 to September 1929, April, July, August 1930, October 1930 to September 1953, October 1971 to October 1977, February 1978 to September 1984. Prior to October 1971 published as "at Diamond Lake, near Fort Klamath."

GAGE.--Water-stage recorder. Elevation of gage is 5,180 ft, from river-profile map. Prior to May 26, 1931, nonrecording gage at site 300 ft downstream at different datum. May 26, 1931, to Oct. 6, 1933, nonrecording gage at present site and datum.

REMARKS.--Flow regulated by gates and fish racks at lake outlet. No diversion upstream from station.

AVERAGE DISCHARGE.--38 years (water years 1927-29, 1931-53, 1972-77, 1979-84), 57.3 ft³/s, 41,510 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 336 ft³/s Jan. 1, 1943, gage height, 2.8 ft, from rating curve extended above 120 ft³/s; no flow Aug. 25-27, 1931, Sept. 19, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1923-1984

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	36	11	1942	93	1972	41	22	6.0
Nov	33	14	1937	133	1974	63	31	8.9
Dec	33	33	1936	139	1953	78	26	11.3
Jan	33	33	1977	142	1953	81	23	11.8
Feb	34	33	1977	140	1953	76	21	10.0
Mar	34	28	1941	134	1972	70	21	10.1
Apr	37	5.0	1942	105	1972	59	20	8.3
May	39	30	1934	107	1943	60	19	8.8
Jun	38	23	1934	149	1953	70	34	9.8
Jul	39	9.5	1979	81	1953	42	18	6.1
Aug	39	6.2	1980	59	1953	28	11	4.1
Sep	39	7.4	1981	58	1953	28	12	3.9
Ann		37	1937	90	1953	58	16	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	11	15	17	19	21	24	29	34	39	47	53	65	78	90	100	36
Nov	16	23	27	31	36	41	55	62	68	76	81	88	98	112	134	33
Dec	32	41	49	53	57	60	69	75	85	95	99	103	109	116	136	33
Jan	45	52	56	60	64	67	72	78	84	93	97	102	110	123	136	33
Feb	42	52	57	59	62	63	67	73	78	84	88	93	99	109	120	34
Mar	39	47	50	53	56	58	64	70	76	82	86	90	94	102	109	34
Apr	15	29	35	42	46	50	56	62	68	74	77	80	84	88	95	37
May	29	35	38	41	44	48	53	57	62	71	75	80	87	95	107	39
Jun	27	32	35	39	42	46	52	59	74	87	94	102	112	125	143	38
Jul	14	20	23	25	27	29	33	38	43	50	54	59	65	75	87	39
Aug	7.8	10	15	18	20	23	26	29	32	34	36	37	39	45	53	39
Sep	6.6	9.9	13	16	18	19	23	27	30	34	36	38	41	47	56	39
Ann	15	21	26	30	33	37	47	56	65	74	80	85	93	102	117	

UMPQUA RIVER BASIN

14315500 NORTH UMPQUA RIVER AT TOKETEE FALLS, OR

LOCATION.--Lat 43°15'50", long 122°25'20", in E-1/2 sec.35, T.26 S., R.3 E., Douglas County, Hydrologic Unit 17100301, 0.1 mi downstream from Clearwater River and 0.5 mi upstream from Toketee Falls.

DRAINAGE AREA.--339 mi².

PERIOD OF RECORD.--July 1925 to September 1945, April 1946 to September 1948.

GAGE.--Water-stage recorder. Datum of gage is 2,373 ft above National Geodetic Vertical Datum of 1929 (levels by California-Oregon Power Co.). Feb. 26, 1908, to July 20, 1909, staff gage, and Dec. 19, 1914, to Sept. 30, 1917, water-stage recorder, at datum 0.50 ft lower.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--22 years (water years 1926-45, 1947-48), 875 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,080 ft³/s Dec. 31, 1942, gage height, 5.90 ft, from rating curve extended above 1,900 ft³/s by logarithmic plotting; minimum, 475 ft³/s Nov. 27-29, Dec. 12, 14, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1926-1948

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	22	512	1932	820	1944	632	77	6.1
Nov	22	494	1932	1090	1928	736	164	6.9
Dec	22	517	1932	1690	1943	842	260	8.2
Jan	22	570	1937	1510	1943	876	239	8.5
Feb	22	584	1931	1350	1927	920	217	8.1
Mar	22	675	1941	1310	1928	965	180	9.4
Apr	22	665	1941	1740	1943	1130	245	10.6
May	22	749	1934	1740	1932	1250	329	12.1
Jun	22	599	1931	2030	1933	1070	362	10.0
Jul	22	545	1931	1130	1933	776	154	7.5
Aug	22	510	1931	877	1943	675	96	6.5
Sep	22	504	1931	807	1933	636	80	6.0
Ann		635	1931	1250	1943	875	143	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	526	544	552	562	569	574	594	613	643	671	683	692	710	747	785	22
Nov	527	561	571	582	592	604	628	672	698	737	771	821	879	957	1190	22
Dec	556	576	593	612	632	655	715	780	815	873	903	960	1050	1190	1410	22
Jan	568	599	647	682	718	737	767	791	834	912	965	1050	1130	1210	1330	22
Feb	580	605	673	702	734	768	819	878	948	1020	1060	1120	1200	1310	1370	22
Mar	662	694	733	762	796	831	875	919	967	1030	1060	1100	1170	1280	1510	22
Apr	734	792	831	853	877	908	980	1070	1180	1280	1330	1390	1470	1590	1750	22
May	722	771	817	848	909	992	1150	1300	1370	1450	1510	1560	1620	1700	1850	22
Jun	616	669	699	724	749	828	910	998	1090	1210	1280	1370	1460	1580	1790	22
Jul	565	598	619	632	643	685	721	754	791	831	847	884	932	1000	1100	22
Aug	531	568	581	587	596	616	644	662	684	714	730	751	782	818	865	22
Sep	526	548	565	569	574	581	601	624	642	669	679	690	716	771	803	22
Ann	553	580	598	619	648	671	719	778	844	938	1000	1080	1200	1340	1540	

NORTH UMPQUA RIVER BASIN

14316500 NORTH UMPQUA RIVER ABOVE COPELAND CREEK, NEAR TOKETEE FALLS, OR

LOCATION.--Lat 43°17'45", long 122°32'10", in NW 1/4 sec.24, T.26 S., R.2 E., Douglas County, Hydrologic Unit 17100301, Umpqua National Forest, on left bank 0.6 mi upstream from Copeland Creek, 4.7 mi west of town of Toketee Falls, and at mile 67.2.

DRAINAGE AREA.--475 mi².

PERIOD OF RECORD.--September 1949 to 1987. Monthly discharge only September 1949, published in WSP 1318. Prior to October 1952, published as "above Copeland Creek."

REVISED RECORDS.--WSP 1448: 1953(M), 1954, drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,580 ft, from river-profile map. Prior to Aug. 1, 1976, on right bank at same datum.

REMARKS.--Considerable fluctuation caused by powerplants upstream; flow slightly regulated by Diamond Lake and by Lemolo Lake (station 14313000). No diversion upstream from station.

AVERAGE DISCHARGE.--38 years, 1,510 ft³/s, 1,094,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 40,700 ft³/s Dec. 22, 1964, gage height, 19.1 ft, from floodmark, from rating curve extended above 7,200 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 370 ft³/s Sept. 30, 1981; minimum daily, 565 ft³/s Sept. 13, 1959.

STATISTICAL SUMMARIES FOR THE PERIOD 1949-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	38	758	1961	1570	1951	964	167	5.4
Nov	38	805	1979	2300	1951	1330	399	7.2
Dec	38	803	1977	5160	1965	1850	916	10.4
Jan	38	788	1977	3420	1956	1850	686	10.4
Feb	38	670	1977	3250	1958	1890	589	9.7
Mar	38	873	1977	4220	1972	1760	582	9.9
Apr	38	1070	1968	2880	1952	1860	426	10.1
May	38	1070	1968	3190	1956	2060	535	11.6
Jun	38	904	1968	2930	1974	1720	593	9.4
Jul	38	689	1968	1650	1953	1100	258	6.2
Aug	38	684	1981	1180	1972	907	154	5.1
Sep	39	653	1968	1110	1972	865	116	4.7
Ann		897	1977	2080	1956	1510	299	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	663	721	761	793	819	845	895	941	984	1030	1050	1070	1100	1160	1290	38
Nov	732	786	828	863	899	936	1040	1110	1200	1370	1480	1660	1830	2110	2660	38
Dec	802	872	943	1010	1080	1150	1310	1500	1700	1960	2140	2330	2560	2990	3750	38
Jan	847	949	1030	1130	1200	1270	1400	1560	1710	1900	2030	2210	2450	2860	3760	38
Feb	921	1090	1180	1270	1360	1430	1530	1640	1790	1960	2070	2280	2510	2940	3800	38
Mar	1010	1140	1220	1280	1330	1370	1460	1560	1700	1890	2000	2160	2320	2560	3100	38
Apr	1130	1240	1310	1380	1450	1520	1660	1800	1960	2120	2210	2320	2430	2580	2820	38
May	1140	1300	1400	1490	1600	1700	1850	2020	2180	2330	2430	2560	2710	2920	3290	38
Jun	903	982	1050	1110	1170	1240	1420	1630	1790	1980	2090	2260	2470	2690	3030	38
Jul	710	757	797	845	883	918	985	1060	1150	1240	1290	1340	1410	1500	1710	38
Aug	658	692	721	739	761	784	842	897	960	1030	1050	1080	1100	1140	1180	38
Sep	650	682	708	730	749	775	818	857	911	952	974	996	1020	1050	1090	39
Ann	718	786	846	902	956	1010	1120	1280	1470	1700	1840	2000	2200	2470	2920	

NORTH UMPQUA RIVER BASIN

14316700 STEAMBOAT CREEK NEAR GLIDE, OR

LOCATION.--Lat 43°21'00", long 122°43'40", in N 1/2 sec.32, T.25-1/2 S., R.1 E., Douglas County, Hydrologic Unit 17100301, in Umpqua National Forest, on right bank in Canton Creek Forest Service Park, 200 ft downstream from Canton Creek, 19 mi northeast of Glide, and at mile 0.5.

DRAINAGE AREA.--227 mi².

PERIOD OF RECORD.--Annual maximum, water year 1956, June 1956 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,128.55 ft above National Geodetic Vertical Datum of 1929 (levels by Federal Highway Administration). October 1955 to June 1956, nonrecording gage at site 100 ft upstream at same datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--31 years, 743 ft³/s, 44.45 in/yr, 538,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,000 ft³/s Dec. 22, 1964, gage height, 25.6 ft, from floodmark, from rating curve extended above 13,000 ft³/s on basis of slope-area measurement at 17.96 ft; minimum discharge, 30 ft³/s Sept. 15-17, 1973.

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	44	1975	535	1957	184	124	2.1
Nov	31	76	1977	2890	1974	936	683	10.3
Dec	31	62	1977	5390	1965	1560	1100	17.8
Jan	31	108	1977	3410	1970	1510	910	17.2
Feb	31	141	1977	3190	1986	1460	712	15.2
Mar	31	383	1978	2770	1972	1250	623	14.3
Apr	31	287	1968	1410	1960	950	317	10.5
May	31	179	1987	1340	1963	618	275	7.1
Jun	31	88	1987	780	1984	259	151	2.9
Jul	31	56	1973	193	1983	96	32	1.1
Aug	31	38	1973	158	1976	60	22	0.7
Sep	31	35	1987	260	1986	71	46	0.8
Ann		238	1977	1250	1974	743	213	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	35	40	43	46	49	52	61	71	90	128	158	216	286	410	730	31
Nov	59	73	97	123	150	187	280	406	593	870	1040	1290	1610	2200	3830	31
Dec	97	198	281	343	412	485	642	873	1180	1580	1860	2240	2750	3630	5300	31
Jan	164	236	307	388	467	548	703	884	1080	1440	1710	2070	2600	3390	5080	31
Feb	281	363	445	515	589	660	804	964	1150	1430	1620	1890	2360	2930	4620	31
Mar	336	414	475	520	566	615	719	878	1100	1380	1550	1770	2020	2450	3440	31
Apr	289	344	403	471	521	581	710	822	938	1110	1200	1310	1470	1650	2120	31
May	192	240	277	303	330	362	438	517	597	707	772	837	927	1070	1330	31
Jun	89	101	112	123	131	142	166	192	221	259	298	338	388	469	631	31
Jul	53	57	60	63	66	69	76	83	91	100	107	117	131	151	186	31
Aug	38	41	42	44	45	47	50	54	58	63	65	69	73	80	100	31
Sep	35	36	38	39	40	42	44	48	52	59	62	70	82	111	160	31
Ann	41	49	57	66	80	103	196	342	525	743	883	1070	1320	1750	2750	

UMPQUA RIVER BASIN

14317500 NORTH UMPQUA RIVER ABOVE ROCK CREEK, NEAR GLIDE, OR

LOCATION.--Lat 43°19'40", long 123°00'00", in NW 1/4 sec.12, T.26 S., R.3 W., Douglas County, Hydrologic Unit 17100301, 0.5 mi upstream from Rock Creek and 5 mi northeast of Glide.

DRAINAGE AREA.--886 mi².

PERIOD OF RECORD.--July 1924 to September 1945.

GAGE.--Water-stage recorder. Elevation of gage is 770 ft, from river-profile map.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--21 years (water years 1925-45), 2,274 ft³/s, 1,648,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 53,000 ft³/s Feb. 20, 1927, gage height, 20.18 ft, from rating curve extended above 18,000 ft³/s by logarithmic plotting; minimum, 521 ft³/s Oct. 16, 1931, gage height, 1.86 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1924-1945

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	21	649	1931	1590	1925	889	252	3.3
Nov	21	651	1930	6210	1943	2210	1620	8.0
Dec	21	943	1937	10300	1943	2930	2070	11.0
Jan	21	818	1937	7200	1943	3380	1740	12.7
Feb	21	1340	1931	7160	1927	3680	1750	12.6
Mar	20	1400	1941	7260	1932	3400	1470	12.8
Apr	21	1320	1926	6060	1937	3430	1280	12.5
May	21	1180	1926	4500	1933	2780	1080	10.4
Jun	21	833	1926	4960	1933	1980	1000	7.2
Jul	22	696	1931	1630	1933	1040	249	3.9
Aug	22	588	1931	1100	1943	809	122	3.0
Sep	22	588	1931	997	1927	772	103	2.8
Ann		1390	1931	3960	1943	2260	672	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	613	643	665	678	691	704	735	767	794	821	851	888	952	1090	1460	21
Nov	634	675	713	754	804	865	1030	1160	1350	1750	2130	2850	3690	4920	7620	21
Dec	786	866	1000	1100	1190	1300	1570	1930	2290	2720	3150	3880	4700	5970	8590	21
Jan	1020	1210	1410	1610	1720	1850	2110	2400	2950	3700	4160	4740	5460	6330	8600	21
Feb	1210	1470	1620	1710	1830	1970	2310	2790	3300	4050	4720	5260	5790	6800	8440	21
Mar	1370	1570	1780	1910	2020	2140	2370	2640	3100	3700	4000	4480	5040	5900	7510	20
Apr	1330	1430	1560	1730	1910	2180	2750	3320	3700	4110	4440	4720	4970	5360	6190	21
May	1060	1270	1430	1590	1760	1940	2330	2730	2990	3370	3610	3820	4000	4410	5030	21
Jun	837	890	982	1100	1210	1310	1470	1680	1920	2210	2380	2590	2810	3130	3980	21
Jul	703	741	763	788	817	857	926	991	1060	1140	1200	1240	1290	1380	1600	22
Aug	628	667	683	705	717	732	764	797	826	865	888	907	927	982	1060	22
Sep	631	656	667	679	693	703	719	736	756	794	828	877	908	927	963	22
Ann	657	710	754	805	859	934	1160	1480	1920	2450	2840	3290	3860	4660	5990	

UMPQUA RIVER BASIN

14317600 ROCK CREEK NEAR GLIDE, OR

LOCATION.--Lat 43°20'45", long 122°59'30", in SE 1/4 SE 1/4 sec. 36, T.25 S., R.3 W., Douglas County, on left bank 0.3 mi downstream from McComas Creek, 5.8 mi northeast of Glide, and at mile 1.2.

DRAINAGE AREA.--97.4 mi².

PERIOD OF RECORD.--Water years 1956-57 (annual maximums only), June 1957 to June 1973.

GAGE.--Water-stage recorder. Elevation of gage is 940 ft, from topographic map. Nov. 8, 1955, to June 16, 1957, nonrecording gage and June 17, 1957, to Sept. 30, 1965, water-stage recorder at site 800 ft downstream at different datum.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--15 years (1957-72), 373 ft³/s, 52.01 in/yr, 270,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,800 ft³/s Dec. 22, 1964, gage height, 20.3 ft, from floodmark, site and datum then in use, from rating curve extended above 5,400 ft³/s on basis of slope-area measurement at gage height 14.83 ft; minimum, 14 ft³/s Sept. 5-11, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1958-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	23	1965	198	1963	91	50	2.1
Nov	16	105	1968	833	1969	449	255	9.9
Dec	16	151	1960	2560	1965	744	582	16.9
Jan	16	118	1963	1610	1972	855	489	19.5
Feb	16	241	1973	1250	1958	658	310	13.6
Mar	16	221	1965	1340	1972	652	335	14.8
Apr	16	164	1968	716	1963	438	152	9.6
May	16	102	1966	679	1963	270	152	6.1
Jun	16	47	1966	174	1958	105	39	2.3
Jul	15	34	1965	87	1969	50	15	1.1
Aug	15	19	1966	44	1968	30	6.6	0.7
Sep	15	17	1965	61	1971	32	12	0.7
Ann		220	1968	567	1972	373	90	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	19	22	24	26	28	30	36	47	67	90	103	130	166	213	297	16
Nov	37	55	64	72	81	97	138	202	313	443	523	607	726	991	1670	16
Dec	81	114	156	183	210	245	340	457	600	743	826	952	1130	1430	2230	16
Jan	122	161	227	280	314	349	433	542	658	889	1050	1220	1450	1760	2740	16
Feb	215	244	275	302	327	352	411	472	546	651	753	868	1020	1310	1730	16
Mar	185	221	258	283	318	350	397	467	575	726	804	938	1070	1240	1640	16
Apr	135	160	195	233	261	284	326	391	465	539	588	624	674	739	856	16
May	80	98	120	134	145	156	181	207	246	281	301	327	387	481	636	16
Jun	47	54	58	62	66	70	79	90	100	113	121	132	146	168	230	16
Jul	30	32	33	35	36	38	41	45	50	55	58	61	68	75	89	15
Aug	20	22	23	23	24	25	27	29	30	33	34	36	39	43	48	15
Sep	17	19	20	21	22	23	24	26	28	31	33	36	41	52	69	15
Ann	22	26	31	37	47	61	102	173	269	381	459	555	679	878	1300	

NORTH UMPQUA RIVER BASIN

14318000 LITTLE RIVER AT PEEL, OR

LOCATION.--Lat 43°15'10", long 123°01'30", in NW 1/4 sec.2, T.27 S., R.3 W., Douglas County, Hydrologic Unit 17100301, on left bank 0.6 mi southeast of Peel, 0.9 mi downstream from Cavitt Creek, and at mile 6.3.

DRAINAGE AREA.--177 mi².

PERIOD OF RECORD.--August 1954 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 828.33 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Small diversions for rural domestic use and irrigation upstream from station.

AVERAGE DISCHARGE.--33 years, 472 ft³/s, 36.21 in/yr, 342,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,100 ft³/s Dec. 11, 1956, gage height, 19.63 ft, from rating curve extended above 5,900 ft³/s on basis of slope-area measurement at gage height 16.55 ft; minimum discharge, 14 ft³/s at times in 1967, 1974, 1977, 1986, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Nov. 22, 23, 1953, reached a stage of 20.6 ft, from floodmark, discharge, 22,700 ft³/s, from rating curve extended above 5,900 ft³/s on basis of slope-area measurement at gage height 16.55 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1955-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	33	24	1975	366	1963	112	85	2.0
Nov	33	41	1977	2160	1974	603	476	10.5
Dec	33	34	1977	3090	1965	1010	700	18.2
Jan	33	53	1977	2120	1971	951	579	17.1
Feb	33	70	1977	1860	1986	841	393	13.8
Mar	33	249	1978	1760	1972	800	378	14.4
Apr	33	237	1968	1070	1979	634	216	11.0
May	33	109	1987	956	1963	430	200	7.7
Jun	33	54	1987	501	1984	168	103	2.9
Jul	33	31	1973	137	1983	59	24	1.1
Aug	33	20	1973	88	1976	32	13	0.6
Sep	33	17	1974	181	1986	39	32	0.7
Ann		158	1977	806	1974	472	141	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	19	22	24	27	29	31	36	43	55	83	100	130	178	263	422	33
Nov	36	44	57	71	91	113	174	252	376	560	691	850	1100	1510	2510	33
Dec	67	125	172	207	247	296	416	607	821	1070	1250	1480	1800	2340	3230	33
Jan	103	152	205	268	319	362	455	558	688	951	1130	1340	1610	2030	3240	33
Feb	186	236	284	326	358	391	466	562	688	866	979	1140	1360	1700	2390	33
Mar	238	279	307	337	374	412	504	605	744	888	983	1110	1250	1510	1960	33
Apr	202	251	298	339	376	418	497	573	654	746	796	856	934	1040	1300	33
May	106	147	170	192	211	233	286	351	417	492	543	607	681	795	997	33
Jun	52	61	68	74	80	87	103	122	142	169	192	219	260	319	428	33
Jul	28	31	33	35	37	39	44	49	55	63	68	75	84	97	125	33
Aug	18	20	21	22	23	24	27	29	31	34	37	40	43	49	58	33
Sep	17	18	19	20	21	22	24	26	28	32	35	39	45	61	98	33
Ann	21	26	31	37	47	62	122	223	346	493	584	709	870	1140	1690	

UMPQUA RIVER BASIN

14318500 NORTH UMPQUA RIVER NEAR GLIDE, OR

LOCATION.--Lat 43°18'20", long 123°07'00", in SW 1/4 sec.13, T.26 S., R.4 W., Douglas County, Hydrologic Unit 17100301, about 1.0 mi downstream from Little River and 1.0 mi west of Glide.

DRAINAGE AREA.--1,210 mi².

PERIOD OF RECORD.--September 1915 to March 1919, October 1928 to September 1938.

GAGE.--Staff gage. Elevation of gage is 645 ft, river-profile survey. Sept. 1, 1915, to Oct. 17, 1922, staff gage 150 ft downstream at datum 0.60 ft higher.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--14 years (water years 1916-18, 1929-38), 3,115 ft³/s, 2,257,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 59,500 ft³/s Mar. 19, 1932, gage height, 17.3 ft; from graph based on gage readings; minimum, 552 ft³/s Aug. 27-30, Sept. 27, 1931, gage height, 0.84 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1916-1938

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	711	1931	1500	1928	957	229	2.6
Nov	14	664	1930	5830	1928	2590	1820	6.8
Dec	14	1160	1937	6870	1935	3700	1720	10.1
Jan	14	992	1937	10300	1936	4810	2500	13.1
Feb	14	1770	1931	10300	1916	4710	2480	11.7
Mar	14	2530	1930	11700	1932	5690	2380	15.5
Apr	14	1980	1930	9310	1917	5410	2100	14.3
May	14	1350	1934	7630	1917	3890	1760	10.6
Jun	14	1050	1931	6410	1933	2650	1610	7.0
Jul	14	743	1931	2500	1916	1320	548	3.6
Aug	14	613	1931	1270	1916	915	192	2.5
Sep	14	623	1931	1090	1917	835	141	2.2
Ann		1880	1931	4280	1938	3110	799	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	667	693	722	737	751	780	823	876	943	963	983	1050	1280	1730	--	14
Nov	661	707	755	807	861	934	1070	1230	1530	2040	2700	3680	4940	6810	9250	14
Dec	835	951	1100	1370	1580	1740	2270	2740	3260	4050	4570	5250	6080	7270	10100	14
Jan	1060	1460	1740	2010	2170	2450	2920	3460	4470	5540	5790	6050	7320	8720	13200	14
Feb	1450	1620	1890	2120	2390	2620	3040	3830	4510	5280	5800	6490	7560	8670	11700	14
Mar	2090	2520	2720	2940	3140	3300	3840	4470	5410	6250	6760	7380	8160	9200	12000	14
Apr	1660	1930	2580	3160	3510	3790	4280	4730	5470	6170	6510	6850	7390	8360	10900	14
May	1180	1590	1870	2180	2480	2800	3180	3600	4050	4720	4940	5320	5760	6510	7470	14
Jun	933	1090	1190	1280	1430	1540	1830	2140	2460	2950	3190	3420	3820	4960	6190	14
Jul	744	791	840	912	954	986	1070	1140	1220	1340	1430	1570	1790	2210	2690	14
Aug	647	700	726	748	775	816	844	878	921	990	1030	1060	1140	1230	1280	14
Sep	633	678	688	704	730	754	779	802	839	889	926	953	1040	1080	1120	14
Ann	691	762	828	891	961	1050	1370	1970	2770	3680	4200	4900	5650	6650	8530	

UMPQUA RIVER BASIN

14319200 SUTHERLIN CREEK AT SUTHERLIN, OR

LOCATION.--Lat 43°23'20", long 123°18'10", in SW 1/4 sec.16, T.25 S., R.5 W., Douglas County, Hydrologic Unit 17100301, on right bank at downstream side of Waite Street bridge in Sutherlin, 1.5 mi upstream from Cooper Creek, and at mile 8.4.

DRAINAGE AREA.--16.4 mi².

PERIOD OF RECORD.--October 1955 to September 1967.

GAGE.--Staff gage read once or twice daily and crest-stage gage. Datum of gage is 511.46 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 17, 1963, at datum 1.00 ft higher.

REMARKS.--No regulation. A few small diversions by pumping for irrigation upstream from station.

AVERAGE DISCHARGE.--12 years, 25.9 ft³/s, 18,750 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,250 ft³/s Feb. 10, 1961, gage height, 7.64 ft, datum then in use, from rating curve extended above 750 ft³/s by logarithmic plotting; maximum gage height, 8.24 ft Dec. 21, 1957, datum then in use; no flow for several months each year.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1967

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	0.0	1959	17	1957	2.3	5.1	0.8
Nov	12	0.4	1960	107	1962	26	29	8.2
Dec	12	2.6	1960	237	1956	72	70	23.8
Jan	12	6.4	1963	134	1964	67	47	22.0
Feb	12	12	1965	154	1961	65	43	19.4
Mar	12	5.9	1965	95	1961	47	28	15.7
Apr	12	3.1	1966	64	1963	17	17	5.5
May	12	0.5	1966	49	1963	12	16	4.2
Jun	12	0.0	1966	7.8	1958	1.3	2.1	0.4
Jul	12	0.0	1957	1.0	1967	0.0	0.1	0.0
Aug	12	0.0	1956	1.0	1967	0.0	0.0	0.0
Sep	12	0.0	1956	5.7	1967	0.5	1.7	0.2
Ann		17	1967	51	1956	25	8.7	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.6	1.1	7.5	12
Nov	0.0	0.1	0.2	0.4	0.6	1.0	2.1	3.4	6.3	12	19	28	37	52	116	12
Dec	0.7	1.2	2.8	5.4	6.8	8.9	13	21	32	50	66	93	136	204	300	12
Jan	2.6	5.9	8.3	12	15	17	23	29	36	51	65	93	120	156	313	12
Feb	7.3	9.6	11	13	14	16	20	26	32	44	54	65	87	115	230	12
Mar	4.8	6.9	8.6	11	13	15	19	26	35	51	60	72	86	118	164	12
Apr	1.3	1.8	2.2	2.6	3.2	3.8	5.9	8.5	13	20	23	27	31	37	58	12
May	0.3	0.5	0.9	0.9	1.2	1.6	2.1	2.8	4.1	6.8	9.2	12	17	25	46	12
Jun	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.4	0.8	1.0	1.0	1.6	2.0	3.9	12
Jul	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	12
Aug	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12
Ann	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.4	7.1	15	21	28	37	60	121	

NORTH UMPQUA RIVER BASIN

14319500 NORTH UMPQUA RIVER AT WINCHESTER, OR

LOCATION.--Lat 43°16'20", long 123°24'40", in NW 1/4 NE 1/4 sec.33, T.26 S., R.6 W., Douglas County, Hydrologic Unit 17100301, on left bank 400 ft downstream from county bridge, 3.0 mi west of Winchester, and at mile 1.8.

DRAINAGE AREA.--1,344 mi².

PERIOD OF RECORD.--October 1908 to December 1913, October 1923 to September 1929, August 1954 to 1987.
Prior to December 1908, monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1448: 1909-12, drainage area. WDR OR-72-1: 1965 (M).

GAGE.--Water-stage recorder. Datum of gage is 372.97 ft above National Geodetic Vertical Datum of 1929 (Douglas County Road Department bench mark). Oct. 1, 1908, to Dec. 31, 1913, and Oct. 1, 1923, to Sept. 30, 1929, nonrecording gage at site 4.8 mi upstream at different datums. Aug. 27, 1954, to Aug. 12, 1965, water-stage recorder on right bank at same datum.

REMARKS.--Diurnal fluctuation caused by upstream powerplants; slight regulation by Lemolo Lake and Diamond Lake. Several small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--44 years, 3,776 ft³/s, 38.15 in/yr, 2,736,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 150,000 ft³/s Dec. 22, 1964, gage height, 34.2 ft, from floodmark; minimum discharge, 235 ft³/s Aug. 27, 1987, result of regulation at Winchester Dam 5.2 mi upstream; minimum daily, 578 ft³/s Sept. 14, 1959.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Oct. 29, 1950, reached a stage of 23.2 ft, from floodmark, at site 4.8 mi upstream at different datum, discharge, 88,000 ft³/s. Flood of Nov. 23, 1953, reached a stage of 28.4 ft, from floodmarks, present site and datum, discharge, 93,300 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1909-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	44	855	1926	2750	1963	1430	452	3.2
Nov	44	1070	1929	12500	1974	4350	2830	9.5
Dec	44	1010	1977	23600	1965	6460	4470	14.5
Jan	44	1130	1977	15200	1965	6800	3650	15.3
Feb	44	1020	1977	13300	1986	6470	2750	13.2
Mar	44	2250	1924	12900	1972	5600	2400	12.6
Apr	44	1610	1926	7250	1955	4730	1450	10.3
May	44	1400	1926	7150	1963	3800	1260	8.5
Jun	44	913	1926	4990	1984	2440	958	5.3
Jul	44	717	1926	2820	1913	1360	389	3.1
Aug	44	698	1924	1580	1976	1010	201	2.3
Sep	44	707	1929	1690	1986	1010	198	2.2
Ann		1640	1977	6120	1974	3780	1010	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	814	854	893	937	982	1060	1130	1220	1350	1450	1580	1770	2060	2900	--	44
Nov	919	1020	1110	1190	1310	1460	1820	2250	2910	3970	4790	5840	7130	9650	15600	44
Dec	1130	1530	1810	2080	2380	2670	3210	4000	5190	6580	7690	9150	10900	13700	18900	44
Jan	1560	1960	2370	2700	3000	3280	3830	4460	5380	6680	7740	9040	11100	13800	20100	44
Feb	2090	2480	2820	3080	3320	3550	4020	4560	5400	6580	7390	8400	9870	12400	17400	44
Mar	2280	2590	2780	2960	3150	3360	3790	4390	5110	5930	6580	7430	8380	9730	13200	44
Apr	2050	2510	2750	2960	3150	3310	3800	4290	4800	5410	5810	6210	6720	7450	9030	44
May	1680	2040	2290	2510	2720	2890	3220	3540	3880	4280	4500	4750	5130	5650	6510	44
Jun	1060	1270	1400	1510	1610	1710	1920	2160	2430	2730	2940	3200	3560	3980	4640	44
Jul	782	878	946	999	1050	1100	1190	1280	1370	1480	1560	1640	1730	1920	2200	44
Aug	690	740	782	815	845	874	928	982	1040	1120	1170	1210	1260	1320	1410	44
Sep	697	734	768	793	818	847	902	956	1020	1090	1120	1160	1200	1260	1410	44
Ann	805	906	999	1090	1200	1330	1780	2480	3180	3980	4500	5170	6100	7620	11200	

UMPQUA RIVER BASIN

14319900 CALAPOOYA CREEK AT NONPAREIL, OR

LOCATION.--Lat 43°25'04", long 123°09'13", in SW 1/4 SE 1/4 sec.3, T.25 S., R.4 W., Douglas County, Hydrologic Unit 17100303, on left bank 0.3 mi upstream from county road bridge, 0.9 mi northeast of Nonpareil, and at mile 26.7.

DRAINAGE AREA.--88.6 mi².

PERIOD OF RECORD.--July 1976 to September 1987.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 699.22 ft above National Geodetic Vertical Datum of 1929 (Douglas County Survey bench mark).

REMARKS.--Only minor diversions by pumping for irrigation upstream from station.

AVERAGE DISCHARGE.--11 years, 205 ft³/s, 31.42 in/yr, 148,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,640 ft³/s Dec. 6, 1981, gage height, 11.16 ft; minimum discharge, 3.7 ft³/s Sept. 23-25, 1987.

STATISTICAL SUMMARIES FOR THE PERIOD 1976-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	19	1981	117	1985	55	33	2.3
Nov	11	31	1977	738	1985	295	205	11.8
Dec	11	26	1977	1020	1982	453	286	18.8
Jan	11	36	1977	637	1982	306	176	12.7
Feb	11	46	1977	836	1986	445	230	16.8
Mar	11	109	1978	538	1983	306	115	12.7
Apr	11	110	1987	531	1979	291	141	11.7
May	11	53	1987	243	1986	167	66	6.9
Jun	11	26	1987	243	1984	83	60	3.3
Jul	12	18	1977	74	1983	31	15	1.3
Aug	12	9.1	1986	34	1976	17	7.6	0.7
Sep	12	7.3	1987	55	1986	24	14	1.0
Ann		73	1977	290	1982	205	62	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	10	12	14	15	17	18	22	24	29	43	58	78	120	165	222	11
Nov	23	29	42	54	68	87	121	159	227	316	377	449	536	698	1070	11
Dec	26	73	104	121	152	177	226	313	396	524	605	726	843	986	1310	11
Jan	36	58	87	99	121	139	178	217	265	331	376	457	525	652	817	11
Feb	22	100	116	134	156	180	238	295	367	484	565	648	754	936	1220	11
Mar	109	121	135	150	165	178	210	247	283	339	377	426	490	559	684	11
Apr	79	98	112	122	135	149	187	225	268	326	358	394	461	566	831	11
May	46	62	72	79	89	96	111	129	151	184	198	224	257	330	455	11
Jun	24	30	34	37	39	42	49	58	71	89	96	108	124	143	183	11
Jul	13	14	15	16	18	19	22	25	29	34	38	41	47	53	68	12
Aug	6.3	8.2	8.9	8.9	10	12	13	15	17	19	20	22	24	29	35	12
Sep	6.2	7.8	8.8	10	11	12	13	16	19	21	23	26	32	43	71	12
Ann	10	14	17	21	25	33	62	107	151	214	255	312	393	518	755	

UMPQUA RIVER BASIN

14320700 CALAPOOYA CREEK NEAR OAKLAND, OR

LOCATION.--Lat 43°24'10", long 123°21'45", in NW 1/4 sec.13, T.25 S., R.6 W., Douglas County, Hydrologic Unit 17100303, near center of span on downstream side of highway bridge, 0.9 mi downstream from Williams Creek, 2.5 mi northwest of Sutherlin, 3.5 mi southwest of Oakland, and at mile 10.1

DRAINAGE AREA.--210 mi².

PERIOD OF RECORD.--October 1955 to September 1973, October 1986 to September 1987. Records for the years 1974-86 are available at the Douglas County Water Resources Dept. in Roseburg.

GAGE.--Water-stage recorder. Datum of gage is 371.26 ft above National Geodetic Vertical Datum of 1929. Prior to June 22, 1968, nonrecording gage at same site and datum.

REMARKS.--Diversion upstream from station for municipal supply of cities of Sutherlin and Oakland. Small diversions by pumping for irrigation upstream from station.

AVERAGE DISCHARGE.--19 years (water years 1956-73, 1987), 486 ft³/s, 31.43 in/yr, 352,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,600 ft³/s Nov. 23, 1961, gage height, 21.55 ft; no flow Sept. 9-11, 1966.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	18	1965	329	1957	76	73	1.3
Nov	18	61	1960	1240	1962	510	349	8.5
Dec	18	108	1960	3860	1956	1240	977	21.3
Jan	18	120	1963	2300	1956	1260	727	21.6
Feb	18	290	1973	2230	1961	1000	520	15.6
Mar	18	208	1965	1910	1961	943	508	16.2
Apr	18	211	1968	1340	1963	478	278	7.9
May	18	58	1966	912	1963	288	230	4.9
Jun	18	25	1966	233	1958	94	53	1.6
Jul	18	9.1	1973	59	1969	27	15	0.5
Aug	18	2.6	1966	28	1968	11	6.7	0.2
Sep	18	4.3	1965	35	1971	16	8.4	0.3
Ann		250	1973	905	1956	495	146	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	8.7	12	15	17	19	21	27	33	43	59	70	88	116	156	235	18
Nov	29	36	46	58	70	81	124	175	269	394	554	724	973	1370	2290	18
Dec	62	102	152	192	225	279	396	589	862	1240	1430	1720	2140	2890	4330	18
Jan	126	188	280	350	387	428	540	747	959	1290	1560	1870	2290	3010	4020	18
Feb	246	301	336	364	395	430	524	643	787	996	1130	1330	1550	1880	2880	18
Mar	205	262	304	352	392	428	511	628	822	1030	1200	1390	1590	1880	2500	18
Apr	126	150	167	187	205	225	282	350	424	508	575	678	791	913	1210	18
May	51	65	80	91	105	119	144	171	202	248	285	346	426	547	813	18
Jun	19	28	35	41	46	50	60	72	83	96	104	113	129	164	243	18
Jul	5.8	6.6	8.7	11	13	14	18	22	26	32	36	40	46	55	76	18
Aug	2.0	2.8	3.3	3.8	4.5	6.8	8.6	9.6	12	14	15	17	18	21	26	18
Sep	3.0	3.6	3.6	5.7	6.9	7.8	10	12	14	16	18	20	24	29	44	18
Ann	5.8	10	14	19	27	38	77	148	259	418	533	692	926	1310	2050	

UMPQUA RIVER BASIN

14321000 UMPQUA RIVER NEAR ELKTON, OR

LOCATION.--Lat 43°35'10", long 123°33'15", in NW1/4 sec.8, T.23 S., R.7 W., Douglas County, Hydrologic Unit 17100303, on left bank 3.5 mi south of Elkton, 8.3 mi upstream from Elk Creek, and at mile 56.9.

DRAINAGE AREA.--3,683 mi².

PERIOD OF RECORD.--October 1905 to 1987.

REVISED RECORDS.--WSP 1184: 1927(M), 1938(M), 1943(M), 1946(M). WSP 1448: 1911-13, drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 90.42 ft above National Geodetic Vertical Datum of 1929. Prior to June 29, 1972, at site 2,400 ft downstream at same datum. See WSP 1931 or 2135 for history of changes prior to June 29, 1972.

REMARKS.--Regulation by powerplants on North Umpqua River ordinarily does not affect discharge at this station. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--82 years, 7,512 ft³/s, 27.70 in/yr, 5,442,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 265,000 ft³/s Dec. 23, 1964, gage height, 51.95 ft, from floodmarks; minimum discharge observed, 640 ft³/s July 18, 1926.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least December 1861, that of Dec. 23, 1964.

STATISTICAL SUMMARIES FOR THE PERIOD 1906-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	82	857	1930	14200	1951	1940	1660	2.2
Nov	82	832	1930	29500	1974	7280	5780	8.0
Dec	82	1240	1977	51200	1965	13500	9600	15.3
Jan	82	1440	1977	34900	1956	16000	8700	18.1
Feb	82	1370	1977	32800	1907	15500	6910	16.0
Mar	82	3460	1941	27100	1972	12400	5490	14.0
Apr	82	2430	1926	20500	1937	9600	4000	10.5
May	82	1930	1934	15800	1921	6490	2870	7.3
Jun	82	1050	1926	9530	1953	3760	1840	4.1
Jul	82	742	1926	5060	1913	1750	723	2.0
Aug	82	703	1931	1870	1976	1180	239	1.3
Sep	82	740	1931	3470	1920	1200	350	1.3
Ann		2320	1977	13400	1974	7510	2260	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	919	980	1020	1070	1110	1200	1300	1420	1570	1740	1970	2330	2980	4470	--	82
Nov	1020	1180	1310	1430	1580	1750	2280	3000	4070	6040	7910	10200	13000	17900	27800	82
Dec	1510	2310	2950	3650	4260	4800	6100	8210	10900	14200	16500	18900	23500	30200	43600	82
Jan	2910	3690	4510	5440	6270	7090	8750	10800	13300	16700	18500	21500	25700	33300	39300	82
Feb	3800	4840	5740	6580	7370	8150	9630	11600	14000	17100	18900	21300	24800	30800	40000	82
Mar	4120	4830	5390	5910	6430	7030	8440	9950	11700	14100	15500	17100	18900	22300	28500	82
Apr	3200	4050	4750	5300	5810	6320	7250	8250	9450	10900	11800	12900	14400	17100	19800	82
May	2250	2880	3400	3790	4150	4490	5090	5720	6400	7170	7640	8280	9170	10600	13400	82
Jun	1310	1590	1820	2010	2190	2390	2820	3210	3590	4190	4580	5010	5580	6520	8440	82
Jul	928	1050	1130	1190	1250	1300	1400	1520	1650	1830	1940	2070	2300	2670	3230	82
Aug	796	865	919	966	1000	1030	1090	1150	1220	1290	1330	1380	1440	1530	1640	82
Sep	800	876	910	944	977	1010	1070	1120	1190	1260	1300	1330	1390	1480	1740	82
Ann	941	1060	1170	1280	1410	1600	2530	4040	5740	7880	9300	11200	13700	17600	25000	

UMPQUA RIVER BASIN

14322000 ELK CREEK NEAR DRAIN, OR

LOCATION.--Lat 43°38'30", long 123°17'50", in NE 1/4 SW 1/4 sec.21, T.22 S., R.5 W., Douglas County, Hydrologic Unit 17100303, on right bank at downstream side of highway bridge, 0.2 mi downstream from Yoncalla Creek, 1.7 mi southeast of Drain, and at mile 26.2.

DRAINAGE AREA.--104 mi².

PERIOD OF RECORD.--October 1955 to September 1973.

GAGE.--Water-stage recorder. Datum of gage is 305.96 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Small diversions by pumping for irrigation upstream from station. Municipal supply for town of Yoncalla is diverted from Wilson Creek upstream from station.

AVERAGE DISCHARGE.--18 years, 222 ft³/s, 29.90 in/yr, 165,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,000 ft³/s Feb. 10, 1961, gage height, 23.7 ft, from floodmark, from rating curve extended above 7,500 ft³/s; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1956-1973

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	5.5	1959	99	1957	20	23	0.8
Nov	19	8.6	1960	611	1962	207	177	7.8
Dec	19	32	1960	1870	1956	559	473	21.8
Jan	19	66	1963	1210	1964	597	378	23.2
Feb	19	126	1973	1370	1961	504	317	17.9
Mar	19	83	1965	807	1961	400	232	15.6
Apr	20	62	1966	649	1963	189	141	7.1
May	20	18	1966	361	1963	105	86	4.1
Jun	20	6.7	1966	63	1958	28	14	1.1
Jul	20	0.9	1973	17	1963	7.0	5.1	0.3
Aug	20	0.1	1966	11	1968	2.4	2.6	0.1
Sep	20	0.9	1965	11	1978	3.9	3.0	0.1
Ann		106	1973	404	1956	218	69	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.5	3.0	3.7	5.1	5.8	6.2	7.3	8.6	11	14	16	20	27	39	64	19
Nov	6.7	8.5	13	16	19	22	30	46	72	127	174	235	343	512	904	19
Dec	19	38	54	75	98	117	167	250	379	529	627	787	1070	1450	2050	19
Jan	61	79	96	120	144	163	213	286	395	531	690	869	1120	1590	2240	19
Feb	91	110	127	141	154	169	211	282	367	485	552	653	787	966	1610	19
Mar	76	95	111	124	136	152	184	224	297	420	510	594	709	852	1200	19
Apr	51	56	60	65	70	79	96	119	149	193	220	253	304	407	567	20
May	21	27	32	38	43	48	56	65	77	95	108	125	149	196	288	20
Jun	5.3	7.9	11	13	15	17	20	24	28	34	37	41	46	51	68	20
Jul	0.3	0.7	1.0	1.3	2.1	2.1	3.4	4.5	5.8	7.4	9.4	12	14	18	23	20
Aug	0.0	0.0	0.2	0.4	0.4	0.6	0.9	1.1	1.4	2.3	2.9	2.9	3.8	4.5	6.1	20
Sep	0.1	0.6	0.7	1.0	1.2	1.5	1.9	1.9	2.5	4.1	4.9	5.6	6.8	8.6	12	20
Ann	0.7	1.5	3.0	4.2	6.6	9.8	24	51	93	154	201	267	389	571	995	

TENMILE CREEK BASIN

14323200 TENMILE CREEK NEAR LAKESIDE, OR

LOCATION.--Lat 43°34'40", long 124°11'30", near center of sec.13, T.23 S., R.13 W., Coos County, Hydrologic Unit 17100304, in Siuslaw National Forest, near left bank on downstream side of highway bridge, 200 ft upstream from Eel Creek, 0.8 mi upstream from Saunders Creek, and 1.0 mi west of Lakeside. Records include flow of Eel and Saunders Creeks.

DRAINAGE AREA.--About 87 mi² at measuring section 1.2 mi downstream.

PERIOD OF RECORD.--August 1957 to September 1976.

GAGE.--Water-stage recorder. Auxiliary nonrecording gage 1.4 mi upstream from base gage, read twice daily. Datum of both gages is National Geodetic Vertical Datum of 1929.

REMARKS.--Flow affected by natural storage in Tenmile Lake and other lakes tributary to Eel and Saunders Creeks. No diversion upstream from station. Records given herein are for measuring site.

AVERAGE DISCHARGE.--19 years (water years 1958-76), 338 ft³/s, 244,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,330 ft³/s Dec. 26, 1964, elevation 16.46 ft at base gage, 18.78 ft at auxiliary gage; minimum, 2.0 ft³/s Aug. 29, Sept. 2, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1958-1976

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	5.6	1966	177	1969	45	46	1.1
Nov	19	49	1973	1160	1974	312	279	7.6
Dec	19	161	1960	1500	1974	724	376	18.2
Jan	19	178	1963	1390	1965	875	377	22.0
Feb	19	270	1973	1330	1961	738	268	16.9
Mar	19	246	1965	1150	1974	603	264	15.1
Apr	19	191	1969	958	1963	401	197	9.7
May	19	90	1966	511	1963	212	109	5.3
Jun	19	41	1966	219	1960	89	39	2.2
Jul	19	20	1966	84	1971	40	16	1.0
Aug	19	5.3	1967	42	1968	19	9.1	0.5
Sep	19	4.3	1967	77	1968	18	18	0.4
Ann		189	1973	568	1974	338	80	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equalled or exceeded for indicated percent of time															
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5 (n)
Oct	5.9	7.6	8.6	10	12	12	14	17	29	49	55	64	82	113	155 19
Nov	17	35	49	64	72	81	100	130	227	336	434	549	649	781	1130 19
Dec	105	158	233	289	332	366	440	519	716	913	1030	1130	1320	1550	1790 19
Jan	220	271	341	413	458	501	592	685	812	976	1090	1260	1530	1830	2280 19
Feb	265	341	382	421	467	503	573	649	740	852	915	985	1070	1210	1540 19
Mar	244	287	314	342	358	373	418	496	585	669	749	877	972	1060	1270 19
Apr	162	176	191	209	229	250	292	349	394	450	497	554	607	669	925 19
May	82	91	104	114	123	132	151	175	202	248	269	293	323	363	460 19
Jun	41	45	49	53	57	62	72	82	91	102	109	116	123	136	159 19
Jul	17	20	22	23	25	29	33	36	41	47	50	53	58	66	81 19
Aug	6.5	7.3	9.1	11	13	14	16	18	21	24	26	28	30	32	37 19
Sep	4.3	4.8	6.0	7.6	9.1	9.9	12	14	15	17	18	20	24	45	70 19
Ann	9.0	13	17	23	34	47	86	153	274	408	490	591	715	911	1250

COOS RIVER BASIN

14324500 WEST FORK MILLICOMA RIVER NEAR ALLEGANY, OR

LOCATION.--Lat 43°28'35", long 124°03'20", in SW 1/4 NW 1/4 sec.19, T.24 S., R.11 W., Coos County, Hydrologic Unit 17100304, on left bank at highway bridge, 40 ft upstream from Daggett Creek, 3.8 mi north of Allegany, and at mile 6.82.

DRAINAGE AREA.--46.9 mi², at cableway 300 ft downstream.

PERIOD OF RECORD.--September 1954 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 76.95 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Only minor diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--27 years (water years 1955-81), 249 ft³/s, 72.10 in/yr, 180,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,100 ft³/s Nov. 24, 1960, gage height, 15.86 ft; minimum, 1.8 ft³/s Sept. 5, 9, 1965, Sept. 8-10, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1955-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	28	4.2	1975	290	1956	84	77	2.9
Nov	27	39	1977	1070	1974	369	252	12.2
Dec	27	34	1977	1360	1965	630	331	21.5
Jan	27	52	1977	1070	1956	581	319	19.8
Feb	27	137	1973	1150	1961	485	237	15.1
Mar	27	117	1978	809	1961	417	192	14.2
Apr	27	83	1977	571	1963	239	125	7.9
May	27	26	1966	358	1960	111	77	3.8
Jun	27	16	1966	146	1981	44	28	1.5
Jul	27	7.6	1972	35	1969	15	7.0	0.5
Aug	27	3.4	1958	57	1968	9.9	10	0.3
Sep	27	2.5	1965	97	1971	20	24	0.7
Ann		84	1977	385	1956	249	63	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3.2	3.9	5.5	6.7	7.9	11	15	22	31	52	71	99	143	215	349	28
Nov	21	29	38	48	58	73	116	175	255	365	436	538	712	925	1320	27
Dec	51	80	104	131	155	183	252	353	473	666	788	976	1180	1440	2190	27
Jan	59	89	113	136	163	191	256	331	422	570	678	838	1040	1340	2180	27
Feb	77	99	118	136	154	177	230	297	403	531	610	738	877	1100	1510	27
Mar	83	104	119	134	153	171	215	270	346	462	533	621	726	894	1250	27
Apr	55	68	78	89	102	113	136	163	195	250	287	335	418	540	708	27
May	30	35	39	43	48	53	61	71	85	103	116	134	159	199	351	27
Jun	16	18	19	21	23	24	27	31	35	41	45	52	61	76	112	27
Jul	6.2	6.8	7.5	8.2	8.2	9.1	12	13	15	17	19	20	23	27	33	27
Aug	2.7	3.1	3.6	3.6	4.2	4.8	5.6	6.6	7.4	8.8	9.5	11	13	15	23	27
Sep	2.5	2.5	3.0	3.5	3.5	4.2	4.9	7.0	8.5	15	19	23	31	47	83	27
Ann	4.4	6.3	8.7	12	17	24	44	81	134	211	269	354	478	668	1060	

COQUILLE RIVER BASIN

14324600 SOUTH FORK COQUILLE RIVER ABOVE PANTHER CREEK, NEAR ILLAHE, OR

LOCATION.--Lat 42°45'30", long 123°59'10", in SE 1/4 sec.28, T.32 S., R.11 W., Coos County, Hydrologic Unit 17100304, on left bank 0.7 mi upstream from Panther Creek, 10.0 mi northeast of Illahe, and at mile 88.5.

DRAINAGE AREA.--31.2 mi².

PERIOD OF RECORD.--October 1956 to September 1970.

GAGE.--Water-stage recorder. Datum of gage is 2,117.30 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Power & Light Co.).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--14 years, 144 ft³/s, 62.68 in/yr, 104,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,840 ft³/s Dec. 22, 1964, gage height, 17.07 ft, from floodmarks, from rating curve extended above 1,100 ft³/s on basis of slope-area measurement at gage height 12.75 ft; minimum, 0.94 ft³/s Sept. 28, 1970.

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1970

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	2.5	1965	162	1963	33	43	2.0
Nov	14	12	1960	270	1962	150	91	8.6
Dec	14	44	1960	846	1965	303	221	17.9
Jan	14	48	1963	740	1970	359	226	21.2
Feb	14	163	1967	734	1958	335	163	18.0
Mar	14	77	1965	470	1966	267	112	15.7
Apr	14	56	1968	381	1963	161	83	9.2
May	14	19	1966	275	1963	90	73	5.3
Jun	14	7.8	1966	39	1960	21	8.3	1.2
Jul	14	5.2	1970	12	1964	7.6	2.4	0.4
Aug	14	1.7	1970	6.3	1968	3.4	1.4	0.2
Sep	14	1.5	1970	8.7	1959	3.5	2.2	0.2
Ann		110	1968	189	1958	144	20	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.5	1.8	2.2	2.2	3.2	3.9	5.3	7.5	13	19	25	37	51	76	127	14
Nov	6.5	10	15	19	23	27	40	61	107	147	181	218	263	357	571	14
Dec	25	33	40	52	61	73	95	129	194	285	345	439	558	723	1010	14
Jan	36	47	58	72	89	97	133	185	251	347	412	479	619	769	1550	14
Feb	75	85	98	110	119	131	160	206	246	315	365	452	562	788	1070	14
Mar	53	66	80	97	110	126	157	211	261	313	338	370	413	500	647	14
Apr	33	39	47	60	73	85	109	144	169	198	213	235	267	315	379	14
May	19	23	26	29	32	35	42	53	66	84	97	114	144	179	260	14
Jun	8.6	10	12	12	14	15	17	19	21	24	26	29	32	35	44	14
Jul	3.2	3.7	3.9	4.4	5.0	5.3	5.7	6.4	7.3	8.3	8.8	9.4	12	13	16	14
Aug	1.4	1.5	1.8	2.0	2.1	2.3	2.7	2.7	3.2	3.5	4.1	4.5	4.8	5.3	6.2	14
Sep	1.2	1.2	1.5	1.5	1.5	1.7	1.9	2.1	2.3	2.9	3.2	3.6	4.4	5.5	8.5	14
Ann	1.8	2.3	3.0	5.0	6.8	10	22	42	79	128	162	208	266	365	568	

COQUILLE RIVER BASIN

14324700 SOUTH FORK COQUILLE RIVER NEAR ILLAHE, OR

LOCATION.--Lat 42°43'30", long 124°00'40", in NW 1/4 sec.16, T.33 S., R.11 W., Coos County, Hydrologic Unit 17100305, in Siskiyou National Forest, on left bank 1.0 mi downstream from Lockhart Creek, 7.0 mi north of Illahe, and at mile 85.1.

DRAINAGE AREA.--40.6 mi², at measuring site 1.2 mi upstream from gage.

PERIOD OF RECORD.--October 1956 to September 1974.

GAGE.--Water-stage recorder. Datum of gage is 1,871.04 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Power & Light Co.).

REMARKS.--No regulation or diversion upstream from station. Records given herein are for measuring site.

AVERAGE DISCHARGE.--18 years, 199 ft³/s, 66.56 in/yr, 144,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,000 ft³/s Dec. 22, 1964, gage height, 11.80 ft, from rating curve extended above 3,000 ft³/s, on basis of slope-area measurement at gage height 9.54 ft; minimum, 1.2 ft³/s Sept. 27-29, 1967, Sept. 28-30, 1974.

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1974

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	3.5	1965	204	1963	38	49	1.6
Nov	18	15	1960	951	1974	255	215	10.5
Dec	18	55	1960	1160	1965	438	277	18.7
Jan	18	72	1963	992	1970	498	271	21.2
Feb	18	181	1971	997	1958	413	215	16.1
Mar	18	95	1965	708	1961	377	154	16.1
Apr	18	73	1968	480	1963	226	110	9.3
May	18	25	1966	364	1963	109	92	4.6
Jun	18	10	1966	53	1960	26	11	1.1
Jul	18	5.7	1973	16	1963	10	3.2	0.4
Aug	18	2.6	1959	8.1	1968	4.7	1.7	0.2
Sep	18	1.7	1974	12	1971	5.3	3.1	0.2
Ann		133	1973	308	1974	199	43	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.1	2.5	2.5	3.1	3.8	5.3	6.7	9.0	15	25	34	44	55	81	135	18
Nov	9.0	15	23	28	34	41	61	92	145	223	284	358	471	704	1140	18
Dec	32	42	54	73	94	111	150	227	323	463	569	688	828	1050	1350	18
Jan	49	63	83	108	123	140	193	243	336	474	554	675	907	1100	2160	18
Feb	95	111	127	142	153	163	201	247	301	368	430	535	686	959	1340	18
Mar	71	94	120	143	162	183	232	283	345	425	466	528	622	778	1000	18
Apr	45	56	71	86	102	116	157	196	232	272	308	335	373	424	522	18
May	23	28	33	37	41	45	53	63	77	99	115	137	164	218	288	18
Jun	12	13	14	15	17	18	21	23	26	30	32	35	40	45	56	18
Jul	4.6	5.3	6.0	6.4	6.8	7.2	8.2	8.7	10	12	13	14	15	17	21	18
Aug	2.3	2.5	2.7	2.7	3.0	3.2	3.5	4.1	4.8	5.2	5.7	6.1	6.6	7.2	8.5	18
Sep	1.7	1.7	2.0	2.2	2.2	2.2	2.8	3.2	3.6	4.6	4.6	5.3	6.7	9.2	16	18
Ann	2.6	3.4	5.1	6.4	9.2	14	29	56	107	179	225	286	366	514	863	

COQUILLE RIVER BASIN

14324900 SOUTH FORK COQUILLE RIVER NEAR POWERS, OR

LOCATION.--Lat 42°47'05", long 124°02'25", in SW 1/4 SW 1/4 sec.18, T.32 S., R.11 W., Coos County, Hydrologic Unit 17100305, Siskiyou National Forest, on right bank 0.8 mi upstream from Hall Creek, 7.0 mi southeast of Powers, and at mile 76.1.

DRAINAGE AREA.--93.2 mi².

PERIOD OF RECORD.--October 1956 to September 1970.

GAGE.--Water-stage recorder. Datum of gage is 585.32 ft above National Geodetic Vertical Datum of 1929 (levels by Pacific Power & Light Co.).

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--14 years, 514 ft³/s, 74.89 in/yr, 372,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,600 ft³/s Dec. 22, 1964, gage height, 23.00 ft, from floodmarks, from rating curve extended above 9,300 ft³/s on basis of slope-area measurement of peak flow; minimum, 6.5 ft³/s Oct. 3-5, 1960.

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1970

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	18	1965	585	1963	150	159	2.5
Nov	14	60	1960	1180	1961	611	342	9.8
Dec	14	192	1960	3250	1965	1110	819	18.3
Jan	14	206	1963	2690	1970	1260	786	20.8
Feb	14	517	1965	2560	1958	1170	595	17.6
Mar	14	217	1965	1710	1961	898	410	14.8
Apr	14	201	1968	1290	1963	522	280	8.3
May	14	76	1966	901	1963	316	243	5.2
Jun	14	36	1966	151	1960	82	28	1.3
Jul	14	26	1959	53	1963	36	7.9	0.6
Aug	14	11	1959	41	1968	21	7.5	0.3
Sep	14	11	1960	42	1959	22	10	0.4
Ann		423	1968	675	1958	514	76	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	13	15	16	18	21	25	31	44	70	111	137	168	224	312	554	14
Nov	32	47	72	83	96	115	165	257	409	598	707	866	1100	1420	2070	14
Dec	98	125	153	191	231	269	344	487	721	1020	1230	1660	2180	2720	3750	14
Jan	135	179	215	266	317	359	479	648	885	1210	1440	1740	2240	2870	5440	14
Feb	274	313	344	375	410	446	531	648	800	1000	1290	1630	2100	2710	4040	14
Mar	172	228	278	321	367	419	527	675	833	1040	1170	1310	1480	1710	2450	14
Apr	125	142	170	202	236	264	350	441	521	600	661	724	806	911	1320	14
May	74	90	101	111	123	136	158	188	228	291	335	396	491	595	859	14
Jun	39	44	49	53	57	61	67	73	81	91	98	107	115	130	156	14
Jul	22	24	25	27	28	29	31	33	37	41	43	46	49	55	62	14
Aug	13	14	15	16	16	17	18	19	20	22	23	24	27	30	36	14
Sep	10	12	13	14	14	15	15	16	17	20	22	25	31	41	60	14
Ann	14	17	22	28	36	49	94	163	284	446	559	702	913	1280	2140	

COQUILLE RIVER BASIN

14325000 SOUTH FORK COQUILLE RIVER AT POWERS, OR

LOCATION.--Lat 42°53'30", long 124°04'10", in SE 1/4 sec.12, T.31 S., R.12 W., Coos County, Hydrologic Unit 17100305, on left bank 0.6 mi downstream from highway bridge at Powers, 0.9 mi upstream from Woodward Creek, and at mile 64.5.

DRAINAGE AREA.--169 mi².

PERIOD OF RECORD.--September 1916 to September 1926, October 1928 to 1987.

REVISED RECORDS.--WSP 1184: 1946(M). WSP 1448: 1917-18(M), 1919, 1920(M), 1925.

GAGE.--Water-stage recorder. Datum of gage is 197.42 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 17, 1938, nonrecording gage at various sites within 1 mi of present site at different datums.

REMARKS.--No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--68 years (water years 1917-26, 1930-87), 794 ft³/s, 63.80 in/yr, 575,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 48,900 ft³/s Dec. 22, 1964, gage height, 26.51 ft, from floodmarks, from rating curve extended above 19,000 ft³/s on basis of contracted-opening measurement at gage height 18.14 ft and slope-area measurement of peak flow; minimum discharge, 8.8 ft³/s Sept. 28, 1987.

STATISTICAL SUMMARIES FOR THE PERIOD 1917-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	68	16	1975	1950	1951	220	328	2.4
Nov	68	15	1937	4230	1974	1060	874	11.0
Dec	69	44	1977	5360	1965	1740	1070	18.6
Jan	69	97	1977	4240	1970	1800	1040	19.2
Feb	69	209	1977	4150	1958	1690	821	16.5
Mar	69	330	1934	3820	1938	1350	662	14.4
Apr	69	216	1926	2450	1963	925	515	9.6
May	69	78	1939	1570	1953	454	339	4.9
Jun	69	50	1924	699	1937	165	114	1.7
Jul	69	27	1926	186	1947	61	29	0.7
Aug	69	17	1939	101	1947	34	14	0.4
Sep	69	12	1987	385	1978	48	57	0.5
Ann		237	1977	1370	1974	794	235	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	17	19	21	23	25	28	34	44	62	98	132	190	277	455	872	68
Nov	28	44	68	97	127	166	259	384	588	926	1190	1530	2020	2910	4760	68
Dec	134	218	288	363	447	521	682	906	1270	1810	2180	2680	3270	4180	5830	69
Jan	200	285	368	456	542	635	823	1050	1370	1820	2140	2510	3060	4040	5950	69
Feb	262	396	491	573	641	718	900	1120	1370	1760	2060	2460	2920	3640	5200	69
Mar	281	376	441	509	580	659	825	996	1180	1480	1670	1920	2240	2660	3630	69
Apr	184	241	295	346	396	455	575	712	871	1050	1160	1280	1460	1740	2350	69
May	95	117	140	156	174	194	236	285	357	458	522	623	760	960	1270	69
Jun	53	62	70	77	84	91	104	120	138	160	175	195	227	292	419	69
Jul	29	33	35	37	40	42	48	53	59	67	72	77	84	98	119	69
Aug	19	21	22	24	25	26	28	31	33	37	39	41	45	50	60	69
Sep	16	18	19	20	21	22	24	27	30	35	39	44	52	69	118	69
Ann	21	26	32	40	51	68	135	260	465	744	928	1160	1500	2070	3260	

COQUILLE RIVER BASIN

14326500 MIDDLE FORK COQUILLE RIVER NEAR MYRTLE POINT, OR

LOCATION.--Lat 43°01'30", long 124°05'20", in NW 1/4 SE 1/4 sec.26, T.29 S., R.12 W., Coos County, Hydrologic Unit 17100305, 0.3 mi downstream from Indian Creek, 2 mi upstream from South Fork, and 3.8 mi southeast of Myrtle Point.

DRAINAGE AREA.--305 mi².

PERIOD OF RECORD.--October 1930 to September 1946.

GAGE.--Water-stage recorder. Datum of gage is 41.20 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 4, 1930, staff gage at same site and datum.

REMARKS.--No diversion upstream from station. Flow regulated during winter and spring months by operation of log ponds.

AVERAGE DISCHARGE.--16 years, 743 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 23,600 ft³/s Jan. 2, 1933, gage height, 22.5 ft, from rating curve extended above 9,000 ft³/s; minimum daily, 1.0 ft³/s July 16, 17, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1931-1946

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	9.1	1937	225	1935	66	65	0.8
Nov	16	10	1937	2550	1938	824	749	9.1
Dec	16	81	1937	3960	1943	1610	1200	18.4
Jan	16	599	1937	4220	1936	1800	968	20.6
Feb	16	419	1934	3920	1938	1840	979	19.2
Mar	16	215	1934	4090	1938	1450	930	16.6
Apr	16	198	1939	1920	1937	755	428	8.3
May	16	72	1939	1390	1933	371	321	4.2
Jun	16	59	1931	341	1942	158	97	1.7
Jul	16	27	1940	124	1942	54	28	0.6
Aug	16	11	1939	41	1942	23	9.2	0.3
Sep	16	10	1939	86	1941	24	19	0.3
Ann		354	1934	1270	1938	743	244	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	8.6	11	12	13	14	15	17	20	27	39	48	62	80	139	262	16
Nov	10	20	30	41	66	92	167	279	373	602	796	1060	1630	2350	4000	16
Dec	35	101	158	207	253	307	467	635	867	1340	1820	2580	3370	4590	6950	16
Jan	309	409	477	535	611	702	924	1150	1440	1840	2070	2560	3080	3900	5410	16
Feb	271	383	484	580	685	788	1020	1310	1680	2070	2280	2660	3260	4020	5380	16
Mar	192	278	360	417	495	594	808	1080	1320	1620	1850	2040	2300	2780	4360	16
Apr	130	191	240	271	304	343	428	557	687	840	931	1070	1280	1500	1970	16
May	58	73	90	108	127	147	194	251	316	395	446	506	583	727	1020	16
Jun	22	35	46	53	61	69	88	123	151	187	211	241	278	326	434	16
Jul	7.2	18	23	26	28	31	36	44	52	62	68	78	90	109	139	16
Aug	9.0	11	13	14	15	16	18	21	25	28	29	31	35	40	46	16
Sep	8.1	9.4	11	12	13	14	15	17	19	22	23	26	31	48	67	16
Ann	11	15	19	24	33	46	97	208	372	623	809	1070	1450	2000	3330	

COQUILLE RIVER BASIN

14326800 NORTH FORK COQUILLE RIVER NEAR FAIRVIEW, OR

LOCATION.--Lat 43°11'03", long 124°04'33", in SW 1/4 SE 1/4 sec.35, T.27 S., R.12 W., Coos County, Hydrologic Unit 17100305, on right bank 0.2 mi downstream from Lost Creek, 2.2 mi south of Fairview, and at mile 22.2.

DRAINAGE AREA.--73.9 mi².

PERIOD OF RECORD.--October 1963 to September 1981.

REVISED RECORDS.--WRD Oreg. 1972: 1964-67, 1969-71(M,P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 79.72 ft above National Geodetic Vertical Datum of 1929 (from stadia survey). Prior to Aug. 17, 1978, at site 0.5 mi downstream at datum 16.38 ft lower with supplementary water-stage recorder and rest-stage gage at present site used during periods of backwater.

REMARKS.--No regulation. Several diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--18 years, 281 ft³/s, 51.57 in/yr, 203,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,760 ft³/s Mar. 2, 1972; maximum gage height, 18.80 ft, previous site and datum, Jan. 8, 1976, backwater from ponding in valley below; maximum gage height unaffected by backwater, 18.03 ft, previous site and datum, Jan. 8, 1976; minimum discharge, 2.0 ft³/s Sept. 9, 10, 1967.

STATISTICAL SUMMARIES FOR THE PERIOD 1964-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	4.9	1975	109	1969	43	34	1.3
Nov	18	29	1977	1120	1974	358	299	10.5
Dec	18	21	1977	1530	1965	729	371	22.0
Jan	18	47	1977	1330	1970	771	364	23.3
Feb	18	105	1977	894	1969	499	240	13.7
Mar	18	155	1978	987	1974	467	245	14.1
Apr	18	121	1977	573	1971	281	124	8.2
May	18	42	1966	310	1979	132	69	4.0
Jun	18	20	1966	130	1981	52	25	1.5
Jul	18	10	1973	33	1971	19	7.4	0.6
Aug	18	3.8	1966	24	1968	10	5.3	0.3
Sep	18	3.9	1967	60	1971	18	17	0.5
Ann		88	1977	462	1974	281	88	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	4.0	4.6	5.4	6.6	7.5	10	13	16	21	31	40	58	80	120	193	18
Nov	16	21	31	42	52	67	106	158	229	328	417	532	717	963	1460	18
Dec	29	102	150	201	244	288	388	490	662	832	944	1110	1370	1730	2240	18
Jan	73	121	160	206	255	302	386	485	630	803	959	1150	1410	1900	2540	18
Feb	78	124	165	191	213	238	298	366	458	607	667	759	858	984	1310	18
Mar	119	145	168	189	205	223	262	317	383	496	568	643	744	907	1250	18
Apr	84	100	112	124	138	154	184	216	253	306	343	394	460	545	707	18
May	46	53	59	65	71	78	89	100	116	132	141	159	189	227	322	18
Jun	21	25	26	29	31	34	39	44	49	58	63	68	75	87	111	18
Jul	7.2	7.7	9.1	10	12	13	15	17	19	22	24	27	30	34	42	18
Aug	3.3	3.7	4.1	4.6	5.1	5.6	6.3	7.0	8.7	11	12	13	15	18	28	18
Sep	3.1	3.6	4.2	4.2	4.9	4.9	5.7	7.9	10	14	16	21	29	44	71	18
Ann	5.2	7.1	10	14	18	25	52	98	165	259	325	416	552	762	1160	

COQUILLE RIVER BASIN

14327000 NORTH FORK COQUILLE RIVER NEAR MYRTLE POINT, OR

LOCATION.--Lat 43°04'15", long 124°06'20", in SE 1/4 sec.10, T.29 S., R.12 W., Coos County, Hydrologic Unit 17100305, near center of span on downstream side of highway bridge 1.6 mi northeast of Myrtle Point, and at mile 4.1.

DRAINAGE AREA.--282 mi².

PERIOD OF RECORD.--December 1928 to September 1946, October 1963 to September 1968.

GAGE.--Wire-weight gage read once daily and crest-stage gage. Datum of gage is 2.79 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1930, chain gage at present site and different datum. Oct. 1, 1930, to Sept. 30, 1946, water-stage recorder at site 4.5 mi upstream at datum 8.15 ft higher.

REMARKS.--No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--22 years (water years 1930-46, 1964-68), 945 ft³/s, 684,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 38,400 ft³/s Dec. 23, 1964, gage height, 37.67 ft; minimum observed, 1.2 ft³/s Aug. 12, 1968.

STATISTICAL SUMMARIES FOR THE PERIOD 1929-1968

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	22	22	1937	500	1935	134	121	1.2
Nov	22	24	1930	3250	1938	1120	925	9.7
Dec	23	342	1937	6110	1965	2050	1460	18.4
Jan	23	854	1944	4760	1964	2450	1130	22.0
Feb	23	530	1931	3780	1938	2010	948	16.5
Mar	23	427	1941	3950	1938	1640	897	14.7
Apr	23	276	1939	2400	1937	944	512	8.2
May	23	125	1939	1690	1933	464	316	4.2
Jun	23	82	1966	986	1933	261	211	2.3
Jul	23	47	1968	183	1937	93	42	0.8
Aug	23	10	1966	80	1943	44	20	0.4
Sep	23	14	1965	219	1941	49	44	0.4
Ann		517	1931	1380	1943	945	261	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	21	23	26	30	33	36	42	49	58	77	97	126	183	293	556	22
Nov	25	41	62	104	148	192	313	454	664	1030	1370	1780	2370	3410	4720	22
Dec	129	224	300	384	485	605	827	1080	1420	2080	2600	3290	4330	5460	6960	23
Jan	542	646	737	837	971	1120	1390	1700	2140	2730	3140	3610	4200	5280	6890	23
Feb	473	585	691	772	869	981	1180	1470	1870	2410	2690	3010	3530	4400	5460	23
Mar	346	438	512	582	646	733	958	1250	1500	1840	2080	2390	2680	3340	4660	23
Apr	278	322	365	401	436	468	572	709	832	1000	1120	1280	1530	1860	2410	23
May	136	165	193	211	230	251	297	346	403	488	535	606	714	880	1170	23
Jun	78	91	102	112	123	130	147	177	212	250	283	314	379	446	629	23
Jul	39	44	50	54	57	60	70	80	91	106	114	122	137	164	207	23
Aug	12	21	24	26	28	30	34	39	45	54	58	63	70	78	93	23
Sep	14	18	20	22	23	24	29	32	36	44	49	56	67	99	159	23
Ann	23	31	41	53	69	94	183	341	558	891	1120	1430	1860	2640	4180	

ROGUE RIVER BASIN

14327500 ROGUE RIVER ABOVE BYBEE CREEK, NEAR UNION CREEK, OR

LOCATION.--Lat 42°56'05", long 122°25'15", in NE 1/4 sec.26, T.30 S., R.3 E., Jackson County, Hydrologic Unit 17100307, on left bank 700 ft upstream from Bybee Creek, 2.3 mi northeast of village of Union Creek, and at mile 186.1 (river-profile survey).

DRAINAGE AREA.--156 mi².

PERIOD OF RECORD.--January 1930 to September 1952.

GAGE.--Water-stage recorder. Elevation of gage is 3,465 ft, from river-profile map. Prior to Nov. 23, 1934, water-stage recorder at site 200 ft downstream at different datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--22 years (water years 1931-52), 498 ft³/s, 360,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,430 ft³/s Nov. 29, 1942 and Dec. 28, 1945, gage height, 7.84 ft, from rating curve extended above 1,600 ft³/s by logarithmic plotting; minimum daily, 180 ft³/s Jan. 7, 1937.

STATISTICAL SUMMARIES FOR THE PERIOD 1930-1952

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	22	227	1932	564	1951	317	84	5.4
Nov	22	234	1932	803	1951	414	151	6.8
Dec	22	254	1931	1040	1951	481	203	8.2
Jan	23	238	1937	729	1943	444	142	7.6
Feb	23	248	1932	820	1951	459	154	7.1
Mar	23	317	1937	758	1940	498	121	8.5
Apr	23	467	1930	1020	1943	723	162	11.9
May	23	373	1934	1390	1952	894	303	15.2
Jun	23	271	1931	1660	1933	701	337	11.6
Jul	23	222	1931	666	1952	386	108	6.6
Aug	23	203	1931	467	1952	312	63	5.3
Sep	23	204	1931	426	1952	297	54	4.9
Ann		313	1931	693	1951	498	97	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	229	234	240	248	258	263	271	289	310	330	341	355	375	422	480	22
Nov	236	251	263	273	283	294	315	332	367	416	441	476	542	688	865	22
Dec	242	263	278	296	313	328	364	388	424	486	518	561	637	741	1110	22
Jan	247	270	295	310	325	339	362	389	424	468	498	535	579	648	806	23
Feb	252	271	287	321	344	358	383	415	450	497	525	555	602	680	859	23
Mar	308	329	351	368	380	395	422	449	485	526	554	603	660	718	855	23
Apr	413	439	464	490	511	549	601	661	742	850	899	955	1020	1100	1220	23
May	376	417	484	550	605	654	780	883	971	1100	1150	1200	1270	1380	1550	23
Jun	288	310	342	378	413	454	529	624	717	828	901	980	1050	1150	1430	23
Jul	250	268	276	287	303	313	334	358	382	424	439	466	498	541	626	23
Aug	232	241	247	254	264	276	286	298	320	345	356	365	381	400	423	23
Sep	228	235	242	249	259	263	273	282	307	328	335	343	360	378	405	23
Ann	241	260	274	290	306	322	354	394	446	521	578	654	762	915	1120	

UPPER ROGUE RIVER BASIN

14328000 ROGUE RIVER ABOVE PROSPECT, OR

LOCATION.--Lat 42°46'30", long 122°29'55", in SE 1/4 NE 1/4 sec.19, T.32 S., R.3 E., Jackson County, Hydrologic Unit 17100307, Rogue River National Forest, on left bank 1.4 mi upstream from Pacific Power and Light Co. diversion dam, 1.8 mi northwest of Prospect, and at mile 173.4.

DRAINAGE AREA.--312 mi².

PERIOD OF RECORD.--January 1908 to February 1912, October 1923 to 1987. Monthly discharge only for some periods, published in WSP 1318. Prior to October 1925, published as "near Prospect."

REVISED RECORDS.--WSP 1248: 1925, 1927(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 2,620 ft, from river-profile map. Prior to Feb. 17, 1912, nonrecording gage at several sites within a few hundred feet upstream at various datums.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--67 years (water years 1909-11, 1924-87), 829 ft³/s, 36.08 in/yr, 600,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 ft³/s Dec. 22, 1964, gage height, 11.55 ft, from floodmark, from rating curve extended above 9,000 ft³/s on basis of slope-area measurement at 16,600 ft³/s; minimum observed discharge, 200 ft³/s Nov. 20, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1908-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	67	283	1932	957	1951	463	120	4.7
Nov	67	292	1932	2060	1910	718	332	7.1
Dec	67	313	1931	3370	1965	937	546	9.6
Jan	69	292	1937	2160	1970	924	429	9.4
Feb	68	325	1937	2090	1958	972	401	9.1
Mar	68	481	1977	2820	1972	969	363	9.9
Apr	68	649	1926	1890	1966	1180	314	11.7
May	68	491	1934	2260	1952	1370	474	14.0
Jun	68	335	1931	2560	1933	995	447	9.8
Jul	68	253	1931	1010	1953	552	165	5.6
Aug	68	222	1931	659	1976	443	103	4.5
Sep	68	230	1931	602	1972	425	89	4.2
Ann		411	1931	1270	1974	830	199	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	298	316	331	346	361	374	401	426	463	503	525	548	573	601	701	67
Nov	314	347	377	395	414	439	485	538	608	702	771	862	994	1210	1690	67
Dec	349	395	431	472	505	538	604	677	790	948	1060	1190	1350	1620	2260	67
Jan	385	431	477	511	543	574	648	724	834	953	1020	1120	1260	1510	2010	69
Feb	389	475	535	578	623	660	738	814	891	1010	1080	1200	1340	1560	2170	68
Mar	506	559	610	650	684	716	768	830	907	1010	1090	1180	1320	1510	1900	68
Apr	650	693	729	767	823	880	994	1100	1220	1340	1420	1520	1650	1820	2090	68
May	568	679	767	866	968	1040	1170	1310	1440	1610	1710	1820	1970	2160	2430	68
Jun	397	465	532	574	616	659	753	878	1010	1160	1260	1370	1500	1660	2000	68
Jul	327	357	387	409	428	444	473	506	549	608	645	688	736	805	918	68
Aug	300	317	342	359	369	381	404	425	445	478	507	542	581	604	638	68
Sep	289	310	325	337	348	363	391	414	440	465	488	518	538	560	591	68
Ann	324	362	394	422	449	484	558	645	751	912	1010	1140	1300	1520	1920	

UPPER ROGUE RIVER BASIN

14330000 ROGUE RIVER BELOW PROSPECT, OR

LOCATION.--Lat 42°43'50", long 122°30'55", in SE 1/4 NW 1/4 sec.6, T.33 S., R.3 E., Jackson County, Hydrologic Unit 17100307, on right bank 600 ft downstream from Prospect No. 1 powerplant, 1.4 mi downstream from Mill Creek, 2.0 mi southwest of Prospect, 2.1 mi upstream from South Fork Rogue River, and at mile 169.4.

DRAINAGE AREA.--379 mi².

PERIOD OF RECORD.--August 1913 to September 1930, October 1968 to 1987.

REVISED RECORDS.--WSP 1518: 1914-23, 1924(M), 1925, 1928.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,964.56 ft above National Geodetic Vertical Datum of 1929 (Pacific Power and Light Co. bench mark). Prior to September 1927 nonrecording gage at site 1,000 ft upstream, above powerplants, at different datum, also concurrent nonrecording gage on headrace to obtain equivalent combined flow.

REMARKS.--Fluctuations caused by powerplant 600 ft upstream from station. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--36 years, 1,299 ft³/s, 941,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 10,900 ft³/s Jan. 18, 1971, gage height, 7.62 ft, from high-water mark; minimum discharge, 205 ft³/s Sept. 17, 22, 24, 1980, caused by regulation of diversion gates upstream.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 12.4 ft Dec. 22, 1964, from floodmarks, discharge, 25,000 ft³/s, from records for station upstream from Prospect (station 14328000) and for station downstream from South Fork Rogue River near Prospect (station 14335000) after adjusting for estimated intervening tributary inflow.

STATISTICAL SUMMARIES FOR THE PERIOD 1969-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	795	1969	1340	1985	1020	162	5.6
Nov	19	868	1979	2100	1974	1350	342	7.2
Dec	19	979	1977	2740	1982	1680	529	9.3
Jan	19	946	1977	2890	1974	1790	521	9.9
Feb	19	946	1977	2720	1986	1760	464	8.8
Mar	19	1050	1977	3630	1972	1830	578	10.1
Apr	19	1270	1977	2460	1974	1840	331	9.8
May	19	1280	1981	3280	1971	2130	576	11.7
Jun	19	1090	1987	2920	1974	1740	581	9.3
Jul	19	873	1977	1660	1971	1260	279	6.9
Aug	19	770	1981	1360	1984	1070	205	5.9
Sep	19	761	1980	1270	1984	1000	171	5.3
Ann		1020	1977	2050	1974	1540	289	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	753	782	807	829	853	880	942	1020	1070	1130	1160	1190	1220	1250	1330	19
Nov	830	877	923	977	1030	1060	1120	1210	1270	1380	1460	1580	1730	1930	2440	19
Dec	948	1010	1120	1180	1220	1260	1360	1470	1620	1810	1940	2060	2230	2470	3060	19
Jan	950	1070	1160	1230	1300	1350	1450	1540	1660	1820	1930	2030	2200	2470	3550	19
Feb	972	1160	1270	1340	1390	1440	1530	1610	1700	1820	1880	1980	2130	2420	3040	19
Mar	1090	1250	1340	1400	1450	1480	1550	1640	1740	1950	2040	2150	2310	2590	3250	19
Apr	1300	1340	1390	1450	1550	1630	1750	1830	1930	2010	2080	2150	2230	2330	2480	19
May	1320	1380	1450	1530	1620	1720	1850	2030	2210	2450	2560	2710	2830	3010	3350	19
Jun	1050	1130	1170	1200	1240	1290	1380	1570	1790	1970	2080	2240	2420	2580	3030	19
Jul	872	914	957	988	1020	1040	1120	1200	1320	1430	1480	1530	1590	1690	1820	19
Aug	780	801	827	853	880	915	982	1050	1150	1240	1270	1290	1320	1340	1370	19
Sep	740	757	781	811	841	875	928	992	1070	1130	1170	1200	1220	1250	1280	19
Ann	822	895	962	1030	1090	1150	1260	1380	1520	1700	1810	1940	2090	2330	2770	

ROGUE RIVER BASIN

14330500 SOUTH FORK ROGUE RIVER ABOVE IMNAHA CREEK, NEAR PROSPECT, OR

LOCATION.--Lat 42°42'25", long 122°23'20", in NE 1/4 sec.18, T.33 S., R.4 E., Jackson County, Hydrologic Unit 17100307, on left bank 900 ft upstream from Imnaha Creek, 1,200 ft upstream from South Fork diversion dam, and 6 mi southeast of Prospect.

DRAINAGE AREA.--52 mi².

PERIOD OF RECORD.--October 1931 to September 1949.

GAGE.--Water-stage recorder. Elevation of gage is 3,390 ft, from river-profile map.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--18 years, 127 ft³/s, 92,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft³/s Dec. 1, 1942, gage height, 6.21 ft, from rating curve extended above 250 ft³/s on basis of former curve defined to 1,000 ft³/s; minimum, 27 ft³/s Oct. 1-21, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1932-1949

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	33	1932	77	1944	52	11	3.5
Nov	18	33	1932	193	1943	79	37	5.2
Dec	18	34	1932	325	1943	109	69	7.3
Jan	18	40	1932	319	1943	118	70	7.9
Feb	18	36	1932	241	1945	109	50	6.6
Mar	18	59	1937	220	1932	127	46	8.5
Apr	18	92	1941	303	1949	205	65	13.3
May	18	76	1934	489	1949	279	106	18.6
Jun	18	57	1934	490	1933	215	109	13.9
Jul	18	43	1934	161	1933	101	30	6.7
Aug	18	35	1934	100	1943	69	17	4.6
Sep	18	34	1934	80	1943	57	12	3.7
Ann		75	1934	203	1943	127	31	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	34	41	42	44	45	46	48	51	53	56	59	63	67	70	78	18
Nov	37	44	46	48	49	52	57	63	69	76	81	88	101	121	178	18
Dec	38	45	49	53	60	65	70	77	88	104	114	130	151	190	268	18
Jan	44	49	57	62	65	68	80	90	106	125	136	155	180	212	273	18
Feb	41	47	50	60	70	80	91	99	111	122	129	137	151	175	200	18
Mar	57	67	77	82	86	90	98	108	125	142	150	161	175	203	241	18
Apr	91	104	112	121	129	135	154	181	213	248	266	287	315	354	395	18
May	90	122	140	167	191	207	246	276	303	338	354	372	393	437	486	18
Jun	62	79	105	119	130	138	158	191	223	257	282	305	328	365	460	18
Jul	49	55	70	75	80	84	91	97	103	113	118	123	131	143	170	18
Aug	39	44	50	54	57	60	66	70	75	80	82	85	88	93	97	18
Sep	36	42	45	46	48	49	54	57	61	66	68	70	73	76	79	18
Ann	41	46	50	55	60	65	76	89	106	132	149	179	218	270	344	

ROGUE RIVER BASIN

14331000 IMNAHA CREEK NEAR PROSPECT, OR

LOCATION.--Lat 42°41'20", long 122°23'00", in NE 1/4 sec.18, T.33 S., R.4 E., Jackson County, Hydrologic Unit 17100307, on left bank 1,200 ft upstream from mouth and 6 mi southeast of Prospect.

DRAINAGE AREA.--26 mi², approximately.

PERIOD OF RECORD.--September 1931 to October 1949.

GAGE.--Staff gage. Elevation of gage is 3,400 ft, from river-profile map.

REMARKS.--No diversion or regulation upstream from station.

AVERAGE DISCHARGE.--18 years (water years 1932-49), 42.8 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 500 ft³/s Feb. 13, 1945, gage not read, computed on basis of records for South and Middle Forks Rogue River near Prospect; minimum observed, 11 ft³/s Dec. 14, 1931, gage height, 0.46 ft.

STATISTICAL SUMMARIES FOR THE PERIOD 1934-1949

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	16	1935	31	1944	22	4.0	4.3
Nov	16	19	1940	66	1943	28	11	5.5
Dec	16	20	1936	107	1943	40	22	8.0
Jan	16	18	1937	126	1943	48	28	9.6
Feb	16	20	1937	84	1945	46	17	8.4
Mar	16	21	1937	81	1943	49	16	9.7
Apr	16	28	1941	115	1949	70	25	13.5
May	16	26	1934	148	1949	78	34	15.4
Jun	16	22	1934	112	1948	55	23	10.6
Jul	16	19	1934	53	1948	31	8.9	6.3
Aug	16	16	1934	35	1948	23	4.8	4.6
Sep	16	15	1934	32	1948	21	4.1	4.1
Ann		26	1934	69	1943	43	11	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	17	18	19	19	20	20	21	22	22	23	24	25	26	29	31	16
Nov	19	20	20	21	21	22	23	24	25	28	29	31	35	39	48	16
Dec	20	21	22	23	24	26	28	29	33	39	44	48	57	67	85	16
Jan	20	24	27	28	29	30	32	37	42	50	55	61	71	87	--	16
Feb	23	28	30	32	33	35	39	43	47	51	55	60	66	70	77	16
Mar	24	29	31	35	37	39	42	45	51	57	60	--	--	--	--	16
Apr	29	30	38	44	48	50	56	62	75	--	--	--	--	--	--	16
May	30	34	39	43	49	53	63	77	87	--	--	--	--	--	--	16
Jun	24	26	32	34	38	41	45	50	56	65	71	--	--	--	--	16
Jul	20	21	23	25	26	27	29	30	32	35	37	39	41	45	--	16
Aug	17	18	19	20	20	21	22	23	24	26	27	27	28	30	34	16
Sep	17	18	18	19	19	20	20	21	22	24	25	26	26	28	32	16
Ann	18	20	21	22	23	24	28	31	38	47	51	59	69	83	101	

ROGUE RIVER BASIN

14333000 MIDDLE FORK ROGUE RIVER NEAR PROSPECT, OR

LOCATION.--Lat 42°44'05", long 122°24'05", in NE 1/4 NE 1/4 sec.1, T.33 S., R.3 E., Jackson County, Hydrologic Unit 17100307, on right bank 850 ft downstream from diversion dam and intake of Middle Fork power canal, and 4.5 mi southeast of Prospect.

DRAINAGE AREA.--56.5 mi².

PERIOD OF RECORD.--May 1925 to September 1955 (includes flow of Middle Fork power canal since completion Nov. 19, 1931).

GAGE.--Water-stage recorder. Datum of gage is 2,619 ft above National Geodetic Vertical Datum of 1929 (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.

REMARKS.--All records given herein include flow in Middle Fork power canal which diverts 850 ft upstream from station for hydroelectric power and returns water to the Rogue River above South Fork Rogue River; practically no storage upstream from diversion dam.

AVERAGE DISCHARGE.--30 years (water years 1926-55), 184 ft³/s, 133,200 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,120 ft³/s Nov. 23, 1953, from rating curve extended above 250 ft on basis of shape of previous rating curves; minimum daily, 72 ft³/s Aug. 24, to Sept. 5, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1933-1955

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	23	100	1943	191	1952	129	25	5.7
Nov	23	107	1940	270	1954	158	46	6.7
Dec	23	112	1945	359	1951	189	73	8.3
Jan	23	104	1937	352	1953	194	64	8.5
Feb	23	103	1937	451	1951	205	85	8.2
Mar	23	134	1933	259	1933	189	36	8.3
Apr	23	145	1933	357	1933	254	53	10.8
May	23	139	1933	443	1933	296	63	13.0
Jun	23	114	1933	460	1933	270	81	11.5
Jul	23	102	1933	263	1933	168	38	7.4
Aug	23	95	1933	184	1933	135	22	5.9
Sep	23	90	1933	168	1933	126	19	5.4
Ann		137	1934	250	1951	193	33	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	97	101	104	106	109	111	115	121	127	135	140	147	154	161	176	23
Nov	106	109	111	114	117	120	127	135	144	153	161	169	185	221	289	23
Dec	108	113	120	125	130	133	140	148	159	183	198	232	261	300	386	23
Jan	112	122	126	130	134	137	146	164	180	202	215	230	251	285	362	23
Feb	112	124	133	137	142	148	160	172	190	211	224	243	270	307	356	23
Mar	128	133	137	141	152	159	171	184	192	205	215	222	236	260	295	23
Apr	151	170	179	186	192	200	219	242	269	291	305	319	335	356	392	23
May	165	196	214	225	240	250	271	291	316	336	347	359	375	397	433	23
Jun	121	157	176	194	210	222	239	258	279	309	323	343	365	393	439	23
Jul	107	116	130	135	140	144	154	161	170	179	185	195	208	226	267	23
Aug	99	106	112	117	120	121	127	133	139	146	152	156	159	163	174	23
Sep	98	102	107	109	112	114	118	125	129	135	138	142	147	155	166	23
Ann	104	112	118	124	129	134	145	161	180	210	229	253	282	315	367	

ROGUE RIVER BASIN

14333500 RED BLANKET CREEK NEAR PROSPECT, OR

LOCATION.--Lat 42°46'40", long 122°25'35", in NW 1/4 NE 1/4 sec.23, T.32 S., R.3 E., Jackson County, Hydrologic Unit 17100307, on right bank 1.8 mi downstream from Lick Creek, 3.7 mi northeast of Prospect, and at mile 4.8.

DRAINAGE AREA.--45.5 mi².

PERIOD OF RECORD.--May 1925 to September 1981.

GAGE.--Water-stage recorder. Elevation of gage is 2,780 ft, from river-profile map. Prior to Sept. 7, 1949, nonrecording gage at several sites within 2.5 mi of present site at various datums.

REMARKS.--No regulation. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--56 years (water years 1926-81), 115 ft³/s, 83,320 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,190 ft³/s Dec. 22, 1964, gage height, 7.85 ft, from rating curve extended above 1,500 ft³/s; minimum observed, 34 ft³/s Sept. 3, 4, 25, Oct. 9, 16, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1925-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	49	47	1981	117	1951	70	16	5.0
Nov	51	50	1937	207	1943	102	38	7.1
Dec	50	54	1937	482	1965	132	78	9.5
Jan	49	48	1937	279	1956	133	57	9.6
Feb	49	54	1937	265	1958	130	44	8.5
Mar	48	72	1977	354	1972	127	48	9.1
Apr	48	74	1968	227	1952	146	38	10.2
May	48	75	1934	285	1949	178	50	12.8
Jun	48	58	1934	274	1974	164	60	11.4
Jul	48	49	1934	198	1953	98	33	7.1
Aug	48	42	1934	117	1953	74	19	5.3
Sep	48	40	1934	97	1958	66	14	4.6
Ann		71	1977	177	1943	118	28	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	48	52	53	55	57	59	62	66	71	77	80	83	86	91	100	49
Nov	53	58	60	63	66	69	75	80	87	99	108	120	135	164	218	51
Dec	59	64	68	72	75	79	87	96	112	131	145	165	183	209	281	50
Jan	62	69	74	79	83	86	95	105	118	137	148	164	183	217	284	49
Feb	67	78	82	87	91	96	105	114	126	141	150	161	173	191	241	49
Mar	76	80	85	91	96	100	107	114	123	135	142	149	161	188	223	48
Apr	83	91	97	103	109	115	126	138	150	168	177	185	197	215	239	48
May	91	107	118	127	134	142	159	173	187	204	215	227	243	261	289	48
Jun	71	88	94	101	108	116	137	156	176	198	211	223	239	261	288	48
Jul	54	60	66	71	74	77	83	89	97	109	117	125	136	148	177	48
Aug	48	52	56	58	60	62	66	70	76	83	86	93	100	105	112	48
Sep	45	48	52	54	56	58	61	64	68	73	77	81	86	91	96	48
Ann	53	58	63	68	72	77	86	97	111	130	144	159	178	202	243	

UPPER ROGUE RIVER BASIN

14334700 SOUTH FORK ROGUE RIVER, SOUTH OF PROSPECT, OR

LOCATION.--Lat 42°42'45", long 122°30'20", in NW 1/4 SE 1/4 sec.7, T.33 S., R.3 E., Jackson County, Hydrologic Unit 17100307, on right bank 200 ft upstream from unnamed tributary, 0.6 mi upstream from Smith Creek, 1.2 mi downstream from Beaver Creek, 2.8 mi southwest of Prospect, and at mile 2.4.

DRAINAGE AREA.--246 mi².

PERIOD OF RECORD.--October 1968 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 2,030 ft, from topographic map.

REMARKS.--Some regulation by South Fork canal dam upstream. Power diversions upstream from station from South Fork Rogue River, Middle Fork Rogue River, and Red Blanket Creek divert water to Rogue River via Main Canal. During summer base flow all of streamflow is diverted for power except that for fish life. Base flow at station is principally from springs downstream from power diversions.

AVERAGE DISCHARGE.--19 years, 396 ft³/s, 286,900 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,880 ft³/s Mar. 3, 1972, gage height, 12.71 ft, from floodmark; minimum discharge, 54 ft³/s Sept. 24-30, 1970, but may have been lower during period of no record Sept. 24-30, 1970, Aug. 16-19, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1890, 20.1 ft, Dec. 22, 1964, from floodmarks at gage, discharge, 28,500 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1969-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	64	1969	251	1985	133	56	3.0
Nov	19	69	1970	761	1974	274	178	5.9
Dec	19	86	1977	1330	1982	488	388	10.9
Jan	19	85	1977	1140	1971	548	328	12.2
Feb	19	80	1977	1330	1986	537	333	10.9
Mar	19	99	1977	2240	1972	588	474	13.1
Apr	19	133	1977	878	1974	517	225	11.2
May	18	253	1977	1050	1969	641	267	14.3
Jun	18	150	1973	1040	1984	506	305	10.9
Jul	18	70	1977	479	1984	218	137	4.9
Aug	18	60	1970	257	1984	131	59	2.9
Sep	19	46	1972	214	1984	121	52	2.6
Ann		114	1977	641	1984	380	157	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	61	64	69	73	82	87	101	113	124	140	151	167	200	228	293	19
Nov	68	81	89	95	103	112	132	159	196	258	318	398	466	577	835	19
Dec	86	104	119	133	148	168	232	314	416	557	641	734	850	1030	1430	19
Jan	89	106	131	157	209	237	300	395	466	559	619	706	829	1040	1650	19
Feb	91	171	202	228	255	291	348	407	482	571	624	693	786	907	1420	19
Mar	122	175	226	257	283	305	363	424	504	612	681	771	898	1110	1620	19
Apr	162	202	243	272	306	343	416	489	557	635	681	729	780	861	972	19
May	206	261	315	350	380	429	520	622	701	784	847	910	971	1090	1220	18
Jun	116	136	168	197	223	248	316	438	559	674	738	821	890	959	1100	18
Jul	70	79	87	93	98	104	122	151	195	260	308	347	393	460	558	18
Aug	59	63	66	72	81	88	102	115	135	155	165	180	196	218	249	18
Sep	50	60	62	64	68	76	96	114	126	138	147	173	196	220	239	19
Ann	67	83	95	108	122	139	189	251	339	450	520	600	694	821	1030	

UPPER ROGUE RIVER BASIN

14335000 ROGUE RIVER BELOW SOUTH FORK ROGUE RIVER, NEAR PROSPECT, OR

LOCATION.--Lat 42°42'00", long 122°35'40", in SW 1/4 NW 1/4 sec.16, T.33 S., R.2 E., Jackson County, Hydrologic Unit 17100307, on left bank 130 ft upstream from highway bridge, 0.5 mi downstream from Cascade Gorge, 3.1 mi downstream from South Fork Rogue River, 6.6 mi southwest of Prospect, and at mile 160.4 (river-profile survey).

DRAINAGE AREA.--650 mi².

PERIOD OF RECORD.--October 1928 to September 1965. Prior to May 1929 monthly discharge only, published in WSP 1318.

GAGE.--Staff gage. Datum of gage is 1,707.57 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to June 23, 1961, water-stage recorder at sites 195 ft downstream; prior to Aug. 31, 1957, water-stage recorder at datum 0.69 ft higher and Aug. 31, 1957 to June 22, 1961, water-stage recorder at datum 0.31 ft lower.

REMARKS.--Considerable diurnal fluctuation caused by powerplant 5.5 mi upstream from station. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--37 years, 1,799 ft³/s, 1,302,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 55,000 ft³/s Dec. 22, 1964, gage height, 23.0 ft, from floodmark, from rating curve extended above 18,000 ft³/s by logarithmic plotting; minimum since intake was lowered Aug. 18, 1934, 493 ft³/s Sept. 1, 1934 (prior to Aug. 18, 1934, minimum not determined).

STATISTICAL SUMMARIES FOR THE PERIOD 1929-1965

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	37	680	1932	1900	1951	1060	255	5.0
Nov	37	717	1930	2720	1951	1400	509	6.4
Dec	37	782	1932	7360	1965	2010	1320	9.5
Jan	37	809	1937	4450	1965	1920	938	9.1
Feb	37	854	1931	4790	1958	2110	907	9.1
Mar	37	1300	1937	3950	1957	2050	565	9.7
Apr	37	1370	1930	3830	1952	2550	583	11.6
May	37	1130	1934	4290	1952	2820	826	13.3
Jun	37	838	1931	4800	1933	2260	841	10.3
Jul	37	692	1931	2290	1953	1350	346	6.4
Aug	37	590	1931	1530	1952	1080	212	5.1
Sep	37	610	1931	1390	1952	1000	177	4.6
Ann		929	1931	2600	1956	1800	422	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	733	777	816	839	862	887	943	991	1050	1120	1160	1220	1280	1330	1470	37
Nov	734	807	864	912	947	982	1060	1140	1240	1380	1500	1660	1860	2190	2980	37
Dec	804	892	954	1020	1090	1160	1260	1390	1590	1920	2180	2520	2850	3490	4740	37
Jan	860	967	1040	1110	1180	1230	1350	1520	1730	2050	2250	2470	2740	3160	4090	37
Feb	864	984	1150	1270	1360	1460	1620	1810	2060	2340	2510	2720	2970	3390	4580	37
Mar	1210	1300	1380	1440	1520	1590	1740	1900	2040	2220	2340	2470	2650	2990	3520	37
Apr	1410	1540	1720	1840	1940	2030	2230	2450	2680	2940	3070	3230	3410	3660	4020	37
May	1250	1580	1830	2020	2150	2300	2600	2790	3030	3250	3370	3540	3800	4110	4510	37
Jun	958	1170	1370	1500	1590	1680	1870	2090	2330	2630	2820	3010	3190	3460	3990	37
Jul	795	903	1020	1070	1110	1150	1220	1300	1370	1460	1520	1600	1690	1830	2060	37
Aug	728	806	866	921	955	973	1020	1060	1110	1180	1220	1270	1310	1360	1470	37
Sep	713	775	821	857	885	902	939	979	1040	1090	1120	1170	1210	1260	1330	37
Ann	799	877	943	1000	1060	1130	1260	1430	1690	2020	2240	2490	2800	3150	3740	

UPPER ROGUE RIVER BASIN

14335500 SOUTH FORK BIG BUTTE CREEK NEAR BUTTE FALLS, OR

LOCATION.--Lat 42°32'25", long 122°33'15", in NE 1/4 SW 1/4 sec.11, T.35 S., R.2 E., Jackson County, Hydrologic Unit 17100307, on right bank 10 ft downstream from Ginger Creek, 0.6 mi east of town of Butte Falls, and at mile 14.0.

DRAINAGE AREA.--138 mi².

PERIOD OF RECORD.--September 1910 to October 1911 (published as "at Butte Falls"), August to October 1915, October 1917 to September 1922, March 1925 to 1987. Monthly discharge only August, September 1915, published in WSP 1318.

REVISED RECORDS.--WSP 1288: 1911, 1918-19, 1921-22, 1929. WSP 1318: 1918-19. WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Concrete control since Oct. 1, 1968. Elevation of gage is 2,360 ft, from river-profile map. Sept. 21, 1910, to Sept. 30, 1922, nonrecording gage at site 300 ft upstream at different datum.

REMARKS.--Flow slightly regulated since 1952 by Willow Creek Reservoir, capacity, 7,320 acre-ft. Diversions for irrigation upstream from station and for municipal water supply for Medford (since 1927) and Butte Falls.

AVERAGE DISCHARGE.--68 years (water years 1911, 1918-22, 1926-87), 154 ft³/s, 111,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft³/s Dec. 22, 1964, gage height, 7.65 ft, from rating curve extended above 1,600 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 29 ft³/s Sept. 26, 1981.

STATISTICAL SUMMARIES FOR THE PERIOD 1928-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	60	43	1981	127	1951	77	18	4.4
Nov	60	48	1981	218	1954	100	34	5.4
Dec	60	59	1977	1070	1965	182	161	10.2
Jan	60	53	1981	785	1965	208	145	11.7
Feb	60	58	1977	532	1958	224	116	11.5
Mar	60	66	1977	740	1972	240	123	13.5
Apr	60	73	1977	435	1938	229	88	12.5
May	60	70	1968	333	1933	182	67	10.2
Jun	60	53	1931	287	1953	125	47	6.8
Jul	60	51	1931	134	1943	89	19	5.0
Aug	60	46	1931	127	1956	80	16	4.5
Sep	60	45	1981	108	1984	77	14	4.2
Ann		64	1981	297	1965	151	50	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	46	51	59	63	66	68	72	75	80	86	90	93	97	102	109	60
Nov	52	61	66	69	72	75	81	87	94	104	111	120	134	154	191	60
Dec	63	71	75	80	85	90	100	112	132	162	184	216	260	335	516	60
Jan	64	77	87	93	99	106	121	141	167	209	232	260	309	410	608	60
Feb	77	90	100	111	122	131	150	173	205	255	284	317	352	405	530	60
Mar	82	104	117	132	144	155	181	205	230	268	292	317	352	404	520	60
Apr	81	97	117	132	145	168	198	225	252	276	289	308	328	353	403	60
May	80	92	100	111	121	132	153	172	190	212	225	242	265	296	336	60
Jun	66	74	78	82	87	93	103	113	124	138	148	159	172	189	227	60
Jul	60	64	68	72	75	78	83	88	93	99	102	107	112	118	125	60
Aug	55	62	64	66	69	71	75	79	84	89	92	94	98	102	109	60
Sep	55	59	62	64	66	69	73	77	81	86	89	92	95	99	103	60
Ann	59	65	70	74	79	83	93	105	124	159	182	209	242	290	366	

UPPER ROGUE RIVER BASIN

14337500 BIG BUTTE CREEK NEAR MCLEOD, OR

LOCATION.--Lat 42°39'05", long 122°41'25", in NE 1/4 NW 1/4 sec.3, T.34 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 225 ft upstream from county road bridge, 0.9 mi south of McLeod, and at mile 0.64.

DRAINAGE AREA.--245 mi².

PERIOD OF RECORD.--October 1945 to September 1957. October 1967 to 1987.

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,525.95 ft above National Geodetic Vertical Datum of 1929. Oct. 9, 1945, to Sept. 30, 1957, nonrecording gage at site 260 ft downstream at datum 0.53 ft higher.

REMARKS.--Slight regulation by fish hatchery 600 ft upstream from station. Several diversions in the vicinity of Butte Falls, the two largest being the city of Medford diversion and Eagle Point Irrigation District Canal.

AVERAGE DISCHARGE.--32 years, 278 ft³/s, 201,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,950 ft³/s Dec. 22, 1955, gage height, 12.75 ft, site and datum then in use, from rating curve extended above 3,300 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 6.4 ft³/s June 23, 24, 1977.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 18.6 ft, present site, from floodmark by local resident, discharge, 16,800 ft³/s, from rating curve, at former site, extended above 9,000 ft³/s and field estimate of overflow.

STATISTICAL SUMMARIES FOR THE PERIOD 1946-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	32	64	1982	330	1951	133	51	4.1
Nov	32	66	1968	535	1974	213	127	6.3
Dec	32	58	1977	1330	1956	438	329	13.4
Jan	32	64	1977	1330	1956	505	334	15.4
Feb	32	91	1977	1120	1982	525	267	14.6
Mar	32	126	1968	1360	1972	528	293	16.1
Apr	32	73	1977	723	1974	393	182	11.6
May	32	57	1968	492	1953	245	120	7.5
Jun	32	43	1968	450	1953	140	81	4.1
Jul	32	36	1968	148	1948	84	28	2.6
Aug	32	43	1977	121	1956	70	20	2.2
Sep	32	44	1968	106	1948	73	16	2.2
Ann		80	1977	501	1956	278	112	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	54	60	65	76	85	100	120	134	142	149	155	160	166	176	201	32
Nov	60	67	72	77	86	99	130	152	171	210	235	269	325	431	618	32
Dec	66	79	99	122	152	168	209	269	347	453	520	624	733	937	1440	32
Jan	72	93	131	168	184	202	251	318	398	509	595	706	849	1090	1620	32
Feb	126	164	189	211	234	261	325	396	487	601	666	741	866	1020	1410	32
Mar	152	187	215	238	266	298	374	439	511	610	663	718	774	919	1190	32
Apr	80	118	149	179	212	269	336	387	436	487	513	542	579	644	761	32
May	70	87	112	128	140	154	187	217	243	277	309	347	385	435	517	32
Jun	53	62	68	74	80	88	107	123	137	155	166	180	204	232	309	32
Jul	41	47	52	56	60	64	73	82	89	98	103	108	115	123	147	32
Aug	43	45	47	49	52	56	64	70	75	79	80	83	88	97	108	32
Sep	42	45	47	51	58	60	65	72	77	82	84	86	92	98	123	32
Ann	49	59	67	73	81	90	121	156	203	285	348	416	497	622	850	

UPPER ROGUE RIVER BASIN

14337600 ROGUE RIVER NEAR MCLEOD, OR

LOCATION.--Lat 42°39'20", long 122°42'50", in SW 1/4 sec.33, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on left bank at Obstatine J Ranch, 1.3 mi downstream from Big Butte Creek, 1.6 mi southwest of McLeod, and at mile 154.0.

DRAINAGE AREA.--938 mi².

PERIOD OF RECORD.--October 1965 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,489.08 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Flow regulated since February 1977 by Lost Creek Lake (station 14335040). Diversions for irrigation upstream from station; most of low flow of Big Butte Creek is diverted near Butte Falls.

AVERAGE DISCHARGE.--22 years, 2,166 ft³/s, 1,569,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,000 ft³/s Mar. 3, 1972, gage height, 12.24 ft; minimum discharge, 468 ft³/s Feb. 18, 1977, result of closure of Lost Creek Dam, minimum prior to that time, 604 ft³/s Sept. 5, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1928, 20.35 ft Dec. 22, 1964, from floodmarks, discharge, 74,300 ft³/s, from slope-area measurement of peak flow.

STATISTICAL SUMMARIES FOR THE PERIOD 1966-1976 (BEFORE REGULATION AT LOST CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	917	1969	1510	1976	1230	180	4.6
Nov	11	1040	1968	3930	1974	1850	836	6.6
Dec	11	1130	1968	4290	1974	2330	953	8.6
Jan	11	1430	1968	5290	1971	3430	1470	12.7
Feb	11	1520	1966	4590	1972	2720	834	9.2
Mar	11	1940	1968	8570	1972	3300	1930	12.2
Apr	11	1600	1968	4240	1974	2860	884	10.3
May	11	1570	1968	4500	1971	3270	946	12.1
Jun	11	1160	1968	4030	1975	2560	1040	9.2
Jul	11	903	1968	2200	1971	1580	445	5.9
Aug	11	887	1968	1620	1976	1260	274	4.7
Sep	11	843	1968	1470	1972	1160	217	4.2
Ann		1380	1968	3340	1972	2290	652	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	901	972	1000	1050	1070	1090	1150	1240	1290	1350	1380	1400	1420	1460	1550	11
Nov	1010	1050	1080	1120	1180	1250	1340	1400	1540	1710	1820	2030	2510	3200	4520	11
Dec	1040	1120	1220	1290	1370	1470	1780	2070	2340	2650	2880	3150	3580	4150	4670	11
Jan	1330	1480	1560	1670	1780	1900	2120	2420	2760	3320	3690	4120	4770	6430	9080	11
Feb	1530	1640	1710	1790	1880	1980	2200	2440	2770	3030	3150	3330	3550	3910	4910	11
Mar	1620	1760	1860	1950	2040	2130	2330	2530	2800	3270	3630	4020	4520	5870	7750	11
Apr	1610	1740	1870	1950	2010	2100	2570	2830	3030	3280	3510	3650	3830	4070	4460	11
May	1590	1790	2080	2210	2340	2510	2950	3320	3610	3900	4060	4270	4460	4660	5080	11
Jun	1140	1250	1370	1460	1580	1760	2120	2460	2680	3070	3220	3510	3760	4210	4430	11
Jul	903	1050	1100	1140	1170	1240	1350	1510	1710	1820	1870	1960	2090	2250	2510	11
Aug	902	960	982	999	1030	1040	1080	1150	1430	1480	1510	1530	1570	1610	1660	11
Sep	840	916	941	959	975	989	1040	1100	1290	1330	1350	1370	1400	1460	1510	11
Ann	966	1030	1090	1200	1310	1390	1560	1810	2120	2590	2880	3210	3570	4060	4860	

UPPER ROGUE RIVER BASIN

14337600 ROGUE RIVER NEAR MCLEOD, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1978-1987 (AFTER REGULATION AT LOST CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	1090	1982	1910	1984	1380	296	5.4
Nov	10	1140	1979	3540	1985	1920	720	7.3
Dec	10	1180	1979	5080	1982	2720	1390	10.7
Jan	10	1110	1981	3060	1980	2010	706	7.9
Feb	10	849	1981	3960	1982	2050	1200	7.4
Mar	10	851	1981	3560	1986	2140	996	8.4
Apr	10	1240	1981	3680	1983	2450	866	9.4
May	10	1750	1981	4020	1984	2640	793	10.4
Jun	10	1800	1987	3750	1984	2310	634	8.8
Jul	10	2060	1980	3020	1984	2310	292	9.1
Aug	10	1870	1978	2920	1984	2200	318	8.7
Sep	10	1290	1980	2190	1983	1700	285	6.5
Ann		1490	1981	3110	1984	2150	541	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1080	1100	1120	1130	1170	1200	1240	1290	1370	1430	1450	1830	1880	1910	1930	10
Nov	1050	1080	1110	1140	1170	1200	1400	1700	2050	2180	2360	2560	2820	3070	3400	10
Dec	1160	1270	1360	1410	1460	1510	1660	2060	2480	2980	3230	3670	4270	5330	7210	10
Jan	1040	1090	1120	1160	1230	1320	1460	1750	1960	2160	2340	2550	2820	3120	3820	10
Feb	809	881	911	943	977	1020	1130	1230	1360	1910	2350	2890	3250	4520	6970	10
Mar	842	885	1030	1090	1150	1330	1510	1840	2270	2530	2760	2880	3390	3960	4670	10
Apr	1070	1240	1340	1390	1550	1720	2070	2320	2600	2770	2950	3330	3610	3850	4190	10
May	1460	1600	1720	1820	1910	2040	2220	2460	2680	2960	3230	3380	3570	4020	4700	10
Jun	1580	1710	1830	1850	1880	1900	1950	2020	2220	2450	2660	2790	2970	3190	3620	10
Jul	1980	2040	2060	2070	2090	2130	2180	2220	2260	2360	2480	2510	2580	2940	3020	10
Aug	1680	1710	1910	1940	1970	2050	2140	2200	2230	2260	2280	2460	2610	2680	2910	10
Sep	1200	1220	1260	1290	1340	1380	1420	1550	1710	1850	1990	2190	2320	2490	2630	10
Ann	1040	1130	1210	1310	1410	1490	1810	2020	2180	2410	2560	2750	3010	3400	4200	

UPPER ROGUE RIVER BASIN

14337800 ELK CREEK NEAR CASCADE GORGE, OR

LOCATION.--Lat 42°46'25", long 122°40'15", in NW 1/4 sec.23, T.32 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 0.1 mi downstream from Sugarpine Creek, 6.5 mi northwest of town of Cascade Gorge, and at mile 10.7.

DRAINAGE AREA.--78.8 mi².

PERIOD OF RECORD.--August 1973 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,813.83 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--No regulation. Many diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--14 years, 151 ft³/s, 26.02 in/yr, 109,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,780 ft³/s Jan. 15, 1974, gage height, 8.9 ft, from floodmark; minimum daily discharge, 0.72 ft³/s Aug. 24, 1973.

STATISTICAL SUMMARIES FOR THE PERIOD 1974-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	3.9	1975	39	1980	16	10.0	0.9
Nov	14	9.6	1977	657	1974	168	184	9.1
Dec	14	8.0	1977	828	1982	337	270	18.9
Jan	14	11	1977	802	1974	293	208	16.5
Feb	14	11	1977	714	1986	351	204	18.0
Mar	14	68	1977	557	1974	254	150	14.3
Apr	14	68	1977	339	1974	206	101	11.2
May	14	28	1987	299	1975	126	75	7.1
Jun	14	9.6	1987	112	1984	41	28	2.3
Jul	14	6.5	1977	19	1983	12	3.9	0.7
Aug	14	3.3	1977	16	1976	5.9	3.3	0.3
Sep	14	2.4	1974	33	1986	8.1	8.2	0.4
Ann		27	1977	292	1974	151	69	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.0	3.5	4.0	4.7	5.4	5.4	6.2	8.0	9.1	13	16	20	26	41	63	14
Nov	7.4	8.3	10	14	17	20	29	43	80	134	194	247	330	473	729	14
Dec	7.8	41	56	63	77	88	121	189	290	386	444	516	611	761	1110	14
Jan	13	30	47	68	83	105	143	189	229	278	312	368	449	561	905	14
Feb	10	52	67	99	113	131	170	221	287	376	415	475	571	747	1170	14
Mar	63	81	91	99	108	118	142	181	229	276	306	342	386	459	640	14
Apr	52	66	71	80	89	104	130	166	206	243	265	290	322	384	526	14
May	28	39	48	54	60	67	83	99	116	140	159	179	202	238	347	14
Jun	9.7	15	18	20	22	23	27	32	37	42	46	52	61	76	118	14
Jul	4.5	5.4	5.9	6.5	7.2	7.9	8.7	12	13	15	16	18	20	22	27	14
Aug	2.4	3.0	3.3	3.3	3.6	3.6	4.0	4.5	5.0	5.5	6.1	6.8	7.5	8.3	13	14
Sep	2.1	2.1	2.5	2.5	2.9	2.9	3.4	3.9	5.3	5.3	6.8	7.5	9.0	12	18	14
Ann	2.7	4.6	5.6	6.8	9.2	12	26	54	92	143	185	231	292	385	571	

UPPER ROGUE RIVER BASIN

14337870 WEST BRANCH ELK CREEK NEAR TRAIL, OR

LOCATION.--Lat 42°42'40", long 122°44'55", in SW 1/4 sec.7, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on Bureau of Land Management land, on left bank 300 ft upstream from Spot Creek and 5.3 mi northeast of Trail.

DRAINAGE AREA.--14.2 mi².

PERIOD OF RECORD.--October 1973 to September 1976, October 1977 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,773.24 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark).

REMARKS.--No regulation or diversions upstream from station.

AVERAGE DISCHARGE.--13 years, 22.9 ft³/s, 21.90 in/yr, 16,590 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,410 ft³/s Jan. 15, 1974, gage height, 5.30 ft, from rating curve extended above 600 ft³/s on basis of slope-area measurement of peak flow; minimum, 0.26 ft³/s Sept. 16, 1981.

STATISTICAL SUMMARIES FOR THE PERIOD 1974-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	13	1.3	1981	7.3	1980	4.1	1.9	1.5
Nov	13	3.6	1979	102	1974	26	28	9.6
Dec	13	7.6	1987	104	1982	48	32	18.0
Jan	13	6.7	1981	140	1974	45	35	16.7
Feb	13	20	1981	100	1983	58	26	19.6
Mar	13	11	1981	124	1974	42	32	15.7
Apr	13	5.0	1986	52	1974	28	16	10.3
May	13	3.1	1987	28	1979	11	7.3	4.3
Jun	13	1.3	1987	11	1984	4.9	2.6	1.7
Jul	13	1.3	1981	4.9	1983	2.6	1.0	1.0
Aug	13	0.6	1981	4.3	1976	2.0	1.0	0.7
Sep	13	0.7	1981	4.4	1978	2.3	1.3	0.8
Ann		8.1	1981	49	1974	22	10	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.9	1.0	1.3	1.3	1.6	1.8	2.1	2.3	2.9	3.7	4.1	4.6	5.8	9.2	15	13
Nov	1.8	2.6	3.1	3.1	3.7	4.4	6.1	9.2	14	21	27	35	51	73	104	13
Dec	4.2	4.9	6.8	8.4	11	14	20	28	40	52	63	75	89	109	164	13
Jan	4.1	4.8	6.1	9.4	12	14	18	23	30	39	45	56	68	90	162	13
Feb	8.0	9.5	12	14	17	19	27	35	44	59	67	80	103	133	198	13
Mar	9.0	10	12	13	14	16	19	25	31	41	47	56	70	88	135	13
Apr	4.4	5.6	6.3	7.1	9.1	12	17	20	25	32	35	40	48	64	83	13
May	2.8	3.5	4.5	4.5	4.5	5.2	5.8	7.8	9.3	12	14	15	18	23	33	13
Jun	1.5	1.7	2.1	2.3	2.9	3.2	3.6	4.1	4.5	5.1	5.7	5.7	6.4	7.1	10	13
Jul	1.0	1.3	1.4	1.5	1.5	1.8	2.1	2.3	2.5	2.9	3.1	3.4	3.7	4.3	4.6	13
Aug	0.6	0.7	0.8	1.0	1.2	1.3	1.5	1.7	2.0	2.2	2.4	2.6	2.9	3.1	4.1	13
Sep	0.5	0.8	0.9	0.9	1.1	1.3	1.5	1.7	2.1	2.4	2.4	2.8	3.1	3.5	4.5	13
Ann	0.9	1.4	1.8	1.8	2.3	2.9	4.6	6.4	11	18	23	31	40	57	93	

UPPER ROGUE RIVER BASIN

14338000 ELK CREEK NEAR TRAIL, OR

LOCATION.--Lat 42°39'50", long 122°44'50", in SW 1/4 sec.30, T.33 S., R.1 E., Jackson County, Hydrologic Unit 17100307, on right bank 3.3 mi northeast of Trail and at mile 0.4.

DRAINAGE AREA.--133 mi².

PERIOD OF RECORD.--October 1945 to 1987. Prior to March 1946 monthly discharge only, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 1,456.56 ft above National Geodetic Vertical Datum of 1929. Prior to July 5, 1946, nonrecording gage at various sites within 1.0 mi of present site at different datums. July 5, 1946, to June 22, 1950, nonrecording gage, and June 23, 1950, to May 23, 1954, water-stage recorder, at site 0.3 mi upstream at datum 12.14 ft higher.

REMARKS.--Low flow regulation resulting from construction of Elk Creek Dam 1.3 mi upstream. Diversions for irrigation and dam construction upstream from station.

AVERAGE DISCHARGE.--42 years, 230 ft³/s, 166,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,200 ft³/s Dec. 22, 1964, gage height, 18.84 ft, from rating curve extended above 4,700 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.24 ft³/s Sept. 30, 1987, result of dam construction 1.3 mi upstream.

STATISTICAL SUMMARIES FOR THE PERIOD 1947-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	41	3.2	1953	404	1951	36	64	1.4
Nov	41	9.1	1953	1010	1974	203	203	7.3
Dec	41	13	1977	1850	1965	465	407	17.2
Jan	41	19	1977	1280	1965	536	376	19.9
Feb	41	23	1977	1130	1958	542	264	18.3
Mar	41	121	1977	1070	1972	435	241	16.1
Apr	41	65	1968	565	1956	295	129	10.6
May	41	33	1987	358	1975	167	90	6.2
Jun	41	11	1987	254	1953	57	43	2.0
Jul	41	3.7	1973	36	1953	14	7.9	0.6
Aug	41	1.4	1973	25	1976	6.8	4.5	0.3
Sep	41	1.5	1951	43	1986	8.1	7.0	0.3
Ann		42	1977	438	1974	229	90	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3.2	4.6	5.4	6.5	7.1	8.3	10	13	16	20	24	29	37	51	91	41
Nov	10	13	15	18	21	24	36	51	85	154	205	270	375	541	889	41
Dec	18	32	48	64	82	100	147	220	325	472	558	651	836	1090	1650	41
Jan	39	55	70	94	121	147	212	289	372	487	583	742	935	1250	1910	41
Feb	80	119	152	181	205	229	287	359	446	561	635	722	892	1150	1730	41
Mar	107	127	144	163	182	203	252	312	390	483	541	626	735	875	1110	41
Apr	73	88	105	127	151	174	211	251	299	351	378	413	459	530	667	41
May	36	48	57	68	79	92	112	134	158	187	207	231	268	313	416	41
Jun	14	17	20	23	26	29	35	42	50	61	68	78	90	108	148	41
Jul	3.3	4.3	4.9	5.5	6.3	7.8	9.8	13	15	17	19	22	25	30	38	41
Aug	1.7	2.2	2.5	2.9	3.2	3.7	4.2	4.8	6.1	7.0	8.5	9.4	11	13	16	41
Sep	1.8	2.1	2.6	3.0	3.0	3.6	4.3	5.6	6.6	7.8	8.7	9.3	11	14	19	41
Ann	3.5	4.9	6.4	9.0	12	17	34	72	133	213	268	339	434	582	907	

UPPER ROGUE RIVER BASIN

14339000 ROGUE RIVER AT DODGE BRIDGE, NEAR EAGLE POINT, OR

LOCATION.--Lat 42°31'30", long 122°50'30", in SE 1/4 sec.17, T.35 S., R.1 W., Jackson County, Hydrologic Unit 17100307, on right bank 50 ft upstream from Dodge Bridge, 0.7 mi downstream from Reese Creek, 4.3 mi northwest of Eagle Point, and at mile 138.61.

DRAINAGE AREA.--1,215 mi².

PERIOD OF RECORD.--October 1938 to 1987.

REVISED RECORDS.--WSP 1094: 1942(M), 1943, 1945(M), 1946. WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,271.39 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 21, 1938, nonrecording gage, Dec. 21, 1938, to Aug. 15, 1968, water-stage recorder, at datum 2.27 ft higher, Aug. 16, 1968, to Sept. 30, 1976, water-stage recorder, at datum 1.00 ft higher.

REMARKS.--Flow regulated since February 1977 by Lost Creek Lake (station 14335040). Diversions for irrigation upstream from station; most of low flow of Big Butte Creek (station 14337500) is diverted near Butte Falls.

AVERAGE DISCHARGE.--49 years, 2,615 ft³/s, 1,895,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 87,600 ft³/s Dec. 22, 1964, gage height, 12.78 ft, datum then in use, from rating curve extended above 23,000 ft³/s; minimum discharge, 567 ft³/s Feb. 18, 1977, result of closure of Lost Creek dam, minimum prior to that time, 611 ft³/s Aug. 6, 14, 29, Sept. 9, 1940.

STATISTICAL SUMMARIES FOR THE PERIOD 1939-1976 (PRIOR TO CONSTRUCTION OF LOST CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	38	934	1943	3100	1951	1350	399	4.3
Nov	38	1010	1940	5720	1974	2150	1010	6.6
Dec	38	1160	1960	11300	1965	3480	2230	11.0
Jan	38	1490	1960	8150	1974	4020	2120	12.7
Feb	38	1800	1955	8380	1958	3920	1380	11.3
Mar	38	1780	1941	9610	1972	3680	1520	11.7
Apr	38	1690	1968	5220	1952	3480	833	10.7
May	38	1590	1968	5290	1956	3480	921	11.0
Jun	38	1200	1968	4530	1953	2630	881	8.1
Jul	38	928	1968	2430	1953	1560	382	4.9
Aug	38	888	1940	1710	1953	1250	244	4.0
Sep	38	853	1968	1530	1972	1180	189	3.6
Ann		1570.0	1968	4120	1974	2680	684	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	993	1020	1060	1090	1110	1170	1240	1310	1380	1430	1480	1550	1630	1870	--	38
Nov	1030	1090	1140	1200	1250	1300	1410	1530	1710	1960	2130	2440	2940	3740	5400	38
Dec	1150	1260	1370	1470	1570	1670	1900	2270	2820	3560	3970	4510	5310	6730	9240	38
Jan	1350	1490	1600	1710	1840	1980	2310	2720	3350	4030	4510	5190	6140	7660	11000	38
Feb	1770	1960	2100	2250	2400	2540	2910	3240	3640	4160	4480	4880	5460	6500	8750	38
Mar	1810	2020	2150	2300	2470	2620	2870	3170	3460	3830	4160	4520	5030	5880	7310	38
Apr	1870	2170	2390	2530	2710	2900	3170	3400	3660	3960	4120	4300	4510	4780	5280	38
May	1830	2180	2360	2520	2630	2760	3110	3410	3670	3980	4170	4390	4700	4990	5490	38
Jun	1340	1480	1600	1720	1820	1930	2170	2460	2700	3060	3280	3500	3750	4150	4560	38
Jul	995	1110	1160	1210	1250	1290	1380	1470	1570	1720	1800	1880	1990	2160	2410	38
Aug	910	967	1010	1040	1060	1090	1130	1200	1310	1400	1450	1500	1550	1630	1700	38
Sep	899	932	971	997	1020	1040	1090	1150	1220	1310	1340	1380	1410	1470	1510	38
Ann	996	1080	1160	1250	1340	1430	1650	2000	2480	3055	3370	3720	4120	4710	5940	

UPPER ROGUE RIVER BASIN

14339000 ROGUE RIVER AT DODGE BRIDGE, NEAR EAGLE POINT, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1978-1987 (AFTER COMPLETION OF LOST CREEK DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	1190	1982	1930	1983	1440	270	4.8
Nov	10	1240	1981	4930	1985	2350	1060	7.6
Dec	10	1430	1979	7980	1982	3750	2300	12.6
Jan	10	1260	1981	4750	1980	2670	1080	9.0
Feb	10	1290	1981	6050	1982	3190	1800	9.8
Mar	10	1030	1981	4390	1983	2710	1250	9.1
Apr	10	1340	1981	4210	1983	2840	1090	9.2
May	10	1730	1981	4330	1984	2790	895	9.4
Jun	10	1760	1981	3940	1984	2360	676	7.7
Jul	10	1990	1981	3150	1984	2340	324	7.8
Aug	10	1940	1978	3090	1984	2250	341	7.5
Sep	10	1290	1980	2200	1983	1760	285	5.7
Ann		1580	1981	3670	1984	2530	687	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1150	1190	1210	1230	1240	1250	1280	1350	1430	1490	1530	1820	1890	1910	1920	10
Nov	1080	1160	1210	1250	1280	1310	1520	1960	2210	2560	2860	3270	3550	4190	5600	10
Dec	1370	1470	1510	1560	1620	1690	2130	2590	3180	3810	4530	5440	6660	8440	9940	10
Jan	1100	1210	1280	1460	1550	1610	1820	2150	2530	2960	3150	3400	3810	4300	5600	10
Feb	967	1170	1260	1390	1450	1510	1670	1810	2110	3010	3960	4610	5420	8060	10800	10
Mar	1010	1130	1280	1370	1540	1690	1970	2290	2710	3060	3280	3670	4190	4900	5890	10
Apr	1250	1410	1490	1580	1730	1870	2300	2700	2890	3250	3560	3960	4220	4470	4980	10
May	1470	1620	1760	1870	1960	2120	2370	2590	2820	3140	3440	3620	3880	4270	5070	10
Jun	1580	1740	1790	1860	1900	1940	2000	2060	2230	2540	2710	2860	3040	3290	3730	10
Jul	1990	2010	2050	2070	2110	2160	2220	2260	2320	2400	2520	2550	2580	3020	3120	10
Aug	1730	1810	1980	2000	2020	2050	2140	2220	2280	2330	2360	2450	2570	2740	3070	10
Sep	1200	1220	1310	1370	1420	1450	1500	1590	1770	1880	2040	2230	2390	2540	2660	10
Ann	1180	1280	1400	1490	1600	1730	1940	2150	2340	2630	2880	3150	3540	4210	5460	

ROGUE RIVER BASIN

14339500 SOUTH FORK LITTLE BUTTE CREEK AT BIG ELK RANGER STATION, OR

LOCATION.--Lat 42°20'40", long 122°21'30", in NW 1/4 sec.21, T.37 S., R.4 E., Jackson County, Hydrologic Unit 17100307, 1.0 mi south of Big Elk ranger station, 2.5 mi upstream from Big Draw Creek, and 15 mi southeast of Lake Creek Post Office.

DRAINAGE AREA.--About 17 mi².

PERIOD OF RECORD.--October 1926 to September 1950.

GAGE.--Water-stage recorder. Elevation of gage is 4,660 ft, by barometer. Prior to Oct. 28, 1942, water-stage recorder 600 ft downstream at same datum.

REMARKS.--No diversion or regulation upstream from station.

COOPERATION.--Records for 1932-50, furnished by the Oregon Water Resources Department.

AVERAGE DISCHARGE.--24 years, 17.9 ft³/s, 12,970 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge recorded, 145 ft³/s May 25, 1942, gage height, 280 ft, from rating curve extended above 25 ft³/s; minimum recorded, 4 ft³/s July 8-15, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1927-1950

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	5.9	1927	12	1944	9.7	1.8	4.6
Nov	24	6.2	1930	13	1939	9.9	2.1	4.6
Dec	24	6.3	1934	16	1943	10	2.6	4.8
Jan	24	6.0	1929	17	1943	9.8	2.9	4.7
Feb	24	6.0	1931	21	1945	10	3.3	4.7
Mar	24	7.6	1931	33	1940	15	6.2	7.2
Apr	24	11	1931	62	1943	31	13	14.3
May	24	8.1	1931	87	1938	53	25	25.3
Jun	24	5.3	1931	77	1933	27	17	12.9
Jul	24	4.7	1931	20	1943	14	4.2	6.7
Aug	24	5.5	1931	16	1943	11	3.0	5.6
Sep	24	5.0	1931	14	1943	10	2.3	4.9
Ann		6.6	1931	25	1943	17	4.9	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	8.0	8.0	8.0	8.0	8.9	8.9	10	11	11	12	12	12	13	13	--	24
Nov	5.8	6.8	6.8	6.8	8.0	8.0	9.9	10	11	12	12	12	13	13	15	24
Dec	6.0	6.7	6.7	7.9	7.9	7.9	8.8	10	11	12	12	13	13	14	15	24
Jan	5.9	5.9	5.9	6.9	7.7	7.7	8.6	8.6	11	12	12	13	13	14	15	24
Feb	6.0	6.0	7.0	7.8	8.7	8.7	10	11	12	13	13	14	14	15	18	24
Mar	8.0	8.0	9.3	11	12	12	13	14	15	16	17	18	20	25	28	24
Apr	12	13	14	15	16	18	24	31	33	36	38	40	46	56	--	24
May	9.0	15	16	21	26	33	43	54	66	--	--	--	--	--	--	24
Jun	6.6	8.7	12	13	14	16	18	23	28	34	37	40	43	53	--	24
Jul	8.0	8.0	9.0	10	12	13	14	15	16	17	17	18	19	20	--	24
Aug	6.0	7.0	7.8	9.0	9.0	10	12	13	14	14	15	15	15	16	17	24
Sep	6.0	6.9	7.9	7.9	8.8	9.1	11	11	12	13	13	13	14	14	15	24
Ann	5.5	6.7	7.5	8.3	8.3	10	11	12	13	15	16	19	27	37	62	

UPPER ROGUE RIVER BASIN

14341500 SOUTH FORK LITTLE BUTTE CREEK NEAR LAKECREEK, OR

LOCATION.--Lat 42°24'30", long 122°36'00", in SE 1/4 sec.29, T.36 S., R.2 E., Jackson County, Hydrologic Unit 17100307, on left bank 0.5 mi upstream from intake of Rogue River Valley Canal, 1.4 mi southeast of Lakecreek, and at mile 18.1.

DRAINAGE AREA.--138 mi².

PERIOD OF RECORD.--April 1921 to September 1982.

GAGE.--Water-stage recorder. Elevation of gage is 1,725 ft, by barometer. Supplementary nonrecording gage at site 25 ft upstream used Jan. 12 to Sept. 6, 1965. Apr. 15 to June 17, 1921, nonrecording gage, and June 18, 1921, to Sept. 6, 1965, water-stage recorder at site 75 ft upstream at datum 4.97 ft higher.

REMARKS.--No regulation. Diversions for irrigation upstream from station; also, in December 1958 Dead Indian collection canal began diverting upstream from station from Code Creek and Dead Indian Creek and in December 1959 South Fork Little Butte collection canal began diverting upstream from station from South Fork Little Butte Creek, Daley Creek, and Beaver Dam Creek. These are transbasin diversions to Howard Prairie Reservoir in Klamath River basin, but eventually this water is diverted back to Rogue River basin for irrigation of lands in the Ashland-Medford area and power development enroute.

AVERAGE DISCHARGE.--61 years (water years 1922-82), 104 ft³/s, 75,350 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,660 ft³/s Dec. 2, 1962, gage height, 8.35 ft, site and datum then in use; minimum, 2.0 ft³/s Aug. 10, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1922-1957 (BEFORE THE CONSTRUCTION OF THE TWO COLLECTION CANALS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	36	13	1932	84	1951	24	14	1.9
Nov	36	14	1940	177	1954	53	41	4.1
Dec	36	19	1937	405	1956	117	111	9.2
Jan	36	18	1937	380	1948	127	98	10.0
Feb	36	26	1931	345	1951	157	95	11.2
Mar	36	50	1934	479	1957	180	99	14.1
Apr	36	47	1926	509	1952	256	110	19.5
May	36	18	1931	434	1948	228	132	17.9
Jun	36	9.7	1926	292	1953	95	67	7.2
Jul	36	4.8	1931	50	1953	26	10	2.0
Aug	36	4.7	1931	27	1953	16	5.5	1.3
Sep	36	8.5	1931	26	1927	17	4.4	1.3
Ann		21	1931	181	1956	108	44	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	14	15	16	17	18	18	20	21	22	24	25	26	28	31	36	36
Nov	15	17	19	21	22	23	25	29	34	43	50	60	78	109	185	36
Dec	18	21	23	26	28	30	39	52	71	106	130	162	210	281	457	36
Jan	23	29	33	36	40	46	60	79	103	143	161	178	202	254	381	36
Feb	33	39	45	54	63	71	89	114	147	182	203	228	258	305	437	36
Mar	49	65	75	83	91	100	120	142	166	200	223	248	289	338	433	36
Apr	49	79	122	144	160	174	207	241	282	321	342	364	397	439	499	36
May	24	38	57	82	99	123	168	217	265	306	329	352	385	422	482	36
Jun	13	18	25	33	39	44	55	69	84	106	121	142	169	206	285	36
Jul	7.5	11	13	17	19	21	23	25	27	31	32	34	37	42	52	36
Aug	7.0	8.2	12	13	14	15	16	17	18	20	21	22	23	25	28	36
Sep	9.3	12	13	14	14	15	16	17	19	20	21	22	23	25	27	36
Ann	12	15	17	19	21	23	30	44	74	119	151	186	231	293	381	

UPPER ROGUE RIVER BASIN

14341500 LITTLE BUTTE CREEK NEAR LAKECREEK, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1983 (AFTER THE COMPLETION OF THE TWO COLLECTION CANALS)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	22	12	1969	109	1963	20	20	1.8
Nov	22	15	1977	140	1974	49	37	4.2
Dec	22	15	1977	817	1965	148	174	12.8
Jan	22	16	1977	446	1965	160	124	13.8
Feb	22	15	1977	302	1965	129	73	10.2
Mar	22	29	1977	556	1972	165	111	14.3
Apr	22	48	1968	451	1974	202	104	16.9
May	22	31	1968	511	1975	172	118	14.9
Jun	22	16	1968	183	1975	65	41	5.5
Jul	22	10	1968	44	1969	26	9.0	2.3
Aug	22	10	1981	34	1976	20	6.7	1.8
Sep	22	10	1968	35	1978	19	5.9	1.6
Ann		29	1968	187	1965	98	46	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	9.9	12	12	13	13	14	15	16	17	19	20	21	23	28	39	22
Nov	15	16	16	17	18	19	21	23	30	39	47	60	79	120	186	22
Dec	17	20	23	30	35	41	55	73	102	129	154	178	207	262	411	22
Jan	19	23	28	34	40	47	64	91	117	148	170	199	246	369	543	22
Feb	29	37	43	51	62	74	89	107	123	144	157	172	191	231	328	22
Mar	41	57	66	76	88	98	112	130	154	177	190	210	239	309	400	22
Apr	50	58	74	89	105	120	150	177	222	265	292	315	335	360	402	22
May	37	44	52	58	64	75	94	124	163	206	237	280	320	366	461	22
Jun	22	26	30	34	37	40	44	50	57	65	71	79	95	118	159	22
Jul	12	15	17	18	19	21	23	26	29	32	34	36	38	41	45	22
Aug	11	12	13	14	15	16	17	20	22	25	26	27	28	29	32	22
Sep	11	12	13	14	15	16	18	19	20	22	23	24	25	27	32	22
Ann	13	15	16	18	20	23	31	44	66	102	122	148	182	242	339	

UPPER ROGUE RIVER BASIN

14342500 NORTH FORK LITTLE BUTTE CREEK AT FISH LAKE, NEAR LAKECREEK, OR

LOCATION.--Lat 42°22'35", long 122°21'20", in SE 1/4 SW 1/4 sec.4, T.37 S., R.4 E., Jackson County, Hydrologic Unit 17100307, on right bank 0.5 mi downstream from Fish Lake dam, 14 mi east of Lakecreek, and at mile 15.2.

DRAINAGE AREA.--20.8 mi².

PERIOD OF RECORD.--October 1914 to July 1915, June 1916 to 1987. Monthly discharge only November 1916 to May 1917, published in WSP 1318.

REVISED RECORDS.--WSP 654: Drainage area (former site). WSP 1218: 1917(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 4,571.41 ft above National Geodetic Vertical Datum of 1929. Oct. 1, 1914, to July 31, 1915, nonrecording gage at site 0.5 mi upstream at different datum. June 1, 1916, to July 9, 1918, nonrecording gage and July 10, 1918, to Oct. 28, 1932, water-stage recorder at site 0.25 mi upstream at different datums.

REMARKS.--Since 1915, Fish Lake has stored water for irrigation by Medford Irrigation District. Cascade Canal diverts from Fourmile Lake in Klamath River basin and discharges into lava bed 1.0 mi upstream from Fish Lake; diversion began August 1923. No diversion from creek upstream from station.

AVERAGE DISCHARGE.--71 years (water years 1917-87), 36.1 ft³/s, 26,150 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 940 ft³/s June 5, 1917, computed from rate of change in contents of reservoir after break in dam occurred; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1924-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	63	0.2	1931	67	1985	12	11	3.0
Nov	64	0.0	1935	63	1985	12	11	2.9
Dec	64	1.6	1935	57	1985	16	11	3.7
Jan	64	4.0	1931	66	1965	18	11	4.3
Feb	64	5.0	1931	66	1965	19	11	4.2
Mar	64	6.0	1931	99	1972	21	12	4.9
Apr	64	7.5	1931	80	1972	25	11	5.6
May	64	15	1941	78	1984	38	15	8.8
Jun	64	19	1941	118	1951	57	22	12.9
Jul	64	32	1926	145	1959	88	25	20.6
Aug	64	14	1981	129	1950	82	24	19.0
Sep	64	6.2	1981	76	1985	42	16	9.6
Ann		15	1931	66	1972	36	10	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.1	0.3	0.7	1.1	1.8	2.3	5.1	8.9	13	17	19	22	25	31	41	63
Nov	0.3	1.1	1.8	2.8	3.5	5.2	7.4	10	14	17	18	20	22	25	33	64
Dec	2.3	3.8	6.3	7.4	8.5	9.8	12	14	17	19	21	23	25	28	41	64
Jan	5.8	7.0	9.2	11	12	13	15	17	19	21	23	25	27	31	42	64
Feb	7.7	10	12	13	14	15	16	18	20	23	24	26	27	31	41	64
Mar	10	12	13	14	15	15	17	19	22	25	26	27	28	31	35	64
Apr	13	15	16	17	17	18	21	23	26	29	31	33	35	38	45	64
May	17	20	22	24	26	28	31	34	39	44	47	51	56	64	78	64
Jun	22	25	27	30	32	36	44	54	65	72	78	83	89	97	112	64
Jul	36	51	56	62	67	71	81	91	99	110	114	119	123	129	137	64
Aug	24	46	57	64	67	70	76	83	90	97	102	108	114	119	132	64
Sep	2.7	8.7	17	22	26	29	37	44	51	57	61	64	68	73	85	64
Ann	2.9	6.7	10	12	14	16	20	24	31	43	53	64	74	89	109	

UPPER ROGUE RIVER BASIN

14343000 NORTH FORK LITTLE BUTTE CREEK NEAR LAKECREEK, OR

LOCATION.--Lat 42°24'10", long 122°32'10", in NW 1/4 sec.36, T.36 S., R.2 E., Jackson County, Hydrologic Unit 17100307, on right bank 1.2 mi upstream from Wasson Canyon, 4.9 mi east of Lakecreek, and at mile 4.8.

DRAINAGE AREA.--43.8 mi².

PERIOD OF RECORD.--September 1911 to March 1913, July to September 1917, May 1922 to December 1964, September 1965 to September 1985 (discontinued). Monthly discharge only for some periods, published in WSP 1318. Published as "above Medford intake, near Lakecreek" 1922-28, 1931-40. Records for April to September 1916, May 1917 to September 1919, April to September 1921, and October 1923 to September 1924 at site 3 mi upstream not equivalent owing to diversion and difference in drainage areas.

GAGE.--Water-stage recorder. Concrete control since Oct. 9, 1968. Elevation of gage is 2,160 ft, from topographic map. Sept. 10, 1911, to Mar. 31, 1913, and July 1 to Sept. 30, 1917, nonrecording gage at site 1,000 ft downstream at different datums. May 26, 1922, to Dec. 31, 1964, water-stage recorder at site 1,000 ft downstream at datum 2,125.01 ft above mean sea level.

REMARKS.--Flow partly regulated since 1915 by Fish Lake. Diversions for irrigation upstream from station; some water diverted into Fish Lake from Fourmile Lake, in Klamath River basin, since 1923.

AVERAGE DISCHARGE.--63 years (water years 1912, 1923-64, 1966-85), 71.9 ft³/s, 52,090 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,750 ft³/a Dec. 22, 1964, gage height, 6.06 ft, present site and datum; minimum discharge, 11 ft³/s Oct. 29 to Nov. 8, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1911-1986

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	63	13	1927	100	1985	37	16	4.4
Nov	63	16	1932	111	1985	42	16	4.8
Dec	62	19	1932	168	1984	57	26	6.7
Jan	60	25	1931	145	1972	59	22	7.0
Feb	60	27	1931	126	1912	64	21	6.9
Mar	61	30	1931	253	1972	72	30	8.4
Apr	61	32	1931	144	1972	75	22	8.5
May	62	43	1930	140	1956	82	22	9.7
Jun	64	44	1981	149	1953	89	23	10.1
Jul	66	48	1926	164	1959	111	27	13.0
Aug	66	32	1931	155	1950	105	26	12.3
Sep	67	21	1968	119	1956	67	19	7.6
Ann		33	1931	118	1972	72	16	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	17	19	21	22	23	25	29	35	39	43	46	49	54	62	75	63
Nov	20	24	25	27	28	30	35	40	44	49	52	55	60	66	83	63
Dec	26	30	33	35	38	40	45	49	54	61	66	72	80	93	122	62
Jan	31	35	37	39	42	44	49	53	59	65	70	74	81	90	108	60
Feb	35	39	43	46	48	50	54	58	64	70	74	79	88	99	114	60
Mar	41	44	47	50	53	56	61	66	72	77	81	85	91	100	123	61
Apr	40	44	51	55	60	63	68	74	79	87	90	94	99	106	118	61
May	46	52	58	62	66	68	74	80	86	93	98	102	110	119	131	62
Jun	48	54	59	63	66	70	77	86	95	106	111	117	122	128	141	64
Jul	60	70	77	83	89	93	101	112	122	133	137	142	148	153	161	66
Aug	41	69	79	84	87	91	98	105	111	120	125	131	141	148	158	66
Sep	26	33	40	45	50	54	60	68	74	81	85	89	92	99	108	67
Ann	25	32	37	41	46	49	57	66	76	87	94	101	110	123	142	

ROGUE RIVER BASIN

14347000 LITTLE BUTTE CREEK ABOVE EAGLE POINT, OR

LOCATION.--Lat 42°28'30", long 122°44'00", in NW 1/4 sec. 5, T. 36 S., R. 1 E., 1 mile upstream from intake of Eagle Point Canal, 3 miles east of Eagle Point, and 9.1 miles upstream from mouth.

DRAINAGE AREA.--274 mi².

PERIOD OF RECORD.--April 1916 to September 1926, October 1928 to June 1929. Records for 1928-29, not previously published by the Geological Survey, furnished by the State engineer of Oregon.

GAGE.--Staff gage. Elevation of gage is 1,390 ft (from river-profile map). Prior to Oct. 1, 1924, staff gages at site about half a mile downstream at different datums.

REMARKS.--Cascade Canal has diverted water from Klamath River basin to Fish Lake reservoir since August 1923. Rogue River Valley Canal since 1904, in part through the Medford Irrigation District Canal since 1922, diverts water for irrigation of about 13,200 acres chiefly in the Bear Creek basin downstream from Phoenix. Medford municipal water supply, about 7 ft³/s, was diverted upstream from station prior to 1927. Other diversions upstream from station for irrigation total about 44 ft³/s, of which about 2 ft³/s is used downstream from station. Regulation by Fish Lake reservoir.

AVERAGE DISCHARGE.--10 years (1916-26), 179 ft³/s.

EXTREMES FOR PERIOD OF RECORD.--1916-26, 1928-29: Maximum discharge, 7,000 ft³/s Dec. 30, 1924 (gage height, 13.0, from floodmark), from rating curve extended above 1,800 ft³/s by logarithmic plotting; minimum observed, 6.0 ft³/s June 17, 1924.

STATISTICAL SUMMARIES FOR THE PERIOD 1916-1926

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	32	1926	105	1917	68	21	3.3
Nov	10	45	1924	254	1925	114	73	5.2
Dec	10	50	1917	386	1921	188	112	8.9
Jan	10	97	1926	682	1921	267	196	12.7
Feb	10	67	1920	895	1921	368	248	15.9
Mar	10	120	1926	595	1919	296	169	14.0
Apr	10	23	1926	642	1919	345	203	15.8
May	11	19	1926	701	1917	282	239	13.4
Jun	11	15	1926	517	1917	127	148	5.8
Jul	11	11	1926	92	1917	34	29	1.6
Aug	11	13	1926	70	1921	26	17	1.2
Sep	11	13	1926	80	1921	39	21	1.8
Ann		63	1926	353	1921	179	86	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	13	25	32	45	48	56	62	67	73	79	84	88	92	95	111	10
Nov	28	34	48	54	61	67	77	84	90	97	102	107	127	176	321	10
Dec	45	58	65	69	73	77	88	100	112	143	176	210	255	333	563	10
Jan	58	78	89	95	99	103	124	150	201	294	335	405	474	577	719	10
Feb	63	73	88	128	154	170	209	266	309	389	503	569	647	790	1150	10
Mar	106	118	124	129	139	163	205	230	267	315	355	394	480	556	679	10
Apr	17	51	152	180	197	214	261	312	357	439	478	535	595	647	743	10
May	15	16	31	59	78	104	151	239	279	370	423	490	558	639	762	11
Jun	13	15	17	19	22	25	35	53	83	125	145	186	257	383	488	11
Jul	12	13	14	15	16	17	19	21	25	31	36	55	74	84	94	11
Aug	11	13	14	15	16	17	18	20	21	25	27	41	48	56	69	11
Sep	12	14	15	16	17	18	24	31	42	51	58	66	73	79	88	11
Ann	13	16	18	23	32	47	69	87	115	185	227	283	354	473	645	

MIDDLE ROGUE RIVER BASIN

14350000 EMIGRANT CREEK NEAR ASHLAND, OR

LOCATION.--43°09'50", long 122°36'15", in SE 1/4 NE 1/4 sec.20, T.39 S., R.2 E., Jackson County, Hydrologic Unit 17100309, on left bank 0.1 mi downstream from Emigrant Dam, 6 mi southeast of Ashland, and at mile 29.2.

DRAINAGE AREA.--64.3 mi².

PERIOD OF RECORD.--January to June 1920, October 1921 to July 1922, February 1923 to May 1924 (incomplete), October 1924 to November 1925, February to August 1926, October 1926 to September 1928, April 1929 to September 1930, April 1931 to October 1932 (incomplete), April 1933 to September 1935, April 1936 to September 1939 (incomplete), April 1940 to September 1947, January 1948 to October 1952 (incomplete), December 1952 to 1987. Monthly discharge only for some periods, published in WSP 1318.

GAGE.--Water-stage recorder and artificial control. Datum of gage is 2,042.80 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 1, 1926, water-stage recorder or nonrecording gage at several nearby sites at various datums. Oct. 1, 1926, to Feb. 24, 1959, water-stage recorder near present site at datum 10.93 ft higher. Feb. 25, 1959, to May 7, 1961, water-stage recorder at site 1.0 mi downstream at different datum.

REMARKS.--Flow regulated since 1924 by Emigrant Lake. Several diversions upstream from station for irrigation; the principal diversion canals are Ashland lateral and East lateral. Records for Ashland lateral and inflow to the basin from Green Springs powerplant can be obtained from the Oregon Water Resources Department. From June 1923 to August 1960, water diverted by Keene Creek Canal from Klamath River basin into Emigrant Creek upstream from station. Beginning May 1960, water from Klamath River basin diverted to Emigrant Creek upstream from station via Green Springs powerplant diversion.

AVERAGE DISCHARGE.--46 years (water years 1925, 1927-30, 1934-35, 1941-47, 1954-86), 34.0 ft³/s, 24,630 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,260 ft³/s Feb. 20, 1927, by computation of peak flow over dam; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1925-1960 (BEFORE THE CONSTRUCTION OF GREEN SPRINGS DIVERSION)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	11	0.0	1954	9.6	1926	2.2	3.2	0.7
Nov	14	0.0	1943	47	1925	4.0	12	1.2
Dec	16	0.1	1945	158	1956	29	49	9.3
Jan	22	0.1	1934	230	1956	57	67	18.3
Feb	25	0.1	1926	243	1958	81	77	23.5
Mar	28	0.1	1955	167	1957	49	44	15.6
Apr	34	0.2	1955	163	1938	52	43	16.0
May	36	0.5	1934	90	1948	18	20	5.9
Jun	36	0.7	1952	33	1953	11	8.6	3.6
Jul	35	11	1926	43	1960	27	7.5	8.6
Aug	35	4.3	1926	32	1948	20	6.9	6.4
Sep	30	0.0	1947	14	1956	4.9	3.4	1.5
Ann		6.0	1955	46	1954	26	14	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.4	0.9	1.3	1.9	5.9	6.4	6.9	11
Nov	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.5	1.0	2.0	6.2	41	14
Dec	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.7	2.1	6.9	24	48	88	166	16
Jan	0.1	0.1	0.2	0.2	0.2	0.3	0.4	0.9	8.5	37	62	89	148	229	283	22
Feb	0.1	0.2	0.2	0.3	0.4	0.5	1.9	38	68	91	105	151	175	223	310	25
Mar	0.1	0.3	0.4	0.5	0.5	0.5	0.6	23	57	73	79	90	103	125	163	28
Apr	0.2	0.4	0.4	0.8	1.2	2.6	24	41	59	74	81	88	102	121	163	34
May	0.3	0.4	0.5	0.7	0.9	1.1	2.4	5.1	9.3	17	23	31	39	54	85	36
Jun	0.4	0.6	0.7	1.0	1.2	1.4	2.0	3.5	10	16	19	22	25	32	40	36
Jul	1.4	8.8	15	18	20	23	28	31	33	35	36	38	40	42	45	35
Aug	0.4	4.1	6.9	9.0	12	14	17	21	24	28	30	32	34	37	41	35
Sep	0.0	0.0	0.0	0.0	0.1	0.1	0.4	1.1	3.6	6.8	7.8	9.4	12	15	19	30
Ann	0.1	0.1	0.2	0.2	0.3	0.6	1.0	6.1	16	28	35	43	64	90	158	

MIDDLE ROGUE RIVER BASIN

14350000 EMIGRANT CREEK NEAR ASHLAND, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1962-1986 (AFTER THE COMPLETION OF GREEN SPRINGS DIVERSION)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	25	0.0	1968	46	1964	3.4	9.4	0.7
Nov	25	0.0	1967	89	1984	13	28	2.6
Dec	25	0.0	1968	361	1984	65	97	13.4
Jan	25	0.0	1967	288	1965	59	80	12.0
Feb	25	0.0	1968	117	1983	26	37	4.9
Mar	25	0.0	1968	175	1983	44	54	9.0
Apr	25	0.3	1973	241	1983	89	73	17.7
May	25	0.4	1962	139	1971	45	41	9.2
Jun	25	2.7	1980	60	1970	25	12	5.0
Jul	25	23	1983	84	1972	51	15	10.4
Aug	25	22	1976	72	1986	51	13	10.4
Sep	25	0.1	1978	47	1974	24	10	4.9
Ann		10.6	1962	83	1984	41	24	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.5	0.6	1.2	29	25
Nov	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.3	0.3	45	70	91	25
Dec	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	48	95	134	226	430	25
Jan	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.4	0.6	57	94	146	192	327	25
Feb	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	1.0	1.7	50	94	182	25
Mar	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.4	0.5	1.2	2.0	51	105	155	291	25
Apr	0.1	0.1	0.3	0.4	0.9	5.4	23	60	95	121	149	176	204	239	290	25
May	0.2	0.4	0.5	0.8	1.6	4.9	15	22	31	42	51	64	95	161	195	25
Jun	0.3	0.6	3.3	10	15	18	21	23	26	33	36	40	45	51	61	25
Jul	18	22	29	35	39	42	47	52	58	64	67	70	74	77	84	25
Aug	18	28	31	35	39	42	47	52	57	64	67	70	74	78	85	25
Sep	0.1	0.2	6.1	9.1	13	16	22	26	30	34	36	39	42	46	51	25
Ann	0.0	0.1	0.1	0.1	0.2	0.2	0.4	12	27	42	51	61	76	104	191	

ROGUE RIVER BASIN

14353000 WEST FORK ASHLAND CREEK NEAR ASHLAND, OR

LOCATION.--Lat 42°08'55", long 122°42'55", near line between NW 1/4 and SW 1/4 sec.28, T.39 S., R.1 E., Jackson County, Hydrologic Unit 17100308, in Rogue River National Forest, on left bank 0.3 mi above city diversion, 2.5 mi south of Ashland, and at mile 0.4.

DRAINAGE AREA.--10.5 mi², at diversion dam 0.3 mi downstream.

PERIOD OF RECORD.--September 1924 to January 1933, water years 1954-60, 1963, annual maximum; December 1974 to September 1982. Monthly discharge only for some periods published in WSP 1318.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,962.75 ft above National Geodetic Vertical Datum of 1929. Sept. 10, 1924, to Jan. 31, 1933, water-stage recorder at site about 0.2 mi upstream at different datum. Oct. 14, 1953, to Sept. 30, 1963, crest-stage gage at diversion dam 0.3 mi downstream at different datum.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--15 years (water years 1925-32, 1976-82), 8.92 ft³/s, 11.54 in/yr, 6,460 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 330 ft³/s Dec. 2, 1962, gage height, 15.51 ft, site and datum then in use, from rating curve defined by computation of peak flow over dam; minimum, 1.3 ft³/s Aug. 29, 1931, Sept. 8, 9, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1925-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	2.4	1932	8.4	1925	3.6	1.6	3.4
Nov	16	2.4	1930	14	1982	6.1	3.5	5.6
Dec	17	2.9	1932	38	1982	8.8	8.6	8.4
Jan	17	2.8	1977	20	1982	8.5	5.8	8.1
Feb	16	2.5	1977	25	1925	11	7.7	9.6
Mar	16	2.8	1977	23	1982	11	5.6	10.9
Apr	16	4.5	1977	24	1925	12	6.0	11.9
May	16	4.5	1931	32	1927	18	9.5	17.4
Jun	16	3.2	1931	34	1975	15	9.8	13.9
Jul	16	2.1	1926	13	1927	6.5	3.5	6.1
Aug	16	1.6	1931	6.4	1976	3.7	1.6	3.5
Sep	16	1.8	1926	7.5	1978	3.4	1.4	3.1
Ann		3.3	1931	17	1982	8.9	4.3	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	2.0	2.2	2.2	2.4	2.4	2.6	2.6	2.8	3.1	3.4	3.7	3.7	4.0	4.8	6.3	16
Nov	2.2	2.2	2.5	2.7	3.0	3.0	3.4	4.1	4.6	5.7	6.3	7.0	8.6	12	16	16
Dec	2.5	2.8	3.1	3.1	3.5	3.5	4.5	5.0	6.3	7.1	8.4	9.8	13	17	30	17
Jan	2.7	2.9	3.5	3.5	3.9	3.9	4.3	5.7	7.6	9.2	10	13	15	18	22	17
Feb	2.4	3.0	3.4	3.4	3.8	4.9	6.2	7.0	10	12	14	16	19	23	30	16
Mar	3.0	4.3	5.2	5.2	5.7	6.2	7.4	10	13	15	16	17	18	20	24	16
Apr	4.4	4.8	5.2	6.2	7.3	7.9	9.3	13	15	16	17	18	20	23	27	16
May	4.7	5.5	6.5	7.7	9.0	11	15	19	21	25	28	29	31	32	34	16
Jun	2.8	3.4	4.0	4.9	6.5	7.1	10	14	17	20	21	24	26	29	37	16
Jul	1.8	2.1	2.6	3.0	3.3	3.5	4.1	5.1	6.3	7.9	8.5	10	11	13	15	16
Aug	1.6	1.7	1.8	1.9	2.2	2.5	2.9	3.5	4.0	4.2	4.8	5.1	5.5	5.9	6.7	16
Sep	1.7	1.8	2.0	2.1	2.1	2.3	2.6	2.8	3.2	3.7	3.7	4.0	4.3	4.9	6.1	16
Ann	2.1	2.4	2.7	2.7	3.1	3.5	4.0	5.2	7.3	9.7	12	14	17	20	26	

ROGUE RIVER BASIN

14353500 EAST FORK ASHLAND CREEK NEAR ASHLAND, OR

LOCATION.--Lat 42°09'10", long 122°42'30", near line between NE 1/4 and NW 1/4 sec.28, T.39 S., R.1 E., Jackson County, Hydrologic Unit 17100308, Rogue River National Forest, on left bank 0.1 mi above city diversion dam, 2.5 mi south of Ashland, and at mile 0.2.

DRAINAGE AREA.--8.14 mi², at diversion dam 0.1 mi downstream.

PERIOD OF RECORD.--September 1924 to January 1933, water years 1954-60, 1963, annual maximum, December 1974 to September 1982.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,903.70 ft above National Geodetic Vertical Datum of 1929. Sept. 10, 1924, to Jan. 31, 1933, water-stage recorder at site about 200 ft downstream at different datum. Oct. 19, 1953, to Sept. 30, 1963, crest-stage gage at diversion dam 0.1 mi downstream at different datum.

REMARKS.--No regulation or diversion.

AVERAGE DISCHARGE.--15 years (water years 1925-32, 1976-82), 9.37 ft³/s, 15.63 in/yr, 6,790 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 335 ft³/s Dec. 2, 1962, gage height, 5.42 ft, site and datum then in use, from rating curve defined by computations of peak flow over dam; minimum, 0.47 ft³/s Mar. 14, 1977, result of freezeup.

STATISTICAL SUMMARIES FOR THE PERIOD 1925-1983

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second								
Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	2.1	1978	6.8	1925	3.4	1.2	3.1
Nov	16	2.7	1930	16	1982	6.2	4.3	5.4
Dec	17	2.7	1932	42	1982	9.5	9.9	8.6
Jan	17	2.7	1977	20	1980	8.2	5.8	7.4
Feb	16	2.5	1977	30	1982	11	8.4	9.3
Mar	16	2.8	1977	24	1982	11	5.8	10.2
Apr	16	3.7	1977	23	1925	11	5.8	10.4
May	16	5.4	1977	34	1927	19	9.8	17.4
Jun	16	4.0	1931	51	1975	18	13	16.1
Jul	16	2.1	1931	17	1927	8.3	5.0	7.5
Aug	16	1.5	1931	6.7	1975	3.9	1.8	3.6
Sep	16	1.7	1931	6.6	1978	3.2	1.3	2.8
Ann		3.2	1977	19	1982	9.4	4.9	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time																
Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.4	1.9	1.9	2.1	2.3	2.5	2.5	2.8	3.1	3.4	3.4	3.7	3.7	4.5	5.4	16
Nov	2.2	2.4	2.4	2.7	3.0	3.0	3.3	3.7	4.1	5.0	5.6	6.8	8.4	13	19	16
Dec	2.3	2.6	2.6	2.9	3.3	3.7	4.2	5.4	6.1	8.1	9.2	12	15	19	32	17
Jan	2.4	2.7	2.9	3.3	3.3	3.6	4.9	6.0	6.7	8.2	9.1	13	14	16	20	17
Feb	2.5	2.8	3.1	3.5	3.9	5.0	5.6	8.1	11	13	14	15	18	22	34	16
Mar	2.7	4.3	5.2	5.7	6.2	6.2	6.8	8.1	13	15	16	17	18	20	23	16
Apr	3.8	4.5	5.2	6.1	6.6	7.7	9.0	10	14	15	16	17	19	22	24	16
May	5.0	5.8	8.1	8.8	10	11	16	18	21	24	27	29	31	35	40	16
Jun	3.3	4.4	4.8	5.8	7.8	8.5	12	18	20	23	25	26	28	35	52	16
Jul	2.1	2.5	2.7	3.0	3.6	4.2	5.0	6.5	8.4	11	13	14	15	17	19	16
Aug	1.5	1.7	2.0	2.0	2.1	2.5	3.0	3.5	4.3	4.6	5.0	5.3	5.7	6.6	7.0	16
Sep	1.6	1.8	2.0	2.0	2.3	2.3	2.5	2.9	3.3	3.6	3.9	4.2	4.5	4.5	5.6	16
Ann	1.8	2.4	2.4	2.8	3.2	3.2	4.3	5.7	7.6	10	13	15	18	21	27	

MIDDLE ROGUE RIVER BASIN

14357500 BEAR CREEK AT MEDFORD, OR

LOCATION.--Lat 42°19'40", long 122°52'10", in NW 1/4 sec.30, T.37 S., R.1 W., Jackson County, Hydrologic Unit 17100308, on left bank 40 ft upstream from Main street Bridge, in Medford, and at mile 9.91.

DRAINAGE AREA.--289 mi².

PERIOD OF RECORD.--March 1915 to June 1920 (no low-flow records), October 1920 to September 1981, December 1983 to 1987. Monthly discharge only for some periods, published in WSP 1318.

REVISED RECORDS.--WSP 1044: 1944. WSP 1448: 1916, 1917(M), 1918-20, 1922, 1924, 1927(M), 1928, 1930. WSP 1568: Drainage area.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,341.98 ft above National Geodetic Vertical Datum of 1929. Dec. 31, 1947, to Sept. 23, 1985, at datum 2.00 ft higher. See WSP 1738 for history of changes prior to Dec. 31, 1947.

REMARKS.--Flow partly regulated since 1924 by Emigrant Lake. Numerous diversions for irrigation and municipal use upstream from station.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,500 ft³/s Dec. 2, 1962, gage height, 10.04 ft, present datum; maximum gage height, about 13.0 ft Feb. 20, 1927, from floodmarks, present datum, site then in use; no flow at times.

STATISTICAL SUMMARIES FOR THE PERIOD 1924-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	61	4.7	1932	215	1963	34	31	2.6
Nov	61	8.2	1937	290	1985	63	57	4.6
Dec	62	17	1937	1140	1965	161	218	11.9
Jan	62	13	1937	1080	1965	219	236	16.2
Feb	62	11	1931	873	1958	221	189	14.9
Mar	62	13	1931	787	1957	202	162	14.9
Apr	62	4.9	1931	686	1974	199	138	14.2
May	62	1.5	1931	391	1963	131	96	9.7
Jun	62	2.1	1931	232	1953	73	54	5.2
Jul	62	0.5	1924	95	1971	31	22	2.3
Aug	62	0.4	1924	115	1976	32	27	2.4
Sep	62	0.7	1931	91	1971	35	28	2.5
Ann		8.4	1931	304	1974	115	74	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	5.9	7.8	11	13	16	18	22	25	29	34	37	41	46	54	72	61
Nov	13	16	20	23	25	27	31	36	43	54	64	75	94	132	220	61
Dec	17	22	26	30	33	37	47	60	82	121	148	190	228	322	579	62
Jan	23	31	36	40	45	50	66	87	128	178	213	263	338	513	884	62
Feb	32	43	50	57	64	73	95	125	166	228	271	325	422	536	682	62
Mar	33	53	61	71	82	94	112	137	170	213	239	275	317	401	588	62
Apr	15	29	48	69	85	100	136	171	203	242	264	296	341	422	489	62
May	6.4	18	28	38	50	60	80	100	124	157	177	202	231	283	394	62
Jun	4.1	11	15	20	26	31	41	53	68	89	103	119	142	166	206	62
Jul	2.8	6.0	8.4	11	13	14	17	21	28	37	43	49	57	68	85	62
Aug	1.3	3.0	6.5	8.6	10	12	15	19	27	40	47	53	62	73	91	62
Sep	2.2	3.9	6.1	7.8	9.3	12	17	23	32	46	52	57	66	79	99	62
Ann	5.4	10	14	18	23	28	39	53	72	104	129	160	199	265	407	

MIDDLE ROGUE RIVER BASIN

14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR

LOCATION.--Lat 42°26'15", long 122°59'10", in SW 1/4 sec.18, T.36 S., R.2 W., Jackson County, Hydrologic Unit 17100308, on right bank at Raygold, 0.1 mi downstream from Gold Ray Dam, 1.0 mi downstream from Bear Creek, 5.6 mi northwest of Central Point, and at mile 125.8.

DRAINAGE AREA.--2,053 mi².

PERIOD OF RECORD.--August 1905 to 1987. Prior to October 1921, published as "near Tolo."

REVISED RECORDS.--WSP 1248: 1906, 1914(M), 1915. WSP 1398: 1910(M). WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,121.78 ft above National Geodetic Vertical Datum of 1929. Prior to Sept. 19, 1914, nonrecording gage and Sept. 19, 1914, to Sept. 30, 1956, water-stage recorder, at site 300 ft upstream at same datum.

REMARKS.--Flow regulated since February 1977 by Lost Creek Lake (station 14335040). Slight regulation by Fish Lake (published with station 14342500) and Emigrant Lake (published with station 14350000). Many diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--82 years, 2,988 ft³/s, 2,165,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 131,000 ft³/s Dec. 23, 1964, gage height, 23.43 ft, from rating curve extended above 63,000 ft³/s on basis of slope-area measurement of 113,000 ft³/s; minimum discharge not determined; minimum daily, 616 ft³/s Sept. 6, 1931.

STATISTICAL SUMMARIES FOR THE PERIOD 1906-1976 (BEFORE REGULATION OF LOST CREEK LAKE)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	71	845	1932	3800	1951	1400	437	4.0
Nov	71	923	1930	8410	1910	2340	1350	6.4
Dec	71	1070	1931	18800	1965	3680	2790	10.4
Jan	71	1110	1937	12000	1965	4610	2740	13.0
Feb	71	1210	1931	12500	1907	4710	2210	12.1
Mar	71	1970	1931	12500	1972	4290	1890	12.1
Apr	71	1650	1926	7810	1907	4210	1280	11.5
May	71	1280	1931	6700	1917	3910	1300	11.1
Jun	71	920	1931	5750	1917	2840	1120	7.8
Jul	71	747	1931	2700	1917	1610	453	4.6
Aug	71	642	1931	2040	1976	1270	277	3.6
Sep	71	679	1931	1760	1972	1230	227	3.4
Ann		1160	1931	5130	1974	3000	892	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	913	992	1050	1090	1130	1160	1230	1300	1370	1450	1510	1560	1630	1730	1940	71
Nov	1040	1150	1200	1250	1300	1350	1450	1580	1760	2040	2250	2540	3040	4110	6030	71
Dec	1160	1300	1400	1500	1600	1700	1920	2230	2740	3490	4010	4670	5590	7060	10000	71
Jan	1400	1590	1730	1850	2030	2210	2590	3060	3760	4560	5100	5860	7070	9140	12600	71
Feb	1690	2040	2270	2450	2640	2830	3220	3690	4260	5040	5490	6010	6800	8060	10900	71
Mar	1930	2200	2430	2620	2800	2970	3300	3620	4020	4510	4850	5300	5850	6670	8810	71
Apr	1850	2370	2720	2970	3170	3310	3640	4020	4370	4800	5050	5330	5660	6090	6860	71
May	1600	2010	2450	2710	2920	3100	3450	3750	4120	4550	4820	5110	5450	5890	6570	71
Jun	1070	1400	1590	1770	1910	2050	2340	2580	2920	3360	3570	3810	4150	4610	5300	71
Jul	873	1010	1150	1220	1280	1320	1430	1520	1630	1780	1870	1980	2110	2280	2590	71
Aug	806	935	1010	1050	1080	1110	1170	1230	1320	1400	1450	1500	1610	1670	1750	71
Sep	850	937	992	1030	1060	1100	1170	1220	1270	1340	1390	1450	1500	1560	1670	71
Ann	992	1120	1200	1280	1370	1470	1700	2120	2710	3380	3750	4200	4780	5550	7020	

MIDDLE ROGUE RIVER BASIN

14359000 ROGUE RIVER AT RAYGOLD, NEAR CENTRAL POINT, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1978-1987 (AFTER REGULATION OF LOST CREEK LAKE)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	1330	1982	2110	1984	1600	291	4.4
Nov	10	1420	1979	6190	1985	2910	1390	7.8
Dec	10	1790	1979	10800	1982	5080	3400	14.0
Jan	10	1530	1981	6010	1980	3430	1380	9.5
Feb	10	1750	1981	8010	1986	4360	2470	11.0
Mar	10	1380	1981	6040	1983	3520	1590	9.7
Apr	10	1670	1981	5590	1983	3660	1450	9.8
May	10	1990	1981	4970	1983	3250	1140	9.0
Jun	10	1830	1981	4240	1984	2520	747	6.7
Jul	10	1980	1981	3160	1984	2390	330	6.6
Aug	10	1980	1981	3110	1984	2290	353	6.3
Sep	10	1430	1980	2510	1983	1930	327	5.2
Ann		1810	1981	4530	1984	3070	905	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1250	1290	1310	1330	1360	1390	1470	1520	1580	1720	1830	2000	2060	2090	2140	10
Nov	1260	1310	1360	1410	1460	1550	1810	2230	2530	3110	3530	4150	4650	5650	7470	10
Dec	1670	1750	1810	1870	1980	2120	2770	3350	4060	5040	5740	7070	8940	10400	14700	10
Jan	1340	1450	1590	1770	1910	2030	2380	2770	3250	3830	4110	4450	4940	5660	7290	10
Feb	1210	1510	1680	1870	1960	2040	2240	2470	2900	4380	5300	6390	7510	10700	14200	10
Mar	1320	1590	1720	1880	2020	2160	2620	3010	3440	3990	4290	4700	5300	6040	7420	10
Apr	1610	1770	1910	2050	2210	2410	2720	3410	3880	4400	4770	5070	5360	5810	6470	10
May	1630	1810	1980	2090	2210	2410	2660	2950	3240	3630	4030	4420	4720	5290	5760	10
Jun	1710	1810	1900	1930	1970	2000	2070	2230	2420	2680	2860	3070	3300	3560	4130	10
Jul	1980	2020	2040	2070	2160	2220	2270	2310	2390	2500	2550	2610	2660	3050	3180	10
Aug	1740	1910	1990	2030	2060	2090	2160	2230	2300	2370	2390	2460	2630	2890	3250	10
Sep	1330	1390	1440	1500	1580	1620	1700	1800	2000	2140	2230	2360	2520	2690	2820	10
Ann	1350	1480	1610	1740	1860	1970	2140	2330	2580	3030	3330	3780	4410	5290	6900	

MIDDLE ROGUE RIVER BASIN

14361500 ROGUE RIVER AT GRANTS PASS, OR

LOCATION.--Lat 42°25'50", long 123°19'00", in NW 1/4 sec.20, T.36 S., R.5 W., Josephine County, Hydrologic Unit 17100308, on right bank at city of Grants Pass filter plant, 0.6 mi upstream from bridge on State Highway 99 at Grants Pass, and at mile 101.8. Prior to Sept. 3, 1983, at site 300 ft upstream.

DRAINAGE AREA.--2,459 mi².

PERIOD OF RECORD.--October 1938 to 1987. Prior to January 1939 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 884.28 ft above National Geodetic Vertical Datum of 1929. Prior to Aug. 8, 1957, at site 300 ft upstream at datum 4.00 ft higher and Aug. 8, 1957, to Sept. 2, 1983, at site 300 ft upstream at datum 1.00 ft higher.

REMARKS.--Flow regulated since February 1977 by Lost Creek Lake (station 14355040), slight regulation by Fish Lake and Emigrant Lake. Large fluctuations at times caused by Savage Rapids Dam 5.5 mi upstream from station. Many diversions from Rogue River and tributaries upstream from station, the largest of which is at Savage Rapids Dam of Grants Pass Irrigation District, 5.5 mi upstream from station.

AVERAGE DISCHARGE.--49 years, 3,518 ft³/s, 2,549,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 152,000 ft³/s Dec. 23, 1964, gage height, 35.15 ft, present datum, from rating curve extended above 93,000 ft³/s; minimum discharge, 195 ft³/s Jan. 30, 1961; minimum daily, 606 ft³/s Sept. 10, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in December 1861 reached a stage of about 43 ft, present datum (information furnished by Corps of Engineers). Flood in February 1890 reached a stage of about 36 ft, present datum, and that of Feb. 21, 1927, about 32 ft, present datum, according to local resident.

STATISTICAL SUMMARIES FOR THE PERIOD 1940-1976 (BEFORE REGULATION OF LOST CREEK LAKE)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	37	987	1943	4930	1951	1630	686	3.8
Nov	37	1130	1940	9090	1974	2840	1610	6.5
Dec	37	1450	1945	23400	1965	5400	4350	12.7
Jan	38	1800	1961	15200	1974	6630	4180	15.6
Feb	38	2470	1955	14600	1958	6030	2460	13.0
Mar	38	2120	1941	15300	1972	5430	2710	12.8
Apr	38	1870	1968	8390	1974	4530	1340	10.3
May	38	1710	1968	6370	1971	4020	1260	9.5
Jun	38	1130	1940	5650	1953	2800	1080	6.4
Jul	38	817	1940	2330	1953	1460	407	3.4
Aug	38	805	1942	1920	1976	1160	264	2.7
Sep	38	791	1968	1590	1971	1170	213	2.7
Ann		2030	1968	6270	1974	3600	1160	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1010	1070	1140	1180	1220	1260	1340	1430	1530	1640	1690	1750	1860	1990	2310	37
Nov	1240	1340	1400	1450	1510	1560	1690	1850	2070	2450	2700	3090	3910	5220	7990	37
Dec	1440	1580	1700	1830	1960	2120	2480	3120	3940	5110	5860	6890	8400	10700	15700	37
Jan	1690	1870	2030	2220	2430	2650	3120	3880	4890	6260	7330	8590	10700	13500	20900	38
Feb	2350	2600	2810	3030	3280	3560	4130	4620	5360	6260	6770	7500	8810	10700	15100	38
Mar	2350	2610	2840	3080	3290	3510	3950	4430	4960	5670	6160	6880	7670	8970	12300	38
Apr	2300	2530	2850	3120	3340	3550	3960	4340	4730	5180	5460	5750	6080	6500	7180	38
May	1850	2290	2560	2740	2930	3100	3460	3810	4150	4590	4860	5160	5550	6070	6880	38
Jun	1260	1470	1580	1710	1830	1960	2210	2500	2810	3290	3560	3860	4210	4620	5220	38
Jul	878	975	1030	1070	1110	1160	1260	1350	1470	1620	1710	1810	1940	2150	2460	38
Aug	817	865	900	927	951	980	1040	1090	1150	1290	1360	1420	1490	1550	1640	38
Sep	836	875	907	940	976	1010	1070	1130	1210	1290	1330	1380	1440	1510	1640	38
Ann	945	1060	1170	1290	1410	1530	1830	2380	3060	3880	4360	4900	5590	6690	9390	

MIDDLE ROGUE RIVER BASIN

14361500 ROGUE RIVER AT GRANTS PASS, OR--Continued

STATISTICAL SUMMARIES FOR THE PERIOD 1978-1987 (AFTER REGULATION OF LOST CREEK LAKE)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	1420	1982	2280	1984	1720	305	4.1
Nov	10	1580	1979	7670	1985	3400	1800	7.9
Dec	10	2020	1979	14000	1982	6200	4330	14.9
Jan	10	1710	1981	7750	1980	4300	1900	10.3
Feb	10	2150	1981	11000	1983	5740	3260	12.6
Mar	10	1510	1981	8120	1983	4340	2150	10.4
Apr	10	1750	1981	6850	1983	4310	1920	10.0
May	10	1960	1987	5590	1984	3440	1370	8.3
Jun	10	1810	1981	4520	1984	2530	838	5.9
Jul	10	1850	1981	3130	1984	2340	355	5.6
Aug	10	1880	1981	3080	1984	2260	379	5.4
Sep	10	1330	1980	2640	1983	1930	382	4.5
Ann		1930	1981	5270	1984	3530	1160	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1220	1300	1380	1410	1440	1470	1570	1640	1750	1920	2030	2100	2170	2240	2340	10
Nov	1340	1410	1470	1520	1570	1710	2020	2330	2840	3550	4040	4890	5660	6990	8970	10
Dec	1810	1920	2020	2110	2220	2320	3150	3910	4830	6160	7050	8940	11200	13400	18400	10
Jan	1460	1630	1760	2000	2180	2340	2830	3380	4030	4710	5050	5660	6360	7860	10900	10
Feb	1370	1800	2060	2230	2390	2550	2870	3240	3710	5470	7100	8720	10700	14600	18400	10
Mar	1460	1810	1950	2180	2310	2620	3100	3540	4160	4960	5410	5900	6800	7650	9630	10
Apr	1780	1980	2120	2250	2490	2660	3060	3810	4430	5190	5680	6140	6540	6990	8530	10
May	1600	1740	1920	2060	2210	2410	2750	3020	3360	3920	4310	4810	5200	5800	6610	10
Jun	1660	1750	1810	1860	1910	1970	2070	2180	2400	2700	2940	3100	3310	3640	4340	10
Jul	1820	1880	1920	2070	2130	2170	2240	2290	2340	2450	2500	2570	2690	3030	3150	10
Aug	1630	1830	1890	1950	1990	2040	2150	2210	2260	2340	2400	2570	2690	2860	3210	10
Sep	1230	1290	1350	1430	1540	1590	1660	1800	2020	2210	2310	2420	2600	2830	2960	10
Ann	1400	1570	1710	1830	1940	2050	2240	2440	2860	3390	3860	4520	5390	6600	9290	

APPLEGATE RIVER BASIN

14361600 ELLIOTT CREEK NEAR COPPER, OR

LOCATION.--Lat 42°00'16", long 123°09'00", in W-1/2 sec.17, T.48 N., R.11 W., Mt. Diablo Meridian, Siskiyou County, CA, Hydrologic Unit 17100309, Rogue River National Forest, on left bank 0.3 mi upstream from Middle Fork Applegate River and 1.5 mi south of former town of Copper.

DRAINAGE AREA.--51.8 mi².

PERIOD OF RECORD.--October 1977 to September 1987 (discontinued).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 2,023.56 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No diversion or regulation.

AVERAGE DISCHARGE.--10 years, 108 ft³/s, 28.31 in/yr, 78,250 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,980 ft³/s Dec. 19, 1981, gage height, 7.13 ft; minimum discharge, 3.9 ft³/s Sept. 10, 1980; minimum daily, 7.1 ft³/s Sept. 14-16, 1981.

STATISTICAL SUMMARIES FOR THE PERIOD 1978-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	10	13	1978	32	1983	21	6.2	1.7
Nov	10	20	1979	198	1985	75	64	5.7
Dec	10	25	1979	532	1982	160	160	12.6
Jan	10	50	1985	282	1980	129	83	10.1
Feb	10	62	1979	443	1982	199	142	14.3
Mar	10	61	1985	339	1983	165	88	13.0
Apr	10	82	1981	238	1983	158	49	12.0
May	10	70	1981	401	1983	191	94	15.0
Jun	10	37	1981	360	1983	122	96	9.3
Jul	10	18	1981	124	1983	45	31	3.6
Aug	10	10	1981	53	1983	22	12	1.8
Sep	10	9.7	1981	34	1983	19	7.8	1.5
Ann		48	1981	196	1983	108	52	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	9.1	12	13	15	16	16	17	18	21	23	24	26	28	36	44	10
Nov	16	17	19	20	21	22	26	30	42	75	91	114	137	179	279	10
Dec	22	25	26	28	33	42	60	74	90	143	183	243	311	390	500	10
Jan	26	31	36	42	47	51	65	93	117	143	157	174	208	250	318	10
Feb	41	49	58	67	75	83	101	122	142	173	203	260	332	432	701	10
Mar	59	65	70	75	81	90	119	137	163	192	211	230	246	275	339	10
Apr	69	87	93	101	110	116	135	149	167	182	190	204	226	245	267	10
May	66	77	93	105	127	140	156	170	185	207	223	236	254	280	335	10
Jun	30	35	40	45	50	56	74	96	118	141	156	170	190	224	331	10
Jul	17	20	21	22	24	26	29	35	40	48	55	64	74	87	115	10
Aug	9.5	12	13	15	16	17	19	20	22	24	25	27	33	39	49	10
Sep	8.1	9.2	11	12	14	15	17	18	20	21	23	25	28	31	37	10
Ann	13	16	19	21	24	27	41	64	91	128	146	167	195	235	315	

APPLEGATE RIVER BASIN

14362000 APPLEGATE RIVER NEAR COPPER, OR

LOCATION.--Lat 42°03'50", long 123°06'37", in SW 1/4 NW 1/4 sec.30, T.40 S., R.3 W., Jackson County, Hydrologic Unit 17100309, U.S. Corps of Engineers land, on left bank 0.1 mi downstream from Brushy Gulch, 0.6 mi downstream from Applegate Dam, 3.1 mi northeast of former town of Copper, and at mile 45.7.

DRAINAGE AREA.--225 mi².

PERIOD OF RECORD.--October 1938 to 1987. Prior to January 1939 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WDR OR-78-1: Drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 1,747.51 ft above National Geodetic Vertical Datum of 1929. Prior to Oct. 1, 1977, at site 0.6 mi upstream at datum 12.15 ft higher.

REMARKS.--Flow regulated since December 1980 by Applegate Lake (station 14361900). Some storage during winter in Squaw Lakes Reservoir, capacity, 1,100 acre-ft on Squaw Creek upstream from station. Diversions upstream from station from Carberry Creek for irrigation in Thompson Creek basin.

AVERAGE DISCHARGE.--49 years, 451 ft³/s, 326,700 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,800 ft³/s Jan. 15, 1974, gage height, 25.38 ft, site and datum then in use, from high-water mark in well, from rating curve extended above 12,000 ft³/s on basis of four slope-area measurements of peak flows made in 1950, 1955, 1964, and 1974; minimum discharge, 1.5 ft³/s Dec. 20, 1980, result of regulation at Applegate dam, 0.6 mi upstream.

STATISTICAL SUMMARIES FOR THE PERIOD 1939-1980 (PRIOR TO CONSTRUCTION OF APPLEGATE DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	42	29	1945	803	1951	99	129	1.9
Nov	42	29	1940	1550	1974	286	288	5.3
Dec	42	45	1977	2620	1965	598	585	11.4
Jan	42	50	1977	3760	1974	846	772	16.2
Feb	42	52	1977	2940	1958	773	509	13.5
Mar	42	93	1977	1970	1972	672	365	12.8
Apr	42	179	1977	1350	1952	727	287	13.4
May	42	189	1977	1420	1969	749	325	14.3
Jun	42	112	1939	898	1953	371	217	6.9
Jul	42	44	1977	342	1953	117	58	2.2
Aug	42	26	1939	118	1953	59	18	1.1
Sep	42	23	1939	91	1978	48	12	0.9
Ann		80	1977	1080	1974	444	195	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	30	35	38	41	43	46	50	55	61	70	76	86	103	138	221	42
Nov	43	51	57	62	69	77	96	124	158	207	249	311	421	685	1190	42
Dec	56	79	97	113	129	146	205	303	391	523	628	780	983	1300	1930	42
Jan	71	117	140	157	189	230	319	419	547	727	877	1110	1350	1790	2810	42
Feb	123	175	231	277	331	388	492	588	672	790	876	988	1170	1460	2160	42
Mar	158	281	310	339	370	409	477	538	616	725	795	881	1010	1200	1540	42
Apr	283	351	389	419	448	489	560	650	762	859	916	987	1090	1220	1390	42
May	265	348	388	423	466	504	566	649	762	890	962	1060	1180	1320	1520	42
Jun	108	130	148	166	182	200	238	292	347	415	466	538	632	777	939	42
Jul	50	57	63	68	73	78	87	98	111	127	138	152	169	198	260	42
Aug	31	37	40	43	45	47	52	56	61	68	71	75	80	87	100	42
Sep	26	31	34	36	37	39	42	46	50	54	56	59	62	65	75	42
Ann	39	47	55	65	80	102	166	250	357	497	579	680	819	1020	1420	

ROGUE RIVER BASIN

14363000 APPLEGATE RIVER NEAR RUCH, OR

LOCATION.--Lat 42°10'40", long 123°02'40", in E-1/2 sec.15, T.39 S., R.3 W., Jackson County, Hydrologic Unit 17100309, on downstream side of left pier of Cameron Bridge, 1.6 mi upstream from Little Applegate River and 4.2 mi south of Ruch.

DRAINAGE AREA.--302 mi².

PERIOD OF RECORD.--June 1911 to September 1914, September 1925 to September 1953. Published as "near Buncom" 1911-14. Monthly discharge only February to September 1927, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 1,475.64 ft above National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). June 18, 1911, to Sept. 30, 1914, staff gage at datum 0.88 ft lower.

REMARKS.--Diversions for irrigation of about 700 acres upstream from station. Cameron (Comstock) ditch diverts as much as 14 ft³/s around station on left bank. An average of about 8 ft³/s is diverted upstream from station for irrigation in Thompson Creek basin. Several hundred acre-feet stored in Squaw Lake (capacity, 1,100 acre-ft) each spring for irrigation the following summer.

AVERAGE DISCHARGE.--31 years (water years 1912-14, 1926-53), 389 ft³/s, 281,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 20,000 ft³/s Feb. 20, 1927, gage height, 16.0 ft, from rating curve extended above 8,000 ft³/s; minimum, 7 ft³/s Sept. 2, 1929.

STATISTICAL SUMMARIES FOR THE PERIOD 1912-1953

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	19	1937	849	1951	83	146	1.8
Nov	31	28	1940	979	1927	252	268	5.3
Dec	31	43	1937	1590	1951	443	429	9.7
Jan	31	37	1937	2290	1953	619	521	13.5
Feb	31	93	1937	2270	1927	705	519	14.0
Mar	31	301	1929	1550	1938	612	314	13.4
Apr	31	232	1934	1540	1938	713	302	15.1
May	31	118	1934	1870	1938	698	385	15.2
Jun	31	35	1926	1190	1933	372	286	7.9
Jul	31	17	1926	324	1953	110	74	2.4
Aug	31	12	1926	119	1953	46	24	1.0
Sep	31	10	1926	77	1912	37	18	0.8
Ann		143	1931	897	1938	389	175	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	18	22	26	29	32	35	43	48	52	58	62	69	80	105	160	31
Nov	33	39	50	56	62	68	84	105	130	179	221	289	409	604	1050	31
Dec	56	75	89	106	119	130	153	200	284	397	475	564	695	977	1690	31
Jan	70	102	133	153	172	200	287	383	493	613	714	845	1020	1350	1870	31
Feb	127	155	184	213	242	276	387	490	603	739	826	940	1110	1460	2160	31
Mar	241	277	307	333	358	384	432	485	553	639	710	803	987	1130	1360	31
Apr	241	294	350	403	435	471	573	674	747	845	904	976	1070	1160	1370	31
May	120	173	251	297	350	406	536	634	766	878	933	1010	1100	1200	1450	31
Jun	50	73	86	110	135	156	201	262	336	438	495	556	656	820	1040	31
Jul	25	32	36	44	52	58	70	83	98	121	136	153	178	221	296	31
Aug	13	18	22	25	28	31	37	42	47	54	59	64	72	81	96	31
Sep	12	15	18	20	22	24	32	36	39	42	44	47	52	60	72	31
Ann	23	32	40	48	58	71	115	188	311	457	538	637	776	946	1260	

APPLEGATE RIVER BASIN

14366000 APPLGATE RIVER NEAR APPLGATE, OR

LOCATION.--Lat 42°14'30", long 123°08'20", in NE 1/4 sec.26, T.38 S., R.4 W., Jackson County, Hydrologic Unit 17100309, on left bank 0.9 mi downstream from Keeler Creek, 1.8 mi southeast of Applegate, and at mile 26.7.

DRAINAGE AREA.--483 mi².

PERIOD OF RECORD.--October 1938 to 1987.

RECORDS.--WSP 1738: Drainage area. WSP 1935: 1953(M). WDR OR-76-1: 1956(M), 1965(M).

GAGE.--Water-stage recorder. Datum of gage is 1,285.33 ft above National Geodetic Vertical Datum of 1929. Prior to Dec. 23, 1938, nonrecording gage at same site and datum.

REMARKS.--Flow regulated since December 1980 by Applegate Lake (station 14361900). Many diversions for irrigation upstream from station. McDonald Creek Canal diverts from McDonald Creek upstream from station for irrigation in Bear Creek basin. Thompson Creek Irrigation Association ditch diverts upstream from station for irrigation in Thompson Creek basin. Fowler-Keeler and Berryman ditches divert upstream from station for irrigation downstream.

AVERAGE DISCHARGE.--49 years, 556 ft³/s, 402,800 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 37,200 ft³/s Jan. 15, 1974, gage height, 20.41 ft, from rating curve extended above 18,000 ft³/s on basis of slope-area measurements of flow at gage heights 18.00 ft and 19.57 ft; minimum discharge, 4.6 ft³/s Sept. 22-25, 1979. Minimum since first filling of Applegate Lake, 104 ft³/s Aug. 9, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Feb. 20, 1927, reached a stage of 18.7 ft, from floodmarks.

STATISTICAL SUMMARIES FOR THE PERIOD 1939-1980 (PRIOR TO CONSTRUCTION OF APPLGATE DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	42	22	1945	1120	1951	118	179	1.8
Nov	42	37	1940	1850	1974	333	336	5.0
Dec	42	59	1977	3570	1965	755	783	11.7
Jan	42	65	1977	4600	1974	1120	1010	17.3
Feb	42	68	1977	3910	1958	1020	687	14.4
Mar	42	106	1977	2590	1972	873	517	13.5
Apr	42	164	1977	1790	1974	876	360	13.1
May	42	218	1977	1750	1969	881	407	13.6
Jun	42	95	1939	1160	1953	443	282	6.6
Jul	42	16	1977	348	1953	104	74	1.6
Aug	42	11	1939	96	1953	38	21	0.6
Sep	42	11	1939	116	1978	36	19	0.5
Ann		84	1977	1390	1974	548	264	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	22	28	33	37	41	45	52	59	70	86	96	107	127	160	256	42
Nov	51	63	71	79	88	98	118	145	188	247	297	375	477	776	1360	42
Dec	74	106	124	143	163	182	250	356	470	634	771	919	1200	1590	2460	42
Jan	106	158	177	200	228	271	384	538	696	949	1140	1440	1850	2520	3900	42
Feb	181	229	285	343	404	487	626	751	881	1050	1180	1340	1560	1950	2850	42
Mar	201	351	396	431	474	517	596	683	773	932	1010	1140	1340	1620	2100	42
Apr	329	417	463	505	544	582	680	790	909	1030	1120	1220	1330	1460	1680	42
May	279	378	435	482	527	579	666	762	897	1050	1150	1270	1410	1580	1830	42
Jun	90	121	150	174	196	219	274	352	424	512	579	665	786	966	1180	42
Jul	23	28	35	41	47	52	63	76	92	114	129	151	178	220	297	42
Aug	12	14	16	18	20	22	27	32	39	48	52	57	64	73	93	42
Sep	12	13	15	16	18	20	25	30	35	43	46	50	56	63	77	42
Ann	21	33	46	60	81	111	190	287	426	609	711	853	1030	1280	1810	

ROGUE RIVER BASIN

14368500 POWELL CREEK NEAR WILLIAMS, OR

LOCATION.--Lat 42°16'00", long 123°17'40", near center of sec.16, T.38 S., R.5 W., Josephine County, Hydrologic Unit 17100309, on left bank 0.1 mi upstream from Blodgett ditch intake and 2 mi northwest of Williams.

DRAINAGE AREA.--8.17 mi².

PERIOD OF RECORD.--September 1946 to September 1958.

GAGE.--Water-stage recorder. Elevation of gage is 1,680 ft, by barometer.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--12 years (water years 1947-58), 16.2 ft³/s, 11,730 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,110 ft³/s Jan. 18, 1953, gage height, 5.36 ft, from rating curve extended above 550 ft³/s on basis of slope-area measurement at gage height 4.92 ft; minimum, 0.8 ft³/s Sept. 25, 1955.

STATISTICAL SUMMARIES FOR THE PERIOD 1947-1958

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	1.3	1950	39	1951	6.0	10	3.1
Nov	12	1.7	1950	36	1951	10	10	5.2
Dec	12	2.7	1950	83	1956	25	25	13.2
Jan	12	6.0	1947	89	1953	47	33	25.1
Feb	12	9.5	1955	75	1958	38	19	18.4
Mar	12	12	1955	57	1956	28	14	14.8
Apr	12	8.1	1951	38	1956	19	9.2	9.8
May	12	3.7	1958	18	1953	9.1	5.1	4.7
Jun	12	2.3	1958	14	1953	5.0	3.2	2.5
Jul	12	1.9	1949	4.9	1953	2.7	1.0	1.4
Aug	12	1.4	1951	3.1	1953	2.0	0.6	1.0
Sep	12	1.2	1955	2.6	1953	1.7	0.4	0.9
Ann		6.1	1955	27	1956	16	6.6	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.0	1.2	1.4	1.4	1.4	1.7	1.7	2.0	2.0	2.4	2.4	2.4	2.9	4.1	6.8	12
Nov	1.2	1.6	1.6	1.9	1.9	1.9	2.2	3.1	4.3	6.8	7.7	9.3	15	23	40	12
Dec	1.8	2.5	3.0	3.5	4.1	4.9	6.4	8.8	14	20	25	32	43	60	--	12
Jan	3.6	4.3	5.1	6.4	7.9	9.4	14	20	28	43	56	70	93	122	--	12
Feb	7.3	7.3	9.5	12	16	18	22	27	34	41	47	53	64	85	--	12
Mar	8.5	11	13	13	14	15	16	20	25	31	34	38	45	56	78	12
Apr	6.1	6.7	7.9	9.3	11	12	13	15	18	23	26	29	34	40	--	12
May	3.3	3.6	4.0	4.4	4.8	5.3	5.8	6.3	8.4	10	11	13	14	18	--	12
Jun	2.3	2.5	2.8	2.8	3.0	3.3	3.6	3.6	4.2	4.6	5.0	5.4	7.0	8.3	--	12
Jul	1.6	1.7	1.9	1.9	1.9	2.1	2.2	2.3	2.5	2.9	3.1	3.5	3.7	4.1	--	12
Aug	1.3	1.4	1.4	1.5	1.5	1.5	1.7	1.8	2.0	2.1	2.4	2.6	2.7	2.8	3.1	12
Sep	1.1	1.2	1.2	1.3	1.3	1.4	1.5	1.6	1.7	1.9	2.0	2.0	2.2	2.4	2.5	12
Ann	1.2	1.5	1.8	1.8	2.2	2.2	3.2	5.1	7.8	13	16	20	27	38	62	

14369500 APPLGATE RIVER NEAR WILDERVILLE, OR

LOCATION.--Lat 42°21'15", long 123°24'20", in SE 1/4 NE 1/4 sec.16, T.37 S., R.6 W., Josephine County, Hydrologic Unit 17100309, on left bank 0.3 mi downstream from Jackson Creek, 3.6 mi southeast of Wilderville, and at mile 7.6.

DRAINAGE AREA.--698 mi².

PERIOD OF RECORD.--October 1938 to September 1955, September 1978 to 1987.

REVISED RECORDS.--WSP 1318: 1943. WSP 1738: 1951, 1953, drainage area.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 947.18 ft above National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Sept. 1, 1978, nonrecording gage at site 1,100 ft upstream at datum 2.36 ft higher.

REMARKS.--Flow regulated since December 1980 by Applegate Lake (station 14361900). Many diversions for irrigation upstream from station. Wilderville ditch diverts up to 16 ft³/s 0.3 mi upstream and at the mouth of Jackson Creek.

AVERAGE DISCHARGE.--26 years, 757 ft³/s, 548,400 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 47,500 ft³/s Jan. 18, 1953, gage height, 18.3 ft, from floodmark, site and datum then in use, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 0.78 ft³/s Aug. 22-24, 1979. Minimum since first filling of Applegate Lake, 183 ft³/s Aug. 9, 1983.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1955, reached a stage of 20.3 ft, from floodmark, former site and datum, discharge, 66,500 ft³/s, from rating curve extended above 12,000 ft³/s on basis of slope-area measurement of peak flow.

Flood of February 1927 reached a stage of 22 ft at former site, from local resident. Floods of Dec. 22, 1964, and Jan. 15, 1974, are known to have exceeded the December 1955 flood.

No flow was observed at present site during the late summer of 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1939-1980 (PRIOR TO CONSTRUCTION OF APPLGATE DAM)

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	19	34	1940	1840	1951	213	401	2.5
Nov	19	55	1940	1920	1951	482	467	5.5
Dec	19	167	1950	3120	1951	1010	896	12.0
Jan	19	297	1949	4740	1953	1640	1310	19.4
Feb	19	394	1944	3180	1954	1530	920	16.5
Mar	19	415	1955	2430	1940	1090	481	12.9
Apr	19	448	1944	2090	1952	1080	428	12.4
May	19	295	1947	1890	1952	953	415	11.3
Jun	19	99	1939	1460	1953	487	345	5.6
Jul	19	22	1939	399	1953	98	93	1.2
Aug	19	5.2	1979	116	1953	26	27	0.3
Sep	20	3.5	1939	155	1978	40	37	0.5
Ann		264	1944	1310	1951	716	320	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	22	31	38	47	56	64	77	90	106	128	140	159	184	235	360	19
Nov	64	98	114	127	141	154	181	213	253	330	391	470	707	1160	1980	19
Dec	151	165	183	206	228	254	336	480	674	963	1120	1320	1710	2470	3790	19
Jan	205	245	277	319	365	417	609	850	1090	1460	1770	2160	2900	3590	5640	19
Feb	314	392	445	541	633	729	897	1100	1420	1670	1910	2200	2560	2990	4030	19
Mar	372	500	568	619	663	731	832	944	1060	1160	1240	1340	1440	1740	2600	19
Apr	467	539	603	660	705	747	843	970	1080	1240	1310	1410	1590	1820	2120	19
May	299	373	431	513	568	622	744	892	1050	1170	1230	1320	1440	1670	1910	19
Jun	73	109	151	180	211	239	301	382	453	555	610	693	841	1050	1460	19
Jul	12	17	22	26	31	36	47	59	76	98	113	130	165	220	340	19
Aug	3.5	4.2	5.9	6.8	7.4	8.1	10	14	21	31	34	38	48	63	83	19
Sep	3.1	6.0	7.3	7.9	10	13	21	29	35	44	50	61	74	98	134	20
Ann	12	30	54	91	130	175	266	385	554	804	960	1130	1380	1730	2610	

ROGUE RIVER BASIN

14370000 SLATE CREEK AT WONDER, OR

LOCATION.--Lat 42°21'40", long 123°31'10", in SW 1/4 sec.10, T.37 S., R.7 W., Josephine County, Hydrologic Unit 17100309, on left bank 0.6 mi upstream from Elliot Creek and 0.7 mi east of Wonder.

DRAINAGE AREA.--31.4 mi².

PERIOD OF RECORD.--July to November 1913, October 1943 to September 1957, water years 1958-60 (annual maximum). October 1943 to September 1945 monthly discharge only, published in WSP 1318.

GAGE.--Crest-stage gage. Datum of gage is 1,034.85 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 21, 1946, staff gage at several sites within 0.5 mi of described site at various datums. Nov. 21, 1946, to Sept. 30, 1957, water-stage recorder at present site and datum.

REMARKS.--No regulation. Several small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--14 years (water years 1944-57), 80.9 ft³/s, 58,570 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,020 ft³/s Oct. 29, 1950, gage height, 9.72 ft, from rating curve extended above 2,100 ft³/s on basis of slope-area measurements at gage heights 8.29 and 9.72 ft; minimum discharge, 0.2 ft³/s Aug. 25, 1957.

STATISTICAL SUMMARIES FOR THE PERIOD 1944-1957

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	2.2	1953	213	1951	28	56	3.0
Nov	14	6.5	1953	195	1946	75	63	7.6
Dec	14	25	1944	581	1956	161	160	16.9
Jan	14	29	1947	546	1956	243	175	25.5
Feb	14	64	1944	333	1945	199	86	19.0
Mar	14	81	1955	247	1956	144	51	15.1
Apr	14	24	1944	202	1948	71	46	7.2
May	14	11	1947	90	1953	33	22	3.5
Jun	14	5.9	1951	38	1953	13	8.2	1.4
Jul	14	2.1	1951	10	1953	4.9	2.3	0.5
Aug	14	1.0	1946	4.7	1953	2.2	1.1	0.2
Sep	14	1.1	1944	3.9	1948	2.1	0.9	0.2
Ann		46	1944	154	1956	81	32	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.4	1.8	2.2	2.2	2.2	2.8	2.8	3.6	5.1	6.2	7.3	9.1	13	27	79	14
Nov	2.8	3.4	5.2	5.7	6.5	7.9	15	22	34	53	69	82	113	177	336	14
Dec	14	17	23	32	38	43	55	73	102	149	191	241	302	447	725	14
Jan	15	20	31	42	55	75	100	129	183	261	315	384	487	635	967	14
Feb	36	53	60	69	77	83	98	118	144	185	214	249	311	426	636	14
Mar	46	55	60	64	70	77	88	100	124	159	181	209	236	273	374	14
Apr	21	24	28	32	35	38	44	53	65	82	95	111	126	150	208	14
May	10	12	13	14	15	17	19	22	29	37	40	47	58	73	108	14
Jun	4.8	5.7	6.2	6.8	7.4	8.0	8.8	11	12	14	15	16	20	24	34	14
Jul	1.5	1.7	2.1	2.3	2.5	2.5	3.1	3.5	4.8	5.3	5.3	5.9	7.2	7.2	12	14
Aug	0.8	1.0	1.1	1.3	1.4	1.5	1.7	1.9	2.1	2.6	2.8	2.8	3.5	3.5	4.8	14
Sep	0.8	1.0	1.1	1.2	1.3	1.3	1.5	1.7	2.0	2.3	2.6	2.8	3.0	3.3	3.9	14
Ann	1.2	1.6	2.1	2.8	4.1	5.4	11	21	37	62	79	100	133	200	347	

LOWER ROGUE RIVER BASIN

14371500 GRAVE CREEK AT PEASE BRIDGE, NEAR PLACER, OR

LOCATION.--Lat 42°38'30", long 123°12'40", in SE 1/4 sec.6, T.34 S., R.4 W., Jackson County, Hydrologic Unit 17100310, on right bank 0.5 mi downstream from Pease Bridge, 0.5 mi upstream from Boulder Creek, 5.4 mi east of Placer, and at mile 27.1.

DRAINAGE AREA.--22.1 mi² at measuring site 0.5 mi upstream.

PERIOD OF RECORD.--October 1940 to 1987. Prior to October 1945 monthly discharge only, published in WSP 1318.

REVISED RECORDS.--WSP 1738: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 2,354.2 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Aug. 4, 1955, at sites 0.5 mi upstream at datum 29.9 ft higher.

REMARKS.--No regulation. One small diversion upstream from station. Prior to 1945, Columbia upper ditch diverted water about 2 mi upstream from station, bypassing station. Records herein are for measuring site.

AVERAGE DISCHARGE.--42 years (water years 1946-87), 59.1 ft³/s, 36.32 in/yr, 42,820 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,240 ft³/s Dec. 22, 1964, gage height, 11.20 ft, from rating curve extended above 1,200 ft³/s on basis of slope-area measurement at gage height 9.66 ft; minimum discharge, 0.12 ft³/s July 15, 1970.

STATISTICAL SUMMARIES FOR THE PERIOD 1946-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	42	1.2	1965	163	1951	12	26	1.8
Nov	42	3.0	1960	307	1974	64	62	9.0
Dec	42	3.2	1977	415	1965	122	104	17.5
Jan	42	5.6	1977	427	1974	138	100	19.8
Feb	42	8.3	1977	293	1958	135	70	17.7
Mar	42	37	1977	216	1966	110	51	15.8
Apr	42	22	1986	215	1956	78	42	10.8
May	42	8.7	1947	99	1963	35	21	5.1
Jun	42	4.5	1987	52	1953	11	7.6	1.6
Jul	42	1.1	1973	9.3	1953	3.6	1.7	0.5
Aug	42	0.5	1973	5.1	1947	1.7	1.1	0.2
Sep	42	0.5	1974	7.6	1978	1.9	1.4	0.3
Ann		11	1977	122	1974	59	21	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	0.8	1.0	1.3	1.3	1.6	1.6	2.0	2.5	3.2	4.8	5.9	7.2	10	16	32	42
Nov	2.1	3.1	3.9	5.3	6.4	7.7	12	18	28	49	66	86	112	154	296	42
Dec	6.0	9.2	14	19	23	29	41	56	79	114	141	177	219	275	389	42
Jan	10	16	21	25	31	36	52	69	91	123	144	171	216	307	505	42
Feb	20	31	40	46	51	57	71	86	107	134	150	176	211	269	383	42
Mar	31	37	42	46	51	56	64	78	95	119	133	153	180	219	295	42
Apr	20	24	29	33	37	42	51	61	75	92	102	114	129	153	197	42
May	9.5	12	13	15	17	19	22	27	32	39	44	49	57	73	103	42
Jun	3.7	4.7	4.7	5.3	5.9	6.7	7.6	9.1	11	13	14	15	17	21	27	42
Jul	1.0	1.4	1.6	1.6	2.0	2.0	2.3	2.7	3.1	4.1	4.1	4.6	5.3	6.1	8.0	42
Aug	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.4	1.6	2.0	2.2	2.5	2.8	3.6	42
Sep	0.5	0.6	0.6	0.6	0.7	0.9	1.0	1.1	1.3	1.7	2.0	2.0	2.6	3.4	4.6	42
Ann	0.7	1.0	1.7	2.2	3.1	4.3	8.8	18	33	53	67	85	110	149	226	

LOWER ROGUE RIVER BASIN

14372300 ROGUE RIVER NEAR AGNESS, OR
(National stream quality accounting network station)

LOCATION.--Lat 42°34'50", long 124°03'30", in NE 1/4 NW 1/4 sec.6, T.35 S., R.11 W., Curry County, Hydrologic Unit 17100310, on left bank 0.8 mi upstream from Shasta Costa Creek, 1.5 mi north of Agness, 2.6 mi upstream from Illinois River, and at mile 29.7.

DRAINAGE AREA.--3,939 mi².

PERIOD OF RECORD.--October 1960 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 113.81 ft above National Geodetic Vertical Datum of 1929 (levels by U.S. Bureau of Public Roads).

REMARKS.--Flow regulated since February 1977 by Lost Creek Lake (station 14335040), since December 1980 by Applegate Lake (station 14361900), slight regulation by Fish Lake and Emigrant Lake. Many diversions for irrigation and mining.

AVERAGE DISCHARGE.--27 years, 6,227 ft³/s, 4,511,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 290,000 ft³/s Dec. 23, 1964, from slope-area measurement; maximum gage height, 68.03 ft Dec. 23, 1964, from floodmark (backwater from Illinois River); minimum discharge, 608 ft³/s July 9, 10, 1968.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1976

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	16	1320	1961	5070	1963	1910	894	2.4
Nov	16	1720	1968	20200	1974	5500	4420	6.8
Dec	16	4190	1964	44000	1965	11500	9720	14.7
Jan	16	3290	1963	32600	1974	16200	10300	20.8
Feb	16	4770	1973	19100	1961	11200	4040	13.1
Mar	16	5290	1973	25600	1972	11500	6470	14.7
Apr	16	3340	1968	14000	1963	7740	3160	9.6
May	16	2550	1968	11300	1963	6020	2320	7.7
Jun	16	1490	1973	6130	1975	3540	1410	4.4
Jul	16	864	1968	2740	1971	1740	526	2.2
Aug	16	877	1973	2150	1976	1350	346	1.7
Sep	16	935	1968	1800	1971	1340	243	1.7
Ann		3450	1973	12000	1974	6620	2240	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1200	1290	1370	1440	1490	1590	1720	1860	2040	2170	2360	2650	2870	3420	--	16
Nov	1470	1590	1680	1790	1910	2030	2340	2830	3620	4850	6040	7580	10100	13900	20700	16
Dec	1780	2340	2750	3130	3530	4070	5270	6670	8430	11300	13400	15600	18500	23500	31400	16
Jan	2000	2720	3130	3490	3940	4340	5320	6710	8870	11200	13400	16100	20300	26200	34200	16
Feb	2390	3790	4460	4950	5430	5960	7170	8260	9540	11400	13100	15500	18700	23000	32400	16
Mar	3140	3910	4400	4740	5050	5400	6180	7220	8730	10800	12200	13600	15700	18900	25100	16
Apr	2550	3170	3630	4000	4410	4910	5680	6370	7090	8260	8940	9720	11000	12200	15100	16
May	2220	2530	2990	3300	3600	3880	4460	4990	5550	6270	6810	7450	8170	9010	10100	16
Jun	1310	1770	1990	2170	2300	2410	2630	2930	3320	3800	4210	4640	5010	5550	6330	16
Jul	905	1070	1220	1340	1460	1580	1840	2030	2210	2380	2470	2570	2670	2900	3390	16
Aug	852	978	1050	1100	1150	1200	1420	1640	1780	2010	2100	2200	2350	2560	2980	16
Sep	971	1050	1090	1130	1190	1260	1370	1470	1570	1780	1920	2100	2350	2670	3030	16
Ann	1110	1330	1510	1680	1900	2120	2620	3420	4600	6040	6990	8280	10020	12860	19780	

ILLINOIS RIVER BASIN

14372500 EAST FORK ILLINOIS RIVER NEAR TAKILMA, OR

LOCATION.--Lat 42°00'10", long 123°37'30", in SE 1/4 NE 1/4 sec.15, T.41 S., R.8 W., Josephine County, Hydrologic Unit 17100311, Siskiyou National Forest, on right bank 0.3 mi downstream from Dunn Creek (California-Oregon State line), 3.4 mi south of Takilma, and at mile 71.2.

DRAINAGE AREA.--42.3 mi².

PERIOD OF RECORD.--April to September 1926, April 1927 to April 1932, October 1940 to 1987. Monthly discharge only for some periods, published in WSP 1318. Records prior to 1942 water year not equivalent owing to large diversions.

REVISED RECORDS.--WSP 1184: 1948. WSP 1288: 1951(P). WSP 1398: 1946, 1947(M), 1949. WSP 1738: Drainage area (former site).

GAGE.--Water-stage recorder. Elevation of gage is 1,780 ft, from topographic map. Prior to Oct. 31, 1946, nonrecording gage at sites 0.6 mi downstream at different datums. Oct. 31, 1946, to May 13, 1949, nonrecording gage and May 14, 1949, to Aug. 23, 1965, water-stage recorder at site 0.6 mi downstream at datum 1,746.6 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Two small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--46 years (water years 1942-87), 179 ft³/s, 57.47 in/yr, 129,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,700 ft³/s Dec. 22, 1964, gage height, 14.90 ft, present site and datum, from floodmark, from rating curve extended above 4,400 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 4.6 ft³/s Nov. 3, 1960.

STATISTICAL SUMMARIES FOR THE PERIOD 1942-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	46	8.3	1953	469	1951	50	81	2.4
Nov	46	12	1960	873	1974	220	189	10.1
Dec	46	12	1977	1510	1965	357	301	16.9
Jan	46	21	1977	1040	1953	375	242	17.8
Feb	46	37	1977	969	1958	351	202	15.2
Mar	46	84	1942	606	1966	274	139	13.0
Apr	46	73	1970	437	1948	231	94	10.6
May	46	43	1947	382	1963	181	87	8.6
Jun	46	23	1987	228	1953	71	39	3.3
Jul	46	12	1987	55	1983	23	9.6	1.1
Aug	46	7.8	1977	23	1983	13	3.5	0.6
Sep	46	7.1	1944	51	1986	13	8.3	0.6
Ann		39	1977	315	1974	179	58	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	7.5	8.5	8.9	9.3	10	11	13	15	17	22	26	33	45	75	157	46
Nov	11	14	18	23	27	33	49	75	116	175	222	284	384	588	974	46
Dec	27	41	56	70	82	95	122	163	224	322	401	485	621	820	1280	46
Jan	41	54	65	76	88	99	135	180	238	326	390	474	619	846	1490	46
Feb	56	82	99	112	126	139	170	205	249	316	374	470	586	733	1170	46
Mar	79	92	105	118	128	137	160	191	222	269	305	355	439	553	749	46
Apr	81	98	115	127	137	148	170	195	220	250	275	306	343	401	484	46
May	54	66	74	83	93	105	125	151	181	215	237	265	296	338	397	46
Jun	24	28	31	34	36	39	45	52	62	78	88	101	121	143	185	46
Jul	12	14	14	15	16	17	18	20	22	25	27	29	32	36	47	46
Aug	7.8	9.1	9.1	10	11	11	12	13	14	15	16	17	17	19	21	46
Sep	7.1	7.8	8.3	8.7	9.0	9.2	9.7	11	12	13	13	14	15	18	22	46
Ann	8.6	11	13	14	18	22	44	80	121	170	201	239	297	402	654	

ROGUE RIVER BASIN

14375000 SUCKER CREEK NEAR HOLLAND, OR

LOCATION.--Lat 42°09'00", long 123°27'50", in NE 1/4 sec.25, T.39 S., R.7 W., Josephine County, Hydrologic Unit 17100311, on right bank 1.3 mi downstream from Grayback Creek and 4 mi northeast of Holland.

DRAINAGE AREA.-- 76.2 mi².

PERIOD OF RECORD.--April to August 1940, September 1941 to September 1965. Prior to October 1945 monthly discharge only, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 1,777.22 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Sept. 16, 1947, staff gage at several sites within 0.5 mi 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.

REMARKS.--No regulation. Grayback Canal and 3 small diversions from Grayback and Cave Creeks divert water for domestic use and irrigation upstream from station. Most of return flow from these diversions enters creek upstream from station.

AVERAGE DISCHARGE.--24 years (water years 1942-65), 212 ft³/s, 153,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft³/s Dec. 22, 1964, gage height, 9.28 ft, from floodmark, from estimate of peak based on slope-area survey; minimum observed, 17 ft³/s Sept. 29 to Oct. 3, 1941.

STATISTICAL SUMMARIES FOR THE PERIOD 1942-1965

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	24	25	1942	312	1951	60	67	2.4
Nov	24	25	1960	391	1951	138	95	5.3
Dec	24	29	1960	1020	1965	311	280	12.5
Jan	24	77	1960	921	1956	369	282	14.8
Feb	24	117	1955	1250	1958	408	237	14.9
Mar	24	95	1955	610	1957	293	118	11.7
Apr	24	69	1955	595	1963	342	127	13.3
May	24	105	1947	691	1963	328	140	13.1
Jun	24	88	1951	361	1953	169	77	6.5
Jul	24	40	1944	136	1953	63	22	2.6
Aug	24	26	1944	56	1953	37	8.3	1.5
Sep	24	23	1944	39	1948	30	5.1	1.2
Ann		86	1955	339	1956	212	71	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	25	26	27	28	29	30	32	34	38	43	48	54	64	87	142	24
Nov	27	30	33	36	39	41	51	69	93	127	147	179	229	322	482	24
Dec	36	46	60	69	79	89	117	145	190	252	298	367	451	613	1030	24
Jan	57	68	77	85	93	104	131	197	271	381	460	546	669	861	1130	24
Feb	95	116	139	167	183	208	246	290	336	413	475	557	658	815	1160	24
Mar	118	151	170	182	197	210	233	261	296	338	369	405	461	551	685	24
Apr	119	189	216	230	242	257	298	333	368	420	452	484	523	574	689	24
May	94	161	183	202	218	233	270	308	358	415	443	470	504	557	642	24
Jun	69	79	88	95	103	111	126	143	165	201	223	248	286	332	407	24
Jul	36	39	42	45	47	49	54	59	64	72	75	80	88	103	128	24
Aug	27	28	29	30	31	33	35	38	41	44	45	47	49	53	57	24
Sep	23	24	25	26	27	27	29	31	33	35	36	37	38	40	43	24
Ann	26	29	33	37	43	51	77	118	174	239	277	324	386	475	651	

ILLINOIS RIVER BASIN

14375100 SUCKER CREEK BELOW LITTLE GRAYBACK CREEK, NEAR HOLLAND, OR

LOCATION.--Lat 42°09'35", long 123°28'40", in NE 1/4 SW 1/4 sec.24, T.39 S., R.7 W., Josephine County, Hydrologic Unit 17100311, on right bank 500 ft downstream from Little Grayback Creek, 2.0 mi downstream from Grayback Creek, 3.7 mi northeast of Holland, and at mile 9.3.

DRAINAGE AREA.--83.9 mi².

PERIOD OF RECORD.--October 1965 to 1987.

REVISED RECORDS.--WDR OR-86-2: 1985.

GAGE.--Water-stage recorder. Datum of gage is 1,713.92 ft above National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Grayback Canal and 3 small diversions from Grayback and Cave Creeks divert water for domestic use and irrigation upstream from station. Return flow from these diversions enters creek upstream from station.

AVERAGE DISCHARGE.--22 years, 241 ft³/s, 39.01 in/yr, 174,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,550 ft³/s Jan. 15, 1974, gage height, 8.20 ft; minimum discharge, 12 ft³/s Oct. 20, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since at least 1940, 10.8 ft on Dec. 22, 1964, from floodmark, discharge, 19,300 ft³/s, from estimate based on slope-area measurement of peak flow at site 0.7 mi upstream.

STATISTICAL SUMMARIES FOR THE PERIOD 1966-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	22	21	1975	88	1980	45	16	1.6
Nov	22	30	1981	911	1974	202	209	6.9
Dec	22	31	1977	1190	1982	363	307	12.8
Jan	22	35	1977	1150	1974	462	311	16.3
Feb	22	42	1977	1050	1986	440	261	14.1
Mar	22	92	1977	953	1972	427	222	15.0
Apr	22	101	1977	700	1982	347	164	11.8
May	22	105	1981	617	1969	314	164	11.1
Jun	22	57	1987	345	1971	163	96	5.6
Jul	22	29	1977	129	1983	67	29	2.4
Aug	22	18	1977	65	1983	39	12	1.4
Sep	22	18	1987	61	1978	34	10	1.2
Ann		53	1977	462	1974	241	107	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	22	24	26	27	28	29	32	35	39	44	47	52	58	73	112	22
Nov	27	31	34	38	43	48	59	80	111	150	188	269	371	575	835	22
Dec	35	49	63	78	91	111	156	203	270	379	470	588	707	878	1140	22
Jan	46	85	109	127	140	152	194	257	339	417	479	552	654	813	1580	22
Feb	77	120	153	180	203	227	264	317	380	442	477	534	639	838	1260	22
Mar	137	162	185	202	218	239	286	340	390	471	520	578	651	775	920	22
Apr	132	150	165	185	213	231	266	299	343	401	431	462	505	577	745	22
May	107	126	144	158	170	183	211	258	319	384	434	477	529	587	674	22
Jun	53	60	67	72	79	86	103	123	151	189	211	247	291	355	403	22
Jul	31	35	37	40	42	45	51	58	65	76	84	93	102	116	134	22
Aug	21	22	25	27	30	32	35	38	42	45	47	51	54	57	66	22
Sep	18	20	22	24	26	28	30	31	33	36	38	40	43	49	60	22
Ann	25	29	33	38	44	52	81	130	188	264	313	372	439	548	765	

ILLINOIS RIVER BASIN

14375500 WEST FORK ILLINOIS RIVER BELOW ROCK CREEK, NEAR O'BRIEN, OR

LOCATION.--Lat 42°02'20", long 123°44'50", in SW 1/4 SE 1/4 sec.34, T.40 S., R.9 W., Josephine County, Hydrologic Unit 17100311, Siskiyou National Forest, on left bank 0.2 mi downstream from Rock Creek, 3.0 mi southwest of O'Brien, and at mile 12.8.

DRAINAGE AREA.--42.4 mi².

PERIOD OF RECORD.--September 1954 to September 1985.

GAGE.--Water-stage recorder. Datum of gage is 1,516.14 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--Three small diversions from Elk Creek for irrigation upstream from station.

AVERAGE DISCHARGE.--31 years, 219 ft³/s, 70.14 in/yr, 158,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,100 ft³/s Dec. 22, 1964, gage height, 16.05 ft, from rating curve extended above 6,200 ft³/s, on basis of slope-area measurement at gage height 14.79 ft; minimum discharge, 1.5 ft³/s Sept. 2-4, 1974.

STATISTICAL SUMMARIES FOR THE PERIOD 1955-1986

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	31	4.7	1975	300	1963	50	63	2.0
Nov	31	17	1977	1310	1974	324	291	12.2
Dec	31	11	1977	1620	1965	520	378	20.2
Jan	31	49	1977	1180	1970	492	298	19.1
Feb	31	85	1977	1110	1958	465	247	16.4
Mar	31	86	1965	801	1974	401	206	15.5
Apr	31	47	1977	767	1982	230	148	8.6
May	31	31	1966	302	1963	100	76	3.9
Jun	31	15	1973	65	1960	29	11	1.1
Jul	31	6.6	1973	28	1983	12	4.4	0.5
Aug	31	3.3	1973	17	1976	7.3	3.0	0.3
Sep	31	3.0	1974	63	1978	10	11	0.4
Ann		48	1977	408	1974	219	77	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	3.8	4.6	6.1	6.8	7.3	8.1	9.9	12	16	23	29	39	57	99	221	31
Nov	10	15	21	27	33	40	62	107	169	274	341	445	618	908	1490	31
Dec	20	48	70	89	106	122	168	230	336	526	642	802	1030	1300	1880	31
Jan	46	62	77	90	104	120	167	239	332	470	557	665	807	1190	2000	31
Feb	62	99	119	133	147	164	204	251	325	440	519	633	827	1110	1710	31
Mar	84	102	119	136	151	167	215	264	326	411	478	556	656	861	1230	31
Apr	51	60	70	79	91	103	133	166	201	242	269	305	364	462	629	31
May	28	32	36	39	42	45	51	59	69	86	98	118	150	195	309	31
Jun	15	16	18	19	21	22	24	27	29	32	34	37	40	44	54	31
Jul	5.2	6.4	7.1	7.8	8.6	8.6	10	12	13	15	16	17	18	20	23	31
Aug	3.3	4.0	4.0	4.5	5.0	5.0	5.6	6.2	6.9	7.7	7.7	7.7	9.2	10	13	31
Sep	3.4	3.4	4.1	4.1	4.1	4.8	4.8	6.2	6.7	7.6	8.3	8.9	11	14	22	31
Ann	4.8	6.1	6.9	9.2	12	16	30	56	104	173	221	286	388	572	992	

ROGUE RIVER BASIN

14377000 ILLINOIS RIVER AT KERBY, OR

LOCATION.--Lat 42°11'50", long 123°39'30", in NW 1/4 sec.9, T.39 S., R.8 W., Josephine County, Hydrologic Unit 17100311, on upstream side of Finch Bridge and 0.5 mi west of Kerby.

DRAINAGE AREA.--364 mi².

PERIOD OF RECORD.--March 1926 to September 1961. Monthly discharge only March 1926, published in WSP 1318.

GAGE.--Wire-weight gage read once or twice daily. Datum of gage is 1,232.00 ft above National Geodetic Vertical Datum of 1929. Prior to May 9, 1928, staff gage at site 0.5 mi 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 at site 1 mi downstream at datum 16.76 ft lower. Oct. 1, 1950 to Dec. 28, 1958, staff gage at present site at datum 2.00 ft higher.

REMARKS.--No regulation. Diversions for irrigation of 5,500 acres upstream from station. Some diversions for mining during winter months.

AVERAGE DISCHARGE.--35 years (water years 1927-61), 1,209 ft³/s, 875,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 56,800 ft³/s Dec. 22, 1955, gage height, 16.4 ft, present datum, from floodmark, from rating curve extended above 9,600 ft³/s on basis of slope-area measurement at gage height 15.7 ft, present datum; minimum observed, 9.6 ft³/s Aug. 16, 1959.

STATISTICAL SUMMARIES FOR THE PERIOD 1926-1961

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	35	28	1940	3360	1951	287	589	2.0
Nov	35	39	1930	3040	1954	1190	948	8.1
Dec	35	183	1937	7310	1956	2250	1650	15.8
Jan	35	293	1937	7370	1953	2780	1780	19.5
Feb	35	703	1931	7830	1958	2800	1620	17.9
Mar	36	655	1926	5500	1938	2060	1070	14.4
Apr	36	361	1926	3750	1937	1550	718	10.5
May	36	199	1931	2140	1933	987	520	6.9
Jun	36	81	1926	1270	1933	415	274	2.8
Jul	36	35	1926	296	1953	105	62	0.7
Aug	36	16	1931	127	1947	44	23	0.3
Sep	36	16	1934	77	1948	39	15	0.3
Ann		575	1931	2080	1958	1210	419	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	25	30	34	38	41	44	53	64	79	102	124	170	268	447	854	35
Nov	40	51	75	97	124	163	286	417	599	983	1250	1720	2270	3130	4830	35
Dec	126	254	348	413	493	580	791	1080	1470	2040	2590	3210	4120	5650	8440	35
Jan	354	505	629	754	893	1010	1270	1590	1990	2610	3110	3700	4610	6190	9690	35
Feb	583	683	806	921	1040	1170	1460	1780	2200	2760	3160	3660	4590	5610	8480	35
Mar	655	780	868	947	1050	1140	1340	1560	1810	2140	2350	2660	3110	3900	5590	36
Apr	507	622	738	835	933	1020	1160	1300	1500	1740	1880	2070	2300	2630	3290	36
May	212	298	373	454	549	615	733	848	997	1180	1290	1420	1570	1780	2230	36
Jun	86	117	141	166	190	215	270	324	394	480	539	612	708	827	1180	36
Jul	34	41	47	53	58	63	73	85	98	115	126	139	155	186	258	36
Aug	18	21	25	29	31	33	36	39	44	50	54	59	64	74	97	36
Sep	18	21	24	26	29	30	33	36	38	43	46	51	57	65	77	36
Ann	28	36	43	55	71	100	259	538	842	1210	1440	1740	2150	2860	4550	

ILLINOIS RIVER BASIN

14377100 ILLINOIS RIVER NEAR KERBY, OR

LOCATION.--Lat 42°13'55", long 123°39'45", in SE 1/4 SE 1/4 sec.29, T.38 S., R.8 W., Josephine County, Hydrologic Unit 17100311, Siskiyou National Forest, on right bank 1.6 mi upstream from Josephine Creek, 2.5 mi northwest of Kerby, and at mile 50.3.

DRAINAGE AREA.--380 mi².

PERIOD OF RECORD.--October 1961 to 1987.

GAGE.--Water-stage recorder. Datum of gage is 1,198.8 ft above National Geodetic Vertical Datum of 1929. Prior to Jan. 28, 1965, water-stage recorder, and Jan. 28 to Sept. 30, 1965, nonrecording gage 700 ft downstream at datum 2.99 ft lower.

REMARKS.--No regulation. Diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--26 years, 1,331 ft³/s, 47.57 in/yr, 964,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 92,200 ft³/s Dec. 22, 1964, gage height, 45.28 ft, from floodmark, site and datum then in use, from rating curve extended above 30,000 ft³/s on basis of slope-area measurement of peak flow; minimum discharge, 14 ft³/s Aug. 11, 13, 14, 1977, Sept. 10, 11, 1986.

STATISTICAL SUMMARIES FOR THE PERIOD 1962-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	26	42	1975	1770	1963	280	345	1.8
Nov	26	128	1977	6340	1974	1760	1580	10.9
Dec	26	115	1977	9240	1965	2900	2100	18.5
Jan	26	236	1977	7180	1970	2950	1770	18.8
Feb	26	357	1977	6690	1986	2720	1470	15.8
Mar	26	863	1965	4870	1983	2370	1190	15.1
Apr	26	433	1977	4520	1982	1600	937	9.9
May	26	321	1981	2440	1963	919	525	5.9
Jun	26	104	1987	646	1971	319	160	2.0
Jul	26	36	1987	280	1983	93	54	0.6
Aug	26	20	1977	116	1976	47	23	0.3
Sep	26	22	1987	358	1978	75	76	0.5
Ann		275	1977	2370	1974	1330	495	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	42	49	55	63	72	88	101	122	160	188	234	340	516	1040	--	26
Nov	97	122	162	197	232	284	395	651	990	1600	2050	2560	3330	4920	7440	26
Dec	193	394	571	711	808	905	1170	1500	2080	3010	3570	4360	5410	6610	9310	26
Jan	309	462	580	662	743	842	1140	1590	2100	2810	3340	3980	4950	6530	10800	26
Feb	452	717	897	1010	1100	1210	1440	1710	2090	2690	3110	3700	4680	6110	8510	26
Mar	671	762	874	985	1080	1180	1390	1660	2020	2460	2750	3140	3670	4610	6680	26
Apr	497	585	657	743	813	886	1070	1250	1440	1690	1860	2080	2440	3010	3780	26
May	295	336	373	416	469	522	612	702	831	1070	1170	1310	1520	1690	2040	26
Jun	90	109	127	145	164	186	221	261	310	366	411	476	547	627	745	26
Jul	34	38	43	48	53	57	65	74	87	104	112	127	144	171	214	26
Aug	22	24	26	28	30	32	36	40	45	53	56	61	66	76	99	26
Sep	22	24	26	29	32	35	40	45	49	55	60	67	76	99	172	26
Ann	31	41	52	68	91	122	276	549	844	1250	1510	1860	2390	3300	5490	

ROGUE RIVER BASIN

14377500 DEER CREEK NEAR DRYDEN, OR

LOCATION.--Lat 42°15'50", long 123°27'00", near center of sec.18, T.38 S., R.6 W., Josephine County, Hydrologic Unit 17100311, on left bank 500 ft downstream from confluence of North and South Forks and 5 mi east of Dryden.

DRAINAGE AREA.--22.0 mi².

PERIOD OF RECORD.--December 1941 to September 1956. Monthly discharge only for December 1941 to September 1945, published in WSP 1318.

GAGE.--Water-stage recorder. Datum of gage is 1,650.10 ft above National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to Sept. 12, 1946, staff gage at same site at datum 1.26 ft higher.

REMARKS.--No regulation. Small diversions upstream from station for irrigation.

AVERAGE DISCHARGE.--14 years (water years 1943-56), 74.1 ft³/s, 53,650 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 5,000 ft³/s Jan. 18, 1953, gage height, 7.61 ft, backwater from logs; maximum gage height, 7.92 ft Oct. 29, 1950; minimum discharge, 0.9 ft³/s Sept. 20-24, 1951, Sept. 6-10, 1955.

STATISTICAL SUMMARIES FOR THE PERIOD 1942-1956

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	14	1.6	1953	226	1951	24	59	2.8
Nov	14	3.4	1953	195	1951	82	70	9.2
Dec	15	20	1950	488	1956	166	158	19.0
Jan	15	29	1949	510	1953	193	142	22.1
Feb	15	48	1944	315	1952	144	68	15.1
Mar	15	40	1942	192	1950	95	38	10.9
Apr	15	32	1942	162	1948	89	40	9.9
May	15	11	1947	111	1953	57	32	6.6
Jun	15	7.8	1951	68	1953	22	15	2.5
Jul	15	3.2	1951	11	1953	6.7	3.0	0.8
Aug	15	1.6	1946	6.1	1947	3.1	1.4	0.4
Sep	15	1.4	1951	3.7	1948	2.2	0.7	0.2
Ann		28	1944	128	1956	74	30	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	1.2	1.5	1.9	1.9	1.9	2.4	2.4	4.0	5.2	6.5	7.9	11	15	26	56	14
Nov	2.3	2.8	2.8	4.6	5.6	6.4	12	22	35	55	68	101	137	204	335	14
Dec	15	20	26	31	36	39	47	59	82	119	155	200	258	379	605	15
Jan	15	20	25	30	39	46	63	90	122	190	238	322	404	553	848	15
Feb	24	34	45	51	56	63	78	98	117	137	153	184	232	299	407	15
Mar	36	40	47	51	54	58	66	78	94	111	122	141	159	191	258	15
Apr	32	42	47	54	60	68	74	83	97	111	118	125	141	159	209	15
May	11	14	18	21	25	28	41	52	65	81	88	95	104	117	147	15
Jun	6.0	6.7	8.2	9.1	9.1	11	13	16	19	25	28	30	35	44	72	15
Jul	2.3	2.9	3.2	3.5	3.5	3.9	4.3	4.8	5.9	6.6	7.3	9.2	12	14	17	15
Aug	1.3	1.6	1.7	1.7	1.9	2.0	2.5	2.7	2.9	3.4	3.7	3.9	4.6	5.7	6.6	15
Sep	1.1	1.2	1.3	1.3	1.4	1.5	1.7	2.1	2.4	2.6	2.9	2.9	3.3	3.5	4.3	15
Ann	1.5	1.9	2.4	3.0	4.6	6.4	14	27	44	65	79	97	118	157	275	

ROGUE RIVER BASIN

14378000 ILLINOIS RIVER NEAR SELMA, OR

LOCATION.--Lat 42°22'45", long 123°48'40", in SW 1/4 sec.6, T.37 S., R.9 W., Josephine County, Hydrologic Unit 17100311, on right bank 0.1 mi upstream from Panther Creek, 0.2 mi downstream from Briggs Creek, 12 mi northwest of Selma, and at mile 32.3.

DRAINAGE AREA.--665 mi², includes that of Panther Creek.

PERIOD OF RECORD.--October 1956 to January 1968.

GAGE.--Water-stage recorder. Datum of gage is 829.18 ft above National Geodetic Vertical Datum of 1929. Prior to Nov. 13, 1967, water-stage recorder at same site and datum.

REMARKS.--No regulation. Many diversions upstream from station for irrigation, mining, and logpond operation. Records include flow of Panther Creek.

AVERAGE DISCHARGE.--11 years, 2,335 ft³/s, 1,690,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 160,000 ft³/s Dec.22, 1964, gage height, 34.0 ft, from floodmark, from rating curve extended above 33,000 ft³/s on basis of slope-area measurement at gage height 25.64 ft, and comparison of peak flows at station near Kerby and Rogue River near Agness; minimum, 61 ft³/s Aug. 28, Sept. 2, 1959.

STATISTICAL SUMMARIES FOR THE PERIOD 1957-1968

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	12	86	1965	2730	1963	556	777	2.0
Nov	12	161	1960	4490	1964	2030	1250	7.1
Dec	12	432	1960	16400	1965	4130	4240	15.0
Jan	12	1110	1962	9950	1965	5170	3450	18.8
Feb	11	2520	1966	15000	1958	5700	3600	18.8
Mar	11	1340	1965	7570	1961	4270	1920	15.5
Apr	11	1450	1964	6780	1963	3150	1530	11.1
May	11	764	1959	4520	1963	1820	1140	6.6
Jun	11	328	1965	915	1960	561	191	2.0
Jul	11	120	1959	267	1963	188	47	0.7
Aug	11	65	1959	130	1963	105	19	0.4
Sep	11	73	1964	124	1959	97	16	0.3
Ann		1730	1962	3740	1958	2340	637	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	78	84	90	97	104	112	128	145	171	200	261	434	713	1120	2610	12
Nov	134	151	176	229	327	391	526	823	1390	2050	2490	3290	3920	5270	9030	12
Dec	265	411	552	673	798	979	1230	1590	1990	3100	4100	5560	7680	10700	14300	12
Jan	574	761	901	1010	1080	1150	1500	2340	3310	5170	6710	7790	9170	12300	19200	12
Feb	1360	1550	1670	1780	1900	2060	2530	3000	3630	5200	6710	8130	10500	14400	20700	11
Mar	994	1150	1400	1610	1830	2020	2420	3030	3900	4870	5470	6330	7390	8980	12000	11
Apr	1050	1180	1360	1510	1670	1890	2080	2380	2740	3370	3740	4230	4850	5850	7690	11
May	624	726	792	861	907	950	1120	1250	1420	1790	2000	2330	2690	3060	4500	11
Jun	235	269	305	332	363	391	437	479	531	639	693	760	843	967	1080	11
Jul	99	111	121	131	142	149	161	179	197	218	227	236	249	274	334	11
Aug	64	72	79	83	88	91	97	106	111	120	122	124	131	139	152	11
Sep	68	70	74	77	79	81	83	87	93	101	105	110	117	129	161	11
Ann	81	94	111	132	160	208	467	903	1350	1970	2410	3060	4050	5860	9610	

ILLINOIS RIVER BASIN

14378200 ILLINOIS RIVER NEAR AGNESS, OR

LOCATION.--Lat 42°31'15", long 124°02'35", in SW 1/4 NW 1/4 sec.29, T.35 S., R.11 W., Curry County, Hydrologic Unit 17100311, on right bank 0.6 mi downstream from Lawson Creek, 1.4 mi upstream from Fox Creek, 2.8 mi southeast of Agness, and at mile 3.0.

DRAINAGE AREA.--988 mi², at cable section 2.1 mi downstream where all measurements are made.

PERIOD OF RECORD.--October 1960 to September 1981.

GAGE.--Water-stage recorder. Datum of gage is 125.86 ft above National Geodetic Vertical Datum of 1929.

REMARKS.--No regulation. Many diversions upstream from station for irrigation, mining, and logpond operation. Records include flow of Fox Creek. All records given herein are for measuring site.

AVERAGE DISCHARGE.--21 years, 4,094 ft³/s, 56.27 in/yr, 2,966,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 225,000 ft³/s Dec.22, 1964, estimated on basis of runoff ratio with station near Selma; maximum gage height, 56.91 ft Dec. 22, 1964, from floodmark (backwater from Rogue River); minimum discharge, 125 ft³/s Sept. 14-16, 1977.

STATISTICAL SUMMARIES FOR THE PERIOD 1961-1981

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	22	167	1975	4700	1963	868	1000	1.8
Nov	21	339	1977	23100	1974	4950	4880	9.9
Dec	21	262	1977	26800	1965	8830	5950	18.3
Jan	21	591	1977	25700	1970	10400	6730	21.6
Feb	21	818	1977	15400	1961	7890	3680	14.9
Mar	21	2190	1965	14500	1975	7370	4080	15.3
Apr	21	1310	1977	11700	1963	4560	2330	9.2
May	21	1120	1973	8190	1963	2680	1810	5.6
Jun	21	510	1973	1690	1975	903	309	1.8
Jul	21	221	1977	574	1971	377	82	0.8
Aug	21	131	1977	384	1976	237	58	0.5
Sep	21	149	1974	1330	1978	288	257	0.6
Ann		799	1977	7810	1974	4090	1450	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	151	161	174	186	204	224	257	306	369	485	588	736	1020	1580	2780	22
Nov	272	324	446	544	651	803	1210	1870	2900	4160	4990	6280	8400	12500	22000	21
Dec	423	1130	1770	2230	2520	2840	3590	4600	6270	8920	10600	12600	16300	21000	28300	21
Jan	826	1380	1650	1930	2260	2670	3800	5210	7190	9600	11400	13900	17500	24500	33100	21
Feb	1330	2280	2820	3290	3730	4090	4700	5430	6450	7770	8800	10300	12600	16500	24800	21
Mar	1910	2260	2600	2950	3240	3540	4160	4890	6080	7650	8590	9800	11500	15600	20400	21
Apr	1350	1570	1800	2060	2350	2730	3260	3800	4480	5070	5490	6010	6730	7780	10200	21
May	953	1060	1150	1220	1300	1410	1620	1890	2230	2700	3040	3470	4410	5070	6060	21
Jun	449	498	536	574	612	657	739	806	876	975	1060	1150	1270	1470	1740	21
Jul	227	247	264	277	288	301	324	355	386	423	445	470	491	531	624	21
Aug	147	166	175	184	192	199	211	222	236	252	260	269	279	307	341	21
Sep	141	149	157	161	165	169	177	186	196	225	237	256	295	378	754	21
Ann	171	201	235	278	336	436	830	1510	2480	3810	4570	5560	7160	9770	16360	

CHETCO RIVER BASIN

14400000 CHETCO RIVER NEAR BROOKINGS, OR

LOCATION.--Lat 42°07'25", long 124°11'10", in SE 1/4 sec.12, T.40 S., R.13 W., Curry County, Hydrologic Unit 17100312, on right bank 16 ft upstream from bridge, 0.5 mi upstream from Elk Creek, 6.8 mi northeast of Brookings, and at mile 10.7.

DRAINAGE AREA.--271 mi².

PERIOD OF RECORD.--October 1969 to 1987.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 50 ft, from topographic map.

REMARKS.--No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--18 years, 2,364 ft³/s, 118.46 in/yr, 1,713,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 65,800 ft³/s Jan. 16, 1971, gage height, 27.45 ft; minimum discharge, 45 ft³/s Oct. 21-23, 1974.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Dec. 22, 1964, reached a stage of 32.25 ft, from high-water mark on bridge pier, discharge, 85,400 ft³/s, from rating curve extended above 45,000 ft³/s.

STATISTICAL SUMMARIES FOR THE PERIOD 1970-1987

[n = number of values used to compute statistics; months are abbreviated; Ann = annual]

Monthly and annual statistics based on mean daily discharge, in cubic feet per second

Month	n	Minimum	(year)	Maximum	(year)	Mean	Standard deviation	Percent of annual runoff
Oct	18	61	1975	2540	1982	742	679	2.7
Nov	18	229	1977	10200	1974	3920	3040	13.6
Dec	18	121	1977	12800	1982	5500	3140	19.8
Jan	18	479	1977	13100	1970	4960	2970	17.8
Feb	18	619	1977	11500	1986	4960	2910	16.3
Mar	18	1770	1978	6830	1975	4060	1870	14.6
Apr	18	673	1977	6960	1982	2290	1500	8.0
May	18	430	1973	2510	1979	1070	612	3.8
Jun	18	229	1974	1440	1985	451	315	1.6
Jul	18	121	1973	442	1983	186	75	0.7
Aug	18	69	1987	310	1983	121	65	0.4
Sep	18	54	1987	1530	1978	263	358	0.9
Ann		549	1977	3940	1982	2360	828	100.0

Flow duration statistics based on mean daily discharge

Discharge, in cubic feet per second, which was equaled or exceeded for indicated percent of time

Month	95	90	85	80	75	70	60	50	40	30	25	20	15	10	5	(n)
Oct	55	64	69	75	82	92	140	192	255	374	487	744	1150	2160	4180	18
Nov	148	223	338	470	598	782	1180	1840	2680	3960	5060	6290	8240	11300	16300	18
Dec	181	681	1180	1440	1750	2070	2560	3560	4730	6490	7230	8670	10600	12600	16700	18
Jan	475	808	1050	1280	1450	1600	1960	2410	3300	4800	5830	6900	8800	12000	18500	18
Feb	457	920	1180	1350	1540	1780	2330	3030	3880	5240	6070	7140	9090	11700	16100	18
Mar	958	1100	1290	1470	1680	1930	2390	2850	3440	4190	4670	5330	6550	8700	11600	18
Apr	544	646	735	821	921	1030	1350	1630	1980	2400	2670	3070	3720	4550	5890	18
May	322	369	413	454	497	541	641	749	890	1100	1250	1440	1720	2100	2740	18
Jun	193	216	231	244	257	269	296	330	368	416	448	488	542	640	1010	18
Jul	103	111	116	121	129	136	147	160	177	196	207	220	240	276	326	18
Aug	69	72	75	78	80	83	89	95	101	112	119	125	134	148	184	18
Sep	56	60	62	65	67	69	76	83	93	117	151	194	324	511	934	18
Ann	71	86	106	137	176	232	419	790	1360	2120	2630	3360	4470	6350	10300	

INDEX

STATION NUMBER	STATION NAME	PAGE
14306500	Alsea River near Tidewater	307
14169300	Amazon Creek at Eugene	220
10388001	Ana River near Summer Lake	17
11503000	Annie Spring near Crater Lake	31
14366000	Applegate River near Applegate	390
14362000	Applegate River near Copper	388
14363000	Applegate River near Ruch	389
14369500	Applegate River near Wilderville	392
14357500	Bear Creek at Medford	382
14248700	Bear Creek near Svensen	293
13330500	Bear Creek near Wallowa	73
14078000	Beaver Creek near Paulina	135
14337500	Big Butte Creek near McLeod	364
14306900	Big Creek near Roosevelt Beach	312
14061000	Big Marsh Creek at Hoey Ranch, near Crescent	124
14025000	Birch Creek at Rieth	88
14138800	Blazed Alder Creek near Rhododendron	163
14162200	Blue River at Blue River	210
14162000	Blue River near Blue River	209
14161100	Blue River below Tidbits Creek, near Blue River	207
14179000	Breitenbush River above French Creek, near Detroit	230
10397000	Bridge Creek near Frenchglen	21
14054500	Brown Creek near La Pine	117
14139500	Bull Run River below Lake Ben Morrow	167
14138850	Bull Run River near Multnomah Falls	164
13226500	Bully Creek at Warm Springs, near Vale	46
13227000	Bully Creek near Vale	47
13275000	Burnt River at Huntington	53
13274200	Burnt River near Bridgeport	52
13273000	Burnt River near Hereford	51
14201500	Butte Creek at Monitor	268
14032000	Butter Creek near Pine City	91
14173500	Calapooia River at Albany	226
14172000	Calapooia River at Holley	225
14319900	Calapooya Creek at Nonpareil	341
14320700	Calapooya Creek near Oakland	342
10370000	Camas Creek near Lakeview	12
14042000	Camas Creek near Lehman	102
14042500	Camas Creek near Ukiah	103
13320000	Catherine Creek near Union	66
14139700	Cedar Creek near Brightwood	168
14400000	Chetco River near Brookings	405
10384000	Chewaucan River near Paisley	15
14209500	Clackamas River above Three Lynx Creek	287
14208000	Clackamas River at Big Bottom	282
14210000	Clackamas River at Estacada	288
14211000	Clackamas River near Clackamas	290
14152500	Coast Fork Willamette River at London	189
14157000	Coast Fork Willamette River at Saginaw	196
14153500	Coast Fork Willamette River below Cottage Grove Dam	190

INDEX--Continued

STATION NUMBER	STATION NAME	PAGE
14157500	Coast Fork Willamette River near Goshen	197
11340500	Cottonwood Creek near Lakeview	25
14309000	Cow Creek near Azalea	322
14310000	Cow Creek near Riddle	324
14167000	Coyote Creek near Crow	218
14060000	Crescent Creek at Crescent Lake, near Crescent	123
14087400	Crooked River below Opal Springs, near Culver	140
14087500	Crooked River near Culver	141
14080500	Crooked River near Prineville	138
14079500	Crooked River near Post	137
14051000	Cultus Creek above Crane Prairie Reservoir, near La Pine	112
14050500	Cultus River above Cultus Creek, near La Pine	111
14308700	Days Creek at Days Creek	321
10371500	Deep Creek above Adel	14
14052000	Deer Creek above Crane Prairie Reservoir, near La Pine	114
14377500	Deer Creek near Dryden	402
14312200	Deer Creek near Roseburg	330
14306810	Deer Creek near Salado	311
14064500	Deschutes River at Benham Falls, near Bend	126
14103000	Deschutes River at Moody, near Biggs	151
14057000	Deschutes River at Pringle Falls, near La Pine	120
14070500	Deschutes River below Bend	130
14054000	Deschutes River below Crane Prairie Reservoir, near La Pine ..	116
14056500	Deschutes River below Wickiup Reservoir, near La Pine	119
14066000	Deschutes River below Lava Island, near Bend	128
14050000	Deschutes River below Snow Creek, near La Pine	110
14076500	Deschutes River near Culver	133
14092500	Deschutes River near Madras	144
14113400	Dog River near Parkdale	154
10396000	Donner und Blitzen River near Frenchglen	20
10371000	Drake Creek near Adel	13
11339500	Drews Creek near Lakeview	24
14306600	Drift Creek near Salado	308
13288200	Eagle Creek above Skull Creek, near New Bridge	59
14353500	East Fork Ashland Creek near Ashland	381
14205500	East Fork Dairy Creek at Mountaindale	277
14372500	East Fork Illinois River near Takilma	396
13325001	East Fork Wallowa River near Joseph	69
14337800	Elk Creek near Cascade Gorge	367
14322000	Elk Creek near Drain	344
14308500	Elk Creek near Drew	319
14338000	Elk Creek near Trail	369
14361600	Elliott Creek near Copper	387
14350000	Emigrant Creek near Ashland	378
14151000	Fall Creek below Winberry Creek, near Fall Creek	185
14150300	Fall Creek near Lowell	183
14057500	Fall River near La Pine	122
14138870	Fir Creek near Brightwood	165
14306400	Five Rivers near Fisher	306
14306800	Flynn Creek near Salado	310

INDEX--Continued

STATION NUMBER	STATION NAME	PAGE
14044500	Fox Creek at gorge, near Fox	105
14204500	Gales Creek near Forest Grove	276
14204000	Gales Creek near Gales Creek	275
14163000	Gate Creek at Vida	213
13318800	Grande Ronde River at Hilgard	64
13319000	Grande Ronde River at La Grande	65
13332500	Grande Ronde River at Rondowa	75
13333000	Grande Ronde River at Troy	76
13323500	Grande Ronde River near Elgin	67
13318500	Grande Ronde River near Hilgard	63
14371500	Grave Creek at Pease Bridge, near Placer	394
14195000	Haskins Creek near McMinnville	260
14144900	Hills Creek above Hills Creek Lake, near Oakridge	173
10378500	Honey Creek near Plush	16
14120000	Hood River at Tucker Bridge, near Hood River	156
13329500	Hurricane Creek near Joseph	71
14377000	Illinois River at Kerby	400
14378200	Illinois River near Agness	404
14378000	Illinois River near Selma	403
14377100	Illinois River near Kerby	401
14331000	Imnaha Creek near Prospect	358
13292000	Imnaha River at Imnaha	62
13323600	Indian Creek near Imbler	68
14307700	Jackson Creek near Tiller	317
14048000	John Day River at McDonald Ferry	109
14040500	John Day River at Picture Gorge, near Dayville	100
14038500	John Day River at Prairie City	97
14046500	John Day River at Service Creek	107
14038530	John Day River near John Day	99
14211500	Johnson Creek at Sycamore	291
11514500	Keene Creek near Ashland	35
11509500	Klamath River at Keno	33
11510700	Klamath River below John C. Boyle Powerplant, near Keno	34
14307500	Lake Creek at Triangle Lake	313
14307580	Lake Creek near Deadwood	314
14312500	Lake Creek near Diamond Lake	331
14088000	Lake Creek near Sisters	142
14347000	Little Butte Creek above Eagle Point	377
14063000	Little Deschutes River near La Pine	125
14151500	Little Fall Creek near Fall Creek	187
14182500	Little North Santiam River near Mehama	233
14318000	Little River at Peel	337
14141500	Little Sandy River near Bull Run	170
14131000	Little Zigzag River at Twin Bridges, near Rhododendron	157
14170000	Long Tom River at Monroe	221
14169001	Long Tom River near Alvadore	219
14166500	Long Tom River near Noti	217

INDEX--Continued

STATION NUMBER	STATION NAME	PAGE
14311500	Lookingglass Creek at Brockway	328
14161500	Lookout Creek near Blue River	208
13330000	Lostine River near Lostine	72
14190000	Luckiamute River at Pedee	250
14189500	Luckiamute River near Hoskins	249
14190500	Luckiamute River near Suver	251
13220000	Malheur River at Little Valley, near Hope	44
13228000	Malheur River at Vale	48
13215000	Malheur River below Warm Springs Reservoir, near Riverside	41
13214000	Malheur River near Drewsey	40
13220500	Malheur River near Hope	45
14171000	Marys River near Philomath	224
14206000	McKay Creek near North Plains	278
14023500	McKay Creek near Pendleton	87
14022500	McKay Creek near Pilot Rock	86
14159000	McKenzie River at McKenzie Bridge	202
14158500	McKenzie River at outlet of Clear Lake	199
14158850	McKenzie River below Trail Bridge Dam, near Belknap Springs ..	201
14165500	McKenzie River near Coburg	215
14162500	McKenzie River near Vida	211
14020300	Meacham Creek at Gibbon	82
14091500	Metolius River near Grandview	143
14326500	Middle Fork Coquille River near Myrtle Point	251
14044000	Middle Fork John Day River at Ritter	104
14333000	Middle Fork Rogue River near Prospect	359
14145500	Middle Fork Willamette River above Salt Creek, near Oakridge .	174
14152000	Middle Fork Willamette River at Jasper	188
14148000	Middle Fork Willamette River below North Fork, near Oakridge .	180
14150000	Middle Fork Willamette River near Dexter	182
14144800	Middle Fork Willamette River near Oakridge	172
14186500	Middle Santiam River at mouth, near Foster	240
14185800	Middle Santiam River near Cascadia	237
14186000	Middle Santiam River near Foster	239
14306036	Mill Creek near Toledo	304
14193300	Mill Creek near Willamina	257
13331500	Minam River at Minam	74
14165000	Mohawk River near Springfield	214
14200000	Molalla River near Canby	265
14198500	Molalla River above Pine Creek, near Wilhoit	264
14156500	Mosby Creek at mouth, near Cottage Grove	195
14156000	Mosby Creek near Cottage Grove	194
14113200	Mosier Creek near Mosier	153
14306700	Needle Branch near Salado	309
14301000	Nehalem River near Foss	296
14303600	Nestucca River near Beaver	301
14302900	Nestucca River near Fairdale	299
14303000	Nestucca River near McMinnville	300
14306100	North Fork Alsea River at Alsea	305
14077500	North Fork Beaver Creek near Paulina	134
14138900	North Fork Bull Run River near Multnomah Falls	166
13269300	North Fork Burnt River near Whitney	49

INDEX--Continued

STATION NUMBER	STATION NAME	PAGE
14326800	North Fork Coquille River near Fairview	352
14327000	North Fork Coquille River near Myrtle Point	353
14078500	North Fork Crooked River above Deep Creek	136
14046000	North Fork John Day River at Monument	106
14041500	North Fork John Day River near Dale	101
14342500	North Fork Little Butte Creek at Fish Lake, near Lakecreek ...	375
14343000	North Fork Little Butte Creek near Lakecreek	376
13216500	North Fork Malheur River above Beulah Reservoir near Beulah ..	42
13217500	North Fork Malheur River at Beulah	43
14022200	North Fork McKay Creek near Pilot Rock	85
14307645	North Fork Siuslaw River near Minerva	316
14010800	North Fork Walla Walla River near Milton Freewater	79
14011000	North Fork Walla Walla River near Milton	80
14147500	North Fork of Middle Fork Willamette River near Oakridge	179
14311000	North Myrtle Creek near Myrtle Creek	326
14183000	North Santiam River at Mehama	234
14181500	North Santiam River at Niagara	231
14178000	North Santiam River below Boulder Creek, near Detroit	229
14316500	North Umpqua River above Copeland Creek, near Toketee Falls ..	333
14317500	North Umpqua River above Rock Creek, near Glide	335
14315500	North Umpqua River at Toketee Falls	332
14319500	North Umpqua River at Winchester	340
14318500	North Umpqua River near Glide	338
14197000	North Yamhill River at Pike	262
14194300	North Yamhill River near Fairdale	259
14196500	North Yamhill River near Pike	261
14209000	Oak Grove Fork above powerplant intake	285
14208500	Oak Grove Fork at Timothy Meadows	283
14208700	Oak Grove Fork near Government Camp	284
14055500	Odell Creek near Crescent	118
14311200	Olalla Creek near Tenmile	327
13182000	Owyhee River above Lake Owyhee	37
13184000	Owyhee River at Owyhee	39
13183000	Owyhee River below Owyhee Dam	38
13181000	Owyhee River near Rome	36
13290190	Pine Creek near Oxbow	61
13277000	Powder River at Baker	56
13275500	Powder River near Baker	55
13286700	Powder River near Richland	57
13289500	Powder River near Robinette	60
13275300	Powder River near Sumpter	54
14368500	Powell Creek near Williams	391
14202000	Pudding River at Aurora	269
14201000	Pudding River near Mount Angel	267
14185900	Quartzville Creek near Cascadia	238
14052500	Quinn River near La Pine	115
14333500	Red Blanket Creek near Prospect	360
14034800	Rhea Creek near Heppner	94
14190700	Rickreall Creek near Dallas	252

INDEX--Continued

STATION NUMBER	STATION NAME	PAGE
14047390	Rock Creek above Whyte Park, near Condon	108
14317600	Rock Creek near Glide	336
14170500	Rock Creek near Philomath	223
14327500	Rogue River above Bybee Creek, near Union Creek	354
14328000	Rogue River above Prospect	355
14339000	Rogue River at Dodge Bridge, near Eagle Point	370
14361500	Rogue River at Grants Pass	385
14359000	Rogue River at Raygold, near Central Point	383
14330000	Rogue River below Prospect	356
14335000	Rogue River below South Fork Rogue River, near Prospect	356
14372300	Rogue River near Agness	395
14337600	Rogue River near McLeod	365
14154500	Row River above Pitcher Creek, near Dorena	191
14155500	Row River near Cottage Grove	192
14146500	Salmon Creek near Oakridge	177
14135500	Salmon River above Boulder Creek, near Brightwood	161
14135000	Salmon River at Welches	160
14134500	Salmon River below Linney Creek	159
14134000	Salmon River near Government Camp	158
14146000	Salt Creek near Oakridge	176
14142500	Sandy River below Bull Run River, near Bull Run	171
14137000	Sandy River near Marmot	162
14189000	Santiam River at Jefferson	247
14202980	Scoggins Creek below Henry Hagg Lake, near Gaston	271
14203000	Scoggins Creek near Gaston	272
14093000	Shitike Creek near Warm Springs	147
14092885	Shitike Creek below Wolford Canyon, near Warm Springs	146
14305500	Siletz River at Siletz	302
14200300	Silver Creek at Silverton	266
10403000	Silver Creek near Riley	22
10390001	Silver Creek near Silver Lake	18
10393500	Silvies River near Burns	19
14307620	Siuslaw River near Mapleton	315
14370000	Slate Creek at Wonder	393
14158790	Smith River above Smith River Reservoir, near Belknap Springs.	200
14335500	South Fork Big Butte Creek near Butte Falls	363
14139800	South Fork Bull Run River near Bull Run	169
13270800	South Fork Burnt River above Barney Creek, near Unity	50
14324600	South Fork Coquille River above Panther Creek, near Illahe ...	347
14325000	South Fork Coquille River at Powers	350
14324700	South Fork Coquille River near Illahe	348
14324900	South Fork Coquille River near Powers	349
14339500	South Fork Little Butte Creek at Big Elk ranger station	372
14341500	South Fork Little Butte Creek near Lakecreek	373
14159200	South Fork McKenzie River above Cougar Lake, near Rainbow	204
14159500	South Fork McKenzie River near Rainbow	205
14330500	South Fork Rogue River above Imnaha Creek, near Prospect	357
14334700	South Fork Rogue River, south of Prospect	361
14010500	South Fork Walla Walla River below Pacific Power and light Co's plant, near Milton	78
14010000	South Fork Walla Walla River near Milton-Freewater	77

INDEX--Continued

STATION NUMBER	STATION NAME	PAGE
14310700	South Myrtle Creek near Myrtle Creek	325
14187500	South Santiam River at Waterloo	244
14185000	South Santiam River below Cascadia	236
14187200	South Santiam River near Foster	243
14308600	South Umpqua River at Days Creek	320
14308000	South Umpqua River at Tiller	318
14312000	South Umpqua River near Brockway	329
14194000	South Yamhill River near Whiteson	258
14192500	South Yamhill River near Willamina	255
11497500	Sprague River near Beatty	28
11501000	Sprague River near Chiloquin	29
14075000	Squaw Creek near Sisters	132
14037500	Stawberry Creek above Slide Creek, near Prairie City	96
14316700	Steamboat Creek near Gilde	334
14375100	Sucker Creek below Little Grayback Creek, near Holland	398
14375000	Sucker Creek near Holland	397
14319200	Sutherlin Creek at Sutherlin	339
14323200	Tenmile Creek near Lakeside	345
14188800	Thomas Creek near Scio	246
14302500	Trask River near Tillamook	298
10406500	Trout Creek near Denio, NV	23
14206500	Tualatin River at Farmington	279
14207500	Tualatin River at West Linn	280
14203500	Tualatin River near Dilley	273
14202500	Tualatin River near Gaston	270
14073001	Tumalo Creek near Bend	131
10366000	Twentymile Creek near Adel	11
14022000	Umatilla River above McKay Creek, near Pendleton	84
14020000	Umatilla River above Meacham Creek, near Gibbon	81
14021000	Umatilla River at Pendleton	83
14026000	Umatilla River at Yoakum	89
14033500	Umatilla River near Umatilla	92
14321000	Umpqua River near Elkton	343
14147000	Waldo Lake Outlet near Oakridge	178
13327500	Wallowa River at Joseph	70
14097100	Warm Springs River near Kahneeta Hot Springs	148
14337870	West Branch Elk Creek near Trail	368
14353000	West Fork Ashland Creek near Ashland	380
14309500	West Fork Cow Creek near Glendale	323
14118500	West Fork Hood River near Dee	155
14375500	West Fork Illinois River below Rock Creek, near O'Brien	399
14324500	West Fork Millicoma River near Allegany	346
14101500	White River below Tygh Valley	150
14097200	White River near Government Camp	149
14187100	Wiley Creek at Foster	242
14187000	Wiley Creek near Foster	241
14174000	Willamette River at Albany	227
14166000	Willamette River at Harrisburg	216
14211720	Willamette River at Portland	292

INDEX--Continued

STATION NUMBER	STATION NAME	PAGE
14191000	Willamette River at Salem	253
14158000	Willamette River at Springfield	198
14198000	Willamette River at Wilsonville	263
14193000	Willamina Creek near Willamina	256
11502500	Williamson River below Sprague River, near Chiloquin	30
11493500	Williamson River near Klamath Agency	27
14034500	Willow Creek at Heppner	93
14036000	Willow Creek near Arlington	95
14301500	Wilson River near Tillamook	297
14150800	Winberry Creek near Lowell	184
11504000	Wood River at Fort Klamath	32
14306030	Yaquina River near Chitwood	303
14251500	Youngs River near Astoria	294