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Water-Supply Paper 932

SURFACE WATER SUPPLY *of the* UNITED STATES 1941

PART 12

PACIFIC SLOPE BASINS IN WASHINGTON AND UPPER COLUMBIA RIVER BASIN

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SURFACE WATER SUPPLY OF PACIFIC SLOPE BASINS IN WASHINGTON AND UPPER COLUMBIA RIVER BASIN, 1941

SCOPE OF WORK

This volume is one of a series of 14 reports presenting results of measurements of stage and flow made on streams, lakes, and reservoirs in the United States during the water year ending September 30, 1941. The work was begun in 1888 in connection with special studies relating to irrigation. Measurements of the flow of streams and of the stage and contents of lakes and reservoirs have been made at about 9,120 gaging stations in the United States and also at many gaging stations in Alaska and Hawaii. In July 1941, 4,850 gaging stations were being maintained by the Geological Survey and cooperating organizations. Miscellaneous discharge measurements were made at many other points.

In the execution of the work many State and private organizations have cooperated, either by furnishing data or by assisting in collecting data. Cooperation of the first kind is acknowledged in connection with the description of each station affected; cooperation of the second kind is acknowledged on page 10.

DEFINITION OF TERMS

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

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

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

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

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

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

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

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

EXPLANATION OF DATA

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the records of stage and discharge

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

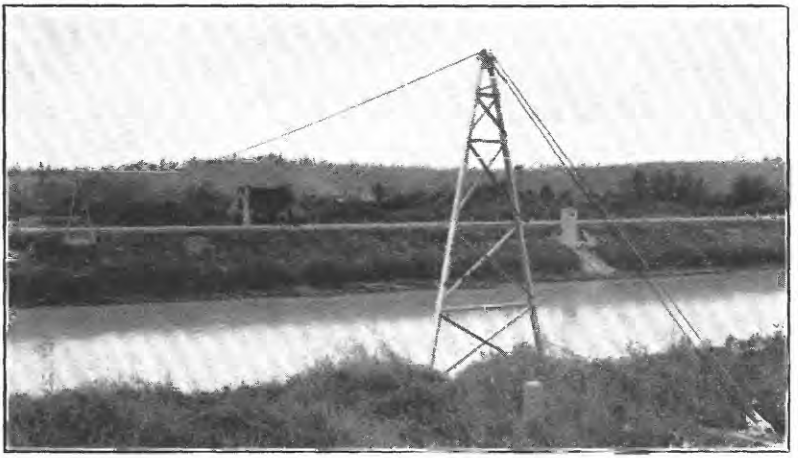
Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the daily mean gage height to these rating tables gives the daily mean discharge, from which the monthly and the yearly mean discharge are computed. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is determined by the "shifting-control method," in which correction factors based on individual discharge measurements are used in applying the gage heights to the rating tables.

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

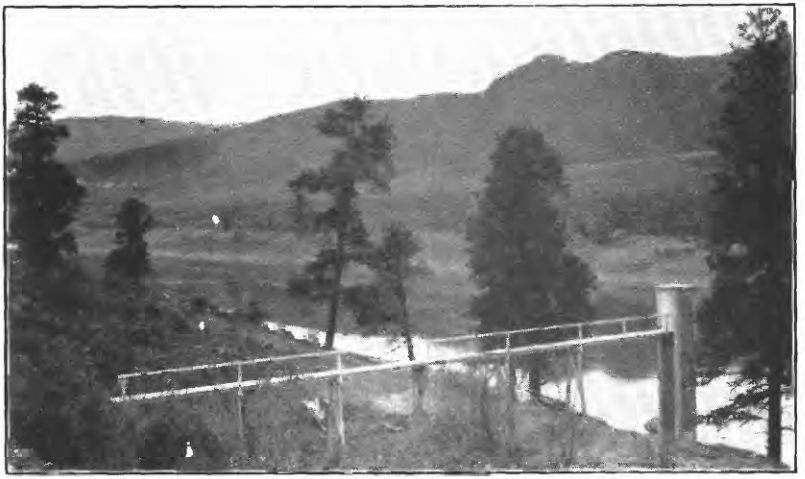
At most gaging stations in the northern part of the United States and at some in the mountainous regions of other parts the stage-discharge relation is affected by ice during the winter, which makes it impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of the gage-height record and occasional winter discharge measurements, consideration being given to the available information on temperature and precipitation, notes by gage observers and engineers, and comparable records of discharge for stations in the same or nearby basins. The days included in the periods of ice effect and the days during the winter period on which discharge measurements were made are indicated in the table by symbols referring to footnotes.

For most of the gaging stations on streams in the area covered by this report the data presented comprise a description of the station, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and runoff. Skeleton rating tables are published for all stations except those at which the daily discharge for the greater part of the year was determined by the shifting-control method, the slope method, or other special methods.

The description of the station gives the type of gage, its latitude and longitude determined from the best available maps, and information in regard to diversions that decrease the flow at the gage, artificial regulation from pondage or storage, and the accuracy of the records. Under "Average discharge" is given the average discharge for the number of years indicated. It is given only for stations for which there are 10 or more complete years of record. Under "Extremes" are given the maximum discharge and gage height; the minimum discharge if there is little or no regulation; the minimum daily discharge if there is extensive regulation (also the minimum discharge if useful); and the minimum gage height (unless it is of no importance). Unless otherwise qualified, the maximum discharge corresponds to the crest stage, obtained by use of a water-stage



A. PUYALLUP RIVER AT PUYALLUP, WASH.



B. COLUMBIA RIVER AT GRAND COULEE, WASH.

GAGING-STATION STRUCTURES.

recorder or a nonrecording gage read at the time of the crest. Likewise the minimum discharge represents the lowest stage, unless otherwise qualified. Selected peak discharges with the times of their occurrence are given below the table of monthly discharge for some stations. This supplementary information is generally omitted for stations having drainage areas of less than 10 square miles or more than 10,000 square miles or if the peak discharges usually exceed the corresponding mean discharges for the day by less than 10 percent.

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

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

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

ACCURACY OF FIELD DATA AND COMPUTED RESULTS

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

The station description gives a statement in regard to the general accuracy of the records. "Excellent" indicates that, in general, the daily records are accurate within 5 percent; "good," within 10 percent; "fair," within 15 percent; and "poor," within 20 or a higher percent.

Yield at some stations as indicated by monthly means may vary widely from natural yield, owing to diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or other factors. For such stations figures of "second-feet per square mile" and "runoff in inches" are not published unless storage or diversion records are included indicating the extent of the regulation or diversion or unless

satisfactory adjustments can be made for changes in contents of reservoirs or for other changes incident to use and control. Figures of second-feet per square mile and runoff in inches are also omitted if the drainage area includes large noncontributing areas or if the average annual rainfall over the drainage area is less than 20 inches.

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

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

PUBLICATIONS

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

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

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

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

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

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

East of the Mississippi River:
Albany, N. Y., 526 Federal Building.
Asheville, N. C., 220 Post Office Building.
Atlanta, Ga., 5 North Rhodes Center.
Augusta, Maine, Statehouse.
Baton Rouge, La., 124 Geology Building, Louisiana State University.
Boston, Mass., 945 Post Office Building.
Charleston, W. Va., 408 Union Building.
Charlottesville, Va., House G, Dawson Row, University of Virginia.
Chattanooga, Tenn., 442 Post Office Building.
College Park, Md., Engineering Building, University of Maryland.
Columbia, S. C., 119 United States Courthouse.
Columbus, Ohio, 404 Engineering Experiment Station, Ohio State University.
Harrisburg, Pa., 490 Education Building.
Hartford, Conn., 225 Capitol Building, 410 Asylum Street.
Indianapolis, Ind., 511 Board of Trade Building.
Jackson, Miss., 208 Millsaps Building.

Louisville, Ky., 652 Federal Building.
Madison, Wis., 666 State Office Building.
Montgomery, Ala., 507 Post Office Building.
Ocala, Fla., 302 Post Office Building.
St. Paul, Minn., 808 New Post Office Building.
Trenton, N. J., 228 Federal Building.
Urbana, Ill., 14 Post Office Annex, Elm Street.

West of the Mississippi River:
Austin, Tex., 302 West 15th Street.
Boise, Idaho, 429 Federal Building.
Denver, Colo., 230 Customhouse.
Fort Smith, Ark., 6 Post Office Building.
Helena, Mont., 408 Federal Building.
Honolulu, Hawaii, 225 Federal Building.
Idaho Falls, Idaho, 204 Federal Building.
Iowa City, Iowa, 508 Hydraulic Laboratory, University of Iowa.
Lincoln, Nebr., 1404 Statehouse.
Los Angeles, Calif., G-31 United States Post Office and Courthouse.
Oklahoma City, Okla., 303 Capitol Office Building.
Portland, Oreg., 606 Post Office Building.
Rolla, Mo., Missouri Geological Survey Building, Missouri School of Mines and Metallurgy.
St. Louis, Mo., 926 New Federal Building.
Salt Lake City, Utah, 303 Federal Building.
San Francisco, Calif., 625 Market Street Building.
Santa Fe, N. Mex., 204 United States Courthouse.
Tacoma, Wash., 1100 Washington Building.
Topeka, Kans., 305 Federal Building.
Tucson, Ariz., 210 Post Office Building.

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

Records of flow of streams in the United States have been published in the reports tabulated as follows:

Stream-flow data in reports of the Geological Survey

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

Report	Character of data	Year
10th A, pt. 2	Descriptive information only.	
11th A, pt. 2	Monthly discharge and descriptive information...	1884 to Sept. 1890
12th A, pt. 2	....do.....	1884 to June 30, 1891.
13th A, pt. 3	....do.....	1884 to Dec. 31, 1892.
14th A, pt. 2	Monthly discharge (long-time records, 1871-93)..	1888 to Dec. 31, 1893.
B 131.....	Descriptions, measurements, gage heights, and ratings.	1893-94.
16th A, pt. 2	Descriptive information only.	
B 140.....	Descriptions, measurements, gage heights, ratings, and monthly discharge (also many data covering earlier years).	1895.
W 11.....	Gage heights (also gage heights for earlier years).	1896.
18th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also similar data for some earlier years).	1895-96.
W 15.....	Descriptions, measurements, and gage heights of streams east of the Mississippi River and Missouri River and tributaries above Kansas River.	1897.
W 16.....	Descriptions, measurements, and gage heights of streams west of the Mississippi River except Missouri River and tributaries above Kansas River.	1897.
19th A, pt. 4	Descriptions, measurements, ratings, and monthly discharge (also some long-time records).	1897.
W 27.....	Measurements, ratings, and gage heights of streams east of the Mississippi River and Missouri River and tributaries.	
W 28.....	Measurements, ratings, and gage heights of streams west of the Mississippi River except Missouri River and tributaries.	1898.
20th A, pt. 4	Monthly discharge (also for many earlier years).	1898.
W 35 to 39...	Descriptions, measurements, gage heights, and ratings.	1899.
21st A, pt. 4	Monthly discharge.....	1899.
W 47 to 52...	Descriptions, measurements, gage heights, and ratings.	1900.
22d A, pt. 4	Monthly discharge.....	1900.
W 65, 66.....	Descriptions, measurements, gage heights, and ratings.	1901.
W 75.....	Monthly discharge.....	1901.

Note.- Reports containing records for years after 1901 are given in table on page 6.

The table on the following page gives, by years and drainage basins, the numbers of the papers on surface water supply published from 1899 to 1941. The data for any particular station will, in general, be found in the reports covering the years during

Numbers of water-supply papers containing results of stream measurements, 1899-1941

(For basins included see p. 4)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1899 a...	35	b35, 36	36	36	36	a36, 37	37	37	d37, 38	38, e39	38, f39	38	38	38
1900 g...	47, h48	48	48, 149	49	49	49, j50	50	50	50	51	51	51	51	51
1901.....	65, 75	65, 75	65, 75	65, 75	k65, 66, 75	66, 75	k65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902.....	82	b82, 83	83	m82, 83	k83, 85	84	k83, 84	84	85	85	85	85	85	85
1903.....	97	b97, 98	98	97	k98, 99, n100	99	k98, 99	99	100	100	100	100	100	100
1904.....	o124, p125, q126	q126, 127	128	129	k128, 130	130, r131	k128, 131	132	133	133, s134	134	135	135	135
1905.....	o165, p166, q167	q167, 168	169	170	171	172	k169, 173	174	175, t177	176, s177	177	178	178	u177, 178
1906.....	o201, p202, q203	q203, 204	205	206	207	208	k205, 209	210	211, t213	212, s213	213	214	214	214
1907-8....	241	242	243	244	245	246	247	248	249	250, s251	251	252	252	252
1909.....	261	262	263	264	265	266	267	268	269	270, s271	271	272	272	272
1910.....	281	282	283	284	285	286	287	288	289	290	291	292	292	292
1911.....	301	302	303	304	305	306	307	308	309	310	311	312	312	312
1912.....	321	322	323	324	325	326	327	328	329	330	331	332-A	332-B	332-C
1913.....	351	352	353	354	355	356	357	358	359	360	361	362-A	362-B	362-C
1914.....	381	382	383	384	385	386	387	388	389	390	391	392	393	394
1915.....	401	402	403	404	405	406	407	408	409	410	411	412	413	414
1916.....	431	432	433	434	435	436	437	438	439	440	441	442	443	444
1917.....	451	452	453	454	455	456	457	458	459	460	461	462	463	464
1918.....	471	472	473	474	475	476	477	478	479	480	481	482	483	484
1919-20..	501	502	503	504	505	506	507	508	509	510	511	512	513	514
1921.....	521	522	523	524	525	526	527	528	529	530	531	532	533	534
1922.....	541	542	543	544	545	546	547	548	549	550	551	552	553	554
1923.....	561	562	563	564	565	566	567	568	569	570	571	572	573	574
1924.....	581	582	583	584	585	586	587	588	589	590	591	592	593	594
1925.....	601	602	603	604	605	606	607	608	609	610	611	612	613	614
1926.....	621	622	623	624	625	626	627	628	629	630	631	632	633	634
1927.....	641	642	643	644	645	646	647	648	649	650	651	652	653	654
1928.....	661	662	663	664	665	666	667	668	669	670	671	672	673	674
1929.....	681	682	683	684	685	686	687	688	689	690	691	692	693	694
1930.....	696	697	698	699	700	701	702	703	704	705	706	707	708	709
1931.....	711	712	713	714	715	716	717	718	719	720	721	722	723	724
1932.....	726	727	728	729	730	731	732	733	734	735	736	737	738	739
1933.....	741	742	743	744	745	746	747	748	749	750	751	752	753	754
1934.....	756	757	758	759	760	761	762	763	764	765	766	767	768	769
1935.....	781	782	783	784	785	786	787	788	789	790	791	792	793	794
1936.....	801	802	803	804	805	806	807	808	809	810	811	812	813	814
1937.....	821	822	823	824	825	826	827	828	829	830	831	832	833	834
1938.....	851	852	853	854	855	856	857	858	859	860	861	862	863	864
1939.....	871	872	873	874	875	876	877	878	879	880	881	882	883	884
1940.....	891	892	893	894	895	896	897	898	899	900	901	902	903	904
1941.....	921	922	923	924	925	926	927	928	929	930	931	932	933	934

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

which the station was maintained. For example, the data for 1910 to 1920 for any station in the area covered by part 3 are published in Water-Supply Papers 283, 303, 323, 353, 403, 433, 453, 473, 503, which contain records for the Ohio River Basin for those years.

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

Each of the reports on surface water supply for the year 1939, issued as Water-Supply Papers 871 to 884 (see table on p. 6), contains a summary of yearly discharge at gaging stations in the area covered by that report. Gaging stations at which 10 or more complete years of record have been collected are represented. These summaries are available also as separate reprints.

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

Reports containing compilation of discharge by States and drainage basins

Water-Supply Paper	Year ending	State or drainage basin and title
		STATE
107	1903	Alabama, Water powers of, with an appendix on stream measurements in Mississippi.
298	1912	California, Water resources of, part 1, Stream measurements in Sacramento River Basin.
299	1912	California, Water resources of, part 2, Stream measurements in San Joaquin River Basin.
300	1912	California, Water resources of, part 3, Stream measurements in the Great Basin and Pacific coast river basins.
447	1918	California, southern, Surface water supply of Pacific slope of.
597-E	1927	California, Surface water supply of Sacramento River Basin.
636-D	1927	California, Surface water supply of San Joaquin River Basin.
636-E	1927	California, southern, Surface water supply of Pacific slope basins in.
637-A	1927	California, Surface water supply of minor San Francisco Bay, northern Pacific, and Great basins in.
74	1900	Colorado, Water resources of.
197	1905	Georgia, Water resources of.
415	1915	Massachusetts, Surface waters of.
230	1906	Nebraska, Surface water supply of.
370	1910	Oregon, Surface water supply of.
850	1937	Texas, Summary of records of surface waters of.
424	1916	Vermont, Surface waters of.
492	1919	Washington, Summary of hydrometric data in.
870	1935	Washington, Summary of records of surface waters of.
469	1921	Wyoming, Surface waters of, and their utilization.
		DRAINAGE BASIN
395	1914	Colorado River (Ariz., Colo., N. Mex., Utah, Wyo.) and its utilization.
617	1927	Colorado River, upper (Colo., Utah), and its utilization.
517	1920	Great Salt Lake Basin, Water powers of.
618	1926	Green River (Utah, Wyo.) and its utilization.
198	1906	Kennebec River Basin (Maine), Water resources of.
491	1917	Milk River. (See St. Mary and Milk Rivers.)
536	1920	New-Kanawha River Basin (N. C., Va., W. Va.), Surface Water Supply of.
279	1909	Penobscot River Basin (Maine), Water resources of.
192	1906	Potomac River Basin (D. C., Md., W. Va.)
358	1913	Rio Grande Basin (Colo., N. Mex., Tex.), Water resources of, 1888-1913.
491	1917	St. Mary and Milk Rivers (Mont., Canada), Water supply of.
109	1904	Susquehanna River Basin (Pa., Md.,), Hydrography of.

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

State reports containing compilation of records of discharge

State	Year ending	Report	Issued by
Alabama.....	1915	Bull. 17, Water powers of Alabama....	Geological Survey of Alabama.
Arkansas....	1928	Stream-gaging Report 1.....	Arkansas Geological Survey.
Connecticut.	1926	Bull. 44, Water resources of Connecticut.	State Geological and Natural History Survey.
Do.....	1933[a]	5th biennial report.....	Connecticut State Water Commission.
Georgia.....	1906	Bull. 16, Water powers of Georgia....	Geological Survey of Georgia.
Do.....	1920[b]	Bull. 38, Water powers of Georgia....	Do.
Illinois....	1911	Water resources of Illinois.....	Rivers and Lakes Commission.
Do.....	1934	Stream-flow data of Illinois.....	Division of Waterways.
Indiana.....	1927	Pub. 72, Surface water supply of Indiana.	Department of Conservation.
Do.....	1930[c]	Pub. 112, Surface water supply of Indiana.	Do.
Iowa.....	1932	Stream-flow records of Iowa.....	Iowa State Planning Board.
Kansas.....	1919	Surface waters of Kansas.....	Kansas Water Commission.
Do.....	1924[d]	....do.....	Do.
Do.....	1928[e]	....do.....	Kansas State Board of Agriculture.
Do.....	1935[f]	Stream-flow data of Kansas.....	Do.
Do.....	1939[g]	....do.....	Do.
Kentucky....	1920	Surface waters of Kentucky.....	Kentucky Geological Survey.
Maryland....	1937	Flow data and draft storage curves for major streams in Maryland.	State Planning Commission and Water Resources Commission.
Minnesota...	1912	Water-resources investigation of Minnesota.	State Drainage Commission.
Missouri....	1926	Vol. 20, 2d series, Water resources of Missouri.	Missouri Geological Survey and Water Resources.
Do.....	1939[h]	Vol. 26, 2d series, Surface waters of Missouri.	Do.
Nebraska....	1914	1st hydrographic report.....	Bureau of Water Power, Irrigation, and Drainage.
Do.....	1928[i]	2d hydrographic report.....	Do.
New Jersey..	1928	Bull. 33, Surface water supply of New Jersey.	Department of Conservation and Development.
Do.....	1934[j]	Special Report 5, Surface water supply of New Jersey.	State Water Policy Commission.
New Mexico..	1925	Surface water supply of New Mexico...	Office of the State Engineer.
North Carolina.	1923	Bull. 34, Discharge records of North Carolina streams.	Department of Conservation and Development.
Do.....	1936[k]	Bull. 39, Discharge records of North Carolina streams.	Do.
North Dakota	1920	Report to Governor of North Dakota on flood control.	State chief engineer.
Do.....	1927[l]	Surface water in North Dakota.....	State Planning Board.
Ohio.....	1921[m]	Bull. 73, Ohio stream flow.....	Engineering Experiment Station, Ohio State University.
Do.....	1939[n]	Bull. 200, Compilation of stream-flow records of Ohio.	Department of Agriculture, Division of Conservation and Natural Resources.
Oregon.....	1914	Bull. 4, Water resources of the State of Oregon.	Office of the State Engineer.
Do.....	1924[o]	Bull. 7, Water resources of the State of Oregon.	Do.
Do.....	1930[p]	Bull. 8, Water resources of the State of Oregon.	Do.
Do.....	1936[q]	Bull. 9, Water resources of the State of Oregon.	Do.
Pennsylvania	1911	Report of the Water Supply Commission of Pennsylvania.	Water Supply Commission of Pennsylvania.
Do.....	1932[r]	Stream-flow records of Pennsylvania..	Department of Forests and Waters.
Tennessee...	1924	Bull. 34, Water resources of Tennessee.	Department of Education.
Do.....	1930[s]	Bull. 40, Surface waters of Tennessee.	Do.
Utah.....	1905	5th biennial report, State Engineer..	Office of the State Engineer.
Do.....	1910	7th biennial report, State Engineer..	Do.
Do.....	1916	10th biennial report, State Engineer.	Do.
Virginia....	1927	Bull. 31, Water resources of Virginia.	Conservation Commission.
Washington..	1933	Bull. 5, Monthly and yearly summaries of hydrometric data.	Department of Conservation and Development.
Wisconsin...	1914	1st report of Railroad Commission of Wisconsin to Legislature on water powers.	Railroad Commission of Wisconsin.
Do.....	1923[t]	2d report of Railroad Commission of Wisconsin to Legislature on water powers.	Do.

a Includes records of monthly discharge in second-feet per square mile for years 1912-33.
b Includes records for years 1907-18.
c Includes records for years 1927-30.
d Includes records for years 1919-24.
e Includes records for years 1924-28.
f Includes records for years 1928-35.
g Includes records for years 1935-39.
h Includes records for years 1927-39.
i Includes records for years 1914-28.
j Includes records for years 1928-34.
k Includes records for years 1889-1936; records of daily and monthly discharge are not included.
l Includes records for years 1882-1937.
m Includes all available records prior to 1921.
n Includes records for years 1902-39.
o Includes records for years 1914-24.
p Includes records for years 1924-30.
q Includes records for years 1930-36.
r Includes records for years 1928-32.
s Includes average weekly discharge for years 1920-30.
t Includes records for years 1914-23.

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

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

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

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The following table contains a list of gaging stations for the area covered by this report at which records of daily discharge were collected during the water year October 1940 to September 1941 by agencies other than the Geological Survey. The records for these stations are not contained in the publications of the Geological Survey except as noted.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Collected by	Remarks
Reservation drain	Alfalfa, Wash.....	1912-41	Office of Indian Affairs	†Unpublished since 1923.
Satus Creek.....	Downstream from Dry Creek, near Toppenish, Wash.	1913-41	....do.....	†Unpublished since 1924.
Do.....	Near Satus, Wash.....	1932-41	....do.....	Unpublished.
Toppenish Creek..	Near Fort Simcoe, Wash..	1909-41	....do.....	†Unpublished since 1924.
Do.....	Near Alfalfa, Wash.....	1932-41	....do.....	Unpublished.

† Records for earlier years published in water-supply papers of the Geological Survey.

Note.- Records of daily discharge for many canals and drains in Washington for 1939 and earlier years have been collected by the Bureau of Reclamation and the Office of Indian Affairs in connection with irrigation and drainage projects. These records have not been published. The Soil Conservation Service began in 1932 to make studies of runoff from one area of 762 acres and three areas of less than 70 acres each in the vicinity of Pullman, Wash., and in 1939 from one area of 19.2 acres in the vicinity of Dayton, Wash. The records are in the files of that organization.

The work in the several States was done under cooperative agreements with the organizations listed below:

Idaho: State Department of Reclamation, James Spofford, commissioner, succeeded by E. V. Berg.

Montana: Office of State engineer, E. B. Donohue; State Water Conservation Board.

Washington: Department of Conservation and Development, John Brooke Fink, director, succeeded by Ed Davis, and C. J. Bartholet, supervisor of hydraulics, division of water resources; cities of Aberdeen, Bellingham, Everett, Seattle, and Tacoma; King and Pierce Counties, through the Intercounty River Improvement Commission; and Skagit and Whatcom Counties.

Financial assistance was furnished by the Corps of Engineers, United States Army, for the operation of one gaging station in Idaho, five in Montana, and ten in Washington.

Acknowledgment of financial assistance in collecting records published herein is due also to the United States Department of State; Bureau of Reclamation and Office of Indian Affairs, United States Department of the Interior; Forest Service and Soil Conservation Service, United States Department of Agriculture; Weather Bureau, United States Department of Commerce; and the Federal Power Commission.

Full cooperation exists between this organization and the Dominion Water and Power Bureau, Department of Mines and Resources, Canada. On waters adjacent to the international boundary certain stations are maintained jointly by the United States and Canada under the terms of the Boundary Waters Treaty of 1909, and others are maintained under a subsequent agreement between the two Governments. The records from all these stations are obtained in such a manner as to be equally acceptable and available in either country. These stations are herein designated "international gaging stations."

Assistance in collecting the records was also rendered by the following municipalities, corporations, and individuals:

Idaho: Washington Water Power Co.

Montana: Montana Power Co. and Glacier Silver Lead Mining Co.

Washington: Crown Zellerbach Corporation; Hugh L. Cooper Co.; Puget Sound Power & Light Co.; Washington Water Power Co.; and Western Washington Electric Light & Power Co.

DIVISION OF WORK

The stream-gaging work was conducted by the water resources branch of the Geological Survey, Glenn L. Parker, chief hydraulic engineer, Carl G. Paulsen, assistant chief hydraulic engineer, and Rudolph G. Kasel, chief of the division of surface waters. The data for the stations in the several States were collected and prepared for publication under supervision of district engineers as follows: In Idaho (except for Pend Oreille River at Priest River) and for Clark Fork near Heron, Mont., Flathead River at Flathead, British Columbia, and Kootenai River near Rexford, Mont., T. R. Newell; in Montana (except for the two stations noted above), A. H. Tuttle; in Washington and for Pend Oreille River at Priest River, Idaho, F. M. Veatch.

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

Basins between Columbia River and Puget Sound

NASELLE RIVER BASIN

Naselle River near Naselle, Wash.

Location.- Staff gage, lat. 46°22'25", long. 123°44'45" (revised), in SW¼ sec. 1, T. 10 N., R. 9 W., 1½ miles upstream from Salmon Creek and 3½ miles east of Naselle.

Drainage area.- 55 square miles (revised).

Records available.- May 1929 to September 1941.

Average discharge.- 12 years, 423 second-feet.

Extremes.- Maximum discharge during year, 4,360 second-feet Jan. 17 (gage height, 9.74 feet, from graph based on gage readings); minimum observed, 31 second-feet Aug. 19, 20, 21 (gage height, 2.02 feet).

1929-41: Maximum discharge observed, 10,400 second-feet Jan. 22, 1935 (gage height, 15.9 feet, from floodmarks), from rating curve extended above 3,000 second-feet; minimum observed, 22 second-feet Oct. 6, 7, 1929; minimum gage height observed, 1.72 feet Aug. 29, 1935.

Remarks.- Records good. Gage read twice daily. No diversion or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 24 to Nov. 28)

Oct. 1-10				Oct. 11 to Sept. 30					
2.1	45	2.8	205	2.2	59	3.0	263	6.0	1,760
2.2	62	3.0	265	2.4	99	3.5	439	7.0	2,410
2.4	104	3.5	440	2.6	147	4.0	651	8.0	3,110
2.6	152	4.0	650	2.8	202	5.0	1,160		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	995	697	479	697	248	142	88	132	78	39	217
2	44	891	562	420	744	280	132	91	134	74	41	248
3	47	697	697	382	651	248	147	124	120	72	56	357
4	72	562	562	329	541	217	142	188	115	70	49	651
5	55	479	697	346	459	202	217	248	115	68	42	401
6	48	420	697	382	401	188	248	202	137	67	39	296
7	45	697	606	382	346	188	232	174	132	67	38	217
8	42	651	562	346	329	171	202	152	117	65	36	174
9	44	606	520	312	346	160	188	140	117	61	36	174
10	833	520	459	296	364	152	169	130	106	59	35	527
11	626	479	401	280	364	144	155	120	99	57	34	520
12	280	401	364	263	329	137	147	115	93	56	36	346
13	332	364	329	263	296	132	140	110	91	56	35	346
14	280	312	296	248	280	127	137	110	86	52	34	346
15	217	296	280	312	248	120	150	106	86	52	34	296
16	188	263	263	364	232	113	150	539	82	50	34	329
17	188	248	248	2,670	217	120	150	1,630	84	47	34	329
18	188	232	312	2,560	217	296	132	841	122	49	32	329
19	376	202	732	1,270	202	382	124	562	140	49	31	459
20	2,020	232	1,270	841	188	296	115	439	158	49	31	420
21	1,540	232	942	651	174	248	113	364	140	47	31	364
22	792	202	697	520	166	263	108	312	120	45	34	312
23	744	188	651	439	169	217	104	263	132	45	44	280
24	891	263	651	520	188	202	99	232	108	45	41	248
25	562	296	697	1,270	163	188	95	217	106	45	39	232
26	500	248	995	995	155	188	91	202	101	42	54	202
27	401	382	942	792	188	171	86	188	91	42	108	188
28	382	1,080	732	606	248	160	86	188	91	44	152	174
29	401	1,630	697	500	-	158	84	169	86	42	70	163
30	850	995	606	439	-	150	84	152	78	42	59	243
31	995	-	541	651	-	142	-	150	-	41	82	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	14,072	2,020	39	454	8.25	9.52	27,910
November	15,063	1,630	188	502	9.13	10.19	29,880
December	18,765	1,270	248	605	11.0	12.69	37,220
Calendar year 1940	146,906	3,490	30	401	7.29	99.35	291,400
January	20,128	2,670	248	649	11.8	13.61	39,920
February	8,902	744	155	318	5.78	6.02	17,660
March	6,008	382	113	194	3.53	4.06	11,920
April	4,169	248	84	139	2.53	2.82	8,270
May	8,546	1,630	88	276	5.02	5.78	16,950
June	3,319	158	78	111	2.02	2.24	6,580
July	1,678	78	41	54.1	.984	1.13	3,330
August	1,460	152	31	47.1	.856	.99	2,900
September	9,388	651	163	313	5.69	6.35	18,620
Water year 1940-41	111,498	2,670	31	305	5.55	75.40	221,200

North River near Raymond, Wash.

Location.- Water-stage recorder, lat. 46°49', long. 123°51', in sec. 6, T. 15 N., R. 9 W., 1¼ miles upstream from Salmon Creek and 10 miles northwest of Raymond.

Drainage area.- 219 square miles.

Records available.- August 1927 to September 1941.

Average discharge.- 14 years, 953 second-feet.

Extremes.- Maximum discharge during year, 5,440 second-feet Jan. 18 (gage height, 6.39 feet); minimum, 42 second-feet Aug. 20-22 (gage height, 1.26 feet).
1927-41: Maximum discharge, 35,000 second-feet Dec. 10, 1933 (gage height, 15.8 feet, from floodmarks), from rating curve extended above 6,300 second-feet; minimum, 24 second-feet Sept. 17, 1938 (gage height, 1.18 feet).

Remarks.- Records good. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

1.3	47	2.0	181	3.5	1,060
1.4	61	2.3	277	4.0	1,600
1.6	94	2.6	401	5.0	2,870
1.8	132	3.0	635	6.0	4,600

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	91	1,460	1,960	1,200	1,320	750	340	187	307	128	60	288
2	86	1,580	1,410	1,020	1,320	798	319	184	296	124	61	401
3	82	1,330	1,340	902	1,200	742	327	198	281	118	69	814
4	92	1,140	1,350	824	1,060	665	323	252	252	112	77	734
5	84	947	1,330	790	938	594	344	331	239	108	94	710
6	86	911	1,450	841	850	549	416	416	252	107	86	468
7	82	994	1,380	1,010	766	506	462	365	277	105	74	344
8	74	1,440	1,290	1,050	688	473	406	296	281	103	d70	270
9	84	1,720	1,140	938	680	441	374	252	249	96	d67	236
10	467	1,400	974	841	680	416	348	223	232	d94	d63	319
11	642	1,100	850	758	742	388	323	204	220	d91	d59	411
12	596	920	766	702	702	370	296	196	198	d89	d55	456
13	581	782	688	680	642	356	281	198	181	d86	d52	360
14	530	734	628	628	594	336	274	198	178	d84	48	331
15	365	642	587	642	555	315	281	196	168	d81	48	344
16	263	549	543	766	518	307	296	609	165	79	47	370
17	236	490	518	2,460	495	304	296	1,900	163	77	46	378
18	419	468	536	5,010	462	428	266	2,330	178	75	45	383
19	633	436	867	4,700	441	734	246	1,500	201	72	43	416
20	1,750	421	2,080	2,670	426	766	232	1,050	236	72	42	451
21	2,870	411	2,140	1,840	406	615	223	816	220	71	42	431
22	1,780	401	1,540	1,460	388	561	213	665	201	69	42	352
23	1,140	383	1,370	1,190	378	524	207	549	196	67	60	311
24	1,060	421	1,340	1,080	401	468	201	473	181	66	61	281
25	984	530	1,460	1,540	436	431	198	416	176	66	99	256
26	758	549	1,720	2,140	431	401	193	378	163	64	107	239
27	601	601	2,020	1,840	473	388	190	356	158	63	133	223
28	518	1,310	2,080	1,450	621	370	190	356	146	61	178	213
29	446	2,730	1,840	1,220	-	352	193	356	137	60	263	201
30	808	3,010	1,600	1,090	-	340	193	336	130	60	176	246
31	1,300	-	1,400	1,180	-	374	-	300	-	60	217	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	19,508	2,870	74	629	2.87	3.31	38,690
November	29,810	3,010	383	994	4.54	5.06	59,130
December	40,197	2,140	518	1,297	5.92	6.83	79,730
Calendar year 1940	325,334	5,550	44	889	4.06	55.24	645,200
January	44,462	5,010	628	1,434	6.55	7.55	88,190
February	18,613	1,320	378	665	3.04	3.16	36,920
March	15,062	798	304	486	2.22	2.56	29,880
April	8,451	462	190	282	1.29	1.44	16,760
May	16,086	2,330	184	519	2.37	2.73	31,910
June	6,262	307	130	209	.954	1.06	12,420
July	2,608	128	60	84.1	.384	.44	5,170
August	2,584	263	42	83.4	.381	.44	5,130
September	11,237	814	201	375	1.71	1.91	22,290
Water year 1940-41	214,880	5,010	42	589	2.69	36.49	426,200

d Doubtful gage-height record; discharge interpolated.

Chehalis River near Doty, Wash.

Location.- Staff gage, lat. 46°37'00", long. 123°16'40" (revised), in NW¼ sec. 14, T. 13 N., R. 5 W., 1⅛ miles upstream from Elk Creek, 1⅛ miles south of Doty, and 3½ miles north of Pe Ell.

Drainage area.- 113 square miles.

Records available.- October 1939 to September 1941.

Extremes.- Maximum discharge during year, 9,140 second-feet Jan. 17 or 18 (gage height, 11.7 feet, from high-water mark on gage, noted by observer), minimum observed, 27 second-feet Oct. 9 (gage height, 1.05 feet).
1939-41: Maximum discharge observed, 15,100 second-feet Dec. 15, 1939 (gage height, 15.76 feet); minimum observed, 22 second-feet Aug. 18, 19, 20, 21, 26, 1940 (gage height, 0.99 foot); discharge may have been less during period Oct. 1-3, 1939, before gage was installed.

Remarks.- Records good. Gage read twice daily. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

1.1	31	2.0	235	4.0	1,380	8.0	4,650
1.3	57	2.5	454	4.5	1,730	10.0	6,880
1.5	94	3.0	742	5.0	2,080		
1.7	142	3.5	1,060	6.0	2,850		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	928	681	508	803	481	189	108	179	86	38	160
2	34	772	564	454	865	508	189	108	167	80	38	434
3	32	536	593	428	742	454	189	142	156	78	59	279
4	34	402	536	378	622	378	198	221	148	74	54	428
5	36	312	712	378	564	334	312	428	142	71	44	292
6	31	402	991	508	481	312	402	402	150	71	40	221
7	30	991	772	622	428	272	378	334	153	67	38	170
8	29	991	652	536	402	254	355	272	137	64	36	137
9	240	803	536	481	378	235	334	235	137	60	36	142
10	508	652	454	428	402	225	292	208	127	57	33	332
11	272	481	402	378	402	211	272	189	117	57	33	538
12	159	378	355	355	378	198	235	173	112	54	36	334
13	145	334	312	334	355	186	218	159	108	54	36	254
14	129	292	292	334	334	176	208	150	103	51	33	254
15	99	272	254	454	312	170	218	148	99	48	32	235
16	84	235	254	1,030	292	164	221	530	99	48	31	221
17	82	218	235	4,680	272	164	201	2,450	99	45	31	235
18	110	205	272	5,420	254	402	186	1,250	122	44	30	235
19	126	186	431	2,460	254	712	173	865	148	43	30	292
20	666	195	2,200	1,520	232	564	162	622	170	43	30	272
21	538	235	1,380	1,060	218	454	153	508	142	42	30	225
22	334	192	1,180	803	205	428	148	428	127	42	31	192
23	272	189	928	681	208	355	142	355	132	43	33	170
24	694	208	928	652	235	312	134	312	117	42	36	148
25	454	225	1,120	1.620	221	272	127	272	112	52	40	134
26	292	254	1,520	1,380	208	254	124	254	114	47	52	124
27	235	378	1,380	1,060	292	235	117	272	101	43	74	114
28	195	876	1,120	803	481	225	114	254	94	42	137	105
29	208	1,870	865	652	-	214	114	228	94	40	80	99
30	964	991	712	593	-	208	112	205	90	39	64	96
31	1,060	-	622	772	-	195	-	192	-	38	96	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	8,124	1,060	29	262	2.32	2.67	16,110
November	15,003	1,870	186	500	4.42	4.94	29,760
December	23,253	2,200	235	750	6.64	7.65	46,120
Calendar year 1940	196,768	4,350	22	538	4.76	64.75	390,200
January	31,762	5,420	334	1,025	9.07	10.45	63,000
February	10,840	865	205	387	3.42	3.57	21,500
March	9.552	712	164	308	2.73	3.14	18,950
April	6,217	402	112	207	1.83	2.05	12,330
May	12,274	2,450	108	396	3.50	4.04	24,350
June	3,796	179	90	127	1.12	1.25	7,530
July	1,665	86	38	53.7	.475	.55	3,300
August	1,411	137	30	45.5	.403	.46	2,800
September	6,872	538	96	229	2.03	2.26	13,630
Water year 1940-41	130,769	5,420	29	358	3.17	43.03	259,400

Chehalis River near Grand Mound, Wash.

Location.- Water-stage recorder, lat. 46°46'35" long. 123°02'05" (revised), in NE¼ sec. 22, T. 15 N., R. 3 W., at Meadow, 1½ miles southwest of Grand Mound and about 6 miles downstream from Skookumchuck River. Datum of gage is 123.27 feet above mean sea level, datum of 1929.

Drainage area.- 897 square miles (revised).

Records available.- October 1928 to September 1941.

Average discharge.- 13 years, 2,607 second-feet.

Extremes.- Maximum discharge during year, 18,800 second-feet Jan. 19 (gage height, 12.69 feet); minimum, 152 second-feet Aug. 17, 20.
1928-41: Maximum discharge, 48,400 second-feet Dec. 29, 1937 (gage height, 18.39 feet); minimum, 108 second-feet Sept. 24, 1938.

Remarks.- Records good. Cities of Centralia and Chehalis divert about 15 second-feet from Newaukum River, a tributary, for municipal supply. No noticeable regulation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	238	3,230	5,240	3,090	3,810	2,290	1,040	612	1,070	513	193	a500
2	238	3,020	3,740	2,620	3,810	2,420	1,060	612	964	446	196	a1,000
3	233	2,420	3,090	2,360	3,510	2,360	1,030	650	881	415	221	a900
4	242	1,860	3,090	2,220	3,160	2,040	1,090	752	811	385	279	a980
5	251	1,500	3,020	2,160	2,810	1,800	1,150	1,090	744	385	279	1,250
6	246	1,270	4,910	2,740	2,480	1,620	1,740	1,500	736	385	217	1,040
7	225	1,380	4,430	3,230	2,220	1,440	1,860	1,330	811	362	196	777
8	217	2,810	3,580	3,300	2,040	1,310	1,860	1,150	760	362	181	612
9	225	3,160	3,020	2,950	1,920	1,200	1,740	1,000	720	351	174	519
10	229	2,680	2,480	2,620	2,040	1,110	1,740	890	680	335	166	513
11	755	2,160	2,160	2,290	1,980	1,050	1,560	811	628	329	166	836
12	881	1,860	1,920	2,100	1,920	1,010	1,380	777	591	329	163	a900
13	642	1,560	1,680	1,980	1,800	935	1,270	768	555	319	174	a1,000
14	704	1,380	1,500	1,920	1,620	890	1,170	736	533	314	177	a880
15	576	1,230	1,400	2,220	1,560	845	1,140	704	513	309	166	a760
16	452	1,110	1,270	3,090	1,450	820	1,160	736	499	288	159	a800
17	396	1,030	1,220	5,320	1,380	802	1,130	3,520	499	274	152	836
18	374	1,000	1,250	15,100	1,320	1,160	1,040	6,270	519	270	156	881
19	415	926	1,400	18,100	1,250	2,220	944	4,110	605	246	166	899
20	498	881	5,310	13,200	1,170	2,550	872	2,880	736	251	159	a940
21	1,270	1,120	7,750	8,150	1,110	2,100	811	2,160	712	246	159	a970
22	1,140	1,220	6,270	5,750	1,050	1,860	777	1,740	628	238	163	a900
23	881	1,060	5,240	4,430	1,010	1,680	736	1,450	576	229	174	a800
24	1,240	1,070	4,750	3,580	1,080	1,500	720	1,230	555	229	177	a730
25	1,920	1,400	4,910	3,960	1,170	1,370	696	1,080	506	221	204	a670
26	1,340	1,500	5,920	6,270	1,060	1,300	665	992	492	246	225	a610
27	992	1,560	6,990	5,240	1,170	1,210	658	1,020	492	208	284	a570
28	820	2,480	6,630	4,110	1,860	1,140	658	1,110	472	196	345	a530
29	720	8,150	5,240	3,440	-	1,090	620	1,270	465	204	452	a500
30	1,050	8,150	4,270	3,020	-	1,110	620	1,050	446	196	356	a480
31	3,370	-	3,660	2,880	-	1,100	-	973	-	196	293	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	22,780	3,370	217	735	0.819	0.94	45,180
November	64,177	8,150	881	2,139	2.38	2.66	127,300
December	117,340	7,750	1,220	3,785	4.22	4.86	232,700
Calendar year 1940	972,404	19,100	124	2,657	2.96	40.32	1,929,000
January	143,440	18,100	1,920	4,627	5.16	5.95	284,500
February	52,760	3,810	1,010	1,884	2.10	2.19	104,600
March	45,332	2,550	802	1,462	1.63	1.88	89,910
April	32,937	1,860	620	1,098	1.22	1.37	65,330
May	44,973	6,270	612	1,451	1.62	1.86	89,200
June	19,199	1,070	446	640	.713	.80	38,080
July	9,277	513	196	299	.333	.38	18,400
August	6,572	452	152	212	.236	.27	13,040
September	23,583	1,250	480	786	.876	.98	46,780
Water year 1940-41	582,370	18,100	152	1,596	1.78	24.14	1,155,000

a No gage-height record; discharge computed on basis of records for Satsop River near Satsop.
Note.- Shifting-control method used Oct. 1-30, Feb. 14 to Sept. 30.

Skookumchuck River near Centralia, Wash.

Location.- Water-stage recorder, lat. 46°47'15", long. 122°42'45", in SW¼NW¼ sec. 17, T. 15 N., R. 1 E., half a mile upstream from Bloody Run Creek, 4½ miles upstream from Thompson Creek, and 12 miles northeast of Centralia. Datum of gage is 300.0 feet above mean sea level (river-profile survey).

Drainage area.- 60 square miles.

Records available.- April 1929 to September 1931, October 1939 to September 1941.

Extremes.- Maximum discharge during year, 1,880 second-feet Jan. 18 (gage height, 43.63 feet); minimum, 22 second-feet Oct. 7-9 (gage height, 39.40 feet).
1929-31, 1939-41: Maximum discharge, 3,240 second-feet Mar. 31, 1931 (gage height, 7.50 feet, site and datum then in use); minimum, 21 second-feet Sept. 23, 24, 1930, Sept. 8, 9, 23, 24, 25, 26, 1940.

Remarks.- Records excellent. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

39.6	37	40.4	141	41.3	444
39.8	53	40.6	190	41.6	588
40.0	73	40.8	248	42.0	817
40.2	101	41.0	318	43.0	1,470

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	274	288	203	330	177	108	62	125	57	31	39
2	25	238	235	180	314	229	106	62	113	55	31	52
3	25	182	244	167	278	195	106	88	106	55	42	54
4	27	141	226	164	244	162	102	87	98	52	42	104
5	25	119	324	169	214	143	145	155	93	52	34	108
6	23	102	370	214	192	128	232	148	104	49	33	84
7	22	202	292	212	169	117	201	125	108	48	30	65
8	22	311	248	190	157	106	172	115	94	47	30	53
9	23	264	203	180	155	99	169	101	88	46	30	48
10	50	206	174	167	162	96	162	90	84	45	30	61
11	100	180	155	157	145	91	143	85	80	44	30	57
12	52	148	138	145	138	87	132	87	73	44	34	51
13	90	130	125	145	128	84	119	81	70	42	31	50
14	66	117	117	160	121	80	134	79	67	41	29	67
15	51	104	110	195	115	77	113	76	66	40	27	110
16	44	98	102	229	110	76	104	140	65	38	27	98
17	40	96	101	564	104	74	98	645	66	38	27	108
18	38	88	110	1,440	101	191	90	486	77	38	26	94
19	38	83	135	709	96	235	86	322	121	38	25	135
20	42	91	577	467	93	201	81	244	113	37	25	187
21	67	117	417	366	88	164	77	201	96	34	25	130
22	56	98	322	292	86	164	74	167	86	34	25	104
23	60	88	281	254	87	138	72	141	81	35	34	87
24	241	111	307	232	94	128	71	125	74	34	33	76
25	174	128	338	342	87	117	68	115	71	34	30	69
26	111	121	396	374	85	108	65	111	70	32	42	63
27	86	132	431	307	117	102	71	110	65	34	39	59
28	72	315	383	260	152	98	65	162	63	34	52	56
29	71	734	318	229	-	96	64	134	62	33	38	55
30	244	404	274	214	-	123	63	117	61	33	32	56
31	314	-	232	248	-	99	-	136	-	32	31	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	2,324	314	22	75.0	1.25	1.44	4,610
November	5,422	734	83	181	3.02	3.36	10,750
December	7,973	577	101	257	4.28	4.94	15,810
Calendar year 1940	71,757	1,710	21	196	3.27	44.47	142,300
January	9,175	1,440	145	296	4.93	5.69	18,200
February	4,162	330	85	149	2.48	2.58	8,260
March	3,985	235	74	129	2.15	2.47	7,900
April	3,293	232	63	110	1.83	2.04	6,530
May	4,796	645	82	155	2.58	2.97	9,510
June	2,540	125	61	84.7	1.41	1.57	5,040
July	1,275	57	32	41.1	.685	.79	2,530
August	995	52	25	32.1	.535	.62	1,970
September	2,380	187	39	79.3	1.32	1.48	4,720
Water year 1940-41	48,320	1,440	22	132	2.20	29.95	95,830

Satsop River near Satsop, Wash.

Location.- Water-stage recorder, lat. 47°00'05", long. 123°29'40" (revised), in sec. 36, T. 18 N., R. 7 W., 1 mile west of Satsop and 1½ miles upstream from mouth. Datum of gage is at mean sea level, datum of 1929.

Drainage area.- 315 square miles.

Records available.- March 1929 to September 1941.

Average discharge.- 12 years, 1,933 second-feet.

Extremes.- Maximum discharge during year, 25,200 second-feet Jan. 18 (elevation, 33.81 feet), from rating curve extended above 10,000 second-feet; minimum, 226 second-feet Oct. 3, 9 (elevation, 22.49 feet).

1929-41: Maximum discharge observed, 52,500 second-feet Jan. 22, 1935 (elevation, 38.9 feet, from floodmarks), from rating curve extended above 17,000 second-feet; minimum discharge, 166 second-feet Sept. 21, 1938.

Remarks.- Records excellent except those above 12,000 second-feet, which are fair. No diversions or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 17

22.5	229	23.5	630	25.5	2,810
22.7	285	24.0	1,000	26.0	3,600
22.9	352	24.5	1,490	27.0	5,480
23.2	477	25.0	2,080	28.0	7,550

Jan. 18 to Sept. 30

23.2	225	25.5	2,720	30.0	12,600
23.5	367	26.0	3,570	31.0	15,500
24.0	730	27.0	5,490	32.0	18,600
24.5	1,290	28.0	7,670		
25.0	1,950	29.0	10,000		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	229	3,520	2,810	a3,300	4,600	2,800	940	539	780	414	275	1,410
2	229	3,350	2,360	a2,700	3,750	2,880	907	539	790	402	285	1,660
3	232	2,580	2,440	a2,350	3,220	2,480	951	584	712	391	335	1,200
4	256	2,080	2,360	2,020	2,880	2,180	1,020	539	676	385	329	2,020
5	270	1,830	2,580	1,830	2,560	1,880	1,070	929	649	373	294	1,190
6	251	2,220	2,880	1,830	2,250	1,740	1,480	1,120	685	367	280	863
7	237	3,040	3,110	2,020	2,020	1,670	1,680	1,030	649	362	271	685
8	229	3,520	4,580	1,950	1,880	1,550	1,510	885	608	356	266	584
9	257	3,040	3,770	1,830	1,880	1,310	1,390	770	608	352	262	539
10	2,630	2,440	2,810	1,710	1,950	1,350	1,250	703	576	345	262	949
11	2,400	2,080	2,360	1,600	2,250	1,270	1,150	649	553	340	262	1,280
12	1,210	1,830	2,020	1,490	2,100	1,180	1,050	667	525	335	262	1,170
13	910	1,600	1,770	1,490	1,880	1,120	995	616	518	335	262	984
14	725	1,440	1,600	1,440	1,750	1,050	951	576	490	329	258	929
15	619	1,330	1,490	1,440	1,640	1,020	907	568	490	318	254	841
16	545	1,230	1,380	2,620	1,550	973	885	1,570	477	313	254	863
17	535	1,180	1,330	10,400	1,450	951	852	6,990	490	318	250	940
18	3,400	1,090	1,380	16,800	1,360	1,170	800	4,220	553	313	241	830
19	3,860	1,010	1,670	7,440	1,290	1,730	760	2,640	546	313	246	929
20	5,880	1,030	5,280	4,890	1,220	1,710	721	2,250	592	313	237	940
21	5,080	1,070	3,770	3,840	1,160	1,500	703	1,880	592	313	241	830
22	3,040	955	3,110	3,140	1,110	1,640	557	1,600	553	308	241	730
23	2,510	910	2,880	2,720	1,070	1,510	640	1,410	532	304	271	667
24	3,600	1,240	3,350	2,560	1,130	1,370	624	1,240	490	304	271	608
25	2,660	1,540	4,300	4,480	1,100	1,290	608	1,130	484	304	266	576
26	2,020	1,490	5,480	4,690	1,370	1,210	584	1,050	532	304	285	546
27	1,660	1,710	4,490	3,570	2,080	1,130	568	995	445	294	299	504
28	1,490	2,720	4,780	2,960	3,220	1,060	553	973	432	290	308	490
29	1,540	5,280	5,280	2,560	-	1,040	553	907	432	285	285	477
30	2,440	3,600	a4,600	2,400	-	1,070	546	852	420	280	266	518
31	2,960	-	a4,000	2,900	-	984	-	800	-	275	507	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	53,904	5,880	229	1,739	5.52	6.36	106,900
November	61,955	5,280	910	2,065	6.56	7.31	122,900
December	96,020	5,480	1,330	3,097	9.83	11.34	190,500
Calendar year 1940	673,800	11,800	224	1,841	5.84	79.64	1,336,000
January	106,970	16,800	1,440	3,451	11.0	12.63	212,200
February	55,720	4,600	1,070	1,990	6.32	6.58	110,500
March	45,818	2,880	951	1,478	4.69	5.41	90,880
April	27,315	1,680	546	910	2.89	3.22	54,180
May	41,221	6,990	539	1,330	4.22	4.87	81,760
June	16,879	790	420	563	1.79	1.99	33,480
July	10,235	414	275	330	1.05	1.21	20,300
August	8,625	507	237	278	.883	1.02	17,110
September	26,752	2,020	477	892	2.83	3.16	53,060
Water year 1940-41	551,414	16,800	229	1,511	4.80	65.10	1,094,000

a No gage-height record; discharge computed on basis of records for Chehalis River near Grand Mound.

Wynoochee River at Oxbow, near Aberdeen, Wash.

Location.- Water-stage recorder, lat. 47°19'30", long. 123°38'20", in sec. 12, T. 21 N., R. 8 W., 1 mile downstream from Oxbow and 24 miles northeast of Aberdeen. Discharge measurement made at site 1½ miles upstream.

Drainage area.- About 65 square miles, above discharge measuring section (uncertain because of inadequate maps).

Records available.- May 1925 to September 1941.

Average discharge.- 16 years, 766 second-feet.

Extremes.- Maximum discharge during year, 10,600 second-feet Jan. 17 (gage height, 23.47 feet), from rating curve extended above 7,500 second-feet); minimum, 96 second-feet Oct. 9 (gage height, 2.05 feet).

1925-41: Maximum discharge, 18,000 second-feet Jan. 22, 1935 (gage height, 30.3 feet, from floodmarks), from rating curve extended above 5,300 second-feet; minimum, 76 second-feet Sept. 23, 1930.

Remarks.- Records excellent. No diversion or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 17

2.1	100	4.3	358	12.0	2,810
2.4	125	5.0	505	14.0	3,930
2.8	161	6.0	750	16.0	5,130
3.2	200	8.0	1,320	18.0	6,400
3.7	259	10.0	1,970		

Jan. 18 to Sept. 30

2.1	105	3.7	268	8.0	1,380
2.4	131	4.3	373	10.0	2,000
2.8	167	5.0	539	12.0	2,810
3.2	207	6.0	806		

Note.- Same as preceding table above 12.0 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	1,560	829	941	2,420	1,520	405	254	353	212	126	1,400
2	98	1,260	725	829	2,000	1,700	405	261	344	207	131	909
3	100	969	1,110	750	1,520	1,290	463	291	316	202	144	1,100
4	120	802	857	700	1,500	1,000	488	340	308	197	140	1,080
5	112	776	1,360	625	1,200	862	752	617	299	192	131	617
6	104	1,140	1,260	612	1,030	890	1,140	806	308	187	126	451
7	100	2,410	2,060	675	1,200	806	1,060	578	291	182	122	363
8	98	1,780	2,850	650	806	725	834	475	283	182	122	308
9	158	1,290	1,560	612	1,090	644	725	405	268	177	118	310
10	2,590	1,020	1,140	588	1,200	591	644	363	261	172	118	890
11	1,020	829	913	564	1,030	542	565	363	254	172	118	779
12	540	725	776	552	890	500	500	373	248	167	113	578
13	419	650	700	750	779	475	463	344	241	162	113	500
14	330	588	625	625	698	439	439	316	235	162	113	488
15	288	528	564	810	644	416	428	308	241	158	109	428
16	252	494	516	1,410	591	394	405	1,720	224	158	109	542
17	658	472	505	5,690	542	405	384	3,770	262	154	109	488
18	5,780	440	776	4,530	513	617	353	1,630	325	154	109	463
19	4,230	408	1,840	2,100	488	1,030	344	1,120	299	149	105	684
20	3,990	408	2,900	1,520	451	806	325	1,000	384	149	105	542
21	2,690	378	1,530	1,230	428	698	316	834	344	144	104	439
22	1,500	358	1,320	1,030	405	946	308	725	308	144	104	384
23	1,800	348	1,260	890	416	725	308	644	291	140	113	344
24	2,060	483	2,090	946	416	617	291	578	268	140	113	316
25	1,260	540	2,660	2,070	451	565	283	526	261	140	113	291
26	941	461	2,370	1,500	630	539	283	475	248	136	118	276
27	776	638	1,680	1,120	1,600	513	276	451	235	136	122	261
28	725	1,300	1,930	946	1,940	475	268	428	229	136	118	254
29	969	1,670	1,820	834	-	463	261	394	224	131	113	248
30	1,440	1,050	1,410	946	-	500	254	373	218	131	126	268
31	1,500	-	1,140	2,440	-	439	-	363	-	126	1,010	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	36,747	5,780	98	1,185	72,890
November	25,775	2,410	348	859	51,120
December	43,076	2,900	505	1,390	85,440
Calendar year 1940	284,508	5,780	94	777	564,300
January	39,485	5,690	552	1,274	78,320
February	26,878	2,420	405	960	53,310
March	22,132	1,700	394	714	43,900
April	15,970	1,140	254	466	27,710
May	21,125	3,770	254	681	41,900
June	8,370	384	218	279	16,600
July	4,999	212	126	161	9,920
August	4,535	1,010	104	146	9,000
September	16,001	1,400	248	533	31,740
Water year 1940-41	263,093	5,780	98	721	521,800

Peak discharge.- Oct. 18 (10:30 a.m.) 7,590 sec.-ft.; Jan. 17 (8 p.m.) 10,600 sec.-ft.

Quinault River at Quinault Lake, Wash.

Location.- Water-stage recorder, lat. 47°27'30", long. 123°53'30", in sec. 25, T. 23 N., R. 10 W., at outlet of Quinault Lake, 4 miles southwest of Quinault.

Drainage area.- 264 square miles.

Records available.- October 1911 to September 1941.

Average discharge.- 30 years, 2,704 second-feet.

Extremes.- Maximum discharge during year, 16,000 second-feet Oct. 19 (gage height, 11.12 feet); minimum, 374 second-feet Aug. 22 (gage height, 2.14 feet).
1911-22, 1924-32, 1933-41: Maximum discharge, 37,000 second-feet Dec. 12, 1921 (gage height, 16.3 feet, datum then in use), from rating curve extended above 25,000 second-feet; minimum, 285 second-feet Sept. 20, 1924 (gage height, 0.74 foot, datum then in use).

Remarks.- Records excellent except those for periods of no gage-height record, which are fair. No diversion. Slight regulation caused by natural storage in lake.

Rating table. water year 1940-41 (gage height, in feet, and discharge, in second-feet)

2.3	454	4.0	1,910	8.0	8,700
2.5	565	4.5	2,500	9.0	10,800
2.7	697	5.0	3,210	10.0	13,100
3.0	945	6.0	4,800	11.0	15,700
3.5	1,400	7.0	6,700		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	459	4,460	3,820	3,250	7,500	4,630	2,020	1,450	1,910	1,120	492	1,750
2	444	4,460	3,360	2,850	7,900	4,980	2,020	1,450	1,910	1,110	486	2,130
3	434	3,900	3,510	2,600	6,300	4,460	2,020	1,450	1,800	1,090	508	2,310
4	439	3,280	3,440	2,350	5,530	3,660	2,020	1,450	1,700	1,050	519	3,210
5	434	2,910	3,740	2,130	5,160	3,140	2,190	1,700	1,650	1,010	508	2,700
6	423	2,910	4,460	2,080	4,300	2,840	2,770	2,130	1,650	981	497	2,130
7	413	4,370	5,530	2,020	3,660	2,560	3,140	2,250	1,700	954	481	1,750
8	403	5,720	8,500	1,960	3,210	2,370	3,060	2,080	1,650	936	470	1,500
9	434	4,980	7,500	1,960	3,280	2,190	2,840	1,910	1,600	892	454	1,300
10	2,400	3,980	5,600	2,020	3,580	2,080	2,630	1,750	1,600	856	449	1,700
11	3,020	3,360	4,500	2,020	3,510	1,910	2,370	1,800	1,600	839	444	2,080
12	2,910	2,840	3,700	2,020	3,210	1,800	2,130	2,080	1,650	814	439	2,020
13	2,250	2,440	3,000	2,250	2,840	1,750	2,020	2,130	1,700	790	428	1,860
14	1,860	2,250	2,500	2,370	2,560	1,650	1,910	2,020	1,600	781	418	1,800
15	1,550	2,080	2,200	2,370	2,310	1,600	1,860	1,910	1,500	765	413	1,750
16	1,350	1,910	2,000	2,910	2,130	1,550	1,800	2,920	1,400	758	403	1,800
17	1,360	1,800	1,900	6,360	1,960	1,500	1,700	8,790	1,400	750	398	1,910
18	9,310	1,700	2,000	14,100	1,860	1,650	1,600	8,300	1,500	758	393	1,800
19	14,600	1,650	3,000	9,960	1,750	2,250	1,550	6,100	1,550	758	389	1,860
20	13,100	1,700	6,600	6,900	1,700	2,500	1,500	4,980	1,600	720	384	1,860
21	12,200	1,600	5,200	4,980	1,600	2,370	1,450	4,140	1,600	697	379	1,700
22	8,500	1,450	4,500	3,900	1,550	2,500	1,450	3,660	1,550	669	374	1,600
23	6,500	1,400	4,100	3,280	1,500	2,440	1,450	3,360	1,500	635	398	1,450
24	7,500	1,400	5,000	2,910	1,450	2,250	1,450	3,210	1,400	609	408	1,350
25	6,100	1,600	6,000	3,820	1,450	2,080	1,450	3,060	1,350	584	413	1,260
26	4,630	1,550	5,400	4,300	1,650	2,020	1,450	2,770	1,300	565	418	1,170
27	3,740	1,700	4,500	3,740	2,270	2,020	1,500	2,500	1,260	554	423	1,100
28	3,140	2,340	5,800	3,210	4,140	2,020	1,500	2,310	1,220	542	423	1,040
29	2,980	4,630	4,800	2,840	-	2,020	1,450	2,130	1,170	525	413	981
30	3,510	4,460	4,100	2,700	-	2,080	1,450	2,020	1,120	514	428	981
31	3,900	-	3,600	3,960	-	2,080	-	1,960	-	503	828	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	121,093	14,600	403	3,906	14.8	17.06	240,200
November	84,830	5,720	1,400	2,828	10.7	11.95	168,300
December	133,860	8,500	1,900	4,318	16.4	18.86	265,500
Calendar year 1940	993,661	14,600	374	2,715	10.3	139.97	1,971,000
January	114,120	14,100	1,960	3,681	13.9	16.08	226,400
February	89,860	7,900	1,450	3,209	12.2	12.66	178,200
March	74,950	4,980	1,500	2,418	9.16	10.56	148,700
April	57,750	3,140	1,450	1,925	7.29	8.14	114,500
May	89,770	8,790	1,450	2,896	11.0	12.65	178,100
June	46,140	1,910	1,120	1,538	5.83	6.50	91,520
July	24,129	1,120	503	778	2.95	3.40	47,860
August	13,878	828	374	448	1.70	1.96	27,530
September	51,852	3,210	981	1,728	6.55	7.30	102,800
Water year 1940-41	902,232	14,600	374	2,472	9.36	127.12	1,790,000

Note.- No gage-height record Nov. 17-25, Dec. 10 to Jan. 4; discharge computed on basis of one discharge measurement, recorded range of stage, and records for Queets River near Clearwater.

Queets River near Clearwater, Wash.

Location.- Water-stage recorder, lat. 47°32', long. 124°19', in SW¼ sec. 36, T. 24 N., R. 13 W., on Quinault Indian Reservation, 2 miles downstream from Clearwater River and 4 miles southwest of Clearwater. Datum of gage is 14.5 feet above mean sea level (river-profile survey).

Drainage area.- 454 square miles.

Records available.- September 1930 to September 1941.

Average discharge.- 11 years, 4,295 second-feet.

Extremes.- Maximum discharge during year, 53,200 second-feet Jan. 17 (gage height, 19.56 feet), from rating curve extended above 30,000 second-feet; minimum, 457 second-feet Aug. 18, 20.

1930-41: Maximum discharge, 100,000 second-feet Jan. 22, 1935 (gage height, 27.0 feet, present datum, from floodmarks), from rating curve extended above 31,000 second-feet; minimum, 384 second-feet Aug. 31, 1938; minimum gage height, 3.58 feet, present datum, Oct. 11, 1932.

Remarks.- Records excellent except those above 30,000 second-feet, which are fair. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 17						Jan. 18 to Sept. 30			
5.0	470	7.0	2,750	11.0	12,200	5.3	600	7.0	2,750
5.3	710	7.5	3,500	12.0	15,600	5.6	900	8.0	4,500
5.6	1,010	8.0	4,410	13.0	19,300	6.0	1,360	9.0	6,700
6.0	1,460	9.0	6,700	15.0	27,900	6.5	2,010		
6.5	2,080	10.0	9,310			Note.- Same as preceding table above 9 feet.			

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	548	7,720	4,610	4,320	17,400	6,230	2,080	1,400	2,010	1,200	544	4,500
2	526	5,970	4,220	3,670	15,700	7,460	2,010	1,410	1,940	1,190	528	2,880
3	491	4,510	5,920	3,260	8,770	5,770	2,440	1,740	1,800	1,130	627	7,090
4	612	3,760	4,510	3,190	7,720	4,500	2,590	1,610	1,680	1,090	681	6,640
5	638	4,040	7,820	2,890	5,770	3,760	4,160	3,060	1,600	1,030	584	3,320
6	540	6,210	6,700	2,890	4,700	4,500	5,550	4,880	1,870	1,040	536	2,360
7	505	11,000	17,700	3,120	4,310	3,850	4,800	3,070	2,010	1,060	536	1,940
8	477	9,310	18,800	2,820	3,670	3,410	3,940	2,440	1,680	1,030	544	1,680
9	1,080	6,090	9,040	2,820	6,380	2,990	3,580	2,150	1,610	977	552	1,600
10	14,500	4,610	6,090	2,750	6,230	2,750	3,070	1,940	1,560	922	544	4,470
11	5,410	3,940	4,720	2,470	5,550	2,520	2,670	2,010	1,680	911	552	4,310
12	2,890	3,340	3,850	2,340	4,500	2,360	2,360	2,440	1,740	900	513	2,990
13	2,340	2,960	3,340	3,500	3,850	2,150	2,220	2,080	1,570	900	492	2,750
14	1,880	2,750	2,960	2,820	3,410	2,010	2,150	1,800	1,400	922	485	3,160
15	1,640	2,540	2,680	3,240	3,070	1,870	2,440	1,740	1,300	986	485	2,670
16	1,420	2,400	2,470	5,730	2,750	1,800	2,220	10,300	1,250	955	492	3,580
17	3,710	2,340	2,400	26,800	2,520	1,800	1,940	19,400	1,350	955	492	3,320
18	34,600	2,140	3,670	19,800	2,360	3,070	1,800	9,040	2,010	966	485	2,910
19	24,800	1,950	6,960	9,580	2,220	5,550	1,740	6,230	1,740	911	492	3,160
20	12,900	2,140	11,900	6,460	2,080	4,400	1,680	5,770	1,870	845	492	2,670
21	12,200	2,080	6,450	5,110	1,940	3,670	1,610	4,700	1,940	780	492	2,220
22	7,200	1,820	6,090	4,310	1,800	5,110	1,610	3,940	1,740	730	499	2,010
23	7,720	1,760	5,620	3,760	1,800	3,670	1,610	3,670	1,580	681	654	1,800
24	9,850	2,280	8,770	3,670	2,080	3,070	1,520	3,410	1,440	654	627	1,680
25	5,970	2,890	11,000	10,400	2,980	2,750	1,470	2,990	1,400	627	513	1,580
26	4,510	2,280	9,850	7,460	5,380	2,670	1,470	2,590	1,370	636	592	1,510
27	3,670	3,190	6,950	5,220	7,900	2,590	1,460	2,360	1,320	645	663	1,370
28	3,340	6,440	10,700	4,400	9,040	2,360	1,410	2,360	1,250	627	592	1,290
29	4,030	10,200	9,310	3,760	-	2,220	1,360	2,220	1,200	618	520	1,250
30	4,610	6,090	6,700	4,510	-	2,290	1,340	2,010	1,200	592	665	1,610
31	6,210	-	5,270	11,000	-	2,080	-	1,940	-	576	4,480	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	180,817	34,600	477	5,833	12.8	14.81	358,600
November	128,750	11,000	1,760	4,292	9.45	10.55	255,400
December	217,070	18,800	2,400	7,002	15.4	17.78	430,600
Calendar year 1940	1,429,639	34,600	470	3,906	8.60	117.12	2,836,000
January	178,070	26,800	2,340	5,744	12.7	14.59	353,200
February	145,880	17,400	1,800	5,210	11.5	11.95	289,300
March	105,230	7,460	1,800	3,395	7.48	8.62	208,700
April	70,300	5,550	1,340	2,343	5.16	5.76	139,400
May	116,700	19,400	1,400	3,765	8.29	9.56	231,500
June	48,110	2,010	1,200	1,604	3.53	3.94	95,420
July	27,088	1,200	576	874	1.93	2.22	53,730
August	20,953	4,480	485	676	1.49	1.72	41,560
September	84,320	7,090	1,250	2,811	6.19	6.91	167,200
Water year 1940-41	1,323,288	34,600	477	3,625	7.98	108.41	2,625,000

Peak discharge.- Oct. 18 (12 m.) 44,900 sec.-ft.; Jan. 17 (6:45 p.m.) 53,200 sec.-ft.

Clearwater River near Clearwater, Wash.

Location.- Water-stage recorder, lat. 47°35', long. 124°18', in lot 4, sec. 18, T. 24 N., R. 12 W., 1½ miles north of Clearwater and 3 miles upstream from mouth.

Records available.- July 1937 to September 1941. October 1931 to September 1932, at site a quarter of a mile upstream.

Extremes.- Maximum discharge during year, 25,600 second-feet Jan. 17 (gage height, 14.51 feet), from rating curve extended above 6,000 second-feet by velocity-area method; minimum, 96 second-feet Aug. 20, 21.

1931-32, 1937-41: Maximum discharge, 29,200 second-feet Oct. 28, 1937 (gage height, 14.90 feet), from rating curve extended above 6,000 second-feet by velocity-area method; minimum, 60 second-feet Sept. 15, 16, 17, 18, 1938.

Discharge known to have been greater Jan. 21 or 22, 1935 (stage and discharge not determined).

Remarks.- Records excellent except those for periods of shifting-control, which are good, those for period of no gage-height record or above 8,000 second-feet, which are poor. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 20, Dec. 21 to Jan. 16, Sept. 4-29)

5.8	122	6.7	785	9.0	4,250
6.0	212	7.0	1,110	10.0	6,650
6.2	332	7.5	1,750	11.0	9,650
6.4	492	8.0	2,520	12.0	13,300

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	142	2,200	1,540	1,390	6,250	2,200	450	256	320	212	110	1,340
2	142	1,820	1,320	1,160	6,160	2,440	432	267	300	207	112	812
3	134	1,390	2,100	1,020	3,160	1,980	658	424	280	202	134	2,620
4	182	1,160	1,620	953	2,280	1,550	712	400	270	192	172	2,160
5	177	1,350	2,780	816	1,700	1,280	1,300	895	260	187	130	1,140
6	150	2,120	2,360	816	1,380	1,570	1,590	1,700	290	182	117	806
7	138	3,330	7,270	932	1,270	1,260	1,390	963	320	177	112	604
8	130	2,840	7,180	816	1,050	1,110	1,130	754	270	172	110	501
9	618	1,980	3,240	743	2,080	922	1,090	614	260	162	107	518
10	4,370	1,440	2,120	652	1,980	816	880	520	250	158	104	1,310
11	1,560	1,210	1,590	585	1,870	722	743	458	270	158	104	1,380
12	911	984	1,280	557	1,460	652	642	475	274	158	102	932
13	722	858	1,060	774	1,240	585	566	400	256	150	102	922
14	557	754	911	642	1,050	529	548	362	245	150	100	964
15	466	661	796	901	900	484	670	414	240	146	100	827
16	400	594	722	1,780	796	450	566	3,940	234	146	97	1,080
17	1,630	585	680	11,700	722	441	492	7,000	299	146	97	964
18	13,100	511	922	6,580	652	970	441	3,500	424	146	97	838
19	7,120	475	1,680	3,160	594	1,680	400	1,500	354	138	97	827
20	3,410	576	3,060	2,200	548	1,320	377	1,300	432	134	97	712
21	3,240	529	1,800	1,630	501	1,190	354	1,000	492	134	97	594
22	2,120	458	1,760	1,330	466	1,670	332	740	384	130	100	520
23	2,050	441	1,750	1,110	466	1,200	319	680	347	126	187	475
24	2,280	754	2,520	1,110	585	974	306	620	306	126	146	432
25	1,540	869	3,160	3,760	1,160	827	293	470	280	122	120	400
26	1,200	642	3,000	2,760	2,030	732	280	410	274	122	146	377
27	974	961	2,280	1,870	3,310	661	267	370	256	122	177	340
28	922	2,120	3,680	1,460	3,080	585	256	370	245	120	138	326
29	1,180	3,000	3,160	1,200	-	529	250	350	234	120	122	312
30	1,400	2,050	2,360	1,500	-	520	245	330	223	117	196	407
31	1,900	-	1,760	3,500	-	458	-	300	-	112	1,450	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	54,865	13,100	130	1,770	108,800
November	38,662	3,330	441	1,299	76,680
December	71,461	7,270	680	2,305	141,700
Calendar year 1940	427,111	13,100	99	1,167	847,100
January	59,407	11,700	557	1,916	117,800
February	48,740	6,250	466	1,741	96,670
March	32,307	2,440	441	1,042	64,080
April	17,979	1,590	245	599	35,660
May	31,772	7,000	256	1,025	63,020
June	8,839	492	223	296	17,630
July	4,674	212	112	151	9,270
August	5,080	1,450	97	164	10,080
September	25,440	2,620	312	848	50,460
Water year 1940-41	399,276	13,100	97	1,094	791,800

Peak discharge.- Oct. 18 (7:15 a.m.) 20,700 sec.-ft.; Jan. 17 (5:30 p.m.) 25,600 sec.-ft.

Note.- No gage-height record May 17 to June 11; discharge computed on basis of one discharge measurement and records for Queets River near Clearwater.

Hoh River near Spruce, Wash.

Location.- Water-stage recorder, lat. 47°48'20", long. 124°06'20" (revised), in sec. 34, T. 27 N., R. 11 W., 2¼ miles downstream from Spruce and 5 miles downstream from South Fork.

Drainage area.- 193 square miles.

Records available.- August 1926 to September 1941.

Average discharge.- 15 years, 1,961 second-feet.

Extremes.- Maximum discharge during year, 16,000 second-feet Jan. 17 (gage height, 13.24 feet), from rating curve extended above 8,000 second-feet on basis of velocity-area studies; minimum, 468 second-feet Oct. 2 (gage height, 1.60 feet).

1926-41: Maximum discharge, 40,000 second-feet Nov. 5, 1934 (gage height, 21.2 feet, from high-water mark in gage structure), from rating curve extended above 8,000 second-feet on basis of velocity-area studies (gage observer noted water higher on this day than at any other time during his 43 years of residence on the stream); minimum, 247 second-feet Nov. 14, 15, 1929; minimum gage height, 0.71 foot Nov. 10, 1936.

Remarks.- Records excellent except those for period of faulty recorder operation, which are good, and those above 10,000 second-feet, which are fair. No diversion or artificial regulation. Large diurnal fluctuation during summer months caused by melting of glaciers at source.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

1.7	498	3.5	1,360	7.0	4,780
2.0	600	4.0	1,690	8.0	6,300
2.5	810	5.0	2,470	10.0	9,700
3.0	1,060	6.0	3,470	12.0	13,500

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	600	2,060	2,220	1,840	7,450	2,650	1,300	1,040	1,390	1,300	764	2,140
2	498	1,690	2,060	1,620	5,680	2,650	1,150	984	1,330	1,330	720	1,440
3	498	1,490	2,970	1,490	3,710	2,060	1,180	958	1,240	1,270	858	3,380
4	530	1,330	2,140	1,360	4,640	1,730	1,120	932	1,240	1,180	764	2,600
5	530	1,420	4,480	1,300	3,250	1,520	1,490	1,490	1,270	1,240	742	1,520
6	564	1,760	2,840	1,240	2,560	1,490	1,730	1,990	1,590	1,360	810	1,180
7	564	4,220	6,590	1,210	2,300	1,390	1,560	1,390	1,590	1,360	882	984
8	530	2,740	6,460	1,150	1,990	1,300	1,390	1,180	1,330	1,270	1,010	907
9	843	2,060	3,470	1,490	2,560	1,180	1,300	1,060	1,300	1,150	1,060	958
10	6,420	1,690	2,650	1,520	2,560	1,120	1,210	1,040	1,460	1,090	1,040	2,790
11	2,240	1,460	2,220	1,330	2,220	1,060	1,060	1,460	1,760	1,120	1,010	1,760
12	1,390	1,270	1,910	1,300	1,990	1,010	984	1,870	1,990	1,150	858	1,240
13	1,240	1,150	1,690	1,870	1,760	984	932	1,560	1,690	1,240	858	1,390
14	1,120	1,060	1,520	1,460	1,590	932	958	1,270	1,420	1,490	882	1,660
15	932	1,010	1,390	1,490	1,460	907	1,090	1,240	1,240	1,690	932	1,390
16	834	958	1,270	2,140	1,360	882	984	4,520	1,180	1,840	907	1,920
17	2,760	932	1,300	8,230	1,270	882	907	7,240	1,300	1,990	907	1,560
18	12,900	858	2,140	7,740	1,180	1,180	834	3,330	1,800	1,910	1,010	1,240
19	10,700	810	3,800	4,220	1,120	1,560	810	2,840	1,560	1,760	1,040	1,210
20	6,780	787	5,830	3,040	1,040	1,360	810	2,740	1,490	1,420	1,090	1,120
21	5,720	720	3,360	2,470	1,010	1,270	834	2,470	1,360	1,360	1,060	958
22	3,140	678	3,470	2,140	984	1,490	882	2,300	1,420	1,150	958	907
23	4,420	678	2,840	1,990	958	1,240	907	2,390	1,300	984	1,220	958
24	3,720	1,060	3,590	1,910	984	1,120	882	2,390	1,210	907	834	958
25	2,300	1,120	3,960	3,580	1,090	1,090	858	2,140	1,180	907	787	958
26	1,840	882	3,710	2,740	1,270	1,150	932	1,840	1,180	1,040	810	984
27	1,560	1,300	2,840	2,220	2,870	1,180	984	1,620	1,210	1,060	699	787
28	1,490	2,860	2,840	2,060	3,630	1,150	958	1,590	1,150	1,010	658	764
29	1,760	3,470	3,040	1,840	-	1,150	932	1,420	1,150	932	619	810
30	1,840	2,300	2,470	2,070	-	1,240	958	1,330	1,240	932	810	1,110
31	2,060	-	2,140	4,830	-	1,120	-	1,420	-	858	2,640	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	82,323	12,900	498	2,656	13.8	15.86	163,300
November	45,823	4,220	678	1,527	7.91	8.83	90,890
December	93,210	6,590	1,270	3,007	15.6	17.96	184,900
Calendar year 1940	703,164	12,900	498	1,921	9.95	135.50	1,395,000
January	74,890	8,230	1,150	2,416	12.5	14.43	148,500
February	64,486	7,450	958	2,303	11.9	12.43	127,900
March	41,047	2,650	882	1,324	6.86	7.91	81,420
April	31,926	1,730	810	1,064	5.51	6.15	63,320
May	61,544	7,240	932	1,985	10.3	11.86	122,100
June	41,570	1,990	1,150	1,386	7.18	8.01	82,450
July	39,300	1,990	858	1,268	6.57	7.57	77,950
August	29,239	2,640	619	943	4.89	5.63	57,990
September	41,583	3,380	764	1,386	7.18	8.01	82,480
Water year 1940-41	646,941	12,900	498	1,772	9.18	124.65	1,283,000

Peak discharge.- Oct. 18 (9 a.m.) 15,300 sec.-ft.; Oct. 19 (8 a.m.) 14,100 sec.-ft.; Jan. 17 (5 p.m.) 16,000 sec.-ft.; Feb. 1 (8:30 p.m.) 8,470 sec.-ft.

Note.- Recorder not operating properly Oct. 22 to Jan. 7; discharge computed on basis of corrected gage-height record.

Soleduck River near Fairholm, Wash.

Location.- Water-stage recorder, lat. 48°02'30", long. 123°57'30", in lot 4, sec. 35, T. 30 N., R. 10 W., 300 feet downstream from South Fork, 2.5 miles southwest of Fairholm, and 17 miles west of Beaver.

Drainage area.- 79 square miles.

Records available.- October 1917 to September 1921, October 1933 to September 1941.

Average discharge.- 12 years, 628 second-feet.

Extremes.- Maximum discharge during year, 9,550 second-feet Jan. 17 (gage height, 8.97 feet), from rating curve extended above 3,000 second-feet; minimum, 56 second-feet Oct. 9.

1917-21, 1933-41: Maximum discharge, 24,300 second-feet Dec. 21, 1933 (gage height, 14.9 feet), from rating curve extended above 5,000 second-feet; minimum, that of Oct. 9, 1940.

Remarks.- Records excellent. No diversion or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
1.3	65	2.5	365	1.3	75	3.5	870
1.5	92	3.0	573	1.5	105	4.0	1,220
1.7	127	3.5	860	1.7	143	5.0	2,140
2.0	200	4.0	1,220	2.0	212	6.0	3,500
Note.- Same as following table above 4.0 feet.				2.5	377	7.0	5,200
				3.0	595		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	60	564	709	617	2,200	840	361	239	373	197	94	200
2	58	494	670	550	1,880	780	320	239	365	192	97	154
3	57	424	878	511	1,260	620	306	251	358	185	107	434
4	62	369	675	481	1,340	539	299	263	331	180	103	400
5	63	343	1,540	440	1,040	482	405	502	324	173	100	202
6	61	396	1,340	412	840	469	477	724	377	169	94	156
7	57	1,180	3,380	408	724	447	410	516	385	169	89	131
8	57	840	3,100	392	644	410	373	426	327	164	86	119
9	73	593	1,510	477	840	377	365	377	313	158	85	119
10	1,080	489	1,030	473	870	346	346	365	324	151	82	305
11	344	420	794	440	751	331	309	460	342	147	81	234
12	189	369	664	436	675	313	289	534	354	145	81	176
13	168	335	573	564	600	299	272	418	313	141	79	182
14	134	318	524	460	557	282	286	342	279	135	78	269
15	114	293	473	477	508	272	324	327	257	133	76	239
16	105	276	436	704	469	266	289	1,770	254	127	75	345
17	254	293	432	5,110	439	263	263	3,260	266	127	74	302
18	2,660	270	654	3,510	410	346	248	1,420	320	129	74	231
19	1,940	244	1,280	1,550	385	452	239	1,000	324	123	71	215
20	998	238	2,360	1,070	365	398	234	934	316	119	71	210
21	1,220	223	1,220	870	338	377	231	780	282	118	70	185
22	698	209	1,140	724	324	439	234	680	272	116	71	166
23	588	212	1,070	639	316	377	239	639	254	112	110	156
24	751	408	1,300	624	334	346	231	610	242	110	88	143
25	532	452	1,380	1,270	338	346	223	548	234	109	85	137
26	432	346	1,300	1,000	422	373	228	486	228	103	89	133
27	365	508	998	809	958	393	231	447	217	102	83	125
28	332	919	998	696	1,140	365	231	443	210	102	82	119
29	365	1,260	1,110	624	-	354	223	406	204	100	79	121
30	515	820	894	894	-	346	226	373	200	99	83	176
31	550	-	732	1,410	-	327	-	377	-	95	171	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	14,882	2,660	57	480	6.08	7.01	29,520
November	14,105	1,260	209	470	5.95	6.64	27,980
December	35,164	3,380	432	1,134	14.4	16.55	69,750
Calendar year 1940	200,229	3,380	57	547	6.92	94.27	397,200
January	28,642	5,110	392	924	11.7	13.48	56,810
February	20,967	2,200	316	749	9.48	9.87	41,590
March	12,575	840	263	406	5.14	5.92	24,940
April	8,712	477	223	290	3.67	4.10	17,280
May	20,156	3,260	239	650	8.23	9.49	39,980
June	8,845	385	200	295	3.73	4.16	17,540
July	4,230	197	95	136	1.72	1.99	8,390
August	2,708	171	70	87.4	1.11	1.27	5,370
September	6,084	434	119	203	2.57	2.86	12,070
Water year 1940-41	177,070	5,110	57	485	6.14	83.34	351,200

Elwha River at McDonald Bridge, near Port Angeles, Wash.

Location.- Water-stage recorder, lat. 48°03'20", long. 123°34'55", in NE¼NW¼ sec. 33, T. 30 N., R. 7 W., at site of McDonald Bridge (now removed), half a mile upstream from Little River, 7 miles upstream from mouth, and 8 miles southwest of Port Angeles. Datum of gage is 200.00 feet above mean sea level, datum of 1929.
Drainage area.- 262 square miles.
Records available.- October 1897 to December 1901, October 1918 to September 1941.
Average discharge.- 27 years, 1,456 second-feet (adjusted for storage since April 1927).
Extremes.- Maximum discharge during year, 10,800 second-feet (regulated) Jan. 17 (gage height, 16.29 feet), from rating curve extended above 5,000 second-feet; minimum, 36 second-feet (regulated) Oct. 7; minimum daily, 76 second-feet (regulated) July 4.
1897-1901, 1918-41: Maximum discharge, 26,700 second-feet Dec. 21, 1933 (gage height, 10.5 feet, site and datum then in use, from floodmarks), computed on basis of spillway and turbine records at Glines Canyon Reservoir; minimum daily, 10 second-feet Oct. 3, 1938.
Remarks.- Records good except those below 300 second-feet, which are fair. Flow affected by Glines Canyon Reservoir on Elwha River, lat. 48°00'05", long. 123°41'05", 4 miles north of Elwha, which was completed in 1927 for development of power. Usable capacity, 38,650 acre-feet at elevation 610 feet. Change in contents determined from midnight elevations based on two staff-gage readings daily. Flow diverted through Glines Canyon power house and returned to river above gage.
Cooperation.- Reservoir gage heights furnished by Crown-Zellerbach Corporation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-19)

Oct. 1-19						Oct. 19 to Sept. 30					
7.0	40	8.0	320	10.0	1,640	7.7	67	9.0	640	12.0	3,600
7.2	64	8.5	585	11.0	2,630	8.0	145	9.5	1,040	13.0	4,970
7.4	104	9.0	890	12.0	3,760	8.3	250	10.0	1,470	14.0	6,530
7.7	195	9.5	1,240	13.0	5,090	8.6	390	11.0	2,450	15.0	8,270

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	558	1,420	†998	1,490	4,230	1,560	1,120	1,140	†1,460	1,130	487	156
2	546	1,270	1,290	1,490	†3,100	†1,540	1,190	1,120	1,440	1,090	450	840
3	502	†691	1,950	1,490	2,090	1,340	1,210	1,190	1,440	779	†378	820
4	530	714	1,440	1,480	2,270	1,310	1,150	†1,030	1,290	76	393	1,220
5	514	1,070	2,340	†1,150	2,530	1,230	1,140	1,170	989	760	446	893
6	†228	1,070	1,980	860	2,230	1,090	†1,090	1,200	1,250	†980	444	608
7	366	1,660	3,120	1,080	1,930	1,010	1,090	1,160	1,440	970	500	†496
8	536	1,650	†3,630	1,110	1,810	1,010	929	1,160	†1,420	1,030	481	534
9	514	1,550	2,370	1,200	†1,900	†1,050	956	1,080	1,420	994	475	515
10	905	†1,200	1,900	1,260	1,790	1,060	956	1,030	1,260	936	†462	525
11	1,060	884	1,760	1,200	1,640	1,030	962	†968	1,270	890	515	478
12	925	1,030	1,590	†956	1,540	1,020	926	1,060	1,590	828	478	497
13	†562	1,060	1,550	902	1,520	920	†914	1,340	1,690	†797	482	499
14	394	1,040	1,530	1,230	1,400	894	856	1,380	1,420	842	530	†560
15	546	1,040	†919	1,380	1,210	844	836	1,380	†1,310	824	518	629
16	574	1,050	1,200	1,420	†1,150	†809	882	1,410	1,250	693	584	562
17	585	†789	1,600	4,720	1,160	958	890	3,330	1,130	758	†475	678
18	3,160	720	1,700	5,660	1,210	886	868	†2,280	1,370	876	462	664
19	4,910	1,170	1,800	†2,810	1,150	1,090	846	1,760	1,220	825	434	624
20	†3,380	1,140	3,910	2,360	1,010	1,140	†882	1,740	1,170	†743	433	652
21	2,890	1,050	2,490	2,160	1,040	1,000	841	1,740	1,160	769	436	†583
22	2,000	1,030	†2,530	1,780	1,040	966	746	1,770	†1,140	737	443	446
23	2,150	1,060	2,030	1,620	†1,010	†900	850	2,050	1,410	652	542	449
24	2,690	*658	2,700	1,620	1,160	908	901	2,360	1,440	673	†457	505
25	1,740	732	2,580	2,330	1,030	940	906	†2,050	1,150	668	501	529
26	1,650	1,170	2,540	†1,550	986	870	916	1,670	1,150	547	484	489
27	†950	1,090	1,970	1,540	1,050	968	†1,030	1,560	1,110	†686	507	500
28	1,320	1,210	1,930	1,450	1,060	1,000	1,100	1,580	978	706	505	†480
29	1,260	1,350	†1,960	1,510	-	1,130	1,210	1,490	†1,020	662	497	515
30	1,510	1,350	1,450	1,550	-	†1,230	1,220	1,470	1,150	584	612	470
31	1,680	-	1,510	2,470	-	1,060	-	1,470	-	570	†558	-

Month	Observed				Change in contents in Glines Canyon Reservoir (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	4,910	228	1,327	81,590	-90	81,500	1,325	5.06	5.83
November	1,660	658	1,097	65,290	+380	65,670	1,104	4.21	4.70
December	3,910	919	2,009	123,500	+1,070	124,600	2,026	7.73	8.91
Calendar year 1940	6,750	22	1,419	1,030,000	+340	1,031,000	1,420	5.42	73.74
January	5,660	860	1,769	108,700	+210	108,900	1,771	6.76	7.79
February	4,230	986	1,652	91,730	-80	91,650	1,650	6.30	6.56
March	1,560	809	1,057	64,980	-340	64,640	1,051	4.01	4.62
April	1,220	746	980	58,340	-1,360	56,980	958	3.66	4.08
May	3,330	968	1,521	93,500	+1,310	94,810	1,542	5.89	6.79
June	1,690	978	1,285	76,440	-1,940	74,500	1,252	4.78	5.33
July	1,130	76	777	47,750	+580	48,330	786	3.00	3.46
August	612	378	483	29,690	+1,100	30,790	501	1.91	2.20
September	1,220	156	581	34,540	-1,730	32,810	551	2.10	2.34
Water year 1940-41	5,660	76	1,210	876,000	-890	875,200	1,209	4.61	62.61

† Sunday.

Dungeness River near Sequim, Wash.

Location.- Water-stage recorder, lat. 48°00'40", long. 123°07'50", in SW¼SE¼ sec. 12, T. 29 N., R. 4 W., three-quarters of a mile upstream from Canyon Creek, 4½ miles southwest of Sequim, and 11½ miles upstream from mouth.

Drainage area.- 156 square miles.

Records available.- June 1937 to September 1941. July 1897 to July 1898 at site about 2 miles downstream; June 1923 to September 1930 at site half a mile downstream.

Average discharge.- 11 years (1923-30, 1937-41), 333 second-feet.

Extremes.- Maximum discharge during year, 2,400 second-feet Jan. 17 (gage height, 5.47 feet), from rating curve extended above 1,000 second-feet; minimum, 115 second-feet Oct. 8, Sept. 29, 30; minimum gage height, 2.61 feet Oct. 8.
1897-98, 1923-30, 1937-41: Maximum discharge, 5,380 second-feet Dec. 28, 1937 (gage height, 6.85 feet), from rating curve extended above 900 second-feet; minimum observed, 77 second-feet Sept. 10, 1928.

Remarks.- Records good. No diversion or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30			
2.8	152	4.0	674	2.8	141	4.0	674
3.0	204	4.5	1,120	3.0	196	4.5	1,120
3.3	306	5.0	1,730	3.3	301	5.0	1,730
3.6	436			3.6	436		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	133	273	385	288	710	361	348	402	528	457	206	212
2	127	259	385	273	595	330	339	374	483	462	202	187
3	124	238	452	266	511	293	297	330	457	441	242	218
4	126	226	403	259	640	278	297	305	472	412	209	218
5	124	223	478	245	620	256	301	290	478	417	196	179
6	118	223	441	238	551	246	271	267	557	436	187	157
7	118	389	462	232	483	238	260	260	647	446	187	146
8	117	334	545	226	431	235	252	246	545	398	190	139
9	120	291	478	280	412	228	249	232	522	374	187	139
10	256	252	412	299	379	228	246	235	588	361	184	209
11	228	238	350	284	356	228	232	339	689	348	182	170
12	176	223	334	280	326	228	225	545	755	339	179	159
13	179	216	310	295	309	228	228	539	689	343	173	149
14	162	216	291	280	293	225	238	452	576	374	167	146
15	152	220	273	269	282	225	249	412	511	388	167	139
16	144	220	266	269	274	228	238	436	472	388	164	141
17	168	232	266	1,050	263	235	225	557	467	398	162	141
18	582	232	342	1,420	252	238	215	436	522	412	162	139
19	929	213	444	788	249	232	212	384	494	393	167	146
20	1,210	210	795	582	242	215	218	370	472	330	164	159
21	922	198	588	494	232	206	235	374	436	318	159	141
22	539	187	755	436	225	202	263	417	472	293	157	137
23	609	193	601	398	222	193	293	545	488	260	164	130
24	820	235	595	370	215	190	301	640	441	249	154	128
25	545	210	539	370	206	199	309	627	417	242	151	128
26	436	198	483	330	206	215	335	576	412	242	157	128
27	376	280	422	309	235	228	343	488	422	246	151	119
28	342	403	376	301	322	238	343	478	412	232	151	117
29	318	557	355	286	-	252	356	436	398	225	141	119
30	302	427	334	309	-	260	370	407	422	225	141	121
31	284	-	302	446	-	267	-	505	-	218	188	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	10,786	1,210	117	348	2.23	2.57	21,390
November	7,816	557	187	261	1.67	1.86	15,500
December	13,462	795	266	434	2.78	3.21	26,700
Calendar year 1940	141,223	1,840	117	386	2.47	33.66	280,100
January	12,172	1,420	226	393	2.52	2.90	24,140
February	10,041	710	206	359	2.30	2.39	19,920
March	7,425	361	190	240	1.54	1.77	14,730
April	8,288	370	212	276	1.77	1.98	16,440
May	12,904	640	232	416	2.67	3.08	25,590
June	15,244	755	398	508	3.26	3.63	30,240
July	10,667	462	218	344	2.21	2.54	21,160
August	5,391	242	141	174	1.12	1.29	10,690
September	4,561	218	117	152	.974	1.09	9,050
Water year 1940-41	118,757	1,420	117	325	2.08	28.31	235,600

Peak discharge.- Oct. 19 (9 a.m.) 1,180 sec.-ft.; Oct. 20 (3:45 p.m.) 1,690 sec.-ft.; Oct. 21 (4 a.m.) 1,230 sec.-ft.; Dec. 20 (4 a.m.) 1,010 sec.-ft.; Jan. 17 (8 p.m.) 2,400 sec.-ft.

DOSEWALLIPS RIVER BASIN

Dosewallips River near Brinnon, Wash.

Location.- Water-stage recorder, lat. 47°43', long. 123°00', in SW¼ sec. 24, T. 26 N., R. 3 W., half a mile upstream from Corrigenda ranger station, 5½ miles northwest of Brinnon, and 7½ miles upstream from mouth.

Drainage area.- 94 square miles.

Records available.- October 1930 to September 1941.

Average discharge.- 11 years, 463 second-feet.

Extremes.- Maximum discharge during year, 3,400 second-feet Oct. 20 (gage height, 6.06 feet); minimum, 111 second-feet Oct. 8, 9 (gage height, 1.94 feet).
1930-41: Maximum discharge, 10,900 second-feet Nov. 5, 1934 (gage height, 9.57 feet), from rating curve extended above 4,500 second-feet; minimum, 65 second-feet Dec. 4, 1936 (gage height, 1.71 feet).

Remarks.- Records excellent except those above 1,000 second-feet, which are good. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

2.0	121	2.7	317	4.0	955
2.2	160	3.0	437	5.0	1,880
2.4	215	3.5	675	6.0	3,310

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	125	391	446	412	1,440	780	595	600	580	486	206	355
2	118	363	446	383	1,020	675	537	541	532	490	197	299
3	116	332	576	367	808	551	472	472	522	459	241	360
4	118	313	468	347	1,060	481	490	446	537	433	203	313
5	118	306	546	328	925	437	595	433	556	441	191	237
6	116	334	504	313	780	416	532	408	650	450	188	197
7	116	933	625	306	675	399	546	379	700	446	197	182
8	115	650	780	292	625	387	522	359	595	412	203	170
9	131	513	595	375	650	375	499	347	570	387	203	178
10	572	433	495	408	610	367	463	379	675	375	203	367
11	270	383	433	408	565	359	433	575	780	367	197	254
12	185	347	391	433	518	359	416	808	865	359	185	215
13	194	325	359	522	481	355	408	675	752	359	182	200
14	170	310	340	459	446	351	433	590	650	391	182	203
15	150	313	317	455	424	351	433	546	570	408	182	182
16	137	310	299	513	399	363	399	685	527	412	178	228
17	321	317	313	1,460	383	383	371	988	537	420	170	197
18	1,320	295	513	1,760	367	387	355	700	610	424	178	175
19	1,700	278	746	988	355	383	355	575	527	383	182	188
20	2,160	271	1,200	752	347	347	367	551	486	332	185	188
21	1,200	257	865	650	336	328	408	556	472	328	180	170
22	675	244	1,060	565	325	328	463	625	522	288	170	160
23	1,260	244	835	504	317	310	513	808	537	257	197	160
24	1,330	261	1,060	477	306	303	504	925	481	244	160	158
25	780	247	1,090	546	295	332	522	835	450	237	160	156
26	590	237	955	490	292	379	561	700	450	244	172	158
27	486	299	752	446	390	416	570	615	459	247	172	141
28	433	497	625	429	650	446	570	605	450	237	160	139
29	412	678	561	412	-	472	556	541	441	228	150	141
30	412	468	509	459	-	486	570	527	468	231	160	156
31	395	-	446	849	-	486	-	615	-	225	378	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	16,225	2,160	115	523	5.56	6.42	32,180
November	11,149	933	237	372	3.96	4.41	22,110
December	19,150	1,200	299	618	6.57	7.58	37,980
Calendar year 1940	186,836	3,020	115	510	5.43	73.92	370,600
January	17,108	1,760	292	552	5.87	6.77	33,930
February	15,789	1,440	292	564	6.00	6.25	31,320
March	12,792	780	303	413	4.39	5.06	25,370
April	14,458	595	355	482	5.13	5.72	28,680
May	18,409	988	347	594	6.32	7.28	36,510
June	16,951	865	441	565	6.01	6.71	33,620
July	11,000	490	225	355	3.78	4.35	21,820
August	5,912	378	150	191	2.03	2.34	11,730
September	6,227	367	139	208	2.21	2.46	12,350
Water year 1940-41	165,170	2,160	115	453	4.82	65.35	327,600

Duckabush River near Brinnon, Wash.

Location.- Water-stage recorder, lat. 47°41'100", long. 123°00'40", in SW¼SW¼ sec. 1, T. 25 N., R. 3 W., 4½ miles upstream from mouth and 5 miles west of Brinnon.

Drainage area.- 66 square miles.

Records available.- June 1938 to September 1941. August 1910 to December 1911, at practically same site but different datum, published as Duckabush River near Duckabush, Wash.

Extremes.- Maximum discharge during year, 4,750 second-feet Oct. 23 (gage height, 7.22 feet); minimum, 49 second-feet Oct. 6, 7, 8, 9 (gage height, 1.49 feet).
1911-12, 1938-41: Maximum discharge, 6,080 second-feet Dec. 15, 1939 (gage height, 8.07 feet); minimum, 46 second-feet Oct. 8, 9, 1938.

Remarks.- Records good. No diversion or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 16				May 17 to Sept. 30			
1.5	50	3.5	660	1.7	89	3.3	610
1.7	78	4.0	985	1.9	123	3.7	860
2.0	135	4.5	1,420	2.2	189	4.3	1,390
2.5	270	5.0	1,950	2.5	274	5.0	2,120
3.0	440	6.0	3,130	2.9	418		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	54	422	372	362	2,060	1,140	415	380	398	284	102	656
2	53	380	369	328	1,240	771	380	355	360	277	100	570
3	51	328	448	309	803	552	342	318	338	262	129	451
4	51	292	369	289	1,100	448	404	318	346	246	114	360
5	53	276	560	267	822	394	613	349	346	235	105	249
6	51	376	502	251	644	359	544	349	414	226	99	202
7	50	1,820	613	251	544	342	634	305	588	221	97	175
8	50	848	666	248	490	328	535	276	456	212	95	152
9	54	570	490	322	655	312	463	258	414	207	94	156
10	281	444	400	362	561	296	411	276	431	199	95	446
11	166	372	349	372	502	283	362	394	510	192	94	314
12	112	328	312	397	444	276	336	575	566	187	92	237
13	112	296	283	552	400	267	328	470	496	187	89	207
14	99	273	261	448	366	258	335	408	418	189	89	210
15	86	267	239	444	335	248	328	380	368	192	88	179
16	80	261	222	544	315	261	299	711	346	189	86	215
17	225	270	252	2,200	292	270	273	2,060	372	189	83	189
18	1,320	251	728	2,140	276	302	256	898	439	210	82	165
19	1,710	230	1,380	978	264	342	248	594	402	182	82	189
20	2,480	219	1,880	671	245	302	254	520	353	165	82	197
21	1,260	207	1,100	544	236	276	276	492	328	154	82	165
22	618	194	1,190	463	227	289	312	505	338	145	81	150
23	1,780	191	933	404	219	261	342	610	357	133	89	139
24	1,840	207	1,470	411	213	242	336	728	314	123	85	131
25	765	205	1,520	644	202	254	342	628	300	119	83	123
26	535	191	1,140	502	207	296	366	510	294	118	100	119
27	426	242	771	415	461	318	376	447	287	116	103	110
28	369	474	599	380	963	338	369	435	271	112	99	107
29	359	658	531	359	-	349	362	379	268	109	91	109
30	408	418	467	404	-	355	369	360	274	107	92	116
31	404	-	404	1,380	-	345	-	418	-	105	518	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	15,902	2,480	50	513	7.77	8.96	31,540
November	11,510	1,820	191	384	5.82	6.49	22,830
December	20,820	1,880	222	672	10.2	11.73	41,300
Calendar year 1940	157,736	4,050	50	431	6.53	88.89	312,900
January	17,641	2,200	248	569	8.62	9.94	34,990
February	15,086	2,060	202	539	8.17	8.50	29,920
March	11,074	1,140	242	357	5.41	6.24	21,960
April	11,216	634	248	374	5.67	6.32	22,250
May	15,706	2,060	258	507	7.68	8.85	31,150
June	11,392	588	268	380	5.76	6.42	22,600
July	5,592	284	105	180	2.73	3.15	11,090
August	3,320	518	81	107	1.62	1.87	6,590
September	6,788	656	107	226	3.42	3.82	13,460
Water year 1940-41	146,047	2,480	50	400	6.06	82.29	289,700

North Fork of Skokomish River below Staircase Rapids, near Hoodsport, Wash.

Location.- Staff gage, lat. 47°30'55", long. 123°19'45" (revised), in NW¼ sec. 4, T. 23 N., R. 5 W., three-quarters of a mile upstream from Lake Cushman, 2 miles upstream from Dry Creek, and 11½ miles northwest of Hoodsport.

Drainage area.- 60 square miles.

Records available.- July 1924 to September 1941.

Average discharge.- 17 years, 464 second-feet.

Extremes.- Maximum discharge during year, 6,830 second-feet Jan. 17 (gage height, 7.77 feet, from graph based on gage readings); minimum observed, 40 second-feet Oct. 9 (gage height, 1.45 feet).
1924-41: Maximum discharge 23,300 second-feet Nov. 5, 1934 (gage height, 14.4 feet, from floodmarks), from rating curve extended above 3,200 second-feet; minimum recorded, 16 second-feet Sept. 23, 1930 (gage height, 1.12 feet).

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

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Jan. 18 to Feb. 28, Sept. 11-30)

Oct. 1 to May 17

1.5	46	3.5	725
1.7	74	4.0	1,070
2.0	130	4.5	1,510
2.3	202	5.0	2,040
2.6	295	6.0	3,300
3.0	450	7.0	5,150

May 18 to Sept. 30

2.3	136	3.5	715
2.6	268	4.0	1,070
3.0	425		

Note.- Same as preceding table above 4.0 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	925	495	495	2,040	1,320	a450	348	360	198	93	989
2	43	725	450	450	1,320	1,150	472	330	340	198	91	560
3	43	572	630	407	925	790	a495	312	302	198	126	502
4	50	495	495	387	1,230	660	545	312	302	186	100	402
5	50	472	890	367	925	545	630	407	285	186	91	285
6	44	630	758	348	758	495	790	520	321	174	89	224
7	42	2,040	925	348	660	a472	822	337	360	174	86	198
8	42	1,070	1,070	330	600	450	692	348	340	163	86	174
9	47	758	660	407	790	428	600	312	285	163	82	216
10	835	600	545	428	790	407	545	312	285	163	80	530
11	246	520	472	428	660	387	472	450	321	152	79	402
12	152	450	450	450	600	367	428	692	360	152	76	302
13	148	407	387	a495	520	367	407	428	380	141	76	253
14	120	387	348	a545	472	348	407	387	285	141	74	238
15	106	387	330	600	428	330	a337	367	253	141	72	224
16	97	387	295	630	387	330	a367	1,070	238	141	72	224
17	154	367	312	3,280	367	330	a348	2,270	238	141	69	211
18	3,610	348	822	2,360	348	495	a330	958	340	141	66	198
19	3,960	330	1,810	1,150	a330	495	312	682	285	128	66	302
20	3,610	330	2,120	790	a330	428	312	650	285	120	65	238
21	1,710	a295	1,320	630	312	407	312	560	268	116	63	211
22	925	a278	1,150	545	295	495	348	560	268	112	a72	186
23	a1,500	262	1,070	520	278	407	387	590	268	108	80	174
24	a1,610	312	a1,610	545	262	367	348	620	238	102	66	163
25	925	330	a1,820	890	278	367	a367	560	253	104	63	a152
26	660	312	1,610	660	790	428	387	502	238	102	84	141
27	572	472	925	545	995	450	387	502	211	98	93	137
28	520	660	855	495	1,320	450	387	425	211	130	95	128
29	660	855	758	472	-	472	367	360	211	98	74	135
30	925	545	630	660	-	472	348	360	198	98	141	139
31	890	-	545	a1,340	-	450	-	380	-	98	1,020	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	24,341	3,960	42	785	13.1	15.09	48,280
November	16,521	2,040	262	551	9.18	10.24	32,770
December	26,557	2,120	295	857	14.3	16.46	52,680
Calendar year 1940	193,109	4,740	42	528	8.80	119.68	383,000
January	21,997	3,280	330	710	11.8	13.63	43,630
February	19,010	2,040	262	679	11.3	11.78	37,710
March	15,359	1,320	330	495	8.25	9.52	30,460
April	13,449	822	312	448	7.47	8.34	26,680
May	16,961	2,270	312	547	9.12	10.51	33,640
June	8,529	380	198	284	4.73	5.29	16,920
July	4,337	198	98	140	2.33	2.69	8,600
August	3,490	1,020	63	113	1.88	2.16	6,920
September	8,238	989	128	275	4.58	5.11	16,340
Water year 1940-41	178,789	3,960	42	490	8.17	110.82	354,600

Note.- No gage-height record; discharge computed from graph based on gage readings.

South Fork of Skokomish River near Union, Wash.

Location.- Water-stage recorder, lat. 47°20'30", long. 123°16'30", in NE¼ sec. 2, T. 21 N., R. 5 W., 2¼ miles upstream from North Fork, 5 miles upstream from Vance Creek, and 8 miles west of Union.

Drainage area.- 81 square miles.

Records available.- August 1931 to September 1941.

Average discharge.- 10 years, 704 second-feet.

Extremes.- Maximum discharge during year, 12,500 second-feet Jan. 17 (gage height, 9.73 feet), from rating curve extended above 3,500 second-feet; minimum, 69 second-feet Oct. 1.

1931-41: Maximum discharge, 21,600 second-feet Jan. 22, 1935 (gage height, 11.0 feet), from rating curve extended above 11,000 second-feet; minimum, 62 second-feet Sept. 18, 1938.

Remarks.- Records good except those for September, which are poor. No diversion or regulation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	1,590	750	854	2,500	1,570	404	283	283	183	110	910
2	76	1,310	644	760	1,980	1,640	411	289	283	172	120	650
3	80	932	760	691	1,490	1,210	425	301	258	167	130	450
4	83	730	672	634	1,460	944	467	352	252	167	115	510
5	86	682	1,000	589	1,210	790	624	572	240	161	110	310
6	93	992	1,120	589	1,030	720	876	730	252	156	105	230
7	100	3,030	1,310	624	920	662	944	537	246	150	105	180
8	104	2,090	1,740	624	821	589	790	432	240	140	105	150
9	127	1,360	1,180	606	1,030	545	672	371	228	132	100	150
10	1,760	992	854	615	1,050	498	580	326	217	130	100	405
11	798	790	710	589	1,030	460	513	308	211	130	100	650
12	384	672	606	572	932	432	460	314	223	130	95	460
13	314	589	545	672	8[illegible]	411	425	270	217	130	95	400
14	258	528	505	606	760	398	398	[illegible]54	211	125	95	385
15	223	498	475	653	700	391	384	211	199	125	95	340
16	199	452	452	1,200	644	365	378	1,040	199	125	90	450
17	513	467	445	4,830	598	365	358	3,580	240	125	90	380
18	4,800	445	672	4,550	563	432	346	1,650	295	125	90	360
19	3,780	425	1,720	2,160	537	760	339	980	277	120	85	530
20	4,110	425	3,470	1,340	505	672	333	790	320	120	85	450
21	2,600	404	1,740	1,030	482	580	326	653	295	120	85	340
22	1,360	384	1,440	854	452	710	320	563	270	120	85	305
23	2,110	384	1,400	760	452	624	314	490	258	115	95	265
24	2,780	475	2,410	790	460	545	314	445	240	115	95	235
25	1,380	554	2,880	1,860	475	505	301	411	228	115	95	220
26	944	505	2,780	1,360	589	490	301	378	211	115	100	205
27	730	572	1,880	1,030	1,460	482	295	352	205	115	110	195
28	624	1,020	1,670	876	2,070	452	301	339	199	115	110	190
29	780	1,460	1,590	790	-	445	289	320	194	110	105	185
30	1,360	932	1,250	865	-	445	289	301	183	110	115	200
31	1,420	-	992	2,030	-	418	-	289	-	110	580	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	34,045	4,800	69	1,098	13.6	15.63	67,530
November	25,719	3,030	384	857	10.6	11.81	51,010
December	39,662	3,470	445	1,279	15.8	18.21	78,670
Calendar year 1940	265,730	5,050	66	726	8.96	122.01	527,100
January	36,003	4,830	572	1,161	14.3	16.53	71,410
February	27,021	2,500	452	965	11.9	12.41	53,600
March	19,600	1,640	365	632	7.80	9.00	38,880
April	13,177	944	289	439	5.42	6.05	26,140
May	18,111	3,580	211	584	7.21	8.32	35,920
June	7,174	320	183	239	2.95	3.29	14,230
July	4,073	183	110	131	1.62	1.87	8,080
August	3,595	580	85	116	1.43	1.65	7,130
September	10,690	910	150	356	4.40	4.91	21,200
Water year 1940-41	238,870	4,830	69	654	8.07	109.68	473,800

Peak discharge.- Oct. 18 (9 a.m.) 6,630 sec.-ft.; Jan. 17 (8:30 p.m.) 12,400 sec.-ft.

Note.- Stage-discharge relation affected by obstruction which diverted flow from gage, July 7 to Sept. 30; discharge computed on basis of 6 discharge measurements and records for Wynoochee River at Oxbow, near Aberdeen. Shifting-control method used Oct. 1 to July 6.

Nisqually River near Alder, Wash.

Location.- Water-stage recorder, lat. 46°46'05", long. 122°16'05", in SW¼ sec. 23, T. 15 N., R. 4 E., 2½ miles southeast of Adler and 8 miles downstream from Mineral Creek.

Drainage area.- 252 square miles.

Records available.- August 1931 to September 1941.

Average discharge.- 10 years, 1,206 second-feet.

Extremes.- Maximum discharge during year, 5,010 second-feet Jan. 18 (gage height, 6.17 feet); minimum, 182 second-feet Oct. 5, 6, 9 (gage height, 1.50 feet).
1931-41: Maximum discharge, 25,000 second-feet Dec. 22, 1933 (gage height, 13.2 feet), from rating curve extended above 10,000 second-feet; minimum, 142 second-feet Nov. 3, 1935 (gage height, 1.31 feet).

Remarks.- Records excellent. No diversion or regulation.

Cooperation.- Gage-height record collected in cooperation with city of Tacoma.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1-11		Oct. 11 to Sept. 30					
1.6	217	1.7	234	3.0	890	5.0	3,030
1.8	293	2.0	360	3.5	1,280	6.0	4,640
2.0	380	2.3	495	4.0	1,780		
2.3	529	2.6	646	4.5	2,360		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	314	997	1,560	761	1,460	890	890	588	732	604	408	330
2	239	857	1,370	702	1,280	960	1,030	553	674	593	378	454
3	228	702	1,240	674	1,110	824	824	573	646	635	386	677
4	217	604	1,110	646	997	732	761	529	646	578	351	1,030
5	206	533	1,440	674	890	646	824	674	674	578	334	824
6	206	486	1,670	702	824	614	960	625	702	646	364	604
7	232	614	1,420	646	792	578	890	568	732	625	444	481
8	228	702	1,240	620	732	563	824	543	635	543	500	426
9	203	674	1,110	614	702	543	824	500	625	543	505	431
10	510	588	960	620	702	524	761	490	630	548	533	408
11	803	538	857	614	674	505	702	630	732	543	505	568
12	382	490	761	614	620	486	646	960	824	543	458	495
13	500	449	702	674	588	458	625	792	792	593	454	481
14	391	436	674	702	553	449	620	674	674	674	477	630
15	330	426	625	702	553	444	646	625	604	761	495	890
16	304	431	583	732	514	440	609	892	543	792	472	761
17	369	440	548	1,780	495	454	573	2,620	538	824	495	732
18	481	481	558	4,290	472	674	543	2,180	674	732	481	674
19	490	451	688	2,590	449	674	514	1,620	702	674	472	674
20	505	422	1,940	2,120	444	593	509	1,320	732	588	458	674
21	529	426	1,460	1,620	436	529	524	1,110	630	568	477	625
22	391	391	1,320	1,370	426	538	548	1,070	646	533	444	583
23	356	378	1,110	1,150	422	505	578	1,070	646	458	458	563
24	997	449	1,030	1,030	463	472	573	1,030	578	426	356	543
25	781	533	1,030	1,370	431	458	578	997	538	386	358	529
26	548	495	1,070	1,460	408	467	588	890	533	436	426	529
27	454	732	1,110	1,190	554	472	553	890	543	477	326	454
28	400	1,300	1,030	1,030	824	509	524	824	543	477	404	413
29	395	3,470	960	960	-	533	568	761	568	490	317	404
30	727	2,120	890	925	-	674	630	702	578	495	275	449
31	1,030	-	824	1,110	-	609	-	761	-	477	288	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	13,726	1,030	203	443	1.76	2.03	27,230
November	21,595	3,470	378	720	2.86	3.19	42,830
December	32,890	1,940	548	1,061	4.21	4.85	65,240
Calendar year 1940	348,540	4,300	203	952	3.78	51.44	691,300
January	34,992	4,290	614	1,129	4.48	5.16	69,410
February	18,795	1,460	408	671	2.66	2.77	37,280
March	17,817	960	440	575	2.28	2.63	35,340
April	20,239	1,030	509	675	2.68	2.99	40,140
May	28,061	2,620	490	905	3.59	4.14	55,660
June	19,314	824	533	644	2.56	2.85	38,310
July	17,860	824	386	576	2.29	2.64	35,420
August	13,097	533	275	422	1.67	1.93	25,980
September	17,336	1,030	330	578	2.29	2.56	34,390
Water year 1940-41	255,722	4,290	203	701	2.78	37.74	507,200

Little Nisqually River near Alder, Wash.

Location.- Water-stage recorder, lat. 46°47'20", long. 122°18'45", in NW¼ sec. 16, T. 15 N., R. 4 E., 1,500 feet upstream from mouth, 3,000 feet upstream from diversion dam of Tacoma municipal power plant on Nisqually River, and 1½ miles southwest of Alder.

Drainage area.- 27.2 square miles.

Records available.- August 1920 to September 1941.

Average discharge.- 21 years, 119 second-feet.

Extremes.- Maximum discharge during year, 1,550 second-feet Jan. 18 (gage height, 4.93 feet); minimum, 7.4 second-feet Oct. 9 (gage height, 0.59 foot).
1920-41: Maximum discharge, 2,430 second-feet Dec. 20, 21, 1933 (gage height, 6.8 feet); minimum, 0.9 second-foot July 17, 1926.

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

Cooperation.- Gage-height record collected in cooperation with city of Tacoma.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 18

1.0	34	2.5	360
1.2	60	3.0	540
1.5	113	3.5	765
1.7	154	4.0	1,020
2.0	223		

Jan. 19 to Sept. 30

0.6	7.7	1.2	62
.8	18	1.5	113
1.0	36		

Note.- Same as preceding table above 1.5 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	a180	163	101	271	167	54	23	56	26	11	15
2	8.4	a150	129	89	226	216	58	23	51	24	11	22
3	9.0	a110	121	78	190	167	50	31	48	23	14	23
4	9.4	90	111	75	154	129	50	36	44	22	13	36
5	8.7	71	192	73	129	105	79	61	42	21	12	41
6	8.0	60	218	83	111	91	109	64	42	20	11	32
7	7.7	118	172	85	98	77	98	58	41	20	10	26
8	7.7	156	135	82	86	f65	86	52	38	18	10	21
9	7.7	127	107	83	86	62	80	46	36	18	9.6	20
10	14	98	89	94	87	55	79	41	34	17	9.2	42
11	36	a80	78	96	79	51	71	37	32	17	9.6	42
12	20	a65	65	96	76	48	64	37	31	17	11	37
13	29	a55	60	99	70	46	58	34	29	16	9.6	36
14	23	a50	56	105	64	41	54	33	28	15	9.2	42
15	18	46	50	113	61	37	51	33	26	15	9.2	68
16	a15	45	47	123	54	36	48	109	25	14	8.8	65
17	a15	45	46	610	50	37	44	512	26	14	8.8	66
18	15	46	49	1,130	48	87	42	330	36	14	8.4	58
19	16	40	137	492	46	87	38	209	44	13	6.4	72
20	22	38	464	298	43	74	36	150	56	13	8.4	92
21	35	38	274	221	41	64	35	117	51	13	8.0	71
22	a25	34	199	172	37	66	33	96	46	12	8.0	56
23	a20	32	165	139	38	62	32	80	41	12	12	46
24	a130	66	163	131	47	56	29	70	36	12	9.6	39
25	a95	92	176	245	41	51	26	59	36	12	9.6	33
26	62	80	206	285	37	48	27	58	38	12	13	31
27	43	80	218	226	71	46	27	58	33	11	13	26
28	34	250	190	183	115	43	25	61	30	11	20	24
29	42	375	161	154	-	46	24	56	28	11	17	22
30	a120	238	139	137	-	59	24	51	27	11	12	24
31	a200	-	119	186	-	46	-	59	-	11	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	1,104.3	200	7.7	35.6	1.31	1.51	2,190
November	2,955	375	32	98.5	3.62	4.04	5,860
December	4,499	464	46	145	5.33	6.15	8,920
Calendar year 1940	37,596.2	901	7.0	103	3.79	51.40	74,570
January	6,084	1,130	73	196	7.21	8.32	12,070
February	2,456	271	37	87.7	3.22	3.36	4,870
March	2,265	216	36	73.1	2.69	3.10	4,490
April	1,531	109	24	51.0	1.88	2.09	3,040
May	2,684	512	23	86.6	3.18	3.67	5,320
June	1,131	56	25	37.7	1.39	1.55	2,240
July	485	26	11	15.6	.574	.66	962
August	336.4	20	8.0	10.9	.401	.46	667
September	1,228	92	15	40.9	1.50	1.68	2,440
Water year 1940-41	26,758.7	1,130	7.7	73.3	2.69	36.59	53,070

a No gage-height record; discharge computed on basis of records for Nisqually River near Alder and Skookumchuck River near Centralia.
f Computed on basis of partly estimated gage-height record.

Mashel River near La Grande, Wash.

Location.- Water-stage recorder, lat. 46°51'27", long. 122°18'12", in NE¼ sec. 21, T. 16 N., R. 4 E., 2 miles upstream from mouth and 2 miles northeast of La Grande. Datum of gage is 619.35 feet above mean sea level, datum of 1929.

Drainage area.- 79 square miles.

Records available.- October 1940 to September 1941.

Extremes.- Maximum discharge during year, 1,320 second-feet Jan. 18 (gage height, 5.81 feet); minimum, 12 second-feet Aug. 20 (gage height, 2.67 feet).

Remarks.- Records excellent except those for periods of no gage-height record, which are fair. Small diversion for city of Eatonville. No regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

2.7	14	3.5	103	4.6	485
2.9	25	3.7	145	5.0	700
3.1	43	4.0	235	5.5	1,060
3.3	69	4.3	350		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a25	298	408	176	260	160	472	47	246	53	16	27
2	a25	270	318	145	194	173	565	51	191	48	16	50
3	a25	194	314	134	162	141	338	94	152	44	22	107
4	28	152	274	134	143	121	249	89	127	41	31	182
5	26	121	368	132	123	101	256	152	109	38	23	214
6	23	101	440	165	113	94	359	141	127	35	20	141
7	20	150	334	150	109	85	290	121	158	33	18	90
8	18	232	282	134	98	83	221	121	134	31	16	62
9	18	224	238	130	99	80	204	96	138	30	16	53
10	39	170	191	121	123	71	191	80	125	27	15	90
11	53	145	162	115	103	65	162	71	105	27	14	96
12	38	123	141	107	96	58	141	107	90	27	17	79
13	65	105	121	111	92	55	125	87	80	26	17	72
14	55	101	107	123	82	50	111	87	72	25	16	122
15	41	99	99	141	77	48	130	89	69	24	14	278
16	33	94	96	136	72	45	117	107	62	22	15	191
17	a31	105	92	310	69	45	109	624	66	21	14	173
18	a31	170	92	1,100	66	83	98	454	113	21	14	155
19	a31	130	111	618	63	105	89	294	194	21	13	141
20	a34	115	476	418	61	85	83	210	214	21	13	165
21	a56	130	368	310	56	71	72	162	152	20	13	136
22	a49	109	274	242	55	77	69	132	123	19	13	109
23	a55	99	232	194	54	75	63	109	101	18	40	90
24	a210	111	228	165	62	66	58	92	85	18	31	77
25	a160	115	207	232	71	58	53	80	74	18	23	65
26	a120	101	224	270	58	55	53	77	68	18	42	63
27	a95	222	310	207	77	54	55	190	61	18	27	55
28	74	497	278	176	127	51	49	260	59	17	37	51
29	66	970	249	158	-	66	45	221	59	17	35	50
30	135	580	238	149	-	274	45	168	56	17	25	53
31	286	-	221	179	-	138	-	256	-	16	23	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,965	286	18	63.4	0.803	0.93	3,900
November	6,033	970	94	201	2.54	2.84	11,970
December	7,493	476	92	242	3.06	3.53	14,860
Calendar year	-	-	-	-	-	-	-
January	6,881	1,100	107	222	2.81	3.24	13,650
February	2,765	260	54	98.8	1.25	1.30	5,480
March	2,733	274	45	88.2	1.12	1.29	5,420
April	4,872	565	45	162	2.05	2.29	9,660
May	4,869	624	47	157	1.99	2.29	9,660
June	3,410	246	56	114	1.44	1.61	6,760
July	811	53	16	26.2	.332	.38	1,610
August	649	42	13	20.9	.265	.31	1,290
September	3,237	278	27	108	1.37	1.52	6,420
Water year 1940-41	45,718	1,100	13	125	1.58	21.53	90,680

a No gage-height record; discharge computed on basis of records for Shookumchuck River near Centralia.

Puyallup River near Orting, Wash.

Location.- Water-stage recorder, lat. 47°02'30", long. 122°12'20", in SW¼ sec. 17, T. 18 N., R. 5 E., 4 miles south of Orting and 7½ miles upstream from Carbon River.

Drainage area.- 170 square miles.

Records available.- September 1931 to September 1941.

Average discharge.- 10 years, 695 second-feet.

Extremes.- 1939-40: Maximum discharge during water year, 5,600 second-feet Dec. 15 (gage height, 8.04 feet); minimum, 92 second-feet (regulated) Oct. 19; minimum daily, 134 second-feet (regulated) Oct. 18.

1940-41: Maximum discharge during water year, 5,600 second-feet Nov. 29 (gage height, 7.90 feet); minimum, 53 second-feet (regulated) Mar. 16; minimum daily, 207 second-feet (regulated) Feb. 21, 22, 23, Mar. 15, 16.

1931-41: Maximum discharge not determined (occurred Dec. 9 or 10, 1933, when water-stage recorder was not operating); minimum, that of Mar. 16, 1941; minimum daily, 123 second-feet (regulated) (revised) Dec. 4, 1936.

Revisions: The figures of maximum, minimum, and minimum daily discharge for some water years have been revised, as shown in the following table. They supersede those published in the water-supply papers indicated.

Water-Supply Paper	Water year	Maximum			Minimum		Minimum daily	
		Date	Gage height (feet)	Discharge (sec.-ft.)	Date	Discharge (sec.-ft.)	Date	Discharge (sec.-ft.)
832	1936-37	Apr. 14	7.37	4,640	(a)	(a)	Dec. 4	b123
862	1937-38	Apr. 18	9.14	8,680	Oct. 6	121	Oct. 5-7	192
882	1938-39	Feb. 15	7.64	5,110	Oct. 9	143	Sept.13,14	192

a Not determined; affected by regulation. b Affected by regulation.

Remarks.- Records fair. Water that is diverted for Electron plant of Puget Sound Power & Light Co. is returned to river above gage. Slight regulation due to pondage in connection with operation of Electron power plant.

Revisions.- Revised figures of discharge for water years 1937, 1938, and 1939 are given herein. They supersede those published in Water-Supply Papers 832, 862 and 882.

Discharge, in second-feet, 1936-41

1936-37

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	e250	150	145	294	192	721	645	610	850	1,330	404	380
2	e240	143	145	275	192	994	544	804	1,210	1,050	380	357
3	e230	143	127	257	192	994	484	1,210	1,330	994	430	404
4	e350	165	123	257	207	944	513	1,330	1,160	1,050	513	430
5	e340	152	e152	257	239	1,210	484	994	1,100	944	610	1,390
6	e280	150	e700	223	223	1,210	456	850	1,160	762	610	762
7	e260	145	800	165	223	944	430	804	1,270	804	576	544
8	e250	143	721	165	223	804	404	762	1,270	650	544	513
9	e290	136	645	192	207	850	484	762	1,210	550	544	484
10	e270	136	544	178	207	804	576	762	1,390	895	683	456
11	e250	136	484	178	257	721	576	804	1,100	850	850	484
12	e230	138	456	192	314	762	610	762	1,050	550	683	513
13	e210	138	721	192	275	850	1,650	944	994	804	544	513
14	e280	134	721	192	257	804	2,820	944	1,100	762	404	513
15	e300	131	645	239	a250	721	2,480	895	1,330	721	357	576
16	e255	136	513	239	a450	683	1,790	850	1,390	804	404	513
17	e240	192	513	223	a700	610	1,330	804	1,330	895	484	430
18	e230	165	762	223	a540	544	1,100	804	1,520	1,050	513	430
19	e220	152	1,210	192	430	484	944	762	1,580	850	456	404
20	e215	178	804	192	380	456	1,050	683	1,860	683	456	430
21	207	178	762	138	804	430	1,160	683	2,320	683	456	357
22	192	165	1,650	152	1,580	456	1,100	721	2,160	683	513	294
23	207	165	2,650	192	1,160	456	994	683	1,940	683	513	239
24	223	152	1,450	207	994	456	850	762	1,580	762	380	239
25	207	178	994	207	850	430	850	895	1,270	762	357	257
26	192	165	721	207	762	430	850	850	1,160	721	357	336
27	192	165	544	207	721	404	804	804	1,210	721	314	357
28	178	165	430	207	645	380	762	804	1,330	721	239	294
29	178	152	380	192	-	357	683	683	1,580	645	294	239
30	165	152	357	178	-	404	645	610	1,450	576	380	257
31	165	-	314	150	-	576	-	645	-	456	456	-

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

Discharge, in second-feet, of Puyallup River near Orting, Wash., 1936-41--Continued

1937-38

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	294	513	895	1,160	544	456	357	804	645	544	484	544
2	223	380	804	994	513	484	336	683	683	513	380	683
3	207	380	804	895	484	430	357	610	683	484	404	683
4	207	357	721	721	430	404	404	610	762	484	513	576
5	192	357	683	645	430	544	380	576	850	513	576	404
6	192	294	645	645	484	544	357	544	895	576	576	380
7	192	357	610	610	456	456	357	484	1,050	645	513	336
8	207	2,650	576	576	430	430	404	513	804	721	430	294
9	223	1,860	544	544	404	404	544	513	576	645	456	294
10	223	1,390	895	683	404	380	484	484	456	576	456	380
11	239	1,210	994	683	380	380	456	762	484	544	430	430
12	257	1,160	944	850	380	357	430	944	610	544	357	456
13	239	1,580	762	994	380	404	456	944	683	721	380	456
14	239	1,860	895	2,650	404	430	430	804	576	944	850	430
15	223	1,650	804	2,480	357	484	430	804	576	1,050	544	456
16	357	1,270	994	1,330	357	610	513	762	576	994	513	456
17	380	1,050	1,450	1,050	336	513	2,010	683	544	850	513	456
18	294	850	1,330	944	336	610	4,420	576	430	762	484	544
19	239	994	1,050	850	336	645	2,320	544	430	762	456	513
20	645	1,790	895	721	357	576	1,790	610	544	804	456	430
21	610	1,650	804	762	357	513	1,330	721	762	944	484	456
22	513	1,580	721	850	336	484	1,160	895	1,050	944	430	456
23	430	1,650	645	762	357	544	994	1,050	1,160	850	404	430
24	336	1,390	645	721	357	544	895	1,160	994	721	456	430
25	336	1,940	576	645	336	544	804	1,210	762	762	544	336
26	404	1,790	762	610	357	456	721	1,160	645	804	645	380
27	645	2,320	1,050	576	380	513	683	1,160	610	762	645	380
28	994	2,320	3,780	610	430	484	645	1,050	645	683	513	430
29	850	1,330	2,650	610	-	430	721	850	762	645	484	404
30	610	1,050	1,940	576	-	357	804	762	683	576	456	380
31	576	-	1,390	544	-	380	-	645	-	576	513	-

Peak discharge.- Dec. 28 (4:50 p.m.) 4,420 sec.-ft.; Apr. 18 (3:55 a.m.) 8,680 sec.-ft. These figures supersede those published in Water-Supply Paper 862.

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	336	257	645	1,520	404	456	610	544	645	804	576	576
2	380	223	1,050	1,720	380	456	645	544	544	762	645	484
3	456	1,100	1,100	1,450	357	484	683	544	544	944	762	430
4	314	994	1,650	1,210	336	456	610	576	544	895	683	484
5	314	610	2,160	994	357	430	544	513	762	721	683	456
6	257	430	1,390	721	404	430	513	456	850	645	645	336
7	239	380	2,480	645	380	430	484	430	721	610	576	257
8	239	404	2,480	762	336	404	513	430	721	610	645	357
9	223	404	1,580	683	314	380	544	513	721	721	721	380
10	456	380	1,050	994	314	357	544	544	721	944	762	40.
11	804	336	804	850	380	357	513	610	721	1,050	721	404
12	544	314	610	762	1,450	380	544	683	762	850	683	257
13	762	357	513	645	1,050	404	484	804	762	895	610	192
14	357	456	484	544	1,580	380	430	1,050	762	804	576	192
15	275	576	430	610	3,190	404	404	1,210	721	804	544	336
16	257	1,860	380	544	1,860	576	404	1,160	645	683	576	404
17	257	1,580	357	762	1,330	645	456	944	804	544	576	404
18	223	994	314	895	1,050	683	610	683	994	544	544	357
19	223	804	294	895	850	762	721	544	1,390	544	610	380
20	239	944	294	721	683	850	721	456	1,580	544	645	544
21	239	721	294	576	610	994	804	576	1,270	544	610	610
22	223	544	275	513	544	1,160	762	576	1,100	683	683	544
23	207	456	357	484	484	1,390	683	544	944	762	544	380
24	239	430	430	645	456	1,450	576	513	721	850	576	357
25	257	404	484	645	513	1,330	544	610	721	850	683	275
26	294	380	404	576	456	1,050	484	721	645	944	513	275
27	380	380	484	576	513	850	456	645	683	1,100	513	336
28	314	357	683	610	513	721	513	1,330	804	a1,000	456	223
29	380	380	645	576	-	610	721	2,160	1,050	a900	314	207
30	294	430	683	513	-	576	610	1,270	994	a780	314	239
31	314	-	804	456	-	576	-	895	-	a660	456	-

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

Discharge, in second-feet, of Puyallup River near Orting, Wash., 1936-41--Continued

1939-40

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	275	207	336	1,210	357	895	645	1,520	513	544	336	513
2	192	178	645	994	336	1,050	576	1,390	544	576	314	544
3	178	178	513	804	357	850	513	1,050	544	544	357	430
4	357	152	456	762	357	850	484	944	456	484	404	336
5	430	150	430	683	484	895	456	994	380	484	513	336
6	257	178	484	576	2,480	721	404	944	357	456	544	357
7	207	1,100	484	513	1,790	1,210	456	804	430	456	544	430
8	178	721	1,210	484	1,450	1,450	544	804	404	513	544	513
9	178	513	1,100	456	1,940	1,100	645	804	404	513	544	645
10	178	380	1,450	456	1,940	944	610	895	484	544	456	895
11	165	544	944	430	1,330	804	544	804	544	683	513	762
12	192	430	721	404	1,050	721	544	721	683	645	576	804
13	207	404	610	380	1,050	645	683	645	762	544	456	610
14	192	404	683	380	850	576	645	610	576	544	430	484
15	178	336	2,650	357	762	610	544	576	544	610	404	430
16	165	314	3,380	357	721	762	484	513	544	576	456	430
17	178	294	2,650	357	721	683	430	544	484	513	544	404
18	134	294	1,720	336	645	610	484	576	576	456	576	456
19	314	257	1,580	314	610	544	430	610	645	456	645	357
20	239	257	1,450	294	544	513	430	610	576	484	645	357
21	207	239	1,100	294	484	513	380	576	456	544	544	404
22	207	380	944	275	484	484	380	610	404	513	513	430
23	239	257	762	275	484	484	683	721	456	484	513	a450
24	257	257	683	275	484	610	895	645	544	404	544	a430
25	178	223	576	257	804	576	762	544	645	380	576	a440
26	223	178	544	294	944	610	721	456	576	484	544	a470
27	294	165	513	456	850	645	645	404	456	576	610	a580
28	544	165	683	430	994	645	804	404	456	544	484	a450
29	380	165	944	456	944	645	850	430	484	544	513	a420
30	336	357	895	404	-	850	895	484	513	484	610	404
31	257	-	1,100	380	-	721	-	645	-	380	513	-

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

1940-41

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	380	513	1,160	357	484	430	484	336	544	484	430	404
2	294	484	944	314	430	430	645	336	513	513	404	513
3	314	430	944	314	380	357	484	357	484	576	430	804
4	314	380	850	314	336	294	430	357	456	544	404	1,100
5	294	336	994	314	336	275	404	404	456	576	404	895
6	275	314	944	357	314	257	456	357	513	610	456	610
7	275	404	804	336	314	257	404	357	576	576	544	484
8	294	404	721	314	275	239	404	357	513	513	645	430
9	275	380	645	314	294	276	404	336	513	513	683	430
10	610	357	544	314	336	257	404	336	513	513	645	645
11	804	336	484	314	294	223	380	380	610	544	645	484
12	544	314	456	314	294	223	336	610	645	544	610	430
13	576	294	404	336	257	223	380	513	645	576	544	430
14	430	294	380	336	257	223	380	456	544	645	610	513
15	380	294	380	314	239	207	380	430	513	721	683	683
16	336	294	357	294	239	207	357	513	456	804	610	576
17	456	336	357	645	223	223	357	895	456	850	683	576
18	683	f357	357	1,330	239	257	336	762	544	762	683	484
19	721	f314	404	895	223	239	314	610	576	721	610	484
20	850	294	850	683	223	239	314	576	576	576	610	456
21	610	294	576	544	207	223	336	544	513	610	645	430
22	357	275	544	513	207	239	336	544	544	513	610	404
23	336	257	456	484	207	275	336	576	513	456	645	404
24	850	336	430	456	223	257	336	610	456	430	456	404
25	610	357	404	456	223	257	336	576	456	404	513	404
26	430	314	404	484	223	239	336	544	430	456	484	430
27	357	645	456	430	275	239	314	576	430	484	380	357
28	336	1,580	430	404	430	239	314	544	430	513	380	336
29	314	3,580	430	357	-	239	314	513	456	513	357	336
30	456	1,580	404	357	-	380	314	456	484	513	336	404
31	544	-	380	404	-	314	-	544	-	484	380	-

f Computed on basis of partly estimated gage-height record.

Monthly discharge, in second-feet, of Puyallup River near Orting, Wash., 1936-41

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October 1936	7,296	350	165	235	1.38	1.60	14,470
November	4,600	192	131	153	.900	1.01	9,120
December	21,183	2,650	123	683	4.02	4.63	42,020
Calendar year 1936	240,242	3,600	123	656	3.86	52.54	476,500
January 1937	6,362	294	138	205	1.21	1.39	12,620
February	13,474	1,580	192	481	2.83	2.95	26,730
March	20,889	1,210	357	674	3.96	4.57	41,430
April	28,068	2,820	404	936	5.51	6.14	55,670
May	25,280	1,330	610	815	4.79	5.53	50,140
June	41,204	2,320	850	1,373	8.08	9.01	81,730
July	25,211	1,330	456	813	4.78	5.52	50,010
August	14,704	850	239	474	2.79	3.22	29,160
September	13,395	1,390	239	446	2.62	2.93	26,570
Water year 1936-37	221,666	2,820	123	607	3.57	48.50	439,670
October 1937	11,576	994	192	373	2.19	2.53	22,960
November	38,972	2,650	294	1,299	7.64	8.53	77,300
December	32,258	3,780	544	1,041	6.12	7.06	63,980
Calendar year 1937	271,393	3,780	138	744	4.38	59.38	538,300
January 1938	27,291	2,650	544	880	5.18	5.97	54,130
February	11,112	544	336	397	2.34	2.43	22,040
March	14,790	645	357	477	2.81	3.24	29,340
April	25,992	4,420	336	866	5.09	5.69	51,550
May	23,917	1,210	484	772	4.54	5.23	47,440
June	20,930	1,160	430	698	4.11	4.58	41,510
July	21,943	1,050	484	708	4.16	4.80	43,520
August	15,345	850	357	495	2.91	3.36	30,440
September	13,283	683	294	443	2.61	2.91	26,350
Water year 1937-38	257,409	4,420	192	705	4.15	56.33	510,600
October 1938	10,296	804	207	332	1.95	2.25	20,420
November	17,885	1,860	223	596	3.51	3.91	35,470
December	25,608	2,480	275	826	4.86	5.60	50,790
Calendar year 1938	228,392	4,420	207	626	3.68	49.97	453,000
January 1939	24,097	1,720	456	777	4.57	5.27	47,800
February	21,094	3,190	314	753	4.43	4.61	41,840
March	20,431	1,450	357	659	3.88	4.47	40,520
April	17,130	804	404	571	3.36	3.75	33,980
May	23,078	2,160	430	744	4.38	5.05	45,770
June	24,846	1,580	544	828	4.87	5.44	49,280
July	23,991	1,100	544	774	4.55	5.25	47,590
August	18,445	762	314	595	3.50	4.04	36,590
September	11,080	610	192	369	2.17	2.42	21,980
Water year 1938-39	237,981	3,190	192	652	3.84	52.06	472,000
October 1939	7,516	544	134	242	1.42	1.64	14,910
November	9,677	1,100	150	323	1.90	2.12	19,190
December	32,240	3,380	336	1,040	6.12	7.05	63,950
Calendar year 1939	233,625	3,380	134	640	3.76	51.11	463,400
January 1940	14,343	1,210	257	463	2.72	3.14	28,450
February	26,246	2,480	336	905	5.32	5.74	52,060
March	23,216	1,450	484	749	4.41	5.08	46,050
April	17,566	995	380	586	3.45	3.84	34,840
May	22,277	1,520	404	719	4.23	4.87	44,190
June	15,440	762	357	515	3.03	3.38	30,620
July	15,962	683	380	515	3.03	3.49	31,660
August	15,765	645	314	509	2.99	3.45	31,270
September	14,571	895	336	486	2.86	3.19	28,900
Water year 1939-40	214,819	3,380	134	587	3.45	46.99	426,100
October 1940	14,305	850	275	461	2.71	3.13	28,370
November	16,347	3,580	257	545	3.21	3.58	32,420
December	17,893	1,160	357	577	3.39	3.91	35,490
Calendar year 1940	213,931	3,580	257	585	3.44	46.80	424,300
January 1941	13,598	1,330	294	439	2.58	2.97	26,970
February	7,982	484	207	285	1.68	1.75	15,830
March	8,236	430	207	266	1.56	1.80	16,340
April	11,325	645	314	378	2.22	2.48	22,460
May	15,305	895	336	494	2.91	3.35	30,360
June	15,358	645	430	512	3.01	3.36	30,460
July	17,537	850	404	566	3.33	3.84	34,780
August	16,519	683	336	533	3.14	3.61	32,760
September	15,340	1,100	336	511	3.01	3.36	30,430
Water year 1940-41	169,745	3,580	207	465	2.74	37.14	336,700

Puyallup River at Puyallup, Wash.

Location.- Water-stage recorder, lat. 47°12'20", long. 122°19'30", in NE¼ sec. 20, T. 20 N., R. 4 E., 1 mile northwest of Puyallup and 7 miles upstream from mouth. Datum of gage is at mean sea level, datum of 1929.

Drainage area.- 948 square miles.

Records available.- May 1914 to September 1941.

Average discharge.- 27 years, 3,214 second-feet (adjusted for storage since October 1934).

Extremes.- Maximum discharge during year, 18,400 second-feet Nov. 29 (gage height, 18.80 feet); minimum, 945 second-feet (regulated) Mar. 16.
1914-41: Maximum discharge, 57,000 second-feet Dec. 10, 1933 (gage height, 31.0 feet, present datum); minimum, probably less than 350 second-feet (regulated) Nov. 24, 28, Dec. 1, 3-5, 1929.

Remarks.- Records good. All diverted water returned to river above gage. Large part of flow of White River diverted into Lake Tapps above station. Records of daily discharge not adjusted for change in contents of Lake Tapps. Lake Tapps, lat. 47°14'20", long. 122°11'30", in sec. 8, T. 20 N., R. 5 E., completed in 1912; usable contents between elevations 505 and 541 feet, 50,400 acre-feet. Some pondage on upper Puyallup River and some tributaries.

Cooperation.- Records of change of contents in Lake Tapps furnished by Puget Sound Power & Light Co.

Revision.- Corrected figures for change in contents in Lake Tapps and monthly discharge adjusted for change in reservoir contents for the water year 1940, superseding those published in Water-Supply Paper 902, are given herein.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,400	2,160	4,360	1,800	1,910	2,280	2,390	1,780	2,450	2,100	1,700	1,140
2	1,330	1,920	2,990	2,020	1,550	1,910	3,520	1,760	3,070	2,190	1,320	1,460
3	1,240	1,640	2,800	2,170	1,940	2,150	2,880	1,600	2,920	2,210	1,310	1,730
4	1,240	1,720	2,680	1,990	1,880	2,120	2,580	1,520	2,760	1,650	1,660	3,460
5	1,120	1,680	2,770	1,730	1,860	2,100	2,390	2,220	2,860	2,070	1,530	2,830
6	1,090	1,620	2,990	2,340	1,890	1,940	2,020	2,200	2,960	2,300	1,510	2,290
7	1,090	1,660	2,770	2,360	1,930	1,860	2,440	2,110	2,880	2,460	1,690	1,540
8	1,090	1,830	3,100	2,400	1,760	1,650	2,480	2,210	2,520	2,200	1,870	1,460
9	1,120	1,830	3,220	2,300	1,400	1,280	2,250	2,000	3,020	2,120	1,700	1,460
10	1,560	1,540	2,770	2,220	1,960	1,520	2,210	1,680	3,010	2,110	1,650	2,300
11	2,240	1,500	2,460	1,520	2,000	1,450	2,150	1,680	3,120	2,220	2,030	2,300
12	1,580	1,720	2,260	1,770	1,870	1,470	1,970	2,640	3,260	1,910	1,870	2,040
13	1,440	1,440	2,140	2,070	1,830	1,490	1,710	2,700	3,520	1,710	1,820	1,580
14	1,610	1,300	2,040	2,190	1,770	1,340	2,000	2,640	2,940	2,470	1,810	1,480
15	1,540	1,400	2,510	2,300	1,620	1,200	1,960	2,590	2,640	2,430	1,920	2,250
16	1,480	1,270	1,900	2,230	a1,350	1,100	1,810	2,830	2,710	3,340	1,800	2,120
17	1,510	1,240	1,950	3,150	a1,700	1,530	1,710	3,480	2,580	3,490	1,710	2,320
18	1,740	1,470	2,000	4,520	a1,730	1,580	1,780	2,950	2,920	3,420	2,140	2,120
19	1,720	1,330	2,140	3,740	a1,760	1,640	1,680	3,160	3,150	3,100	2,010	2,120
20	1,920	1,340	2,830	3,600	a1,800	1,550	1,370	2,990	3,310	2,630	1,930	1,840
21	2,000	1,210	2,670	2,620	1,800	1,530	1,610	2,820	2,530	2,540	2,000	1,520
22	1,580	1,210	1,660	2,420	1,480	1,310	1,660	2,740	2,110	2,280	2,020	1,720
23	1,470	1,150	2,420	2,270	1,350	1,280	1,640	2,800	2,510	1,900	1,820	1,600
24	2,060	1,300	2,290	2,220	1,980	1,510	1,680	2,820	2,510	1,640	1,430	1,510
25	2,240	1,540	2,060	1,930	1,970	1,470	1,630	2,730	2,290	1,640	1,800	1,410
26	1,800	1,500	2,260	1,780	1,930	1,420	1,590	3,160	2,010	1,470	1,940	1,440
27	1,360	1,830	2,520	2,080	2,080	1,340	1,370	3,680	2,030	1,860	1,870	1,500
28	1,500	2,900	2,440	2,040	2,320	1,390	1,540	4,190	1,800	1,830	1,700	1,250
29	1,680	14,500	2,220	2,040	-	1,350	1,620	3,850	1,620	1,840	1,500	1,340
30	2,000	7,760	2,410	2,120	-	1,570	1,690	1,880	1,970	1,820	1,370	1,410
31	2,560	-	2,350	2,090	-	1,820	-	2,530	-	1,820	1,420	-

a No gage-height record; discharge computed by study of weather records and general information.

Monthly discharge, in second-feet, of Puyallup River at Puyallup, Wash., 1939-41

Month	Observed				Change in contents in Lake Tapps (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October 1939	2,180	986	1,423	87,520	-9,800	77,720	1,264	1.33	1.53
November	2,910	1,000	1,727	102,700	-3,100	99,600	1,674	1.77	1.98
December	8,600	1,920	3,392	208,600	+22,110	230,700	3,752	3.96	4.56
Calendar year 1939	10,800	986	2,900	2,099,000	-350	2,099,000	2,899	3.06	41.50
January 1940	5,880	2,210	3,135	192,800	-4,530	188,300	3,062	3.23	3.72
February	10,500	2,020	4,486	258,000	+4,790	262,800	4,569	4.82	5.20
March	7,770	2,640	3,964	243,700	-40	243,700	3,963	4.18	4.82
April	4,280	1,900	3,098	184,300	-2,460	181,800	3,055	3.22	3.59
May	7,380	2,460	3,618	222,500	+1,930	224,400	3,650	3.85	4.44
June	3,060	1,900	2,447	145,600	+1,850	147,400	2,477	2.61	2.91
July	2,500	1,560	2,097	128,900	-2,900	126,000	2,049	2.16	2.49
August	1,980	1,380	1,706	104,900	+460	105,400	1,714	1.81	2.09
September	2,110	1,170	1,561	92,870	-840	92,030	1,547	1.63	1.82
Water year 1939-40	10,500	986	2,717	1,972,000	+7,470	1,980,000	2,727	2.88	39.15
October 1940	2,560	1,090	1,591	97,800	-1,540	96,260	1,566	1.65	1.90
November	14,500	1,150	2,217	131,900	-2,180	129,700	2,180	2.30	2.57
December	4,360	1,660	2,515	154,700	+4,600	159,300	2,591	2.73	3.15
Calendar year 1940	14,500	1,090	2,697	1,958,000	-860	1,957,000	2,696	2.84	38.70
January 1941	4,520	1,520	2,324	142,900	-1,450	141,400	2,300	2.43	2.80
February	2,320	1,350	1,801	100,000	-15,520	84,480	1,521	1.60	1.67
March	2,280	1,100	1,585	97,490	+790	98,280	1,598	1.69	1.95
April	3,520	1,370	1,977	117,700	+10,000	127,700	2,146	2.26	2.52
May	4,190	1,520	2,575	158,400	+5,170	163,600	2,661	2.81	3.24
June	3,520	1,620	2,666	158,600	+2,220	160,800	2,702	2.85	3.18
July	3,490	1,470	2,218	136,400	-790	135,600	2,205	2.33	2.69
August	2,140	1,310	1,737	106,800	-1,470	105,300	1,713	1.81	2.09
September	3,460	1,140	1,818	108,200	+2,350	110,600	1,859	1.96	2.19
Water year 1940-41	14,500	1,090	2,087	1,511,000	+2,180	1,513,000	2,090	2.20	29.95

Carbon River near Fairfax, Wash.

Location.- Water-stage recorder, lat. 47°01'30", long. 122°02'00", in SW¼ sec. 22, T. 18 N., R. 6 E., 1¾ miles northwest of Fairfax and 12 miles upstream from Voights Creek.

Drainage area.- 81 square miles.

Records available.- March 1929 to September 1941. November 1910 to July 1912, at site 1¼ miles upstream, published as Carbon River at Fairfax, Wash.

Average discharge.- 12 years (1929-41), 398 second-feet.

Extremes.- Maximum discharge during year, 4,040 second-feet Nov. 29 (gage height, 5.80 feet); minimum, 100 second-feet Oct. 8, Feb. 22, 23; minimum gage height, 1.15 feet Oct. 8.

1910-12, 1929-41: Maximum discharge, 8,030 second-feet Dec. 9, 1933 (gage height, 10.2 feet), from rating curve extended above 500 second-feet; minimum, 40 second-feet (estimated) Jan. 20, 1930 (stage-discharge relation affected by ice).

Remarks.- Records good. Some water diverted for use by lumber industry but returned to river above gage.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	150	306	782	182	208	221	372	295	409	250	211	176
2	130	277	738	173	193	224	467	291	362	295	184	184
3	127	240	752	168	179	190	349	296	333	345	173	492
4	132	208	619	165	173	168	284	266	321	341	179	895
5	127	190	626	168	168	150	270	277	321	357	176	709
6	114	179	556	168	166	142	273	240	366	357	233	419
7	106	202	472	162	164	137	260	227	428	345	260	284
8	104	205	499	155	152	137	266	237	405	329	237	243
9	110	199	462	157	152	132	260	221	391	310	310	256
10	304	173	387	165	160	127	250	227	383	298	306	459
11	562	165	325	168	150	125	230	306	405	277	298	329
12	313	152	284	173	145	123	208	593	438	277	284	253
13	284	145	256	182	137	125	196	462	442	306	237	277
14	253	147	233	187	130	120	199	447	362	370	263	399
15	208	150	214	176	125	116	246	357	321	457	270	560
16	179	155	202	170	118	112	214	396	287	538	230	405
17	179	170	193	513	114	116	196	538	266	544	253	400
18	230	179	190	846	112	140	187	438	325	499	287	349
19	357	162	193	562	112	125	179	349	370	428	287	306
20	477	157	390	405	110	120	182	313	378	357	291	280
21	432	155	298	333	108	112	187	310	317	405	291	237
22	246	145	273	291	102	135	193	349	298	313	260	211
23	199	142	243	260	100	145	205	400	295	233	336	196
24	395	250	221	243	112	130	205	423	302	240	202	184
25	374	263	205	246	108	120	205	419	287	214	208	179
26	256	230	202	250	104	123	221	387	266	280	218	202
27	208	675	224	211	142	127	227	357	266	270	168	202
28	184	1,530	205	205	202	135	218	326	263	273	147	182
29	184	2,600	221	193	-	150	224	302	237	270	132	176
30	288	1,110	214	190	-	202	243	273	230	263	145	244
31	349	-	199	193	-	190	-	405	-	263	147	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	7,561	562	104	244	3.01	3.47	15,000
November	10,861	2,600	142	362	4.47	4.99	21,540
December	10,878	782	190	351	4.33	4.99	21,580
Calendar year 1940	123,869	2,600	104	338	4.17	56.88	245,700
January	7,660	846	155	247	3.05	3.52	15,190
February	3,946	208	100	141	1.74	1.81	7,830
March	4,419	224	112	143	1.77	2.03	8,760
April	7,216	467	179	241	2.98	3.31	14,310
May	10,728	593	221	346	4.27	4.93	21,280
June	10,074	442	230	336	4.15	4.63	19,980
July	10,304	544	214	332	4.10	4.73	20,440
August	7,273	336	132	235	2.90	3.34	14,430
September	9,688	895	176	323	3.99	4.45	19,220
Water year 1940-41	100,608	2,600	100	276	3.41	46.20	199,600

White River at Greenwater, Wash.

Location.- Water-stage recorder, lat. 47°08'50", long. 121°38'50" in SE¼ sec. 10, T. 19 N., R. 9 E., three-quarters of a mile southeast of Greenwater, three-quarters of a mile upstream from Greenwater River, and 25 miles upstream from Buckley.

Drainage area.- 216 square miles.

Records available.- March 1929 to September 1941. September 1911 to May 1912 (fragmentary), at site 2 miles upstream, published as White River near Enumclaw, Wash.

Average discharge.- 12 years, 792 second-feet.

Extremes.- Maximum discharge during year, 2,690 second-feet Nov. 29 (gage height, 4.80 feet); minimum, 232 second-feet Nov. 22 (gage height, 1.99 feet).
1911-12, 1929-41: Maximum discharge, 12,100 second-feet Dec. 21, 1933 (gage height, 9.38 feet); minimum, 120 second-feet Nov. 2, 1935 (gage height, 1.69 feet).

Remarks.- Records good. No diversion or regulation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	341	377	952	405	583	555	665	848	872	800	549	488
2	304	356	856	394	488	542	760	824	896	824	495	521
3	308	317	856	388	457	476	672	768	896	856	514	565
4	295	304	760	377	439	457	612	696	920	840	528	680
5	283	295	880	372	422	427	591	672	928	832	542	591
6	279	287	864	361	416	410	549	591	960	904	576	488
7	279	356	752	346	416	399	535	562	960	888	642	433
8	275	346	792	336	394	399	528	555	896	776	696	427
9	272	317	736	331	388	383	542	508	880	760	752	427
10	501	291	650	331	377	377	535	528	968	728	768	728
11	562	295	591	326	367	377	528	712	1,120	720	720	476
12	399	275	535	331	356	372	501	1,140	1,270	728	768	416
13	399	272	495	351	346	361	488	1,090	1,270	784	634	394
14	336	272	470	351	346	356	495	936	1,090	872	665	405
15	326	272	439	336	331	351	528	832	960	944	696	445
16	299	279	410	331	326	351	501	912	880	1,040	657	405
17	433	287	405	610	322	361	463	1,130	848	1,090	688	399
18	605	283	422	1,030	317	388	451	952	888	1,040	736	377
19	776	268	445	808	313	372	439	824	848	968	784	372
20	896	268	936	657	308	351	451	760	792	840	736	356
21	664	264	736	583	308	341	463	760	736	792	728	331
22	427	247	744	521	304	356	501	832	816	720	680	326
23	414	250	657	482	304	361	549	960	840	634	672	341
24	904	317	620	463	313	346	569	1,140	776	634	521	346
25	556	308	591	488	299	346	605	1,140	712	627	562	351
26	433	291	542	463	291	356	634	1,050	720	665	555	372
27	356	476	521	427	291	367	650	928	752	672	470	317
28	331	1,010	495	410	470	394	665	840	752	680	445	308
29	326	2,140	488	399	-	410	712	784	728	650	427	322
30	405	1,270	476	399	-	482	808	728	728	650	427	383
31	433	-	445	451	-	501	-	840	-	612	427	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	13,417	904	272	433	2.00	2.31	26,610
November	12,590	2,140	247	420	1.94	2.17	24,970
December	19,561	952	405	631	2.92	3.37	38,800
Calendar year 1940	252,239	2,140	247	689	3.19	43.42	500,300
January	13,858	1,030	326	447	2.07	2.39	27,490
February	10,292	583	291	368	1.70	1.77	20,410
March	12,325	555	341	398	1.84	2.12	24,450
April	16,990	808	439	566	2.62	2.93	33,700
May	25,842	1,140	508	834	3.86	4.45	51,260
June	26,702	1,270	712	890	4.12	4.60	52,960
July	24,570	1,090	612	793	3.67	4.23	48,730
August	19,060	784	427	615	2.85	3.28	37,800
September	12,790	728	308	426	1.97	2.20	25,370
Water year 1940-41	207,997	2,140	247	570	2.64	35.82	412,600

White River near Buckley, Wash.

Location.- Water-stage recorder, lat. 47°09'05", long. 121°57'00", in SW¼NW¼ sec. 8, T. 19 N., R. 7 E., 3 miles east of Buckley and 8 miles downstream from Clearwater River. Datum of gage is at mean sea level, datum of 1929.

Drainage area.- 403 square miles.

Records available.- October 1938 to September 1941. October 1928 to November 1933 at site 3 miles upstream.

Extremes.- Maximum discharge during year, 7,600 second-feet Nov. 29 (elevation, 805.67 feet); minimum, 374 second-feet Oct. 6, 7 (elevation, 798.96 feet).
1928-33, 1938-41: Maximum discharge, 17,000 second-feet Feb. 26, 1932 (gage height, 17.5 feet, site and datum then in use), from rating curve extended above 4,000 second-feet; minimum, 213 second-feet Nov. 21, 1929 (gage height, 1.78 feet, site and datum then in use), but may have been less some time during Jan. 15-30, 1930, when stage-discharge relation was affected by ice.

Remarks.- Records good. No diversions. Some slight regulation from construction operations at Mud Mountain Dam.

Cooperation.- Water-stage recorder inspected by employees of Corps of Engineers, U. S. Army.

Rating tables, water year 1940-41 (elevation, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 30 to Dec. 12, Jan. 16 to Feb. 18, Mar. 26 to Apr. 15)

Oct. 1 to Nov. 29						Nov. 30 to Sept. 30			
799.0	385	800.5	1,120	802.5	2,860	800.3	480	802.0	1,770
799.2	450	801.0	1,460	803.0	3,380	800.5	565	802.5	2,370
799.5	570	801.5	1,880	804.0	4,810	801.0	840	803.0	3,020
800.0	826	802.0	2,360	805.0	6,400	801.5	1,240	803.5	3,710

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	476	883	2,500	808	1,020	875	1,060	1,200	1,390	980	688	588
2	416	798	2,130	745	910	875	1,340	1,150	1,390	1,020	660	635
3	443	691	2,070	745	840	808	1,150	1,200	1,340	1,020	635	715
4	423	616	1,830	715	808	745	1,060	1,340	1,340	1,020	660	980
5	413	579	2,010	715	775	715	1,020	1,100	1,340	1,020	660	980
6	394	536	1,950	715	775	688	980	980	1,390	1,060	688	775
7	394	616	1,720	688	775	660	910	910	1,390	1,100	745	635
8	394	665	1,830	a660	715	688	910	945	1,340	980	775	588
9	391	616	1,720	660	715	660	945	875	1,290	945	808	588
10	606	544	1,440	660	715	635	910	840	1,340	910	840	945
11	912	523	1,290	660	688	610	945	980	1,500	875	808	745
12	611	480	1,150	660	660	588	910	1,550	1,720	875	840	660
13	616	461	1,020	688	635	565	875	1,550	1,660	945	715	635
14	523	457	945	715	610	560	875	1,340	1,500	1,020	715	688
15	491	f465	910	688	588	556	875	1,200	1,290	1,100	745	840
16	461	f503	840	660	565	552	945	1,340	1,200	1,240	745	745
17	557	544	808	1,300	542	556	910	1,720	1,200	1,290	775	808
18	744	548	808	2,310	534	610	875	1,500	1,240	1,200	840	745
19	912	495	808	1,830	520	610	840	1,340	1,290	1,060	840	715
20	1,060	487	1,440	1,440	516	588	840	1,240	1,200	1,020	840	688
21	1,000	476	1,240	1,240	508	552	840	1,200	1,100	945	840	635
22	607	440	1,200	1,100	500	588	875	1,200	1,100	875	808	588
23	523	443	1,060	980	500	610	875	1,340	1,150	775	808	588
24	1,360	579	1,020	910	538	588	910	1,500	1,060	775	635	565
25	941	640	980	945	529	565	910	1,550	980	745	660	565
26	717	593	910	945	508	565	945	1,440	945	745	715	688
27	598	1,010	945	875	610	588	980	1,340	980	808	588	588
28	540	2,400	875	808	808	610	980	1,240	980	808	565	547
29	553	6,270	910	775	-	660	980	1,150	980	808	542	552
30	771	3,430	910	775	-	808	1,100	1,060	945	775	552	660
31	1,000	-	875	808	-	808	-	1,390	-	775	534	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	19,847	1,360	391	640	1.59	1.83	39,370
November	27,788	6,270	440	926	2.30	2.56	55,120
December	40,144	2,500	808	1,295	3.21	3.70	79,620
Calendar year 1940	413,642	6,270	391	1,130	2.80	38.14	820,500
January	28,223	2,310	660	910	2.26	2.60	55,980
February	15,407	1,020	500	657	1.63	1.70	36,510
March	20,086	875	552	648	1.61	1.85	39,840
April	29,570	1,340	840	952	2.36	2.64	56,670
May	38,430	1,720	840	1,240	3.08	3.55	76,220
June	37,570	1,720	945	1,252	3.11	3.47	74,520
July	29,514	1,290	745	952	2.36	2.72	58,540
August	22,269	840	534	718	1.78	2.06	44,170
September	20,674	980	547	689	1.71	1.91	41,010
Water year 1940-41	331,522	6,270	391	908	2.25	30.59	657,600

a No gage-height record; discharge computed on basis of following day's record.
f Computed on basis of partly estimated gage-height record.

Greenwater River at Greenwater, Wash.

Location.- Water-stage recorder, lat. 47°09'15", long. 121°38'00", in NW¼NW¼ sec. 11, T. 19 N., R. 9 E., 1 mile upstream from mouth, 1 mile east of Greenwater, and 17 miles east of Buckley.

Drainage area.- 74 square miles.

Records available.- September 1911 to August 1912 (fragmentary), published as Greenwater River near Enumclaw, Wash.; May 1929 to September 1941.

Average discharge.- 12 years (1929-41), 190 second-feet.

Extremes.- Maximum discharge during year, 773 second-feet Nov. 29 (gage height, 4.40 feet); minimum, 29 second-feet Oct. 8, 9, 16-19 (gage height, 2.10 feet).
1911-12, 1929-41: Maximum discharge, 4,140 second-feet Dec. 9, 1933 (gage height, 9.24 feet, site and datum then in use), from rating curve extended above 1,000 second-feet; minimum, 23 second-feet Oct. 7, 1934 (gage height, 2.06 feet).

Remarks.- Records good except those for periods of shifting control, which are fair. No diversion or regulation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	58	247	100	110	77	126	139	197	88	44	37
2	32	52	202	94	109	89	155	143	199	86	43	39
3	38	47	188	91	101	85	155	150	194	85	45	55
4	36	43	183	89	100	83	152	146	186	83	48	66
5	35	41	183	88	98	79	148	148	172	79	44	64
6	31	39	191	86	96	77	150	132	167	77	44	58
7	31	41	175	83	94	77	141	126	164	76	43	52
8	30	48	180	80	89	79	137	126	167	73	42	46
9	30	47	186	80	88	79	135	122	162	71	41	45
10	35	42	167	79	88	79	137	118	157	68	40	66
11	39	41	155	79	86	76	139	118	152	67	41	64
12	35	39	141	79	86	74	141	155	148	66	47	59
13	36	36	128	82	79	73	139	167	139	64	43	57
14	35	35	120	80	74	71	137	167	135	62	41	55
15	31	35	112	79	74	70	143	164	132	61	40	68
16	30	38	105	76	73	68	139	167	128	58	39	64
17	29	40	103	121	71	68	139	177	120	57	38	66
18	29	42	100	180	70	71	137	186	118	56	37	64
19	29	40	98	172	68	71	135	188	120	55	36	66
20	31	38	126	155	66	70	132	186	116	54	35	67
21	34	37	118	146	66	68	130	180	109	52	37	62
22	32	35	118	141	66	70	128	177	105	51	42	58
23	31	35	114	130	64	71	128	172	101	50	46	56
24	51	44	112	122	66	71	126	169	98	51	43	54
25	58	48	109	120	67	71	126	169	98	52	40	51
26	46	46	103	122	67	73	126	169	96	51	45	58
27	39	84	107	114	70	76	124	164	93	49	41	62
28	35	225	105	109	74	80	126	164	91	48	39	57
29	35	613	107	103	-	83	126	164	91	47	38	55
30	46	357	109	103	-	109	132	162	91	45	39	67
31	62	-	105	105	-	116	-	186	-	44	38	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,124	62	29	36.3	0.491	0.56	2,230
November	2,366	613	35	78.9	1.07	1.19	4,690
December	4,297	247	98	139	1.88	2.16	8,520
Calendar year 1940	46,677	613	28	128	1.73	23.46	92,590
January	3,288	180	76	106	1.43	1.65	6,520
February	2,260	110	64	80.7	1.09	1.14	4,480
March	2,404	116	68	77.5	1.05	1.21	4,770
April	4,089	155	124	136	1.84	2.05	8,110
May	4,901	188	118	158	2.14	2.46	9,720
June	4,046	199	91	135	1.82	2.03	8,030
July	1,926	88	44	62.1	.839	.97	3,820
August	1,279	48	35	41.3	.558	.64	2,540
September	1,738	68	37	57.9	.782	.87	3,450
Water year 1940-41	33,718	613	29	92.4	1.25	16.93	66,880

Note.- Shifting-control method used Dec. 22 to Jan. 28, Feb. 3 to May 24, Aug. 6 to Sept. 30.

Green River near Palmer, Wash.

Location.- Water-stage recorder, lat. 47°17'40", long. 121°49'20", in SW¼NW¼ sec. 20, T. 21 N., R. 8 E., 1½ miles upstream from diversion dam and intake of Tacoma water-supply system, 2⅝ miles downstream from North Fork, and 4 miles southeast of Palmer.

Drainage area.- 231 square miles.

Records available.- October 1931 to September 1941.

Average discharge.- 10 years, 1,043 second-feet.

Extremes.- Maximum discharge during year, 8,070 second-feet Nov. 29 (gage height, 13.05 feet); minimum, 107 second-feet Oct. 9 (gage height, 4.27 feet).
1931-41: Maximum discharge, 33,600 second-feet Dec. 9, 1933 (gage height, 19.4 feet, computed on basis of flow over diversion dam); minimum, 81 second-feet Sept. 4, 5, 1934; minimum gage height, 4.00 feet Sept. 4, 1933.

Remarks.- Records excellent except those above 600 second-feet, which are good. No diversion or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 22						Apr. 23 to Sept. 30			
4.3	115	5.2	504	8.0	2,120	4.3	125	5.0	410
4.5	179	5.5	661	9.0	2,870	4.5	190	5.4	610
4.7	262	6.0	931	10.0	3,850	4.7	270	5.8	830
4.9	354	7.0	1,500	12.0	6,450				

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	120	613	2,120	708	S49	592	703	440	616	297	155	149
2	118	561	1,680	661	S22	687	S76	430	585	284	155	152
3	120	494	1,680	618	768	676	795	465	555	274	162	254
4	126	428	1,560	597	714	634	741	445	520	266	166	356
5	123	383	1,620	571	671	597	741	510	495	258	162	351
6	118	349	1,620	535	639	566	768	470	495	250	152	302
7	112	383	1,470	504	629	546	692	435	575	246	143	250
8	110	443	1,560	479	587	556	661	445	580	238	140	222
9	112	438	1,500	474	571	561	661	425	570	230	140	210
10	222	393	1,300	458	571	546	645	400	540	222	137	351
11	383	359	1,130	448	551	520	629	395	500	218	137	333
12	249	326	986	438	535	499	592	485	480	210	143	315
13	236	298	876	443	499	458	561	450	450	210	143	342
14	202	280	795	458	479	438	540	435	430	202	137	500
15	179	276	714	474	458	428	602	435	410	198	137	610
16	168	271	655	453	438	413	661	555	395	190	134	600
17	164	276	613	977	418	418	703	830	400	190	131	621
18	168	294	587	1,740	408	510	703	830	440	186	128	580
19	171	276	655	1,500	393	494	682	802	495	186	125	520
20	198	271	1,180	1,240	388	463	661	748	515	183	125	515
21	244	258	958	1,040	373	438	634	698	455	180	122	460
22	210	240	876	931	368	474	613	638	420	176	128	410
23	244	231	795	822	364	469	590	585	395	176	146	380
24	354	276	741	768	373	443	560	540	380	176	146	346
25	340	349	714	822	378	433	530	500	385	180	146	324
26	298	349	682	876	364	438	510	490	356	172	176	328
27	258	645	714	795	448	463	495	510	333	169	162	342
28	231	2,350	714	741	587	494	470	485	324	166	162	310
29	231	6,740	822	698	-	535	445	465	324	166	149	306
30	463	3,050	849	682	-	661	440	450	310	162	143	435
31	671	-	795	741	-	661	-	632	-	155	146	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	6,943	671	110	224	0.970	1.12	13,770
November	21,900	6,740	231	730	3.16	3.53	43,440
December	32,961	2,120	587	1,063	4.60	5.31	65,380
Calendar year 1940	262,266	6,740	100	717	3.10	42.22	520,200
January	22,692	1,740	438	732	3.17	3.65	45,010
February	14,643	849	364	523	2.26	2.36	29,040
March	16,111	687	413	520	2.25	2.59	31,960
April	18,904	876	440	630	2.73	3.04	37,500
May	16,423	830	395	530	2.29	2.64	32,570
June	13,728	616	310	458	1.98	2.21	27,230
July	6,416	297	155	207	.896	1.03	12,730
August	4,478	176	122	144	.623	.72	8,880
September	11,174	621	149	372	1.61	1.80	22,160
Water year 1940-41	186,373	6,740	110	511	2.21	30.00	369,700

Green River near Black Diamond, Wash.

Location.- Staff gage, lat. 47°17'00", long. 122°03'30", in NW¼ sec. 28, T. 21 N., R. 6 E., at highway bridge, three-quarters of a mile upstream from Newaukum Creek and 3 miles southwest of Black Diamond. Datum of gage is 158.5 feet above mean sea level (river-profile survey).

Drainage area.- 286 square miles.

Records available.- October 1939 to September 1941.

Extremes.-- Maximum discharge during year, 8,680 second-feet Nov. 29 (gage height, 6.55 feet, from graph based on gage readings); minimum observed, 68 second-feet Oct. 9 (gage height, 1.45 feet).
1939-41: Maximum discharge, that of Nov. 29, 1940; minimum observed, 56 second-feet Sept. 25, 26, 1940 (gage height, 1.39 feet).

Remarks.- Records good. Gage read twice daily. City of Tacoma diverts about 85 second-feet for municipal use. No regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

1.5	82	2.4	530	4.0	2,400
1.7	150	2.7	760	4.5	3,250
1.9	238	3.0	1,050	5.0	4,230
2.1	340	3.5	1,660	6.0	6,820

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	82	602	2,090	719	848	566	640	431	602	303	134	118
2	82	530	1,660	678	760	640	804	431	566	287	130	126
3	82	462	1,600	640	719	640	760	462	530	277	134	150
4	88	400	1,530	602	719	602	678	431	496	267	142	329
5	88	364	1,530	566	678	602	678	496	462	258	134	308
6	82	329	1,600	566	640	566	719	462	462	253	126	287
7	76	324	1,460	530	640	530	640	431	530	238	118	262
8	70	431	1,530	496	602	530	602	431	566	233	118	219
9	70	431	1,530	496	566	530	602	400	530	228	118	174
10	106	388	1,280	462	602	530	602	388	602	228	112	287
11	376	352	1,100	462	566	496	602	364	496	209	a110	329
12	238	324	994	462	530	496	566	462	462	209	a115	287
13	200	292	848	462	530	462	530	431	431	204	118	303
14	174	272	760	462	496	431	566	400	431	200	112	400
15	178	258	719	496	462	400	602	400	400	190	109	566
16	182	258	640	462	462	400	640	462	382	182	106	496
17	122	258	602	760	431	394	678	760	388	182	106	530
18	126	277	602	1,660	431	462	678	804	431	182	103	496
19	134	262	602	1,460	400	496	640	760	496	174	97	496
20	142	258	1,050	1,220	400	462	640	719	530	166	94	496
21	182	253	943	1,050	388	431	602	678	462	166	94	431
22	200	238	848	896	376	431	602	602	431	166	100	394
23	182	228	760	804	364	462	566	566	400	158	106	358
24	258	219	719	760	370	431	530	530	376	158	112	329
25	319	298	678	760	394	400	530	496	376	166	118	303
26	277	340	678	848	370	400	496	530	364	158	142	298
27	209	431	719	760	431	431	462	496	340	150	142	324
28	209	1,100	719	719	566	462	462	462	319	146	158	303
29	200	6,240	804	678	-	462	431	462	319	142	126	287
30	282	3,430	848	678	-	602	431	431	319	142	118	298
31	602	-	760	678	-	602	-	566	-	138	118	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	5,618	602	70	181	11,140
November	19,849	6,240	219	662	39,370
December	32,203	2,090	602	1,039	63,870
Calendar year 1940	276,139	6,240	56	754	547,700
January	22,292	1,660	462	719	44,220
February	14,741	848	364	526	29,240
March	15,349	640	394	495	30,440
April	17,979	804	431	599	35,660
May	15,744	804	364	508	31,230
June	13,499	602	319	450	26,770
July	6,160	303	138	199	12,220
August	3,670	158	94	118	7,280
September	9,984	566	118	333	19,800
Water year 1940-41	177,088	6,240	70	485	351,200

a No gage-height record; discharge computed on basis of records for station near Auburn.

Green River near Auburn, Wash.

Location.- Water-stage recorder, lat. 47°18'15", long. 122°02'10", in lot 3, sec. 17, T. 21, N., R. 5 E., 1½ miles east of Auburn and 2 miles downstream from Big Soos Creek. Datum of gage is at mean sea level, datum of 1929.

Drainage area.- 386 square miles.

Records available.- August 1936 to September 1941.

Extremes.- Maximum discharge during year, 7,290 second-feet Nov. 29 (elevation, 61.60 feet); minimum, 140 second-feet Aug. 22, 23 (elevation, 54.61 feet).
1936-41: Maximum discharge, 14,400 second-feet Apr. 18, 1938 (elevation, 65.88 feet); minimum, 113 second-feet Sept. 25, 1940; minimum elevation, that of Aug. 22, 23, 1941.

Remarks.- Records excellent. City of Tacoma diverts about 85 second-feet from river near Palmer, several miles above station, for municipal supply. No regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-10, Mar. 24 to Apr. 17)

Oct. 1 to Apr. 17				Apr. 18 to Sept. 30	
54.6	116	56.0	1,150	54.8	240
54.8	205	57.0	2,130	55.0	364
55.0	319	58.0	3,130	55.3	579
55.3	532	59.0	4,230	55.6	821
55.6	783	61.0	6,560	56.0	1,170

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	171	801	2,530	1,050	1,150	872	899	579	838	412	196	190
2	157	766	2,030	982	1,070	946	1,130	579	771	391	196	207
3	162	671	1,930	927	1,030	927	1,060	595	722	384	218	234
4	162	596	1,830	881	963	872	982	595	665	371	229	384
5	167	524	1,830	863	918	819	954	657	634	364	212	405
6	157	479	1,980	908	881	774	1,030	641	626	368	196	398
7	149	471	1,830	845	872	740	954	587	689	351	190	338
8	145	604	1,830	783	819	731	899	595	738	345	180	276
9	153	658	1,930	740	811	740	872	572	706	332	170	246
10	186	612	1,680	713	836	722	863	549	738	319	165	332
11	435	564	1,480	688	801	696	828	519	657	313	165	446
12	378	509	1,340	671	774	662	801	587	602	306	180	398
13	313	464	1,200	671	722	620	748	595	579	294	185	378
14	277	428	1,070	713	688	588	722	572	556	288	170	482
15	271	406	982	757	662	564	783	564	542	282	165	649
16	277	392	899	722	637	548	872	657	512	270	165	665
17	200	399	836	1,070	612	540	927	958	519	264	165	722
18	195	435	828	2,030	586	637	906	1,040	572	270	155	714
19	210	413	854	1,980	564	671	880	966	706	264	155	665
20	232	413	1,440	1,680	548	620	846	915	730	258	150	626
21	265	435	1,390	1,440	532	580	804	872	649	252	150	579
22	295	392	1,200	1,290	517	596	771	804	587	246	145	526
23	289	365	1,110	1,150	509	604	738	738	556	240	155	475
24	442	399	1,050	1,070	524	580	714	689	519	240	175	432
25	517	449	1,020	1,100	548	556	689	649	512	240	185	398
26	442	494	1,010	1,200	517	556	657	618	497	240	212	391
27	372	572	1,100	1,100	588	564	649	641	468	229	218	412
28	326	1,270	1,090	1,040	801	588	641	657	446	224	229	398
29	313	5,920	1,130	972	-	620	610	626	432	218	212	371
30	399	3,790	1,110	936	-	774	595	587	432	218	185	364
31	774	-	1,150	963	-	810	-	738	-	202	180	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	8,831	774	145	285	17,520
November	24,721	5,920	365	824	49,030
December	42,689	2,530	828	1,377	84,670
Calendar year 1940	347,823	5,920	113	950	689,800
January	31,935	2,030	671	1,030	63,340
February	20,482	1,150	509	732	40,630
March	21,116	945	540	681	41,880
April	24,824	1,130	595	827	49,240
May	20,941	1,040	519	676	41,540
June	18,200	838	432	607	36,100
July	8,985	412	202	290	17,820
August	5,653	229	145	182	11,210
September	13,101	722	190	437	25,990
Water year 1940-41	241,478	5,920	145	662	479,000

Cedar River at Cedar Falls, Wash.

Location.- Water-stage recorder, lat. 47°25'10", long. 121°47'20", in sec. 4, T. 22 N., R. 8 E., three-quarters of a mile downstream from Seattle municipal power plant at Cedar Falls and 3 miles downstream from Cedar Lake.

Drainage area.- 86 square miles.

Records available.- April 1914 to September 1941.

Average discharge.- 27 years, 286 second-feet.

Extremes (regulated).- Maximum discharge during year, 742 second-feet Nov. 28 (gage height, 6.75 feet); minimum, 31 second-feet Nov. 19 (gage height, 4.93 feet); minimum daily, 52 second-feet July 12.
1914-41: Maximum discharge, 6,290 second-feet Dec. 19, 1917; maximum gage height, 11.5 feet Dec. 22, 1933; no flow Nov. 25, 1917, Aug. 18, 1923; minimum daily, 2 second-feet Sept. 20, 1922.

Remarks.- Records excellent. All diverted water returned to river above station. Flow partly regulated by Cedar Lake Reservoir for power.

Cooperation.- Gage-height record collected in cooperation with city of Seattle.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

5.0	40	5.6	156	6.3	455
5.2	71	5.8	220		
5.4	108	6.0	305		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	69	287	81	81	116	67	69	83	76	59	54
2	73	67	276	79	81	76	64	69	81	74	79	68
3	68	68	254	78	94	98	67	69	79	72	66	84
4	60	64	315	76	78	171	66	81	78	71	59	109
5	54	62	298	76	78	190	69	71	76	71	58	90
6	54	62	338	76	91	120	112	71	79	71	58	81
7	54	64	295	76	95	67	67	71	94	71	58	60
8	54	64	282	190	78	178	69	71	89	71	58	95
9	68	64	306	231	76	117	85	67	85	71	58	96
10	59	62	109	226	76	66	76	67	81	95	65	94
11	62	61	94	245	96	83	168	67	78	122	64	92
12	59	59	89	294	115	84	67	72	93	52	61	83
13	59	140	78	234	97	66	66	72	82	71	61	108
14	58	70	67	219	98	83	66	72	76	66	56	66
15	61	86	66	208	124	67	69	72	131	64	58	121
16	59	58	81	206	77	113	71	76	90	64	56	153
17	59	58	84	229	135	90	95	85	76	64	56	128
18	58	84	73	98	110	89	87	81	78	65	58	116
19	58	82	81	196	110	70	69	89	79	64	56	216
20	61	111	95	98	100	59	69	78	79	66	56	74
21	61	69	78	85	97	71	69	78	78	64	58	64
22	59	92	78	83	104	68	69	82	78	66	61	151
23	59	69	76	81	175	89	71	79	78	64	56	190
24	67	58	76	87	198	66	69	102	80	66	56	154
25	67	120	74	83	197	66	67	121	88	62	62	182
26	67	120	76	122	207	66	67	74	135	64	73	115
27	66	196	79	81	182	64	127	74	79	69	64	128
28	64	115	78	79	198	66	67	77	76	62	59	56
29	78	142	83	87	-	67	71	73	74	61	62	213
30	69	299	85	79	-	66	67	74	74	61	53	213
31	72	-	83	79	-	66	-	85	-	59	54	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,925	78	54	62.1	-	-	3,820
November	2,735	299	58	91.2	-	-	5,420
December	4,434	338	66	143	-	-	8,790
Calendar year 1940	67,038	845	53	183	2.13	28.99	133,000
January	4,162	294	76	134	-	-	8,260
February	3,248	207	76	116	-	-	6,440
March	2,758	190	59	89.0	-	-	5,470
April	2,313	168	64	77.1	-	-	4,590
May	2,389	121	67	77.1	-	-	4,740
June	2,527	135	74	84.2	-	-	5,010
July	2,139	122	52	69.0	-	-	4,240
August	1,858	79	53	59.9	-	-	3,690
September	3,444	216	54	115	-	-	6,830
Water year 1940-41	33,932	338	52	93.0	1.08	14.66	67,300

Note.- Monthly discharge in second-feet per square mile and runoff in inches not computed, owing to regulation. Yearly figures closely represent natural flow.

Cedar River near Landsberg, Wash.

Location.- Water-stage recorder, lat. 47°23'35", long. 121°56'50", in sec. 17, T. 22 N., R. 7 E., 1¾ miles upstream from Landsberg and intake of Seattle water-supply system, 7 miles upstream from Maple Valley, and 12 miles downstream from Cedar Lake.
Drainage area.- 138 square miles (including that of Rock Creek).
Records available.- April 1914 to September 1941. July 1895 to September 1898 (at site 2 miles downstream, published as Cedar River at Clifford Bridge, near Ravensdale, Wash.), and March 1901 to April 1912 (at site of Seattle water-supply intake, published as Cedar River near Ravensdale, Wash.).
Average discharge.- 43 years (1895-1911, 1914-41), 690 second-feet (adjusted for Rock Creek diversion since October 1932).
Extremes.- Maximum discharge during year, 1,050 second-feet (regulated) Nov. 28 (gage height, 2.52 feet); minimum, 226 second-feet (regulated) Oct. 8, 9 (gage height, 0.95 foot).
1895-98, 1901-12, 1914-41: Maximum discharge observed, 13,600 second-feet Nov. 19, 1911 (gage height, 9.7 feet, site and datum then in use); minimum observed, 83 second-feet Sept. 19, 1898.
Remarks.- Records excellent except those for periods of no gage-height record, which are fair. All diversions except Rock Creek returned to river above station. Rock Creek which entered naturally just above gage has been diverted to a point below Seattle municipal water-supply intake to lessen danger of pollution. Monthly discharge adjusted for diversion estimated on basis of 11 discharge measurements, and relation of flow of Rock Creek to difference in discharge between records of Cedar River at Cedar Falls and near Landsberg. Flow of river partly regulated by Cedar Lake.
Cooperation.- Gage-height record collected in cooperation with city of Seattle.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

1.0	242	1.4	395	2.0	700
1.2	314	1.6	486		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	253	277	593	334	397	438	330	310	382	337	288	262
2	258	281	549	326	374	392	345	310	361	330	288	274
3	258	274	542	318	388	391	330	310	349	326	288	298
4	252	263	560	314	368	419	326	330	341	318	280	326
5	240	256	630	314	362	469	334	320	337	318	280	322
6	238	249	594	314	373	439	393	320	353	314	280	310
7	232	263	589	310	376	352	336	320	413	318	277	276
8	229	281	596	389	358	376	334	320	387	315	277	296
9	240	281	584	454	351	438	345	310	378	317	277	300
10	266	266	441	454	364	363	342	310	366	324	284	327
11	310	260	370	464	377	352	422	310	357	368	284	321
12	256	252	348	504	385	351	330	320	370	314	282	304
13	253	324	332	482	372	336	322	320	353	320	281	322
14	239	266	310	452	372	342	322	320	346	320	276	306
15	235	281	304	436	388	335	336	320	347	314	274	384
16	232	256	319	442	364	370	343	330	396	310	270	413
17	229	258	315	543	392	346	364	350	341	310	271	397
18	235	282	306	474	390	368	354	340	356	314	271	378
19	232	276	328	524	383	340	342	350	376	310	266	438
20	235	298	416	402	374	326	326	340	372	303	266	336
21	263	273	358	378	367	336	322	345	357	303	266	300
22	242	282	341	370	370	342	318	337	351	307	268	347
23	239	264	330	366	417	357	314	348	348	303	270	409
24	292	256	326	370	466	330	314	330	350	303	264	354
25	277	308	326	382	471	326	314	394	358	296	268	378
26	263	328	330	416	474	322	310	327	387	296	284	340
27	252	398	345	372	478	326	362	325	364	299	276	340
28	246	477	337	361	488	318	312	338	340	296	279	271
29	264	658	366	361	-	322	310	326	338	292	270	376
30	292	629	361	361	-	326	310	323	336	288	268	408
31	296	-	345	374	-	318	-	410	-	288	260	-

Month	Observed				Rock Creek Diversion (acre-feet)	Adjusted for diversion			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Runoff in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	310	229	253	15,570	1,290	16,860	274	-	-
November	658	249	311	18,480	1,550	20,030	337	-	-
December	630	304	413	25,370	2,890	28,260	460	-	-
Calendar year 1940	1,360	229	492	357,200	18,200	375,400	517	3.75	51.04
January	543	310	399	24,520	2,340	26,860	437	-	-
February	488	351	394	21,880	1,220	23,100	416	-	-
March	469	318	360	22,150	1,410	23,560	383	-	-
April	422	310	335	19,960	1,010	20,970	352	-	-
May	410	310	331	20,360	1,050	21,410	348	-	-
June	413	336	360	21,440	1,010	22,450	377	-	-
July	368	288	312	19,180	430	19,610	319	-	-
August	288	260	275	16,920	120	17,040	277	-	-
September	438	262	337	20,060	650	20,710	348	-	-
Water year 1940-41	658	229	340	245,900	14,970	260,900	360	2.61	35.43

Note.- Monthly discharge in second-feet per square mile and runoff in inches not computed, owing to regulation. Yearly figures closely represent natural flow.

Sammamish Lake near Redmond, Wash.

Location.- Staff gage, lat. 47°39'00", long. 122°06'30", in SE¼ sec. 13, T. 25 N., R. 5 E., on left shore, half a mile upstream from outlet and 1¾ miles south of Redmond. Datum of gage is 32.13 feet above mean lower low water (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 91 square miles.

Records available.- January 1939 to September 1941.

Extremes.- Maximum gage height observed during year, 3.59 feet Jan. 26; minimum observed, 0.60 foot Oct. 8.
1939-41: Maximum gage height observed, 6.05 feet Mar. 9, 10, 1940; minimum observed, 0.25 foot Sept. 27, 30, Oct. 1, 1939.

Remarks.- Records excellent. Gage read once daily. No known diversion or regulation.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.63	1.42	1.96	3.00	3.53	2.54	1.96	1.74	1.84	1.71	1.20	1.02
2	.61	1.46	1.99	2.99	3.51	2.58	2.01	1.73	1.84	1.69	1.18	1.05
3	.62	1.50	2.04	2.98	3.48	2.58	2.01	1.72	1.84	1.68	1.18	1.13
4	.63	1.51	2.06	2.98	3.47	2.57	2.01	1.70	1.84	1.67	1.18	1.16
5	.64	1.50	2.09	2.98	3.41	2.54	2.01	1.70	1.84	1.65	1.17	1.18
6	.62	1.49	2.11	2.98	3.35	2.52	2.01	1.68	1.84	1.62	1.16	1.19
7	.61	1.52	2.15	2.98	3.33	2.50	2.01	1.66	1.84	1.61	1.15	1.18
8	.60	1.54	2.24	2.98	3.29	2.47	2.00	1.64	1.86	1.60	1.14	1.18
9	.62	1.60	2.38	2.96	3.24	2.43	2.00	1.61	1.85	1.58	1.13	1.22
10	.68	1.63	2.44	2.93	3.23	2.40	1.99	1.59	1.83	1.56	1.12	1.30
11	.72	1.65	2.46	2.90	3.20	2.37	1.97	1.55	1.82	1.53	1.10	1.32
12	.76	1.65	2.49	2.86	3.16	2.33	1.95	1.59	1.80	1.51	1.11	1.33
13	.76	1.64	2.48	2.85	3.12	2.29	1.91	1.57	1.80	1.49	1.09	1.38
14	.75	1.63	2.46	2.85	3.07	2.24	1.91	1.57	1.79	1.48	1.08	1.40
15	.74	1.63	2.44	2.88	3.02	2.20	1.99	1.55	1.78	1.47	1.07	1.39
16	.73	1.62	2.43	2.89	2.96	2.17	2.05	1.58	1.76	1.47	1.05	1.41
17	.72	1.62	2.39	2.98	2.91	2.14	2.06	1.70	1.75	1.44	1.05	1.43
18	.77	1.63	2.36	3.20	2.86	2.14	2.05	1.74	1.75	1.43	1.04	1.44
19	.79	1.63	2.39	3.36	2.81	2.17	2.05	1.78	1.77	1.49	1.03	1.45
20	.86	1.63	2.50	3.46	2.75	2.14	2.02	1.78	1.83	1.44	1.02	1.52
21	.92	1.64	2.55	3.50	2.70	2.11	1.99	1.78	1.84	1.42	1.02	1.55
22	.93	1.64	2.59	3.53	2.66	2.14	1.97	1.78	1.83	1.38	1.01	1.56
23	.96	1.65	2.62	3.54	2.61	2.13	1.94	1.77	1.82	1.34	1.01	1.56
24	1.13	1.65	2.62	3.54	2.58	2.11	1.92	1.75	1.79	1.32	1.01	1.56
25	1.20	1.65	2.66	3.56	2.56	2.08	1.90	1.74	1.79	1.31	1.02	1.56
26	1.22	1.66	2.72	3.59	2.52	2.05	1.86	1.72	1.78	1.31	1.01	1.56
27	1.22	1.69	2.79	3.57	2.52	2.02	1.83	1.72	1.77	1.29	1.02	1.56
28	1.24	1.74	2.83	3.54	2.54	1.99	1.81	1.71	1.76	1.27	1.03	1.54
29	1.25	1.83	2.88	3.52	-	1.96	1.78	1.70	1.74	1.26	1.03	1.55
30	1.32	1.92	2.93	3.48	-	1.98	1.74	1.69	1.73	1.24	1.02	1.57
31	1.38	-	2.98	3.49	-	1.96	-	1.78	-	1.22	1.04	-

Sammamish River near Redmond, Wash.

Location.- Staff gage, lat. 47°39'00", long. 122°06'30", in SE¼ sec. 13, T. 25 N., R. 5 E., on left shore of Lake Sammamish, half a mile upstream from outlet and 1¾ miles south of Redmond. Datum of gage is 32.13 feet above mean lower low water (Corps of Engineers, U. S. Army, bench mark). Discharge measurements made below mouth of Bear Creek.

Drainage area.- 140 square miles, including that of Bear Creek.

Records available.- January 1939 to September 1941 (including flow of Bear Creek).

Extremes.- Maximum discharge observed during year, 370 second-feet Jan. 20-26; minimum observed, 56 second-feet Aug. 16-23.
1939-41: Maximum discharge observed, 689 second-feet Mar. 9, 10, 1940; minimum observed, 51 second-feet Sept. 27, 30, Oct. 1, 1939 (gage height, 0.25 foot).

Remarks.- Records fair. Gage read once daily. No known diversions or regulation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	137	194	318	344	251	194	172	152	97	62	61
2	66	142	199	318	344	257	199	172	147	97	61	63
3	67	147	204	318	331	257	199	167	147	93	61	68
4	68	147	204	318	331	257	199	167	147	93	61	71
5	69	147	210	318	331	257	199	167	142	93	61	72
6	67	147	210	318	324	257	199	167	142	90	61	74
7	66	147	216	318	318	251	199	162	142	88	61	74
8	66	152	227	318	318	251	199	162	142	87	60	74
9	67	157	245	312	312	251	199	157	137	85	60	78
10	72	162	251	312	312	245	199	157	137	84	60	83
11	75	162	251	305	312	239	194	152	132	81	58	85
12	79	162	257	299	305	239	194	157	132	80	59	87
13	79	162	257	299	299	233	188	152	127	78	58	90
14	78	162	251	299	299	227	188	152	126	78	57	93
15	77	162	251	305	293	221	199	147	124	76	57	93
16	76	157	251	305	287	216	204	147	121	76	56	93
17	75	157	245	318	281	216	204	157	119	74	56	93
18	80	162	239	344	275	216	204	162	117	73	56	93
19	81	162	245	357	269	216	204	162	118	77	56	93
20	87	162	257	370	263	216	199	162	121	73	56	100
21	92	162	263	370	263	210	199	162	120	72	56	100
22	93	162	269	370	257	218	194	157	118	69	56	100
23	96	162	269	370	251	216	194	157	116	68	56	100
24	111	162	269	370	251	210	188	152	112	66	57	100
25	118	162	275	370	251	210	188	152	110	66	58	100
26	119	162	281	370	245	204	182	147	108	66	57	97
27	119	167	293	357	245	199	182	147	106	65	58	97
28	121	172	299	357	251	199	177	142	104	65	60	97
29	122	182	305	344	-	194	177	142	100	64	60	97
30	127	188	312	344	-	199	172	137	98	64	60	97
31	137	-	318	331	-	194	-	147	-	62	61	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	2,718	137	66	87.7	.626	.72	5,390
November	4,776	188	137	159	1.14	1.27	9,470
December	7,817	318	194	252	1.80	2.08	15,500
Calendar year 1940	93,784	689	62	266	1.83	24.91	186,000
January	10,322	370	299	333	2.38	2.74	20,470
February	8,162	344	245	292	2.09	2.17	16,190
March	7,024	257	194	227	1.62	1.87	13,930
April	5,816	204	172	194	1.39	1.54	11,540
May	4,842	172	137	156	1.11	1.29	9,600
June	3,764	152	98	126	.893	1.00	7,470
July	2,400	97	62	77.4	.553	.64	4,760
August	1,816	62	56	58.6	.419	.48	3,600
September	2,623	100	61	87.4	.624	.70	5,200
Water year 1940-41	62,080	370	56	170	1.21	16.50	123,100

Note.- Shifting-control method used Jan. 19 to Mar. 8, May 12 to Sept. 30.

Sammamish River at Bothell, Wash.

Location.- Water-stage recorder, lat. 47°45'00", long. 122°11'30", in NW¼SE¼ sec. 8, T. 26 N., R. 5 E., in Bothell, a quarter of a mile downstream from North Creek and 4½ miles upstream from mouth. Datum of gage is mean lower low water at Seattle (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 199 square miles.

Records available.- October 1939 to September 1941.

Extremes.- Maximum discharge during year, 752 second-feet Jan 18 (elevation, 29.75 feet); minimum, 66 second-feet Aug. 21.
1939-41: Maximum discharge, 878 second-feet Mar. 5, 8, 9, 1940 (elevation, 30.1 feet); minimum, that of Aug. 21, 1941.

Remarks.- Records good. No known diversions nor artificial regulation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	122	214	262	377	525	377	276	202	232	120	74	a80
2	113	214	262	363	480	391	342	197	202	118	76	a90
3	108	202	262	363	450	356	295	197	186	114	f76	120
4	106	192	262	363	435	342	295	202	175	112	f74	110
5	102	186	282	363	420	328	302	214	170	110	74	97
6	100	186	276	377	405	321	295	208	170	a110	73	93
7	98	208	269	377	391	314	288	197	175	a105	74	92
8	98	262	335	363	391	308	276	180	170	a105	72	91
9	99	288	349	356	391	295	276	186	164	f102	72	103
10	116	250	321	342	391	288	276	180	159	a100	71	154
11	134	238	308	335	391	288	262	186	154	a95	71	149
12	122	220	295	335	377	282	256	192	149	a95	76	124
13	126	214	288	342	363	276	250	180	149	a95	74	125
14	120	208	282	356	356	269	250	186	149	a95	72	125
15	116	202	276	420	349	269	391	180	144	a90	72	130
16	114	202	276	450	342	269	356	192	144	a90	71	125
17	113	220	276	573	a335	262	321	295	144	a85	70	125
18	120	244	282	735	a330	288	302	276	144	a84	69	123
19	144	220	314	685	321	295	282	238	154	a100	69	122
20	175	220	480	605	314	282	269	220	154	a90	67	130
21	159	238	391	525	314	269	262	208	149	f86	67	125
22	144	220	363	495	308	288	250	197	144	f84	69	123
23	149	214	356	480	308	282	244	186	144	83	77	121
24	214	238	377	465	308	276	238	175	139	83	77	120
25	197	232	391	495	308	269	232	170	139	80	74	120
26	170	220	391	480	308	262	226	170	134	78	a70	121
27	159	244	435	465	328	256	220	170	134	78	a75	120
28	154	295	405	435	349	256	208	159	130	77	a75	120
29	170	308	420	420	-	250	208	159	130	76	a75	125
30	232	276	405	420	-	250	202	164	125	75	a75	125
31	220	-	405	465	-	250	-	237	-	74	a75	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	4,313	232	98	139	.698	.81	8,550
November	6,875	308	186	229	1.15	1.28	13,640
December	10,296	480	262	332	1.67	1.92	20,420
Calendar year 1940	119,333	878	82	326	1.64	22.29	236,700
January	13,625	735	335	440	2.21	2.55	27,020
February	10,288	525	308	367	1.84	1.92	20,410
March	9,008	391	250	291	1.46	1.68	17,870
April	8,150	391	202	272	1.37	1.52	16,170
May	6,103	295	159	197	.990	1.14	12,110
June	4,656	232	125	155	.779	.87	9,240
July	2,889	120	74	93.2	.468	.54	5,730
August	2,256	77	67	72.8	.366	.42	4,470
September	3,528	164	80	118	.593	.66	7,000
Water year 1940-41	81,987	735	67	225	1.13	15.31	162,600

a No gage-height record; discharge computed on basis of records for station near Redmond.
f Computed on basis of partly estimated gage-height record.
Note.- Shifting-control method used Oct. 1 to Dec. 7, Jan. 17-25, Feb. 2 to Sept. 30.

South Fork of Skykomish River near Index, Wash.

Location.- Water-stage recorder, lat. 47°48'20", long. 121°32'40", in NE¼ sec. 29, T. 27 N., R. 10 E., 600 feet upstream from Sunset Falls, 2 miles upstream from confluence with North Fork, and 2 miles southeast of Index. Datum of gage is 574.76 feet above mean sea level, datum of 1929. Discharge measurements made about 2 miles (revised) upstream from gage.

Drainage area.- 355 square miles.

Records available.- October 1902 to September 1905, April 1911 to September 1941.

Average discharge.- 33 years, 2,316 second-feet.

Extremes.- Maximum discharge during year, 13,000 second-feet Nov. 29 (gage height, 12.22 feet); minimum, 291 second-feet Oct. 9 (gage height, 2.34 feet).
1902-5, 1911-41: Maximum discharge observed, 57,000 second-feet Dec. 18, 1917 (gage height, 22.6 feet, site then in use); minimum observed, 214 second-feet Oct. 15-21, 23, 1925.

Remarks.- Records good. No diversion or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Dec. 9 to Jan. 15 and Apr. 2-24)

Oct. 1 to Apr. 10

2.5	360	4.0	1,370	7.0	4,310
2.8	510	4.5	1,790	8.0	5,700
3.0	635	5.0	2,240	9.0	7,250
3.5	980	6.0	3,190	10.0	8,910

Apr. 11 to Sept. 30

2.5	380	4.0	1,410
2.8	536	4.5	1,810
3.0	661	5.0	2,240
3.5	1,010		

Note.- Same as preceding table above 5.0 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	356	1,570	3,090	1,210	2,150	1,490	2,150	1,930	2,280	975	428	491
2	360	1,490	3,190	1,090	1,970	1,920	2,420	1,770	1,970	919	414	502
3	333	1,410	3,600	1,020	1,700	1,490	1,970	1,730	1,770	S91	414	969
4	342	1,250	3,090	945	1,530	1,290	1,660	1,530	1,610	863	418	1,610
5	360	1,130	3,090	903	1,370	1,170	1,570	1,650	1,570	828	399	1,090
6	342	1,020	3,290	868	1,290	1,130	1,610	1,650	1,570	814	390	849
7	320	1,170	2,690	812	1,250	1,090	1,490	1,490	1,850	814	390	863
8	303	1,490	3,600	763	1,210	1,170	1,450	1,330	1,650	772	390	696
9	303	1,330	3,090	756	1,130	1,170	1,530	1,210	1,530	744	385	842
10	2,840	1,130	2,420	784	1,090	1,090	1,660	1,210	1,450	696	385	2,280
11	3,340	1,020	1,970	S12	1,090	1,020	1,610	1,530	1,450	675	376	1,770
12	1,490	910	1,700	854	1,050	980	1,490	2,790	1,490	661	438	1,490
13	1,450	819	1,490	896	1,020	945	1,370	2,240	1,410	654	404	2,240
14	1,210	763	1,330	945	945	889	1,370	2,020	1,290	654	376	3,390
15	910	728	1,210	945	889	868	1,690	1,730	1,170	654	380	3,880
16	763	805	1,090	a1,050	854	889	1,530	2,250	1,090	648	376	3,380
17	714	833	1,020	a2,000	819	945	1,410	4,570	1,090	648	362	3,460
18	1,170	798	1,020	5,850	791	1,090	1,370	3,820	1,290	616	362	2,420
19	1,210	728	1,050	3,190	770	1,170	1,330	2,990	1,530	590	354	1,970
20	1,410	694	2,020	2,330	756	1,090	1,330	2,990	1,850	560	358	2,020
21	3,090	661	1,740	1,880	735	1,020	1,450	2,890	1,450	542	354	1,690
22	2,100	602	1,740	1,610	728	1,050	1,530	2,690	1,290	519	349	1,410
23	1,490	570	1,530	1,450	721	1,050	1,650	2,690	1,210	491	371	1,250
24	2,150	609	1,410	1,330	721	980	1,650	2,600	1,130	508	380	1,130
25	1,920	875	1,330	1,570	714	980	1,770	2,420	1,210	508	345	1,010
26	1,450	910	1,330	1,740	700	1,090	1,810	2,060	1,130	480	362	975
27	1,210	1,450	1,330	1,490	770	1,290	1,810	1,810	1,010	480	418	905
28	1,050	4,660	1,370	1,370	1,130	1,490	1,690	1,730	975	470	404	842
29	1,020	S,490	1,530	1,290	-	1,700	1,850	1,650	1,050	464	385	800
30	1,410	4,400	1,490	1,250	-	1,970	1,970	1,530	1,050	454	354	1,110
31	1,790	-	1,330	1,490	-	1,970	-	2,690	-	444	362	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	38,206	3,340	303	1,232	3.47	4.00	75,780
November	44,315	8,490	570	1,477	4.16	4.64	87,900
December	61,180	3,600	1,020	1,974	5.56	6.41	121,300
Calendar year 1940	611,622	8,490	279	1,671	4.71	64.07	1,213,000
January	44,493	5,850	756	1,435	4.04	4.66	88,250
February	29,893	2,150	700	1,068	3.01	3.13	59,290
March	37,486	1,970	868	1,209	3.41	3.93	74,350
April	49,190	2,420	1,330	1,640	4.62	5.15	97,570
May	67,190	4,570	1,210	2,167	6.10	7.04	133,300
June	42,415	2,280	975	1,414	3.98	4.44	84,130
July	20,036	975	444	646	1.82	2.10	39,740
August	11,883	438	345	383	1.08	1.24	23,570
September	47,334	3,880	491	1,578	4.45	4.96	93,890
Water year 1940-41	493.621	8,490	303	1,352	3.81	51.70	979,100

a No gage-height record; discharge computed on basis of records for Skykomish River near Gold Bar.

Skykomish River near Gold Bar, Wash.

Location.- Water-stage recorder, lat. 47°50'15", long. 121°40'00", in SW¼ sec. 9, T. 27 N., R. 9 E., 2 miles southeast of Gold Bar and 5 miles upstream from Wallace River and Startup. Datum of gage is 210.01 feet above mean sea level, unadjusted.

Drainage area.- 535 square miles.

Records available.- September 1928 to September 1941.

Average discharge.- 13 years, 3,608 second-feet.

Extremes.- Maximum discharge during year, 21,600 second-feet Nov. 28 (gage height, 11.38 feet); minimum, 473 second-feet Oct. 9 (gage height, 2.89 feet).
1928-41: Maximum discharge, 79,000 second-feet Dec. 21, 1933 (gage height, 21.3 feet); minimum, 382 second-feet Oct. 9, 1938 (gage height, 2.78 feet).

Remarks.- Records excellent. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

2.9	480	4.0	1,460	5.5	3,430	7.5	7,200
3.1	635	4.3	1,800	6.0	4,240	8.0	8,600
3.3	800	4.6	2,170	6.5	5,110	9.0	11,800
3.6	1,070	5.0	2,710	7.0	6,050	10.0	15,700

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	699	2,850	4,750	2,040	3,580	2,640	3,430	3,060	3,500	1,460	659	827
2	675	2,640	a5,150	1,800	3,360	3,280	3,740	2,850	2,990	1,410	635	863
3	597	2,430	a6,440	1,680	2,850	2,640	2,990	2,730	2,710	1,360	627	1,720
4	611	2,170	a5,150	1,620	2,500	2,240	2,570	2,430	2,500	1,310	659	3,150
5	635	1,920	a5,150	1,520	2,300	1,980	2,430	2,640	2,430	1,230	635	1,920
6	595	1,800	a5,540	1,460	2,100	1,860	2,500	2,710	2,430	1,200	611	1,520
7	540	1,980	a4,450	1,410	2,040	1,860	2,300	2,360	2,850	1,200	611	1,520
8	518	2,570	6,480	1,310	1,980	1,920	2,240	2,100	2,500	1,150	611	1,240
9	495	2,300	5,290	1,310	1,800	1,920	2,360	1,920	2,300	1,120	611	1,390
10	6,000	1,980	4,160	1,410	1,800	1,740	2,500	1,920	2,240	1,040	619	3,570
11	5,990	1,800	3,430	1,460	1,800	1,680	2,430	2,500	2,240	1,020	587	2,780
12	2,570	1,570	2,920	1,520	1,740	1,620	2,300	4,410	2,300	989	667	2,430
13	2,500	1,460	2,570	1,570	1,680	1,520	2,100	3,580	2,240	971	659	3,620
14	1,980	1,360	2,300	1,620	1,570	1,460	2,100	3,280	1,980	971	595	5,660
15	1,570	1,310	2,100	1,620	1,460	1,410	2,640	2,780	1,800	953	587	5,820
16	1,260	1,410	1,920	1,800	1,410	1,460	2,430	3,890	1,680	953	595	5,270
17	1,210	1,460	1,800	2,980	1,360	1,520	2,170	7,460	1,620	953	563	5,290
18	2,710	1,410	1,740	8,600	1,310	1,800	2,100	5,850	2,040	944	563	3,660
19	2,780	1,310	1,920	5,110	1,260	1,920	2,040	4,580	2,360	899	548	3,060
20	3,060	1,260	3,500	3,740	1,230	1,800	2,100	4,580	2,920	863	555	3,060
21	5,560	1,200	2,990	3,060	1,210	1,620	2,240	4,410	2,240	827	548	2,570
22	3,740	1,120	2,990	2,570	1,190	1,800	2,430	4,240	1,980	800	532	2,240
23	2,640	1,080	2,710	2,300	1,160	1,740	2,640	4,160	1,800	749	635	1,920
24	3,500	1,130	2,430	2,100	1,170	1,620	2,710	4,160	1,680	740	683	1,740
25	3,200	1,570	2,360	2,640	1,170	1,620	2,850	3,740	1,800	749	571	1,620
26	2,430	1,620	2,300	2,850	1,140	1,800	2,920	3,280	1,680	715	587	1,570
27	2,040	2,330	2,360	2,430	1,260	2,240	2,920	2,850	1,570	715	691	1,520
28	1,740	7,420	2,360	2,240	2,040	2,500	2,710	2,710	1,460	715	691	1,410
29	1,740	13,400	2,780	2,100	-	2,850	2,920	2,570	1,620	707	659	1,360
30	2,500	6,520	2,640	2,040	-	3,280	3,200	2,430	1,620	691	595	1,930
31	3,280	-	2,300	2,500	-	3,280	-	3,960	-	683	595	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	69,355	6,000	495	2,237	4.18	4.82	137,600
November	74,380	13,400	1,080	2,479	4.63	5.17	147,500
December	104,980	6,480	1,740	3,386	6.33	7.30	208,200
Calendar year 1940	998,726	13,400	445	2,729	5.10	69.41	1,981,000
January	72,410	8,600	1,310	2,336	4.37	5.03	143,600
February	49,470	3,580	1,140	1,767	3.30	3.44	98,120
March	62,620	3,280	1,410	2,020	3.78	4.35	124,200
April	77,010	3,740	2,040	2,567	4.80	5.35	152,700
May	106,190	7,460	1,920	3,425	6.40	7.38	210,600
June	65,080	3,500	1,460	2,169	4.05	4.52	129,100
July	30,087	1,460	683	971	1.81	2.09	59,680
August	18,984	691	532	612	1.14	1.32	37,650
September	76,250	5,820	827	2,542	4.75	5.30	151,200
Water year 1940-41	806,816	13,400	495	2,210	4.13	56.07	1,600,000

a No gage-height record; discharge computed on basis of records for South Fork of Skykomish River near Index.

Snohomish River at Snohomish, Wash.

Location.- Water-stage recorder, lat. 47°54'32", long. 122°06'00", in SE¼ sec. 13, T. 29N., R. 5 E., on downstream end of drawrest of bridge No. 205 on State Highway 1A in Snohomish. Auxiliary water-stage recorder, lat. 47°54'14", long. 122°08'15", in lot 3, SE¼ sec. 10, T. 29 N., R. 5 E., on right bank of river at downstream end of county road trestle over railroad tracks and about 2 miles west of Snohomish. Datum of both gages is 10.00 feet below mean sea level, datum of 1929.

Drainage area.- 1,700 square miles.

Records available.- February to September 1941 (flood discharges only). The Northern Pacific R. R. Co. has record of gage heights at their bridge a quarter of a mile upstream since 1906. High-water elevations prior to 1932 and high-water profiles on flood peaks since that time are available at the Seattle office of Corps of Engineers, U. S. Army.

Extremes.- Maximum discharge during period February to September, 22,200 second-feet May 18 (gage height, 18.14 feet); maximum gage height, 19.33 feet May 18, affected by backwater from tide.

Maximum stage known, 35 feet at base gage and 31 feet at auxiliary gage in 1906, from flood profile furnished by Corps of Engineers, U. S. Army.

Remarks.- Records good. No appreciable regulation or diversion at stages for which discharges are published.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								-				-
2								-				-
3								-				-
4								-				-
5								-				-
6								-				-
7								-				-
8								-				-
9								-				-
10								-				-
11								-				-
12								-				-
13								-				-
14								-				13,700
15								-				18,000
16								-				13,600
17								17,600				15,100
18								19,700				11,400
19								14,800				-
20								12,600				-
21								12,100				-
22								10,800				-
23								-				-
24								-				-
25								-				-
26								-				-
27								-				-
28								-				-
29								-				-
30								-				-
31								-				-

Troublesome Creek near Index, Wash.

Location.- Water-stage recorder, lat. 47°54'00", long. 121°23'50", in NE¼ sec. 21, T. 28 N., R. 11 E. (unsurveyed), a quarter of a mile upstream from mouth and 9 miles northeast of Index.
Drainage area.- 10.4 square miles at measuring section, 1½ miles upstream from gage.
Records available.- July 1929 to October 1941 (discontinued).
Average discharge.- 12 years, 114 second-feet.
Extremes.- 1940-41: Maximum discharge during water year, 575 second-feet Oct. 10 (gage height, 3.36 feet); minimum, 19 second-feet Jan. 9; minimum gage height, 0.59 foot Oct. 9.
1929-41: Maximum discharge, 2,300 second-feet Dec. 21, 1933 (gage height, 7.0 feet), from rating curve extended above 750 second-feet; maximum gage height, 7.54 feet Feb. 26, 1932; minimum discharge, 10 second-feet Nov. 17, 18, 19, 1936.
Remarks.- Records fair; they represent discharge at measuring section, 1½ miles above gage. No diversion or regulation.

Discharge, in second-feet, 1940-41
1940-41

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	36	112	134	46	85	70	101	96	102	82	34	42
2	32	98	125	39	88	88	104	90	93	76	31	49
3	29	88	170	32	81	81	92	85	84	75	29	76
4	28	79	138	29	70	73	80	76	78	70	28	152
5	29	71	154	26	60	64	71	76	78	66	26	116
6	28	67	177	24	52	56	68	79	82	64	25	95
7	27	69	154	22	47	51	63	73	93	69	26	86
8	26	75	206	20	45	49	57	65	85	66	29	70
9	26	73	167	20	40	49	56	57	75	60	32	67
10	296	68	115	25	38	47	60	55	70	55	34	109
11	316	60	88	30	38	44	64	73	83	54	34	101
12	153	52	65	33	38	42	62	135	98	54	37	96
13	126	44	55	34	36	39	57	132	101	57	37	150
14	98	39	45	35	34	36	54	118	90	60	34	261
15	76	36	40	34	32	34	57	101	81	65	35	215
16	65	40	34	36	29	34	63	130	70	70	34	239
17	63	42	30	74	28	36	61	204	63	71	33	219
18	244	41	35	284	27	42	58	179	74	69	32	153
19	244	38	44	187	25	46	54	153	86	64	32	116
20	237	34	86	112	24	46	52	136	97	56	34	100
21	285	32	63	85	24	43	55	118	86	51	35	85
22	199	30	65	71	23	44	64	114	85	43	34	75
23	137	29	59	59	23	44	75	122	88	37	41	68
24	149	28	55	51	23	41	79	129	82	35	41	64
25	122	37	57	57	23	40	86	123	82	34	32	60
26	98	41	57	67	24	44	89	107	80	33	32	62
27	81	51	61	64	26	50	88	92	73	35	36	63
28	72	147	67	57	46	64	82	83	73	37	36	56
29	67	288	75	53	-	79	89	76	83	36	33	51
30	86	202	65	53	-	95	97	70	85	36	30	70
31	129	-	53	66	-	98	-	97	-	36	30	-

Note.- No gage-height record Dec. 12, 1940, to Jan. 2; discharge computed on basis of records for Sultan River near Startup. Shifting-control method used May 23 to June 22.

1941

Day	Oct.	Day	Oct.	Day	Oct.
1	250	11	445	21	90
2	209	12	394	22	80
3	314	13	271	23	70
4	315	14	177	24	60
5	180	15	143	25	50
6	144	16	200	26	50
7	235	17	170	27	40
8	342	18	140	28	40
9	410	19	130	29	40
10	494	20	100	30	30
				31	30

Note.- No gage-height record Oct. 16-31; discharge computed on basis of records for Sultan River near Startup.

Monthly discharge, in second-feet, 1940-41

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October 1940	3,604	316	26	116	11.2	12.89	7,150
November	2,111	288	28	70.4	6.77	7.55	4,190
Decoember	2,739	206	30	88.4	8.50	9.79	5,430
Calendar year 1940	29,737	321	20	81.2	7.81	106.34	58,990
January 1941	1,825	284	20	58.9	5.66	6.53	3,620
February	1,129	88	23	40.3	3.88	4.04	2,240
March	1,669	98	34	53.8	5.17	5.97	3,310
April	2,138	104	52	71.3	6.86	7.65	4,240
May	3,244	204	55	105	10.1	11.60	6,430
June	2,500	102	63	83.3	8.01	8.94	4,960
July	1,716	82	33	55.4	5.33	6.14	3,400
August	1,016	41	25	32.8	3.15	3.63	2,020
September	3,166	261	42	106	10.2	11.32	6,280
Water year 1940-41	26,857	316	20	73.6	7.08	96.05	53,270
October 1941	5,643	494	30	182	17.5	20.18	11,190

Sultan River near Startup, Wash.

Location.- Water-stage recorder, lat. 47°58'30", long. 121°46'30", in NE¼ sec. 28, T. 29 N., R. 8 E., 1⅛ miles upstream from intake of Everett water-supply system and 7⅛ miles north of Startup.

Drainage area.- 75 square miles.

Records available.- May 1934 to September 1941.

Extremes.- Maximum discharge during year, 9,190 second-feet Oct. 10 (gage height, 12.65 feet), from rating curve extended above 3,000 second-feet; minimum, 50 second-feet Aug. 21, 22 (gage height, 3.36 feet).
1934-41: Maximum discharge, 15,600 second-feet Oct. 24, 1934 (gage height, 16.05 feet), from rating curve extended above 3,000 second-feet; minimum, that of Aug. 21, 22, 1941; minimum gage height, 3.32 feet Sept. 22, 23, 24, 1938.

Remarks.- Records excellent except those for periods of no gage-height record and those above 3,000 second-feet, which are fair. No diversion or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 28

3.9	103	5.5	515	8.0	2,250
4.1	136	6.0	750	9.0	3,400
4.4	193	6.5	1,020	10.0	4,800
4.7	262	7.0	1,370		
5.0	346	7.5	1,770		

Mar. 1 to Sept. 30

3.5	63	4.4	210	6.0	770
3.7	88	4.7	285	6.5	1,050
3.9	117	5.0	375	7.0	1,380
4.1	150	5.5	555	7.5	1,770

Note.- Same as preceding table above 7.5 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	414	960	1,120	426	900	820	498	345	635	280	73	215
2	223	825	1,230	365	800	870	595	318	480	250	71	188
3	179	700	1,980	319	700	575	462	417	417	225	73	1,200
4	257	565	1,160	299	556	462	389	369	360	206	73	1,400
5	235	477	1,470	270	477	400	420	515	339	192	75	595
6	177	625	1,300	310	416	396	445	615	357	184	70	462
7	147	825	1,880	300	436	366	386	462	480	176	67	462
8	129	1,020	2,680	300	380	354	348	389	389	168	64	327
9	148	725	1,500	340	340	327	332	333	389	156	62	600
10	4,500	515	900	380	343	300	442	330	360	145	60	1,580
11	2,330	435	650	430	380	278	428	462	345	138	60	770
12	900	374	515	430	362	260	375	770	330	133	65	870
13	940	337	432	430	322	240	333	555	306	127	62	1,620
14	700	313	377	430	288	222	327	555	272	120	59	2,640
15	500	310	334	430	260	208	480	480	248	116	57	1,700
16	390	355	299	600	240	206	445	2,020	230	110	55	1,500
17	305	383	270	2,000	226	215	392	3,220	220	116	53	1,140
18	1,080	349	275	2,200	214	380	357	1,660	428	131	53	820
19	1,280	302	435	1,500	201	462	333	1,050	635	114	52	725
20	1,690	280	1,370	1,150	191	366	327	1,200	858	106	51	702
21	2,260	262	700	900	183	306	342	930	498	105	51	535
22	1,050	237	750	700	177	462	345	795	396	101	51	445
23	725	221	555	540	173	406	354	702	336	98	106	382
24	1,090	267	515	620	199	333	330	615	294	94	92	333
25	825	578	535	820	204	315	357	535	318	91	79	294
26	555	477	535	780	206	351	360	445	315	87	98	354
27	439	962	625	720	338	431	342	400	265	83	116	375
28	383	2,960	775	620	850	445	315	438	260	80	135	312
29	530	3,390	1,160	540	-	462	309	396	336	79	119	303
30	1,480	1,660	750	520	-	498	357	363	336	76	101	624
31	1,370	-	535	700	-	462	-	942	-	74	122	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	27,231	4,500	129	878	11.7	13.50	54,010
November	21,679	3,390	221	723	9.64	10.75	43,000
December	27,612	2,680	270	891	11.9	13.69	54,770
Calendar year 1940	216,137	4,500	54	591	7.88	107.17	428,700
January	20,369	2,200	270	657	8.76	10.10	40,400
February	10,360	900	173	370	4.93	5.14	20,550
March	12,178	870	206	393	5.24	6.04	24,150
April	11,575	595	309	386	5.15	5.74	22,960
May	22,626	3,220	318	730	9.73	11.22	44,880
June	11,432	858	220	381	5.08	5.67	22,680
July	4,161	280	74	134	1.79	2.06	8,250
August	2,325	135	51	75.0	1.00	1.15	4,610
September	23,473	2,640	188	782	10.4	11.64	46,560
Water year 1940-41	195,021	4,500	51	534	7.12	96.70	386,800

Note.- No gage-height record Oct. 13-16, Jan. 5 to Feb. 3; discharge computed on basis of recorded range of stage, one discharge measurement, and records for Tolt River near Tolt.

Snoqualmie River near Tolt, Wash.

Location.- Water-stage recorder, lat. 47°39'55", long. 121°55'30", in sec. 9, T. 25 N., R. 7 E., 100 feet downstream from highway bridge, 1 mile northwest of Tolt, and 2 miles downstream from Tolt River. Datum of gage is at mean sea level, unadjusted. Auxiliary water-stage recorder, lat. 47°39'00", long. 121°55'25", in SW¼ sec. 16, T. 25 N., R. 7 E., at Tolt, three-quarters of a mile downstream from Tolt River and 1¼ miles upstream from main gage. Datum of gage is at mean sea level, unadjusted.

Drainage area.- 605 square miles.

Records available.- October 1928 to September 1941.

Average discharge.- 13 years, 3,526 second-feet.

Extremes.- Maximum discharge during year, 20,000 second-feet Nov. 29 (elevation, 53.18 feet); minimum not determined (occurred when water was below intakes for part of each of many days during August).
1929-41: Maximum discharge, 51,000 second-feet Feb. 26, 1932; maximum elevation recorded, 59.9 feet (present datum), Nov. 13, 1932; minimum discharge, 329 second-feet Sept. 9, 1940; minimum elevation, 43.30 feet (present datum), Sept. 11, 1930.

Remarks.- Records good except those for period of doubtful gage-height record, which are fair. Low-water flow diverted for operation of power plant Snoqualmie Falls but returned to river above gage. Some diurnal fluctuation caused by power plant.

Rating tables, water year 1940-41 (elevation, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 1 to Sept. 30)

Oct. 1 to Nov. 28				Nov. 29 to Sept. 30					
45.0	515	47.0	3,070	44.3	416	45.5	1,230	48.0	5,330
45.5	960	48.0	5,100	44.5	520	46.0	1,720	49.0	7,600
46.0	1,530	49.0	7,320	44.8	705	46.5	2,400	50.0	10,100
46.5	2,230			45.0	843	47.0	3,250	52.0	16,000

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	612	2,980	5,770	2,890	4,140	2,640	2,400	1,970	4,040	1,560	549	590
2	725	2,720	5,770	2,560	3,540	3,730	3,250	1,900	2,890	1,510	532	719
3	629	2,640	5,990	2,320	2,890	2,890	2,720	1,900	2,480	1,410	520	1,270
4	620	2,390	5,770	2,250	2,560	2,320	2,320	1,900	2,250	1,410	549	4,690
5	716	2,010	4,890	2,110	2,320	2,110	2,110	2,180	2,110	1,360	537	2,480
6	725	1,870	5,550	2,110	2,180	1,970	2,480	2,480	2,110	1,320	526	1,610
7	638	1,870	4,670	2,040	2,180	1,900	d2,400	2,110	2,800	1,230	509	1,410
8	579	2,640	6,440	1,970	2,110	1,900	d2,250	1,970	2,720	1,230	509	1,230
9	587	2,720	6,670	1,970	1,970	1,970	d2,250	1,840	2,560	1,110	509	1,290
10	2,290	2,310	4,890	2,110	2,040	1,840	d2,250	1,660	2,480	1,070	498	4,520
11	7,320	2,010	3,830	2,180	2,040	1,780	d2,110	1,780	2,250	1,030	509	4,140
12	2,890	1,870	3,250	2,180	2,040	1,610	d2,040	3,020	2,180	1,030	509	3,070
13	2,310	1,670	2,800	2,250	1,970	1,560	d1,900	2,890	2,040	990	532	4,250
14	2,160	1,570	2,560	2,250	1,840	1,560	d1,900	2,560	1,900	982	520	5,990
15	1,610	1,530	2,320	2,320	1,720	1,510	2,560	3,070	1,780	975	493	8,320
16	1,320	1,580	2,180	2,320	1,660	1,460	2,800	2,680	1,660	886	488	5,990
17	1,160	1,660	2,040	3,540	1,560	1,460	2,560	7,360	1,560	879	482	7,130
18	1,290	1,670	1,970	9,580	1,610	1,610	2,320	7,360	1,840	908	482	4,670
19	1,500	1,490	2,040	6,670	1,560	1,900	2,180	5,770	2,800	843	471	3,630
20	1,760	1,460	4,900	4,560	1,510	1,840	2,110	5,110	3,630	843	471	4,560
21	3,700	1,480	4,140	3,630	1,510	1,610	2,110	5,000	2,720	836	456	3,730
22	3,550	1,390	3,440	3,070	1,460	1,720	2,110	4,140	a2,430	815	446	2,800
23	2,230	1,320	3,160	2,720	1,460	1,900	2,040	3,630	a2,130	712	515	2,250
24	3,320	1,360	2,800	2,480	1,410	1,720	2,040	3,250	1,840	705	566	1,900
25	3,850	1,940	2,720	2,980	1,510	1,660	1,970	2,890	1,900	705	532	1,660
26	2,640	2,230	2,800	3,540	1,510	1,610	2,040	2,560	1,840	679	537	1,560
27	2,080	2,820	2,980	2,890	1,560	1,780	1,970	2,250	1,720	653	603	1,460
28	1,800	6,930	3,070	2,560	2,180	1,900	1,900	2,250	1,610	578	621	1,360
29	1,690	18,300	4,140	2,400	-	2,040	1,840	2,250	1,560	561	634	1,280
30	2,310	9,320	3,830	2,250	-	2,180	1,970	2,110	1,660	572	578	1,410
31	3,750	-	3,340	2,480	-	2,250	-	3,400	-	543	543	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	62,361	7,320	579	2,012	3.33	3.83	123,700
November	87,750	18,300	1,320	2,925	4.83	5.39	174,000
December	120,720	6,670	1,970	3,894	6.44	7.42	239,400
Calendar year 1940	1,030,131	18,300	420	2,815	4.65	63.32	2,043,000
January	91,180	9,580	1,970	2,941	4.86	5.60	180,900
February	56,040	4,140	1,410	2,001	3.31	3.44	111,200
March	59,930	3,730	1,460	1,933	3.20	3.68	118,900
April	66,900	3,250	1,840	2,230	3.69	4.11	132,700
May	95,240	7,360	1,660	3,072	5.08	5.85	188,900
June	67,490	4,040	1,560	2,250	3.72	4.15	133,900
July	29,935	1,560	543	966	1.60	1.84	59,380
August	16,226	634	446	523	.864	1.00	32,180
September	90,969	8,320	590	3,032	5.01	5.59	180,400
Water year 1940-41	844,741	18,300	446	2,314	3.82	51.90	1,676,000

a No gage-height record; discharge interpolated.
d Doubtful gage-height record; discharge computed on basis of gage-height record traced from recorder roller.

North Fork of Snoqualmie River near Snoqualmie Falls, Wash.

Location.- Water-stage recorder, lat. 47°37'10", long. 121°42'35", in SW¼ sec. 30, T. 25 N., R. 9 E., 1 mile upstream from Calligan Creek, 8 miles northeast of Snoqualmie Falls, 9 miles northeast of Snoqualmie, and 9½ miles upstream from mouth.

Drainage area.- 65 square miles.

Records available.- August 1929 to September 1941.

Average discharge.- 12 years, 481 second-feet.

Extremes.- Maximum discharge during year, 5,500 second-feet Nov. 28 (gage height, 12.94 feet), from rating curve extended above 2,200 second-feet; minimum, 41 second-feet Aug. 21, 22, 23 (gage height, 2.02 feet).
1929-41: Maximum discharge, 8,020 second-feet Feb. 26, 1932 (gage height, 17.5 feet), from rating curve extended above 1,500 second-feet; minimum, 30 second-feet Sept. 17-19, 1929.

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

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

2.2	54	3.0	146	4.5	516
2.4	71	3.3	197	5.0	700
2.6	92	3.6	259	6.0	1,120
2.8	117	4.0	361	8.0	2,170

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	81	451	700	380	720	467	361	270	550	190	55	133
2	80	405	820	310	500	604	436	241	405	172	54	126
3	66	390	1,040	280	376	347	312	270	333	159	55	902
4	81	323	680	260	304	268	261	239	290	151	56	938
5	108	268	780	240	275	231	248	361	266	142	55	483
6	84	237	661	250	250	220	323	376	332	134	54	323
7	70	347	790	250	277	220	282	294	451	130	51	292
8	62	451	1,200	240	246	222	241	268	361	121	51	216
9	60	361	900	280	222	216	248	229	376	116	49	446
10	1,520	275	650	320	248	192	290	220	333	109	48	1,120
11	1,300	239	500	360	246	177	287	302	294	104	47	700
12	420	210	430	350	244	165	270	550	264	99	46	680
13	516	195	360	350	218	152	233	390	239	96	46	1,040
14	347	186	320	330	197	146	226	376	218	91	45	1,210
15	239	195	280	330	179	140	376	302	201	88	44	1,300
16	192	226	250	350	167	136	347	690	192	84	44	1,140
17	164	235	200	1,000	160	138	304	1,520	192	81	44	1,020
18	220	220	200	1,200	152	174	304	1,080	373	79	44	661
19	231	192	300	750	146	226	292	620	661	76	42	550
20	333	177	700	516	142	208	284	922	772	73	42	900
21	990	167	490	405	137	177	284	780	420	70	42	586
22	483	152	410	333	132	218	277	642	268	68	41	436
23	307	144	340	290	130	233	270	533	230	66	60	347
24	810	194	310	280	140	197	252	467	200	66	62	297
25	516	390	300	436	142	183	259	390	300	72	57	257
26	333	323	320	467	134	195	264	330	231	66	68	239
27	259	808	470	347	174	264	259	284	208	63	84	216
28	218	2,140	600	300	396	261	233	328	195	60	86	199
29	235	2,260	900	280	-	280	246	312	206	60	83	193
30	628	900	630	280	-	317	268	282	212	58	74	259
31	1,010	-	460	422	-	290	-	754	-	56	71	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	11,963	1,520	60	386	5.94	6.84	23,730
November	13,061	2,260	144	435	6.69	7.47	25,910
December	16,991	1,200	200	548	8.43	9.72	33,700
Calendar year 1940	137,801	2,260	38	377	5.80	78.83	273,300
January	12,186	1,200	240	393	6.05	6.97	24,170
February	6,654	720	130	238	3.66	3.81	13,200
March	7,264	604	136	234	3.60	4.16	14,410
April	8,537	436	226	285	4.38	4.88	16,930
May	14,822	1,520	220	478	7.35	8.48	29,400
June	9,573	772	192	319	4.91	5.48	18,990
July	3,000	190	56	96.8	1.49	1.72	5,950
August	1,700	86	41	54.8	.845	.97	3,370
September	17,209	1,300	126	574	8.83	9.85	34,130
Water year 1940-41	122,960	2,260	41	337	5.18	70.35	243,900

Note.- No gage-height record Dec. 7 to Jan. 19, June 23-25, Aug. 12-15; discharge computed on basis of records for Tolt River near Tolt.

Tolt River near Tolt, Wash.

Location.- Water-stage recorder, lat. 47°41'45", long. 121°49'20", in S½NE¼ sec. 31, T. 26 N., R. 8 E., 500 feet downstream from the Forks and 6 miles northeast of Tolt. Datum of gage is approximately 348 feet above mean sea level (river-profile survey).

Drainage area.- 80 square miles.

Records available.- August 1928 to January 1932, September 1937 to September 1941.

Extremes.- Maximum discharge during year, 8,250 second-feet Nov. 28 (gage height, 10.75 feet), from rating curve extended above 4,500 second-feet; minimum, 77 second-feet Aug. 20-23 (gage height, 4.22 feet).
1928-32, 1937-41: Maximum discharge, 9,750 second-feet Apr. 18, 1938 (gage height, 11.51 feet), from rating curve extended above 4,500 second-feet; minimum, 63 second-feet Sept. 25, 26, 1940; minimum gage height, 4.07 feet Sept. 23, 1938.

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

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Nov. 1)

Oct. 1 to Nov. 28						Nov. 28 to Sept. 30			
4.4	105	5.3	339	6.6	1,050	4.4	102	5.8	532
4.6	143	5.6	453	7.0	1,420	4.7	158	6.2	761
4.8	189	5.9	588	7.5	1,950	5.0	230	6.6	1,060
5.0	243	6.2	760	8.5	3,280	5.4	358	7.0	1,440

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	210	a640	852	494	746	484	306	207	629	247	99	144
2	135	a510	1,070	439	600	702	385	197	457	225	98	148
3	115	a430	1,170	397	489	418	316	236	378	212	98	897
4	141	a390	821	381	422	348	290	230	337	199	98	876
5	158	a350	822	358	385	303	290	358	310	190	96	427
6	121	a400	775	366	354	300	340	362	391	182	93	300
7	100	453	910	348	381	293	300	284	480	180	92	259
8	89	569	1,660	337	340	293	268	259	378	173	88	204
9	85	517	1,130	370	316	274	278	222	397	165	87	496
10	1,910	425	761	439	362	253	316	207	374	160	87	1,060
11	1,300	375	610	466	351	236	323	222	323	154	87	624
12	466	339	522	457	340	225	306	371	297	150	87	518
13	517	312	466	457	313	209	271	316	284	146	87	1,010
14	382	305	414	444	293	202	262	390	262	140	84	1,020
15	286	302	378	435	281	194	422	300	244	136	83	944
16	232	322	348	489	265	192	385	788	227	132	82	942
17	204	328	323	1,590	253	192	348	1,760	227	128	80	787
18	266	318	326	f1,780	242	264	334	1,340	346	127	79	563
19	362	292	409	f976	233	330	310	850	599	121	78	513
20	541	280	959	685	225	262	290	822	710	123	77	802
21	980	264	558	547	217	227	278	668	428	119	77	518
22	562	243	503	475	209	327	265	518	337	116	77	410
23	398	232	457	426	207	313	253	435	310	116	114	344
24	709	333	439	418	214	265	239	374	278	114	100	306
25	608	583	439	718	214	247	233	334	407	114	90	281
26	433	450	444	700	212	253	227	306	326	110	100	271
27	349	978	563	518	292	274	220	290	278	107	114	247
28	312	3,280	711	486	467	271	209	340	256	105	128	233
29	376	2,320	1,190	431	-	274	202	306	274	104	125	233
30	880	1,130	748	422	-	278	204	300	278	102	102	497
31	752	-	578	541	-	256	-	918	-	100	100	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	13,979	1,910	85	451	5.64	6.50	27,730
November	17,670	3,280	232	589	7.36	8.21	35,050
December	21,356	1,660	323	689	8.61	9.93	42,360
Calendar year 1940	173,857	3,280	63	475	5.94	80.82	344,800
January	17,370	1,780	337	560	7.00	8.07	34,450
February	9,223	746	207	329	4.11	4.29	18,290
March	8,959	702	192	289	3.61	4.16	17,770
April	8,670	422	202	289	3.61	4.03	17,200
May	14,510	1,760	197	468	5.85	6.75	28,780
June	10,822	710	227	361	4.51	5.03	21,470
July	4,497	247	100	145	1.81	2.09	8,920
August	2,887	128	77	93.1	1.16	1.34	5,730
September	15,874	1,060	144	529	6.61	7.38	31,490
Water year 1940-41	145,817	3,280	77	399	4.99	67.78	289,200

a No gage-height record; discharge computed on basis of recorded range of stage, two discharge measurements, and records for Sultan River near Startup.
f Computed on basis of partly estimated gage-height record.

South Fork of Stillaguamish River near Granite Falls, Wash.

Location.- Water-stage recorder, lat. 48°06'10", long. 121°56'40", in SW¼NW¼ sec. 8, T. 30 N., R. 7 E., 1⅛ miles upstream from Canyon Creek and 2 miles northeast of Granite Falls.

Drainage area.- 119 square miles.

Records available.- July 1928 to September 1941.

Average discharge.- 13 years, 997 second-feet.

Extremes.- Maximum discharge during year, 9,240 second-feet Oct. 10 (gage height, 10.76 feet), from rating curve extended above 6,000 second-feet; minimum, 74 second-feet Aug. 19-21 (gage height, 2.99 feet).

1928-41: Maximum discharge, 26,700 second-feet Feb. 26, 1932 (gage height, 19.7 feet, from graph based on gage readings), from rating curve extended above 6,000 second-feet; minimum, 55 second-feet Sept. 23, 24, 1938; minimum gage height, that of Aug. 19-21, 1941.

Remarks.- Records excellent. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

3.2	106	4.5	565	6.0	1,730
3.5	174	5.0	890	7.0	2,920
4.0	334	5.5	1,270	8.0	4,400

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	267	1,630	1,230	661	1,940	1,110	595	398	792	271	92	438
2	199	1,360	1,320	548	1,580	1,370	764	361	565	245	91	291
3	149	1,150	2,090	480	1,070	820	595	708	465	229	92	1,000
4	253	834	1,320	456	820	589	505	628	407	217	98	1,780
5	229	673	2,030	415	692	526	614	960	373	202	99	686
6	166	1,280	2,270	398	601	516	637	1,150	377	191	94	433
7	138	1,450	2,970	420	637	490	475	661	510	191	89	390
8	120	1,730	3,700	394	560	460	424	543	442	182	86	298
9	131	1,150	1,980	438	500	420	475	442	398	169	85	443
10	4,360	785	1,190	554	510	377	548	398	390	156	81	1,850
11	3,640	625	890	565	625	346	490	456	369	149	81	869
12	1,080	510	718	548	548	323	438	873	373	144	88	925
13	960	451	601	649	470	305	386	661	361	140	88	1,430
14	631	433	516	649	415	288	369	757	320	135	86	3,500
15	446	424	451	673	377	274	565	560	281	131	83	2,080
16	357	442	411	1,110	346	264	485	3,160	258	128	81	1,560
17	309	505	369	2,450	327	271	415	4,880	242	126	78	1,320
18	1,690	500	398	4,480	312	471	373	2,290	373	138	75	1,030
19	1,840	415	671	1,780	284	724	342	1,450	764	126	75	925
20	2,130	386	2,140	1,110	274	505	327	1,540	1,230	122	74	925
21	2,860	369	1,080	827	264	407	342	1,150	589	118	74	667
22	1,280	330	1,030	673	254	645	354	925	433	114	75	526
23	890	305	855	583	248	510	377	806	369	110	96	442
24	1,450	369	890	554	291	402	369	744	323	106	149	381
25	1,070	1,240	960	1,960	320	373	390	631	309	106	110	334
26	711	841	995	2,020	334	390	394	532	323	103	120	524
27	543	1,360	1,030	1,030	540	460	402	460	278	99	133	607
28	460	3,150	1,320	827	1,110	480	377	532	264	96	140	442
29	719	4,780	2,010	711	-	510	369	475	295	98	142	415
30	2,580	2,100	1,150	750	-	685	415	424	323	94	116	547
31	2,940	-	841	1,310	-	619	-	1,080	-	92	157	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	34,598	4,360	120	1,116	9.38	10.81	68,620
November	31,577	4,780	305	1,053	8.85	9.87	62,630
December	39,426	3,700	369	1,272	10.7	12.32	78,200
Calendar year 1940	299,463	5,000	79	818	6.87	93.58	594,000
January	30,023	4,480	394	968	8.13	9.38	59,550
February	16,249	1,940	248	580	4.87	5.08	32,230
March	15,930	1,370	264	514	4.32	4.98	31,600
April	13,611	764	327	454	3.82	4.25	27,000
May	30,635	4,880	361	988	8.30	9.57	60,760
June	12,796	1,230	242	427	3.59	4.00	25,380
July	4,528	271	92	146	1.23	1.42	8,980
August	3,028	157	74	97.7	.821	.95	6,010
September	27,058	3,500	291	902	7.58	8.46	53,670
Water year 1940-41	259,459	4,880	74	711	5.97	81.09	514,600

South Fork of Stillaguamish River above Jim Creek, near Arlington, Wash.

Location.- Water-stage recorder, lat. 48°09'55", long. 122°03'55", in SW¼ sec. 17, T. 31 N., R. 6 E., 1⅛ miles upstream from Jim Creek and 3 miles southeast of Arlington. Datum of gage is 80 feet above mean sea level, datum of 1929.

Drainage area.- 199 square miles.

Records available.- October 1936 to September 1941.

Extremes.- Maximum discharge during year, 14,700 second-feet Oct. 10 (gage height, 19.56 feet); minimum, 114 second-feet Aug. 20, 21 (gage height, 10.66 feet).
1936-41: Maximum discharge, 25,200 second-feet Apr. 17, 1938 (gage height, 23.27 feet), from rating curve extended above 10,000 second-feet; minimum, 114 second-feet Sept. 26, 1940, Aug. 20, 21, 1941.

Remarks.- Records excellent. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

10.8	152	12.0	725	14.0	2,760
11.0	220	12.5	1,100	14.5	3,570
11.3	341	13.0	1,550	15.0	4,500
11.6	485	13.5	2,100	16.0	6,450

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	272	2,420	1,980	1,140	2,550	1,500	830	534	1,320	424	138	767
2	287	2,040	2,040	949	2,100	2,040	1,060	496	941	382	135	488
3	213	1,750	3,050	844	1,500	1,230	881	978	773	360	138	1,290
4	328	1,320	2,040	816	1,230	988	773	941	666	333	144	2,800
5	350	1,100	2,650	753	1,060	808	890	1,360	609	312	141	1,090
6	247	2,060	3,180	766	926	787	1,060	1,550	597	295	144	672
7	198	2,100	4,240	746	972	780	780	988	794	291	135	580
8	174	2,550	5,720	705	874	705	666	808	712	279	130	454
9	174	1,860	3,100	780	780	647	712	659	597	259	127	505
10	5,970	1,320	1,920	996	801	585	830	591	591	243	124	2,630
11	5,190	1,060	1,450	988	1,020	545	746	659	545	236	122	1,450
12	1,660	881	1,180	941	949	512	679	1,180	539	224	130	1,230
13	1,450	780	988	1,060	801	480	585	964	517	216	135	2,810
14	972	760	859	1,060	692	454	556	1,100	460	213	130	3,910
15	705	732	766	1,100	616	434	808	852	420	206	124	2,680
16	562	773	692	1,600	568	420	732	3,690	386	198	122	2,000
17	480	852	634	2,940	534	424	628	6,870	364	195	122	1,850
18	1,940	881	659	6,080	507	592	556	3,320	486	198	117	1,550
19	2,270	725	956	2,600	480	1,020	512	2,220	1,100	184	119	1,360
20	2,780	666	2,870	1,700	465	773	496	2,280	2,030	174	117	1,450
21	4,020	628	1,600	1,320	444	609	507	1,800	1,060	171	114	1,060
22	1,960	551	1,450	1,100	424	948	523	1,410	718	168	119	823
23	1,320	512	1,230	941	420	823	545	1,230	597	162	135	679
24	2,260	585	1,270	866	470	634	517	1,140	507	158	228	580
25	1,700	1,780	1,410	2,280	517	580	534	972	470	158	171	512
26	1,180	1,360	1,500	3,100	539	603	539	823	507	152	181	817
27	896	1,830	1,550	1,600	796	692	534	725	439	146	213	1,030
28	766	3,950	1,920	1,270	1,650	699	507	552	400	141	216	705
29	1,000	7,290	3,290	1,140	-	718	501	787	420	141	216	640
30	2,890	3,260	1,980	1,100	-	911	539	655	501	141	184	760
31	4,150	-	1,410	1,740	-	874	-	1,570	-	141	198	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	48,364	5,970	174	1,560	7.84	9.04	95,930
November	48,376	7,290	512	1,613	8.11	9.04	95,950
December	59,584	5,720	634	1,922	9.66	11.14	118,200
Calendar year 1940	454,236	7,290	114	1,241	6.24	84.88	901,000
January	45,021	6,080	705	1,452	7.30	8.41	89,300
February	24,685	2,550	420	882	4.43	4.61	48,960
March	23,815	2,040	420	768	3.86	4.45	47,240
April	20,026	1,060	496	668	3.36	3.74	39,720
May	44,034	6,870	496	1,420	7.14	8.23	87,340
June	20,066	2,030	364	669	3.36	3.75	39,800
July	6,891	424	141	222	1.12	1.29	13,670
August	4,569	228	114	147	.739	.85	9,060
September	39,172	3,910	454	1,306	6.56	7.32	77,700
Water year 1940-41	384,603	7,290	114	1,054	5.30	71.87	762,900

Peak discharge.- Oct. 10 (6:30 p.m.) 14,700 sec.-ft.; Nov. 29 (2:30-3 a.m.) 9,930 sec.-ft.; Jan. 18 (3:30 a.m.) 9,260 sec.-ft.; May 17 (11:30 a.m.) 8,160 sec.-ft.

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Jim Creek near Arlington, Wash.

Location.- Water-stage recorder, lat. 48°10'30", long. 122°03'55", in SE¼NW¼ sec. 17, T. 31 N., R. 6 E., 1 mile upstream from mouth and 3 miles southeast of Arlington.

Drainage.- 48.9 square miles.

Records available.- October 1937 to September 1941.

Extremes.- Maximum discharge during year, 3,590 second-feet Nov. 29 (gage height, 7.08 feet), from rating curve extended above 800 second-feet; minimum, 8.4 second-feet Aug. 22 (gage height, 0.73 foot).

1937-41: Maximum discharge, 5,320 second-feet Dec. 28, 1937 (gage height, 8.32 feet), from rating curve extended above 800 second-feet; minimum, 6.2 second-feet July 30, Sept. 3, 5, 1938; minimum gage height, 0.67 foot July 19, 1940.

Remarks.- Records excellent except those for period of no gage-height record, which are fair. No diversion or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Dec. 12 to Jan. 13)

Oct. 1 to Jan. 13						Jan. 14 to Sept. 30					
0.9	14	2.0	123	3.5	540	0.9	14	2.0	118	3.5	545
1.1	25	2.3	182	4.0	750	1.1	26	2.3	178	4.0	810
1.3	36	2.6	256	4.5	1,050	1.3	38	2.6	244		
1.6	65	3.0	370	5.0	1,400	1.6	62	3.0	357		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	218	398	275	257	177	69	39	168	44	14	70
2	14	225	349	228	209	237	91	37	134	41	14	36
3	13	191	417	194	176	162	85	98	109	38	16	76
4	24	151	305	182	154	134	88	108	92	35	16	133
5	25	123	326	165	138	114	132	170	81	33	14	57
6	17	269	305	161	122	113	158	158	83	31	13	45
7	14	326	420	157	118	105	118	107	98	29	12	36
8	13	498	f914	153	105	94	98	84	81	28	12	30
9	14	467	f618	163	100	85	96	72	71	27	11	48
10	360	300	f331	178	100	81	96	66	65	25	11	222
11	293	222	272	163	155	77	84	62	58	26	11	126
12	120	174	215	153	152	73	78	85	54	24	12	81
13	96	149	182	172	120	69	72	75	53	24	12	71
14	66	139	159	176	105	65	68	84	50	22	11	130
15	49	128	141	192	97	61	104	77	46	21	11	101
16	a40	125	128	232	91	58	80	345	45	20	10	117
17	a35	134	120	486	84	57	72	732	42	20	10	148
18	a65	136	120	655	78	71	67	364	57	20	9.9	160
19	a110	116	160	397	72	104	62	267	92	20	9.6	138
20	a225	111	364	286	70	91	58	265	273	20	9.6	132
21	a325	109	218	230	67	79	55	200	132	20	9.6	94
22	a250	98	189	196	64	146	53	160	94	18	9.0	73
23	94	91	167	174	62	114	50	132	77	18	12	65
24	310	113	189	160	70	90	47	109	68	18	18	57
25	215	182	218	304	72	81	46	92	64	18	14	52
26	132	139	248	390	69	81	43	84	58	16	16	103
27	98	237	275	265	124	78	41	81	51	16	20	102
28	83	409	401	220	198	73	40	141	49	16	20	73
29	99	1,600	686	194	-	71	38	107	48	16	18	72
30	198	627	433	184	-	66	38	91	50	15	13	78
31	235	-	343	211	-	62	-	182	-	14	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	3,645	360	13	118	2.41	2.77	7,230
November	7,807	1,600	91	260	5.32	5.94	15,480
December	9,611	914	120	310	6.34	7.31	19,060
Calendar year 1940	64,580.7	1,600	8.3	176	3.60	49.12	128,100
January	7,296	655	153	235	4.81	5.55	14,470
February	3,229	257	62	115	2.35	2.46	6,400
March	2,969	237	57	95.8	1.96	2.26	5,890
April	2,227	158	38	74.2	1.52	1.69	4,420
May	4,674	732	37	151	3.09	3.55	9,270
June	2,443	273	42	81.4	1.66	1.86	4,850
July	733	44	14	23.6	.483	.56	1,450
August	406.7	20	9.0	13.1	.268	.31	807
September	2,726	222	30	90.9	1.86	2.07	5,410
Water year 1940-41	47,766.7	1,600	9.0	131	2.68	36.33	94,740

a No gage-height record; discharge computed on basis of records for South Fork of Stillaguamish River above Jim Creek, near Arlington, and South Fork of Stillaguamish River near Granite Falls.
f Computed on basis of partly estimated gage-height record.

North Fork of Stillaguamish River near Arlington, Wash.

Location.- Water-stage recorder, lat. 48°15'45", long. 122°02'45", in SE¼NW¼ sec. 16, T. 32 N., R. 6 E., 6 miles northeast of Arlington, 7 miles upstream from mouth, and 8 miles downstream from Deer Creek. Altitude of gage, 90 feet (river-profile map).

Drainage area.- 269 square miles.

Records available.- July 1928 to September 1941.

Average discharge.- 13 years, 1,650 second-feet.

Extremes.- Maximum discharge during year, 9,760 second-feet Oct. 10 (gage height, 8.38 feet), from rating curve extended above 7,000 second-feet; minimum, 183 second-feet Aug. 21, 22, 23 (gage height, 1.20 feet).
1928-41: Maximum discharge, 27,700 second-feet Feb. 26, 1932 (gage height, 12.7 feet); minimum, 88 second-feet Sept. 23, 1938 (gage height, 1.14 feet).

Remarks.- Records good. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

1.3	210	4.0	1,490
1.5	270	5.0	2,210
2.0	440	6.0	3,490
2.5	640	7.0	5,720
3.0	880	8.0	8,500

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	213	2,400	2,510	1,600	a2,700	2,220	803	597	1,140	515	230	1,510
2	213	2,050	2,210	1,350	a2,400	2,610	990	555	908	477	254	662
3	205	1,770	3,500	1,230	1,980	1,700	828	922	778	451	261	1,480
4	270	1,380	2,510	1,170	1,660	1,380	778	880	702	429	233	2,600
5	264	1,170	3,930	1,080	1,490	1,170	1,090	1,490	662	415	224	1,010
6	219	2,020	3,670	f1,050	1,320	1,140	2,210	1,560	684	404	222	662
7	207	2,570	4,310	f990	1,350	1,080	1,260	1,140	828	404	222	531
8	199	3,320	6,250	962	1,200	990	990	880	778	386	219	440
9	210	2,300	3,860	1,110	1,110	880	962	730	640	366	216	470
10	4,730	1,660	2,510	1,320	1,050	803	962	662	597	345	210	2,150
11	3,910	1,350	1,910	1,320	1,350	754	828	702	597	335	207	1,600
12	1,470	1,080	1,630	1,290	1,290	730	754	1,050	597	332	213	1,290
13	1,170	990	1,350	1,520	1,050	684	684	908	597	322	216	2,030
14	854	962	1,200	1,420	935	640	662	803	531	322	207	3,320
15	662	908	1,080	1,380	854	618	935	730	500	322	205	2,160
16	539	908	962	1,480	803	597	880	2,990	470	318	202	2,180
17	485	1,020	908	3,310	754	597	754	6,790	458	315	199	2,050
18	4,400	1,020	935	6,860	702	730	702	3,880	618	372	194	1,910
19	3,940	854	1,170	3,490	684	1,020	662	2,510	962	322	191	1,840
20	3,860	803	3,210	2,400	640	908	640	2,510	1,700	305	191	1,560
21	4,060	754	1,910	1,910	618	803	618	1,910	1,020	302	191	1,230
22	2,300	662	1,700	1,600	597	1,200	618	1,560	778	289	194	990
23	1,700	640	1,490	1,380	576	990	618	1,380	662	273	216	828
24	3,180	778	1,740	1,260	662	803	597	1,260	597	296	254	702
25	2,300	1,630	1,910	2,670	662	730	597	1,110	597	299	216	640
26	1,600	1,290	2,050	3,060	803	754	597	962	618	270	239	932
27	1,230	1,660	2,050	a2,000	1,390	803	597	990	535	258	273	962
28	1,080	3,000	2,510	a1,800	2,700	778	576	1,110	496	251	261	730
29	1,260	6,520	3,960	a1,600	-	778	576	962	511	245	248	702
30	2,140	4,100	2,510	a1,600	-	828	597	880	618	239	230	1,180
31	2,300	-	1,980	a2,200	-	803	-	1,260	-	236	339	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	51,170	4,730	199	1,651	6.14	7.07	101,500
November	51,569	6,520	640	1,719	6.39	7.13	102,300
December	73,425	6,250	908	2,369	8.81	10.15	145,600
Calendar year 1940	535,947	8,690	194	1,464	5.44	74.10	1,063,000
January	57,412	6,860	962	1,852	6.88	7.94	113,900
February	33,330	2,700	576	1,190	4.42	4.61	66,110
March	30,521	2,610	597	985	3.66	4.22	60,540
April	24,365	2,210	576	812	3.02	3.37	48,330
May	45,673	6,790	555	1,473	5.48	6.31	90,590
June	21,179	1,700	458	706	2.62	2.93	42,010
July	10,415	515	236	336	1.25	1.44	20,660
August	6,977	339	191	225	.836	.96	13,840
September	40,351	3,320	440	1,345	5.00	5.58	80,040
Water year 1940-41	446,387	6,860	191	1,223	4.55	61.71	885,400

a No gage-height record; discharge computed on basis of records for station on South Fork above Jim Creek.
f Computed on basis of partly estimated gage-height record.

Skagit River near Hope, British Columbia

(International gaging station)

Location.- Water-stage recorder, lat. 49°03', long. 121°05', just downstream from Galena Creek, 4 miles upstream from the international boundary, and 40 miles southeast of Hope, British Columbia.

Drainage area.- 370 square miles.

Records available.- October 1934 to September 1941 in water-supply papers of Geological Survey. March 1915 to September 1922 in bulletins of Dominion Water & Power Bureau, Canada.

Extremes.- Maximum discharge during year, 1,560 second-feet May 2 (gage height, 5.15 feet); minimum, 122 second-feet Oct. 9 (gage height, 2.27 feet).
1915-22, 1934-41: Maximum discharge, 7,560 second-feet June 17, 1916; minimum recorded, 81 second-feet Feb. 9, 1937.

Remarks.- Records good. No diversion or regulation.

Cooperation.- This station is maintained with the cooperation of the city of Seattle and is one of the international gaging stations maintained by Canada under agreement with the United States.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

2.4	151	3.0	345	4.0	818
2.6	203	3.3	475	4.5	1,100
2.8	268	3.6	617	5.0	1,440

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	174	362	212	272	417	317	898	1,500	1,100	555	241	192
2	168	345	218	248	439	337	1,020	1,490	1,020	531	231	192
3	151	329	254	248	430	341	1,060	1,360	964	522	225	209
4	142	309	290	251	421	333	992	1,210	925	503	225	234
5	137	294	313	241	417	333	936	1,110	969	484	218	209
6	133	290	362	231	408	329	893	1,010	986	466	212	200
7	130	301	383	228	408	333	860	947	1,100	470	212	198
8	126	321	555	225	400	345	839	887	1,130	448	215	181
9	124	290	685	225	396	353	866	839	1,020	421	215	181
10	241	241	603	241	387	353	920	802	969	404	212	248
11	333	234	522	248	383	353	903	834	986	387	209	248
12	234	209	457	251	374	358	893	1,160	1,020	374	225	248
13	234	215	430	261	358	362	871	1,370	1,030	374	212	294
14	212	231	404	272	337	366	866	1,220	964	374	206	426
15	200	22e	379	272	329	370	909	1,110	936	383	206	466
16	164	225	358	272	321	387	871	1,050	882	391	203	452
17	179	225	333	286	313	417	834	1,100	839	400	195	550
18	370	218	333	444	301	439	792	1,080	797	400	192	498
19	627	212	329	470	298	444	770	992	781	391	190	466
20	898	209	341	444	294	434	770	947	755	366	187	475
21	980	206	329	413	286	426	807	936	720	345	187	448
22	770	192	362	396	279	421	866	947	705	309	187	417
23	622	195	362	400	254	417	947	998	705	294	190	400
24	622	200	345	374	265	408	992	1,140	675	362	184	387
25	617	195	329	366	265	417	1,030	1,180	641	366	171	370
26	536	192	321	345	258	462	1,080	1,110	617	321	171	383
27	475	195	313	329	261	560	1,140	1,040	598	305	203	374
28	430	203	305	329	294	622	1,160	1,020	583	290	209	362
29	408	215	305	333	-	700	1,200	1,020	593	279	192	349
30	391	215	301	333	-	781	1,340	964	579	265	176	353
31	383	-	286	374	-	855	-	1,030	-	254	174	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	11,231	980	124	362	0.98	1.13	22,280
November	7,296	362	192	243	.66	.74	14,470
December	11,319	685	212	365	.99	1.14	22,450
Calendar year 1940	222.397	2,790	124	608	1.64	22.34	440,800
January	9,622	470	225	310	.84	.97	19,080
February	9,593	439	254	343	.93	.97	19,030
March	13,373	855	317	431	1.16	1.34	26,520
April	28,325	1,340	770	944	2.55	2.84	56,180
May	33,383	1,500	802	1,080	2.92	3.37	66,210
June	25,589	1,130	579	853	2.31	2.58	50,760
July	12,034	555	254	388	1.05	1.21	23,870
August	6,275	241	171	202	.55	.63	12,450
September	10,010	550	181	334	.90	1.00	19,860
Water year 1940-41	178,050	1,500	124	488	1.32	17.92	353,200

Skagit River above Devils Creek, near Newhalem, Wash.

Location.- Water-stage recorder, lat. 48°51', long. 121°02', in NW¼ sec. 30, T. 39 N., R. 14 E., 2 miles upstream from Devils Creek, 10½ miles upstream from Ross Dam, and 15 miles northeast of Newhalem.

Drainage area.- 638 square miles.

Records available.- March 1940 to September 1941.

Extremes.- Maximum discharge during year, 4,210 second-feet Oct. 21 (gage height, 4.58 feet); minimum, 359 second-feet Oct. 8 (gage height, 0.68 foot).
1940-41: Maximum discharge, 5,900 second-feet May 24, 1940 (gage height, 5.55 feet); minimum, that of Oct. 8, 1940.

Remarks.- Records good. No diversion or regulation.

Cooperation.- Gage-height record collected in cooperation with and sixteen discharge measurements furnished by city of Seattle.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

0.8	395	1.7	810	3.5	2,690
1.0	470	2.0	1,040	4.0	3,360
1.2	555	2.5	1,520	4.5	4,060
1.4	645	3.0	2,080		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	498	960	582	744	1,080	804	1,900	3,220	2,500	1,270	609	604
2	462	928	591	706	1,220	866	2,260	3,150	2,380	1,270	578	550
3	430	880	680	670	1,180	873	2,320	2,880	2,140	1,220	573	655
4	409	838	774	655	1,130	866	2,140	2,560	2,080	1,180	578	750
5	389	804	880	627	1,130	852	2,020	2,260	2,200	1,130	560	604
6	380	786	1,040	614	1,080	838	1,900	2,080	2,260	1,130	555	560
7	368	804	1,040	596	1,040	831	1,800	1,850	2,440	1,180	564	528
8	365	852	1,320	582	1,020	852	1,740	1,740	2,380	1,130	582	486
9	362	810	1,580	600	1,000	866	1,800	1,580	2,140	1,040	600	478
10	719	750	1,470	614	968	873	1,900	1,520	2,080	984	600	669
11	944	717	1,320	650	952	880	1,900	1,630	2,320	968	600	614
12	655	670	1,180	675	936	880	1,850	2,500	2,560	968	695	568
13	660	650	1,080	706	896	880	1,800	2,950	2,620	976	632	655
14	596	640	1,020	728	873	888	1,800	2,560	2,320	1,000	604	873
15	604	636	960	722	838	896	1,850	2,320	2,140	1,030	600	866
16	532	632	896	728	810	920	1,800	2,200	1,960	1,080	596	936
17	527	627	845	756	792	984	1,680	2,380	1,800	1,130	573	1,080
18	1,630	618	824	1,020	780	1,030	1,580	2,260	1,800	1,130	564	968
19	2,650	600	810	1,130	756	1,040	1,520	2,020	1,630	1,080	550	888
20	3,640	596	880	1,130	744	1,020	1,520	1,850	1,580	1,000	550	880
21	3,430	582	852	1,040	739	992	1,630	1,800	1,470	944	564	838
22	2,380	560	896	1,020	728	976	1,800	1,850	1,520	831	564	780
23	1,850	546	912	976	706	960	2,020	2,080	1,580	750	573	768
24	1,900	542	888	944	700	936	2,140	2,560	1,470	739	528	762
25	1,740	528	873	936	695	944	2,260	2,690	1,370	762	486	739
26	1,520	519	838	888	690	1,020	2,380	2,440	1,270	768	478	a890
27	1,320	519	824	852	695	1,180	2,500	2,380	1,270	768	550	a800
28	1,180	537	817	831	762	1,320	2,560	2,200	1,320	750	528	a700
29	1,080	568	817	838	-	1,470	2,620	2,140	1,370	712	510	a660
30	1,040	586	804	852	-	1,580	2,950	2,020	1,320	685	478	a690
31	992	-	780	852	-	1,800	-	2,320	-	655	540	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	35,252	3,640	362	1,137	1.78	2.05	69,920
November	20,285	960	519	676	1.06	1.18	40,230
December	29,073	1,580	582	938	1.47	1.69	57,670
Calendar year	-	-	-	-	-	-	-
January	24,682	1,130	582	796	1.25	1.44	48,960
February	24,940	1,220	690	891	1.40	1.45	49,470
March	31,217	1,800	804	1,007	1.58	1.82	61,920
April	59,940	2,950	1,520	1,998	3.13	3.49	118,900
May	69,990	3,220	1,520	2,258	3.54	4.08	138,800
June	57,290	2,620	1,270	1,910	2.99	3.34	113,600
July	30,260	1,270	655	976	1.53	1.76	60,020
August	17,562	695	478	567	.889	1.02	34,830
September	21,839	1,080	478	728	1.14	1.27	43,320
Water year 1940-41	422,330	3,640	362	1,157	1.81	24.59	837,600

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

Skagit River at Newhalem, Wash.

Location.- Water-stage recorder, lat. 48°40', long. 121°15', in SE¼ sec. 21, T. 37 N., R. 12 E., at power plant of city of Seattle at Newhalem, a quarter of a mile upstream from Newhalem Creek, 11 miles upstream from Bacon Creek, and 16 miles upstream from Marblemount. Datum of gage is 400 feet above mean sea level, subject to correction to datum of 1929.

Drainage area.- 1,160 square miles, of which 390 square miles is in Canada.

Records available.- December 1908 to May 1914 and October 1920 to September 1941 in reports of Geological Survey. October 1908 to September 1933 (monthly discharge only) in State Water-Supply Bulletin 5.

Average discharge.- 33 years, 4,320 second-feet, adjusted for storage in Diablo Reservoir since October 1929 and Ruby Reservoir since March 1940.

Extremes.- Maximum discharge during year, 17,100 second-feet Oct. 20 (gage height, 88.12 feet); minimum, 138 second-feet Mar. 16 (gage height, 78.71 feet); minimum daily, 1,180 second-feet Jan. 12.

1908-14, 1920-41: Maximum discharge, 60,000 second-feet Dec. 12, 1921 (gage height, 94.2 feet); minimum, 74 second-feet (regulated) Nov. 10, 1936 (gage height, 78.39 feet); minimum daily, 136 second-feet (regulated) Aug. 24, 1930

Remarks.- Records excellent. Water is diverted 3 miles upstream (may be entire low-water flow) and is returned to river at Seattle power plant just above station. Flow partly regulated by Diablo and Ruby Reservoirs (see p. 67), having a combined capacity of 179,100 acre-feet.

Cooperation.- Gage-height record collected in cooperation with and many discharge measurements furnished by city of Seattle.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

81.0	1,330	82.5	2,930	85.0	7,150
81.5	1,790	83.0	3,620	86.0	9,820
82.0	2,330	84.0	5,200	87.0	12,900

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,190	2,070	†1,290	1,410	2,840	1,660	3,440	7,190	†5,790	4,070	2,650	2,140
2	2,250	1,830	1,800	1,720	†2,620	†1,470	3,170	7,030	5,650	4,050	2,250	2,370
3	2,220	†1,650	1,930	1,750	2,590	1,720	2,990	5,860	4,980	a3,050	†1,560	2,840
4	2,120	2,160	1,710	1,670	2,560	1,600	2,970	†5,210	4,790	a1,590	2,260	2,940
5	1,850	1,930	1,660	†1,440	2,250	1,570	2,690	4,510	5,370	a2,930	2,220	2,870
6	†1,490	2,070	1,820	1,730	2,250	1,600	†2,290	3,960	5,580	†a3,860	2,190	2,480
7	1,660	2,060	1,730	1,790	1,980	1,660	2,960	4,130	5,660	a6,410	2,210	†2,100
8	1,530	2,330	†3,090	1,660	2,110	1,510	3,450	3,470	†5,480	a5,120	2,280	2,550
9	2,100	1,940	3,890	1,580	†2,130	†1,290	3,950	3,170	4,840	a4,870	2,500	2,600
10	3,760	†1,700	3,850	1,620	1,790	1,880	3,740	3,110	4,370	3,190	†2,260	2,650
11	2,340	1,830	3,370	1,430	1,770	1,900	3,760	†3,400	6,170	2,670	2,500	2,410
12	1,500	1,890	2,870	†1,180	1,770	1,820	3,780	6,190	6,860	2,420	2,630	2,610
13	†1,330	1,970	2,590	1,620	1,780	1,870	†2,900	7,450	7,030	†2,380	2,580	2,900
14	1,630	2,120	2,470	1,710	1,730	1,960	3,040	5,690	6,730	2,460	2,640	†2,490
15	1,610	2,060	†2,150	1,710	1,610	1,720	3,190	4,980	†6,000	2,460	2,660	2,700
16	1,560	1,810	2,160	1,700	†1,540	†1,820	3,050	4,980	5,080	2,270	2,670	2,960
17	1,940	†1,470	2,170	2,000	1,680	3,400	3,620	5,220	4,270	2,770	†2,530	2,850
18	4,780	2,110	2,130	2,250	1,680	3,670	3,380	†5,220	4,660	4,200	2,660	2,720
19	7,580	2,150	2,180	†2,890	1,670	3,310	3,040	4,590	4,220	4,680	2,720	2,640
20	†13,500	2,230	2,250	2,830	1,680	3,320	†2,890	3,740	3,800	†3,800	2,740	2,340
21	11,300	1,660	2,030	2,380	1,680	3,420	3,700	3,870	3,440	3,610	2,690	†2,080
22	7,200	2,110	†1,560	2,230	1,360	2,950	3,790	4,080	†3,780	2,250	2,690	2,570
23	4,900	2,010	1,890	2,060	†1,540	†2,120	4,420	4,840	5,090	2,520	2,740	2,750
24	5,770	†1,350	2,280	2,010	1,580	3,280	4,970	6,450	4,620	2,270	†2,580	2,720
25	5,080	2,140	2,030	2,020	1,570	3,360	4,900	†6,590	5,040	2,320	2,690	2,700
26	3,880	2,210	2,060	†2,100	1,570	3,400	5,110	5,940	4,610	2,370	2,590	2,760
27	†3,040	2,230	1,960	2,100	1,620	3,460	†5,350	5,490	3,360	†3,100	2,720	2,460
28	4,050	2,050	1,850	1,810	1,700	3,460	5,760	4,760	2,920	2,480	2,710	†2,430
29	2,510	2,160	†2,010	1,770	-	3,050	5,560	4,590	†2,530	2,420	2,670	2,680
30	3,630	1,670	2,080	1,850	-	†2,460	6,580	4,480	3,030	2,640	2,740	2,830
31	2,470	-	1,820	2,040	-	3,290	-	5,450	-	2,670	†2,540	-

Month	Observed				Change in contents in Ruby and Diablo Reservoirs (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Runoff in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	13,500	1,330	3,638	223,700	+17,020	240,700	3,915	3.38	3.90
November	2,330	1,350	1,966	117,000	-14,920	102,100	1,716	1.48	1.65
December	3,890	1,290	2,222	136,600	+16,730	153,300	2,493	2.15	2.48
Calendar year 1940	13,500	1,280	3,306	2,400,000	+105,500	2,505,000	3,451	2.98	40.49
January	2,890	1,180	1,870	115,000	+690	115,700	1,882	1.62	1.87
February	2,840	1,360	1,877	104,200	-5,060	99,100	1,784	1.54	1.60
March	3,570	1,290	2,416	148,600	-18,970	129,600	2,108	1.82	2.10
April	6,580	2,290	3,815	227,000	+26,360	253,400	4,259	3.67	4.10
May	7,450	3,110	5,021	308,700	-1,120	307,600	5,003	4.31	4.97
June	7,030	2,530	4,858	289,100	-7,010	282,100	4,741	4.09	4.56
July	6,410	1,590	3,158	194,200	+10,950	205,200	3,337	2.88	3.32
August	2,740	1,560	2,519	154,900	-14,850	140,000	2,277	1.96	2.26
September	2,960	2,080	2,605	155,000	-10,280	144,700	2,432	2.10	2.34
Water year 1940-41	13,500	1,180	3,003	2,174,000	-460	2,174,000	3,002	2.59	35.15

† Sunday.

a No gage-height record; discharge computed on basis of records for station at Ferry Bar, furnished by city of Seattle.

Note.- Change in contents based on midnight elevations.

Skagit River near Concrete, Wash.

Location.- Water-stage recorder, lat. 48°32', long. 121°46', in sec. 16, T 35 N., R. 8 E., at dalles 2 miles downstream from Baker River and 2½ miles southwest of Concrete. Datum of gage is 130.0 feet above mean sea level, datum of 1929.

Drainage area.- 2,700 square miles, of which 390 square miles is in Canada.

Records available.- September 1924 to September 1941.

Average discharge.- 17 years, 14,080 second-feet (adjusted for storage in Lake Shannon Reservoir since October 1925, Diablo Reservoir since October 1929, and Ruby Reservoir since March 1940).

Extremes.- Maximum discharge during year, 51,000 second-feet Oct. 19 (gage height, 26.20 feet); minimum, 3,540 second-feet (regulated) Oct. 6 (gage height, 13.51 feet); minimum daily, 4,120 second-feet (regulated) Oct. 6.

1924-41: Maximum discharge, 147,000 second-feet Feb. 27, 1932 (gage height, 40.0 feet, present datum); minimum, probably less than 2,160 second-feet during Oct. 1-24, 1925, when recorder was not operating and gates in Baker River Dam were first closed; minimum daily recorded, 2,610 second-feet (regulated) Nov. 14, 1936.

Maximum stage known, 69.3 feet, present datum, from floodmarks (discharge, about 500,000 second-feet), occurred about 1815. Records of other floods prior to establishment of station are given in Water-Supply Paper 612.

Remarks.- Records excellent except those for period of no gage-height record, which are fair. All diversions returned to river above gage. Flow partly regulated by power plants on Baker and upper Skagit Rivers, and by Ruby, Diablo, and Lake Shannon Reservoirs (see p. 67). Records of daily discharge not adjusted for change in contents of reservoirs.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,620	11,000	†10,100	8,110	14,300	9,280	10,700	17,300	†17,600	11,400	a6,400	9,050
2	5,480	9,620	11,400	7,680	†12,700	†9,460	12,200	16,600	16,800	11,600	a6,000	7,920
3	5,100	†9,340	14,200	7,620	10,400	8,740	11,000	15,200	14,200	11,500	†a5,300	9,660
4	4,930	8,460	13,400	7,590	10,000	8,180	9,880	†13,000	13,700	9,390	a5,900	13,400
5	4,620	8,360	15,900	†6,840	9,510	7,710	9,540	12,500	14,400	9,430	5,860	9,650
6	†4,120	8,460	16,700	6,920	9,190	7,400	†9,360	11,500	16,800	†10,200	5,740	8,480
7	4,260	9,420	16,900	6,760	8,640	7,330	9,150	11,200	18,900	13,900	5,860	†7,200
8	4,370	11,200	†21,800	6,420	8,200	7,340	9,340	10,400	†15,600	13,300	6,180	6,330
9	4,220	9,460	19,500	6,400	†7,900	6,560	10,200	9,340	13,900	11,800	6,480	7,000
10	13,800	†8,400	14,800	6,920	7,740	†6,920	10,600	9,510	12,500	10,000	†6,290	12,400
11	18,500	7,720	13,000	6,800	7,800	7,160	10,100	†10,500	15,900	9,140	6,420	10,600
12	9,490	7,560	11,600	†6,280	7,600	7,080	10,100	18,000	21,100	8,560	7,800	9,560
13	†8,580	7,250	10,400	7,100	7,220	6,940	†8,900	19,200	20,400	†7,840	7,000	13,900
14	7,540	7,440	9,760	7,380	7,040	6,990	8,590	15,800	17,600	8,880	6,680	†20,100
15	7,050	7,440	†8,650	7,220	6,620	6,960	9,930	13,700	†16,000	9,530	6,690	16,600
16	6,540	7,120	8,540	7,520	†6,100	†6,420	9,760	15,100	14,500	9,680	6,590	16,100
17	6,710	†6,900	8,450	9,020	6,510	7,740	9,570	25,200	12,600	9,860	†6,410	16,800
18	35,700	6,980	8,280	21,300	6,580	8,680	9,560	†20,500	13,500	11,300	6,920	13,100
19	39,300	6,600	8,380	†15,700	6,440	9,040	8,900	16,500	14,500	11,900	6,880	11,600
20	†42,200	6,400	11,800	12,700	6,400	8,560	†8,700	14,600	13,000	†11,100	6,740	10,700
21	40,000	5,820	10,100	10,600	6,450	8,360	9,660	14,200	11,600	9,180	6,880	†9,470
22	24,100	5,720	†10,300	10,000	6,120	8,400	10,700	14,400	†11,900	8,720	6,570	8,600
23	17,100	5,780	9,580	9,120	†5,810	†7,200	11,700	17,000	13,900	7,220	6,940	8,680
24	21,900	†6,200	10,700	8,670	6,260	7,380	12,300	21,000	12,900	6,820	†6,600	8,500
25	17,600	6,740	9,450	10,000	6,300	8,100	13,000	†20,200	12,400	6,500	5,960	8,110
26	13,700	7,140	10,000	†10,100	6,450	8,490	13,400	18,000	12,400	a6,800	6,340	8,920
27	†10,500	7,650	9,440	9,460	6,840	9,020	†13,300	16,500	10,800	†a7,700	6,680	8,700
28	10,100	9,330	9,180	8,670	9,220	9,550	13,800	14,300	10,100	a6,800	6,270	†7,330
29	9,390	16,700	†10,400	8,260	-	9,740	14,000	13,400	†10,100	a6,300	5,980	7,440
30	11,300	13,000	10,100	8,080	-	†9,540	16,400	12,600	10,400	a6,500	5,670	8,540
31	12,700	-	8,840	10,100	-	10,300	-	17,200	-	a6,600	†6,460	-

Month	Observed				Change in contents (acre-feet)‡	Adjusted for change in reservoir contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	42,200	4,120	13,790	848,000	+27,760	875,800	14,240	5.27	6.08
November	16,700	5,720	8,307	494,300	-17,380	476,900	8,015	2.97	3.31
December	21,800	8,280	11,670	717,300	+17,150	734,400	11,940	4.42	5.10
Calendar year 1940	42,200	4,120	12,140	8,810,000	+103,900	8,914,000	12,280	4.55	61.89
January	21,300	6,280	8,882	546,100	+2,860	549,000	8,929	3.31	3.82
February	14,300	5,810	7,869	437,000	-18,920	418,100	7,528	2.79	2.90
March	10,300	6,420	8,083	497,000	-20,030	477,000	7,758	2.87	3.31
April	16,400	8,590	10,810	643,300	+26,510	669,800	11,260	4.17	4.65
May	25,200	9,340	15,300	941,100	+15,000	956,100	15,550	5.76	6.64
June	21,100	10,100	14,330	852,900	-7,010	845,900	14,220	5.27	5.88
July	13,900	6,300	9,337	574,100	+9,490	583,600	9,491	3.52	4.06
August	7,800	5,300	6,403	393,700	-14,110	379,600	6,174	2.29	2.64
September	20,100	6,330	10,480	623,700	-11,220	612,500	10,290	3.81	4.25
Water year 1940-41	42,200	4,120	10,460	7,568,000	+10,100	7,579,000	10,470	3.88	52.64

† Sunday.
‡ Change in contents in Ruby, Diablo, and Lake Shannon Reservoirs.
a No gage-height record; discharge computed on basis of records for Skagit River at Newhalem, Sauk River near Sauk, and unpublished records for Baker River at Concrete.

Skagit River near Mount Vernon, Wash.

Location.- Water-stage recorder, lat. 48°25'40", long. 122°20'00", in SE¼ sec. 7, T. 34 N., R. 3 E., on drawrest of, and 150 feet downstream from bridge on U. S. Highway No. 99 and about 1 mile north of Mount Vernon. Datum of gage is mean sea level, datum of 1929. Auxiliary water-stage recorder, lat. 48°25'20", long. 122°20'10", in NE¼ sec. 19, T. 34 N., R. 4 E., on left bank, 250 feet upstream from highway bridge and in rear of Carnation Creamery plant in Mount Vernon. Datum of gage is mean sea level, datum of 1929.

Drainage area.- 3,060 square miles.

Records available.- November 1940 to September 1941.

Extremes.- Maximum discharge during period, 28,100 second-feet May 17 (elevation, 17.70 feet); minimum, 4,560 second-feet (regulated) Aug. 4 (elevation, 8.30 feet).
Maximum stage known, 37 feet at base gage and 29 feet at auxiliary gage in 1906, from Great Northern Ry. high-water profile.

Remarks.- Records good except those for period of no gage-height record, which are fair. The city of Anacortes diverts a comparatively insignificant amount at Avalon, between gages, for municipal water supply. Flow partly regulated by power plants on Baker and upper Skagit Rivers, and by Ruby, Diablo and Lake Shannon Reservoirs.

Rating table, November 1940 to September 1941 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 21 to Jan. 4, Sept. 17-30)

8.5	5,000	10.0	8,350	12.0	13,000	15.0	20,500
9.0	6,100	11.0	10,600	13.0	15,400	17.0	26,000

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		a13,000	14,000	10,200	15,700	11,100	10,600	16,700	19,200	11,800	6,980	9,960
2		a11,000	13,700	9,040	15,900	11,600	12,100	16,900	16,900	12,300	6,320	9,040
3		a11,000	15,200	8,810	12,800	10,200	11,800	16,200	15,700	12,300	5,880	9,270
4		a10,000	17,700	8,810	11,600	9,270	10,400	14,200	14,500	10,900	5,220	14,900
5		a9,900	17,200	8,120	11,100	8,580	10,200	14,000	14,500	9,730	5,880	12,100
6		a10,000	21,600	7,430	10,200	8,120	11,100	13,000	16,400	10,600	5,660	9,730
7		a11,000	19,000	7,430	9,730	7,890	9,960	12,300	18,200	12,800	5,660	8,580
8		a12,000	24,300	6,980	9,270	7,890	9,960	11,600	17,200	14,200	5,880	8,980
9		a13,000	25,200	6,980	8,810	7,200	10,200	10,200	15,200	12,500	6,320	6,760
10		a11,000	19,200	7,430	8,580	6,760	11,100	9,960	13,500	11,600	6,540	11,800
11		a9,600	16,900	7,660	8,810	7,430	10,900	10,400	14,200	9,960	6,320	12,800
12		a8,900	14,500	7,200	8,580	7,430	10,400	14,500	19,500	9,500	7,200	10,600
13		a8,500	13,000	7,430	8,120	7,200	9,960	19,500	20,300	8,580	7,430	12,300
14		a8,600	12,100	8,350	7,660	6,980	8,810	17,200	18,200	8,810	6,980	19,800
15		a8,600	10,900	8,350	7,200	7,200	10,200	14,700	16,700	9,730	6,540	19,200
16		a8,300	10,200	8,810	6,540	6,760	10,600	15,200	15,400	10,200	6,540	15,400
17		a8,000	9,960	10,200	6,540	6,760	9,730	24,900	13,700	10,200	6,540	19,500
18		a8,100	9,960	22,100	6,760	8,580	9,960	24,000	13,700	11,100	6,760	15,700
19		a7,800	9,960	21,600	6,540	9,500	9,270	18,400	15,900	12,300	6,980	14,200
20		a7,600	13,300	15,400	6,540	9,040	9,040	16,700	14,900	12,100	6,980	12,500
21		7,430	13,300	13,500	6,320	8,580	9,270	15,200	13,500	9,960	6,980	11,100
22		6,540	12,500	11,600	6,320	9,270	10,600	14,700	12,500	9,730	6,760	9,730
23		6,760	11,300	10,600	5,660	8,350	11,300	16,700	13,700	7,890	6,540	9,500
24		7,200	12,300	9,960	6,100	6,980	12,300	19,500	14,200	7,200	7,430	9,500
25		8,120	12,500	11,100	6,540	8,120	13,000	20,500	13,000	6,760	6,100	9,040
26		8,810	11,800	13,300	6,760	8,350	13,300	19,000	13,300	6,540	6,320	9,270
27		9,040	11,600	11,300	7,430	9,040	13,700	17,200	12,300	6,760	6,760	9,730
28		11,300	11,300	10,400	10,200	9,500	13,300	15,700	11,100	7,430	6,760	8,580
29		16,900	13,300	9,730	-	9,730	14,000	14,500	10,600	6,980	6,100	7,660
30		18,400	13,700	9,270	-	9,960	15,400	13,700	11,100	6,760	5,660	8,350
31		-	11,600	10,400	-	9,730	-	14,900	-	7,200	5,660	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	-	-	-	-	-
November	296,400	18,400	6,540	9,880	587,900
December	443,080	25,200	9,960	14,290	878,800
Calendar year	-	-	-	-	-
January	319,490	22,100	6,980	10,310	633,700
February	242,310	15,900	5,600	8,654	480,600
March	263,100	11,600	6,760	8,487	521,900
April	332,460	15,400	8,810	11,080	659,400
May	492,160	24,900	9,960	15,880	976,200
June	449,100	20,300	10,600	14,970	890,800
July	304,420	14,200	6,540	9,820	603,800
August	199,680	7,430	5,220	6,441	396,100
September	343,580	19,800	6,760	11,450	681,500
The period	-	-	-	-	7,311,000

a No gage-height record; discharge computed on basis of records for station near Concrete.

Reservoirs in Skagit River Basin, Wash.

Ruby Reservoir.- Water-stage recorder, lat. 48°44', long. 121°04', in SE¼ sec. 35, T. 38 N., R. 13 E., at Ross Dam on Skagit River, 9 miles northeast of Newhalem. Datum of gage is at mean sea level (city of Seattle bench mark). Records available, March 1940 to September 1941. Maximum contents during year, 112,600 acre-feet July 19 (elevation, 1,384.6 feet); minimum, 73,560 acre-feet Oct. 10 (elevation, 1,363.3 feet). Maximum contents during period 1940-41, that of July 19, 1941.

Reservoir is formed by concrete dam completed to elevation 1,365 feet in 1940; additional storage provided by timber crib to elevation 1,380 feet; storage began Mar. 11, 1940. Capacity, 102,300 acre-feet between elevation 1,250 feet (lowest outlet) and 1,380 feet (overflow). Dead storage negligible. Water used to supplement low flow of Skagit River through city of Seattle's Diablo and Newhalem power plants. Gage-height record collected in cooperation with city of Seattle. Figures given herein represent total contents.

Diablo Reservoir.- Water-stage recorder, lat. 48°43', long. 121°08', in Diablo Dam on Skagit River, sec. 6, T. 37 N., R. 13 E. (unsurveyed), 1 mile downstream from Thunder Creek and 6 miles northeast of Newhalem. Datum of gage is at mean sea level, subject to correction to datum of 1929. Records available, October 1929 (revised) to September 1941. October 1929 to September 1938, change in reservoir contents published with tables of monthly discharge for Skagit River at Newhalem, Wash. Maximum contents during year, 92,340 acre-feet Oct. 10 (elevation, 1,206.1 feet); minimum, 83,580 acre-feet Sept. 28 (elevation, 1,196.4 feet). Maximum contents during period 1929-41, 92,720 acre-feet July 14, 1933 (elevation, 1,206.5 feet).

Reservoir is formed by concrete dam, completed in 1930. Capacity, 76,800 acre-feet between elevations 1,040 feet (bottom of outlet pipes) and 1,205 feet (top of taintor gates). Dead storage, 14,500 acre-feet. Crest of spillway is at elevation 1,187 feet. Water is used by city of Seattle for power development at Diablo and Newhalem power plants. Gage-height record collected in cooperation with city of Seattle. Figures given herein represent total contents.

Lake Shannon.- Staff gage, lat. 48°33', long. 121°44', in sec. 2, T. 35 N., R. 8 E., on Baker River, half a mile north of Concrete and 1 mile upstream from mouth of Baker River. Datum of gage is at mean sea level, subject to correction to datum of 1929. Records available, October 1938 to September 1941.

Reservoir is formed by concrete dam, completed in June 1927. Capacity, 132,500 acre-feet between elevations 360 feet (lowest elevation for capacity operation) and 435 feet (spillway crest). Dead storage unknown. Water is used by Puget Sound Power & Light Co. for power development. Gage-height records furnished by Puget Sound Power & Light Co. Figures given herein represent contents above elevation 340 feet (center line of outlet tunnel).

Monthly elevation and contents, water year October 1940 to September 1941

Date	Ruby Reservoir			Diablo Reservoir			Lake Shannon		
	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	1,370.92	86,530	-	1,204.80	91,110	-	429.09	143,140	-
Oct. 31	1,381.37	106,190	+19,660	1,201.99	88,470	-2,640	433.95	153,880	+10,740
Nov. 30	1,372.72	89,760	-16,430	1,203.60	89,980	+1,510	432.85	151,420	-2,460
Dec. 31	1,381.04	105,540	+15,780	1,204.61	90,930	+950	433.04	151,840	+420
Calendar year 1940	-	-	+105,500	-	-	+20	-	-	-1,660
Jan. 31	1,381.19	105,830	+290	1,205.03	91,330	+400	434.01	154,010	+2,170
Feb. 28	1,381.05	105,560	-270	1,199.93	86,540	-4,790	427.71	140,150	-13,860
Mar. 31	1,369.82	84,580	-20,980	1,202.07	88,550	+2,010	427.22	139,090	-1,060
Apr. 30	1,382.32	108,060	+23,480	1,205.14	91,430	+2,880	427.29	139,240	+150
May 31	1,382.11	107,650	-410	1,204.38	90,720	-710	434.61	155,360	+16,120
June 30	1,378.62	100,820	-6,830	1,204.19	90,540	-180	434.61	155,360	0
July 31	1,384.17	111,740	+10,920	1,204.22	90,570	+30	433.96	153,900	-1,460
Aug. 31	1,376.52	96,800	-14,940	1,204.32	90,660	+90	434.29	154,640	+740
Sept.30	1,373.82	91,770	-5,030	1,198.58	85,410	-5,250	433.87	153,700	-940
Water year 1940-41	-	-	+5,240	-	-	-5,700	-	-	+10,560

† Elevation at midnight.

Beaver Creek near Newhalem, Wash.

Location.- Water-stage recorder, lat. 48°47', long. 121°05', in sec. 14, T. 38 N., R. 13 E., three-quarters of a mile upstream from Ruby Reservoir, about 3½ miles north of Ross Dam on Skagit River, and 10½ miles northeast of Newhalem. Prior to Mar. 23, 1940, staff gage at same site but at datum 1.58 feet lower.

Drainage area.- 63 square miles.

Records available.- March 1940 to September 1941.

Extremes.- 1940: Maximum discharge during period March to September, 1,320 second-feet May 24 (gage height, 4.97 feet); minimum, 139 second-feet Sept. 20.
1940-41: Maximum discharge during water year, 2,980 second-feet (gage height, 7.34 feet); minimum, 105 second-feet Oct. 9.

Remarks.- Records excellent except those for period of no gage-height record, which are poor, and those for period of staff-gage readings, which are fair. No diversion or regulation.

Rating table for period March 1940 to September 1941 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 24, 1940, to Dec. 3, 1940, July 13, 1941, to Aug. 17, 1941)

1.6	120	2.8	402	5.0	1,350
1.8	153	3.1	501	5.7	1,760
2.0	190	3.5	647	7.0	2,660
2.2	234	4.0	852		
2.5	312	4.5	1,080		

Discharge, in second-feet, 1940-41
1940

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						a240	536	590	852	467	271	256
2						a330	484	767	726	501	253	220
3						a330	434	666	706	467	246	229
4						a340	399	609	647	418	246	205
5						a360	371	536	572	418	258	182
6						a330	359	501	518	380	298	196
7						a360	365	501	572	365	321	232
8						a390	450	647	501	380	306	251
9						a340	450	896	536	383	304	276
10						a310	418	1,110	628	380	263	292
11						a280	402	1,010	746	450	258	318
12						h253	484	852	830	536	284	349
13						h229	788	706	852	536	229	324
14						h220	767	686	686	450	209	276
15						h229	609	706	590	467	203	239
16						h518	501	686	554	484	211	209
17						h467	450	666	518	434	232	218
18						h418	666	746	609	356	253	268
19						h402	609	874	746	347	268	175
20						h377	518	852	686	377	306	157
21						h377	484	788	518	418	284	164
22						h377	501	941	467	356	229	205
23						371	536	1,160	501	353	222	225
24						518	590	1,160	572	347	261	220
25						590	572	964	666	298	263	209
26						590	590	706	572	274	227	220
27						686	554	554	434	292	340	355
28						647	518	501	434	312	270	225
29						609	467	554	450	383	229	203
30						647	418	647	467	362	268	196
31						590	-	941	-	284	290	-

a No gage-height record; discharge computed on basis of records for Ruby Creek near Newhalem and Thunder Creek near Newhalem.
h Computed from twice daily staff-gage readings.

Discharge, in second-feet, of Beaver Creek near Newhalem, Wash., 1940-41--Continued
1940-41

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	254	350	166	167	374	246	501	746	590	418	232	450
2	160	347	160	155	377	281	628	666	536	434	211	290
3	148	332	216	150	338	258	536	554	501	434	211	401
4	134	306	251	144	301	236	450	450	467	418	213	484
5	122	284	338	136	276	225	402	418	554	399	198	312
6	112	271	393	133	256	213	396	371	609	418	207	258
7	114	256	380	126	241	211	365	329	609	467	229	220
8	120	362	726	120	229	220	344	292	467	396	253	188
9	112	374	609	133	213	222	371	263	434	362	279	190
10	811	326	467	155	205	213	402	256	484	341	268	426
11	493	287	390	167	205	211	374	353	647	347	266	284
12	271	253	335	171	194	209	359	788	788	362	318	253
13	301	225	290	184	182	207	341	666	767	393	266	435
14	248	207	261	190	171	200	341	484	590	434	244	484
15	287	188	236	184	164	203	386	418	554	484	261	341
16	209	179	216	182	157	213	344	467	467	554	261	509
17	344	173	200	200	151	229	306	666	450	590	246	467
18	1,880	167	192	418	150	253	287	536	518	572	251	347
19	2,280	158	192	399	146	263	279	418	467	536	248	290
20	2,510	151	236	332	143	248	295	371	399	450	261	266
21	1,720	141	216	284	139	232	350	368	371	396	274	232
22	1,010	131	253	258	136	234	402	418	450	315	263	211
23	830	128	246	234	133	222	467	609	501	271	276	227
24	1,040	130	229	218	130	213	484	746	402	253	222	234
25	767	126	220	220	125	216	484	647	390	246	184	234
26	609	123	218	200	125	251	536	554	356	290	194	326
27	484	131	207	188	143	318	554	572	380	309	248	234
28	390	150	203	182	211	353	572	518	434	306	192	196
29	341	179	200	182	-	402	572	484	467	284	180	190
30	341	177	188	190	-	467	706	450	418	271	169	200
31	338	-	177	234	-	484	-	647	-	256	395	-

Peak discharge.- Oct. 18 (6:15 p.m.) 2,160 sec.-ft.; Oct. 19 (6 p.m.) 2,980 sec.-ft.; Oct. 20 (4 a.m.) 2,900 sec.-ft.

Monthly discharge, in second-feet, 1940-41

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
March 1940	12,695	686	220	410	6.51	7.49	25,180
April	15,290	788	359	510	8.10	9.03	30,330
May	23,523	1,160	501	759	12.0	13.89	46,660
June	18,156	852	434	605	9.60	10.72	36,010
July	12,275	536	274	396	6.29	7.25	24,350
August	8,102	340	203	261	4.14	4.78	16,070
September	7,096	355	157	237	3.76	4.19	14,070
The period	-	-	-	-	-	-	192,700
October 1940	18,780	2,510	112	606	9.62	11.09	37,250
November	6,612	374	123	220	3.49	3.90	13,110
December	8,611	726	160	278	4.41	5.08	17,080
Calendar year 1940	-	-	-	-	-	-	-
January 1941	6,236	418	120	201	3.19	3.68	12,370
February	5,615	377	125	201	3.19	3.31	11,140
March	7,953	484	200	257	4.08	4.69	15,770
April	12,834	706	279	428	6.79	7.58	25,460
May	15,525	788	256	501	7.95	9.16	30,790
June	15,067	788	356	502	7.97	8.89	29,880
July	12,006	590	246	387	6.14	7.09	23,810
August	7,520	395	169	243	3.86	4.44	14,920
September	9,179	509	188	306	4.86	5.42	18,210
Water year 1940-41	125,938	2,510	112	345	5.48	74.33	249,800

Ruby Creek near Newhalem, Wash.

Location.- Water-stage recorder, lat. 48°43', long. 121°00', in SE¼ sec. 5, T. 37 N., R. 14 E., about 2 miles upstream from mouth and 12 miles northeast of Newhalem.

Drainage area.- 203 square miles.

Records available.- June 1919 to March 1920, April 1930 to September 1941.

Average discharge.- 11 years (1930-41), 634 second-feet.

Extremes.- Maximum discharge during year, 1,630 second-feet Oct. 20 (gage height, 5.88 feet); minimum, 95 second-feet Oct. 9 (gage height, 3.03 feet).
1919-20, 1930-41: Maximum discharge, 6,730 second-feet Feb. 27, 1932 (gage height, 14.15 feet, site and datum then in use); minimum, 40 second-feet Feb. 22, 1937.

Remarks.- Records excellent. No diversion or regulation.

Cooperation.- Gage-height record collected in cooperation with and results of ten discharge measurements furnished by city of Seattle.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

3.1	108	4.5	523
3.3	147	4.8	690
3.6	214	5.1	895
3.9	294	5.4	1,140
4.2	393	5.7	1,420

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	160	303	204	170	212	195	736	1,420	1,060	509	200	190
2	131	291	219	166	209	207	991	1,280	983	490	188	202
3	119	274	294	183	204	197	903	1,140	911	504	190	222
4	112	261	297	177	200	192	769	975	903	467	188	302
5	108	250	331	164	195	188	684	846	919	425	186	224
6	103	247	340	168	192	186	636	742	991	463	186	207
7	99	250	344	164	195	188	613	672	1,140	500	197	207
8	97	247	450	160	190	197	596	613	911	393	202	179
9	97	226	421	166	188	197	672	574	797	357	209	179
10	324	197	350	170	186	197	729	580	839	337	200	292
11	414	212	303	170	183	204	729	742	1,100	340	212	239
12	247	229	286	172	179	209	703	1,420	1,320	337	347	224
13	255	250	277	175	168	209	678	1,320	1,230	344	244	257
14	222	209	272	177	164	212	690	1,050	967	361	219	364
15	216	204	269	172	166	219	729	888	888	382	216	327
16	190	197	269	172	166	239	672	860	755	389	209	408
17	202	200	255	183	164	261	624	943	729	425	197	476
18	746	192	229	229	164	277	574	825	684	425	197	389
19	1,110	183	224	216	166	274	559	703	624	368	195	340
20	1,280	186	229	204	166	263	585	642	569	321	200	327
21	1,190	177	222	190	166	258	672	636	548	288	202	303
22	776	160	247	204	164	255	790	710	648	258	195	286
23	602	172	229	192	155	244	919	975	672	239	192	280
24	684	172	224	188	166	242	959	1,280	574	242	168	274
25	602	170	214	190	160	261	1,020	1,230	490	229	158	263
26	495	166	209	181	158	312	1,100	1,060	450	239	160	280
27	425	177	204	177	162	361	1,140	935	476	239	197	252
28	386	195	202	179	181	429	1,140	888	509	242	183	236
29	361	234	197	177	-	518	1,230	825	591	229	190	232
30	340	214	192	183	-	619	1,370	762	523	224	166	252
31	327	-	188	190	-	678	-	1,050	-	214	175	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	12,410	1,280	97	400	1.97	2.27	24,610
November	6,445	303	160	215	1.06	1.18	12,780
December	8,191	450	188	264	1.30	1.50	16,250
Calendar year 1940	174,116	2,750	97	476	2.33	31.81	345,400
January	5,609	229	160	181	.892	1.03	11,130
February	4,969	212	155	177	.872	.91	9,860
March	8,488	678	136	274	1.35	1.56	16,840
April	24,212	1,370	559	807	3.98	4.44	48,020
May	28,586	1,420	574	922	4.54	5.24	56,700
June	23,801	1,320	450	793	3.91	4.36	47,210
July	10,780	509	214	348	1.71	1.97	21,380
August	6,168	347	158	199	.980	1.13	12,230
September	8,213	476	179	274	1.35	1.50	16,290
Water year 1940-41	147,872	1,420	97	405	2.00	27.09	293,300

Thunder Creek near Newhalem, Wash.

Location.- Water-stage recorder, lat. 48°40', long. 121°04', in SE¼ sec. 23, T. 37 N., R. 13 E. (unsurveyed), half a mile upstream from backwater from Diablo Reservoir, 8 miles east of Newhalem, and 20 miles northeast of Marblemount.

Drainage area.- 98 square miles.

Records available.- October 1930 to September 1941.

Average discharge.- 11 years, 627 second-feet.

Extremes.- Maximum discharge during year, 4,790 second-feet Oct. 20 (gage height, 9.56 feet); minimum, 126 second-feet Feb. 26 (gage height, 2.88 feet).
1930-41: Maximum discharge, 8,780 second-feet Feb. 26, 1932 (gage height, 11.3 feet), from rating curve extended above 2,000 second-feet; minimum not determined, occurred during period of ice effect.

Remarks.- Records excellent. No diversion or regulation.

Cooperation.- Gage-height record collected in cooperation with, and results of twenty discharge measurements furnished by city of Seattle.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	572	315	261	166	235	187	432	895	810	1,020	764	795
2	355	298	389	158	229	210	585	757	752	1,100	676	768
3	341	276	545	160	215	190	485	621	690	1,110	633	1,120
4	295	261	448	160	208	178	401	498	733	1,140	618	1,140
5	270	246	460	149	195	168	353	428	825	1,080	688	704
6	266	240	460	147	190	164	332	371	955	1,340	853	568
7	302	243	456	147	187	162	302	332	975	1,380	1,010	489
8	306	243	639	143	178	168	295	302	695	1,060	1,090	431
9	370	221	550	153	170	164	322	286	695	940	1,250	508
10	2,170	202	440	168	168	162	342	305	825	935	1,100	796
11	1,350	197	374	173	166	164	328	537	1,230	1,030	1,200	474
12	571	182	328	173	162	164	318	1,180	1,550	1,090	1,490	505
13	514	185	302	175	151	166	315	915	1,350	1,280	1,130	728
14	450	185	276	173	145	166	325	658	1,060	1,490	1,070	720
15	456	185	261	166	145	168	378	559	1,000	1,710	1,150	489
16	343	187	246	162	142	182	339	590	815	1,870	1,030	1,040
17	830	192	235	190	138	197	308	639	815	2,030	1,050	682
18	3,090	182	224	335	136	210	315	494	840	1,890	1,120	489
19	3,960	173	221	282	134	202	279	408	737	1,750	1,140	425
20	3,420	170	240	249	134	190	308	389	639	1,360	1,210	408
21	2,040	164	226	224	134	185	374	416	671	1,150	1,240	362
22	1,020	147	264	215	133	175	456	528	1,040	880	1,090	375
23	890	151	243	205	129	166	524	810	1,020	764	1,070	480
24	1,000	155	229	190	129	164	537	1,020	810	786	688	528
25	685	153	215	192	127	170	567	920	709	816	641	534
26	545	147	210	185	127	205	612	766	658	1,020	672	777
27	456	185	205	178	134	238	626	667	820	1,090	725	422
28	405	218	197	173	173	276	630	630	965	1,090	579	370
29	382	325	197	168	-	325	695	532	1,040	950	499	354
30	371	279	187	173	-	367	805	545	1,000	971	505	511
31	342	-	180	192	-	397	-	870	-	902	860	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	28,367	3,960	266	915	9.34	10.76	56,270
November	6,307	325	147	210	2.14	2.39	12,510
December	9,708	639	180	313	3.19	3.68	19,260
Calendar year 1940	218,412	3,960	138	597	6.09	82.87	433,200
January	5,724	335	143	185	1.89	2.17	11,350
February	4,514	235	127	161	1.64	1.71	8,950
March	6,230	397	162	201	2.05	2.36	12,360
April	12,888	805	279	430	4.39	4.89	25,560
May	18,868	1,180	286	609	6.21	7.16	37,420
June	26,724	1,550	639	891	9.09	10.14	53,010
July	37,024	2,030	764	1,194	12.2	14.05	73,440
August	28,841	1,490	499	930	9.49	10.94	57,210
September	17,992	1,140	354	600	6.12	6.83	35,690
Water year 1940-41	203,187	3,960	127	557	5.68	77.08	403,000

Peak discharge.- Oct. 20 (6 p.m.) 4,790 sec.-ft.; July 17 (8:15 p.m.) 2,420 sec.-ft.

Stetattle Creek near Newhalem, Wash.

Location.- Water-stage recorder, lat. 48°43'40", long. 121°09'30", in NE¼ sec. 6, T. 37 N., R. 13 E., three-quarters of a mile upstream from mouth, 5⅛ miles northeast of Newhalem, and 18½ miles northeast of Marblemount.

Drainage area.- 21.4 square miles.

Records available.- September 1933 to September 1941. December 1913 to March 1914 and December 1914 to April 1915, at site half a mile downstream, published as Stetattle Creek near Marblemount, Wash.

Extremes.- Maximum discharge during year, 1,940 second-feet Oct. 19 (gage height, 6.03 feet), from rating curve extended above 700 second-feet; minimum, 24 second-feet Oct. 9 (gage height, 2.13 feet).

1913-15, 1933-41: Maximum discharge, 4,520 second-feet Nov. 5, 1934 (gage height, 10.4 feet, site and datum then in use), from rating curve extended above 400 second-feet; minimum, 9 second-feet Nov. 9, 10, 11, 1936.

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

Cooperation.- Gage-height record collected in cooperation with, and results of eight discharge measurements furnished by city of Seattle.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	133	111	64	248	184	212	312	233	130	a45	171
2	39	114	151	58	187	179	242	212	215	132	a40	97
3	34	103	267	54	144	132	153	174	181	128	a40	221
4	32	90	176	50	121	107	113	126	187	119	a40	310
5	29	82	281	48	109	93	103	117	215	109	a40	128
6	26	92	248	46	93	88	109	115	224	119	a40	93
7	26	124	276	45	88	88	99	92	215	124	a45	71
8	25	133	649	42	79	97	103	78	139	99	a45	57
9	50	104	308	65	a70	88	128	74	153	90	44	79
10	609	89	187	88	a65	81	134	106	190	83	44	185
11	191	79	134	92	a65	81	117	240	264	84	46	101
12	129	68	107	90	a60	81	115	482	301	88	52	158
13	139	66	90	99	a55	78	115	239	245	93	45	506
14	102	64	76	90	a50	74	134	163	184	99	42	487
15	79	66	68	79	a50	81	161	146	174	107	41	221
16	60	68	61	78	48	95	115	241	134	111	39	469
17	390	77	57	216	47	105	93	308	144	126	38	252
18	1,050	70	57	426	46	109	84	204	184	107	38	184
19	1,130	64	65	230	46	93	95	a160	171	92	38	144
20	731	59	113	156	45	79	133	a130	141	74	37	121
21	570	54	95	119	45	71	171	a130	134	62	37	95
22	247	52	117	99	44	71	212	a200	174	53	37	84
23	239	51	101	86	39	65	218	324	153	48	54	79
24	370	53	93	78	40	62	218	330	121	a45	41	71
25	198	63	90	90	39	81	230	242	128	a45	35	67
26	139	58	84	86	40	132	239	209	115	a55	39	114
27	106	81	79	78	72	158	230	192	132	a50	65	81
28	92	116	78	79	190	179	218	161	134	a50	60	73
29	106	172	86	78	-	192	264	151	158	a50	45	67
30	131	132	81	116	-	218	312	179	128	a45	45	147
31	128	-	73	174	-	212	-	310	-	a45	164	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	7,265	1,130	25	234	10.9	12.63	14,410
November	2,577	172	51	85.9	4.01	4.48	5,110
December	4,459	649	57	144	6.73	7.75	8,840
Calendar year 1940	54,836	1,130	25	150	7.01	95.31	108,800
January	3,199	426	42	103	4.81	5.56	6,350
February	2,225	248	39	79.5	3.71	3.87	4,410
March	3,454	218	62	111	5.19	6.00	6,850
April	4,870	312	84	162	7.57	8.46	9,660
May	6,147	482	74	198	9.25	10.68	12,190
June	5,271	301	115	176	8.22	9.16	10,450
July	2,662	172	45	85.9	4.01	4.63	5,280
August	1,461	164	35	47.1	2.20	2.54	2,900
September	4,933	506	57	164	7.66	8.57	9,780
Water year 1940-41	48,523	1,130	25	133	6.21	84.33	96,230

Peak discharge.- Oct. 18 (10:30 a.m.) 1,600 sec.-ft.; Oct. 19 (8:30 a.m.) 1,940 sec.-ft.; Oct. 20 (4:30 p.m.) 1,280 sec.-ft.

a No gage-height record; discharge computed on basis of one discharge measurement and records for Beaver Creek near Newhalem.

Cascade River at Marblemount, Wash.

Location.- Water-stage recorder, lat. 48°31'45", long. 121°23'30", in SW¼ sec. 9, T. 35 N., R. 11 E., 2 miles east of Marblemount and 2½ miles upstream from mouth.

Drainage area.- 180 square miles.

Records available.- September 1928 to September 1941.

Average discharge.- 13 years, 957 second-feet.

Extremes.- Maximum discharge during year, 4,430 second-feet Oct. 19 (gage height, 6.58 feet); minimum, 256 second-feet Oct. 9 (gage height, 1.66 feet).
1928-41: Maximum discharge, 12,900 second-feet Feb. 26, 1932 (gage height, 9.88 feet); minimum, 149 second-feet Nov. 15, 1929, or may have been less during January or February 1929, when stage-discharge relation was affected by ice; minimum gage height, 1.11 feet Feb. 8, 1937.

Remarks.- Records excellent except those for periods of shifting control, which are good, and those for periods of no gage-height record, which are fair. No diversion or regulation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-9, Oct. 22 to Nov. 28, June 13 to July 5)

1.8	305	3.0	765	5.0	2,250
2.0	365	3.5	1,020	5.5	2,760
2.3	470	4.0	1,350	6.0	3,410
2.6	590	4.5	1,760		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	494	630	890	463	765	550	840	1,510	1,280	992	506	765
2	331	570	1,240	437	652	600	1,050	1,180	1,180	1,020	444	630
3	343	530	1,490	419	590	510	815	1,020	1,050	1,050	448	1,080
4	317	486	1,210	408	550	466	652	840	1,080	992	448	1,560
5	305	463	1,320	391	530	440	610	765	1,180	965	478	675
6	283	466	1,240	378	502	419	610	720	1,460	1,110	510	630
7	289	530	1,320	365	494	408	550	630	1,760	1,180	570	550
8	276	550	1,670	356	463	416	530	570	1,140	940	610	440
9	305	510	1,320	385	440	398	590	530	992	865	652	662
10	2,080	500	1,050	430	426	388	630	590	1,130	815	610	1,140
11	1,810	460	890	430	419	391	590	1,000	1,590	815	610	698
12	890	430	790	433	408	391	550	2,050	1,850	840	815	790
13	905	410	720	440	385	375	530	1,480	1,550	915	630	1,320
14	630	410	652	437	368	368	570	1,050	1,180	965	590	1,800
15	550	410	610	422	359	375	698	890	1,140	1,050	610	1,210
16	459	430	570	433	350	398	610	1,020	965	1,110	570	1,630
17	637	450	530	641	343	419	570	1,350	992	1,110	590	1,300
18	3,010	450	530	1,180	337	433	550	1,080	1,140	1,080	610	992
19	3,250	410	550	840	331	408	550	915	1,080	1,050	610	865
20	3,100	380	790	698	325	385	590	915	965	890	610	865
21	2,690	350	630	610	322	365	698	965	915	765	630	742
22	1,560	340	720	570	310	368	790	1,110	1,180	630	570	675
23	1,180	320	630	530	305	350	890	1,520	1,050	570	700	742
24	1,510	340	610	506	305	340	890	1,670	940	590	482	698
25	1,140	362	570	570	305	356	940	1,470	890	570	444	630
26	890	343	550	530	310	419	992	1,240	840	630	510	908
27	742	469	530	498	330	482	940	1,050	865	652	630	652
28	675	640	530	498	440	570	890	965	890	652	530	570
29	652	1,390	570	478	-	630	1,080	865	1,080	590	433	550
30	675	992	530	498	-	720	1,280	990	965	590	405	808
31	675	-	498	610	-	790	-	1,430	-	590	650	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	32,653	3,250	276	1,053	5.85	6.75	64,770
November	15,021	1,390	320	501	2.78	3.10	29,790
December	25,750	1,670	498	831	4.62	5.32	51,070
Calendar year 1940	316,158	3,250	276	864	4.80	65.31	627,100
January	15,884	1,180	356	512	2.84	3.28	31,510
February	11,664	765	305	417	2.32	2.41	23,140
March	13,928	790	340	449	2.49	2.88	27,630
April	22,075	1,280	530	736	4.09	4.56	43,790
May	33,280	2,050	530	1,074	5.97	6.88	66,010
June	34,319	1,850	840	1,144	6.36	7.09	68,070
July	26,583	1,180	570	858	4.77	5.49	52,730
August	17,505	815	405	565	3.14	3.62	34,720
September	26,577	1,800	440	886	4.92	5.49	52,710
Water year 1940-41	275,239	3,250	276	754	4.19	56.87	545,900

Peak discharge.- Oct. 18 (11:30 a.m.) 4,160 sec.-ft.; Oct. 19 (12 m.) 4,430 sec.-ft.; Oct. 20 (6:30 p.m.) 4,250 sec.-ft.; Oct. 21 (10 a.m.) 3,260 sec.-ft.
Note.- No gage-height record Nov. 10-23, Feb. 22 to Mar. 2; discharge computed on basis of recorded range of stage and records for Sauk River above Whitechuck River, near Darrington, and Thunder Creek near Newhalem.

Sauk River above Whitechuck River, near Darrington, Wash.

Location.- Water-stage recorder, lat. 48°10'00", long. 121°27'45", in NW¼ sec. 24, T. 31 N., R. 10 E., half a mile upstream from Whitechuck River and 9¼ miles southeast of Darrington.

Drainage area.- 152 square miles.

Records available.- August to November 1910 (fragmentary gage heights), October 1917 to September 1922, August 1928 to September 1941.

Average discharge.- 18 years (1917-22, 1928-41), 1,085 second-feet.

Extremes.- Maximum discharge during year, 4,180 second-feet Oct. 18 (gage height, 5.94 feet); minimum, 147 second-feet Oct. 8, 9 (gage height, 2.14 feet).
1917-22, 1928-41: Maximum discharge, 23,000 second-feet Dec. 12, 1921 (gage height, 14.65 feet), from rating curve extended above 3,000 second-feet; minimum, 115 second-feet Nov. 15, 16, 30, Dec. 1, 1936.

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

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-9)

2.2	186	3.0	600	4.0	1,520
2.4	264	3.3	839	4.5	2,090
2.7	411	3.6	1,110	5.0	2,740

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	277	1,120	1,190	566	1,250	772	1,070	a1,150	1,210	638	219	363
2	219	964	1,160	519	1,120	883	1,250	a900	1,070	615	204	329
3	197	831	1,630	482	927	715	1,020	1,050	1,000	608	204	535
4	201	715	1,420	463	789	608	857	901	936	552	201	880
5	197	630	a1,750	440	707	546	772	918	1,010	526	197	494
6	176	615	a1,950	428	645	513	739	918	1,110	532	197	411
7	166	763	a2,100	406	622	488	668	763	1,310	532	201	440
8	166	909	a2,300	384	573	488	638	668	945	482	208	338
9	156	a800	a1,750	395	532	482	691	600	831	440	212	403
10	2,080	a650	a1,350	423	513	457	747	615	865	411	212	1,070
11	2,070	a550	a1,100	446	507	446	731	945	1,150	406	216	707
12	936	a500	a900	452	475	434	668	1,660	1,310	400	260	645
13	964	a450	814	463	440	423	622	1,420	1,170	406	223	952
14	660	a450	723	469	411	411	630	1,160	918	423	212	1,800
15	507	446	652	469	384	395	763	982	839	434	219	1,520
16	423	463	593	546	374	406	691	1,360	739	446	212	1,800
17	519	488	546	892	358	423	622	2,210	699	452	204	1,580
18	2,940	488	532	2,280	343	507	586	1,680	848	423	201	1,100
19	2,470	452	630	1,420	338	532	573	1,310	901	400	201	892
20	2,470	428	1,230	1,040	338	482	600	1,170	927	353	208	805
21	2,670	406	936	848	324	440	675	1,140	772	319	208	675
22	1,740	374	1,030	731	324	463	780	1,250	831	286	216	580
23	1,290	358	901	645	319	446	918	1,470	772	260	268	526
24	1,630	379	831	608	319	423	964	1,680	683	256	235	475
25	1,270	494	763	814	319	417	1,070	1,520	707	244	193	440
26	982	452	747	883	324	469	1,100	1,300	660	244	201	571
27	805	640	699	715	384	580	1,110	1,100	622	248	235	593
28	699	1,300	699	645	630	683	1,090	1,000	622	244	256	482
29	691	2,600	805	600	-	805	1,210	918	731	235	216	482
30	1,070	1,630	723	630	-	955	1,360	883	675	235	193	590
31	1,420	-	638	992	-	1,020	-	1,360	-	227	248	-

Month	Second-feet-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	32,051	2,940	156	1,034	6.80	7.84	63,570
November	21,345	2,600	358	712	4.68	5.22	42,340
December	33,092	2,300	532	1,067	7.02	8.10	65,640
Calendar year 1940	324,433	2,940	156	886	5.83	79.39	643,500
January	20,994	2,280	384	677	4.45	5.14	41,640
February	14,589	1,250	319	521	3.43	3.57	28,940
March	17,112	1,020	395	552	3.63	4.19	33,940
April	25,215	1,360	573	840	5.53	6.17	50,010
May	36,021	2,210	600	1,162	7.64	8.81	71,450
June	26,863	1,310	622	895	5.89	6.57	53,280
July	12,277	638	227	396	2.61	3.00	24,350
August	6,680	268	193	215	1.41	1.63	13,250
September	22,478	1,800	329	749	4.93	5.50	44,580
Water year 1940-41	268,717	2,940	156	736	4.84	65.74	533,000

a No gage-height record; discharge computed on basis of records for South Fork of Stillaguamish River near Granite Falls.

Sauk River near Sauk, Wash.

Location.- Water-stage recorder, lat. 48°25'15", long. 121°33'45", in NW¼ sec. 19, T. 34 N., R. 10 E., 5 miles upstream from mouth, 5 miles southeast of Sauk, and 8 miles downstream from Suiattle River. Datum of gage is approximately 266 feet above mean sea level (river-profile survey).

Drainage area.- 714 square miles.

Records available.- July 1928 to September 1941. August 1910 to August 1912, various gages between a point 1 mile downstream from and a point 5 miles upstream from present site, published as Sauk River near Suiattle Crossing, near Sauk, Wash. All early discharge measurements made at point 5 miles upstream from present site.

Average discharge.- 13 years (1928-41), 4,038 second-feet.

Extremes.- Maximum discharge recorded during year, 7,980 second-feet May 17 (gage height, 6.80 feet), discharge probably greater Oct. 18, during period of doubtful gage-height record; *minimum* not determined (probably occurred during period of no gage-height record, Oct. 1-10).

1910-12, 1928-41: Maximum discharge, 68,500 second-feet Feb. 26, 1932 (gage height, 15.83 feet); minimum, 572 second-feet Dec. 5, 1929; discharge may have been less sometime during period of ice effect Jan. 10-27, 1930.

Remarks.- Records fair. No diversion or regulation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	a1,300	3,250	3,910	2,560	4,260	3,250	3,140	4,630	4,260	3,140	1,720	2,220
2	a1,210	3,040	4,140	2,380	3,910	3,570	3,910	4,020	3,910	3,140	1,600	2,130
3	a1,230	2,840	4,760	2,220	3,360	2,840	3,250	3,800	3,680	3,360	1,620	2,300
4	a1,210	2,560	4,760	2,220	2,840	2,380	2,650	3,250	3,460	3,250	1,620	3,140
5	a1,200	2,300	5,000	2,050	2,560	2,130	2,470	3,250	3,910	3,040	1,690	2,110
6	a1,180	2,560	5,260	2,000	2,380	2,000	2,560	3,360	4,260	3,040	1,760	2,380
7	a1,200	2,840	5,520	1,910	2,300	1,970	2,300	2,840	5,130	3,140	1,830	2,300
8	a1,190	2,940	6,200	1,810	2,130	2,000	2,220	2,470	3,680	2,650	1,870	1,840
9	a1,200	2,940	5,920	1,870	2,100	1,970	2,380	2,220	3,140	2,470	1,840	2,020
10	a6,100	2,560	5,000	2,100	2,000	1,950	2,650	2,220	3,250	2,380	1,740	3,680
11	6,060	2,470	4,380	2,110	2,030	1,950	2,470	3,040	4,630	2,470	1,690	2,650
12	3,460	2,300	3,910	2,100	1,920	1,950	2,300	5,780	5,780	2,470	2,300	2,740
13	2,650	2,220	3,570	2,220	1,780	1,890	2,220	5,390	5,390	2,560	1,870	3,360
14	2,470	2,220	3,360	2,130	1,680	1,800	2,220	4,140	4,020	2,650	1,780	4,760
15	2,110	2,130	3,040	2,080	1,630	1,760	2,650	3,460	3,800	2,740	1,760	4,630
18	1,540	2,130	2,840	2,380	1,570	1,810	2,470	4,630	3,360	2,940	1,620	4,260
17	1,440	2,300	2,740	3,260	1,520	1,910	2,300	7,520	3,360	3,140	1,750	4,380
18	6,300	2,220	2,740	5,390	1,520	2,130	2,220	5,650	3,680	3,250	1,910	4,140
19	6,060	2,050	2,940	4,380	1,480	2,300	2,130	4,880	3,570	2,840	1,890	3,360
20	6,340	2,050	4,880	3,680	1,480	2,000	2,220	4,260	3,250	2,470	1,940	3,460
21	6,620	1,990	3,910	3,140	1,510	1,740	2,470	4,140	3,040	2,220	1,840	3,360
22	4,500	1,920	3,800	2,740	1,500	1,780	2,840	4,260	3,460	2,070	1,810	2,940
23	3,680	1,990	3,360	2,560	1,520	1,760	3,250	5,000	3,800	1,870	1,860	2,740
24	3,680	2,220	3,250	2,380	1,560	1,690	3,250	5,920	3,360	1,800	1,890	2,380
25	3,360	2,650	3,040	3,040	1,500	1,690	3,460	5,520	3,140	1,780	1,700	2,560
26	2,740	2,470	3,140	3,460	1,620	1,870	3,680	4,630	2,940	1,890	1,830	3,360
27	2,470	2,650	3,040	3,040	2,070	2,100	3,800	3,910	2,740	2,050	1,810	2,840
28	2,470	3,330	3,040	2,740	3,250	2,380	3,680	3,570	2,840	1,940	1,750	2,380
29	2,470	6,770	3,460	2,650	-	2,650	4,020	3,360	3,460	1,680	1,640	2,560
30	3,040	5,000	3,250	2,650	-	2,940	4,630	3,140	3,140	1,720	1,540	2,740
31	3,570	-	2,940	3,360	-	3,040	-	4,760	-	1,810	1,640	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	94,050	6,620	1,180	3,034	4.25	4.90	186,500
November	80,910	6,770	1,920	2,697	3.78	4.21	160,500
December	121,100	6,200	2,740	3,906	5.47	6.31	240,200
Calendar year 1940	1,245,710	10,000	1,000	3,404	4.77	64.88	2,471,000
January	82,610	5,390	1,810	2,665	3.73	4.30	163,900
February	58,980	4,260	1,480	2,106	2.95	3.07	117,000
March	67,200	3,570	1,690	2,168	3.04	3.50	133,300
April	85,810	4,630	2,130	2,860	4.01	4.47	170,200
May	129,020	7,520	2,220	4,162	5.83	6.72	255,900
June	111,440	5,780	2,740	3,715	5.20	5.80	221,000
July	77,970	3,360	1,680	2,515	3.52	4.06	154,700
August	55,110	2,300	1,540	1,778	2.49	2.87	109,300
September	89,720	4,760	1,840	2,991	4.19	4.67	178,000
Water year 1940-41	1,053,920	7,520	1,180	2,887	4.04	54.88	2,090,000

a No gage-height record; discharge computed on basis of records for Skykomish River near Gold Bar and Cascade River at Marblemount.

Suiattle River near Mansford, Wash.

Location.- Water-stage recorder, lat. 48°21'50", long. 121°29'30", in N½ sec. 10, T. 33 N., R. 10 E., 2½ miles downstream from Big Creek and 4 miles north of Mansford.

Drainage area.- 335 square miles.

Records available.- July 1938 to September 1941.

Extremes.- Maximum discharge during year, 4,980 second-feet Oct. 18, 19; maximum gage height, 7.83 feet Oct. 18; minimum discharge, 562 second-feet Feb. 25.
1938-41: Maximum discharge, 9,680 second-feet May 29, 1939 (gage height, 9.79 feet), from rating curve extended above 5,000 second-feet; minimum, 444 second-feet Oct. 8, 9, 1939 (gage height, 3.41 feet).

Remarks.- Records fair. No diversion or regulation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	926	1,180	1,780	1,140	1,530	1,060	1,350	2,230	2,180	1,780	879	1,140
2	625	1,140	1,880	1,060	1,300	1,060	1,680	1,930	2,080	1,780	806	1,200
3	786	1,060	2,230	1,020	1,220	879	1,350	1,730	1,980	1,830	793	1,700
4	799	948	1,980	984	1,140	806	1,180	1,480	1,930	1,780	767	1,680
5	812	872	2,180	948	1,100	754	1,100	1,400	2,130	1,730	799	1,180
6	761	879	2,080	914	1,060	730	1,020	1,260	2,340	1,780	866	1,060
7	799	1,020	2,230	914	1,020	711	948	1,180	2,670	1,880	948	914
8	832	1,020	2,620	859	948	724	948	1,060	2,080	1,630	984	786
9	846	948	2,230	879	914	687	1,060	984	1,880	1,530	1,100	1,020
10	2,640	812	1,980	948	879	664	1,100	1,060	1,930	1,440	1,060	1,930
11	2,400	780	1,730	948	872	664	1,020	1,630	2,500	1,480	1,020	1,180
12	1,060	730	1,530	914	846	658	948	2,790	2,970	1,480	1,530	1,180
13	1,260	718	1,440	948	786	641	914	2,340	2,730	1,580	1,020	1,700
14	879	730	1,350	948	754	619	984	1,880	2,280	1,680	1,160	2,400
15	799	724	1,260	914	718	630	1,180	1,630	2,130	1,780	1,060	1,730
16	748	754	1,220	948	693	676	1,020	1,830	1,880	1,880	1,020	1,930
17	1,010	774	1,180	1,340	676	724	948	2,280	1,880	1,930	1,060	1,730
18	3,620	736	1,180	2,560	658	774	914	1,830	1,930	1,880	1,070	1,300
19	3,610	724	1,260	1,980	636	724	914	1,630	1,780	1,730	1,100	1,140
20	3,670	724	1,780	1,730	625	647	1,020	1,630	1,580	1,480	1,110	1,140
21	3,280	711	1,400	1,530	614	614	1,220	1,730	1,530	1,400	1,220	1,020
22	2,130	670	1,530	1,400	593	630	1,400	1,930	1,830	1,180	1,060	948
23	1,680	687	1,400	1,260	582	604	1,530	2,340	1,830	1,060	1,400	948
24	2,180	767	1,350	1,180	582	577	1,580	2,730	1,680	1,020	948	948
25	1,780	799	1,260	1,260	577	593	1,680	2,560	1,580	1,020	948	948
26	1,440	761	1,220	1,260	593	724	1,780	2,230	1,480	1,100	1,020	1,440
27	1,220	1,140	1,220	1,140	705	846	1,730	1,980	1,530	1,140	1,020	1,140
28	1,140	1,460	1,260	1,100	1,060	948	1,730	1,830	1,530	1,140	948	984
29	1,180	2,620	1,300	1,060	-	1,100	1,980	1,730	1,930	1,060	872	984
30	1,220	2,030	1,220	1,060	-	1,220	2,180	1,680	1,780	1,060	832	1,210
31	1,350	-	1,180	1,180	-	1,300	-	2,400	-	984	1,020	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	47,482	3,670	625	1,532	4.57	5.27	94,180
November	28,918	2,620	670	964	2.88	3.21	57,360
December	49,460	2,620	1,180	1,595	4.76	5.49	98,100
Calendar year 1940	566,931	4,800	588	1,549	4.62	62.94	1,124,000
January	36,326	2,560	859	1,172	3.50	4.03	72,050
February	23,681	1,530	577	846	2.53	2.63	46,970
March	23,988	1,300	577	774	2.31	2.66	47,580
April	38,408	2,180	914	1,280	3.82	4.26	76,180
May	56,924	2,790	984	1,836	5.48	6.32	112,900
June	59,560	2,970	1,480	1,985	5.93	6.61	118,100
July	46,224	1,930	984	1,491	4.45	5.13	91,680
August	31,440	1,530	767	1,014	3.03	3.49	62,360
September	38,610	2,400	786	1,287	3.84	4.29	76,580
Water year 1940-41	481,021	3,670	577	1,318	3.93	53.39	954,000

Peak discharge.- Oct. 18 (9:15 a.m.) 4,980 sec.-ft.; Oct. 19 (6:15 p.m.) 4,980 sec.-ft.; Oct. 20 (7:30 p.m.) 4,870 sec.-ft.

Whatcom Creek near Bellingham, Wash.

Location.- Water-stage recorder, lat. 48°45'10", long. 122°25'40", in NW¼SE¼ sec. 28, T. 38 N., R. 3 E., in Whatcom Falls State Park, three-quarters of a mile downstream from Lake Whatcom and 2 miles east of Bellingham. Datum of gage is 200.00 feet above mean sea level (city of Bellingham datum).

Drainage area.- 56 square miles.

Records available.- November 1910 to September 1914 (gage heights only October 1912 to September 1914), July 1939 to September 1941.

Extremes (regulated).- Maximum discharge during year, 473 second-feet Jan. 23 (gage height, 88.08 feet); minimum, 0.4 second-foot Jan. 13, 14; minimum gage height, 84.81 feet Jan. 14; minimum daily discharge, 0.4 second-foot Jan. 13.

1910-12, 1939-41: Maximum discharge observed, 739 second-feet Nov. 20, 21, 1911 (gage height, 5.50 feet, site and datum then in use); minimum discharge, that of Jan. 13, 14, 1941; minimum daily discharge, that of Jan. 13, 1941.

Remarks.- Records excellent except those below 10 second-feet, which are fair. Flow regulated by Lake Whatcom (usable capacity, about 28,800 acre-feet). The city of Bellingham diverts about 30 second-feet from lake for municipal supply.

Cooperation.- Gage-height record collected in cooperation with the city of Bellingham.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

84.9	0.9	85.4	11	86.6	113
85.0	2.0	85.6	18	87.0	187
85.1	3.5	85.8	27	87.4	277
85.2	5.4	86.0	40	87.8	383
85.3	7.8	86.3	70		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.5	1.7	0.7	0.8	297	2.2	2.2	1.8	2.1	2.1	1.3	1.2
2	3.3	1.7	.7	.8	292	2.0	2.2	1.7	2.1	2.0	1.3	1.2
3	3.3	1.7	.8	.8	290	2.0	2.0	1.7	2.2	2.0	1.4	1.3
4	3.3	1.6	.8	.8	230	2.1	2.0	1.8	2.4	1.8	1.4	1.2
5	3.1	1.6	.8	.8	161	2.1	6.6	1.7	2.4	1.7	1.4	1.1
6	3.0	1.6	.8	.6	79	2.1	20	1.7	2.4	1.7	1.3	1.1
7	2.8	1.6	.8	.8	42	2.0	20	1.5	2.5	1.7	1.3	1.1
8	2.8	1.5	.9	.8	42	2.4	36	1.6	2.4	1.6	1.3	1.1
9	2.6	1.5	.9	.8	42	2.2	45	1.5	2.4	1.5	1.2	1.1
10	2.5	1.4	.9	.8	42	2.0	45	1.5	2.1	1.5	1.3	1.2
11	2.4	1.4	.9	.8	42	1.8	45	1.5	3.4	1.5	1.5	1.1
12	2.4	1.4	.8	.6	42	2.0	44	1.6	3.8	1.5	1.4	1.1
13	2.4	1.4	.8	.4	42	1.8	44	1.4	1.6	1.5	1.4	.9
14	2.4	1.4	.8	.6	42	1.8	18	1.4	4.5	1.5	1.4	.8
15	2.4	6.9	.8	.8	17	2.2	3.1	1.4	2.1	1.5	1.3	.8
16	2.2	1.5	.8	1.1	2.6	2.0	2.8	1.4	1.7	12	1.3	.8
17	2.2	1.6	.8	1.7	2.6	2.2	2.2	1.5	1.5	6.1	1.3	1.1
18	2.2	16	.8	1.7	2.4	2.1	2.0	1.4	1.5	1.6	1.3	1.4
19	2.2	38	.8	138	2.4	2.1	2.1	1.2	1.4	1.6	1.4	1.2
20	2.2	38	.8	353	2.2	2.0	2.1	3.8	1.4	1.5	1.4	1.2
21	2.2	46	.8	398	2.2	2.1	2.1	2.8	1.5	1.6	1.3	1.0
22	2.2	1.0	.9	383	2.4	2.4	2.0	2.2	1.5	1.4	1.4	.9
23	2.1	.9	.9	398	2.2	3.0	3.5	2.1	1.5	1.3	1.6	1.0
24	1.8	1.0	.9	369	2.1	2.1	9.9	2.2	3.2	1.3	1.4	.8
25	1.8	.9	.9	369	2.2	2.1	2.1	2.2	2.4	1.2	1.5	.9
26	1.8	.9	.8	369	2.6	2.1	2.0	2.1	3.1	1.2	2.5	8.9
27	1.7	.7	.8	369	2.4	2.0	2.0	2.1	2.4	1.2	7.8	34
28	1.7	.7	.8	355	2.2	2.1	2.0	2.2	2.2	1.2	1.2	26
29	1.6	.7	.9	325	-	2.0	2.0	2.1	2.1	1.2	1.1	.9
30	1.6	.7	.9	302	-	2.0	1.8	2.0	2.2	1.2	1.1	1.0
31	1.6	-	.8	300	-	2.0	-	2.1	-	1.2	1.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	73.3	3.5	1.6	2.36	145
November	177.0	46	.7	5.90	351
December	25.6	.9	.7	.83	51
Calendar year 1940	22,171.5	383	.7	60.6	43,970
January	4,443.7	398	.4	143	8,810
February	1,732.5	297	2.1	61.9	3,440
March	65.0	3.0	1.8	2.10	129
April	375.7	45	1.8	12.5	745
May	57.2	3.8	1.2	1.85	113
June	68.0	4.5	1.4	2.27	135
July	61.9	12	1.2	2.00	123
August	49.2	7.8	1.1	1.59	98
September	97.4	34	.8	3.25	193
Water year 1940-41	7,226.5	398	.4	19.8	14,330

Nooksack River above Cascade Creek, near Glacier, Wash.

Location.- Water-stage recorder, lat. 48°54'20", long. 121°50'50", in NW¼ sec. 1, T. 39 N., R. 7 E., a quarter of a mile upstream from Cascade Creek, 4½ miles east of Glacier, and 6 miles upstream from Glacier Creek.

Drainage area.- 105 square miles.

Records available.- October 1937 to September 1941.

Extremes.- Maximum discharge during year, 6,300 second-feet Oct. 19 (gage height, 8.32 feet), from rating curve extended above 2,000 second-feet; minimum not determined, probably occurred during period of doubtful gage-height record.
1937-41: Maximum discharge, 9,670 second-feet Oct. 28, 1937 (gage height, 10.28 feet), from rating curve extended above 2,000 second-feet; minimum recorded, 85 second-feet (regulated) Mar. 30, 1938 (gage height, 2.34 feet).

Remarks.- Records fair except those for periods of doubtful gage-height record, which are poor. No diversion. Some regulation at low water by power plant at Excelsior.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	366	559	366	d410	1,030	592	a700	1,110	950	820	432	681
2	256	542	542	d390	642	574	a730	838	820	852	364	515
3	248	493	832	d380	539	444	a610	752	760	820	427	813
4	221	415	616	d360	517	379	a560	682	760	790	432	662
5	196	376	995	d340	512	335	a510	675	852	820	380	a590
6	178	361	925	d330	485	317	469	610	1,060	885	458	a510
7	229	775	940	d300	475	305	452	528	1,170	918	545	a450
8	214	d680	1,860	250	460	329	452	475	760	790	590	a400
9	297	d600	1,150	360	450	305	512	436	712	724	623	a360
10	1,940	d520	d930	391	422	285	512	485	905	700	575	1,170
11	721	d460	d750	400	427	280	452	801	1,260	694	570	684
12	282	d400	d600	391	409	280	435	1,740	1,580	706	570	a820
13	307	d360	d540	445	382	280	428	1,180	1,340	820	486	a1,120
14	209	d340	d500	414	355	270	444	868	950	950	450	a1,410
15	177	d370	d470	386	335	270	520	724	852	1,090	486	a1,070
16	d168	d400	d440	386	d330	285	444	1,140	754	1,250	436	a1,200
17	1,120	d430	d410	755	d320	300	400	1,800	820	1,300	481	736
18	4,110	d390	d410	1,380	d310	311	372	985	1,130	1,130	510	606
19	4,870	d370	d500	696	d300	323	365	730	950	950	490	570
20	3,870	d330	1,050	528	d300	295	400	678	790	760	500	555
21	2,200	d310	669	470	d290	265	460	667	760	689	510	432
22	1,020	d290	859	409	d280	300	520	790	918	601	458	376
23	1,080	d270	651	312	d280	255	583	1,170	852	555	514	384
24	2,380	d260	675	280	d270	168	601	1,250	748	601	316	384
25	1,120	d260	640	432	d260	215	628	1,060	678	596	322	368
26	700	268	d500	355	d260	353	691	852	684	634	339	606
27	610	306	d500	280	362	421	710	820	748	640	342	326
28	553	306	d500	280	619	452	682	820	736	606	310	316
29	548	381	d500	265	-	494	780	724	742	585	304	316
30	587	342	d470	319	-	a570	900	790	754	580	307	418
31	564	-	d430	587	-	a660	-	1,130	-	515	1,140	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	31,341	4,870	168	1,011	9.63	11.10	62,160
November	12,164	775	260	405	3.86	4.31	24,130
December	21,220	1,860	366	685	6.52	7.52	42,090
Calendar year 1940	253,655	4,870	168	693	6.60	89.86	503,100
January	13,281	1,380	250	428	4.08	4.70	26,340
February	11,621	1,030	260	415	3.95	4.12	23,050
March	10,912	660	168	352	3.35	3.86	21,640
April	16,322	900	365	544	5.18	5.78	32,370
May	27,310	1,800	436	881	8.39	9.67	54,170
June	26,795	1,580	678	893	8.50	9.49	53,150
July	24,371	1,300	515	786	7.49	8.63	48,340
August	14,667	1,140	304	473	4.50	5.19	29,090
September	18,746	1,410	316	625	5.95	6.64	37,180
Water year 1940-41	228,750	4,870	168	627	5.97	81.01	453,700

Peak discharge.- Oct. 18 (5 a.m.) 5,850 sec.-ft.; Oct. 19 (9:40 a.m.) 6,300 sec.-ft.; Oct. 20 (6:40 p.m.) 5,850 sec.-ft.
a No gage-height record.
d Doubtful gage-height record; discharge computed on basis of records for Cascade River at Marblemount.
Note.- Shifting-control method used Oct. 1-9, Nov. 26 to Dec. 9, Jan. 8-17, Feb. 6-15.

Nooksack River at Deming, Wash.

Location.- Water-stage recorder, lat. 48°48'35", long. 122°12'15", in lot 12, sec. 6, T. 38 N., R. 5 E., 800 feet downstream from South Fork and 1 mile southeast of Deming. Datum of gage is 203.6 feet above mean sea level, datum of 1929.

Drainage area.- 580 square miles.

Records available.- July 1935 to September 1941. September to December 1910 (gage heights only) at site 1 1/8 miles downstream; December 1910 to March 1911 (gage heights only) at Nugents' bridge, 4 miles downstream from Deming.

Extremes.- Maximum discharge during year, 15,000 second-feet Jan. 18 (gage height, 9.50 feet); minimum, 645 second-feet Oct. 9.
1935-41: Maximum discharge, 33,200 second-feet Oct. 28, 1937, corrected, (gage height, 13.21 feet), from rating curve extended above 11,000 second-feet; minimum, 560 second-feet Nov. 9, 10, 1936, but may have been less sometime during periods of ice effect.

Remarks.- Records good except those for periods of shifting control, which are fair. No diversion. Slight regulation at power plant at Excelsior has little if any effect at this station.

Rating table, water year 1940-41, except periods of shifting control (gage height, in feet, and discharge, in second-feet)

3.0	765	5.0	2,690	8.0	9,690
3.5	1,120	5.5	3,510	9.0	13,000
4.0	1,510	6.0	4,470		
4.5	2,050	7.0	6,640		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,080	2,690	2,690	2,360	6,840	4,270	2,110	2,690	3,080	1,990	1,190	3,220
2	850	2,690	3,780	2,110	4,470	4,370	2,420	2,360	2,620	2,050	f1,120	1,880
3	785	2,620	4,170	1,990	3,420	3,080	1,990	2,480	2,420	2,050	f1,160	3,450
4	737	2,170	3,330	1,930	3,080	2,620	1,760	2,230	2,290	1,930	1,230	3,900
5	725	1,930	5,050	1,760	2,920	2,290	1,880	2,760	2,360	1,930	1,160	2,230
6	692	2,110	5,220	1,660	2,620	2,230	2,480	2,480	2,690	1,990	1,230	1,820
7	725	3,080	5,620	1,610	2,690	2,170	2,050	2,230	3,240	2,110	1,340	1,610
8	708	3,180	8,800	1,560	2,360	2,170	f1,880	1,990	2,620	1,930	1,420	1,360
9	812	2,480	5,820	1,930	2,230	1,990	f1,880	1,820	2,690	1,820	1,460	1,420
10	4,970	2,050	4,270	2,290	2,050	1,820	1,990	1,820	2,360	1,710	1,420	3,330
11	3,080	1,760	3,330	2,290	2,170	1,760	1,760	2,290	2,840	1,710	1,380	1,710
12	1,610	1,610	2,760	2,230	2,170	1,710	1,660	4,070	3,240	1,710	1,510	2,840
13	1,660	1,510	2,480	2,480	1,930	1,660	1,560	3,420	3,000	1,880	1,380	4,250
14	1,300	1,460	2,230	2,230	1,820	1,610	1,610	2,620	2,480	2,110	1,340	6,070
15	1,230	1,420	2,050	2,050	1,710	1,510	2,110	2,230	2,360	2,360	1,340	4,240
16	1,050	1,420	1,930	2,420	1,610	1,510	1,880	4,360	2,050	2,620	1,300	4,400
17	1,270	1,560	1,820	4,100	1,560	1,560	1,710	8,510	2,110	2,690	1,340	3,780
18	8,890	1,560	1,930	11,200	1,510	1,660	1,610	f4,890	2,620	2,480	1,380	3,980
19	9,690	1,380	2,110	5,940	1,460	1,820	1,560	f3,690	3,240	2,290	1,380	4,370
20	9,090	1,340	4,800	4,170	1,420	1,710	1,610	4,680	2,690	1,990	1,380	3,330
21	6,580	1,300	3,420	3,420	1,380	1,560	1,660	3,600	2,420	1,880	1,420	2,760
22	3,600	1,230	3,420	2,920	1,340	1,990	1,760	3,330	2,420	1,510	1,380	2,360
23	2,920	1,230	2,920	2,550	1,300	1,760	1,930	3,600	2,360	1,380	1,610	2,170
24	4,830	1,660	2,920	2,420	1,510	1,610	1,880	3,600	2,110	1,420	1,230	2,050
25	3,510	2,290	2,920	3,380	1,510	1,510	1,930	3,240	1,930	1,560	1,120	1,880
26	4,170	1,990	2,840	3,690	1,930	1,760	2,110	2,760	1,930	1,510	1,380	2,290
27	1,990	2,170	2,840	2,920	2,950	1,990	2,170	2,620	1,930	1,510	1,340	1,760
28	1,760	2,420	3,330	2,690	5,110	1,930	2,050	2,760	1,930	1,460	1,230	1,610
29	2,290	3,420	4,070	2,480	-	2,050	2,230	2,480	1,930	1,420	1,120	1,610
30	2,840	3,080	3,330	2,620	-	2,170	2,480	2,420	1,930	1,380	1,050	1,970
31	2,620	-	2,760	3,950	-	2,110	-	3,160	-	1,340	2,160	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	88,064	9,690	692	2,841	4.90	5.65	174,700
November	60,790	3,420	1,230	2,026	3.49	3.90	120,600
December	109,160	8,800	1,820	3,521	6.07	7.00	216,500
Calendar year 1940	988,244	9,690	692	2,700	4.66	63.36	1,960,000
January	91,350	11,200	1,560	2,947	5.08	5.86	181,200
February	67,070	6,840	1,300	2,395	4.13	4.30	133,000
March	63,960	4,370	1,510	2,063	3.56	4.10	126,900
April	57,710	2,480	1,560	1,924	3.32	3.70	114,500
May	97,190	8,510	1,820	3,135	5.41	6.23	192,800
June	73,890	3,240	1,930	2,463	4.25	4.74	146,600
July	57,720	2,690	1,340	1,862	3.21	3.70	114,500
August	41,500	2,160	1,050	1,339	2.31	2.66	82,310
September	83,670	6,070	1,380	2,789	4.81	5.36	166,000
Water year 1940-41	892,074	11,200	692	2,444	4.21	57.20	1,770,000

f Computed on basis of partly estimated gage-height record.
Note.- Shifting-control method used Oct. 1-18, Nov. 4 to Jan. 6, Mar. 11 to June 12.

South Fork of Nooksack River near Wickersham, Wash.

Location.- Water-stage recorder, lat. 48°39'50", long. 122°07'50", in lot 2, sec. 26, T. 37 N., R. 5 E., three-quarters of a mile upstream from Skookum Creek and 4 miles east of Wickersham.

Drainage area.- 103 square miles.

Records available.- May 1934 to September 1941.

Extremes.- Maximum discharge during year, 5,340 second-feet Jan. 18 (gage height, 7.26 feet); minimum, 66 second-feet Oct. 9 (gage height, 2.11 feet).
1934-41: Maximum discharge, 12,900 second-feet Oct. 28, 1937 (gage height, 10.70 feet); minimum, that of Oct. 9, 1940.

Remarks.- Records excellent except those for period of faulty gage-height record, which are poor. No diversion or regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Dec. 20 to Jan. 8)

Oct. 1 to Jan. 17				Jan. 18 to Sept. 30					
2.3	100	4.5	1,340	2.1	68	3.5	563	5.5	2,460
2.6	178	5.0	1,860	2.3	105	4.0	894	6.0	3,140
3.0	315	5.5	2,450	2.6	182	4.5	1,340	7.0	4,780
3.5	550	6.0	3,130	3.0	321	5.0	1,860		
4.0	880								

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	1,030	931	534	f2,460	1,540	519	418	498	226	89	880
2	77	936	1,340	461	f1,340	1,520	627	363	413	216	89	338
3	74	880	1,440	422	959	959	461	524	372	210	95	965
4	78	683	987	408	797	748	408	450	342	198	103	1,320
5	82	562	2,100	373	716	621	554	826	342	191	93	524
6	75	722	1,750	347	640	640	818	735	386	182	89	350
7	70	1,080	1,860	335	735	609	575	580	432	176	85	275
8	69	1,050	2,720	319	609	580	487	446	376	168	83	230
9	85	756	1,490	e390	536	508	508	394	329	160	82	301
10	1,610	579	987	e580	487	456	514	390	355	151	80	1,010
11	622	486	749	e560	546	427	442	472	338	146	80	896
12	307	418	620	e540	514	418	394	812	368	144	87	748
13	335	386	534	e660	432	399	363	546	329	138	85	1,490
14	229	364	476	e670	390	372	372	432	282	131	83	2,150
15	203	355	427	e700	359	363	558	390	271	131	80	1,170
16	170	355	395	e1,200	338	368	451	1,950	250	126	78	654
17	267	413	368	e2,450	317	376	404	2,720	271	126	75	902
18	2,850	395	399	3,660	305	446	368	1,240	415	126	75	1,120
19	2,760	347	597	e2,140	286	530	350	894	792	121	73	1,240
20	1,860	319	1,790	e1,100	278	451	359	1,240	633	119	71	871
21	1,740	288	880	e870	268	394	386	833	456	123	71	677
22	828	270	835	e640	250	621	408	709	381	114	71	536
23	639	263	651	e520	260	482	413	696	329	114	105	456
24	1,240	442	709	e460	355	408	390	646	294	116	91	399
25	791	805	742	e1,700	359	390	404	541	278	116	85	355
26	550	550	812	e2,700	519	503	432	472	268	103	128	497
27	437	671	798	e1,100	1,190	541	413	456	250	99	131	350
28	424	869	1,050	e800	1,880	519	368	482	243	97	116	321
29	914	1,390	1,300	e650	-	552	413	427	239	97	123	325
30	1,140	1,040	850	e600	-	552	422	408	246	93	101	672
31	928	-	645	e1,500	-	503	-	580	-	91	514	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	21,534	2,850	69	695	6.75	7.78	42,710
November	18,704	1,390	263	623	6.05	6.75	37,100
December	31,232	2,720	368	1,007	9.78	11.28	61,950
Calendar year 1940	220,154	3,400	67	602	5.84	79.49	436,700
January	29,389	3,660	319	948	9.20	10.61	58,290
February	18,125	2,460	250	647	6.28	6.54	35,950
March	17,796	1,540	363	574	5.57	6.43	35,300
April	13,581	818	350	453	4.40	4.90	26,940
May	22,072	2,720	363	712	6.91	7.97	43,780
June	10,778	792	239	359	3.49	3.89	21,380
July	4,349	226	91	140	1.36	1.57	8,630
August	3,211	514	71	104	1.01	1.16	6,370
September	22,022	2,150	230	734	7.13	7.95	43,680
Water year 1940-41	212,793	3,660	69	583	5.66	76.83	422,100

e Gage-height record faulty; discharge computed on basis of records for North and South Forks of Stillaguamish River.
f Computed on basis of partly estimated gage-height record.

COLUMBIA RIVER MAIN STEM

Columbia River at Birchbank, British Columbia

(International gaging station)

Location.- Water-stage recorder, lat. 49°10', long. 117°43', at Birchbank, British Columbia, 7 miles upstream from Trail, 11 miles downstream from Kootenai River, and 17 miles upstream from international boundary. Datum of gage is 1,338.00 feet above mean sea level (levels by Geodetic Survey of Canada in 1930).
Drainage area.- 34,000 square miles.
Records available.- October 1937 to September 1941. April 1913 to September 1937 at site at Trail, 7 miles downstream, published as Columbia River at Trail, British Columbia.
Average discharge.- 28 years, 70,020 second-feet.
Extremes.- Maximum discharge during year, 153,000 second-feet June 19 (gage height, 29.10 feet); minimum, 16,400 second-feet Feb. 27 (gage height, 5.41 feet).
1913-41: Maximum discharge observed, 312,000 second-feet June 14, 15, 1913 (gage height, 41.6 feet, site and datum then in use); minimum observed, 8,940 second-feet Feb. 3, 1937 (gage height, 6.27 feet, site and datum then in use).
Remarks.- Records excellent. Small amount of water diverted above station for irrigation. Slight fluctuation at low water caused by power plant on Kootenai River. Flow affected by natural storage in numerous lakes and by artificial regulation in Kootenai River Basin.
Cooperation.- This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

6.0	18,700	12.0	45,800	21.0	95,000
8.0	26,900	15.0	60,800	24.0	114,000
10.0	36,100	18.0	77,100	27.0	136,000

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	49,900	55,200	23,600	19,100	17,300	17,500	31,400	68,000	112,000	128,000	91,400	66,600
2	49,900	52,800	23,600	19,200	17,200	17,800	32,400	74,600	114,000	125,000	92,100	67,000
3	49,300	50,000	23,300	19,100	17,200	16,800	33,300	79,000	117,000	120,000	91,800	67,800
4	48,400	47,300	22,600	19,200	17,200	17,900	33,900	83,500	120,000	112,000	88,800	67,400
5	47,600	44,900	22,500	19,000	17,200	18,000	31,800	87,600	123,000	102,000	86,600	67,700
6	46,600	43,200	22,700	18,900	17,400	18,000	37,000	90,100	126,000	99,600	83,500	67,900
7	45,400	41,800	22,500	18,800	17,500	18,000	37,100	91,900	128,000	103,000	80,200	67,900
8	44,400	41,000	22,500	19,000	17,500	18,700	37,600	92,400	131,000	116,000	77,100	67,700
9	43,000	40,300	22,600	18,700	17,700	18,700	38,400	90,900	134,000	115,000	75,200	67,200
10	41,600	38,400	22,400	18,600	17,500	18,700	39,400	90,700	135,000	114,000	74,900	66,900
11	41,700	36,800	22,200	18,400	17,600	18,400	40,400	89,400	136,000	113,000	75,700	66,900
12	40,300	35,600	22,100	18,300	17,600	18,400	41,800	89,500	137,000	111,000	76,800	66,300
13	40,200	34,100	22,200	17,500	17,600	18,600	42,900	91,900	139,000	108,000	77,600	65,500
14	38,800	32,500	21,900	17,600	17,500	18,700	43,900	95,600	143,000	106,000	81,200	65,800
15	38,000	31,900	21,500	18,100	17,600	20,800	45,200	97,300	146,000	97,700	79,700	68,000
16	37,000	31,000	21,400	18,100	17,600	22,900	46,200	99,200	149,000	97,400	77,200	67,300
17	36,100	30,100	21,000	18,100	17,700	22,700	47,200	106,000	151,000	102,000	78,300	68,600
18	35,100	29,500	20,700	17,700	17,500	21,000	48,600	110,000	152,000	106,000	80,400	69,700
19	35,300	28,500	20,200	17,800	17,200	22,200	49,400	111,000	152,000	110,000	78,600	70,900
20	37,400	27,600	20,000	18,000	17,200	23,600	49,800	113,000	152,000	115,000	76,000	68,500
21	42,200	27,200	20,100	17,700	17,100	23,200	50,400	114,000	149,000	117,000	74,900	66,800
22	48,300	26,500	20,000	17,700	17,300	22,900	51,400	113,000	145,000	115,000	76,400	64,400
23	54,200	25,900	20,100	17,600	17,200	21,900	52,400	111,000	141,000	112,000	79,100	62,000
24	59,800	25,300	19,900	17,500	17,100	21,900	53,600	110,000	137,000	108,000	79,900	60,600
25	65,600	25,100	19,700	17,400	16,800	23,400	54,900	110,000	135,000	106,000	79,300	60,400
26	67,200	25,000	19,700	17,500	16,700	25,800	56,200	109,000	135,000	104,000	77,400	59,600
27	67,200	24,900	19,900	17,500	16,800	27,600	55,800	109,000	134,000	102,000	77,200	59,000
28	64,200	24,500	19,600	17,500	17,200	27,800	58,000	109,000	134,000	101,000	75,700	59,400
29	61,300	24,400	19,700	17,200	-	28,000	60,300	109,000	132,000	98,500	73,300	60,800
30	59,200	23,800	19,700	17,100	-	29,400	63,300	109,000	130,000	94,500	70,200	59,400
31	58,200	-	19,500	17,200	-	30,500	-	110,000	-	92,300	68,000	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	1,493,400	67,200	35,100	48,200	1.42	1.64	2,962,000
November	1,025,100	55,200	23,800	34,200	1.01	1.13	2,033,000
December	659,400	23,600	19,500	21,300	.63	.73	1,308,000
Calendar year 1940	23,857,700	196,000	18,700	65,200	1.92	26.10	47,360,000
January	561,180	19,200	17,100	18,100	.53	.61	1,113,000
February	485,000	17,700	16,700	17,300	.51	.53	962,000
March	669,800	30,500	16,800	21,600	.64	.74	1,329,000
April	1,364,000	63,300	31,400	45,500	1.34	1.50	2,705,000
May	3,064,600	114,000	68,000	98,900	2.91	3.36	6,079,000
June	4,069,000	152,000	112,000	136,000	4.00	4.46	8,071,000
July	3,350,000	128,000	92,300	108,000	3.18	3.67	6,645,000
August	2,454,500	92,100	68,000	79,200	2.33	2.69	4,868,000
September	1,964,000	70,900	59,000	65,500	1.93	2.15	3,896,000
Water year 1940-41	21,159,900	152,000	16,700	58,000	1.70	23.21	41,970,000

Columbia River at international boundary

(International gaging station)

Location.- Water-stage recorder, lat. 49°00'05", long. 117°37'40", in SE¼ sec. 4, T. 40 N., R. 41 E., at the international boundary, half a mile downstream from Pend Oreille River. Datum of gage is at mean sea level (Bureau of Reclamation 1937 datum).
Drainage area.- 59,700 square miles.
Records available.- March 1938 to September 1941.
Extremes.- Maximum discharge during year, 185,400 second-feet June 19 (elevation, 1,312.33 feet); minimum, 25,400 second-feet Dec. 19 (elevation, 1,291.00 feet).
1938-41: Maximum discharge, 334,400 second-feet (revised) June 27, 28, 1938 (elevation, 1,324.00 feet); minimum observed, 21,500 second-feet (revised) Feb. 10, 1939 (elevation, 1,290.12 feet).
Flow of about 12,900 second-feet occurred January 30 or 31, 1937 (revised), based on information from other gaging stations (elevation, 1,287.9 feet (revised), from rating curve extended below 1,291.6 feet); may have been as low sometime during January 1930.
Remarks.- Records excellent. Many diversions above gage for irrigation but quantity very small percentage of flow past gage. Some fluctuation at low stage caused by power plant on Kootenai River. Flow affected by natural storage in several lakes and by artificial regulation in Kootenai and Pend Oreille River Basins.
Cooperation.- This is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

1,292	30,000	1,298	60,400	1,306	120,000
1,293	34,700	1,300	72,600	1,308	139,000
1,294	39,500	1,302	86,800	1,310	159,500
1,296	49,500	1,304	102,300		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57,700	64,700	33,100	29,800	28,900	29,600	49,500	89,600	142,700	153,600	101,000	74,800
2	57,700	62,800	33,100	29,700	28,800	31,300	50,900	98,300	144,300	150,400	101,600	75,200
3	57,000	59,500	33,000	29,200	28,600	31,300	51,200	103,000	146,300	146,200	101,100	76,100
4	56,300	57,100	32,400	29,800	28,400	31,900	51,600	107,300	149,600	138,100	97,100	76,000
5	55,600	54,700	32,300	29,600	28,400	a31,900	49,100	111,600	152,600	125,600	94,800	76,400
6	54,700	53,200	32,600	29,700	28,700	a31,800	54,100	114,300	155,900	123,200	92,200	76,600
7	53,800	51,800	32,100	29,200	29,200	a31,900	53,800	116,000	159,200	125,700	88,700	76,500
8	52,700	51,100	32,200	29,500	29,100	a32,000	54,700	117,100	162,800	139,700	85,200	76,100
9	51,400	50,600	32,200	29,200	29,200	a32,400	55,300	115,300	166,300	137,000	82,300	75,900
10	50,300	48,700	31,700	28,900	29,200	32,800	56,300	114,800	167,600	135,400	81,900	75,900
11	50,500	47,100	31,300	28,700	29,300	32,800	57,700	113,400	169,000	134,300	83,400	76,700
12	49,100	45,600	30,900	28,500	29,400	32,800	59,200	114,200	170,300	131,900	84,700	75,900
13	49,000	44,400	30,800	28,000	29,400	32,900	60,700	117,100	172,800	127,800	85,400	75,000
14	48,100	42,900	30,300	27,600	29,000	32,800	61,800	120,800	175,600	125,300	89,400	75,900
15	47,300	42,000	29,500	28,400	29,000	34,300	63,400	122,700	177,500	115,000	88,500	78,300
16	46,400	41,200	29,100	28,400	28,900	37,000	64,000	124,200	180,200	114,000	85,200	77,600
17	45,400	40,000	28,400	28,300	28,800	37,200	64,900	134,300	181,700	118,800	86,000	79,000
18	44,600	39,500	27,800	28,500	28,600	35,800	66,400	141,000	183,200	127,800	88,300	80,300
19	44,400	38,300	26,300	28,400	28,300	36,400	67,500	142,000	184,600	126,800	86,500	82,100
20	46,900	37,200	25,800	29,100	28,200	38,500	67,800	143,300	183,600	131,000	83,600	80,500
21	a51,400	37,000	27,700	28,700	28,000	38,200	68,800	144,100	180,100	132,600	81,400	78,800
22	55,900	36,200	28,800	28,700	28,000	37,800	69,900	143,300	175,600	129,900	83,600	76,500
23	62,100	35,600	29,400	28,900	27,800	36,600	71,300	142,000	170,500	126,800	86,600	73,900
24	67,200	34,700	29,200	28,600	27,900	36,600	72,600	140,500	166,000	122,200	87,500	71,900
25	75,000	34,600	29,200	28,600	28,000	37,600	74,000	139,600	162,900	120,200	87,000	71,700
26	76,700	34,400	29,200	29,000	27,400	40,600	75,700	138,900	162,800	116,600	85,000	71,000
27	77,200	34,200	29,900	29,000	27,300	42,700	75,600	137,600	161,800	114,100	85,000	70,200
28	74,000	33,900	29,700	29,200	28,500	43,400	77,600	136,900	160,000	113,700	83,800	70,600
29	70,800	33,900	29,900	29,000	-	43,700	79,900	137,100	157,800	110,100	81,800	71,700
30	68,200	33,300	30,100	28,700	-	45,600	83,600	137,700	155,800	104,600	78,700	70,600
31	67,500	-	30,100	28,700	-	47,700	-	140,300	-	101,600	76,300	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	1,764,900	77,200	44,400	56,930	0.954	1.10	3,501,000
November	1,320,200	64,700	33,300	44,010	.737	.82	2,619,000
December	938,100	33,100	25,800	30,260	.507	.58	1,861,000
Calendar year 1940	29,956,400	247,200	25,500	81,850	1.37	18.65	59,410,000
January	895,600	29,800	27,600	28,890	.484	.56	1,776,000
February	800,300	29,400	27,300	28,580	.479	.50	1,587,000
March	1,117,900	47,700	29,600	36,060	.604	.70	2,217,000
April	1,908,900	83,600	49,100	63,630	1.07	1.19	3,786,000
May	3,898,300	144,100	89,600	125,800	2.11	2.43	7,732,000
June	4,978,900	184,600	142,700	166,000	2.78	3.10	9,876,000
July	3,920,000	153,600	101,600	126,500	2.12	2.44	7,776,000
August	2,703,600	101,600	76,300	87,210	1.46	1.68	5,363,000
September	2,267,700	82,100	70,200	75,590	1.27	1.41	4,498,000
Water year 1940-41	26,514,400	184,600	25,800	72,640	1.22	16.51	52,590,000

a No gage-height record; discharge interpolated or computed on basis of staff-gage readings at cable gage.

Columbia River at Kettle Falls, Wash.

Location.- Water-stage recorder, lat. 48°37'20", long. 118°07'00", in northwest corner lot 1, sec. 14, T. 36 N., R. 37 E., at Kettle Falls, 3¾ miles upstream from Colville River. Datum of gage is at mean sea level, subject to correction to datum of 1929.

Drainage area.- 64,500 square miles.

Records available.- April 1913 to June 1941 (discontinued).

Average discharge.- 27 years, 98,750 second-feet.

Extremes.- Maximum daily discharge during period, 183,000 second-feet June 9; minimum discharge, 26,500 second-feet Dec. 20 (elevation, 1,167.71 feet).

1913-41: Maximum discharge, 468,000 second-feet June 14, 15, 1913 (gage height, 34.2 feet, from floodmarks, referred to U. S. Weather Bureau gage at Marcus); minimum, 13,000 second-feet (estimated because of ice effect) Jan. 18-21, 1930, Jan. 31, 1937.

Maximum discharge known, 700,000 second-feet during flood of 1894 (based on information from several sources).

Remarks.- Records excellent except those for periods of no gage-height record, which are good. Many diversions above gage for irrigation, but quantity diverted is very small percentage of flow past gage. Slight fluctuation at extreme low water caused by power plant on Kootenai River. Flow affected by natural storage in many lakes and by artificial regulation in Kootenai and Pend Oreille River Basins.

Rating table, Oct. 1, 1940, to June 9, 1941 (elevation, in feet, and discharge, in second-feet)

1,168.0	27,900	1,172.0	51,200	1,176.0	82,300
1,169.0	32,700	1,173.0	58,000	1,178.0	101,600
1,170.0	38,100	1,174.0	65,200	1,180.0	123,000
1,171.0	44,400	1,175.0	**73,400**	1,182.0	146,500

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58,800	66,900	33,700	31,000	29,900	30,600	59,900	102,200	153,600			
2	58,400	64,900	33,400	30,700	30,100	32,200	61,900	114,600	155,800			
3	58,000	62,000	33,600	30,700	29,800	34,000	63,100	121,900	157,100			
4	57,300	59,400	33,300	30,500	29,800	34,400	63,100	a125,000	a161,000			
5	56,600	56,800	32,800	30,900	29,800	35,100	62,600	a126,000	a165,000			
6	55,800	55,000	33,100	30,500	29,900	35,000	62,700	a127,000	a168,000			
7	55,000	53,900	32,900	30,500	30,300	35,100	64,100	f128,000	169,800			
8	54,000	52,800	32,700	30,500	30,200	35,400	64,700	a127,000	175,500			
9	53,100	52,200	32,800	30,400	29,900	36,300	65,200	a126,000	183,000			
10	51,600	50,900	32,400	30,100	30,200	36,200	66,200	a124,000	-			
11	51,400	49,000	31,900	29,800	30,100	36,300	68,200	a123,000	-			
12	50,700	47,100	31,400	29,700	30,500	36,200	70,300	a126,000	-			
13	50,100	45,600	31,300	29,500	30,300	36,000	72,400	a131,000	-			
14	49,700	44,300	31,000	28,600	30,200	35,900	73,400	f136,000	-			
15	48,600	43,000	30,400	29,300	29,900	36,500	74,300	a136,000	-			
16	47,300	42,400	29,700	29,400	29,900	39,400	75,700	a137,000	-			
17	46,400	41,500	29,400	29,400	29,800	40,400	75,800	a150,000	-			
18	45,400	40,400	29,400	29,600	29,700	40,000	76,100	a156,000	-			
19	44,900	39,400	28,100	29,300	29,500	40,300	77,000	a155,000	-			
20	45,900	38,100	26,800	30,000	a29,200	43,400	77,000	a154,000	-			
21	49,500	37,800	28,000	29,900	a29,200	43,400	77,600	f154,000	-			
22	55,000	37,200	29,700	29,800	a29,000	43,200	79,000	a153,000	-			
23	61,000	36,300	30,200	29,900	a29,000	41,800	80,800	152,000	-			
24	65,600	35,800	30,600	29,900	a28,800	41,300	83,000	150,400	-			
25	73,700	35,000	30,500	29,800	a28,800	41,600	84,700	150,300	-			
26	77,200	35,100	30,400	30,000	a28,600	45,100	86,600	149,800	-			
27	78,100	35,000	30,900	30,100	28,400	47,600	87,400	148,300	-			
28	76,700	34,700	31,200	30,300	29,200	50,200	89,500	147,500	-			
29	73,400	34,500	30,900	30,200	-	51,200	92,200	147,200	-			
30	70,200	34,100	31,200	29,900	-	53,600	96,300	147,200	-			
31	69,500	-	31,300	29,700	-	56,800	-	149,900	-			

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,788,900	78,100	44,900	57,710	0.895	1.03	3,548,000
November	1,361,100	66,900	34,100	45,370	.703	.78	2,700,000
December	965,000	33,700	26,800	31,130	.483	.56	1,914,000
Calendar year 1940	31,725,600	276,600	26,500	86,680	1.34	18.29	62,930,000
January	929,900	31,000	28,600	30,000	.465	.54	1,844,000
February	830,000	30,500	28,400	29,640	.460	.48	1,646,000
March	1,244,500	56,800	30,600	40,150	.622	.72	2,468,000
April	2,230,800	96,300	59,900	74,360	1.15	1.29	4,425,000
May	4,275,300	156,000	102,200	137,900	2.14	2.47	8,480,000
June 1-9	1,488,800	183,000	153,600	165,400	2.56	.86	2,953,000
July	-	-	-	-	-	-	-
August	-	-	-	-	-	-	-
September	-	-	-	-	-	-	-
The period	-	-	-	-	-	-	29,980,000

a No gage-height record; discharge computed on basis of records for station at international boundary and Kettle River near Laurier.

f Computed on basis of partly estimated gage-height record.

Columbia River Reservoir at Grand Coulee Dam, Wash.

Location.- Staff gage, lat. 47°57', long. 118°58', in SE¼ sec. 1, T. 28 N., R. 30 E., at town of Grand Coulee and 2,000 feet upstream from Grand Coulee Dam on the Columbia River. Datum of gage is at mean sea level (levels by Bureau of Reclamation). Prior to Sept. 19, 1940, staff gage on dam, at same datum.
Drainage area.- 74,100 square miles.
Records available.- April 1938 to September 1941.
Extremes.- 1938: Maximum elevation observed during period April to September, 979.4 feet June 6, 7, 9; minimum, 956.1 feet Aug. 29.
1938-39: Maximum elevation observed during water year, 1,025.2 feet Sept. 15; minimum, 961.8 feet Nov. 3.
1939-40: Maximum elevation observed during water year, 1,167.8 feet June 5; minimum, 1,009.0 feet Mar. 6.
1940-41: Maximum elevation observed during water year, 1,256.8 feet Aug. 26; minimum, 1,127.5 feet Oct. 1.
Remarks.- Reservoir is formed by concrete dam; construction of dam started in 1934, completed in 1941; storage began early in construction period. Capacity, 5,313,000 acre-feet between elevations 1,208 (proposed lower limit of operation) and 1,290 feet (top of gates) above mean sea level. Dead storage, 4,326,000 acre-feet. Figures given herein represent total contents. Water will be used for power development and irrigation on Grand Coulee project of Bureau of Reclamation. Gage read once daily.
Cooperation.- Gage-height record and reservoir area furnished by Bureau of Reclamation.

Capacity table (elevation, in feet, and contents, in acre-feet)
(Prepared by Geological Survey from areas furnished by Bureau of Reclamation)

955	14,000	980	69,000	1,030	304,000	1,120	1,395,000	1,220	4,911,000
960	24,000	990	101,000	1,040	374,000	1,140	1,850,000	1,240	6,041,000
965	34,000	1,000	141,000	1,060	542,000	1,160	2,447,000	1,260	7,363,000
970	44,000	1,010	187,000	1,080	757,000	1,180	3,467,000	1,280	8,846,000
975	54,000	1,020	241,000	1,100	1,038,000	1,200	3,965,000	1,300	10,480,000

Elevation, in feet, at 8 a.m., 1938-41

1938

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1	-	964.4	978.5	977.7	962.5	957.5	16	-	966.3	977.2	968.7	957.3	961.8
2	-	965.1	978.6	977.4	962.2	957.5	17	-	966.5	977.0	-	957.2	961.6
3	-	965.6	978.8	976.5	961.9	957.4	18	-	966.6	976.7	967.7	957.1	961.4
4	-	965.7	979.2	-	961.5	-	19	-	966.6	976.7	967.4	957.0	961.9
5	-	965.8	979.2	975.3	961.0	-	20	-	966.5	976.4	967.0	957.0	962.7
6	-	965.7	979.4	974.5	960.5	957.4	21	-	966.7	976.5	966.5	-	962.5
7	-	965.9	979.4	973.8	-	959.8	22	-	-	976.6	966.0	956.9	962.4
8	-	-	979.3	973.0	959.6	960.1	23	961.5	967.6	977.0	965.7	956.9	963.6
9		966.0	979.4	972.5	959.3	960.4	24	961.6	968.4	977.3	-	957.1	963.6
10		965.8	979.2	-	959.2	961.3	25	962.0	969.5	977.7	965.1	957.0	963.5
11	-	966.0	978.8	971.4	958.9	961.3	26	962.0	970.7	978.3	964.9	957.0	963.3
12	-	965.6	978.3	971.0	958.6	961.3	27	962.5	972.2	978.5	964.5	956.3	963.6
13	-	965.7	977.9	970.4	958.6	961.2	28	962.9	973.5	978.5	964.1	-	963.6
14	-	966.0	977.5	969.9	-	960.9	29	963.1	-	978.3	963.7	956.1	963.6
15	-	-	977.4	969.3	957.5	961.9	30	963.8	-	978.0	963.2	956.2	963.4
							31	-	978.0	-	-	957.2	-

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	963.3	962.0	968.5	977.2	979.1	993.1	998.1	1,006.8	1,013.7	1,012.6	1,014.0	1,015.2
2	963.1	962.0	968.5	977.4	979.2	993.0	998.5	1,007.4	1,013.6	1,013.1	1,014.0	1,015.2
3	962.9	961.8	968.5	977.1	979.2	993.0	998.8	1,007.7	1,013.3	-	1,014.0	1,014.6
4	963.1	964.0	968.2	977.4	980.6	992.8	999.1	1,008.5	1,012.8	-	1,013.8	-
5	962.1	964.1	967.9	977.5	981.1	992.5	999.5	1,009.5	1,012.5	1,013.6	1,013.8	1,013.4
6	963.1	963.9	968.1	977.4	981.1	992.7	999.7	1,010.3	1,012.2	1,013.9	1,013.0	1,014.0
7	963.1	963.5	968.3	977.4	983.0	992.7	999.9	1,010.5	1,011.8	1,013.4	1,012.7	1,014.9
8	964.0	963.9	968.3	977.7	984.4	992.9	1,000.1	1,010.4	1,011.4	1,013.1	1,012.5	1,016.2
9	963.8	963.6	969.8	977.5	985.5	992.8	,999.9	1,010.7	1,010.7	1,012.8	1,013.0	1,017.3
10	963.3	963.5	972.4	977.6	987.4	992.7	1,000.0	1,010.6	1,010.5	1,012.7	1,012.1	1,018.5
11	963.2	966.4	972.5	977.6	987.9	992.6	1,000.2	1,010.4	1,009.8	1,013.3	1,012.0	1,019.1
12	963.0	966.4	973.9	977.5	987.9	992.3	1,000.0	1,010.5	1,009.8	1,012.8	1,012.5	1,020.1
13	962.8	970.1	974.8	977.7	988.2	992.4	1,000.6	1,011.0	1,009.6	1,012.5	-	1,021.5
14	962.7	970.4	976.8	977.7	990.6	992.8	1,000.6	1,008.9	1,009.3	1,013.4	1,010.1	1,024.0
15	962.8	970.5	977.4	977.5	992.7	992.8	1,000.5	1,008.3	1,009.1	1,013.4	1,011.3	1,025.2
16	964.2	970.4	977.4	977.6	993.3	993.0	1,000.1	1,009.7	1,008.8	-	1,012.7	1,025.1
17	963.8	970.5	977.4	977.6	993.6	992.6	1,000.1	1,010.3	1,008.6	1,013.8	1,012.5	1,024.3
18	964.0	970.3	977.2	977.8	993.4	992.7	1,001.2	1,010.9	-	1,014.2	1,012.8	1,023.0
19	963.9	970.1	976.9	977.8	993.5	993.4	1,001.0	1,011.6	1,008.3	1,013.9	1,012.7	1,023.3
20	963.7	970.1	976.9	977.9	993.3	993.6	1,001.4	1,012.1	1,008.8	1,013.6	1,013.4	1,024.1
21	963.4	969.2	977.2	978.8	993.4	994.7	1,001.7	1,012.3	1,008.9	1,013.1	1,013.2	1,024.3
22	963.1	969.6	977.3	979.0	993.3	995.3	1,002.1	1,012.5	1,009.7	1,012.5	1,013.1	1,024.5
23	962.9	969.7	977.1	978.8	993.2	995.0	1,002.6	1,012.7	1,009.9	-	1,012.1	1,024.0
24	962.4	969.7	977.1	978.7	993.3	995.4	1,003.0	1,012.8	1,010.9	1,011.2	1,011.6	1,023.6
25	962.6	969.2	-	978.8	993.3	995.7	1,003.6	1,012.8	-	1,011.9	1,012.3	1,020.9
26	962.5	969.4	976.5	978.8	993.2	996.9	1,004.0	1,012.8	1,011.4	1,012.8	1,013.4	1,020.4
27	962.2	969.3	976.3	978.8	993.0	997.6	1,004.2	1,012.5	1,012.5	1,012.6	1,013.6	1,019.7
28	962.2	968.7	976.4	978.9	993.0	997.7	1,004.4	1,012.5	1,012.8	1,013.7	1,013.8	1,019.9
29	962.3	968.7	976.6	979.1	-	998.0	1,004.8	1,012.8	1,012.6	1,013.7	1,013.9	1,020.0
30	962.0	968.8	976.6	978.9	-	998.1	1,005.6	1,012.6	1,012.7	-	1,014.7	1,020.0
31	962.0	-	977.0	979.0	-	998.1	-	1,013.2	-	1,013.7	1,015.1	-

Elevation, in feet, at 8 a.m., of Columbia River Reservoir at Grand Coulee Dam, Wash., 1938-41--Con.

1939-40

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,019.5	1,020.2	1,020.1	1,018.6	1,020.7	1,017.7	1,060.4	1,064.4	1,165.5	1,153.6	1,128.1	1,129.4
2	1,018.8	1,020.9	1,020.4	1,018.0	1,020.3	1,016.0	1,061.0	1,064.4	1,166.7	1,152.5	1,128.4	1,129.4
3	1,019.0	1,021.4	1,020.6	1,017.6	1,020.2	1,012.8	1,062.4	1,064.5	1,167.3	1,151.3	1,128.5	1,129.4
4	1,020.3	1,021.6	1,020.6	1,017.5	1,019.9	1,010.9	1,063.1	1,066.6	1,167.6	1,150.4	1,128.4	1,129.4
5	1,021.2	1,021.7	1,020.5	1,017.2	1,019.4	1,009.2	1,063.3	1,072.1	1,167.8	1,149.3	1,128.1	1,129.5
6	1,020.8	1,021.4	1,020.8	1,017.1	1,019.4	1,009.0	1,063.8	1,074.6	1,167.7	1,148.1	1,127.9	1,129.4
7	1,020.5	1,021.1	1,020.0	1,017.5	1,022.9	1,009.1	1,063.5	1,076.0	1,167.5	1,147.1	1,128.0	1,129.3
8	-	1,018.9	1,019.1	1,017.6	1,020.6	1,009.5	1,063.1	1,077.2	1,167.2	1,145.9	1,128.2	1,129.2
9	1,018.8	1,017.5	1,018.1	1,018.0	1,017.7	1,012.0	1,062.8	1,078.4	1,166.8	1,145.5	1,128.4	1,128.9
10	1,018.7	1,018.6	1,018.1	1,018.1	1,017.2	1,015.1	1,063.1	1,079.4	1,166.1	1,143.0	1,128.0	1,129.1
11	1,019.6	1,019.7	1,018.6	1,018.3	1,017.6	1,017.3	1,063.1	1,080.9	1,165.2	1,141.3	1,128.1	1,129.3
12	1,020.0	1,019.3	1,019.7	1,018.1	1,018.4	1,018.0	1,062.9	1,084.6	1,164.4	1,142.0	1,128.1	1,129.3
13	1,020.0	1,018.5	1,019.8	1,018.0	1,019.0	1,018.3	1,062.7	1,088.4	1,163.5	1,141.8	1,128.1	1,129.2
14	1,019.9	1,018.2	1,019.1	-	1,019.7	1,019.0	1,062.9	1,092.1	1,163.0	1,139.8	1,128.2	1,129.1
15	1,019.6	1,017.8	1,018.9	1,017.2	1,019.7	1,021.0	1,063.8	1,095.7	1,162.4	1,137.9	1,128.2	1,129.4
16	1,019.1	1,018.1	1,018.6	1,017.7	1,019.8	1,022.8	1,063.7	1,100.2	1,162.0	1,136.3	1,128.3	1,129.1
17	1,019.5	1,018.2	1,018.6	1,018.3	1,019.4	1,024.8	1,063.5	1,105.0	1,161.6	1,134.6	1,128.2	1,129.2
18	1,020.0	1,017.9	1,018.9	1,018.7	1,017.9	1,026.7	1,063.1	1,109.7	1,161.2	1,132.9	1,127.9	1,129.2
19	1,020.4	1,017.3	1,019.9	1,019.1	1,016.8	1,030.4	1,062.8	1,113.6	1,160.7	1,131.7	1,127.4	1,129.5
20	1,020.7	1,016.8	1,020.5	1,019.9	1,016.2	1,032.6	1,063.4	1,117.6	1,160.1	1,131.0	1,127.2	1,129.4
21	1,020.8	1,017.0	1,020.0	1,019.0	1,017.0	1,036.1	1,064.3	1,121.3	1,159.5	1,130.6	1,127.3	1,129.3
22	1,020.8	1,017.9	1,019.6	1,018.7	1,017.7	1,039.1	1,064.9	1,125.1	1,159.0	1,129.8	1,127.6	1,129.1
23	1,020.4	1,018.6	1,018.7	1,017.7	1,017.1	1,042.2	1,064.8	1,129.2	1,158.7	1,129.1	1,128.2	1,128.1
24	1,020.5	1,019.1	1,017.3	1,017.6	1,017.0	1,045.0	1,064.7	1,133.8	1,158.3	1,128.4	1,128.9	1,127.7
25	1,021.0	1,019.6	1,016.8	1,017.7	1,017.1	1,048.3	1,063.5	1,138.8	1,157.9	1,127.9	1,129.1	1,127.7
26	1,022.8	1,019.4	1,017.3	1,017.7	1,017.7	1,051.5	1,062.5	1,144.1	1,157.2	1,127.4	1,128.5	1,127.6
27	1,021.5	1,018.5	1,017.8	1,017.6	1,019.0	1,055.2	1,062.8	1,149.7	1,156.6	1,127.4	1,128.5	1,127.7
28	1,020.2	1,018.5	1,018.3	1,017.7	1,020.0	1,058.9	1,063.0	1,154.9	1,155.9	1,127.1	1,128.5	1,127.6
29	1,019.2	1,019.0	1,018.6	1,017.6	1,018.6	1,062.5	1,064.0	1,158.8	1,155.2	1,126.9	1,128.7	1,127.6
30	1,018.6	1,019.7	1,018.8	1,018.7	-	1,063.4	1,064.2	1,161.7	1,154.5	1,127.2	1,129.0	1,127.4
31	1,019.2	-	1,018.6	1,020.2	-	1,061.1	-	1,163.9	-	1,127.7	1,129.2	-

1940-41

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,127.5	1,139.7	1,138.6	1,138.8	1,138.9	1,138.6	1,139.6	1,152.1	1,156.2	1,214.8	1,253.9	1,255.7
2	1,127.7	1,139.8	1,138.4	1,138.6	1,139.0	1,138.9	1,139.3	1,153.5	1,156.9	1,216.8	1,254.2	1,256.6
3	1,127.9	1,139.8	1,138.5	1,138.5	1,139.1	1,139.4	1,138.8	1,154.8	1,157.8	1,218.5	1,255.6	1,255.6
4	1,128.1	1,139.7	1,138.6	1,138.2	1,139.0	1,139.3	1,138.7	1,155.4	1,158.5	1,219.9	1,254.8	1,255.6
5	1,128.2	1,139.8	1,138.5	1,138.2	1,139.0	1,139.4	1,138.2	1,155.3	1,159.5	1,220.8	1,255.0	1,255.7
6	1,128.4	1,139.9	1,138.4	1,138.2	1,139.0	1,139.3	1,137.6	1,154.8	1,160.5	1,221.2	1,255.0	1,255.7
7	1,128.5	1,139.9	1,138.5	1,138.2	1,139.0	1,139.2	1,137.2	1,153.6	1,162.1	1,221.5	1,255.2	1,255.8
8	1,128.7	1,139.8	-	1,138.2	1,138.9	1,139.1	1,137.1	1,152.2	1,164.3	1,222.2	1,255.2	1,255.8
9	1,128.9	1,139.8	1,138.7	1,138.2	1,138.9	1,139.2	1,137.0	1,150.4	1,166.6	1,223.6	1,255.0	1,255.8
10	1,129.0	1,139.8	1,138.7	1,138.2	1,138.8	1,139.5	1,136.8	1,148.2	1,169.1	1,225.2	1,255.0	1,255.8
11	1,128.9	1,139.5	1,138.6	1,138.2	1,138.8	1,139.5	1,136.6	1,146.2	1,171.3	1,227.2	1,255.0	1,255.8
12	1,129.3	1,139.4	1,138.5	1,138.2	1,138.8	1,139.4	1,136.6	1,145.0	1,173.7	1,228.9	1,255.2	1,255.8
13	1,129.4	1,139.5	1,138.4	1,138.1	1,138.9	1,139.2	1,136.8	1,144.4	1,176.3	1,230.6	1,255.6	1,255.9
14	1,129.4	1,139.3	1,138.4	1,138.0	1,138.9	1,139.0	1,137.3	1,144.2	1,178.9	1,232.2	1,255.9	1,256.0
15	1,129.5	1,139.3	1,138.2	1,138.2	1,139.0	1,139.0	1,137.6	1,144.7	1,181.6	1,233.6	1,256.0	1,256.0
16	1,129.6	1,139.4	1,138.2	1,138.2	1,138.9	1,139.1	1,138.0	1,145.1	1,184.3	1,234.8	1,256.0	1,256.2
17	1,129.7	1,139.6	1,138.3	1,138.2	1,138.8	1,139.4	1,138.4	1,145.4	1,186.6	1,235.9	1,255.7	1,256.2
18	1,129.7	1,139.1	1,138.3	1,138.4	1,138.8	1,139.4	1,138.8	1,146.2	1,189.1	1,237.6	1,255.6	1,256.4
19	1,129.8	1,138.5	1,138.2	1,138.4	1,138.8	1,139.3	1,139.4	1,147.9	1,191.4	1,239.4	1,255.7	1,256.5
20	1,129.9	1,138.1	1,138.8	1,139.6	1,138.6	1,139.2	1,140.2	1,149.7	1,193.8	1,241.1	1,255.8	1,256.6
21	1,129.9	1,138.0	1,138.2	1,139.2	1,138.6	1,139.4	1,140.8	1,151.1	1,195.8	1,242.7	1,256.0	1,256.7
22	1,130.4	1,137.9	1,138.3	1,139.2	1,138.6	1,139.5	1,141.6	1,152.4	1,197.8	1,244.6	1,256.2	1,256.6
23	1,130.8	1,137.9	1,138.5	1,139.0	1,138.6	1,139.1	1,142.6	1,153.4	1,199.2	1,246.3	1,256.2	1,256.5
24	1,131.4	1,138.9	1,138.6	1,139.0	1,138.4	1,138.9	1,143.6	1,154.1	1,200.4	1,247.9	1,256.5	1,256.4
25	1,132.6	1,138.8	1,138.6	1,139.1	1,138.4	1,138.9	1,144.8	1,154.6	1,202.0	1,249.2	1,256.6	1,256.4
26	1,134.7	1,138.0	1,138.9	1,139.3	1,138.4	1,138.9	1,146.2	1,155.1	1,203.8	1,250.5	1,256.8	1,256.2
27	1,136.7	1,138.2	1,139.0	1,139.4	1,138.4	1,139.2	1,147.4	1,155.4	1,206.0	1,251.4	1,256.7	1,256.2
28	1,138.4	1,138.4	1,139.3	1,139.4	1,138.5	1,139.4	1,148.6	1,155.6	1,208.2	1,252.0	1,256.5	1,256.0
29	1,139.4	1,138.5	1,139.2	1,139.3	-	1,139.5	1,149.7	1,155.8	1,210.4	1,252.6	1,256.3	1,255.7
30	1,139.1	1,138.6	1,139.1	1,139.2	-	1,139.6	1,150.8	1,155.8	1,212.6	1,253.2	1,256.0	1,255.6
31	1,139.3	-	1,138.9	1,139.0	-	1,139.7	-	1,155.9	-	1,253.6	1,255.8	-

Monthly elevation and contents, of Columbia River Reservoir at Grand Coulee Dam, Wash., 1938-41

Date	Elevation (feet)	Contents (acre-feet)	Change in contents during month (acre-feet)
Apr. 30, 1938	963.8	31,600	-
May 31	978.0	63,000	+31,400
June 30	978.0	63,000	0
July 31	-	a29,600	-33,400
Aug. 31	957.2	18,400	-11,200
Sept.30	963.4	30,800	+12,400
Oct. 31, 1938	962.0	28,000	-2,800
Nov. 30	968.8	41,600	+13,600
Dec. 31	977.0	60,000	+18,400
Jan. 31, 1939	979.0	66,000	+6,000
Feb. 28	993.0	113,000	+47,000
Mar. 31	998.1	133,400	+20,400
Apr. 30	1,005.6	165,000	+31,600
May 31	1,013.2	203,000	+38,000
June 30	1,012.7	200,500	-2,500
July 31	1,013.7	205,500	+5,000
Aug. 31	1,015.1	212,500	+7,000
Sept.30	1,020.0	241,000	+28,500
Water year 1938-39	-	-	+210,200
Oct. 31, 1939	1,019.2	236,200	-4,800
Nov. 30	1,019.7	239,200	+3,000
Dec. 31	1,018.6	232,600	-6,600
Calendar year 1939	-	-	+172,600
Jan. 31, 1940	1,020.2	242,200	+9,600
Feb. 29	1,018.6	232,600	-9,600
Mar. 31	1,061.1	552,000	+319,400
Apr. 30	1,064.2	583,000	+31,000
May 31	1,163.9	2,577,600	+1,995,000
June 30	1,154.5	2,269,000	-308,600
July 31	1,127.7	1,556,400	-712,600
Aug. 31	1,129.2	1,589,600	+33,200
Sept.30 (8 a.m.)	1,127.4	1,549,800	-39,800
Water year 1939-40	-	-	+1,309,000
Sept.30, 1940 (12 p.m.)	1,127.5	1,552,000	-
Oct. 31	1,139.6	1,839,600	+287,600
Nov. 30	1,138.6	1,814,000	-25,600
Dec. 31	1,138.8	1,819,000	+5,000
Calendar year 1940	-	-	+1,586,000
Jan. 31, 1941	1,138.9	1,821,500	+2,500
Feb. 28	1,138.6	1,814,000	-7,500
Mar. 31	1,139.6	1,839,600	+25,600
Apr. 30	1,151.7	2,181,700	+342,100
May 31	1,156.1	2,320,200	+138,500
June 30	1,214.0	4,611,000	+2,291,000
July 31	1,253.8	6,932,400	+2,321,000
Aug. 31	1,255.8	7,069,200	+136,800
Sept.30	1,255.6	7,055,400	-13,800
Water year 1940-41	-	-	+5,503,000

a Interpolated.

Note.- Elevations prior to Sept. 30, 1940 were observed at 8 a.m. on the dates indicated; those after that date are for midnight from a graph based on 8 a.m. readings.

Columbia River at Grand Coulee, Wash.

Location.- Water-stage recorder, lat. 47°58'00", long. 118°58'45", opposite lot 4, sec. 36, T. 29 N., R. 30 E., in pier 3 of highway bridge at Grand Coulee, 2,500 feet downstream from Grand Coulee Dam and 14 miles upstream from Nespelem River. Datum of gage is at mean sea level, datum of 1929.

Drainage area.- 74,100 square miles.

Records available.- April 1913 to September 1941 (monthly discharge only, April 1913 to June 1923, January 1924 to May 1928).

Average discharge.- 28 years, 106,300 second-feet (adjusted for change in contents in Columbia River Reservoir beginning October 1939).

Extremes.- Maximum discharge during year, 170,000 second-feet (regulated) May 9 (elevation, 956.19 feet); minimum, 31,700 second-feet (regulated) Jan. 13-15 (elevation, 936.18 feet).

1913-41: Maximum discharge, 492,000 second-feet June 15, 1913 (computed on basis of records of peak discharge at other gaging stations); minimum may have been less than 15,300 second-feet (estimated) in January or February 1937, when stage-discharge relation was affected by ice.

Maximum discharge known, 725,000 second-feet (estimated) during flood of June 1894.

Remarks.- Records excellent. Diversion above station for irrigation is small percentage of flow past gage. Some diurnal fluctuation caused by power plants on Spokane River and by construction at Grand Coulee Dam. Flow affected by natural storage in many lakes and by artificial regulation in Kootenai, Pend Oreille and Spokane River Basins, and in Columbia River Reservoir at Grand Coulee Dam (see p. 84).

Rating table, water year 1940-41 (elevation, in feet, and discharge, in second-feet)

936.2	31,800	939.0	45,000	942.0	61,600	948.0	101,300	954.0	150,300
937.0	35,400	940.0	50,200	944.0	74,000	950.0	116,900	956.0	168,300
938.0	40,000	941.0	55,800	946.0	87,300	952.0	132,900		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58,700	66,300	37,700	42,600	37,900	33,800	68,100	82,500	154,800	112,000	94,000	82,300
2	58,700	66,400	37,100	41,300	38,500	34,600	76,400	96,400	155,700	112,600	93,900	80,600
3	58,700	65,000	36,500	39,500	39,000	41,200	77,800	112,100	156,100	115,000	94,300	80,400
4	58,800	61,400	37,000	37,000	38,100	44,500	79,400	127,700	156,300	119,300	94,200	80,600
5	56,800	58,300	37,200	35,400	37,300	46,500	80,700	140,500	156,800	122,300	94,400	80,600
6	55,400	57,500	36,800	35,400	37,300	48,000	80,600	150,300	153,600	124,700	94,400	80,800
7	55,400	57,400	36,400	35,400	37,200	47,900	79,200	159,300	153,200	121,300	94,200	80,800
8	54,600	56,000	36,500	35,100	37,200	46,000	76,700	162,000	140,800	112,600	93,100	80,600
9	53,900	54,100	37,000	34,300	37,100	44,500	76,800	169,100	143,600	103,300	88,000	80,600
10	53,900	54,000	37,200	34,300	37,100	46,200	77,100	165,600	145,300	93,700	83,800	80,400
11	51,800	52,300	37,200	34,400	37,200	48,000	76,400	154,800	142,700	89,000	80,400	80,800
12	50,600	49,600	36,800	34,200	37,300	48,000	76,500	144,000	136,300	86,800	77,800	81,000
13	50,500	48,700	35,800	33,400	37,600	48,000	76,700	139,500	134,800	85,100	81,000	80,900
14	50,600	48,000	35,400	31,700	37,300	46,000	76,600	139,200	135,900	85,700	87,200	80,400
15	49,800	45,200	34,800	32,200	37,600	44,500	76,700	139,300	137,900	84,400	93,400	81,000
16	49,200	43,100	33,200	32,700	37,300	44,500	77,500	140,400	140,800	79,900	96,000	83,200
17	48,500	46,600	32,700	32,800	37,600	46,800	77,700	144,900	143,300	75,800	94,300	85,500
18	a47,200	50,800	33,100	33,900	37,300	48,000	75,600	148,000	144,800	73,600	91,300	87,700
19	45,900	48,800	33,300	34,400	37,300	47,800	73,500	149,600	146,000	74,100	86,200	89,500
20	45,900	44,400	32,900	36,600	36,400	48,000	73,800	150,700	149,300	74,700	82,100	89,700
21	46,000	42,000	32,900	40,200	35,400	50,200	72,500	151,800	152,500	74,500	82,200	89,000
22	49,300	41,200	32,900	41,800	35,400	52,100	70,500	152,600	153,800	74,300	82,100	89,600
23	55,600	39,600	33,900	39,800	35,500	52,300	71,000	152,800	152,700	74,900	82,300	87,900
24	56,700	38,800	35,400	38,100	34,600	49,800	70,900	153,200	146,000	76,500	82,300	85,000
25	51,100	37,400	35,400	38,000	33,900	48,400	71,200	153,700	128,200	81,300	84,700	85,100
26	50,100	35,300	37,500	39,800	33,800	48,100	71,500	153,800	127,000	85,400	91,800	84,200
27	53,400	35,300	39,600	41,800	33,800	50,400	71,800	153,900	121,000	91,600	97,200	84,200
28	63,600	35,900	42,300	41,600	33,800	53,800	74,500	154,100	116,700	93,400	97,400	84,600
29	73,800	37,500	44,000	41,600	-	55,500	80,300	154,300	113,100	93,600	95,700	83,000
30	74,000	37,800	43,900	41,400	-	57,100	80,600	154,300	111,100	94,000	91,500	81,800
31	68,000	-	43,400	39,200	-	63,400	-	154,400	-	94,100	86,900	-

Month	Observed: Discharge in second-feet: Maximum	Minimum	Mean	Observed: Runoff in acre-feet	Change in contents in Columbia River Reservoir (acre-feet)	Adjusted for change in reservoir contents: Runoff in acre-feet	Discharge in second-feet: Mean	Per square mile	Runoff in inches
October	74,000	45,900	54,730	3,365,000	+287,600	3,653,000	59,410	0.802	.92
November	66,400	35,300	48,490	2,885,000	-25,600	2,859,000	48,050	.648	.72
December	44,000	32,700	36,640	2,253,000	+5,000	2,258,000	36,720	.496	.57
Calendar year 1940	265,100	27,400	91,310	66,280,000	+1,586,000	67,870,000	93,490	1.26	17.18
January	42,600	31,700	37,090	2,281,000	+2,500	2,284,000	37,150	.501	.58
February	39,000	33,800	36,640	2,035,000	-7,500	2,028,000	36,520	.493	.51
March	65,400	33,800	47,870	2,943,000	+25,600	2,969,000	48,290	.652	.75
April	80,700	68,100	75,620	4,500,000	+342,100	4,842,000	81,370	1.10	1.23
May	169,100	82,500	145,300	8,935,000	+138,500	9,074,000	147,600	1.99	2.29
June	156,800	111,100	141,700	8,430,000	+2,291,000	10,720,000	180,200	2.43	2.71
July	124,700	73,600	92,890	5,711,000	+2,321,000	8,032,000	130,600	1.76	2.03
August	97,400	77,800	89,290	5,490,000	+136,800	5,627,000	91,510	1.23	1.42
September	89,700	80,400	83,390	4,962,000	-13,800	4,948,000	83,150	1.12	1.25
Water year 1940-41	169,100	31,700	74,300	53,790,000	+5,503,000	59,290,000	81,900	1.11	14.98

a No gage-height record; discharge interpolated.

Note.- Storage adjustments determined from midnight elevations based on 8 a.m. gage readings.

Columbia River at Trinidad, Wash.

Location.- Water-stage recorder, lat. 47°13'30", long. 120°00'50", in SE¼ sec. 13, T. 20 N., R. 22 E., half a mile southwest of Trinidad, 8½ miles downstream from Colocham Creek, and 12 miles downstream from Rock Island Dam. Datum of gage is 500 feet above mean sea level, subject to correction to datum of 1929.

Drainage area.- 89,700 square miles.

Records available.- October 1930 to September 1941. January to December 1910 (gage heights only) and May 1913 to December 1916 at sites about 1 mile above and at highway bridge at Wenatchee, 24 miles upstream, published as Columbia River at Wenatchee, Wash.; January 1917, at Beverly, 29 miles downstream; January 1917 to September 1930, at site half a mile north of Vernita, 50 miles downstream, published as Columbia River at Vernita, Wash.

Average discharge.- 28 years, 116,100 second-feet (adjusted for change in contents in Columbia River Reservoir beginning October 1939).

Extremes.- Maximum discharge during year, 173,300 second-feet May 10 (gage height, 35.18 feet); minimum, 31,500 second-feet (regulated) Jan. 15 (gage height, 18.60 feet).

1913-41: Maximum discharge, 528,000 second-feet June 15, 16, 1913 (gage height, 45.7 feet, site and datum then in use); minimum, 4,120 second-feet (regulated) Feb.10, 1932 (gage height, 11.40 feet).

Maximum discharge known, about 740,000 second-feet June 7, 1894 (based on information obtained at other points).

Remarks.- Records excellent. Diversion above station for irrigation is small percentage of flow past gage. Some diurnal fluctuation caused by power plant at Rock Island and by construction at Grand Coulee Dam. Flow affected by natural storage in many lakes and by artificial regulation in Kootenai, Pend Oreille, Spokane, Okanogan, and Chelan River Basins, and in Columbia River Reservoir at Grand Coulee Dam (see p. 84).

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65,400	72,900	40,200	46,500	42,900	37,600	72,200	97,500	162,200	119,200	96,600	89,900
2	62,700	71,400	40,600	45,400	40,200	39,100	79,000	101,200	162,700	120,000	96,900	85,400
3	62,600	71,200	41,100	44,900	40,800	40,000	88,000	113,300	163,100	120,200	96,600	84,600
4	62,300	70,200	41,200	41,800	41,600	44,200	89,800	f123,500	163,200	125,000	96,200	84,300
5	62,400	66,600	41,500	41,500	41,000	49,000	91,400	f144,200	163,800	125,000	96,800	84,400
6	60,900	63,900	41,400	38,900	39,800	50,300	92,200	150,300	165,100	128,800	96,700	84,100
7	59,200	62,700	39,700	38,700	39,300	51,700	91,900	158,100	161,800	130,000	97,000	84,200
8	59,200	62,700	39,900	38,100	39,200	51,700	89,400	165,900	157,500	127,200	97,200	84,400
9	58,600	60,900	41,000	38,000	40,800	50,700	86,700	167,300	153,900	118,500	95,400	84,500
10	57,800	59,200	41,000	37,300	39,400	49,900	87,200	172,300	156,000	109,200	90,200	84,600
11	58,000	58,800	41,200	37,000	39,900	50,400	87,600	168,500	156,200	100,000	95,400	85,100
12	57,300	56,800	41,000	37,800	40,200	52,800	86,800	159,800	154,400	94,900	83,600	84,900
13	54,900	54,300	40,900	38,100	40,000	52,800	87,700	154,600	153,300	92,700	81,600	84,900
14	55,000	53,000	39,100	37,500	39,600	52,400	87,500	151,700	152,700	90,100	84,100	84,900
15	55,000	52,300	39,400	35,100	39,200	50,800	87,400	151,200	151,500	90,000	89,300	84,800
16	54,400	50,300	40,100	34,800	40,600	48,800	87,700	150,500	152,400	88,400	95,300	85,900
17	53,400	47,500	37,400	35,300	39,800	50,300	87,700	152,300	151,300	83,900	97,300	88,800
18	53,000	50,000	36,700	35,800	40,300	51,600	87,500	154,700	152,000	80,600	96,400	89,500
19	51,800	54,400	37,000	35,900	40,100	53,900	85,300	156,100	152,800	79,200	93,000	92,700
20	50,300	53,800	37,900	36,800	39,900	53,900	83,300	156,900	154,400	81,300	88,800	93,800
21	52,200	50,100	35,600	38,200	39,200	54,100	83,700	157,200	156,700	74,300	84,900	93,900
22	51,800	46,500	37,300	41,700	37,700	57,800	82,800	157,500	157,800	78,800	84,800	93,800
23	53,800	45,900	37,800	43,900	37,800	54,500	81,600	158,300	161,200	78,300	84,900	94,300
24	60,600	44,100	37,600	43,100	38,900	57,600	82,700	160,000	157,700	77,900	87,400	93,000
25	64,000	43,800	38,000	40,500	38,200	56,300	83,500	160,400	150,900	80,400	81,600	89,400
26	58,200	42,600	38,700	40,000	36,900	54,300	84,000	a161,000	143,300	84,400	87,500	88,600
27	56,500	39,700	39,900	41,600	36,600	54,300	85,900	a161,000	133,300	88,100	95,200	88,000
28	58,200	39,700	42,200	44,100	36,300	55,800	86,400	a161,000	129,200	93,600	108,500	88,200
29	67,400	40,100	44,500	44,400	-	60,100	89,200	a161,000	123,700	95,600	99,700	88,400
30	77,000	40,600	46,700	44,100	-	63,700	96,100	160,300	121,700	96,800	98,100	86,400
31	78,400	-	47,100	44,400	-	66,400	-	160,700	-	96,900	94,400	-

Month	Observed: Discharge in second-feet: Maximum	Minimum	Mean	Observed: Runoff in acre-feet	Change in contents in Columbia River Reservoir (acre-feet)	Adjusted for change in reservoir contents: Runoff in acre-feet	Discharge in second-feet: Mean	Per square mile	Runoff in inches
October	78,400	50,300	59,110	3,634,000	+287,600	3,922,000	63,790	0.711	0.82
November	72,900	39,700	54,200	3,225,000	-25,600	3,199,000	53,760	.599	.67
December	47,100	35,600	40,120	2,467,000	+5,000	2,472,000	40,200	.448	.52
Calendar year 1940	272,000	29,800	96,180	69,820,000	+1,586,000	71,420,000	98,370	1.10	14.94
January	46,500	34,800	40,040	2,462,000	+2,500	2,464,000	40,070	.447	.52
February	42,900	36,300	39,510	2,194,000	-7,500	2,186,000	39,360	.439	.46
March	66,400	37,600	52,150	3,207,000	+25,600	3,233,000	52,580	.586	.68
April	96,100	72,200	86,410	5,142,000	+342,100	5,484,000	92,160	1.03	1.15
May	172,300	97,500	151,800	9,335,000	+138,500	9,474,000	154,100	1.72	1.98
June	165,100	121,700	152,500	9,076,000	+2,291,000	11,370,000	191,100	2.13	2.38
July	130,000	74,300	98,360	6,048,000	+2,321,000	8,369,000	136,100	1.52	1.75
August	108,500	81,600	92,630	5,695,000	+136,800	5,832,000	94,850	1.06	1.22
September	94,300	84,100	87,660	5,216,000	-13,800	5,202,000	87,420	.975	1.09
Water year 1940-41	172,300	34,800	79,700	57,700,000	+5,503,000	63,210,000	87,310	.973	13.24

a No gage-height record; discharge computed on basis of records for station at Grand Coulee.
f Computed on basis of partly estimated gage-height record.
Note.- Storage adjustments determined from midnight elevations based on 8 a.m. gage readings.

Kootenai River at Newgate, British Columbia

(International Gaging Station)

Location.- Two staff gages, one on main river and one on slough, lat. 49°01', long. 115°10', at highway bridges, 0.7 mile northwest of Newgate and 0.9 mile north of the international boundary, respectively. Datum of main river gage lowered 1.00 foot Oct. 1, 1940.

Drainage area.- 7,660 square miles.

Records available.- October 1930 to September 1941.

Average discharge.- 11 years, 9,075 second-feet.

Extremes.- Maximum discharge observed during year, 23,300 second-feet June 3; minimum, 1,770 second-feet Dec. 17 (estimated), Feb. 17.
1931-41: Maximum discharge observed, 83,500 second-feet June 18, 1933; minimum observed, 994 second-feet Feb. 7, 1936.

Remarks.- Records good except those for periods of ice effect, which are fair. Gages read once daily. Records give total flow of main channel and slough.

Cooperation.- This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,660	4,950	2,950	2,660	2,300	2,670	5,720	15,600	20,000	13,000	6,290	5,520
2	4,580	4,770	2,970	b2,240	2,340	2,780	5,940	18,000	21,500	13,000	5,960	5,480
3	4,470	4,680	3,020	b2,110	2,400	2,830	6,020	19,600	23,300	12,200	5,580	5,840
4	4,320	4,540	3,110	b2,030	2,400	2,780	6,130	18,200	21,900	11,900	5,600	6,020
5	4,250	4,320	3,110	b2,110	2,320	2,680	6,130	17,200	21,200	12,100	5,580	6,220
6	4,620	4,160	3,230	2,360	2,120	2,680	6,110	14,100	20,400	11,700	5,560	6,840
7	4,070	4,120	3,160	2,380	1,990	2,710	6,000	13,600	20,000	11,200	5,430	6,860
8	4,000	4,070	3,170	2,380	2,280	2,890	6,090	12,800	19,600	10,900	5,280	6,860
9	3,930	3,910	3,100	2,300	2,280	2,870	6,220	11,600	20,000	10,700	5,210	6,610
10	4,600	3,390	2,960	2,380	2,280	2,820	6,610	10,800	20,100	9,900	5,100	6,280
11	6,030	3,360	2,610	2,360	2,230	2,760	7,180	10,400	18,700	9,430	5,190	6,970
12	6,140	2,740	b2,310	2,330	2,240	2,670	7,440	12,000	17,900	8,870	5,260	7,280
13	6,110	2,500	b1,940	2,380	2,270	2,620	8,130	16,000	18,800	8,480	5,370	7,410
14	5,700	2,410	b1,870	2,390	2,180	2,560	8,440	19,300	20,600	8,230	5,760	7,620
15	5,350	2,360	b1,790	2,410	1,930	2,570	8,360	22,200	19,000	7,950	6,000	8,170
16	4,910	2,470	*b1,810	2,410	1,870	2,600	8,590	20,600	18,200	7,980	6,000	7,860
17	4,680	2,620	b1,770	2,420	1,770	2,650	8,270	21,200	17,100	8,120	5,960	8,210
18	4,560	2,840	b1,840	2,460	1,930	2,780	7,780	22,600	16,500	8,730	5,820	9,940
19	4,560	2,970	b2,140	2,510	1,950	3,070	7,200	20,400	16,200	8,840	5,540	10,900
20	4,540	2,910	b2,600	2,500	2,010	3,150	6,940	17,300	16,300	8,730	5,330	10,100
21	4,910	3,070	b3,000	2,440	2,100	3,260	6,960	15,600	15,000	8,510	5,260	9,630
22	5,530	3,070	b3,200	2,180	2,040	3,260	7,360	15,000	13,600	7,750	5,140	8,730
23	5,890	2,920	3,210	2,280	1,940	3,260	8,120	14,300	13,000	7,390	5,020	7,850
24	5,430	2,960	3,070	2,020	1,840	3,270	8,610	14,900	12,700	7,110	5,260	8,020
25	5,570	3,020	3,130	2,040	1,900	3,320	9,420	17,400	14,900	6,890	5,390	8,160
26	5,450	3,010	3,080	2,080	2,070	3,430	9,880	19,200	15,500	6,620	5,540	8,440
27	5,870	3,010	3,040	2,300	2,110	3,610	10,600	19,400	14,400	6,270	6,140	9,050
28	5,740	3,020	2,990	2,320	2,180	3,910	11,400	17,700	12,800	6,340	5,920	9,510
29	5,470	3,030	2,870	2,300	-	4,250	12,400	17,200	e13,400	6,400	5,940	9,140
30	5,270	3,000	2,870	2,280	-	4,580	13,800	16,600	12,900	6,420	5,900	8,700
31	5,230	-	2,780	2,140	-	5,060	-	17,400	-	6,400	5,640	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	156,440	6,140	3,930	5,050	0.66	0.76	310,300
November	100,200	4,950	2,360	3,340	.44	.49	198,700
December	84,680	3,230	1,770	2,730	.36	.42	168,000
Calendar year 1940	2,913,710	43,600	1,590	7,960	1.04	14.17	5,779,000
January	71,530	2,660	2,020	2,310	.30	.35	141,900
February	59,270	2,400	1,770	2,120	.28	.29	117,600
March	96,360	5,060	2,560	3,110	.41	.47	191,100
April	237,850	13,800	5,720	7,930	1.04	1.16	471,800
May	518,200	22,600	10,400	16,700	2.18	2.51	1,028,000
June	525,500	23,300	12,700	17,500	2.28	2.54	1,042,000
July	278,060	13,000	6,270	8,970	1.17	1.35	551,500
August	172,970	6,290	5,020	5,580	.73	.84	343,100
September	234,220	10,900	5,480	7,810	1.02	1.14	464,600
Water year 1940-41	2,535,280	23,300	1,770	6,950	.91	12.32	5,029,000

* Winter discharge measurement made on this day.
b Stage-discharge relation on main channel affected by ice.
e Gage readings not representative of average for day; discharge computed on basis of records for other Kootenai River stations.

Kootenai River at Libby, Mont.

Location.— Water-stage recorder, lat. 48°24', long. 115°33', in NW¼ sec. 3, T. 30 N., R. 31 W., 1,200 feet downstream from highway bridge at Libby and half a mile downstream from Libby Creek.

Drainage area.- 10,240 square miles.

Records available.- October 1910 to September 1941.

Average discharge.- 15 years (1912-15, 1917-18, 1928-32, 1934-41), 10,250 second-feet.

Extremes.- Maximum discharge during year, 26,800 second-feet May 19 (gage height, 8.18 feet); minimum, 1,410 second-feet Feb. 18 (gage height, 0.56 foot).
1910-41: Maximum discharge, 130,000 second-feet June 21, 1916 (gage height, 19.17 feet); minimum, 895 second-feet, discharge measurement, Jan. 11, 1930 (affected by ice).

Remarks.- Records excellent except those for periods of ice effect, which are fair. No known diversions or regulation above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,020	5,670	3,560	b3,100	2,650	2,520	h5,910	15,800	20,700	13,600	6,680	5,900
2	4,890	5,540	3,560	b2,850	2,690	3,100	h6,800	18,100	22,500	13,600	6,420	5,770
3	4,890	5,280	3,560	b2,650	2,810	3,450	h7,110	20,700	24,400	13,300	6,290	5,900
4	4,760	5,150	3,560	b2,610	2,880	3,450	h7,110	21,600	25,400	12,600	6,160	6,030
5	4,760	4,890	3,680	b2,650	2,780	3,340	h7,110	20,700	23,900	12,300	5,900	6,290
6	4,630	4,760	3,680	b2,760	2,540	3,340	h7,110	19,000	23,000	12,600	5,900	6,550
7	4,630	4,630	3,800	b2,760	2,470	3,340	h7,110	16,900	22,100	12,000	5,770	6,950
8	4,380	4,500	3,680	h3,080	2,470	3,340	h7,110	15,000	21,600	11,700	5,640	7,220
9	4,380	4,500	3,680	h2,850	2,430	3,450	h7,110	13,600	21,600	11,400	5,520	7,220
10	4,260	4,260	3,680	h3,080	2,430	3,450	h7,110	12,600	21,600	11,100	5,390	6,820
11	4,260	3,900	3,450	h3,080	2,520	3,450	h7,760	12,000	21,600	10,100	5,260	6,820
12	5,280	3,660	2,830	h2,850	2,580	3,340	h8,100	12,000	20,300	9,540	5,390	7,220
13	6,640	3,080	b2,320	h3,080	2,630	3,220	8,640	14,000	19,800	9,240	5,520	7,780
14	6,500	h2,980	b1,710	h3,310	2,610	3,220	9,240	18,100	20,700	8,940	5,520	8,060
15	6,080	2,530	b1,750	h3,080	2,450	3,100	9,540	22,500	22,100	8,640	5,900	8,350
16	5,670	h2,590	1,960	h2,850	2,240	3,100	9,540	24,400	21,200	8,350	6,290	8,640
17	5,410	d2,940	bh1,900	h2,650	2,110	3,100	9,540	23,900	19,400	8,350	6,420	8,640
18	5,150	3,300	bh2,050	h2,850	2,090	3,220	9,240	25,500	18,500	8,350	6,290	9,240
19	4,890	3,300	bh2,200	h2,850	2,170	3,450	8,640	25,400	17,700	8,940	6,030	10,800
20	4,890	3,190	h2,640	h3,080	2,170	3,560	8,350	22,500	17,700	9,240	5,770	11,400
21	4,890	3,300	h3,080	h2,850	2,280	3,680	7,780	19,800	17,300	8,940	5,520	10,800
22	5,150	3,190	a3,440	h2,850	2,340	3,800	8,060	17,700	16,100	8,640	5,390	10,100
23	5,670	3,540	h3,790	h2,640	2,410	3,800	8,350	16,900	14,700	8,060	5,390	9,240
24	6,220	3,540	h4,040	h1,780	2,260	3,680	9,240	16,100	14,000	7,780	5,390	8,940
25	6,220	3,680	a3,920	h1,870	1,980	3,800	10,100	17,300	14,300	7,500	5,520	8,640
26	6,080	3,560	h3,790	h2,240	2,150	h3,790	10,800	19,800	15,800	7,220	5,640	8,640
27	6,360	3,450	h3,550	h2,340	2,240	h4,040	11,400	21,600	16,100	6,950	6,160	8,940
28	6,360	3,560	h3,550	2,780	2,300	h4,040	12,000	21,200	15,000	6,680	6,290	9,540
29	6,220	3,680	3,450	2,690	-	h4,810	13,000	19,800	14,000	6,680	6,160	9,840
30	5,940	3,680	3,340	2,560	-	h5,080	14,000	19,400	13,300	6,550	6,160	9,540
31	5,670	-	3,340	2,690	-	h5,350	-	19,400	-	6,680	6,030	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	166,150	6,640	4,260	5,360	0.523	0.60	329,600
November	115,830	5,670	2,530	3,861	.377	.42	229,700
December	98,540	4,040	1,710	3,179	.310	.36	195,500
Calendar year 1940	3,213,530	47,800	1,700	8,780	.857	11.68	6,374,000
January	85,580	3,310	1,780	2,761	.270	.31	169,700
February	67,680	2,880	1,980	2,417	.236	.25	134,200
March	111,410	5,350	2,520	3,594	.351	.40	221,000
April	262,910	14,000	5,910	8,764	.856	.96	521,500
May	583,600	25,800	12,000	18,830	1.84	2.12	1,158,000
June	576,400	25,400	13,300	19,210	1.88	2.10	1,143,000
July	295,570	13,600	6,550	9,535	.931	1.07	586,300
August	181,710	6,680	5,260	5,862	.572	.66	360,400
September	245,820	11,400	5,770	8,194	.800	.89	487,600
Water year 1940-41	2,791,200	25,800	1,710	7,647	.747	10.14	5,536,000

a No gage-height record; discharge interpolated.
b Stage-discharge relation affected by ice.
h Computed from wire-weight gage reading.

Kootenai River at Leonia, Idaho

Location.- Water-stage recorder, lat. 48°37', long. 116°03', in SW¼ sec. 17, T. 33 N., R. 34 W., at Leonia, 450 feet east of Montana-Idaho State line and half a mile upstream from Boulder Creek. Datum of gage is 1,700.00 feet above mean sea level (U. S. Coast and Geodetic Survey datum).

Drainage area.- 11,740 square miles.

Records available.- March 1928 to September 1941.

Average discharge.- 13 years, 12,020 second-feet.

Extremes.- Maximum discharge during year, 31,900 second-feet May 17 (elevation, 1,809.05 feet); minimum daily discharge, 2,000 second-feet (estimated) Dec. 17; minimum elevation, 1,798.45 feet Dec. 16.

1928-41: Maximum discharge, 95,500 second-feet June 18, 1933 (elevation, 1,818.11 feet); minimum, 996 second-feet Dec. 9, 1936; minimum elevation, 1,797.56 feet Dec. 10, 1929.

Floods of June 1894 and 1916 reached elevations of 1,824.6 and 1,821.6 feet, respectively (information furnished by Great Northern Railway Co.).

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

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 11 to Sept. 30)

1,798.8	1,900	1,801.0	5,750	1,803.5	12,660	1,806.5	22,500
1,799.0	2,120	1,801.4	6,750	1,804.0	14,200	1,807.0	24,300
1,799.4	2,620	1,801.8	7,810	1,804.5	15,790	1,807.5	26,100
1,799.8	3,210	1,802.2	8,910	1,805.0	17,430	1,808.0	27,900
1,800.2	3,950	1,802.6	10,030	1,805.5	19,100	1,808.5	29,800
1,800.6	4,810	1,803.0	11,180	1,806.0	20,800	1,809.0	31,700

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,250	5,890	3,810	b3,600	3,100	3,020	7,510	18,600	22,800	14,500	7,040	6,240
2	5,160	5,770	3,750	b3,250	3,100	3,560	8,300	21,200	24,200	14,600	6,910	6,140
3	5,090	5,560	3,730	b3,000	3,100	4,030	8,880	23,200	26,000	14,400	6,720	6,120
4	5,040	5,390	3,750	b2,850	3,100	4,060	9,080	24,300	27,100	13,800	6,620	6,360
5	4,990	5,250	3,830	b2,700	3,070	3,990	9,020	23,800	28,000	13,400	6,240	6,570
6	4,880	5,090	3,930	b2,850	2,890	3,890	8,970	21,700	24,900	13,400	6,140	6,830
7	4,860	4,900	3,990	b2,900	2,790	3,850	8,800	19,300	24,100	13,100	6,090	7,380
8	4,660	4,860	3,990	b3,100	2,930	3,870	8,600	17,400	23,300	12,600	5,920	7,510
9	4,590	4,830	3,950	b3,100	2,890	3,950	8,570	15,900	23,100	12,100	5,750	7,590
10	4,500	4,720	3,890	b3,050	2,890	4,060	8,880	14,600	23,000	11,900	5,650	7,400
11	4,480	4,390	3,710	b3,000	2,930	4,030	**9,440**	**13,800**	**23,000**	11,300	5,530	7,300
12	4,860	4,060	3,350	b2,950	2,980	3,930	**10,100**	**14,100**	**21,900**	10,800	5,560	7,680
13	6,460	b3,600	b2,800	b3,050	3,020	3,790	**10,700**	15,900	**21,000**	10,100	5,660	8,350
14	6,720	b3,150	b2,300	*b3,350	2,990	3,710	**11,200**	20,100	**21,700**	9,860	5,750	8,830
15	6,320	b2,700	b2,100	b3,200	2,920	3,660	**11,600**	24,200	23,000	9,300	6,040	9,250
16	5,870	b2,850	b2,050	b3,200	2,750	3,620	11,600	26,500	22,800	9,080	6,420	9,670
17	5,560	b3,050	b2,000	b3,200	2,560	3,620	11,500	29,800	21,000	8,990	6,700	9,390
18	5,340	3,470	b2,100	b3,250	2,480	3,790	11,100	30,800	20,000	9,050	6,590	9,830
19	5,160	3,430	*b2,200	3,310	2,610	4,060	10,500	29,800	19,100	9,410	6,380	11,200
20	5,040	3,420	b2,850	3,380	2,730	4,290	9,950	26,400	19,000	9,720	6,060	12,300
21	4,970	3,510	b3,350	3,420	2,730	4,410	9,610	23,200	18,700	9,640	5,800	11,800
22	5,200	b3,500	b3,900	3,100	2,750	4,460	9,750	21,000	17,500	9,330	5,630	11,100
23	5,580	3,660	b4,200	3,180	2,830	4,460	10,300	19,600	16,000	8,850	5,610	10,300
24	6,120	3,660	b4,300	3,150	2,830	4,410	11,200	19,000	14,900	8,460	5,630	9,720
25	6,420	3,770	b4,200	2,760	2,560	4,440	12,100	19,500	15,200	8,080	5,700	9,330
26	6,220	3,690	b4,000	2,660	2,520	4,520	12,700	21,800	16,400	7,760	5,730	9,410
27	6,420	3,660	3,970	2,770	2,720	4,700	13,300	23,700	17,100	7,570	6,320	9,610
28	6,520	3,690	3,950	3,050	2,770	4,970	14,300	23,900	16,500	7,240	6,720	10,100
29	6,390	3,770	3,850	3,070	-	5,340	15,300	22,200	15,200	7,110	6,570	10,500
30	6,160	3,830	3,710	2,990	-	5,890	16,700	21,500	14,500	7,010	6,490	10,300
31	6,090	-	3,660	3,000	-	6,670	-	21,500	-	7,060	6,440	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	170,920	6,720	4,480	5,514	0.470	0.54	339,000
November	123,120	5,890	2,700	4,104	.350	.39	244,200
December	107,170	4,300	2,000	3,457	.294	.34	212,600
Calendar year 1940	3,576,760	51,800	1,850	9,773	.832	11.33	7,094,000
January	95,440	3,600	2,660	3,079	.262	.30	189,300
February	79,540	3,100	2,480	2,841	.242	.25	157,800
March	131,050	6,670	3,020	4,227	.360	.42	259,900
April	319,560	16,700	7,510	10,650	.907	1.01	633,800
May	668,300	30,800	13,800	21,560	1.84	2.12	1,326,000
June	619,000	27,100	14,500	20,630	1.76	1.96	1,228,000
July	319,320	14,600	7,010	10,300	.877	1.01	633,400
August	190,410	7,040	5,530	6,142	.523	.60	377,700
September	264,110	12,300	6,120	8,804	.750	.84	523,900
Water year 1940-41	3,087,940	30,800	2,000	8,460	.721	9.78	6,126,000

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

Kootenai River at Boom Camp, near Bonners Ferry, Idaho

Location.- Water-stage recorder, lat. 48°42'05", long. 116°14'30", in NW¼ sec. 29, T. 62 N., R. 2 E., 600 feet east of Boom Camp, 3½ miles upstream from Bonners Ferry, and 4 miles downstream from Moyie River. Datum of gage is 1,700.00 feet above mean sea level (U. S. Coast and Geodetic Survey datum).

Records available.- October 1927 to September 1941 in reports of Geological Survey. April 1925 to September 1927 in reports of Dominion Water and Power Bureau, Department of Mines and Resources, Canada.

Extremes.- Maximum water-surface elevation during year, 1,764.87 feet May 17; minimum, 1,756.19 feet Dec. 17.
1927-41: Maximum water-surface elevation recorded, 1,776.58 feet June 18, 1933; minimum elevation, 1,755.53 feet Dec. 9, 1936.

Remarks.- No backwater effect from Kootenay Lake during year.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57.85	58.15	57.23	57.28	56.75	-	-	62.01	62.80	60.79	58.49	58.23
2	57.78	58.11	57.20	57.00	56.74	-	-	62.53	63.03	60.80	58.45	58.20
3	57.76	58.03	57.18	56.81	56.74		-	62.96	63.35	60.74	58.39	58.18
4	57.74	57.95	57.20	56.76	56.75	57.44	-	63.18	63.61	60.60	58.35	58.26
5	57.71	57.88	57.24	56.56	56.76	57.42	-	63.10	63.45	60.48	58.22	58.34
6	57.66	57.81	57.31	56.66	56.81	57.36	-	62.74	63.19	60.45	58.18	58.41
7	57.65	57.75	57.32	56.79	56.83	57.32	-	62.24	63.03	60.40	58.17	58.60
8	57.57	57.72	57.33	56.80	56.66	57.35	-	61.80	62.87	60.24	58.12	58.65
9	57.54	57.72	57.30	56.92	56.62	57.40	-	61.43	62.82	60.09	58.05	58.69
10	57.50	57.65	57.25	56.88	56.62	57.45	-	61.12	62.77	60.03	58.01	58.65
11	57.48	57.52	57.19	56.76	56.63	57.43	59.78	60.91	62.77	59.87	57.97	58.62
12	57.57	57.32	57.14	56.72	56.67	57.38	59.93	60.96	62.55	59.67	57.97	58.72
13	58.28	57.22	57.04	56.78	56.70	57.30	60.14	61.36	62.33	59.52	58.00	58.95
14	58.42	56.95	56.72	56.90	56.69	57.25	60.27	62.21	62.43	59.45	58.04	59.12
15	58.28	56.76	56.35	56.86	56.67	57.21	60.38	63.04	62.68	59.27	58.14	59.30
16	58.11	56.91	56.52	56.88	56.57	57.19	60.34	63.49	62.69	59.19	58.27	59.44
17	57.98	56.85	56.54	56.87	56.43	57.19	60.31	64.25	62.33	59.14	58.36	59.36
18	57.89	57.06	56.40	56.89	56.38	57.36	60.17	64.71	62.08	59.15	58.34	59.47
19	57.82	57.10	56.40	56.93	-	57.55	59.99	64.47	61.91	59.24	58.25	59.90
20	57.76	57.03	56.82	56.94	-	57.62	59.81	63.79	61.87	59.35	58.15	60.24
21	57.73	57.06	57.05	56.97	-	-	59.71	63.10	61.82	59.33	58.05	60.13
22	57.82	57.27	57.33	56.87	-	-	59.76	62.61	61.55	59.24	57.99	59.91
23	57.98	57.08	57.48	56.80	-	-	59.94	62.29	61.21	59.09	57.98	59.70
24	58.19	57.14	57.50	56.80	-	-	60.19	62.12	60.94	58.97	57.99	59.50
25	58.34	57.21	57.46	56.61	-	-	60.45	62.17	60.94	58.85	58.00	59.38
26	58.26	57.18	57.37	56.49	-	-	60.63	62.55	61.20	58.74	58.02	59.38
27	58.33	57.16	57.35	56.56	-	-	60.78	62.95	61.39	58.67	58.24	59.43
28	58.38	57.16	57.31	56.71	-	-	61.03	63.03	61.31	58.57	58.39	59.55
29	58.35	57.21	57.24	56.75	-	-	61.26	62.73	61.01	58.51	58.35	59.71
30	58.26	57.24	57.17	56.74	-	-	61.58	62.56	60.80	58.49	58.31	59.65
31	58.24	-	57.14	56.72	-	-	-	62.54	-	58.50	58.30	-

Note.- Add 1,700 feet to obtain elevation above mean sea level.

Kootenai River at Bonners Ferry, Idaho

Location.- Wire-weight gage, lat. 48°42'00", long. 116°18'45", in NE¼ sec. 27, T. 62 N., R. 1 E., on highway bridge at Bonners Ferry. Datum of gage is 1,743.00 feet above mean sea level (U. S. Coast and Geodetic Survey).

Drainage area.- 13,000 square miles.

Records available.- October 1927 to September 1941. May to October 1904, at site three-quarters of a mile downstream. Gage heights collected by U. S. Weather Bureau May 1904 to September 1927.

Average discharge.- 13 years (1928-41), 12,970 second-feet.

Extremes.- Maximum daily discharge during year, 35,200 second-feet May 18; maximum elevation observed, 1,758.70 feet May 18; minimum daily discharge, 2,100 second-feet Dec. 17 (estimated); minimum elevation observed, 1,742.64 feet Feb. 26.

1928-41: Maximum discharge, 99,800 second-feet June 18, 1933; maximum elevation, 1,774.98 feet June 19, 1933; minimum daily discharge, 1,300 second-feet, Feb. 8, 1936; minimum elevation, 1,741.14 feet Dec. 5, 1929.

Maximum water-surface elevation known, 1,777.2 feet in June 1894.

Remarks.- Records of discharge excellent except those for periods of ice effect or no gage-height record for Boom Camp, which are good. Gage at Bonners Ferry read twice daily. Backwater effect from Kootenay Lake during entire year at Bonners Ferry; none at Boom Camp. Discharge computed on basis of stage-discharge relation for station at Boom Camp. Discharge measurements are made at station near Bonners Ferry. No diversion or regulation above station.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.80	46.94	45.90	45.18	44.02	43.05	45.48	51.60	54.94	51.02	49.20	48.85
2	46.82	46.91	45.84	45.07	43.98	43.34	45.85	52.66	55.40	50.97	49.11	48.86
3	46.82	46.86	45.76	44.87	43.99	43.68	46.21	53.64	56.00	50.88	49.06	48.76
4	46.75	46.82	45.72	44.78	43.97	43.74	46.36	54.30	56.39	50.78	48.98	48.79
5	46.76	46.74	45.68	44.80	43.96	43.72	46.32	54.44	56.38	50.61	48.86	48.93
6	46.73	46.68	45.68	44.84	43.96	43.64	46.31	53.88	55.94	50.74	48.88	49.00
7	46.72	46.68	45.77	44.91	43.88	43.58	46.25	53.00	55.66	50.90	48.84	48.96
8	46.68	46.72	45.76	44.82	43.80	43.62	46.16	52.22	55.30	50.88	48.85	49.16
9	46.61	46.67	45.76	44.65	43.72	43.69	46.14	51.42	55.18	50.70	48.82	49.16
10	46.57	46.63	45.74	44.61	43.63	43.69	46.30	50.82	55.05	50.60	48.82	49.14
11	46.67	46.56	45.72	44.64	43.62	43.66	46.62	50.40	54.90	50.47	48.83	49.17
12	46.73	46.42	45.84	44.58	43.64	43.60	46.96	50.50	54.72	50.21	48.80	49.19
13	47.20	46.32	45.74	44.52	43.60	43.52	47.42	51.20	54.32	50.00	48.85	49.28
14	47.34	46.15	45.59	44.65	43.54	43.44	47.60	52.48	54.32	49.84	48.84	49.62
15	47.24	46.04	45.42	44.66	43.44	43.38	47.69	54.26	54.66	49.72	48.90	49.84
16	47.16	45.94	45.38	44.62	43.34	43.32	47.86	55.40	54.79	49.74	49.00	49.89
17	47.03	45.92	45.39	44.60	43.16	43.30	47.82	56.74	54.28	49.76	49.04	49.91
18	46.95	46.06	45.47	44.62	43.11	43.60	47.62	58.62	53.82	49.76	48.99	49.94
19	46.90	46.08	45.50	44.64	43.10	43.72	47.30	58.32	53.54	49.76	48.88	50.35
20	46.87	46.08	45.60	44.64	43.12	43.74	47.04	57.20	53.42	49.92	48.82	50.72
21	46.82	46.01	45.68	44.60	43.02	43.78	46.89	56.01	53.31	49.85	48.78	50.68
22	47.00	45.96	45.80	44.46	43.04	43.80	46.98	54.98	52.92	49.68	48.76	50.44
23	47.08	45.91	45.89	44.36	43.08	43.81	47.20	54.26	52.32	49.59	48.76	50.21
24	47.18	45.92	45.88	44.36	43.00	43.74	47.65	53.85	51.64	49.59	48.74	50.00
25	47.26	46.05	45.86	44.30	42.80	43.70	48.16	53.79	51.44	49.44	48.72	49.84
26	47.30	46.06	45.70	44.17	42.68	43.78	48.54	54.22	51.77	49.36	48.76	49.84
27	47.19	45.98	45.60	44.18	42.76	43.88	48.91	54.92	52.16	49.28	48.86	49.88
28	47.15	45.94	45.52	44.21	42.84	44.02	49.38	55.26	52.08	49.18	48.90	49.94
29	47.12	45.96	45.42	44.22	-	44.21	49.92	54.93	51.64	49.12	48.92	50.09
30	47.03	45.94	45.36	44.11	-	44.49	50.62	54.58	51.12	49.10	48.87	50.06
31	47.00	-	45.33	44.08	-	45.01	-	54.56	-	49.16	48.87	-

Note.- Add 1,700 feet to obtain elevations above mean sea level.

Discharge, in second-feet, of Kootenai River at Bonners Ferry, Idaho, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,340	6,080	3,980	b3,800	3,150	a3,310	a8,780	20,300	24,200	15,000	7,130	6,420
2	5,180	5,980	3,920	b3,400	3,130	a3,880	a9,490	22,800	25,400	15,100	7,020	6,340
3	5,130	5,780	3,880	b3,100	3,130	a4,450	a10,600	25,100	27,200	14,800	6,850	6,290
4	5,090	5,580	3,920	b3,000	3,150	4,530	a10,700	26,300	28,700	14,300	6,740	6,500
5	5,020	5,410	4,000	2,810	3,170	4,480	a10,500	25,800	27,800	13,800	6,390	6,720
6	4,900	5,250	4,150	2,990	b3,100	4,360	a10,500	23,900	26,300	13,700	6,290	6,910
7	4,880	5,110	4,170	b3,040	b3,050	4,270	a10,300	21,400	25,400	13,500	6,260	7,440
8	4,700	5,040	4,190	3,240	2,990	4,340	a10,100	19,400	24,600	12,900	6,130	7,580
9	4,640	5,040	4,120	b3,250	2,920	4,440	a10,100	17,700	24,300	12,300	5,960	7,700
10	4,550	4,880	4,020	b3,200	2,920	4,550	a10,400	16,400	24,100	12,100	5,860	7,580
11	4,510	4,590	3,900	3,170	2,930	4,510	11,200	15,500	24,100	11,500	5,760	7,500
12	4,700	4,170	b3,500	3,100	3,010	4,400	11,700	15,700	23,000	10,800	5,760	7,790
13	6,420	b3,750	b2,900	3,200	3,060	4,230	12,500	17,400	21,900	10,300	5,830	8,470
14	6,800	b3,300	b2,400	3,430	3,040	4,120	13,000	21,300	22,400	10,100	5,930	8,990
15	6,420	b2,850	b2,200	3,350	3,010	4,040	13,400	25,500	23,600	9,470	6,180	9,570
16	5,980	b3,000	b2,150	3,390	2,830	4,000	13,300	28,000	23,700	9,220	6,530	10,000
17	5,660	3,240	b2,100	3,370	2,590	4,000	13,100	32,400	21,900	9,060	6,770	9,770
18	5,440	3,640	b2,200	3,410	a2,620	4,360	12,600	35,200	20,700	9,090	6,720	10,100
19	5,270	3,720	b2,350	3,490	a2,770	4,770	11,900	33,800	19,900	9,380	6,480	11,600
20	5,130	3,580	b3,050	3,510	a2,780	4,930	11,300	29,700	19,700	9,740	6,210	12,900
21	5,060	3,640	3,620	3,560	a2,780	a5,050	10,900	25,800	19,500	9,670	5,960	12,500
22	5,270	b3,650	4,190	3,370	a2,840	a5,170	11,100	23,300	18,200	9,380	5,800	11,700
23	5,660	3,680	4,510	3,240	a2,980	a5,210	11,800	21,700	16,800	8,900	5,780	10,900
24	6,180	3,800	4,550	3,240	a3,030	a5,050	12,700	20,800	15,600	8,530	5,800	10,200
25	6,580	3,940	4,460	2,900	a2,740	a4,960	13,700	21,100	15,600	8,170	5,830	9,830
26	6,370	3,880	4,270	2,690	a2,540	a5,150	14,400	23,000	16,700	7,850	5,880	9,830
27	6,560	3,840	4,230	2,810	a2,800	a5,420	15,000	25,000	17,500	7,640	6,450	10,000
28	6,690	3,840	4,150	3,080	a2,880	a5,800	16,000	25,400	17,200	7,360	6,850	10,400
29	6,610	3,940	4,000	3,150	-	a6,190	17,000	23,900	15,900	7,190	6,740	10,900
30	6,370	4,000	3,860	3,130	-	a6,850	18,400	23,000	15,100	7,130	6,640	10,700
31	6,310	-	3,800	3,100	-	a7,940	-	22,900	-	7,160	6,610	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	173,420	6,800	4,510	5,594	0.430	0.50	344,000
November	128,200	6,080	2,850	4,273	.329	.37	254,300
December	112,740	4,550	2,100	3,637	.280	.32	223,600
Calendar year 1940	3,825,810	55,100	2,000	10,450	.804	10.94	7,588,000
January	99,520	3,800	2,690	3,210	.247	.28	197,400
February	81,940	3,170	2,540	2,926	.225	.23	162,500
March	148,760	7,940	3,310	4,799	.369	.43	295,100
April	366,470	18,400	8,780	12,220	.940	1.05	726,900
May	729,500	35,200	15,500	23,530	1.81	2.09	1,447,000
June	647,000	28,700	15,100	21,570	1.66	1.85	1,283,000
July	325,140	15,100	7,130	10,490	.807	.93	644,900
August	195,140	7,130	5,760	6,295	.484	.56	387,100
September	273,130	12,900	6,290	9,104	.700	.78	541,700
Water year 1940-41	3,280,960	35,200	2,100	8,989	.691	9.39	6,508,000

a No gage-height record for station at Boom Camp; discharge computed from the stage-fall-discharge relation of the "at Bonners Ferry-near Bonners Ferry" reach.
b Stage-discharge relation affected by ice.

Kootenai River near Bonners Ferry, Idaho

Location.- Water-stage recorder, lat. 48°41'55", long. 116°20'40", in NW¼ sec. 28, T., 62 N., R. 1 E., 1.6 miles downstream from highway bridge at Bonners Ferry. Datum of gage is 1,700.00 feet above mean sea level (U. S. Coast and Geodetic Survey datum).

Drainage area.- 13,000 square miles.

Records available.- May 1928 to September 1941.

Extremes.- Maximum water-surface elevation during year, 1,758.22 feet May 18; minimum, 1,742.15 feet Feb. 27.
1928-41: Maximum water-surface elevation, 1,774.17 feet June 20, 1933; minimum, 1,740.23 feet Mar. 11, 17, 1939.

Remarks.- Elevations affected by backwater from Kootenay Lake.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.62	46.70	45.77	44.98	43.84	42.43	44.51	50.89	54.55	50.81	49.00	48.71
2	46.71	46.69	45.72	44.77	43.76	42.65	44.91	52.09	54.91	50.56	48.95	48.74
3	46.62	46.66	45.65	44.63	43.76	42.96	45.22	53.08	55.43	50.46	48.93	48.58
4	46.59	46.62	45.62	44.55	43.72	43.02	45.41	53.76	55.96	50.32	48.81	48.65
5	46.61	46.57	45.55	44.58	43.68	42.98	45.40	53.89	55.92	50.23	48.78	48.78
6	46.60	46.51	45.58	44.59	43.62	42.91	45.38	53.37	55.51	50.40	48.75	48.91
7	46.60	46.45	45.63	44.63	43.56	42.86	45.34	52.50	55.18	50.57	48.71	49.02
8	46.56	46.49	45.63	44.59	43.52	42.91	45.24	51.62	54.85	50.54	48.69	49.00
9	46.48	46.61	45.64	44.53	43.42	43.00	45.21	50.92	54.75	50.37	48.65	48.98
10	46.40	46.52	45.65	44.45	43.35	42.99	45.40	50.35	54.65	50.32	48.68	48.97
11	46.54	46.46	45.57	44.40	43.33	42.94	45.67	49.92	54.59	50.18	48.70	49.00
12	46.59	46.36	45.42	44.36	43.29	42.86	46.04	49.94	54.30	49.94	48.65	49.05
13	46.99	46.21	45.29	44.35	43.24	42.80	46.57	50.61	53.89	49.75	48.71	49.17
14	47.12	46.07	45.11	44.43	43.20	42.73	46.83	51.91	53.93	49.62	48.71	49.42
15	47.03	46.02	44.97	44.37	43.11	42.67	47.00	53.60	54.25	49.50	48.69	49.62
16	46.93	46.00	44.86	44.35	43.00	42.60	47.11	54.77	54.42	49.51	48.88	49.66
17	46.83	45.96	44.77	44.33	42.88	42.50	47.11	56.54	53.88	49.55	48.93	49.68
18	46.76	46.07	44.79	44.34	42.78	42.46	46.91	58.14	53.44	49.55	48.86	49.70
19	46.73	46.01	44.80	44.38	42.72	42.73	46.60	57.79	53.20	49.58	48.74	50.05
20	46.73	45.96	44.91	44.38	42.67	42.85	46.28	56.77	53.05	49.65	48.68	50.44
21	46.70	45.96	45.06	44.37	42.61	42.88	46.10	55.61	52.94	49.60	48.65	50.42
22	46.88	45.93	45.18	44.27	42.61	42.85	46.18	54.63	52.52	49.44	48.68	50.18
23	46.93	45.86	45.33	44.17	42.62	42.85	46.45	53.87	51.85	49.35	48.63	49.98
24	47.00	45.90	45.35	44.16	42.48	42.79	46.91	53.48	51.27	49.42	48.64	49.77
25	47.06	45.91	45.32	44.04	42.31	42.76	47.42	53.38	51.03	49.26	48.67	49.62
26	47.11	45.87	45.25	43.99	42.22	42.82	47.86	53.84	51.41	49.17	48.61	49.64
27	47.00	45.85	45.27	43.99	42.22	42.88	48.18	54.48	51.70	49.06	48.71	49.64
28	46.97	45.84	45.22	44.00	42.30	42.97	48.73	54.82	51.65	49.00	48.80	49.73
29	46.88	45.83	45.17	43.99	-	43.16	49.28	54.51	51.17	48.92	48.77	49.87
30	46.80	45.82	45.11	43.90	-	43.42	49.95	54.20	50.73	48.91	48.73	49.80
31	46.78	-	45.06	43.88	-	43.96	-	54.18	-	48.99	48.74	-

Note.- Add 1,700 feet to obtain elevation above mean sea level.

Kootenai River at Klockmann Ranch, near Bonners Ferry, Idaho

Location.- Water-stage recorder, lat. 48°47'40", long. 116°22'50", in SE¼ sec. 19, T. 63 N., R. 1 E., at Klockmann Ranch, 800 feet south of viaduct on Kootenai Valley branch of Great Northern Ry. and 8 miles north of Bonners Ferry. Datum of gage is 1,700.00 feet above mean sea level (U. S. Coast and Geodetic Survey).

Records available.- May 1928 to September 1941.

Extremes.- Maximum water-surface elevation during year, 1,756.43 feet May 18; minimum, 1,741.82 feet Mar. 18.
1928-41: Maximum water-surface elevation, 1,771.24 feet June 20, 1933; minimum, 1,739.11 feet Mar. 18, 1939.

Remarks.- Elevations affected by backwater from Kootenay Lake.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.31	46.32	45.50	44.66	43.59	h42.11	43.14	49.30	53.07	49.56	48.65	48.41
2	46.39	46.32	45.47	44.53	43.52	n42.21	43.46	50.39	53.40	49.50	48.60	48.45
3	46.34	46.30	45.41	44.42	43.52	h42.42	43.74	51.28	53.83	49.40	48.57	48.33
4	46.29	46.28	45.39	44.36	43.48	h42.46	43.89	51.88	54.33	49.34	48.47	48.36
5	46.30	46.25	45.34	44.35	43.43	h42.43	43.94	52.05	54.34	49.32	48.45	48.46
6	46.30	46.20	45.36	44.34	43.37	h42.38	43.95	51.68	54.00	49.54	48.43	48.59
7	46.30	46.17	45.38	44.35	43.30	h42.34	43.91	50.94	53.70	49.77	48.39	48.65
8	46.27	46.19	45.38	44.30	43.27	42.39	43.85	50.19	53.41	49.77	48.38	48.62
9	46.22	46.33	45.40	44.23	43.19	42.43	43.83	49.57	53.31	49.65	48.36	48.59
10	46.17	46.25	45.42	44.19	43.13	42.41	43.98	49.07	53.21	49.60	48.39	48.59
11	46.29	46.21	45.33	44.13	43.09	42.36	44.21	48.70	53.14	49.50	48.42	48.63
12	46.34	46.12	45.19	44.09	43.05	42.28	44.52	48.70	52.92	49.31	48.37	48.65
13	46.60	45.97	45.09	44.07	42.99	42.26	45.01	49.32	52.58	49.15	48.42	48.74
14	46.68	45.88	44.95	44.12	42.95	42.21	45.25	50.42	52.58	49.05	48.41	48.94
15	46.64	45.83	44.84	44.06	42.86	42.16	45.44	51.91	52.84	48.97	48.46	49.10
16	46.57	45.79	44.74	44.03	42.76	42.08	45.56	53.04	53.01	49.01	48.53	49.11
17	46.49	45.75	44.66	44.00	42.67	41.97	45.57	54.74	52.57	49.05	48.57	49.14
18	46.45	45.82	44.65	44.01	f42.56	41.92	45.41	56.34	52.17	49.05	48.51	49.14
19	46.44	45.75	44.63	44.04	42.49	42.07	45.17	56.05	51.95	49.07	48.40	49.38
20	46.45	45.71	44.69	44.03	42.43	42.13	44.91	55.14	51.82	49.10	48.36	49.67
21	46.46	45.70	44.75	44.02	42.36	42.13	44.77	54.09	51.72	49.06	48.35	49.66
22	46.59	45.66	44.80	43.95	42.36	42.09	44.84	53.23	51.38	48.93	48.37	49.49
23	46.61	45.61	44.90	43.86	42.34	42.09	45.07	52.54	50.79	48.87	48.34	49.35
24	46.62	45.62	44.90	43.84	42.20	42.03	45.46	52.18	50.30	48.97	48.35	49.19
25	46.66	45.61	44.89	43.77	42.07	41.99	45.91	52.08	50.03	48.83	48.35	49.08
26	46.69	45.59	44.84	43.75	41.99	41.99	46.32	52.39	50.29	48.77	48.29	49.10
27	46.58	45.57	44.88	43.74	41.96	42.01	46.65	52.94	50.52	48.68	48.37	49.10
28	46.53	45.55	44.83	43.72	f41.99	42.04	47.17	53.25	50.48	48.62	48.45	49.14
29	46.45	45.54	44.80	43.71	-	42.15	47.72	53.05	50.10	48.57	48.42	49.23
30	46.40	45.54	44.75	43.64	-	42.30	48.37	52.78	49.70	48.55	48.41	49.19
31	46.38	-	44.72	43.61	-	42.70	-	52.75	-	48.62	48.42	-

Note.- Add 1,700 feet to obtain elevation above mean sea level.
f Mean daily gage heights computed on basis of partial trace, staff observations, and records for adjacent Kootenai River stations.
h Computed from mean of twice-daily staff-gage observations.

Kootenai River near Copeland, Idaho

(International gaging station)

Location.- Water-stage recorder, lat. 48°54'45", long. 116°25'00", in NW¼NW¼SW¼ sec. 12, T. 64 N., R. 1 W., at Andrews Ranch, three-quarters of a mile downstream from Mission Creek and 1½ miles northwest of Copeland. Datum of gage is 1,700.00 feet above mean sea level (U. S. Coast and Geodetic Survey).
Drainage area.- 13,400 square miles.
Records available.- October 1927 to September 1941 (gage-height record only prior to May 1929) in reports of Geological Survey. April 1925 to September 1927 (gage heights only) in reports of Dominion Water and Power Bureau, Department of Mines and Resources, Canada.
Average discharge.- 12 years, 13,500 second-feet.
Extremes.- Maximum daily discharge during year, 36,500 second-feet May 18; maximum elevation, 1,754.00 feet May 18; minimum daily discharge, 2,200 second-feet Dec. 17, during ice period; minimum elevation, 1,741.54 feet Mar. 28.
1929-41: Maximum daily discharge, 90,500 second-feet June 19, 1933; maximum elevation, 1,767.98 feet June 20, 1933; minimum daily discharge, 1,350 second-feet Feb. 8, 1936, during ice period; minimum elevation, 1,738.94 feet Mar. 18, 1939.
Remarks.- Records of discharge good except those for periods of ice effect, Nov. 14 to Feb. 28 (computed on basis of five discharge measurements and records for station at Bonners Ferry, intervening inflow, and channel storage), which are fair. Discharge computed from mean elevation-conveyance curve determined on basis of fall in reach between station at Klockmann Ranch near Bonners Ferry and station at Port Hill and discharge measurements made at station near Copeland. Stage-discharge relation affected by backwater from Kootenay Lake.
Cooperation.- This station is one of the internation gaging stations maintained by the United States under agreement with Canada.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46.19	46.13	45.40	44.58	43.52	41.99	42.19	47.35	51.35	48.54	48.45	48.24
2	46.27	46.14	45.36	44.49	43.46	42.05	42.41	48.35	51.60	48.47	48.40	48.28
3	46.22	46.14	45.33	44.40	43.46	42.17	42.60	49.15	51.94	48.38	48.37	48.17
4	46.19	46.13	45.32	44.34	43.42	42.22	42.71	49.72	52.33	48.39	48.30	48.19
5	46.21	46.11	45.28	44.31	43.37	42.20	42.77	49.94	52.39	48.48	48.29	48.28
6	46.21	46.08	45.28	44.30	43.32	42.17	42.78	49.72	52.16	48.73	48.28	48.39
7	46.20	46.06	45.30	44.29	43.26	42.14	42.76	49.17	51.92	49.01	48.24	48.42
8	46.18	46.09	45.31	44.24	43.21	42.18	42.73	48.61	51.68	49.08	48.24	48.38
9	46.13	46.21	45.32	44.19	43.15	42.21	42.72	48.14	51.61	49.01	48.23	48.36
10	46.08	46.14	45.32	44.13	43.07	42.17	42.83	47.77	51.53	48.99	48.28	48.35
11	46.20	46.12	45.27	44.07	43.04	42.13	43.00	47.51	51.47	48.92	48.30	48.40
12	46.24	46.05	45.15	44.03	42.98	42.06	43.23	47.53	51.32	48.79	48.26	48.42
13	46.44	45.93	45.05	44.01	42.94	42.06	43.63	47.99	51.09	48.68	48.30	48.46
14	46.50	45.85	44.93	44.01	42.88	42.02	43.82	48.81	51.07	48.59	48.29	48.63
15	46.47	45.80	44.84	43.97	42.80	41.97	44.00	49.94	51.23	48.57	48.32	48.72
16	46.42	45.75	44.74	43.93	42.71	41.89	44.12	50.88	51.37	48.64	48.37	48.72
17	46.36	45.71	44.66	43.90	42.63	41.77	44.14	52.47	51.06	48.70	48.39	48.75
18	46.33	45.74	44.63	43.90	42.54	41.71	44.05	53.92	50.76	48.69	48.33	48.74
19	46.34	45.69	44.59	43.92	42.46	41.79	43.90	53.68	50.63	48.69	48.24	48.88
20	46.36	45.65	44.62	43.92	42.40	41.82	43.73	53.02	50.51	48.69	48.22	49.05
21	46.39	45.63	44.66	43.89	42.33	41.79	43.65	52.24	50.40	48.65	48.23	49.05
22	46.49	45.59	44.67	43.83	42.30	41.74	43.71	51.53	50.13	48.54	48.27	48.95
23	46.48	45.53	44.73	43.75	42.26	41.73	43.88	50.99	49.67	48.52	48.24	48.87
24	46.46	45.53	44.74	43.71	42.13	41.69	44.18	50.70	49.29	48.62	48.24	48.77
25	46.47	45.51	44.72	43.69	42.03	41.65	44.53	50.62	49.03	48.56	48.23	48.68
26	46.48	45.49	44.70	43.68	41.95	41.61	44.86	50.80	49.18	48.52	48.16	48.71
27	46.37	45.47	44.73	43.67	41.92	41.58	45.16	51.16	49.30	48.45	48.21	48.70
28	46.30	45.45	44.69	43.65	41.95	41.56	45.56	51.42	49.27	48.41	48.25	48.72
29	46.23	45.43	44.66	43.64	-	41.59	46.02	51.32	48.99	48.36	48.24	48.77
30	46.19	45.43	44.64	43.58	-	41.66	46.57	51.11	48.67	48.36	48.23	48.72
31	46.17	-	44.61	43.56	-	41.91	-	51.11	-	48.44	48.24	-

Note.- Add 1,700 feet to obtain elevation above mean sea level.

Discharge, in second-feet, of Kootenai River near Copeland, Idaho, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,420	6,150	4,100	3,950	3,320	3,700	9,320	20,500	25,000	15,300	7,320	6,610
2	5,360	5,990	4,030	3,570	3,220	4,030	10,100	22,900	26,100	15,300	7,210	6,530
3	5,260	5,830	4,000	3,270	3,250	4,830	10,800	25,100	27,500	15,100	7,280	6,390
4	5,070	5,660	4,030	3,050	3,270	4,890	11,100	26,400	29,200	14,700	6,810	6,490
5	4,990	5,490	4,150	2,900	3,290	4,770	11,100	26,500	28,900	14,000	6,530	6,810
6	4,900	5,220	4,210	3,060	3,260	4,600	11,000	25,100	27,600	13,900	6,430	7,200
7	4,990	5,040	4,270	3,140	3,190	4,530	10,900	22,700	26,400	13,900	6,410	7,740
8	4,890	4,950	4,220	3,380	3,140	4,650	10,700	20,300	25,500	13,300	6,220	7,800
9	4,690	5,260	4,260	3,330	3,090	4,830	10,700	18,500	25,100	12,800	5,930	7,790
10	4,580	5,060	4,100	3,380	3,050	4,870	11,000	17,000	24,900	12,500	5,750	7,790
11	4,620	4,780	4,040	3,280	3,040	4,690	11,500	15,900	24,700	12,000	5,850	7,730
12	4,910	4,570	3,680	3,220	3,190	4,620	12,100	15,700	24,000	11,300	5,740	7,820
13	6,250	3,950	2,990	3,250	3,190	4,500	13,000	17,400	22,700	10,700	5,950	8,490
14	6,670	3,360	2,550	3,520	3,220	4,320	13,500	20,500	22,800	10,400	5,850	9,050
15	6,500	3,020	2,340	3,470	3,180	4,250	13,800	25,000	23,800	9,720	6,350	9,720
16	6,080	3,020	2,290	3,510	3,010	4,330	13,800	28,100	24,300	9,380	6,560	10,100
17	5,730	3,300	2,200	3,490	2,790	4,240	13,800	31,900	22,800	9,250	6,930	10,000
18	5,470	3,670	2,240	3,480	2,800	4,390	13,400	36,500	21,400	9,320	6,820	10,000
19	5,300	3,920	2,480	3,600	2,940	4,950	12,700	35,500	20,600	9,630	6,420	11,300
20	5,120	3,640	2,990	3,640	2,920	5,170	12,100	32,000	20,200	10,100	6,220	12,800
21	4,850	3,710	3,840	3,690	2,890	5,360	11,600	28,200	20,200	10,100	6,120	12,700
22	5,340	3,750	4,420	3,590	2,880	5,390	11,900	25,400	19,300	9,770	5,940	12,000
23	5,690	3,740	4,690	3,300	3,230	5,430	12,200	23,300	17,600	9,310	5,730	11,200
24	6,110	3,880	4,720	3,380	3,220	5,270	13,000	22,100	16,100	9,280	5,930	10,400
25	6,430	4,040	4,650	3,090	2,970	5,300	14,000	21,800	15,600	8,460	6,120	10,100
26	6,740	3,980	4,430	2,790	2,650	5,530	14,800	23,100	16,700	8,030	6,200	10,100
27	6,630	3,910	4,380	2,970	2,870	5,800	15,300	25,300	17,800	7,750	6,590	10,100
28	6,750	3,910	4,300	3,160	2,950	6,150	16,300	26,200	17,800	7,470	7,060	10,400
29	6,580	4,040	4,150	3,310	-	6,640	17,400	25,300	16,600	7,370	6,790	10,900
30	6,330	4,100	4,030	3,280	-	7,180	18,600	24,300	15,500	7,100	6,780	10,900
31	6,400	-	3,940	3,230	-	8,200	-	24,100	-	7,220	6,790	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	174,650	6,750	4,580	5,634	0.420	0.48	346,400
November	130,940	6,150	3,020	4,365	.326	.36	259,700
December	116,720	4,720	2,200	3,765	.281	.32	231,500
Calendar year 1940	3,952,080	53,400	2,070	10,800	.806	10.97	7,839,000
January	103,280	3,950	2,790	3,332	.249	.29	204,900
February	86,020	3,320	2,650	3,072	.229	.24	170,600
March	157,410	8,200	3,700	5,078	.379	.44	312,200
April	381,520	18,600	9,320	12,720	.949	1.06	756,700
May	752,600	36,500	15,700	24,280	1.81	2.09	1,493,000
June	666,700	29,200	15,500	22,220	1.66	1.85	1,322,000
July	334,460	15,300	7,100	10,790	.805	.93	663,400
August	198,630	7,320	5,730	6,407	.478	.55	394,000
September	276,960	12,800	6,390	9,232	.689	.77	549,300
Water year 1940-41	3,379,890	36,500	2,200	9,260	.691	9.38	6,704,000

Kootenai River at Port Hill, Idaho

(International gaging station)

Location.- Water-stage recorder, lat. 49°00'00", long. 116°30'10", in SW¼ sec. 8, T. 65 N., R. 1 W., 300 feet south of international boundary at Port Hill. Datum of gage is 1,700.00 feet above mean sea level, U. S. Coast and Geodetic Survey datum, and 1,699.80 feet above mean sea level, datum of Geodetic Survey of Canada (adjustment of 1928).

Drainage area.- 13,700 square miles.

Records available.- May to July 1904, October 1927 to April 1928 (gage heights only) and April 1928 to September 1941 in reports of Geological Survey. October 1924 to September 1927 (gage heights only) in reports of Dominion Water and Power Bureau, Department of Mines and Resources, Canada.

Average discharge.- 13 years, 13,700 second-feet.

Extremes.- Maximum daily discharge during year, 38,800 second-feet May 18; maximum elevation, 1,751.79 feet May 18; minimum daily discharge, 2,240 second-feet Dec. 17; minimum elevation, 1,741.16 feet Mar. 28.

1928-41: Maximum daily discharge, 93,200 second-feet June 19, 1933; maximum elevation, 1,764.08 feet May 31, 1938; minimum daily discharge, 1,380 second-feet Feb. 8, 1936; minimum elevation, 1,738.69 feet Mar. 18, 1939.

Maximum elevation known, 1,772.7 feet sometime in June 1894.

Remarks.- Records of discharge good except those for Nov. 14 to Feb. 28, during period of ice effect at Copeland, which are fair. Daily discharge, which represents the entire flow passing international boundary, computed by adding tributary inflow, including that of Boundary Creek, to flow at station near Copeland. Boundary dike of Reclamation Farm and Forest Service roadway dike (south side of Boundary Creek) remained intact and flow of river was confined throughout the year to main channel upon which gage and cableway are located. Elevations affected by backwater from Kootenay Lake.

Cooperation.- This station is one of the international gaging stations maintained by United States under agreement with Canada.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45.93	45.85	45.18	44.36	43.28	41.76	41.59	46.05	49.99	47.76	48.15	47.98
2	46.02	45.87	45.15	44.28	43.23	41.81	41.74	46.83	50.17	47.68	48.11	48.03
3	45.98	45.87	45.12	44.22	43.22	41.89	41.87	47.46	50.41	47.60	48.07	47.92
4	45.95	45.87	45.09	44.16	43.18	41.92	41.96	47.93	50.68	47.66	48.02	47.94
5	45.97	45.86	45.07	44.12	43.14	41.91	42.02	48.15	50.76	47.81	48.03	48.01
6	45.98	45.84	45.07	44.08	43.09	41.89	42.05	48.04	50.63	48.11	48.02	48.10
7	45.97	45.83	45.08	44.07	43.03	41.86	42.04	47.69	50.49	48.41	47.98	48.10
8	45.95	45.86	45.08	44.02	42.98	41.89	42.02	47.33	50.32	48.50	47.99	48.06
9	45.92	45.97	45.11	43.96	42.92	41.90	42.01	47.00	50.28	48.46	48.00	48.03
10	45.88	45.91	45.10	43.92	42.86	41.87	42.10	46.74	50.21	48.45	48.05	48.03
11	46.00	45.90	45.03	43.88	42.82	41.85	42.23	46.55	50.15	48.41	48.07	48.08
12	46.02	45.83	44.94	43.83	42.75	41.78	42.43	46.60	50.03	48.32	48.03	48.09
13	46.13	45.74	44.86	43.79	42.71	41.78	42.73	46.97	49.89	48.24	48.06	48.10
14	46.16	45.67	44.76	43.80	42.66	41.76	42.89	47.59	49.87	48.17	48.06	48.24
15	46.14	45.62	44.68	43.75	42.58	41.72	43.04	48.39	49.97	48.18	48.06	48.32
16	46.12	45.57	44.58	43.72	42.48	41.62	43.17	49.13	50.07	48.27	48.11	48.28
17	46.08	45.53	44.50	43.67	42.41	41.52	43.19	50.56	49.84	48.33	48.11	48.32
18	46.07	45.55	44.46	43.68	42.32	41.44	43.14	51.72	49.64	48.32	48.06	48.32
19	46.08	45.50	44.41	43.69	42.25	41.49	43.04	51.56	49.55	48.30	47.99	48.39
20	46.11	45.46	44.42	43.68	42.19	41.51	42.92	51.12	49.47	48.27	47.97	48.48
21	46.15	45.45	44.45	43.66	42.13	41.47	42.88	50.60	49.35	48.23	47.97	48.48
22	46.23	45.40	44.44	43.63	42.11	41.42	42.89	50.11	49.13	49.13	48.01	48.41
23	46.21	45.35	44.48	43.55	42.05	41.41	43.08	49.70	48.77	48.13	48.00	48.37
24	46.17	45.35	44.48	43.52	41.93	41.38	43.31	49.50	48.49	48.24	47.99	48.32
25	46.17	45.33	44.47	43.49	41.84	41.33	43.55	49.44	48.26	48.20	47.97	48.25
26	46.16	45.30	44.45	43.49	41.75	41.28	43.85	49.54	48.33	48.19	47.90	48.27
27	46.06	45.27	44.49	43.47	41.72	41.24	44.13	49.74	48.37	48.13	47.94	48.27
28	45.99	45.25	44.45	43.44	41.73	41.19	44.48	49.93	48.33	48.10	47.97	48.27
29	45.93	45.23	44.43	43.42	-	41.19	44.88	49.90	48.13	48.06	47.97	48.29
30	45.91	45.22	44.41	43.36	-	41.22	45.36	49.77	47.88	48.07	47.96	48.24
31	45.88	-	44.39	43.33	-	41.40	-	49.79	-	48.13	47.97	-

Note.- Add 1,700 feet to obtain elevation above mean sea level.

Discharge, in second-feet, of Kootenai River at Port Hill, Idaho, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,450	6,280	4,160	4,030	3,390	3,860	10,000	22,500	26,200	15,700	7,390	6,680
2	5,410	6,100	4,080	3,630	3,290	4,280	10,800	24,900	27,100	15,700	7,280	6,620
3	5,300	5,940	4,060	3,320	3,320	5,130	11,400	26,800	28,400	15,400	7,350	6,490
4	5,110	5,750	4,100	3,100	3,340	5,120	11,700	27,900	30,100	15,100	6,890	6,750
5	5,030	5,570	4,240	2,960	3,360	4,970	11,700	27,900	29,700	14,300	6,600	7,010
6	4,940	5,320	4,310	3,120	3,330	4,780	11,600	26,200	28,300	14,200	6,500	7,340
7	5,030	5,140	4,360	3,210	3,260	4,710	11,500	23,700	27,100	14,200	6,470	7,890
8	4,930	5,050	4,310	3,450	3,210	4,840	11,300	21,200	26,200	13,600	6,280	7,920
9	4,720	5,350	4,330	3,400	3,160	5,020	11,300	19,300	25,800	13,000	5,990	7,910
10	4,620	5,140	4,150	3,440	3,120	5,050	11,700	17,800	25,500	12,700	5,810	8,070
11	4,710	4,820	4,080	3,340	3,110	4,860	12,300	16,900	25,200	12,200	5,900	8,110
12	4,980	4,600	3,710	3,280	3,260	4,790	13,000	17,200	24,500	11,500	5,800	8,200
13	6,310	3,980	3,020	3,320	3,260	4,650	13,900	18,900	23,100	10,900	6,010	8,930
14	6,730	3,400	2,580	3,590	3,280	4,480	14,400	22,200	23,200	10,600	5,910	9,650
15	6,550	3,060	2,370	3,540	3,240	4,420	14,800	26,400	24,200	9,880	6,410	10,300
16	6,130	3,070	2,330	3,580	3,070	4,490	14,700	30,000	24,700	9,530	6,620	10,600
17	5,780	3,350	2,240	3,560	2,850	4,410	14,600	36,500	23,200	9,400	6,980	10,400
18	5,520	3,730	2,290	3,550	2,860	4,670	14,100	38,800	22,000	9,480	6,870	10,400
19	5,350	3,980	2,550	3,670	3,010	5,230	13,400	37,100	21,300	9,770	6,470	11,900
20	5,170	3,700	3,080	3,710	3,000	5,420	12,800	33,400	20,900	10,200	6,270	13,300
21	4,960	3,770	4,110	3,760	2,960	5,600	12,500	29,600	20,700	10,200	6,160	13,200
22	5,440	3,800	4,800	3,660	2,950	5,620	12,900	26,700	19,800	9,880	5,990	12,400
23	5,760	3,800	4,960	3,370	3,300	5,650	13,200	24,600	18,000	9,420	5,780	11,500
24	6,210	3,940	4,840	3,450	3,290	5,490	14,100	23,500	16,500	9,390	5,980	10,700
25	6,810	4,090	4,760	3,160	3,040	5,530	15,100	23,200	16,100	8,580	6,170	10,400
26	6,940	4,040	4,540	2,860	2,720	5,790	16,000	24,300	17,100	8,130	6,250	10,400
27	6,790	3,970	4,480	3,030	2,940	6,070	16,600	26,300	18,200	7,840	6,680	10,300
28	6,880	3,970	4,400	3,230	3,050	6,460	17,700	27,200	18,300	7,560	7,160	10,600
29	6,700	4,100	4,240	3,380	-	6,990	18,800	26,300	17,100	7,460	6,870	11,100
30	6,460	4,160	4,120	3,340	-	7,650	20,200	25,400	15,900	7,180	6,840	11,100
31	6,540	-	4,030	3,300	-	8,860	-	25,400	-	7,300	6,860	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	177,260	6,940	4,620	5,718	0.417	0.48	351,600
November	132,970	6,280	3,060	4,432	.324	.36	263,700
December	119,630	4,960	2,240	3,859	.282	.33	237,300
Calendar year 1940	4,063,960	54,600	2,140	11,100	.810	11.03	8,060,300
January	105,350	4,030	2,860	3,398	.248	.29	209,000
February	87,970	3,390	2,720	3,142	.229	.24	174,500
March	164,890	8,860	3,860	5,319	.388	.45	327,100
April	408,100	20,200	10,000	13,600	.993	1.11	809,500
May	798,100	38,800	16,900	25,750	1.88	2.17	1,583,000
June	684,400	30,100	15,900	22,810	1.66	1.85	1,357,000
July	340,300	15,700	7,180	10,980	.801	.92	675,000
August	200,540	7,390	5,780	6,469	.472	.54	397,800
September	286,170	13,300	6,490	9,539	.696	.78	567,600
Water year	3,505,680	38,800	2,240	9,605	.701	9.52	6,953,000

Granite Creek near Libby, Mont.

Location.- Staff gage and concrete control, lat. 48°18', long. 115°35', in SE¼ sec. 5, T. 29 N., R. 31 W., at Glacier silver-lead mine, 2½ miles upstream from Cherry Creek and 7 miles southwest of Libby.

Drainage area.- 23.6 square miles.

Records available.- January to December 1933, August 1936 to September 1941.

Extremes.- Maximum discharge observed during year, 430 second-feet May 17 (gage height, 3.86 feet); minimum observed, 6.8 second-feet Aug. 22, 23 (gage height, 1.90 feet).
1933, 1936-41: Maximum discharge observed, 1,960 second-feet Apr. 18, 1938; no flow Jan. 4, 1933 (creek blocked by snow slide).

Remarks.- Records good except those for periods of ice effect, which are fair. Some fluctuation at low flow caused by concentrating mill. Gage read once daily.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	19	9.0	12	8.7	14	69	191	279	61	16	14
2	8.4	17	9.0	9.6	9.3	27	78	236	229	56	15	16
3	9.3	15	9.6	9.0	9.9	25	78	179	173	53	12	20
4	9.9	15	10	b9	9.3	22	78	152	142	51	14	24
5	11	14	10	b9	7.5	22	72	132	157	51	14	27
6	9.9	13	14	9.3	7.5	20	66	104	146	49	9.4	23
7	9.9	15	14	10	8.7	22	64	81	136	46	9.4	26
8	9.3	18	13	9.9	9.3	26	63	75	136	44	9.4	22
9	8.1	19	13	9.3	9.9	23	63	66	142	38	8.7	20
10	7.5	14	*11	9.3	9.9	26	75	66	113	35	8.7	20
11	8.7	13	9.6	9.3	10	26	76	78	113	35	8.7	37
12	14	12	7.2	8.7	9.9	25	85	179	109	32	8.7	46
13	14	8.4	b7	8.7	8.7	22	85	209	113	28	9.0	51
14	13	9.0	7.2	8.7	8.1	20	85	209	132	28	9.4	124
15	13	9.6	b7	9.3	8.1	18	92	146	113	28	9.4	115
16	11	9.6	b7	9.9	7.5	18	89	122	89	28	11	70
17	10	9.6	7.2	10	7.5	18	75	430	78	27	9.4	61
18	9.9	10	7.2	10	8.1	28	64	318	72	32	8.1	70
19	9.3	9.0	7.2	11	8.7	31	60	203	85	28	8.1	73
20	8.7	9.0	7.2	10	8.4	28	54	142	92	26	7.4	61
21	9.3	9.6	7.2	9.9	8.1	28	60	122	72	23	7.4	51
22	11	9.0	10	9.9	8.7	27	81	132	78	20	6.8	44
23	11	9.0	15	9.3	8.7	26	89	132	75	19	6.8	38
24	9.9	9.6	16	9.9	8.1	25	113	152	75	18	9.4	44
25	22	9.0	14	9.9	7.5	26	113	168	72	17	8.1	35
26	26	8.4	15	10	7.5	26	117	173	57	17	8.7	35
27	23	7.8	14	10	8.1	34	117	126	52	18	17	40
28	21	9.0	10	*10	9.3	32	132	117	50	17	18	35
29	18	9.6	13	9.9	-	38	139	113	85	17	16	33
30	21	9.6	12	9.9	-	48	152	132	66	13	14	32
31	23	-	12	9.3	-	54	-	298	-	16	15	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	398.8	26	7.5	12.9	0.547	0.63	791
November	348.8	19	7.8	11.6	.492	.55	692
December	324.6	16	7	10.5	.445	.51	644
Calendar year 1940	17,757.5	408	5.2	48.5	2.06	27.99	35,220
January	300.0	12	8.7	9.68	.410	.47	595
February	241.0	10	7.5	8.61	.365	.38	478
March	825	54	14	26.6	1.13	1.30	1,640
April	2,586	152	54	86.2	3.65	4.07	5,130
May	4,983	430	66	161	6.82	7.86	9,880
June	3,331	279	50	111	4.70	5.24	6,610
July	971	61	13	31.3	1.33	1.53	1,930
August	333.0	18	6.8	10.7	.453	.52	660
September	1,307	124	14	43.6	1.85	2.06	2,590
Water year 1940-41	15,949.2	430	6.8	43.7	1.85	25.12	31,640

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

Boulder Creek near Leonia, Idaho

Location.- Water-stage recorder, lat. 48°36', long. 116°06', in NW¼ sec. 32, T. 61 N., R. 3 E., half a mile downstream from McGinty Creek, 1 mile upstream from buildings of the Idamount Lead-Zinc Mines Co., 3 miles upstream from mouth, and 3 miles southwest of Leonia.

Drainage area.- 53 square miles.

Records available.- November 1928 to September 1941. April to November 1928 at site 1½ miles downstream.

Average discharge.- 12 years (1929-41), 103 second-feet.

Extremes.- Maximum discharge during year, 1,200 second-feet May 17 (gage height, 4.05 feet); minimum, 6 second-feet Dec. 11, 12 (gage height, 0.27 foot).
1928-41: Maximum discharge, 2,050 second-feet Apr. 18, 1938 (gage height, 5.50 feet), from rating curve extended above 1,800 second-feet; minimum, 2 second-feet Aug. 25 and Sept. 5, 1931.

Remarks.- Records good. No diversion or regulation.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Feb. 26 to May 17)

Oct. 1 to May 17				May 17 to Sept. 30			
0.3	6.3	1.5	105	0.5	5.9	2.0	205
.6	16.5	1.8	175	.8	16.7	2.3	310
.9	32	2.1	270	1.1	38.0	2.7	485
1.2	59	2.4	385	1.4	72	3.1	680
				1.7	127	3.5	890

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7	23	12	b13	16	91	178	309	143	51	11	16
2	8	19	*12	b12	17	101	181	302	121	46	11	17
3	9	17	16	b12	16	76	162	309	119	43	11	19
4	12	16	16	b14	b14	64	158	235	110	44	12	28
5	12	14	26	b16	b13	57	148	246	101	40	11	19
6	10	14	29	b17	b15	54	142	190	93	36	11	18
7	9	15	21	b16	17	54	142	162	86	34	10	21
8	9	20	19	16	16	62	152	158	86	31	10	16
9	9	18	17	16	16	62	165	145	86	29	9	16
10	10	15	13	16	16	57	172	140	77	27	9	22
11	12	12	7	16	16	55	184	155	69	27	9	35
12	12	10	8	16	16	50	214	223	63	26	10	28
13	12	11	10	16	16	45	226	223	59	24	11	28
14	11	12	10	*16	*15	45	214	288	55	22	11	54
15	10	13	11	16	b14	44	223	214	55	21	11	58
16	10	12	11	16	b14	44	184	292	52	20	10	43
17	9	13	11	16	b13	49	162	928	60	20	9	35
18	9	13	13	18	b13	87	148	555	71	22	9	64
19	9	12	16	20	b14	76	145	377	93	20	8	72
20	9	12	22	18	16	71	152	295	90	17	8	72
21	11	12	41	17	15	69	178	265	72	16	9	59
22	13	11	43	16	15	*67	205	234	63	14	9	49
23	11	12	36	16	b13	63	211	215	56	14	11	43
24	12	11	31	16	15	64	220	199	49	14	13	39
25	31	12	30	18	15	72	232	185	58	15	11	35
26	21	11	28	19	15	82	232	166	54	13	12	33
27	22	12	26	17	15	86	229	145	47	12	24	31
28	18	12	24	16	43	98	246	145	58	13	20	30
29	16	13	23	b15	-	109	246	134	71	13	16	29
30	25	13	23	b15	-	138	263	129	58	12	13	36
31	30	-	20	17	-	165	-	155	-	11	15	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	408	31	7	13.2	0.249	0.29	809
November	410	23	10	13.7	.258	.29	813
December	625	43	7	20.2	.381	.44	1,240
Calendar year 1940	24,848	695	4	67.9	1.28	17.44	49,280
Janusry	498	20	12	16.1	.304	.35	988
February	449	43	13	16.0	.302	.31	891
March	2,257	165	44	72.8	1.37	1.58	4,480
April	5,714	263	142	190	3.58	3.99	11,330
May	7,718	928	129	249	4.70	5.42	15,310
June	2,275	143	47	75.8	1.43	1.60	4,510
July	747	51	11	24.1	.455	.52	1,480
August	354	24	8	11.4	.215	.25	702
September	1,065	72	16	35.5	.670	.75	2,110
Water year 1940-41	22,520	928	7	61.7	1.16	15.79	44,660

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

Moyie River at Eastport, Idaho

(International Gaging Station)

Location.- Water-stage recorder, lat. 49°00', long. 116°11', in SE¼ sec. 10, T 65 N., R. 2 E., at Eastport, 1,000 feet downstream from international boundary.

Drainage area.- 570 square miles.

Records available.- August 1929 to September 1941 in reports of U. S. Geological Survey; January to December 1915, March to December 1916, and discharge measurements during 1914 and 1917, in reports of the Dominion Water and Power Bureau, Department of Mines and Resources, Canada.

Average discharge.- 12 years, 586 second-feet.

Extremes.- Maximum discharge during year, 2,560 second-feet May 17 (gage height, 6.72 feet); minimum, 54 second-feet Oct. 1 (gage height, 3.45 feet).
1929-41: Maximum discharge, 6,240 second-feet Apr. 28, 1934 (gage height, 9.46 feet), from rating curve extended above 5,500 second-feet; minimum, 23 second-feet Nov. 7, 1936 (gage height, 3.20 feet).

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

Cooperation.- This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

3.4	44	4.3	330	5.2	919	6.1	1,830
3.7	112	4.6	489	5.5	1,200	6.4	2,180
4.0	205	4.9	684	5.8	1,500		

Discharge, in second-feet, water yesr October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	159	102	b100	107	171	1,190	1,720	1,100	359	107	89
2	57	162	102	b80	112	251	1,210	1,780	1,030	350	102	89
3	57	159	102	b80	109	294	1,190	1,720	981	335	102	91
4	59	152	107	b90	b105	290	1,190	1,610	954	335	99	94
5	59	149	115	b95	b95	290	1,140	1,610	963	326	96	94
6	59	*149	129	b100	b100	285	1,100	1,500	894	303	91	96
7	57	152	126	b105	b105	281	1,060	1,350	828	290	89	102
8	57	159	123	b100	109	321	1,080	1,250	774	285	84	102
9	57	159	120	b100	107	330	1,160	1,150	736	264	81	104
10	57	149	b100	b100	107	321	1,240	1,060	684	247	79	118
11	65	b130	b80	b95	104	308	1,280	1,040	636	235	77	156
12	79	b110	*b65	b90	104	294	1,350	1,190	589	228	77	152
13	79	b110	b60	b95	102	277	1,450	1,270	550	220	84	174
14	84	b115	b70	b100	b98	272	1,400	1,300	513	209	84	290
15	86	b115	b70	b100	b95	264	1,400	1,260	495	202	81	374
16	89	b120	b75	*b100	b95	264	1,300	1,260	466	191	84	345
17	89	b130	b75	b100	b90	285	1,220	2,210	443	185	81	345
18	91	b130	b80	112	b85	455	1,120	2,180	438	174	77	374
19	91	b125	b90	118	b90	495	1,040	1,830	478	168	74	438
20	91	129	b100	b110	*102	478	998	1,660	538	159	72	476
21	102	123	b130	b95	b98	466	1,030	1,500	495	152	68	472
22	109	b105	b160	b100	b98	449	1,120	1,400	455	146	68	460
23	104	120	b155	112	b95	427	1,190	1,300	421	140	68	449
24	107	115	b145	b100	b95	427	1,240	1,260	395	134	70	427
25	123	109	b150	b100	104	455	1,260	1,210	379	132	68	411
26	129	107	149	118	102	520	1,300	1,140	379	126	70	395
27	134	b108	137	109	102	563	1,350	1,030	354	120	86	390
28	140	109	137	b100	126	622	1,400	1,050	374	118	99	374
29	143	107	134	*b90	-	706	1,450	1,070	395	118	91	359
30	149	107	134	b95	-	836	1,560	1,060	369	115	86	359
31	162	-	b120	b90	-	1,060	-	1,060	-	109	86	-

Month	Second-feet-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	2,822	162	57	91.0	0.160	0.18	5,600
November	3,873	162	107	129	.226	.25	7,680
December	3,442	155	60	111	.195	.22	6,830
Calendar year 1940	160,149	3,010	45	438	.768	10.45	317,600
January	3,079	118	80	99.3	.174	.20	6,110
February	2,841	126	85	101	.177	.18	5,640
March	12,757	1,060	171	412	.723	.83	25,300
April	37,018	1,560	998	1,234	2.16	2.41	73,420
May	43,030	2,210	1,030	1,388	2.44	2.81	85,350
June	18,106	1,100	354	604	1.06	1.18	35,910
July	6,475	359	109	209	.367	.42	12,840
August	2,581	107	68	83.3	.146	.17	5,120
September	8,201	478	89	273	.479	.53	16,270
Water year 1940-41	144,225	2,210	57	395	.693	9.38	286,100

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

Moyie River at Eileen, Idaho

Location.- Water-stage recorder, lat. 48°46', long. 116°10', in NE¼ sec. 35, T. 63 N., R. 2 E., an eighth of a mile downstream from Skin Creek, a quarter of a mile southeast of Eileen, and 4 miles upstream from mouth.

Drainage area.- 755 square miles.

Records available.- October 1925 to September 1941.

Average discharge.- 16 years, 751 second-feet.

Extremes.- Maximum discharge during year, 3,290 second-feet May 17 (gage height, 3.24 feet); minimum daily, 85 second-feet Dec. 13.
1925-41: Maximum discharge, 8,780 second-feet Apr. 29, 1934, from rating curve extended above 6,500 second-feet; maximum gage height, 4.8 feet May 17, June 10, 11, 1927, May 13, 17-19, 1928; minimum discharge, 40 second-feet Nov. 27, 1936; minimum gage height, -0.40 foot Sept. 4, 1940.

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

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used July 6 to Sept. 14)

-0.3	84	0.9	403	2.1	1,370
0	135	1.2	551	2.4	1,780
.3	204	1.5	748	2.7	2,250
.6	291	1.8	1,020	3.0	2,790

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	88	202	133	b130	154	263	1,420	2,040	1,380	497	146	127
2	90	196	131	b110	150	421	1,490	2,170	1,300	477	143	129
3	90	196	133	b120	150	497	1,450	2,090	1,230	458	141	137
4	96	192	137	b125	143	472	1,460	1,960	1,190	448	141	137
5	93	184	156	b130	133	458	1,400	1,930	1,190	434	137	139
6	92	*179	177	b140	143	448	1,360	1,810	1,120	412	131	137
7	90	186	170	b140	152	439	1,310	1,640	1,040	391	127	143
8	88	199	170	b135	156	487	1,320	1,530	990	382	124	143
9	87	202	163	b135	148	519	1,380	1,410	950	355	122	152
10	88	189	141	b130	148	497	1,470	1,310	884	336	118	168
11	99	177	b110	b130	150	472	1,530	1,270	839	318	113	204
12	104	b140	*b90	135	150	453	1,640	1,410	789	305	113	226
13	111	b135	b85	143	150	416	1,720	1,540	733	291	118	240
14	111	b140	b90	148	146	403	1,680	1,610	690	285	122	325
15	113	b140	b95	146	135	399	1,710	1,570	656	269	120	482
16	116	b145	b100	*146	b130	387	1,610	1,530	630	257	118	448
17	116	163	b100	146	b125	408	1,490	2,600	604	246	118	439
18	118	163	b110	152	b120	592	1,380	2,910	604	234	113	463
19	120	156	b120	161	b135	697	1,290	2,460	642	223	109	540
20	120	170	b150	156	*152	682	1,240	2,150	704	215	108	592
21	126	148	b200	137	141	656	1,250	1,950	682	204	104	604
22	135	127	b250	143	141	636	1,350	1,800	623	194	104	592
23	135	146	231	156	135	604	1,440	1,670	580	186	106	575
24	137	139	209	148	133	592	1,500	1,580	540	182	108	551
25	152	135	209	141	150	623	1,540	1,530	519	182	104	529
26	165	133	207	174	141	697	1,580	1,440	513	174	106	508
27	168	135	194	163	139	741	1,630	1,310	487	165	127	492
28	172	139	186	154	177	797	1,700	1,320	497	161	141	477
29	177	139	179	137	-	884	1,770	1,350	535	156	136	458
30	192	135	177	141	-	1,010	1,880	1,320	519	156	127	453
31	204	-	172	154	-	1,270	-	1,320	-	150	124	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	3,793	204	87	122	0.162	0.19	7,520
November	4,830	202	127	161	.213	.24	9,580
December	4,775	250	85	154	.204	.24	9,470
Calendar year 1940	197,499	3,470	72	540	.715	9.73	391,700
January	4,406	174	110	142	.188	.22	8,740
February	4,027	177	120	144	.191	.20	7,990
March	17,920	1,270	263	578	.766	.88	35,540
April	44,990	1,880	1,240	1,500	1.99	2.22	89,240
May	53,530	2,910	1,270	1,727	2.29	2.64	106,200
June	23,660	1,380	487	789	1.05	1.17	46,930
July	8,743	497	150	282	.374	.43	17,340
August	3,768	146	104	122	.162	.19	7,470
September	10,610	604	127	354	.469	.52	21,040
Water year 1940-41	185,052	2,910	85	507	.672	9.14	367,100

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

Deep Creek at Moravia, Idaho

Location.- Staff gage, lat. 48°38', long. 116°24', in sec. 18, T. 61 N., R. 1 E., at concrete highway bridge, 1 mile downstream from Ruby Creek, and 1 mile southwest of Moravia.

Drainage area.- 133 square miles.

Records available.- May 1928 to September 1941 (no winter records prior to 1933).

Extremes.- Maximum discharge observed during year, 558 second-feet May 17 (gage height, 2.72 feet); minimum observed, 9 second-feet Aug. 21 (gage height, 0.08 foot).
1928-41: Maximum discharge observed, 1,300 second-feet Dec. 22, 1933; maximum gage height, 4.20 feet Dec. 22, 1933, Apr. 18, 1938; minimum discharge observed, 5 second-feet Aug. 14, 22, 1940; minimum gage height observed, 0.00 foot Aug. 22, 1940.

Remarks.- Records fair except those for periods of ice effect which are poor. Staff gage read once daily. Small diversion above station for irrigation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	41	33	b30	45	150	230	235	192	71	17	21
2	13	38	32	b25	43	201	211	225	165	63	16	25
3	14	34	35	b25	b41	196	206	211	169	61	16	30
4	16	30	36	b28	b38	230	206	211	146	56	18	25
5	17	22	45	b30	b35	201	201	215	139	50	16	27
6	16	27	40	b32	b37	196	196	196	141	47	16	27
7	16	28	*40	b35	b40	183	190	178	137	45	15	31
8	17	28	37	b36	43	171	196	160	129	45	14	27
9	17	41	34	b32	47	165	206	165	135	43	14	49
10	18	b30	b30	b30	43	139	196	160	129	40	13	53
11	19	b25	b21	b30	49	127	201	165	102	36	12	56
12	17	b18	b16	b32	51	123	206	169	92	33	14	50
13	17	b18	b13	b34	53	119	201	178	74	33	16	49
14	17	b19	b13	35	53	115	196	174	77	33	15	49
15	17	b20	b14	36	b51	108	194	169	86	33	14	49
16	16	b21	b15	35	b49	101	174	201	87	32	15	43
17	16	b22	b16	38	b47	131	165	558	87	30	13	40
18	17	24	b20	51	b45	160	165	402	91	32	12	49
19	18	33	b30	62	*62	158	160	320	94	29	12	53
20	19	28	b45	*53	40	160	165	266	84	26	13	60
21	20	27	99	41	40	152	163	260	81	26	9	55
22	19	28	78	40	41	148	160	206	73	24	11	43
23	19	25	80	40	40	139	167	206	75	23	13	45
24	20	24	77	37	40	131	165	192	62	24	17	55
25	22	25	68	49	39	135	165	187	78	20	14	43
26	28	27	61	43	39	156	169	171	74	20	15	38
27	28	27	54	53	39	156	169	156	77	17	43	36
28	30	29	50	51	70	165	185	156	71	17	28	33
29	41	32	46	49	-	169	192	160	68	20	25	34
30	43	34	42	45	-	201	196	154	74	17	22	36
31	*49	-	41	45	-	228	-	230	-	17	25	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	649	49	13	20.9	0.157	0.18	1,290
November	825	41	18	27.5	.207	.23	1,640
December	1,260	99	13	40.6	.305	.35	2,500
Calendar year 1940	31,659	550	5	86.5	.650	8.85	62,800
January	1,201	62	25	38.7	.291	.34	2,380
February	1,260	70	35	45.0	.338	.35	2,500
March	4,914	230	101	159	1.20	1.38	9,750
April	5,596	230	160	187	1.41	1.57	11,100
May	6,636	558	154	214	1.61	1.86	13,160
June	3,089	192	62	103	.774	.86	6,130
July	1,063	71	17	34.3	.258	.30	2,110
August	513	43	9	16.5	.124	.14	1,020
September	1,231	60	21	41.0	.308	.34	2,440
Water year 1940-41	28,237	558	9	77.4	.582	7.90	56,020

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

Long Canyon Creek near Port Hill, Idaho

Location.- Water-stage recorder, lat. 48°57', long. 116°32', in NW¼ sec. 36, T. 65 N., R. 2 W., at U. S. Forest Service bridge at mouth of canyon, 4 miles southwest of Port Hill. Prior to Sept. 4, 1941, at datum 2.00 feet higher.

Drainage area.- 29 square miles.

Records available.- May 1928 to September 1941 (no winter records prior to 1935).

Extremes.- Maximum discharge during year, 580 second-feet May 17 (gage height, 5.90 feet, present datum); minimum daily, 3 second-feet Dec. 13 (estimated); minimum recorded gage height, 1.72 feet, present datum, Aug. 12.
1928-41: Maximum daily discharge, 950 second-feet (estimated) June 15, 1933; maximum gage height, 8.55 feet, present datum, (drift jam) June 14, 15, 1933; minimum discharge, 3 second-feet Nov. 1-3, 28, Dec. 4-10, 1936, Jan. 6-8, 1937, Dec. 13, 1940; minimum gage height, that of Aug. 12, 1941.

Remarks.- Records good except those for Nov. 12 to Feb. 27 and May 17 to Sept. 4 which are poor. No diversions above gage.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6	10	7	6	9	17	43	204	211	55	14	e13
2	6	9	7	5	9	24	44	202	171	52	14	e15
3	6	9	9	5	9	24	44	188	157	48	14	e16
4	6	8	10	5	9	20	43	168	146	50	16	e24
5	6	7	12	6	9	17	42	154	132	51	14	23
6	6	8	13	6	9	17	41	131	121	50	13	16
7	6	8	13	7	9	17	40	115	110	47	13	15
8	6	9	12	7	9	17	40	108	114	42	12	14
9	6	8	11	7	9	18	43	99	100	39	12	15
10	6	7	10	6	9	17	46	106	84	37	12	26
11	10	5	7	6	9	17	52	106	80	35	11	36
12	8	b4	5	7	9	16	65	160	75	34	12	43
13	8	4	3	8	9	15	72	177	67	34	e12	48
14	7	5	4	8	9	16	76	179	62	31	e12	72
15	7	5	4	8	9	15	84	160	55	29	e12	63
16	6	6	5	8	9	15	79	179	50	28	e12	56
17	6	6	6	8	9	15	72	427	52	27	e11	53
18	6	7	7	8	9	21	68	290	55	28	e11	55
19	7	8	8	8	9	22	65	237	60	26	e10	61
20	6	8	9	8	9	21	65	227	70	25	e11	58
21	10	8	10	8	9	20	76	214	65	23	e10	54
22	9	7	12	8	9	19	89	198	58	21	e10	50
23	8	7	14	8	9	18	99	191	54	19	e11	47
24	9	7	12	8	9	18	108	201	50	19	e12	46
25	17	7	11	8	9	18	115	198	55	20	e10	46
26	13	7	11	8	9	19	123	186	55	18	e11	44
27	13	7	10	8	10	20	131	152	50	17	e21	41
28	11	7	b9	8	11	21	141	146	70	16	e16	40
29	10	7	9	8	-	23	156	155	75	16	e14	39
30	11	7	8	8	-	31	175	169	60	15	e12	41
31	11	-	7	8	-	40	-	237	-	15	e13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	253	17	6	8.2	0.283	0.33	502
November	212	10	4	7.1	.245	.27	420
December	275	14	3	8.9	.307	.35	545
Calendar year 1940	15,239	318	5	41.6	1.43	19.53	30,230
January	225	8	5	7.3	.252	.29	446
February	255	11	9	9.1	.314	.33	506
March	608	40	15	19.6	.676	.78	1,210
April	2,337	175	40	77.9	2.69	3.00	4,640
May	5,664	427	99	183	6.31	7.28	11,230
June	2,564	211	50	85.5	2.95	3.29	5,090
July	967	55	15	31.2	1.08	1.24	1,920
August	388	21	10	12.5	.431	.50	770
September	1,170	72	13	39.0	1.34	1.50	2,320
Water year 1940-41	14,918	427	3	40.9	1.41	19.16	29,600

b Stage-discharge relation affected by ice.

Note.- No recorder graph Nov. 13 to Dec. 21, Dec. 29 to Feb. 27, June 14 to July 4; discharge computed on basis of occasional staff gage readings, records for nearby stations, and weather records. Backwater from construction job Aug. 13 to Sept. 4; discharge computed on basis of weather records and records for nearby streams.

Smith Creek near Port Hill, Idaho

Location.- Water-stage recorder, lat. 48°57'40", long. 116°33'20", in NE¼ sec. 26, T. 65 N., R. 2 W., at U. S. Forest Service bridge, 1 mile south of Smith Creek ranger station and 4 miles southwest of Port Hill.

Drainage area.- 70 square miles.

Records available.- May 1928 to September 1941 (no winter records prior to 1935).

Extremes.- Maximum discharge during year, 3,150 second-feet May 17 (gage height, 7.36 feet), from rating curve extended above 1,600 second-feet; minimum recorded, 9 second-feet Oct. 1; minimum gage height, 1.19 feet Aug. 21, 22.
1928-41: Maximum discharge, that of May 17, 1941; minimum, 4 second-feet Dec. 4-10, 1936; minimum gage height, 0.78 foot Sept. 4, 1931.

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

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	56	16	36	26	73	310	840	491	181	23	18
2	13	52	16	30	29	126	320	840	386	163	22	31
3	12	47	21	20	28	134	290	712	364	148	23	39
4	12	40	25	20	26	100	280	594	351	141	24	131
5	13	37	36	22	28	83	270	570	318	129	23	97
6	12	40	43	24	28	77	260	445	295	118	21	61
7	11	40	35	27	26	76	260	377	281	110	19	65
8	11	42	33	28	27	80	270	345	287	102	18	49
9	10	40	30	28	26	80	290	319	284	93	16	51
10	13	33	h16	26	25	77	310	312	240	87	16	107
11	32	15	13	25	25	73	350	377	221	80	14	159
12	30	13	12	25	24	71	420	604	207	80	16	189
13	23	13	11	27	24	64	430	619	189	80	18	238
14	22	14	12	29	23	69	420	701	169	69	18	327
15	18	15	13	30	23	68	430	565	157	63	16	276
16	16	16	14	29	23	65	380	805	143	58	16	225
17	20	17	15	28	*b23	69	330	2,390	192	58	14	159
18	21	19	18	28	b25	120	310	1,080	274	67	12	202
19	18	20	25	29	b27	117	300	676	348	54	12	281
20	16	20	36	28	b29	108	330	564	321	54	11	265
21	51	18	142	27	b27	101	380	555	238	48	10	223
22	46	17	195	27	b27	97	430	522	198	43	11	183
23	31	18	144	27	b26	93	453	522	171	41	13	161
24	36	17	53	26	b26	92	470	564	154	40	14	146
25	156	16	47	27	b26	96	483	560	220	41	13	134
26	89	17	45	28	27	110	523	475	198	36	12	124
27	71	17	42	28	26	112	551	393	163	33	21	113
28	60	17	40	27	40	128	594	396	273	31	33	105
29	a55	17	39	25	-	146	624	393	242	29	24	99
30	a60	17	38	25	-	200	685	431	198	26	18	112
31	a60	-	37	25	-	300	-	564	-	24	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	1,048	156	10	33.8	0.483	0.56	2,080
November	760	56	13	25.3	.361	.40	1,510
December	1,262	195	11	40.7	.581	.67	2,500
Calendar year 1940	44,408	1,190	6	121	1.73	23.60	88,090
January	831	36	20	26.8	.383	.44	1,650
February	742	40	23	26.5	.379	.39	1,470
March	3,205	300	64	103	1.47	1.70	6,360
April	11,753	685	260	392	5.60	6.25	23,310
May	19,110	2,390	312	616	8.80	10.14	37,900
June	7,573	491	143	252	3.60	4.02	15,020
July	2,327	181	24	75.1	1.07	1.23	4,620
August	537	33	10	17.3	.247	.28	1,070
September	4,400	327	18	147	2.10	2.34	8,730
Water year 1940-41	53,548	2,390	10	147	2.10	28.42	106,200

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
h Computed from staff-gage reading.
Note.- Faulty or no gage-height record Nov. 1-4, 11-30, Dec. 11-19, Jan. 2-14, Feb. 9-16, Mar. 30 to Apr. 22; discharge computed on basis of records for nearby streams and weather records.

Boundary Creek near Port Hill, Idaho

(International gaging station)

Location.- Water-stage recorder, lat. 48°59'50", long. 116°34'05", in SW¼ sec. 11, T. 65 N., R. 2 W., 140 feet downstream from bridge at mouth of canyon, 0.2 mile south of international boundary, and 3 miles west of Port Hill.

Drainage area.- 97 square miles.

Records available.- May 1928 to September 1941.

Average discharge.- 11 years (1930-41), 168 second-feet.

Extremes.- Maximum discharge during year, 2,300 second-feet May 17 (gage height, about 5.1 feet, average of floodmarks), from rating curve extended above 1,500 second-feet; minimum recorded, 10 second-feet Nov. 11 (gage height, 0.46 foot).
1928-41: Maximum discharge, 2,400 second-feet June 15, 1933 (gage height, 5.22 feet), from rating curve extended above 1,500 second-feet; minimum, 5 second-feet sometime between Nov. 10 and Dec. 3, 1936 (gage height, 0.27 foot).

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

Cooperation.- This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 20				Dec. 21 to Sept. 30							
0.5	12	1.4	88	0.6	18	1.5	109	2.4	363	3.4	870
.8	29	1.7	140	.9	36	1.8	171	2.7	492		
1.1	54	2.0	210	1.2	65	2.1	256	3.0	640		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	16	51	28	a32	30	52	297	e40	420	147	30	34
2	26	46	28	a25	30	81	300	870	352	136	30	34
3	20	43	30	a22	30	122	263	750	340	124	30	43
4	20	36	35	a23	28	92	253	668	325	141	35	89
5	21	34	38	a26	27	77	247	605	290	122	31	73
6	19	41	40	a28	b28	72	247	502	263	111	29	52
7	18	41	36	a30	b30	69	240	428	247	104	28	60
8	17	40	35	a30	32	74	247	394	240	106	26	45
9	16	39	28	a28	30	72	270	363	244	92	25	50
10	21	34	b18	a27	30	68	294	355	211	85	25	132
11	44	16	a15	a27	30	68	333	424	189	81	24	164
12	30	b14	a13	a28	30	66	394	640	174	78	25	124
13	29	b15	a12	a29	30	57	406	640	160	75	28	132
14	27	b17	a12	a30	25	64	386	695	147	68	27	174
15	24	b19	a14	30	b25	70	394	590	143	63	27	167
16	21	b22	a15	30	b25	65	344	840	141	58	27	147
17	21	b26	a17	30	b24	70	304	a1,500	156	54	24	128
18	22	b30	a20	30	b25	117	280	a800	212	57	23	136
19	24	b32	a30	31	b27	117	273	a600	297	52	22	184
20	22	b32	a40	30	32	106	287	a550	263	57	22	171
21	48	b30	a100	28	30	100	333	a520	203	48	21	151
22	41	b27	a150	28	29	95	386	a500	169	43	24	130
23	30	b28	a100	30	28	92	415	a500	151	42	25	115
24	52	b27	a50	30	28	92	437	a540	136	42	25	102
25	185	b27	a45	30	28	99	460	a540	158	50	23	94
26	83	28	a43	30	28	115	483	a450	160	42	25	86
27	66	28	a42	30	28	118	516	a380	136	38	42	79
28	54	29	a41	30	37	134	561	a380	176	38	43	74
29	50	29	a40	27	-	156	585	a380	181	36	41	72
30	56	29	a39	27	-	205	568	398	156	34	31	79
31	56	-	a38	30	-	280	-	469	-	32	33	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	1,179	185	16	38.0	0.392	0.45	2,340
November	910	51	14	30.3	.312	.35	1,800
December	1,192	150	12	38.5	.397	.46	2,360
Calendar year 1940	45,501	1,060	11	124	1.28	17.45	90,220
January	886	32	22	28.6	.295	.34	1,760
February	804	37	24	28.7	.296	.31	1,590
March	3,065	280	52	98.9	1.02	1.18	6,080
April	10,903	668	240	363	3.74	4.17	21,630
May	18,111	1,500	355	584	6.02	6.94	35,920
June	6,440	420	136	215	2.22	2.48	12,770
July	2,256	147	32	72.8	.751	.87	4,470
August	871	43	21	28.1	.290	.33	1,730
September	3,121	184	34	104	1.07	1.19	6,190
Water year 1940-41	49,738	1,500	12	136	1.40	19.07	98,640

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Dec. 11 to Jan. 14, May 17-29; discharge computed on basis of records for nearby streams and weather records.

Clark Fork above Missoula, Mont.

Location.- Water-stage recorder, lat. 46°53', long. 113°56', in NW¼ sec. 19, T. 13 N., R. 18 W., 3 miles downstream from Blackfoot River and 3 miles east of Missoula.

Drainage area.- 5,740 square miles.

Records available.- March 1929 to September 1941.

Average discharge.- 12 years, 2,146 second-feet.

Extremes.- Maximum discharge during year, 5,400 second-feet June 6 (gage height, 4.89 feet); minimum, 300 second-feet July 28 (gage height, 1.21 feet).
1929-41: Maximum discharge, 21,600 second-feet June 2, 1933 (gage height, 9.90 feet); minimum, 86 second-feet Jan. 8, 1930 (gage height, 0.52 foot, ice jam above gage); minimum daily, 224 second-feet Jan. 8, 1930 (ice jam above gage).

Remarks.- Records good except those for periods of ice effect, which are fair. Regulation from power plant at Bonner. Several diversions above station for irrigation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,450	990	1,300	b920	861	1,080	1,170	1,550	2,720	2,220	1,180	628
2	1,360	1,150	1,290	b850	906	1,610	1,150	1,610	4,310	2,080	1,150	533
3	1,360	1,160	1,290	b800	951	1,600	1,130	1,780	4,020	2,020	1,070	900
4	1,180	1,170	*1,220	b760	933	1,380	1,180	1,980	4,110	1,960	1,060	940
5	1,220	1,190	1,380	b850	897	1,350	1,130	1,980	4,410	1,890	1,030	870
8	1,150	1,130	1,740	b940	879	1,390	1,190	2,040	5,060	1,830	990	960
7	1,140	1,170	1,260	b1,000	888	1,320	1,140	2,040	4,720	1,830	930	980
8	1,140	1,190	852	b1,050	933	1,320	1,100	1,780	4,510	1,770	930	1,040
9	1,190	1,190	1,020	b1,000	933	1,410	1,130	1,840	4,210	1,830	870	1,070
10	1,030	1,130	1,180	b950	970	1,470	1,070	1,640	3,920	1,770	870	1,080
11	1,180	1,060	1,090	b920	990	1,330	1,050	1,640	3,640	1,710	852	1,000
12	1,180	924	942	b920	1,010	1,160	1,160	1,410	3,280	1,710	798	1,170
13	1,170	834	879	b960	980	1,020	1,260	1,910	2,950	1,350	672	1,190
14	1,040	780	b780	b1,020	933	1,030	1,210	2,360	2,800	1,590	834	1,270
15	1,070	1,090	b700	1,080	843	942	1,190	2,720	2,800	1,390	870	1,210
16	1,160	1,200	b660	1,130	798	1,050	1,140	2,500	2,570	1,340	843	1,260
17	1,150	699	b700	1,080	843	980	1,170	2,360	2,590	1,240	798	1,200
18	1,140	1,120	798	1,090	915	1,080	1,170	2,360	2,430	1,080	789	1,260
19	1,120	1,200	1,060	1,100	924	1,220	1,200	2,290	2,430	1,150	735	1,190
20	1,130	1,030	1,100	*1,120	942	1,100	1,150	2,220	2,720	1,070	771	1,260
21	1,120	870	1,240	1,100	951	1,090	1,170	1,890	2,640	1,120	735	1,350
22	1,130	1,090	1,180	1,070	951	1,030	1,190	1,890	2,430	1,060	708	1,420
23	1,250	1,000	1,270	1,040	942	1,080	1,170	1,830	2,220	950	726	1,310
24	1,190	1,000	1,170	1,000	970	1,080	1,150	1,770	2,020	970	762	1,370
25	1,200	1,170	1,190	990	951	1,060	1,190	1,770	1,830	970	753	1,300
26	1,280	1,150	1,160	1,030	924	1,080	1,330	1,830	1,710	990	780	1,310
27	1,250	1,100	1,130	980	924	1,060	1,300	2,020	1,510	1,480	780	1,280
28	1,180	1,140	1,170	970	933	1,070	1,330	2,360	1,710	626	798	1,290
29	1,180	1,380	1,080	951	-	1,080	1,450	2,360	2,150	1,010	900	1,310
30	1,170	1,330	b1,020	834	-	1,060	1,360	2,220	2,220	1,220	861	1,330
31	1,010	-	b940	816	-	1,200	-	2,220	-	1,200	1,510	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	36,520	1,450	1,010	1,178	72,440
November	32,637	1,380	699	1,088	64,730
December	33,791	1,740	660	1,090	67,020
Calendar year 1940	617,185	5,910	520	1,686	1,224,000
January	30,321	1,130	760	978	60,140
February	25,875	1,010	798	924	51,320
March	36,732	1,610	942	1,185	72,860
April	35,730	1,450	1,050	1,191	70,870
May	62,170	2,720	1,410	2,005	123,300
June	90,550	5,060	1,510	3,018	179,600
July	44,416	2,220	626	1,433	88,100
August	27,555	1,510	708	889	54,650
September	34,371	1,420	533	1,146	68,170
Water year 1940-41	490,668	5,060	533	1,344	973,200

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

Clark Fork below Missoula, Mont.

Location.- Water-stage recorder, lat. 46°52, long. 114°07', in SE¼ sec. 21, T. 13 N., R. 20 W., 2 miles downstream from Bitterroot River and 6 miles west of Missoula.

Drainage area.- 8,690 square miles.

Records available.- October 1929 to September 1941.

Average discharge.- 12 years, 3,969 second-feet.

Extremes.- Maximum discharge during year, 10,400 second-feet June 2 (gage height, 4.61 feet); minimum, 738 second-feet Dec. 16 (gage height, 0.42 foot).
1929-41: Maximum discharge, 36,800 second-feet June 11, 1933 (gage height, 10.14 feet); minimum, 388 second-feet Jan. 18, 1933 (gage height, 0.58 foot, ice present).

Remarks.- Records excellent except those for period of staff-gage readings, which are good. Slight regulation from power plant at Bonner. Many diversions above station for irrigation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Dec. 24-31)

Oct. 1 to Dec. 28				Dec. 29 to Sept. 30			
0.6	910	1.4	1,890	0.8	1,070	2.6	4,150
.8	1,120	1.7	2,380	1.1	1,420	3.2	5,630
1.1	1,470	2.0	2,950	1.5	2,000	3.8	7,480
				2.0	2,900	4.5	9,980

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,050	1,920	2,210	1,500	1,420	1,580	2,120	3,600	6,990	4,150	1,920	1,450
2	2,950	2,030	2,210	1,250	1,510	2,100	2,200	4,040	9,980	3,930	1,860	1,110
3	2,950	2,130	2,210	1,090	1,560	2,200	2,290	4,370	9,060	3,820	1,750	1,750
4	2,750	2,050	2,130	1,090	1,540	2,020	2,430	4,480	8,700	3,710	1,660	1,900
5	2,850	2,210	2,210	1,220	1,470	1,970	2,340	4,480	9,240	3,600	1,550	1,940
6	2,660	2,050	2,700	1,350	1,430	1,970	2,340	4,370	9,980	3,400	1,420	2,140
7	2,660	2,030	2,210	1,480	1,420	1,940	2,290	4,040	9,610	3,300	1,340	2,430
8	2,470	2,130	1,800	1,550	1,500	1,890	2,190	3,500	9,240	3,000	1,280	2,620
9	2,470	2,020	1,780	1,550	1,510	1,950	2,150	3,500	9,980	2,900	1,280	2,620
10	2,210	2,020	2,050	1,360	1,550	2,030	2,120	3,100	8,880	2,710	1,230	2,710
11	2,470	1,950	1,920	1,320	1,580	1,900	2,140	3,000	8,000	2,620	1,230	2,520
12	2,470	1,770	1,680	1,360	1,620	1,720	2,270	3,400	7,320	2,620	1,170	2,520
13	2,210	1,640	1,210	1,340	1,610	1,550	2,340	5,780	6,680	2,170	1,250	2,520
14	2,130	1,500	1,120	1,480	1,540	1,550	2,290	8,340	6,220	2,340	1,240	2,900
15	2,030	1,760	1,030	1,560	1,380	1,460	2,240	8,000	6,070	2,100	1,280	2,900
16	2,130	2,210	920	1,620	1,370	1,580	2,170	6,830	5,630	1,950	1,240	3,000
17	2,130	1,610	1,020	1,620	1,370	1,540	2,220	6,220	5,220	1,800	1,200	2,900
18	2,050	1,940	1,250	1,610	1,420	1,590	2,200	6,520	5,090	1,590	1,200	3,000
19	2,050	2,130	1,610	1,690	1,450	1,750	2,190	5,920	5,350	1,620	1,110	2,900
20	2,020	1,920	1,970	1,740	1,480	1,820	2,070	5,220	6,520	1,580	1,140	3,000
21	2,000	1,800	2,050	1,740	1,520	1,620	2,070	4,600	6,680	1,620	1,100	3,100
22	2,000	1,950	2,030	1,720	1,510	1,630	2,030	4,260	5,780	1,510	1,060	3,200
23	2,050	1,670	2,050	1,660	1,500	1,660	2,070	4,480	5,090	1,380	1,150	3,100
24	2,130	1,510	1,990	1,650	1,520	1,700	2,100	4,840	4,600	h1,470	1,180	3,200
25	2,050	1,860	1,990	1,620	1,520	1,630	2,340	5,490	4,040	h1,580	1,230	3,000
26	2,210	2,000	1,950	1,660	1,460	1,680	2,520	5,920	3,600	h1,500	1,280	3,000
27	2,130	1,950	1,890	1,610	1,450	1,650	2,520	5,920	3,100	1,950	1,320	2,900
28	2,130	1,940	1,890	1,580	1,470	1,680	2,710	6,370	3,300	1,310	1,320	2,800
29	2,050	2,210	1,810	1,550	-	1,740	3,000	5,920	4,040	1,690	1,400	2,800
30	2,130	2,300	1,700	1,400	-	1,800	3,100	5,780	4,370	2,020	1,460	2,800
31	1,970	-	1,590	1,370	-	2,020	-	6,220	-	2,000	2,150	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	71,560	3,050	1,970	2,308	141,900
November	58,210	2,300	1,500	1,940	115,500
December	56,180	2,700	920	1,812	111,400
Calendar year 1940	1,139,888	13,800	770	3,114	2,261,000
January	46,350	1,740	1,090	1,495	91,930
February	41,680	1,620	1,370	1,489	82,670
March	54,920	2,200	1,460	1,772	108,900
April	69,060	3,100	2,030	2,302	137,000
May	158,510	8,340	3,000	5,113	314,400
June	198,360	9,980	3,100	6,612	393,400
July	72,940	4,150	1,310	2,353	144,700
August	42,000	2,150	1,060	1,355	83,310
September	78,730	3,200	1,110	2,624	156,200
Water year 1940-41	948,500	9,980	920	2,599	1,881,000

h Computed from staff gage readings.

Clark Fork at St. Regis, Mont.

Location.- Water-stage recorder, lat. 47°18', long. 115°05', in sec. 19, T. 18 N., R. 27 W., at St. Regis, half a mile downstream from St. Regis River.

Drainage area.- 10,500 square miles.

Records available.- October 1910 to September 1923, February 1929 to September 1941.

Average discharge.- 25 years, 7,082 second-feet.

Extremes.- Maximum discharge during year, 12,000 second-feet June 3 (gage height, 8.82 feet); minimum, 1,000 second-feet Dec. 17 (gage height, 3.36 feet).
1910-23, 1929-41: Maximum discharge observed, 62,800 second-feet May 30, 31, 1913 (gage height, 19.1 feet); minimum, that of Dec. 17, 1940, but may have been less during period of ice effect, Feb. 19-22, 1929.

Remarks.- Records excellent except those for periods of ice effect, which are good. Many diversions and slight regulation above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,960	2,370	2,750	2,070	1,880	2,000	3,080	5,260	8,920	5,470	2,590	2,510
2	3,300	2,300	2,670	1,940	1,880	2,140	3,240	5,910	10,400	5,260	2,510	2,140
3	3,380	2,450	2,670	b1,580	1,940	2,670	3,420	6,370	11,700	4,960	2,440	1,690
4	3,380	2,530	2,670	1,580	2,000	2,750	3,510	6,610	11,100	4,860	2,360	2,140
5	3,210	2,450	2,590	1,640	2,000	2,670	3,600	6,850	11,100	4,660	2,280	2,360
6	3,210	2,450	2,750	1,750	1,940	2,590	3,510	6,610	11,400	4,560	2,140	2,440
7	3,120	2,370	3,160	2,000	1,880	2,670	3,510	6,370	11,700	4,460	2,000	2,590
8	3,040	2,370	2,750	2,070	1,880	2,590	3,420	5,910	11,100	4,270	1,940	2,910
9	2,960	2,450	2,440	2,000	1,940	2,590	3,330	5,260	11,400	3,980	1,810	3,080
10	2,870	2,370	2,360	2,000	2,000	2,670	3,330	5,060	11,400	3,800	1,810	3,160
11	2,620	2,370	*2,510	1,810	2,000	2,750	3,330	4,860	10,100	3,600	1,750	3,240
12	2,870	2,230	2,360	1,810	2,070	2,590	3,330	4,960	9,490	3,510	1,750	3,160
13	2,780	2,110	2,000	1,810	2,140	2,360	3,510	5,910	8,920	3,420	1,750	3,160
14	2,620	2,000	b1,480	1,880	2,140	2,210	3,510	8,640	8,110	3,080	1,750	3,240
15	2,530	1,940	b1,340	2,070	2,000	2,210	3,510	10,400	7,850	3,080	1,750	3,510
16	2,450	2,140	b1,260	2,070	1,880	2,140	3,420	9,790	7,350	2,910	1,810	3,600
17	2,530	2,510	1,180	2,070	1,880	2,210	3,420	9,200	7,100	2,750	1,750	3,600
18	2,450	2,140	1,430	2,140	1,810	2,210	3,330	9,200	6,610	2,510	1,690	3,600
19	2,450	2,360	1,880	2,140	1,880	2,280	3,330	8,920	6,610	2,360	1,690	3,700
20	2,370	2,510	2,210	2,210	1,940	2,440	3,240	8,110	7,100	2,280	1,640	3,600
21	2,370	2,360	2,670	2,210	1,940	2,510	3,160	7,350	7,850	2,280	1,640	3,600
22	2,370	2,210	2,830	h2,140	2,000	2,360	3,160	6,610	7,600	2,210	1,640	3,700
23	2,370	2,360	2,750	h2,140	2,000	2,360	3,160	6,370	6,850	2,140	1,580	3,800
24	2,370	2,140	2,670	2,140	2,000	2,360	3,330	6,610	6,140	2,000	1,640	3,700
25	2,450	1,940	2,510	2,140	2,000	2,360	3,510	7,350	5,690	2,000	1,690	3,700
26	2,450	2,210	2,510	2,140	2,000	2,360	3,700	7,850	5,060	2,000	1,690	3,600
27	2,530	2,360	2,510	2,140	1,940	2,440	3,980	8,110	4,660	2,140	1,810	3,600
28	2,530	2,360	2,440	2,140	1,940	2,440	4,180	8,110	4,560	2,510	1,810	3,510
29	2,450	2,510	2,440	*2,070	-	2,510	4,460	8,370	4,760	2,070	1,810	3,420
30	2,450	2,750	2,360	2,000	-	2,670	4,760	7,850	5,260	2,280	1,880	3,420
31	2,450	-	2,210	1,880	-	2,830	-	8,110	-	2,510	2,000	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	83,890	3,380	2,370	2,706	166,400
November	69,620	2,750	1,940	2,321	138,100
December	72,360	3,160	1,180	2,334	143,500
Calendar year 1940	1,536,670	16,800	1,180	4,199	3,047,900
January	61,780	2,210	1,580	1,993	122,500
February	54,900	2,140	1,810	1,961	108,900
March	75,940	2,830	2,000	2,450	150,600
April	105,280	4,760	3,080	3,509	208,800
May	222,890	10,400	4,860	7,190	442,100
June	247,890	11,700	4,560	8,263	491,700
July	99,920	5,470	2,000	3,223	198,200
August	58,400	2,590	1,580	1,884	115,800
September	95,480	3,800	1,690	3,183	189,400
Water year 1940-41	1,248,350	11,700	1,180	3,420	2,476,000

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
h Computed from staff gage readings.

Clark Fork near Plains, Mont.

Location.- Water-stage recorder, lat. 47°26', long. 114°51', on lot 7, SW¼ sec. 1, T. 19 N., R. 26 W., 2 miles upstream from Plains and 6 miles downstream from Flathead River.

Drainage area.- 19,900 square miles.

Records available.- October 1910 to September 1941.

Average discharge.- 25 years (1912-15, 1917-19, 1920-24, 1925-41), 17,940 second-feet.

Extremes.- Maximum discharge during year, 32,200 second-feet June 6 (gage height, 8.91 feet); minimum, 3,200 second-feet Dec. 10 (gage height, 2.85 feet).
1910-41: Maximum discharge, 126,000 second-feet May 28, 1928 (gage height, 18.4 feet); minimum, 3,200 second-feet Feb. 8, 1936 (affected by ice), Dec. 10, 1940.

Remarks.- Records excellent except those for periods of ice effect, which are good. Many diversions above station for irrigation. Partial regulation since April 1938 at Kerr Dam, 4 miles below Flathead Lake (see p. 146).

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,060	6,870	6,870	7,430	8,000	7,060	7,430	11,600	19,000	17,400	6,870	6,500
2	7,620	6,870	6,870	7,240	7,620	5,770	7,620	12,000	20,600	18,000	6,870	5,420
3	7,810	6,870	6,680	b7,200	7,810	6,320	7,240	12,000	22,400	14,000	6,870	3,990
4	7,810	7,060	6,870	b7,100	7,620	7,240	7,810	12,000	25,400	12,000	6,680	5,770
5	7,620	6,870	5,080	b7,300	7,810	7,240	7,810	11,200	30,000	10,800	6,680	6,680
6	7,620	7,060	5,080	b7,400	7,620	7,060	8,400	10,800	31,500	10,800	6,500	6,870
7	7,430	6,870	5,080	b7,600	8,200	7,060	8,800	10,400	26,000	10,800	6,320	7,060
8	7,430	6,870	4,430	b7,800	7,240	7,060	8,400	10,400	23,500	11,600	6,320	7,240
9	7,430	6,870	3,850	b7,400	7,430	7,060	9,000	10,000	22,400	11,200	6,320	7,430
10	7,240	6,870	*3,450	b7,700	7,620	6,500	9,200	9,800	24,100	9,600	6,320	7,240
11	7,060	6,870	4,280	b7,900	7,620	7,240	9,400	9,400	22,400	9,000	6,130	7,430
12	7,060	6,680	4,920	b7,700	7,810	7,240	9,600	9,400	20,600	8,400	6,130	7,430
13	7,240	6,500	5,080	b8,200	7,810	7,060	9,800	9,800	20,100	8,200	6,130	7,080
14	7,240	6,320	5,420	b8,000	7,810	6,870	10,000	12,500	20,600	8,000	6,130	7,240
15	7,060	6,130	5,770	8,400	7,620	6,870	10,000	14,600	23,500	8,200	6,130	7,240
16	6,870	5,950	b5,600	8,000	7,810	6,680	10,000	14,200	23,000	7,430	6,130	7,430
17	7,060	6,500	b5,500	8,400	7,810	6,680	10,000	13,700	18,000	7,060	6,130	8,000
18	7,060	6,680	b5,500	7,810	7,620	6,680	9,600	13,700	15,100	6,870	5,420	8,000
19	7,060	6,320	b5,700	8,000	7,620	6,870	9,600	13,300	13,300	6,680	5,250	8,000
20	6,870	6,320	b6,200	7,810	7,620	6,870	9,600	12,900	12,000	6,680	5,950	7,620
21	6,870	6,500	b6,600	7,810	7,810	7,240	9,600	12,000	20,600	6,500	5,950	7,810
22	6,500	6,680	b5,600	7,810	7,620	7,060	9,400	11,200	20,500	6,500	5,950	8,000
23	6,500	6,320	5,950	9,000	7,620	7,240	9,400	10,600	15,100	6,500	5,950	8,000
24	6,500	6,680	7,060	7,430	7,620	7,060	9,600	10,800	13,700	6,500	5,950	8,000
25	6,870	6,500	7,430	8,400	7,810	7,060	9,600	11,600	13,300	6,320	5,420	8,200
26	7,060	6,130	7,430	7,810	7,620	7,060	10,000	12,000	12,900	6,320	5,600	7,810
27	7,060	6,680	7,810	8,000	7,620	7,060	10,400	19,500	12,500	6,500	6,130	7,620
28	7,060	6,870	b7,800	8,000	7,240	7,060	10,800	26,000	12,500	6,500	6,320	7,430
29	7,060	6,870	b7,900	*8,000	-	7,060	11,600	20,400	12,500	6,500	6,320	6,870
30	7,060	7,060	7,620	7,810	-	7,240	11,600	18,500	14,200	6,500	5,950	7,060
31	7,060	-	7,620	7,810	-	7,240	-	16,900	-	6,680	6,130	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	221,250	7,810	6,500	7,137	438,800
November	199,640	7,060	5,950	6,655	396,000
December	187,050	7,900	3,450	6,034	371,000
Calendar year 1940	4,149,720	47,200	3,450	11,340	8,230,000
January	242,270	9,000	7,100	7,815	480,500
February	215,080	8,200	7,240	7,681	426,600
March	215,810	7,240	5,770	6,962	428,100
April	281,310	11,600	7,240	9,377	558,000
May	403,400	26,000	9,400	13,010	800,100
June	581,300	31,500	12,000	19,380	1,153,000
July	274,040	18,000	6,320	8,840	543,600
August	190,950	6,870	5,250	6,160	378,700
September	216,450	8,200	3,990	7,215	429,300
Water year 1940-41	3,228,550	31,500	3,450	8,845	6,404,000

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

Clark Fork near Heron, Mont.

Location.- Water-stage recorder, lat. 48°04', long. 115°59', in sec. 28, T. 27 N., R. 34 W., 600 feet upstream from Dead Horse Creek and 1½ miles northwest of Heron.

Drainage area.- 21,800 square miles.

Records available.- September 1928 to September 1941.

Average discharge.- 13 years, 18,080 second-feet.

Extremes.- Maximum discharge during year, 35,200 second-feet June 7 (gage height, 22.15 feet); minimum, 2,730 second-feet (regulated) Dec. 11 (gage height, 8.75 feet), from rating curve extended below 4,000 second-feet.
1928-41: Maximum discharge, 137,000 second-feet June 17, 1933 (gage height, 46.62 feet, present datum); minimum, 620 second-feet Dec. 23, 1935, during period of extreme regulation (gage height, 7.59 feet), from rating curve extended below 4,000 second-feet.
Maximum stage known, 59.1 feet, present datum, June 1894.

Remarks.- Records good. Flow subject to regulation on Flathead River; power plant at Thompson Falls causes diurnal fluctuation during low water. Considerable water diverted from tributaries above station for irrigation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

10.0	4,540	12.0	7,910	16.0	16,950
10.4	5,160	13.0	9,920	18.0	22,310
10.8	5,800	14.0	12,120	20.0	28,140
11.2	6,470	15.0	14,470	22.0	34,550

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sept.
1	7,170	7,720	7,530	8,490	8,890	7,910	8,690	15,200	20,900	17,200	7,530	6,810
2	7,910	7,910	7,530	8,890	8,290	7,720	9,090	16,000	24,300	19,600	7,720	7,350
3	7,910	8,100	7,350	8,890	8,690	6,810	9,290	16,200	25,200	19,000	7,720	6,130
4	8,890	8,100	7,530	8,490	8,100	7,720	9,090	16,200	26,900	15,400	7,170	4,840
5	7,720	7,350	7,530	8,100	8,490	8,290	10,300	15,400	30,600	14,000	7,530	6,640
6	8,690	8,100	5,640	6,810	8,690	8,290	9,920	14,700	34,600	12,400	7,350	8,290
7	7,530	7,910	5,960	6,810	8,690	8,290	9,290	13,800	33,200	11,400	7,350	8,100
8	8,890	7,720	6,300	7,910	9,710	8,290	9,920	13,500	28,400	12,400	7,910	6,640
9	7,530	7,910	4,840	8,290	8,890	8,290	10,100	13,300	26,300	12,800	8,100	7,350
10	7,720	7,530	4,690	8,290	6,470	8,690	10,800	13,000	26,900	12,400	7,350	8,100
11	8,290	6,990	4,390	8,890	8,100	7,530	11,000	12,600	26,900	11,200	5,960	8,100
12	8,490	7,720	5,000	8,290	8,690	7,910	11,400	11,200	25,500	9,920	6,810	8,100
13	7,720	6,810	5,960	8,490	8,290	8,690	11,900	12,800	23,400	9,710	6,990	8,100
14	7,170	6,130	7,350	8,690	8,690	8,100	11,900	13,500	22,900	9,710	6,810	7,910
15	7,530	6,990	6,470	8,890	8,690	7,720	12,400	16,000	24,900	9,710	6,470	8,290
16	7,720	6,810	5,480	9,710	8,490	7,720	12,800	18,000	26,600	8,890	7,720	7,910
17	7,530	6,300	5,640	9,290	8,100	7,720	12,400	18,000	24,900	8,290	6,130	8,290
18	8,290	6,990	6,990	9,920	8,490	6,810	12,100	18,500	20,100	8,690	6,470	8,890
19	8,690	6,990	6,130	8,690	8,100	7,350	12,100	18,200	17,500	7,720	5,960	8,890
20	7,530	6,990	6,990	7,530	8,490	7,530	12,100	17,500	15,400	8,290	6,130	9,090
21	5,960	6,810	6,990	8,100	9,290	7,910	9,920	16,400	15,400	6,990	6,990	9,290
22	7,170	6,990	7,720	8,490	8,490	7,910	11,200	15,700	25,200	7,350	8,690	7,720
23	6,990	7,720	6,300	9,290	8,690	8,290	11,400	15,000	20,100	7,350	6,990	9,090
24	7,530	7,170	7,170	9,710	8,100	7,720	11,700	14,500	17,000	8,100	6,130	8,890
25	7,350	6,640	7,350	9,710	9,090	8,100	11,700	14,500	16,000	7,910	5,800	9,710
26	7,720	7,350	8,100	9,710	8,690	7,910	12,400	15,000	15,400	9,090	7,910	7,910
27	7,720	6,810	8,100	6,470	7,170	8,100	12,800	16,700	14,500	6,640	6,990	8,290
28	8,100	7,350	8,490	8,290	7,530	8,100	13,300	26,600	14,500	5,480	5,800	8,290
29	7,720	7,350	9,090	8,490	-	8,690	13,500	28,100	14,200	7,910	5,160	8,100
30	7,530	7,530	9,290	8,890	-	8,100	14,700	21,800	14,700	7,530	6,640	8,100
31	7,350	-	8,290	8,100	-	8,490	-	22,000	-	7,530	6,470	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	240,060	8,890	5,960	7,744	476,200
November	218,790	8,100	6,130	7,293	434,000
December	212,190	9,290	4,390	6,845	420,900
Calendar year 1940	4,811,160	52,200	3,670	13,150	9,543,000
January	264,610	9,920	6,470	8,536	524,800
February	236,090	9,710	6,470	8,432	468,300
March	246,700	8,690	6,810	7,958	489,300
April	339,210	14,700	8,690	11,310	672,800
May	509,900	28,100	11,200	16,450	1,011,000
June	672,400	34,600	14,200	22,410	1,334,000
July	320,610	19,600	5,480	10,340	635,900
August	214,750	8,690	5,160	6,927	426,000
September	239,210	9,290	4 840	7,974	474,500
Water year 1940-41	3,714,520	34,600	4,390	10,180	7,368,000

Pend Oreille Lake at Hope, Idaho

Location.- Water-stage recorder, lat. 48°15', long. 116°18', in lot 2, sec. 35, T. 57 N., R. 1 E., at floating dock near Northern Pacific Ry. station at Hope. Datum of gage is 2,000.00 feet above mean sea level (U. S. Coast and Geodetic Survey datum).

Drainage area.- 22,900 square miles.

Records available.- September 1921 to September 1941. March 1914 to September 1922, at site at Sandpoint.

Extremes.- Maximum elevation during year, 2,052.49 feet June 12; minimum, 2,047.19 feet Dec. 16.
1921-41: Maximum elevation, 2,068.78 feet June 21, 1933; minimum, 2,046.47 feet Feb. 17, 1936.
Maximum elevation known, 2,076.08 feet June 1894.

Remarks.- Considerable water diverted from tributaries of Clark Fork for irrigation.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47.40	47.65	47.52	47.76	47.97	47.89	48.14	49.51	51.42	50.60	48.00	47.49
2	47.40	47.66	47.53	47.77	47.98	47.95	48.18	49.64	51.50	50.60	47.95	47.50
3	47.44	47.68	47.53	47.78	47.98	48.00	48.24	49.76	51.58	50.60	47.94	47.53
4	47.48	47.69	47.53	47.79	47.97	48.00	48.30	49.88	51.68	50.56	47.91	47.52
5	47.49	47.64	47.55	47.80	47.94	48.01	48.35	49.99	51.82	50.48	47.87	47.48
6	47.52	47.62	47.57	47.79	47.92	48.05	48.41	50.05	52.02	50.36	47.86	47.49
7	47.53	47.64	47.53	47.74	47.93	48.06	48.43	50.07	52.27	50.22	47.83	47.52
8	47.54	47.67	47.50	47.72	47.92	48.10	48.46	50.08	52.42	50.10	47.80	47.53
9	47.55	47.70	47.48	47.72	47.96	48.11	48.48	50.07	52.46	49.98	47.81	47.54
10	47.56	47.70	47.41	47.72	47.94	48.13	48.51	50.02	52.47	49.89	47.80	47.55
11	47.59	47.66	47.36	47.73	47.92	48.14	48.55	49.99	52.48	49.79	47.77	47.61
12	47.58	47.62	47.29	47.73	47.91	48.12	48.59	49.96	52.48	49.66	47.74	47.64
13	47.59	47.61	47.25	47.73	47.92	48.11	48.65	49.95	52.43	49.53	47.70	47.68
14	47.59	47.55	47.24	47.74	47.91	48.12	48.71	49.99	52.35	49.42	47.68	47.73
15	47.57	47.51	47.24	47.77	47.91	48.11	48.79	50.03	52.29	49.30	47.66	47.75
16	47.57	47.51	47.20	47.79	47.91	48.10	48.88	50.13	52.28	49.21	47.64	47.76
17	47.56	47.48	47.23	47.84	47.89	48.08	48.94	50.37	52.28	49.10	47.65	47.79
18	47.57	47.47	47.30	47.94	47.88	48.09	48.98	50.63	52.20	48.99	47.61	47.84
19	47.58	47.46	47.32	47.99	47.88	48.09	49.01	50.80	52.06	48.90	47.60	47.90
20	47.59	47.45	47.35	47.98	47.87	48.08	49.05	50.91	51.90	48.78	47.56	47.91
21	47.60	47.46	47.39	47.94	47.86	48.08	49.06	50.98	51.67	48.71	47.54	47.94
22	47.57	47.44	47.41	47.91	47.87	48.08	49.05	50.98	51.55	48.60	47.54	47.96
23	47.53	47.44	47.43	47.91	47.87	48.09	49.07	50.94	51.60	48.50	47.58	47.96
24	47.55	47.45	47.45	47.95	47.86	48.09	49.09	50.90	51.49	48.42	47.58	47.98
25	47.58	47.46	47.49	47.99	47.86	48.08	49.12	50.88	51.36	48.35	47.55	47.98
26	47.56	47.45	47.52	48.04	47.87	48.07	49.17	50.84	51.19	48.30	47.51	48.02
27	47.57	47.47	47.58	48.05	47.86	48.05	49.21	50.79	51.04	48.27	47.56	48.00
28	47.60	47.49	47.62	48.00	47.86	48.06	49.26	50.87	50.94	48.18	47.58	47.98
29	47.60	47.50	47.66	47.99	-	48.07	49.33	51.09	50.81	48.11	47.53	47.98
30	47.62	47.50	47.71	47.98	-	48.10	49.39	51.26	50.69	48.08	47.52	47.99
31	47.66	-	47.74	47.98	-	48.12	-	51.36	-	48.03	47.50	-

Note.- Add 2,000 feet to obtain elevations above mean sea level.

Pend Oreille River at Priest River, Idaho

Location.- Water-stage recorder, lat. 48°10'30", long. 116°55'30", in lot 4, sec. 26, T. 56 N., R. 5 W., at town of Priest River, 1½ miles downstream from Priest River. Datum of gage is 2,000.0 feet above mean sea level, datum of 1929. Discharge measurements made at highway bridge at Newport, Wash., 6 miles downstream.
Drainage area.- 24,200 square miles.
Records available.- June 1903 to April 1905, October 1921 to September 1941 (discontinued) June 1903 to September 1921, published as Clark Fork at Newport, Wash.
Average discharge.- 38 years, 24,820 second-feet (adjusted for change in contents in Pend Oreille Lake).
Extremes.- Maximum discharge during year, 30,200 second-feet June 8, 11, 12 (gage height, 49.45 feet); minimum, 3,960 second-feet Dec. 17, 18 (gage height, 43.67 feet).
1903-41: Maximum discharge, 136,000 second-feet June 15, 1913, and June 21, 1933; minimum, 2,200 second-feet Dec. 12, 1919.
Maximum stage known, 38.9 feet June 1894, from floodmarks, referred to Newport gage (discharge, 217,000 second-feet, estimated).
Remarks.- Records good except those for periods of ice effect or no gage-height record and those for period of shifting control, which are fair. Many small diversions from upper tributaries for irrigation. Flow subject to natural regulation in Pend Oreille Lake (see p. 114) and artificial regulation on Flathead River, and to slight regulation during log-driving seasons by flash dam on tributary of Priest River.
Cooperation.- Gage-height record collected in cooperation with U. S. Weather Bureau.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7,380	9,510	8,700	9,880	11,100	11,100	12,600	17,400	25,300	21,400	10,000	7,910
2	7,650	9,470	8,780	9,920	11,100	11,400	12,400	18,100	25,700	21,400	9,920	8,030
3	*7,460	9,430	8,660	9,950	11,100	11,500	12,600	18,400	26,100	21,400	9,630	7,990
4	7,870	9,470	8,740	10,000	11,200	11,600	12,900	19,000	26,500	21,300	9,710	8,070
5	7,950	9,350	8,660	10,000	11,300	11,600	12,900	18,900	27,200	20,800	a9,400	7,720
6	8,070	9,260	8,860	10,000	11,300	11,500	12,900	19,800	28,100	20,400	a9,400	7,950
7	8,180	9,260	8,860	10,100	10,800	11,600	13,200	20,000	29,000	19,600	a9,400	8,300
8	8,110	9,260	8,580	9,840	10,900	11,200	13,200	20,200	29,800	19,100	a9,300	8,260
9	8,180	9,300	8,380	9,760	11,000	11,700	13,300	20,200	30,100	18,600	a9,200	8,460
10	8,220	9,140	8,200	9,710	11,000	12,000	13,300	20,200	30,000	18,400	a9,100	8,540
11	8,220	*8,900	8,000	9,500	11,000	12,100	13,400	20,000	30,100	17,900	9,220	8,700
12	8,500	8,750	7,800	9,840	10,800	12,200	13,800	19,600	30,000	17,500	8,860	8,860
13	8,540	8,650	7,570	9,800	10,800	12,000	14,300	19,600	29,900	16,900	8,900	8,940
14	8,580	8,500	7,420	9,900	10,800	11,700	14,500	19,800	29,400	16,400	8,780	8,900
15	8,460	8,400	7,300	9,960	10,800	11,800	14,200	20,000	29,000	16,000	8,780	9,140
16	8,700	8,350	7,200	10,000	10,800	11,700	15,000	20,400	29,000	15,500	8,500	9,340
17	8,660	8,300	4,800	10,000	10,800	11,600	15,500	21,500	28,900	15,200	8,500	9,510
18	8,540	8,300	4,190	10,200	10,700	11,300	15,600	22,600	28,700	14,700	8,420	9,710
19	8,660	8,380	6,460	10,500	10,600	11,700	15,700	23,100	28,000	14,100	8,180	10,000
20	8,740	8,500	7,910	10,900	10,500	11,600	15,700	23,500	27,200	13,600	8,030	10,200
21	8,620	8,620	8,100	11,100	*10,500	11,700	15,600	23,500	26,500	13,100	8,030	10,300
22	8,740	8,260	8,300	11,200	10,500	11,600	15,600	23,800	25,900	12,700	7,910	10,500
23	8,620	8,340	8,500	10,900	10,700	11,600	15,700	23,500	25,500	12,500	8,030	10,500
24	8,740	8,460	8,660	10,900	10,700	11,700	16,000	23,100	25,000	12,200	8,140	10,500
25	8,820	e,340	8,780	11,200	10,300	11,700	16,000	22,800	24,500	11,800	8,110	10,500
26	9,300	8,340	9,020	11,400	10,600	12,000	16,200	23,200	24,000	11,500	8,140	10,300
27	9,020	8,500	9,180	11,500	10,600	11,800	16,200	22,600	23,400	11,400	8,380	10,500
28	8,980	8,500	9,430	11,300	10,800	11,700	16,500	23,000	22,700	11,100	8,540	10,500
29	9,180	8,580	9,590	11,300	-	11,800	16,800	23,800	22,400	10,700	8,300	10,300
30	9,300	8,580	9,760	11,100	-	11,900	17,000	24,700	21,800	10,500	8,030	10,400
31	9,430	-	9,760	*11,100	-	12,000	-	25,200	-	10,300	7,950	-

Month	Observed				Change in contents in Pend Oreille Lake (acre-feet)	Adjusted for change in reservoir contents		
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet	Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	9,430	7,380	8,497	522,500	+20,910	543,400	8,838	.365	.42
November	9,510	8,260	8,767	521,700	-13,440	508,300	8,542	.353	.39
December	9,760	4,190	8,198	504,100	+20,160	524,300	8,527	.352	.41
Calendar year 1940	54,800	4,190	16,040	11,640,000	+6,640	11,650,000	16,050	.663	9.02
January	11,500	9,710	10,420	640,800	+20,160	661,000	10,750	.444	.51
February	11,300	10,300	10,320	601,200	-10,080	591,100	10,640	.440	.46
March	12,200	11,100	11,690	718,800	+21,840	740,600	12,040	.498	.57
April	17,000	12,400	14,630	870,300	+107,700	978,000	16,440	.679	.76
May	25,200	17,400	21,340	1,312,000	+170,200	1,482,000	24,100	.996	1.15
June	30,100	21,600	26,990	1,606,000	-58,290	1,548,000	26,020	1.08	1.20
July	21,400	10,300	15,740	967,900	-227,100	740,800	12,050	.498	.57
August	10,000	7,910	8,735	537,100	-44,520	492,600	8,011	.331	.38
September	10,500	7,720	9,294	553,100	+41,160	594,300	9,988	.413	.46
Water year 1940-41	30,100	4,190	12,920	9,356,000	+48,700	9,405,000	12,990	.537	7.28

* Winter-discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for station below Z Canyon, near Metaline Falls.
Note.- Stage-discharge relation affected by ice, Nov. 5, 11-17, Dec. 10-12, 15, 16, 21-23, Jan. 3, 14, 16-21, 24, Feb. 17, 18. Shifting-control method used Oct. 1 to Nov. 2. Contents of Pend Oreille Lake based on mean gage heights for last day of each month.

Pend Oreille River below Z Canyon, near Metaline Falls, Wash.

(International gaging station)

Location.- Water-stage recorder, lat. 48°59', long. 117°21', in lot 2, sec. 11, T. 40 N., R. 43 E., three-quarters of a mile downstream from Z Canyon, 1½ miles south of international boundary, 5 miles downstream from Slate Creek, and 10 miles downstream from Metaline Falls.

Drainage area.- 25,200 square miles.

Records available.- October 1928 to September 1941. November 1908 to September 1910 and October 1912 to September 1928, at site at Metaline Falls, 10 miles upstream, published as Clark Fork at Metaline Falls, Wash.

Average discharge.- 29 years (1912-41), 25,230 second-feet (adjusted for storage in Pend Oreille Lake).

Extremes.- Maximum discharge during year, 32,200 second-feet June 13 (gage height, 19.10 feet); minimum, 5,550 second-feet Dec. 20 (gage height, 9.99 feet).

1912-41: Maximum discharge, 139,000 second-feet June 16, 1913 (gage height, 41.2 feet, site and datum then in use); minimum, 2,500 second-feet Dec. 12, 1919 (gage height, -2.4 feet, site and datum then in use).

Remarks.- Records excellent except those for periods of ice effect and doubtful gage-height record, which are fair. Many small diversions from upper tributaries for irrigation. Flow regulated by natural storage in Pend Oreille Lake and by artificial regulation on Flathead River.

Cooperation.- This is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

10.0	5,570	12.0	9,560	14.0	14,900	16.0	21,800	18.0	28,800
11.0	7,480	13.0	12,000	15.0	18,100	17.0	25,400		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8,000	9,690	8,970	10,300	11,600	11,400	14,400	18,500	27,700	23,300	10,200	8,080
2	7,900	9,740	9,040	10,300	11,600	12,200	14,800	19,000	27,700	22,800	10,100	8,060
3	7,940	9,740	9,060	10,300	11,500	12,700	14,500	19,500	27,900	22,500	9,940	8,160
4	8,000	9,670	9,100	10,400	11,600	12,800	14,600	19,500	28,300	22,600	9,800	8,180
5	8,000	9,580	9,230	10,300	11,600	12,800	14,600	20,700	28,700	22,400	9,630	8,120
6	8,180	9,740	9,320	10,600	11,600	12,700	14,500	20,500	29,200	21,800	9,650	7,960
7	8,300	9,780	9,190	10,500	11,700	12,700	14,200	20,700	29,900	21,500	9,710	7,880
8	8,410	9,830	9,320	10,500	11,400	12,700	14,300	21,100	30,700	20,500	9,650	8,000
9	8,450	9,830	9,230	10,400	11,300	12,500	14,400	21,100	31,400	19,700	9,490	8,180
10	8,600	*9,800	8,970	10,300	11,400	12,500	14,400	21,200	31,800	19,000	9,430	8,470
11	8,660	9,430	b8,800	10,100	11,500	12,800	14,600	21,200	31,900	18,600	9,410	8,870
12	8,510	9,320	b8,600	10,100	11,500	12,900	14,600	21,200	32,000	18,200	9,450	9,060
13	8,680	9,190	b8,400	10,200	11,500	12,900	14,800	20,900	32,000	17,800	9,210	9,040
14	8,890	b9,100	b8,200	10,200	11,600	12,900	15,300	21,000	31,700	17,300	8,970	9,210
15	8,590	b9,000	8,040	10,300	11,300	12,600	15,700	21,000	31,400	16,800	8,800	9,250
16	8,780	b8,900	b7,900	10,300	11,300	12,500	15,400	21,200	31,000	16,300	8,740	9,300
17	8,740	b8,800	b7,700	10,300	11,200	12,600	15,700	22,300	31,000	15,800	8,640	9,410
18	8,830	b8,800	b7,480	10,600	11,200	12,800	16,200	23,600	30,900	15,400	8,490	9,690
19	8,720	8,760	d5,990	11,000	11,300	12,800	16,400	24,500	30,800	15,000	8,430	10,200
20	8,740	8,700	5,930	11,200	*11,200	12,800	16,500	25,100	30,300	14,400	8,260	10,600
21	8,950	8,740	7,740	11,400	11,200	12,900	16,600	25,500	29,400	13,900	8,160	10,700
22	8,860	8,830	8,780	11,400	11,100	12,900	16,600	25,900	28,900	13,300	8,060	10,600
23	8,800	8,700	9,100	11,500	11,000	13,000	16,700	26,200	28,200	12,800	8,080	10,700
24	8,970	8,660	9,210	11,200	11,100	13,100	16,700	26,000	27,500	12,400	8,080	10,800
25	9,340	8,720	9,470	11,200	11,200	13,200	16,900	25,700	27,100	12,200	8,100	10,800
26	9,140	8,720	9,600	11,500	10,900	13,200	17,000	25,200	26,200	12,000	8,180	10,800
27	9,230	8,740	9,710	11,600	11,000	13,600	17,200	25,200	25,700	11,600	8,300	10,700
28	9,430	8,870	9,900	11,800	11,400	13,800	17,200	24,800	25,300	11,400	8,380	10,700
29	9,250	8,910	9,990	11,700	-	13,800	17,400	24,900	24,600	11,100	8,410	10,700
30	9,410	8,950	10,200	*11,700	-	14,000	17,800	25,700	24,000	10,700	8,410	10,700
31	9,560	-	10,300	11,600	-	14,100	-	26,900	-	10,500	8,180	-

Month	Observed: Discharge in second-feet: Maximum	Minimum	Mean	Observed: Runoff in acre-feet	Change in contents in Pend Oreille Lake (acre-feet)	Adjusted for change in reservoir contents: Runoff in acre-feet	Discharge in second-feet: Mean	Per square mile	Run-off in inches
October	9,560	7,900	8,715	535,800	+20,910	556,700	9,054	0.359	0.41
November	9,830	8,660	9,161	545,100	-13,440	531,700	8,936	.355	.40
December	10,300	5,930	8,789	540,400	+20,160	560,600	9,117	.362	.42
Calendar year 1940	56,600	4,850	16,950	12,310,000	+6,640	12,310,000	16,960	.673	9.16
January	11,800	10,100	10,800	664,100	+20,160	684,300	11,130	.442	.51
February	11,700	10,900	11,350	630,300	-10,080	620,200	11,170	.443	.46
March	14,100	11,400	12,900	793,400	+21,840	815,200	13,260	.526	.61
April	17,800	14,200	15,680	932,800	+107,700	1,040,000	17,480	.694	.77
May	26,900	18,500	22,770	1,400,000	+170,200	1,570,000	25,530	1.01	1.16
June	32,000	24,000	29,110	1,732,000	-58,290	1,674,000	28,130	1.12	1.25
July	23,300	10,500	16,570	1,019,000	-227,100	791,900	12,880	.511	.59
August	10,200	8,060	8,914	548,100	-44,520	503,600	8,190	.325	.37
September	10,800	7,880	9,431	561,200	+41,160	602,400	10,120	.402	.45
Water year 1940-41	32,000	5,930	13,680	9,902,000	+48,700	9,951,000	13,740	.545	7.40

* Winter-discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge computed on basis of partly estimated gage heights.

Smaller reservoirs in Pend Oreille River Basin, Mont.

Georgetown Lake on Flint Creek, 2 miles west of Southern Cross, Mont., completed in 1905 to store water for pumpage into Warm Springs Creek for use of reduction works of Anaconda Copper Mining Co. at Anaconda, or for release through Flint Creek for power development, has usable capacity of 33,000 acre-feet. Records furnished by The Montana Power Co.

East Fork of Rock Creek Reservoir on East Fork of Rock Creek, 14 miles southwest of Philipsburg, Mont., completed in 1938 for irrigation in Flint Creek Valley, has usable capacity of 16,200 acre-feet. Records furnished by State Water Conservation Board.

Nevada Creek Reservoir on Nevada Creek, 7 miles west of Finn, Mont., completed in 1938 for irrigation, has usable capacity of 12,600 acre-feet. Records furnished by Montana State Water Conservation Board.

West Fork of Bitterroot River Reservoir on West Fork of Bitterroot River, 7 miles upstream from Nez Perce Creek and 23 miles south of Darby, Mont., completed June 14, 1940, for irrigation, has usable capacity of 31,600 acre-feet. Records furnished by Montana State Water Conservation Board.

Como Lake on Rock Creek, 4 miles northwest of Darby, Mont., completed in 1909 for irrigation, has usable capacity of 34,800 acre-feet. Records furnished by Bitterroot Valley Irrigation Co. Figure of change in contents for September 1940 published in Water-Supply Paper 902 has been corrected to 5,200.

Camas Reservoirs comprise a group of 4 reservoirs in the Little Bitterroot River Basin, which are operated for irrigation. Records furnished by Office of Indian Affairs. Little Bitterroot Lake on Little Bitterroot River, 2 miles southwest of Marion, completed in 1918, has usable capacity of 18,000 acre-feet. Water level below outlet during year. Hubbart Reservoir on Little Bitterroot River, 9 miles northwest of Niarada, Mont., completed in 1923, has usable capacity of 12,100 acre-feet. Upper Dry Fork Reservoir on Dry Fork Creek, 4 miles northwest of Lonepine, Mont., completed in 1940, has usable capacity of 2,700 acre-feet. Dry Fork Reservoir on Dry Fork Creek, 1 mile west of Lonepine, Mont., completed in 1934, has usable capacity of 4,000 acre-feet.

Mission Valley Reservoirs comprise a group of 8 reservoirs in the area east of and tributary to the Flathead River between Flathead Lake and the Jocko River, which are operated for irrigation. Records furnished by the Office of Indian Affairs. Twin Reservoir fed entirely by canals, 4 miles southeast of Polson, Mont., completed in 1932, has usable capacity of 600 acre-feet. Pablo Reservoir, fed entirely by canals, 3 miles south of Polson, Mont., completed in 1934, has usable capacity of 25,000 acre-feet. Lower Crow Reservoir on Crow Creek, 6 miles west of Ronan, Mont., completed in 1933, has usable capacity of 10,350 acre-feet. Kicking Horse Reservoir, fed entirely by canals, 5 miles south of Ronan, Mont., completed in 1930, has usable capacity of 8,350 acre-feet. Ninepipe Reservoir, fed entirely by canals, 2 miles northeast of Charlo, Mont., completed in 1923, has usable capacity of 14,870 acre-feet. McDonald Reservoir on Post Creek, 9 miles east of Charlo, Mont., completed in 1920, has usable capacity of 8,225 acre-feet. Mission Reservoir on Mission Creek, 4 miles east of St. Ignatius, Mont., completed in 1935, has usable capacity of 7,250 acre-feet. Tabor Reservoir on Dry Creek, 8 miles southeast of St. Ignatius, Mont., completed in 1940, has usable capacity of 23,300 acre-feet.

Lower Jocko Lake on Jocko River, 15 miles east of Arlee, Mont., completed in 1937, has usable capacity of 7,600 acre-feet. Records furnished by the Office of Indian Affairs.

Thompson Falls Reservoir on Clark Fork, at Thompson Falls, Mont., for power development, has usable capacity of 15,000 acre-feet. Records furnished by The Montana Power Co.

Other reservoirs of small capacity, principally on tributaries of the Bitterroot River, are operated for irrigation.

Monthly change in contents, in acre-feet, water year October 1940 to September 1941

Month	Georgetown Lake	East Fork of Rock Creek Reservoir	Nevada Creek Reservoir	West Fork of Bitterroot River Reservoir	Como Lake
October	-500	a+1,500	a-120	b-1,800	c+3,400
November	+390	c+280	b+150	0	c+900
December	+190	c-20	c+120	0	c+900
Calendar year 1940	-1,740	-6,440	-	0	+2,000
January	+30	c+1,020	c+580	0	c+1,700
February	-870	c+570	c+440	-	c+700
March	-910	c+430	c+1,710	d+7,500	c+2,000
April	+990	c+730	a+630	a+13,100	c+6,400
May	+1,260	a+2,210	a-1,650	+11,400	c+5,700
June	+1,450	c+3,990	e-1,640	0	c+8,000
July	+720	a+150	a-200	0	c+16,600
August	-140	a-1,340	-	0	c-11,300
September	+140	a+340	f-1,320	-27,000	c-2,700
Water year 1940-41	+2,730	+9,660	-1,300	+3,200	+2,100

Month	Camas Reservoirs	Mission Valley Reservoirs	Lower Jocko Lake	Thompson Falls Reservoir
October	+140	+3,760		+1,890
November	+210	+2,930	f-1,440	+1,610
December	+170	+1,040	0	-1,180
Calendar year 1940	-710	+6,020	-1,440	-1,350
January	+150	+3,670	0	+1,340
February	+310	+3,610	0	-160
March	+500	+3,780	0	-160
April	+620	+7,400	+780	-1,600
May	-1,130	+12,290	+700	+440
June	-510	+13,440	+500	+430
July	-820	-33,050	-1,060	-1,550
August	+440	-19,800	-60	-
September	+160	+1,820	-860	f-1,060
Water year 1940-41	+240	+890	-1,440	0

a Interpolated on basis of weekly readings.
b Interpolated on basis of bi-weekly readings.
c Reading made on first day of following month.
d Change since Feb. 2 when seasonal storage began.
e Estimated on basis of reading on July 5.
f Change during period of 2 months.

Flint Creek near Southern Cross, Mont.

Location.- Staff gage and Cippoletti weir, lat. 46°14', long. 113°18', in NW¼ sec. 36, T. 6 N., R. 14 W., half a mile downstream from power plant, 2 miles downstream from Georgetown Lake, 3 miles northwest of Southern Cross, and 6 miles south of Philipsburg.

Records available.- October 1940 to September 1941.

Extremes.- Maximum discharge observed during year, 32 second-feet Oct. 1-15 (gage height, 0.85 foot); minimum observed, 1.4 second-feet Mar. 7 to Apr. 23, May 17-22 (gage height, 0.11 foot).

Remarks.- Records good. Gage read once daily. Flow regulated by Georgetown Lake (see p. 117).

Cooperation.- Gage-height record furnished by the Montana Power Co., under general supervision of the Geological Survey, in connection with a Federal Power Commission project.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	15	15	15	15	15	1.4	2.3	30	30	30	30
2	32	15	15	15	15	15	1.4	2.3	30	30	30	30
3	32	15	15	15	15	15	1.4	2.3	30	30	30	30
4	32	15	15	15	15	15	1.4	2.3	30	30	30	30
5	32	15	15	15	15	15	1.4	2.1	30	30	30	30
6	32	15	15	15	15	15	1.4	2.1	30	30	30	30
7	32	15	15	15	15	10	1.4	2.1	30	30	30	30
8	32	15	15	15	15	1.4	1.4	2.1	30	30	30	30
9	32	15	15	15	15	1.4	1.4	2.1	30	30	30	30
10	32	15	15	15	15	1.4	1.4	2.1	30	30	30	30
11	32	15	15	15	15	1.4	1.4	1.9	30	30	30	30
12	32	15	15	15	15	1.4	1.4	1.9	30	30	30	30
13	32	15	15	15	15	1.4	1.4	1.9	30	30	30	30
14	32	15	15	15	15	1.4	1.4	1.9	30	21	30	30
15	32	15	15	15	15	1.4	1.4	1.9	30	20	30	30
16	22	15	15	15	15	1.4	1.4	1.9	30	20	30	30
17	15	15	15	15	15	1.4	1.4	1.4	30	20	30	30
18	15	15	15	15	15	1.4	1.4	1.4	30	24	30	30
19	15	15	15	15	15	1.4	1.4	1.4	30	30	30	30
20	15	15	15	15	15	1.4	1.4	1.4	30	30	30	30
21	15	15	15	15	15	1.4	1.4	1.4	30	30	30	30
22	15	15	15	15	15	1.4	1.4	10	30	30	30	30
23	a15	15	15	15	15	1.4	1.4	24	30	30	30	30
24	a15	15	15	15	15	1.4	2.3	29	31	30	30	30
25	a15	15	15	15	15	1.4	2.3	30	30	30	30	30
26	a15	15	15	15	15	1.4	2.5	30	30	30	30	30
27	a15	15	15	15	15	1.4	2.5	30	30	30	30	30
28	a15	15	15	15	15	1.4	2.3	30	30	30	30	30
29	a15	15	15	15	-	1.4	2.3	30	30	30	30	30
30	a15	15	15	15	-	1.4	2.3	30	30	30	30	30
31	a15	-	15	15	-	1.4	-	30	-	30	30	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	727	32	15	23.5	1,440
November	450	15	15	15.0	893
December	465	15	15	15.0	922
Calendar year	-	-	-	-	-
January	465	15	15	15.0	922
February	420	15	15	15.0	833
March	133.6	15	1.4	4.31	265
April	48.7	2.5	1.4	1.62	97
May	313.2	30	1.4	10.1	621
June	901	31	30	30.0	1,790
July	885	30	20	28.5	1,760
August	930	30	30	30.0	1,840
September	900	30	30	30.0	1,790
Water year 1940-41	6,638.5	32	1.4	18.2	13,170

a No gage-height record; discharge interpolated.

Flint Creek near Philipsburg, Mont.

Location.- Wire-weight gage, lat. 46°23'45", long. 113°18'30", in NE¼ sec. 2, T. 7 N., R. 14 W., 1½ miles downstream from Marshall Creek and 4 miles north of Philipsburg.

Records available.- April 1939 to October 1940 (discontinued).

Extremes.- Maximum discharge observed during October 1940, 80 second-feet Oct. 1 (gage height, 2.56 feet); minimum observed, 52 second-feet Oct. 30, 31 (gage height, 2.26 feet).

1939-40: Maximum discharge observed, 157 second-feet June 5, 1939 (gage height, 3.43 feet); minimum observed, 21 second-feet May 21, 1940.

Remarks.- Records good. Gage read twice daily. Many diversions above and below station for irrigation. During irrigation season flow is supplemented by water from East Fork of Rock Creek which is diverted in sec. 5, T. 4 N., R. 14 W., 500 feet below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek. Some additional regulation from Georgetown Lake.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	76											
2	72											
3	72											
4	64											
5	64											
6	60				†27							
7	64											
8	64											
9	64											
10	64											
11	64											
12	64											
13	68											
14	68											
15	64											
16	64											
17	60											
18	60											
19	60											
20	60					†31						
21	56											
22	56											
23	60											
24	60											
25	56											
26	56											
27	56											
28	56											
29	56											
30	52											
31	52											

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October 1940	1,912	76	52	61.7	3,790
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January					
February					
March					
April					
May					
June					
July					
August					
September					
Water year					

† Result of discharge measurement.

Flint Creek at Maxville, Mont.

Location.- Wire-weight gage, lat. 46°27'30", long. 113°14'30", in SW¼ sec. 9, T. 8 N., R. 13 W., three-quarters of a mile southwest of Maxville and 1¼ miles upstream from Boulder Creek. Also after Aug. 4, 1941, a water-stage recorder at site half a mile downstream at different datum.

Records available.- April 1939 to September 1941 (discontinued) at original site. Also August to September 1941 at site half a mile downstream.

Extremes.- Maximum discharge observed during year, 290 second-feet June 1 (gage height, 3.11 feet); minimum observed, 21 second-feet Jan. 3 (gage height, 1.16 feet).

1939-41: Maximum discharge observed, that of June 1, 1941; minimum observed, that of Jan. 3, 1941.

Remarks.- Records good. Gage read once daily. Many diversions above and below station for irrigation. During irrigation season, flow is supplemented by water from East Fork of Rock Creek which is diverted in sec. 5, T. 4 N., R. 14 W., 500 feet below Rock Creek Dam, through a canal into Trout Creek, thence into Flint Creek. Some additional regulation from Georgetown Lake. Increase in flow noted at new site caused principally by return of water, which seeps through railroad embankment above former site into a marsh and reenters above present site as surface flow and seepage. Records for both sites are published below.

Discharge, in second-feet, (at upper site) water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	77	56	49	24	36	66	34	48	174	e3	89	61
2	72	57	53	22	39	62	33	49	148	83	89	61
3	72	56	56	*21	35	56	32	48	174	77	89	62
4	67	54	60	25	32	44	32	48	209	77	72	66
5	66	50	54	26	40	43	32	43	236	89	65	66
6	64	53	56	33	*32	42	34	39	174	72	62	72
7	65	53	54	41	35	42	32	36	140	89	58	83
8	65	53	54	43	32	38	31	34	124	89	59	77
9	64	54	48	41	40	36	30	27	110	67	60	77
10	63	51	44	41	39	32	31	22	89	64	62	89
11	63	47	25	39	38	37	36	a27	77	60	64	83
12	63	a40	b24	37	39	32	45	32	66	62	72	110
13	65	26	24	35	35	32	36	89	46	54	110	96
14	72	63	28	40	30	35	35	110	54	57	83	89
15	64	53	32	42	24	29	32	61	51	54	77	89
16	65	52	36	42	36	32	34	51	44	48	77	89
17	63	48	40	40	29	35	40	48	41	48	77	83
18	61	51	47	42	32	38	37	58	41	47	67	83
19	59	42	b50	43	37	32	35	47	96	47	67	102
20	59	47	b49	43	39	32	40	39	77	56	67	102
21	58	51	b47	43	38	29	45	36	64	45	67	102
22	58	33	45	42	43	32	44	23	54	48	58	96
23	59	36	48	42	38	33	41	32	42	44	58	89
24	58	51	46	42	37	32	66	36	34	48	59	89
25	57	51	45	42	38	32	50	31	26	56	57	89
26	57	53	45	42	24	33	46	72	23	63	60	89
27	57	52	45	32	40	35	46	89	26	72	62	89
28	57	53	46	35	42	35	44	77	182	102	60	96
29	56	55	41	32	-	36	46	59	140	102	64	96
30	55	54	36	b34	-	38	46	60	96	96	65	96
31	56	-	42	35	-	37	-	62	-	89	61	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,937	77	55	62.5	3,840
November	1,495	63	26	49.8	2,970
December	1,369	60	24	44.2	2,720
Calendar year 1940	19,169	120	23	52.4	38,030
January	1,141	43	21	36.8	2,260
February	999	43	24	35.7	1,980
March	1,167	66	29	37.6	2,310
April	1,165	66	30	38.8	2,310
May	1,533	110	22	49.5	3,040
June	2,858	236	23	95.3	5,670
July	2,088	102	44	67.4	4,140
August	2,137	110	57	68.9	4,240
September	2,571	110	61	85.7	5,100
Water year 1940-41	20,460	236	21	56.1	40,580

* Winter discharge measurement made on this day. b Stage-discharge relation affected by ice.
a No gage-height record; discharge estimated.

Discharge, in second-feet, (at lower site) August and September 1941

Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.	Day	Aug.	Sept.
1	-	68	9	70	87	17	86	92	25	66	96
2	-	67	10	72	100	18	83	91	26	67	94
3	-	68	11	74	98	19	77	101	27	73	97
4	-	69	12	86	111	20	76	106	28	68	102
5	77	71	13	120	102	21	78	110	29	71	101
6	72	77	14	99	95	22	66	102	30	74	101
7	70	85	15	91	97	23	69	98	31	70	-
8	68	85	16	90	93	24	68	97			

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
August 5-31	2,083	120	66	77.1	4,130
September	2,763	111	67	92.1	5,480

Note.- The discharge at the lower site on July 29 was measured as 108 second-feet.

Trout Creek near Philipsburg, Mont.

Location.- Wire-weight gage, lat. 46°16'55", long. 113°20'25", in NW¼ sec. 15, T. 6 N., R. 14 W., 300 feet upstream from mouth and 4½ miles south of Philipsburg.

Records available.- May 1939 to September 1941 (irrigation seasons only).

Extremes.- Maximum discharge observed during period, 56 second-feet Aug. 13 (gage height, 2.75 feet); minimum observed, 12 second-feet June 26 (gage height, 1.76 feet).
1939-41: Maximum discharge observed, 67 second-feet Aug. 7, 1939; minimum observed, 3.6 second-feet May 26-29, June 2, 1940.

Remarks.- Records fair. Gage read once daily. Many diversions above station for irrigation. At times during irrigation season flow is supplemented by water from East Fork of Rock Creek which is diverted in sec. 5, T. 4 N., R. 14 W., 500 feet below Rock Creek Dam, through a canal into Trout Creek.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32								-	26	47	25
2	30								-	26	44	24
3	30								-	20	46	25
4	32								-	20	33	24
5	33								-	17	33	26
6	34								-	16	32	24
7	35								-	18	32	27
8	35								-	26	24	23
9	35								-	23	24	25
10	35								-	22	26	29
11	35								-	20	26	24
12	35								-	21	30	29
13	37								-	20	56	24
14	36								-	20	a46	24
15	36								-	18	36	24
16	35								-	18	36	24
17	35							†5.4	-	18	35	26
18	35								-	19	30	27
19	35								-	19	31	31
20	35					†11			-	20	29	30
21	35								-	24	35	29
22	35								-	24	34	26
23	35								-	22	35	26
24	35								18	20	32	26
25	35								18	27	31	26
26	35								12	34	31	25
27	35								13	35	31	26
28	35								16	38	26	26
29	35								24	43	26	26
30	35								26	50	27	33
31	35								-	47	24	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,070	37	30	34.5	2,120
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June 24-30	127	26	12	18.1	252
July	771	50	16	24.9	1,530
August	1,028	56	24	33.2	2,040
September	764	33	23	26.1	1,560
Water year	-	-	-	-	-

† Result of discharge measurement.
a Nc gage-height record; discharge interpolated.

Marshall Creek near Philipsburg, Mont.

Location.- Wire-weight gage, lat. 46°22'25", long. 113°19'25", in SW¼ sec. 11, T. 7 N., R. 14 W., a quarter of a mile upstream from mouth and 2⅝ miles north of Philipsburg.

Records available.- April 1939 to September 1941 (irrigation seasons only).

Extremes.- Maximum discharge observed during period, 46 second-feet June 4, 5, (gage height, 1.90 feet), from rating curve extended above 15 second-feet; no flow at times.
1939-41: Maximum discharge observed, that of June 4, 5, 1941; no flow at times.

Remarks.- Records poor. Gage read once daily. Small diversions above station for irrigation. At times during irrigation season flow is supplemented by water from East Fork of Rock Creek which is diverted in sec. 5, T. 4 N., R. 14 W., 500 feet below Rock Creek Dam, through a canal into Trout Creek, thence into Marshall Creek.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.7							-	15	12	1.6	0
2	.7							-	10	10	1.4	0
3	.6							-	24	10	0	0
4	.7							-	46	10	0	0
5	.7							-	46	12	0	0
6	.8							-	40	13	0	0
7	.8							-	39	13	0	0
8	.8							-	34	10	0	.3
9	.8							-	34	7.9	0	.5
10	.8							-	33	7.9	3.2	.6
11	.8							-	29	7.9	5.0	.5
12	.9							-	10	9.2	3.5	.4
13	.9							-	10	7.9	3.2	.4
14	1.0							-	10	7.3	2.5	.4
15	.9							-	9.2	6.0	3.2	.6
16	1.0							0.8	7.9	6.0	3.0	.5
17	1.0							.9	6.3	6.6	2.9	.4
18	.9							.8	12	6.0	3.5	.4
19	.9							.7	15	6.0	3.9	.5
20	.9					†0.9		.7	15	3.7	3.5	.6
21	.8							.7	9.8	2.1	3.4	.8
22	.9							.7	9.2	1.3	3.7	1.1
23	.9							.7	3.7	1.4	4.1	1.0
24	1.0							.8	1.5	1.4	4.1	.8
25	.9							0	1.5	1.6	3.4	1.0
26	1.0							0	1.4	1.6	2.9	.8
27	.9							0	1.4	1.4	0	.9
28	1.0							0	6.8	1.4	0	.9
29	.8							0	13	1.4	0	.9
30	.9							0	15	1.8	0	.9
31	1.0							0	-	2.1	0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	26.7	1.0	0.6	0.86	53
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May 15-31	6.8	.9	0	.42	13
June	508.7	46	1.4	17.0	1,010
July	189.9	13	1.3	6.13	377
August	62.0	5.0	0	2.00	123
September	15.2	1.1	0	.51	30
Water year	-	-	-	-	-

† Result of discharge measurement.

Boulder Creek at Maxville, Mont.

Location.- Water-stage recorder, lat. 46°28'30", long. 113°14'00", in SE¼ sec. 4, T. 8 N., R. 13 W., an eighth of a mile upstream from mouth and three-quarters of a mile north of Maxville. Staff gage at same site and datum July 21 to Aug. 11, 1941; prior to July 21, 1941, wire-weight gage at site 75 feet upstream and at datum 1.03 feet higher.

Records available.- April 1939 to September 1941 (irrigation seasons only).

Extremes.- Maximum discharge observed during period, 188 second-feet June 5 (gage height, 1.91 feet); minimum observed, 8.0 second-feet Aug. 12.
1939-41: Maximum discharge observed, 190 second-feet May 12, 1940 (gage height, 2.20 feet, site and datum then in use); minimum observed, 5.0 second-feet Sept. 8-17, 1940.

Remarks.- Records good except those above 150 second-feet, which are fair. Gage read once daily prior to Aug. 12. Several diversions above station for irrigation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	40							-	161	59	32	20
2	40							-	170	58	30	20
3	23							-	152	54	28	22
4	23							-	170	55	21	23
5	23							-	188	49	16	24
6	23							-	170	44	15	27
7	18							-	161	61	14	30
8	17							-	144	53	13	28
9	17							-	135	a48	11	28
10	17							-	127	44	9.0	33
11	14							-	119	40	8.2	31
12	14							-	111	39	9.9	35
13	14							-	102	36	26	36
14	14							-	96	33	20	35
15	14							-	96	29	14	35
16	14							111	90	26	13	32
17	12							111	69	25	11	32
18	12							127	73	23	9.9	29
19	12							103	84	22	9.0	35
20	12							84	96	23	8.6	39
21	16							76	94	18	8.6	39
22	17							82	65	18	8.4	36
23	17							84	53	18	8.6	35
24	14							90	45	21	9.9	34
25	14							90	39	21	8.6	35
26	14							103	37	20	8.6	35
27	14							111	36	26	16	36
28	14							111	74	48	21	35
29	15							100	69	49	24	35
30	15							86	69	38	22	34
31	15							98	-	33	21	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	538	40	12	17.4	1,070
November	-	-	-	-	-
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May 16-31	1,567	127	76	97.9	3,110
June	3,095	188	36	103	6,140
July	1,131	61	18	36.5	2,240
August	475.3	32	8.2	15.3	943
September	948	39	20	31.6	1,880
Water year	-	-	-	-	-

a No gage-height record; discharge interpolated.

461678 O-42-9

Middle Fork of Rock Creek near Philipsburg, Mont.

Location.- Wire-weight gage, lat. 46°11', long. 113°30', in NE¼ sec. 17, T. 5 N., R. 15 W., three-quarters of a mile upstream from East Fork, 2½ miles upstream from West Fork, and 15 miles southwest of Philipsburg.

Records available.- September 1937 to September 1941.

Extremes.- Maximum discharge observed during year, 440 second-feet June 5 (gage height, 2.70 feet); minimum observed, 9.4 second-feet Mar. 12 (result of discharge measurement), but may have been less during other periods of ice effect.
1937-41: Maximum discharge observed, 980 second-feet May 29, 1938 (gage height, 3.96 feet); minimum observed, 9 second-feet Dec. 12, 1938 (gage height, 0.73 foot), but may have been less during periods of ice effect.

Remarks.- Records fair except those for periods of ice effect, which are poor. Gage read twice daily. A few small diversions above station for irrigation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	39		29	21	24	37	95	366	175	90	51
2	58	38		29	22	28	38	111	332	164	85	50
3	58	37		*29	23	32	*37	132	315	153	78	50
4	56	37		29	24	34	34	142	366	142	73	48
5	55	36		28	*24	36	37	153	420	142	71	54
6	52	37	33		25	37	35	153	383	132	65	59
7	50	38			25	28	37	142	366	132	63	58
8	43	39		28	25	28	34	142	366	132	60	55
9	41	40			25	26	37	132	348	122	59	59
10	39	37			24	24	41	132	332	113	58	63
11	38	32				20	48	153	283	111	59	61
12	39	27				*16	50	225	268	111	66	66
13	39	26			20	14	49	332	268	106	69	65
14	39	27				14	48	366	299	104	63	64
15	38	29	29	26		17	49	315	268	95	55	61
16	37					22	46	283	268	90	54	63
17	36					28	46	268	225	92	53	60
18	36	32			19	34	49	283	225	92	54	57
19	36					28	41	253	253	89	47	59
20	36					29	49	239	253	111	45	69
21	37					24	53	225	199	93	46	68
22	*35					28	50	225	187	87	52	69
23	34	26	34	23	19	34	52	239	187	81	51	63
24	38					29	60	268	175	78	50	60
25	38					28	57	283	164	95	51	60
26	36		33		18	30	60	299	153	95	57	59
27	39		32		19	32	66	366	153	97	64	64
28	39	27	31		20	33	69	332	199	100	55	60
29	39		30	22	-	32	51	299	187	106	52	61
30	37		29		-	35	92	299	175	90	53	59
31	36	-	29		-	35	-	299	-	84	53	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,302	68	34	42.0	2,580
November	944	40	-	31.5	1,870
December	974	-	-	31.4	1,930
Calendar year 1940	23,187	376	-	63.4	45,980
January	791	-	-	25.5	1,570
February	585	25	-	20.9	1,160
March	859	37	14	27.7	1,700
April	1,482	92	34	49.4	2,940
May	7,185	366	95	232	14,250
June	7,983	420	153	266	15,830
July	3,414	175	78	110	6,770
August	1,851	90	45	59.7	3,670
September	1,798	69	48	59.9	3,570
Water year 1940-41	29,168	420	14	79.9	57,840

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 4-6, Nov. 11 to Mar. 5, Mar. 11-16.

East Fork of Rock Creek near Philipsburg, Mont.

Location.- Staff gage, lat. 46°08'10", long. 113°23'10", in NW¼ sec. 5, T. 4 N., R. 14 W., 200 feet upstream from Flint Creek Canal, 300 feet downstream from Rock Creek Dam, 3 miles upstream from Meadow Creek, and 14 miles southwest of Philipsburg.

Records available.- June 1935 to September 1941.

Extremes.- Maximum discharge observed during year, 78 second-feet (regulated) July 24; minimum observed, 2.2 second-feet (regulated) Oct. 1-5.
1935-41: Maximum discharge observed, 269 second-feet June 15, 1935 (gage height, 3.06 feet, site and datum then in use); minimum observed, 2.0 second-feet (regulated) Sept. 30, 1940.

Remarks.- Records poor. Discharge regulated by Rock Creek Reservoir (see p. 117). Gage ordinarily read twice weekly.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	3.3	3.3	3.3	3.3	4.1	4.6	13	52	70	75	47
2	2.2	3.3	3.3	3.3	3.3	4.1	4.6	13	52	49	75	47
3	2.2	3.3	3.3	3.3	3.4	4.1	4.6	13	52	49	44	47
4	2.2	3.3	3.3	3.3	3.5	4.1	4.6	21	44	49	44	47
5	2.2	3.3	3.3	3.3	3.7	4.1	4.6	21	44	49	44	41
6	2.4	3.3	3.3	3.3	3.7	4.1	4.6	21	44	49	47	41
7	2.7	3.3	3.3	3.3	3.7	4.1	4.6	21	44	40	47	36
8	2.7	3.3	3.3	3.3	3.7	4.1	4.6	21	44	42	47	36
9	2.7	3.3	3.3	3.3	3.7	4.1	4.6	21	42	42	44	36
10	2.7	3.3	3.3	3.3	3.7	4.1	4.6	21	44	42	54	22
11	2.7	3.3	3.3	3.3	3.7	4.1	4.6	49	44	42	57	22
12	3.0	3.3	3.3	3.3	3.7	4.1	4.6	44	44	42	57	22
13	3.0	3.3	3.3	3.3	3.7	4.1	4.6	33	44	42	57	22
14	3.0	3.3	3.3	3.3	3.7	4.1	4.6	22	44	42	57	22
15	3.0	3.3	3.3	3.3	3.7	4.1	4.6	22	44	42	57	22
16	3.0	3.3	3.3	3.3	3.7	4.1	4.6	22	40	42	57	22
17	3.0	3.3	3.3	3.3	3.7	4.1	4.6	22	57	42	57	22
18	3.0	3.3	3.3	3.3	3.7	4.1	4.6	22	57	42	75	22
19	3.3	3.3	3.3	3.3	3.7	4.1	4.6	22	57	42	57	22
20	3.3	3.3	3.3	3.3	3.7	4.1	4.6	30	37	51	57	22
21	3.3	3.3	3.3	3.3	3.7	4.1	4.6	30	47	51	57	22
22	3.3	3.3	3.3	3.3	3.7	4.1	4.6	52	51	57	57	22
23	3.3	3.3	3.3	3.3	3.7	4.1	4.6	52	51	57	57	20
24	3.3	3.3	3.3	3.3	3.8	4.2	4.6	52	58	78	51	20
25	3.3	3.3	3.3	3.3	3.8	4.3	4.6	52	58	76	51	20
26	3.3	3.3	3.3	3.3	3.9	4.3	4.6	52	70	75	51	20
27	3.3	3.3	3.3	3.3	3.9	4.4	4.6	52	70	75	51	29
28	3.3	3.3	3.3	3.3	4.0	4.4	4.6	52	70	75	51	29
29	3.3	3.3	3.3	3.3	-	4.5	44	52	70	75	51	29
30	3.3	3.3	3.3	3.3	-	4.6	13	52	70	75	47	29
31	3.3	-	3.3	3.3	-	4.6	-	52	-	75	47	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	90.8	3.3	2.2	2.93	180
November	99.0	3.3	3.3	3.30	196
December	102.3	3.3	3.3	3.30	203
Calendar year 1940	12,150.4	148	2.0	33.2	24,090
January	102.3	3.3	3.3	3.30	203
February	103.2	4.0	3.3	3.69	205
March	129.6	4.6	4.1	4.18	257
April	185.8	44	4.6	6.19	369
May	1,024	52	13	33.0	2,030
June	1,545	70	37	51.5	3,060
July	1,679	78	40	54.2	3,330
August	1,680	75	44	54.2	3,330
September	860	47	20	28.7	1,710
Water year 1940-41	7,601.0	78	2.2	20.8	15,070

Note.- Discharge poorly defined by gage readings. Discharge for days of no gage-height record computed on basis of records of released flow at Rock Creek Dam.

Blackfoot River near Helmville, Mont.

Location.- Water-stage recorder, lat. 46°56', long. 112°57', in NW¼SW¼ sec. 25, T. 14 N., R. 11 W., 2 miles downstream from Arrastre Creek and 5 miles northeast of Helmville. Prior to Oct. 10, 1940, staff gage at same site and datum. Datum of gage is 4,301.29 feet above mean sea level, datum of 1929 (levels by Corps of Engineers, U. S. Army).

Drainage area.- 481 square miles.

Records available.- September 1940 to September 1941.

Extremes.- Maximum discharge during year, 427 second-feet June 7 (gage height, 2.62 feet), from rating curve extended above 200 second-feet; minimum, 70 second-feet about May 22 (gage height, 1.27 feet, from recorded range in stage during period of faulty recorder operation).

Remarks.- Records good except those for periods of ice effect or no gage-height record, which are fair. Several small diversions above station for irrigation. Flow includes natural overflow channel on left bank, but does not include unnamed diversions past station. For periodic measurements or estimates of these diversions see note below.

Discharge, in second-feet, 1940-41

1940

July 14	†156	Sept.27	113	Sept.29	115
Sept.18	†113	Sept.28	113	Sept.30	117

† Result of discharge measurement.

1940-41

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	113	109	103	b92	92	90	96	87	122	180	122	104
2	113	110	103	b90	90	95	95	87	212	175	118	106
3	113	112	103	b89	90	102	95	87	258	167	115	107
4	113	110	104	*b88	*90	110	96	a90	276	165	113	107
5	112	107	106	b88	90	110	95	a94	312	162	113	109
6	a111	104	104		90	107	93	a93	366	155	112	110
7	110	106	103		90	104	92	a90	411	153	110	113
8	110	106	102	b85	90	109	91	a88	415	146	109	113
9	107	106	102		90	110	91	a84	390	135	112	113
10	109	b104	100		90	*103	91	81	370	131	113	115
11	107	b102	102		90	97	93	e0	331	129	110	117
12	106	b102	b99		a90	95	96	79	301	131	112	122
13	112	b102	b97	b85	a90	b93	93	a83	287	129	112	120
14	118	b102	b96		90	b90	92	a90	279	124	110	120
15	115	b103	b95		90	91	91	a88	287	122	106	122
16	115	b104		b87	b88	91	92	a85	272	122	106	120
17	115	106		91	b87	92	95	83	272	120	106	118
18	113	104	b95	92	b87	a95	92	83	279	122	104	118
19	113	103		92	b87	a97	92	a82	279	124	104	120
20	113	b102		91	88	a97	91	a80	276	131	103	120
21	113	b100	100	91	90	a95	90	a78	255	124	103	120
22	112	b99	99	91	90	93	91	a76	231	122	100	112
23	112	b98	97	a89	87	93	90	75	216	118	99	112
24	110	b97	99	a87	97	93	90	75	200	122	102	115
25	107	b97	97	86	92	93	90	a77	189	124	100	117
26	109	99	97	a88	b92	93	90	a80	180	122	102	115
27	107	99	97	a92	b88	95	90	83	178	122	104	117
28	109	102	96	a93	87	93	90	83	192	124	107	118
29	109	107	95	a93	-	93	90	83	189	127	107	117
30	109	104	96	a93	-	93	88	81	189	124	107	118
31	109	-	93	93	-	*95	-	86	-	122	106	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,444	118	106	111	6,830
November	3,106	112	97	104	6,160
December	3,060	106	-	98.7	6,070
Calendar year	-	-	-	-	-
January	2,746	93	-	88.6	5,450
February	2,512	97	87	89.7	4,980
March	3,007	110	90	97.0	5,960
April	2,760	96	88	92.0	5,470
May	2,591	94	75	83.6	5,140
June	8,014	415	122	267	15,900
July	4,174	180	118	135	8,280
August	3,347	122	99	108	6,640
September	3,455	122	104	115	6,850
Water year 1940-41	42,216	415	75	116	83,730

a No gage-height record; discharge computed on basis of recorded range of stage and records for station near Ovando.

b Stage-discharge relation affected by ice.

Note.- The flow in small diversions above station, which carry water around gage, was measured as 4.3 second-feet May 23; 49.5 second-feet June 28; 9 second-feet (estimated) Aug. 12; and 9.4 second-feet Sept. 10.

Blackfoot River near Ovando, Mont.

Location.- Water-stage recorder, lat. 47°01', long. 113°07', in SE¼NW¼ sec. 34, T. 15 N., R. 13 W., on left bank, a quarter of a mile upstream from Monture Creek and 5 miles west of Ovando. Prior to Oct. 12, 1940, staff gage at same site and datum. Datum of gage is 3,917.27 feet above mean sea level, datum of 1929 (Corps of Engineers, U. S. Army, bench mark).
Drainage area.- 1,280 square miles.
Records available.- September 1940 to September 1941.
Extremes.- 1940-41: Maximum discharge during water year, 1,360 second-feet June 2 (gage height, 3.27 feet), from rating curve extended above 530 second-feet; minimum, 167 second-feet Feb. 28 (gage height, 1.60 feet), but may have been less during periods of ice effect.
Floodmarks indicate stage of 10 feet reached in recent years.
Remarks.- Records good except those for periods of ice effect, which are poor.

Discharge, in second-feet, 1940-41

1940

Day	Sept.	Day	Sept.	Day	Sept.	Day	Sept.	Day	Sept.	Day	Sept.
1	-	6	290	11	269	16	290	21	293	26	290
2	-	7	282	12	269	17	290	22	a292	27	290
3	272	8	279	13	272	18	293	23	290	28	282
4	276	9	276	14	290	19	301	24	290	29	a286
5	290	10	272	15	a290	20	297	25	286	30	a289
										31	-

a No gage-height record; discharge interpolated.
Note.- The discharge on July 14, 1940 was measured as 390 second-feet.

1940-41

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	293	276	272	b225	b205	217	240	297	1,010	532	305	247
2	290	286	266	b215	b205	222	232	346	1,320	508	305	250
3	290	286	266	b210	b210	250	229	386	1,210	486	293	260
4	290	282	269	*b205	*b215	320	227	403	1,210	479	282	256
5	290	276	279	b205	b220	360	227	414	1,250	473	276	253
6	286	269	266		b225	338	227	392	1,230	460	272	253
7	286	269	266		b225	329	222	355	1,160	433	269	256
8	286	272	266	b205	b225	360	217	342	1,160	409	266	260
9	286	272	b260		b225	446	215	324	1,100	403	256	256
10	a281	256	b250		222	*398	213	312	1,010	381	256	260
11	a277	b240			217	293	213	312	922	375	256	263
12	272	b253			220	253	222	351	826	381	253	269
13	279	b260	b205	b210	217	229	224	532	782	381	253	272
14	282	b266			220	240	215	760	826	370	250	269
15	286	b282			215	234	213	674	793	355	247	269
16	282	b282			b206	220	211	571	738	346	247	269
17	279	b269			b215	253	217	532	706	329	247	266
18	279	276	b230	b220	b222	301	217	532	706	324	242	263
19	279	b240			b234	324	217	501	717	320	240	266
20	276	b247			222	290	215	460	717	329	240	266
21	276	b263	b260	b230	211	263	213	420	684	237	237	266
22	276	263	b260	b230	213	250	215	392	625	309	237	263
23	276	b269	b260	229	211	253	215	364	580	305	234	253
24	279	b272	b255	227	211	250	215	360	532	309	234	266
25	279	269	250	222	206	247	220	375	473	320	234	266
26	282	260	240	222	211	247	224	433	453	312	234	263
27	279	266	240	224	206	242	222	486	453	309	240	266
28	276	263	240	222	213	237	229	509	524	309	247	263
29	279	272	240	224	-	237	242	473	571	312	245	263
30	279	276	b235	211	-	240	260	466	562	312	245	260
31	276	-	b230	b205	-	240	-	532	-	309	247	-

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
b Stage-discharge relation affected by ice.

Monthly discharge, in second-feet, 1940-41

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
September 3-30, 1940	7,986	301	269	285	15,840
October 1940	8,726	293	281	281	17,310
November	8,032	286	268	268	15,930
December	7,545	279	243	243	14,970
Calendar year 1941	-	-	-	-	-
January 1941	6,681	230	-	216	13,250
February	6,047	234	205	216	11,990
March	8,583	446	217	277	17,020
April	6,668	260	111	222	13,230
May	13,606	760	297	439	26,990
June	24,850	1,320	453	828	49,290
July	11,501	532	305	371	22,810
August	7,889	305	234	254	15,650
September	7,852	272	247	262	15,570
Water year 1940-41	117,980	1,320	-	323	234,000

Blackfoot River near Bonner, Mont.

Location.- Staff gage, lat. 46°54', long. 113°47', in SW¼SW¼ sec. 8, T. 13 N., R. 17 W., 4 miles northeast of Bonner, 6 miles downstream from Union Creek, and 6 miles upstream from mouth.

Drainage area.- 2,280 square miles.

Records available.- October 1939 to September 1941. July 1898 to October 1905 at mouth, half a mile west of Bonner; records not equivalent.

Extremes.- Maximum discharge observed during year, 1,940 second-feet June 2 (gage height, 3.27 feet); minimum observed, 252 second-feet Dec. 12 (gage height, 0.47 foot).
1939-41: Maximum discharge observed, 3,800 second-feet May 12, 1940 (gage height, 4.94 feet); minimum daily, 220 second-feet Jan. 19, 1940; minimum gage height observed, that of Dec. 12, 1940.

Remarks.- Records good except those for periods of ice effect, which are fair. Many diversions above station for irrigation. Gage read once daily.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0.4	240	1.0	440	2.5	1,320
.5	265	1.5	690	3.0	1,690
.7	330	2.0	990	3.3	1,940

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	420	420	462	310	365	335	485	865	1,530	865	485	348
2	420	420	462	300	390	365	462	865	1,940	805	485	348
3	420	420	462	305	400	400	485	1,060	1,770	775	462	365
4	420	420	*462	325	400	485	485	1,120	1,770	745	462	365
5	400	420	420	350	395	560	485	1,120	1,770	775	440	365
6	420	420	440	360	395	560	485	1,060	1,690	745	420	348
7	420	a420	420	360	405	a585	485	1,060	1,610	718	420	348
8	400	a420	440	355	415	610	485	990	1,610	690	400	365
9	400	420	440	340	420	775	485	1,060	1,530	662	400	365
10	400	400	420	325	415	635	485	1,060	1,390	635	400	365
11	400	a356	382	310	410	535	510	865	1,320	635	400	365
12	400	*312	252	295	400	462	535	925	1,250	635	400	382
13	420	360	260	300	390	400	535	1,180	1,180	635	382	382
14	420	400	265	325	365	a420	535	1,460	1,180	635	382	382
15	420	a420	285	370	335	440	535	1,460	1,180	585	382	382
16	420	440	320	390	320	400	535	1,390	1,120	585	382	382
17	420	a451	340	385	315	420	535	1,320	1,120	560	382	382
18	420	462	370	385	330	510	535	1,250	1,120	535	365	382
19	400	462	395	390	350	585	535	1,250	1,060	535	365	382
20	400	462	410	*390	365	535	535	1,180	1,120	535	365	382
21	400	450	420	395	375	485	535	1,120	990	535	a365	382
22	400	440	430	395	375	462	535	1,060	990	510	365	382
23	400	420	435	400	370	485	535	990	865	485	365	382
24	400	425	440	395	355	462	560	925	865	510	a365	382
25	400	430	440	390	330	485	585	865	865	510	365	382
26	420	435	435	385	315	462	585	1,060	745	510	348	400
27	420	440	430	375	*310	462	610	1,120	775	485	348	382
28	420	450	410	365	310	462	635	1,120	925	510	348	400
29	420	455	390	355	-	462	662	1,060	925	535	348	382
30	420	460	370	350	-	485	718	1,060	865	510	348	382
31	420	-	335	350	-	485	-	1,060	-	485	348	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	12,760	420	400	412	25,310
November	12,710	462	312	424	25,210
December	12,242	462	252	395	24,280
Calendar year 1940	326,699	3,800	220	893	648,100
January	11,025	400	295	356	21,870
February	10,320	420	310	369	20,470
March	15,214	775	335	491	30,180
April	16,112	718	462	537	31,960
May	33,980	1,460	865	1,096	67,400
June	37,070	1,940	745	1,236	73,530
July	18,875	865	485	609	37,440
August	12,092	485	348	390	23,980
September	11,241	400	348	375	22,300
Water year 1940-41	203,641	1,940	252	558	403,900

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Nov. 12-14, 21, 22, 24-26, 28-30, Dec. 13, Dec. 15 to Mar. 2.

Nevada Creek above reservoir, near Finn, Mont.

Location.- Wire-weight gage, lat. 46°47', long. 112°46', in NE¼ sec. 29. T. 12 N., R. 9 W., 2 miles upstream from Buffalo Creek and 3 miles west of Finn.

Drainage area.- 128 square miles.

Records available.- April 1939 to September 1941. May 1934 to February 1939 at site 3 miles downstream.

Extremes.- Maximum discharge observed during year, 150 second-feet Mar. 2 (gage height, 3.33 feet, affected by ice); minimum observed, 2.5 second-feet July 23.
1939-41: Maximum discharge observed, 320 second-feet Mar. 21, 1940 (gage height, 3.68 feet), from rating curve extended above 60 second-feet; minimum observed, 2.5 second-feet Sept. 12, 1940, July 23, 1941.

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

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.0	10		6.0	5	50	18	9.5	73	12	11	4.8
2	3.6	13		5.5	5	150	17	12	d72	12	10	4.8
3	3.8	10		5.5	5	100	16	16	72	8.5	9.0	5.5
4	3.6	8.0		5.0	5	90	14	21	48	9.5	8.0	a5.6
5	3.6	7.6	6	5.0	5	80	15	29	48	12	7.6	a5.7
6	3.4*	7.3		5.0	5	75	14	27	50	9.5	7.6	5.8
7	4.0	6.6		5.0	6	70	12	22	46	8.5	7.3	a6.2
8	4.0	5.8		5.0	6	65	10	21	46	7.6	6.9	a6.6
9	3.8	5.1		5.0	6	25	10	20	41	7.6	6.9	a6.9
10	4.2	5.1		5.0	6	*11	9.5	18	29	6.9	6.6	7.3
11	4.4	5.1				12	13	18	26	7.6	6.2	a7.6
12	4.4	5.0				*13	12	17	25	10	6.9	8.0
13	7.3	5.0				a13	9.5	a20	22	10	8.5	a8.0
14	5.8	6.0				12	8.0	23	20	9.5	7.6	a8.0
15	5.5	7.0	6		7	12	8.0	23	20	8.5	6.9	8.0
16	5.8					18	7.6	20	15	8.5	6.2	a7.3
17	5.5					48	6.9	22	17	8.5	6.2	6.6
18	5.8	6.5				27	7.3	20	22	7.6	5.5	6.2
19	5.8					19	6.9	18	28	6.9	5.5	8.0
20	5.8					16	6.6	14	19	4.2	4.8	11
21	7.3			5		15	6.9	10	16	3.4	4.4	9.0
22	7.3					14	8.5	8.5	11	2.9	4.2	a11
23	6.9	5	5			15	7.3	8.5	8.5	2.5	5.5	a12
24	5.8					16	8.0	8.5	7.3	4.8	5.1	14
25	10				10	16	8.5	10	8.0	6.2	5.1	9.5
26	14					14	a8.3	10	7.3	8.5	5.8	10
27	11					17	a8.1	16	5.8	11	6.6	12
28	8.0	6				16	a8.0	16	15	25	5.8	a10
29	6.9		6		-	18	a7.8	15	15	37	6.2	8.5
30	8.0				-	16	7.6	14	14	15	6.2	a8.5
31	8.0				-	16	-	14	-	14	5.8	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	187.3	14	3.4	6.04	372
November	194.1	13	-	6.47	385
December	161	-	-	5.19	319
Calendar year 1940	8,284.1	320	2.5	22.6	16,430
January	157.0	-	-	5.06	311
February	204	-	5	7.29	405
March	1,079	150	11	34.8	2,140
April	300.3	18	6.6	10.0	596
May	521.0	29	8.5	16.8	1,030
June	846.9	73	5.8	28.2	1,680
July	305.7	37	2.5	9.86	606
August	205.9	11	4.2	6.64	408
September	242.4	14	4.8	8.08	481
Water year 1940-41	4,404.6	150	2.5	12.1	8,730

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
d Doubtful gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Nov. 12 to Mar. 11.

West Fork of Bitterroot River near Conner, Mont.

Location.- Water-stage recorder, lat. 45°44', long. 114°17', in NE¼NW¼ sec. 26, T. 1 S., R. 22 W., half a mile below West Fork Dam, 6 miles upstream from Nez Perce Creek, and 16 miles southwest of Conner. Prior to May 29, staff gage at same site and datum.

Records available.- April to September 1941.

Extremes.- Maximum discharge observed during period, 820 second-feet May 28 (gage height, 3.47 feet); minimum observed, 1.8 second-feet Apr. 20.

Remarks.- Records good except those for periods of no gage-height record, which are poor. Flow regulated by West Fork of Bitterroot Reservoir (see p. 117). Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	2.2	406	294	114	415
2							-	2.2	470	256	114	495
3							-	a2.2	460	282	105	490
4							-	2.2	455	270	98	490
5							-	2.2	505	255	93	485
6							-	2.2	500	236	93	480
7							-	2.2	500	236	91	480
8							-	2.2	571	224	87	475
9							-	2.2	566	202	89	277
10							-	220	550	192	93	112
11							-	a470	530	185	93	109
12							-	450	505	185	105	269
13							-	493	505	174	102	370
14							-	548	530	171	98	365
15							-	736	485	165	91	365
16							-	712	445	159	89	365
17							-	521	425	146	85	361
18							-	a500	406	143	80	361
19							-	571	430	137	78	361
20							2.0	484	430	137	76	392
21							2.2	253	388	132	80	475
22							2.0	542	a364	122	83	475
23							2.0	593	a341	117	89	470
24							2.0	199	a318	114	96	465
25							2.2	a300	294	114	98	460
26							2.0	a400	286	124	98	316
27							2.2	a500	282	127	98	247
28							2.2	674	306	132	93	247
29							2.2	670	335	132	89	247
30							2.2	393	314	127	91	243
31							-	111	-	117	151	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-fest
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 20-30	23.2	2.2	2.0	2.11	46
May	10,349.8	736	2.2	334	20,530
June	12,932	571	282	431	25,650
July	5,437	294	114	175	10,780
August	2,940	151	76	94.8	5,830
September	11,162	495	109	372	22,140
The period	-	-	-	-	84,980

a No gage-height record; discharge interpolated or computed on basis of records of reservoir operation.

Bitterroot River near Darby, Mont.

Location.- Water-stage recorder, lat. 45°59', long. 114°09', in NE¼ sec. 36, T. 3 N., R. 21 W., just below bridge on U. S. Highway 93, a quarter of a mile downstream from Chaffin Creek and 4 miles southeast of Darby.

Drainage area.- 1,050 square miles.

Records available.- April 1937 to September 1941.

Extremes.- Maximum discharge during year, 2,420 second-feet May 13 (gage height, 4.18 feet); minimum, 77 second-feet Nov. 13 (gage height, 1.17 feet).
1937-41: Maximum discharge observed, 5,480 second-feet May 29, 1938 (gage height, 6.51 feet); minimum observed, 71 second-feet Feb. 9, 1939 (stage-discharge relation affected by ice).

Remarks.- Records excellent except those for periods of ice effect, which are fair. Flow partly regulated by West Fork of Bitterroot Reservoir (see p. 117). Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	831	235	243	147	110	152	349	973	1,760	841	339	444
2	806	243	243	120	125	180	384	1,040	1,760	849	328	624
3	806	247	243	105	135	164	426	1,080	1,710	833	302	624
4	797	252	243	105	115	149	414	1,090	1,820	865	279	631
5	756	183	243	135	105	147	378	1,030	1,880	788	265	687
6	748	161	252	186	120	144	355	901	1,820	729	247	758
7	562	168	235	194	140	139	323	788	1,820	729	231	758
8	384	168	231	200	148	144	307	716	2,120	680	214	750
9	453	164	226	183	151	147	318	678	1,940	610	211	666
10	772	155	204	171	147	134	328	692	1,710	552	214	396
11	421	136	152	130	147	117	344	1,260	1,660	519	222	384
12	307	104	*100	115	147	100	344	1,730	1,600	519	231	444
13	293	94	90	135	131	104	334	2,300	1,540	493	239	673
14	288	192	95	160	115	104	318	2,300	1,660	512	231	659
15	279	256	110	183	94	122	323	2,120	1,490	474	208	666
16	269	265	125	180	100	149	318	2,000	1,380	444	a202	659
17	265	269	140	174	104	147	318	1,940	1,280	438	a196	673
18	252	459	205	156	106	164	307	1,660	1,260	438	a190	659
19	243	279	226	190	117	168	288	1,440	1,540	414	a184	666
20	247	*231	231	190	131	164	293	1,280	1,540	402	h177	708
21	247	257	231	186	122	164	293	1,100	1,270	378	177	810
22	239	211	231	183	131	164	298	1,360	1,150	334	183	795
23	235	177	222	180	131	168	334	1,710	1,070	307	190	765
24	226	208	218	180	131	164	396	1,600	964	307	208	750
25	226	226	211	180	129	161	440	1,440	857	312	211	729
26	239	211	208	180	111	171	452	1,710	802	334	226	645
27	247	208	211	150	117	186	499	1,880	795	328	243	512
28	247	208	204	125	*136	204	569	1,760	849	360	247	506
29	235	274	168	120	-	218	662	1,760	905	420	235	500
30	235	284	144	*100	-	293	797	1,660	673	384	239	493
31	235	-	161	110	-	344	-	1,210	-	344	239	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	12,390	831	226	400	24,580
November	6,525	459	94	218	12,940
December	6,046	252	90	195	11,990
Calendar year 1940	185,259	3,010	90	506	367,400
January	4,883	200	100	158	9,690
February	3,496	151	94	125	6,930
March	5,076	344	100	164	10,070
April	11,509	797	288	384	22,830
May	44,208	2,300	678	1,426	87,690
June	42,825	2,120	795	1,428	84,940
July	15,937	865	307	514	31,610
August	7,108	339	177	229	14,100
September	19,034	810	384	634	37,750
Water year 1940-41	179,037	2,300	90	491	355,100

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
h Computed from staff-gage reading.
Note.- Stage-discharge relation affected by ice Nov. 22-24, Dec. 11-18, Dec. 30 to Jan. 5, Jan. 10-14, Jan. 27 to Feb. 9, Feb. 13-21, 26, 27, Mar. 11-15.

East Fork of Bitterroot River at Conner, Mont.

Location.- Wire-weight gage, lat. 45°56', long. 114°08', in SE¼ sec. 7, T. 2 N., R. 20 W., below highway bridge at Conner, about half a mile upstream from confluence with West Fork.

Drainage area.- 404 square miles.

Records available.- April 1937 to September 1941. September 1910 to September 1916, at site 2⅝ miles upstream.

Extremes.- Maximum discharge observed during year, 715 second-feet June 5 (gage height, 3.83 feet); minimum observed, 12.3 second-feet Dec. 12 (result of discharge measurement).
1937-41: Maximum discharge observed, 1,810 second-feet May 29, 1938; minimum observed, 1.4 second-feet Aug. 17, 1937.

Remarks.- Records fair except those for periods of ice effect, which are poor. Gage read twice daily. Several diversions above station for irrigation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	136	72	98		45	95	98	195	558	243	96	65
2	116	69	96		50	112	96	226	558	226	84	61
3	114	75	78	35	55	88	102	312	580	226	66	58
4	127	74	70		45	74	104	348	625	210	68	60
5	108	70	74		30	70	108	348	692	189	60	70
6	96	78	76		35	68	102	330	625	181	56	79
7	91	72	80		40	65	88	295	602	175	50	86
8	90	75	72	70	55	61	88	260	625	170	42	82
9	84	76	72		66	58	91	243	558	141	40	80
10	84	68	70		68	54	88	210	490	106	37	93
11	80	58	35		65	50	102	226	468	96	37	91
12	78	45	*15		69	40	110	295	425	98	35	112
13	76	30	20	50	60	30	106	425	385	102	32	121
14	74	40	25		50	36	91	490	405	106	34	108
15	72	55	35		25	40	98	425	385	96	28	101
16	70	65			35	37	98	425	348	90	27	97
17	68	70			40	39	93	348	330	90	27	93
18	70	74	55		50	40	93	348	330	90	24	86
19	68	70			60	41	83	348	d348	90	21	93
20	65	*33		75	65	46	95	330	365	90	23	101
21	66	40			70	50	98	330	330	81	25	99
22	69	50			66	52	98	330	295	72	25	95
23	72	25	90		65	54	98	330	278	63	30	93
24	70	35		78	70	68	56	100	348	226	61	36	89
25	69	70	88		68	70	57	110	385	184	68	33	86
26	70	84	75	62	55	61	118	348	164	72	45	86
27	72	75	61	54	63	65	120	535	181	74	60	93
28	76	63	60	45	*66	69	139	445	226	76	63	91
29	72	80	55	35	-	74	151	385	243	118	63	89
30	70	95	45	*31	-	81	175	405	226	96	68	86
31	74	-	40	35	-	88	-	385	-	88	68	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	2,550	136	66	82.3	5,060
November	1,886	95	25	62.9	3,740
December	1,975	98	15	63.7	3,920
Calendar year 1940	43,617.7	715	5.5	119	86,510
January	1,778	-	-	57.4	3,530
February	1,531	70	25	54.7	3,040
March	1,851	112	30	59.7	3,670
April	3,141	175	83	105	6,230
May	10,653	535	195	344	21,130
June	12,055	692	164	402	23,910
July	3,684	243	61	119	7,310
August	1,403	96	21	45.3	2,780
September	2,644	121	58	88.1	5,240
Water year 1940-41	45,151	692	15	124	89,560

* Winter discharge measurement made on this day.
d Doubtful gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice Nov. 12-17, 20-25, Dec. 11-24, Dec. 29 to Jan. 22, Jan. 28 to Feb. 8, Feb. 13-21, 26, Mar. 12, 13.

Blodgett Creek near Hamilton, Mont.

Location.- Wire-weight gage, lat. 46°17', long. 114°10', in sec. 12, T. 6 N., R. 21 W., at highway bridge, about 1½ miles upstream from mouth and 2½ miles north of Hamilton.

Drainage area.- 29.2 square miles.

Records available.- April 1938 to September 1941.

Extremes.- Maximum discharge during year, 275 second-feet May 13 (gage height, 2.66 feet, from graph based on gage readings); minimum observed, 1.5 second-feet various days in July and August.
1938-41: Maximum discharge observed, 606 second-feet May 28, 29, 1938 (gage height, 3.45 feet); minimum observed, 0.8 second-foot various days in July and August 1940.

Remarks.- Records good except those for periods of ice effect or backwater from beaver dam, which are fair. Gage read once daily. Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	7.2	4.3		6.2	7.8	*24	113	180	9.2	1.5	2.0
2	14	6.6	4.1		6.2	8.5	30	126	152	12	1.5	2.0
3	26	9.4	4.5	b4.5	b6.0	7.2	30	110	107	7.5	1.5	2.0
4	15	13	4.8		b6.0	6.8	26	104	101	7.0	1.7	2.6
5	11	13	4.8		b6.0	6.8	23	82	101	6.0	1.7	9.5
6	9.4		5.2		b6.5	5.8	21	69	87	5.5	1.7	13
7	6.6		4.6		b6.5	6.0	20	72	81	2.3	1.7	14
8	5.3	c12 -	4.3	b5.0	6.8	6.5	20	69	124	2.3	1.5	13
9	4.3		4.3		7.2	6.5	20	32	106	2.0	1.5	12
10	2.8		4.3		8.5	6.0	23	27	72	2.0	1.7	12
11	2.4		*4.3		8.5	4.6	30	52	72	2.3	1.9	11
12	2.4		b4		9.2	b4.0	26	57	67	2.3	1.9	17
13	6.6	c10	b4	b4.5	8.5	b4.0	23	212	59	2.3	1.9	24
14	6.0		b4		7.8	b5.0	20	172	62	2.0	1.7	26
15	5.3		b4		b7.5	6.8	24	115	45	c2.0	1.7	29
16	4.8	c10			b7.0	7.2	21	90	33		1.7	30
17	4.3	c10			b7.0	7.0	20	95	26		1.7	30
18	4.3	c10	b4	b4.5	b7.5	8.8	19	98	62	c1.5	1.7	27
19	3.8	c10			b7.5	8.2	17	64	120		1.7	29
20	3.3	*10			b7.5	8.2	20	50	95		1.7	27
21	5.3	10	b5.5	b4.5	7.8	8.2	21	52	69		1.7	26
22	6.6	10	5.0	4.6	8.5	8.5	23	57	58		1.9	24
23	6.0	b9	5.0	4.6	8.5	8.5	24	55	46	c2.0	2.0	13
24	6.0	b9	5.5	4.6	7.8	8.5	30	76	45		2.0	12
25	6.6	8.8	5.0	6.5	8.5	7.2	37	139	29		1.8	12
26	7.9	8.2	5.0	6.5	7.8	10	30	118	21		1.8	15
27	7.2	7.5	5.0	6.5	7.8	11	37	170	12		2.0	16
28	7.9	5.5	5.0	6.5	*8.2	12	49	137	14	c3.0	2.0	15
29	9.4	5.0	5.0	6.5	-	12	79	77	16		2.0	14
30	7.9	4.6	5.0	*b7.0	-	21	107	107	12		2.0	12
31	7.2	-	5.0	b6.5	-	20	-	95	-	1.7	2.0	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	236.6	25	2.4	7.63	469
November	286.8	-	4.6	9.56	569
December	141.5	5.5	-	4.56	281
Calendar year 1940	10,865.6	350	.8	29.7	21,560
January	156.8	7.0	-	5.06	311
February	208.8	9.2	6.0	7.46	414
March	258.6	21	4.0	8.34	513
April	894	107	17	29.8	1,770
May	2,892	212	27	93.3	5,740
June	2,074	180	12	69.1	4,110
July	100.9	12	-	3.25	200
August	54.8	2.0	1.5	1.77	109
September	491.1	30	2.0	16.4	974
Water year 1940-41	7,795.9	212	-	21.4	15,460

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
c Backwater from beaver dam; discharge computed on basis of weather records and observer's notes.

Willow Creek at Anfinson Ranch, near Corvallis, Mont.

Location.- Staff gage, lat. 46°18', long. 114°01', in NW¼ sec. 7, T. 6 N., R. 19 W., at Anfinson Ranch, 5 miles southeast of Corvallis.

Drainage area.- 23.2 square miles.

Records available.- April 1938 to September 1941. April 1920 to May 1924 at site about 1 mile upstream; records not equivalent.

Extremes.- Maximum discharge observed during year, 16 second-feet June 1-4; minimum observed, 0.3 second-foot May 11-24, Aug. 5-11, 17-21.
1938-41: Maximum discharge observed, 73 second-feet June 19, 1938; minimum observed, 0.1 second-foot Sept. 11, 1938, Aug. 13 to Sept. 13, 1939.

Remarks.- Records fair. Gage read once daily. Many diversions above station for irrigation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	1.0	5.1	3.2	3.7	4.1	1.5	2.0	16	6.5	1.0	0.5
2	1.0	1.0	5.1	3.2	3.7	4.1	1.5	2.2	16	5.6	1.0	.5
3	1.0	1.0	5.1	b3.2	3.7	4.1	1.5	2.2	16	5.1	1.0	.5
4	1.0	1.0	5.1	b3.2	3.7	2.8	1.5	2.2	16	5.1	1.0	.5
5	1.0	1.0	4.8	b3.2	3.7	2.8	1.5	2.2	15	5.1	.3	.5
6	1.0	1.0	4.6	3.7	3.7	2.8	1.5	2.2	14	5.1	.3	.5
7	1.0	1.0	4.6	3.7	3.7	2.8	1.5	2.2	14	5.1	.3	.5
8	1.0	1.0	4.8	3.5	3.7	2.8	1.5	2.2	14	5.1	.3	.5
9	1.0	1.0	3.9	3.5	3.7	2.8	1.5	1.0	14	5.1	.3	.5
10	1.0	1.0	2.8	3.2	3.7	2.8	1.5	1.0	13	5.1	.3	.5
11	1.0	1.0	*2.8	3.2	3.9	2.8	1.5	.3	13	5.1	.3	.5
12	1.0	1.0	b2.8	3.2	4.1	2.8	1.5	.3	12	5.1	.9	.5
13	1.0	2.0	b2.8	3.2	4.3	2.8	1.5	.3	11	4.3	.9	.5
14	1.0	2.0	b2.5	3.0	4.3	2.8	1.5	.3	10	4.3	.9	.5
15	1.0	2.0	b2.5	2.8	4.3	2.8	1.5	.3	8.5	3.7	.9	.5
16	1.0	2.0	b2.5	2.8	4.3	2.8	1.5	.3	8.5	3.7	.9	.5
17	1.0	2.6	b2.5	2.8	4.3	2.8	1.5	.3	10	3.5	.3	.6
18	1.0	3.0	b3.0	2.8	4.1	2.8	1.8	.3	12	3.2	.3	.6
19	1.0	*3.0	b3.5	2.8	4.1	2.8	2.2	.3	14	2.8	.3	.6
20	1.0	3.5	4.6	2.8	3.9	2.8	2.2	.3	14	2.4	.3	.6
21	1.0	3.2	4.3	2.8	3.9	2.8	2.2	.3	13	2.0	.3	.6
22	1.0	3.2	3.9	2.8	3.7	2.8	2.2	.3	12	1.8	.4	.6
23	1.0	3.2	3.0	2.8	3.7	2.8	2.4	.3	10	1.8	.4	.6
24	1.0	3.5	2.8	2.8	3.7	2.8	2.4	.3	8.5	1.0	.4	.6
25	1.0	3.9	3.0	2.8	3.7	2.8	2.6	.5	7.0	1.0	.4	1.8
26	1.0	4.3	3.0	2.8	3.7	2.8	2.6	.7	5.9	1.0	.5	1.8
27	1.0	4.8	3.0	2.8	3.7	2.8	2.0	1.2	7.9	1.0	.5	1.8
28	1.0	5.1	3.0	2.8	3.9	2.8	2.0	1.5	9.1	1.0	.5	1.8
29	1.0	5.1	2.8	*2.6	-	2.8	2.0	2.0	9.7	1.0	.5	1.8
30	1.0	5.1	2.9	2.8	-	2.8	2.0	2.8	9.7	1.0	.5	1.8
31	1.0	-	3.1	3.7	-	1.5	-	3.2	-	1.0	.5	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	31.0	1.0	1.0	1.00	61
November	73.5	5.1	1.0	2.45	146
December	110.0	5.1	2.5	3.55	218
Calendar year 1940	1,323.1	16	.2	3.62	2,620
January	94.5	3.7	2.6	3.05	187
February	108.6	4.3	3.7	3.88	215
March	89.4	4.1	1.5	2.88	177
April	54.1	2.6	1.5	1.80	107
May	35.5	3.2	.3	1.15	70
June	353.8	16	5.9	11.8	702
July	104.6	6.5	1.0	3.37	207
August	16.7	1.0	.3	.54	33
September	23.6	1.8	.5	.79	47
Water year 1940-41	1,095.3	16	.3	3.00	2,170

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

Bear Creek near Victor, Mont.

Location.- Water-stage recorder lat. 46°23', long. 114°13', in NE¼ sec. 9, T. 7 N., R. 21 W., 5 miles southwest of Victor. Prior to Aug. 27, 1941, staff gage at same site and datum.

Drainage area.- 26.6 square miles.

Records available.- April 1938 to September 1941.

Extremes.-Maximum discharge observed during year, 578 second-feet May 13 (gage height, 2.40 feet); minimum observed, 4.8 second-feet Aug. 20.
1938-41: Maximum discharge observed, 865 second-feet Apr.18, 1938 (gage height, 3.45 feet, from graph based on observer's readings); minimum observed, 1.1 second-feet Aug. 23, Sept. 9-12, 1940.

Remarks.- Records good except those for periods of ice effect or alteration to control, which are fair. Staff gage read twice daily, October 1 to Aug. 26. No diversion or regulation above gage.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	16	17	10	9.4	10	39	209	253	78	14	6.1
2	24	18	16	10	8.7	10	56	224	205	70	12	5.8
3	43	17	16	9	8.7	12	60	198	166	68	12	6.6
4	32	16	18	9	8.7	10	50	179	152	62	11	12
5	23	16	18	10	8.7	11	45	150	147	75	9.4	48
6	21	15	18	11	9.8	11	37	120	134	62	8.4	62
7	18	15	16	11	9.8	12	35	88	132	55	8.0	52
8	17	15	17	11	9.8	12	41	80	188	48	7.8	46
9	15	16	16	e.7	9.4	12	39	72	130	43	8.0	42
10	13	14	15	9.8	9.8	12	43	75	116	38	7.8	52
11	12	13	10	9.8	9.8	11	50	110	116	35	7.2	45
12	11	13	9	10	9.8	10	45	276	118	35	e7.2	41
13	15	12	9	10	9.8	10	42	482	120	34	e7.7	53
14	15	14	9	10	8.7	12	34	266	103	29	e8.0	57
15	13	16	8	10	9.0	13	38	172	91	26	e7.2	68
16	13	15	8	9.8	10	14	32	147	82	22	e6.9	61
17	11	19	8	9.4	10	12	35	209	82	22	e6.9	69
18	11	19	10	9.7	9.8	16	32	185	132	20	e5.5	68
19	10	16	14	9.4	9.0	16	36	127	125	18	e5.3	64
20	9.8	16	17	10	9.4	17	32	112	164	18	e4.8	57
21	9.4	17	16	9.4	8.7	16	32	114	114	17	e5.5	49
22	9.4	16	14	9.4	8.7	16	30	152	95	16	5.5	45
23	9.8	14	9.8	8.7	9.0	16	39	188	84	15	6.1	39
24	11	15	12	8.7	9.0	16	59	221	78	18	7.7	35
25	14	15	13	8.7	8.0	15	65	318	68	16	6.6	32
26	17	13	11	8.7	8.4	17	60	240	62	20	7.4	32
27	18	12	11	8.7	9.4	20	88	185	57	16	8.2	48
28	17	11	11	8.7	9.0	29	101	139	70	18	7.4	43
29	15	19	11	8.4	-	27	130	130	90	18	6.6	42
30	14	18	11	11	-	37	166	152	80	17	6.4	39
31	16	-	11	9.8	-	35	-	161	-	15	6.6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	501.4	43	9.4	16.2	0.609	0.70	995
November	461	19	11	15.4	.579	.65	914
December	399.8	18	8	12.9	.485	.56	793
Calendar year 1940	18,709.9	546	1.1	51.1	1.92	26.17	37,120
January	296.8	11	8.4	9.57	.360	.42	589
February	258.3	10	8.0	9.22	.347	.36	512
March	487	37	10	15.7	.590	.68	966
April	1,591	166	30	53.0	1.999	2.22	3,160
May	5,481	482	72	177	6.65	7.67	10,870
June	3,554	253	57	118	4.44	4.95	7,050
July	1,044	78	15	33.7	1.27	1.46	2,070
August	239.1	14	4.8	7.71	.290	.33	474
September	1,319.5	69	5.8	44.0	1.65	1.84	2,620
Water year 1940-41	15,632.9	482	4.8	42.8	1.61	21.84	31,010

e Control undergoing alteration; discharge computed on basis of gage-height record and record of changes in stage caused by construction.
Note.- Stage-discharge relation affected by ice Nov. 11-14, 20, 21, 23, Dec. 11-20, Dec. 30 to Jan. 5, Feb. 5, 15, 16, Mar. 11-14.

Burnt Fork Creek near Stevensville, Mont.

Location.- Staff gage, lat. 46°28', long. 113°57', in SW¼ sec. 11, T. 8 N., R. 19 W., at highway bridge, 8 miles southeast of Stevensville.

Drainage area.- 74 square miles.

Records available.- May 1920 to August 1924, April 1938 to September 1941.

Extremes.- Maximum discharge observed during year, 119 second-feet June 4 (gage height, 1.36 feet); minimum daily, 8 second-feet Dec. 15-17.
1920-24, 1938-41: Maximum discharge observed, 641 second-feet May 28, 1938 (gage height, 2.92 feet); minimum observed, 5.6 second-feet (result of discharge measurement) Jan. 18, 1940.

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

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	19	a16	a13	12	13	18	29	a105	48	24	a19
2	24	19	16	b12	a12	a12	*19	33	101	48	24	18
3	24	a19	16	b11	12	12	18	38	98	48	a25	18
4	22	19	16	b10	13	12	18	a36	119	a46	26	20
5	20	14	16	b10	b12	12	18	35	103	44	24	20
6	a20	18	16	b12	b11	12	a17	29	93	a40	24	22
7	20	18	16	b15	b12	12	16	27	91	37	24	a22
8	20	19	a16	b16	12	12	16	26	a89	35	23	22
9	20	19	16	b14	a12	a12	17	27	87	34	24	22
10	19	a18	16	b13	12	b12	18	27	80	34	a24	22
11	19	a17	b13	b12	13	b11	19	a35	76	33	23	22
12	19	b15	*b10	b11	13	b11	20	38	73	33	22	23
13	a19	b13	b9	b11	13	b11	a19	63	64	a36	23	21
14	19	b17	b9	b12	b12	b12	18	60	57	38	23	a21
15	19	b18	b8	b13	b10	b13	20	49	a54	38	20	21
16	19	b18	b8	13	b10	a13	18	46	52	35	19	22
17	19	b19	b8	13	b11	13	15	46	50	34	a18	21
18	18	20	b9	13	b11	14	14	a44	56	35	18	21
19	18	*b16	b12	a14	b12	13	12	42	66	33	18	21
20	a18	b15	b17	14	b12	13	a14	41	78	a32	16	22
21	18	b17	b18	13	12	13	15	42	72	31	16	a21
22	18	b17	b16	13	12	13	16	42	a66	30	16	20
23	18	b13	b17	13	a12	a13	17	42	59	30	18	20
24	18	b14	b15	13	12	13	23	46	56	32	a18	18
25	19	b16	a14	13	12	13	24	a60	51	32	18	19
26	19	17	14	a13	b11	13	22	50	49	30	18	18
27	a19	17	14	13	13	13	a25	57	49	a30	20	20
28	19	17	14	13	*12	11	28	57	56	31	21	a19
29	19	18	a14	b13	-	15	28	56	a60	28	20	18
30	18	17	b13	*b13	-	a16	28	a56	50	26	20	18
31	19	-	14	b12	-	18	-	57	-	25	a19	-

Month	Second-feet-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	604	24	18	19.5	1,200
November	513	20	13	17.1	1,020
December	426	18	8	13.7	845
Calendar year 1940	10,202	121	6	27.9	20,230
January	394	16	10	12.7	781
February	333	13	10	11.9	660
March	396	18	11	12.8	785
April	570	28	12	19.0	1,130
May	1,336	63	26	43.1	2,650
June	2,160	119	49	72.0	4,280
July	1,086	48	25	35.0	2,150
August	646	26	16	20.8	1,280
September	611	23	18	20.4	1,210
Water year 1940-41	9,075	119	8	24.9	17,990

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

Flathead River at Flathead, British Columbia

(International gaging station)

Location.- Staff gage, lat. 49°00', long. 114°29', at highway bridge 0.2 mile north of international boundary, 0.2 mile northwest of Flathead, British Columbia, and 7 miles northwest of Trail Creek, Mont.

Drainage area.- 450 square miles.

Records available.- March 1929 to September 1941 (except during winter).

Extremes.- Maximum discharge observed during period of record, 2,930 second-feet May 2 (gage height, 3.92 feet); minimum discharge observed, 179 second-feet Aug. 22, 23, 25 (gage height, 1.14 feet); lower discharge may have occurred during winter, when no records were obtained.

1929-41: Maximum discharge observed, 10,600 second-feet June 17, 1933 (gage height, 6.90 feet); minimum observed, 65 second-feet Apr. 9, 1929; minimum gage height observed, 0.76 foot Apr. 9, 1929, Apr. 2, 3, 1937.

Remarks.- Records good. Gage read once daily.

Cooperation.- This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Rating table, Apr. 7 to Sept. 30 (gage height, in feet, and discharge, in second-feet)

1.1	165	2.3	910	3.5	2,280
1.4	280	2.6	1,190	3.8	2,740
1.7	450	2.9	1,510	4.2	3,420
2.0	665	3.2	1,870		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	2,580	1,620	745	264	186
2							-	2,930	2,000	745	256	193
3							-	2,430	1,510	665	256	193
4							-	2,340	1,440	650	264	200
5							-	2,140	1,190	635	256	200
6							-	1,770	1,190	620	248	216
7							859	1,560	1,130	562	232	208
8							893	1,400	1,090	506	224	208
9							1,070	1,290	1,070	464	216	208
10							1,150	1,230	1,000	450	208	200
11	†220						1,230	1,290	910	464	216	248
12							1,190	1,920	893	450	208	256
13							1,270	2,640	859	402	224	256
14							1,250	2,360	893	390	216	390
15							1,400	2,250	825	366	216	492
16		†216					1,470	2,080	809	342	216	492
17							1,290	2,280	745	366	208	548
18							1,070	2,800	729	342	208	859
19							1,050	2,080	729	330	200	842
20							1,040	1,910	729	330	193	842
21							1,110	1,740	729	320	186	809
22							1,240	1,620	665	300	179	793
23							1,490	1,620	650	290	179	777
24							1,620	1,740	642	342	186	745
25							1,680	1,970	681	320	179	650
26							1,740	2,000	665	310	186	605
27							1,870	1,870	620	280	193	620
28							1,870	1,620	590	280	186	635
29							2,000	1,510	665	272	186	605
30							2,210	1,400	745	272	193	576
31							-	1,400	-	264	186	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October							
November							
December							
Calendar year							
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-
April 7-30	33,062	2,210	859	1,380	3.07	2.74	65,580
May	59,770	2,930	1,230	1,930	4.29	4.95	118,600
June	28,013	2,000	590	934	2.08	2.32	55,560
July	13,074	745	264	422	.94	1.08	25,930
August	6,568	264	179	212	.47	.54	13,030
September	14,052	859	186	468	1.04	1.16	27,870
The period	-	-	-	-	-	-	306,600

† Result of discharge measurement.

Flathead River near Columbia Falls, Mont.

Location.- Water-stage recorder, lat. 48°29', long. 114°05', in NW¼ sec. 7, T. 31 N., R. 19 W., three-quarters of a mile upstream from Middle Fork and 10 miles northeast of Columbia Falls.

Drainage area.- 1,620 square miles.

Records available.- September 1910 to September 1917, April 1929 to September 1941.

Average discharge.- 13 years (1910-17, 1935-41) 2,727 second-feet.

Extremes.- Maximum discharge during year, 8,010 second-feet May 3 (gage height, 6.71 feet); minimum, 345 second-feet Dec. 17 (stage-discharge relation affected by ice).
1910-17, 1929-41: Maximum discharge, 29,500 second-feet June 20, 1916 (gage height, 9.8 feet, site and datum then in use); minimum, 323 second-feet Feb. 9, 1939 (stage-discharge relation affected by ice).

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

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.3	360	3.0	1,430	5.0	4,090
1.6	460	3.5	1,910	6.0	6,240
2.0	670	4.0	2,500	6.7	8,010
2.5	1,030	4.5	3,220		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	852	S38	599	b515	545	510	1,610	6,000	5,000	2,440	955	62e
2	810	824	588	b445	525	550	1,810	7,230	5,100	2,370	955	640
3	796	803	577	b410	515	555	1,910	8,010	4,890	2,370	948	677
4	789	782	572	b440	492	555	1,960	7,490	4,680	2,310	902	698
5	775	768	577	b525	469	545	2,020	6,730	4,480	2,190	873	761
6	761	740	594	555	436	540	2,080	6,000	4,280	2,080	845	817
7	740	740	*599	572	444	540	2,080	5,100	4,090	1,960	817	880
8	726	761	594	582	464	566	2,080	4,480	4,000	1,860	803	866
9	712	740	582	572	515	577	2,250	4,090	4,000	1,810	782	859
10	698	640	572	545	500	560	2,500	3,720	3,720	1,710	775	873
11	719	594	505	540	496	545	2,700	3,720	3,550	1,660	747	925
12	775	b495	452	b520	500	520	2,770	4,090	3,380	1,610	733	1,030
13	1,070	b425	417	b525	492	496	2,840	6,240	3,380	1,560	747	1,140
14	1,030	b475	b400	604	464	505	2,910	6,980	3,380	1,480	782	1,260
15	955	*b540	b400	582	420	545	2,910	6,730	3,380	1,430	768	1,520
16	940	b595	b380	560	408	525	2,980	6,240	3,300	1,380	761	1,660
17	910	b630	b360	555	417	545	2,910	6,000	3,140	1,340	747	1,610
18	880	658	b420	582	424	566	2,700	7,490	2,980	1,300	726	1,660
19	852	622	b500	594	460	577	2,500	6,980	2,910	1,300	698	2,020
20	831	582	b580	566	487	588	2,370	6,000	2,770	1,260	670	2,130
21	810	634	b680	a560	464	594	2,310	5,210	2,630	1,220	652	1,960
22	796	604	b720	a560	460	610	2,560	4,890	2,500	1,180	640	1,810
23	803	604	b720	a460	428	628	2,840	4,890	2,310	1,100	646	1,710
24	796	604	719	b405	402	652	3,300	5,100	2,310	1,100	646	1,710
25	803	610	658	b385	417	705	3,550	6,240	2,500	1,140	646	1,710
26	803	604	634	a470	448	768	3,810	6,730	2,560	1,100	646	1,660
27	831	604	640	*555	464	838	4,180	6,000	2,370	1,030	652	1,760
28	810	604	616	540	464	910	4,380	5,540	2,250	1,030	664	1,760
29	789	622	604	520	-	1,030	4,680	5,100	2,310	992	652	1,760
30	789	610	582	496	-	1,140	5,210	4,680	2,440	992	640	1,710
31	852	-	572	515	-	1,340	-	4,780	-	992	640	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	25,503	1,070	698	823	0.508	0.59	50,580
November	19,352	838	425	645	.398	.44	38,380
December	17,413	720	360	562	.347	.40	34,540
Calendar year 1940	719,858	13,200	360	1,967	1.21	16.56	1,428,000
January	16,255	604	385	524	.323	.37	32,240
February	13,020	545	402	465	.287	.30	25,820
March	20,125	1,340	496	649	.401	.46	39,920
April	84,710	5,210	1,610	2,824	1.74	1.94	168,000
May	178,480	8,010	3,720	5,757	3.55	4.09	354,000
June	100,590	5,100	2,250	3,353	2.07	2.31	199,500
July	47,296	2,440	992	1,526	.942	1.09	93,810
August	23,158	955	640	747	.461	.53	45,930
September	40,204	2,130	628	1,340	.827	.92	79,740
Water year 1940-41	586,106	8,010	360	1,606	.991	13.44	1,162,000

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

Flathead River at Columbia Falls, Mont.

Location.- Water-stage recorder, lat. 48°22', long. 114°11', in SW¼ sec. 17 T. 30 N., R. 20 W., 200 feet downstream from highway bridge at Columbia Falls and 5 miles downstream from South Fork. Datum of gage is 2,978.00 feet above mean sea level, datum of 1929 (levels by Corps of Engineers, U. S. Army).

Drainage area.- 4,440 square miles.

Records available.- May 1922 to September 1923 (fragmentary), June 1928 to September 1941.

Average discharge.- 13 years (1928-41), 8,520 second-feet.

Extremes.- Maximum discharge during year, 26,400 second-feet May 14 (gage height, 9.06 feet); minimum, 899 second-feet Dec. 16 (gage height, 0.07 foot).
1922-23, 1928-41: Maximum discharge, 102,000 second-feet June 1, 1923 (gage height, 17.3 feet); minimum, 798 second-feet Dec. 8, 1929 (gage height, -0.08 foot).
Maximum stage known, 22.7 feet in June 1894, from floodmarks (discharge, about 150,000 second-feet, from rating curve extended above 80,000 second-feet by logarithmic plotting).

Remarks.- Records excellent except those for periods of ice effect, which are fair. No diversion.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0.1	920	2.0	2,970	5.0	9,560
.6	1,300	3.0	4,630	7.0	16,800
1.2	1,900	4.0	6,720	9.0	25,900

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,080	2,080	a1,570	1,530	1,450	1,420	5,410	19,300	18,000	6,960	2,610	1,670
2	2,020	2,020	h1,540	1,400	1,460	1,550	6,250	22,000	20,200	6,720	2,540	1,670
3	1,960	1,960	h1,580	1,240	1,420	*1,680	6,480	23,900	18,900	6,250	2,470	1,790
4	1,960	1,900	h1,640	1,240	1,380	1,790	6,720	22,000	17,600	6,030	2,400	2,020
5	1,960	h1,900	h1,680	1,420	1,310	1,790	6,720	20,200	16,800	6,030	2,340	2,200
6	1,960	h1,960	a1,700	1,520	1,190	1,840	6,960	18,400	16,000	5,610	2,270	2,270
7	1,900	h1,960	*1,720	1,650	1,270	1,840	6,720	16,000	14,800	5,410	2,200	2,340
8	1,840	h1,960	1,680	1,540	1,330	1,900	6,480	14,100	14,500	5,210	2,140	2,270
9	1,790	h1,840	1,680	1,500	1,390	2,020	6,720	13,000	13,700	5,010	2,080	2,270
10	1,790	a1,740	1,670	1,410	1,440	2,020	7,470	11,600	13,000	4,720	2,080	2,200
11	1,790	a1,630	1,500	1,340	1,450	1,960	8,310	11,600	11,900	4,540	2,020	2,270
12	2,080	h1,550	1,340	1,340	1,440	1,840	8,610	13,700	11,600	4,440	1,960	2,400
13	2,400	h1,400	1,190	1,370	1,420	1,790	8,610	20,200	11,600	4,260	1,960	2,680
14	2,400	h1,400	1,050	1,440	1,360	1,740	8,920	25,900	11,600	4,080	2,020	2,820
15	2,340	*1,490	1,070	1,500	1,300	1,840	8,920	23,900	11,200	3,910	1,960	3,350
16	2,270	1,500	1,000	1,490	1,250	1,840	8,920	20,600	10,600	3,750	1,960	3,750
17	2,200	1,550	1,010	1,480	1,260	1,790	8,610	19,300	9,890	3,670	1,900	3,750
18	2,140	1,640	1,100	1,500	1,290	1,840	7,740	22,000	9,240	3,590	1,840	3,750
19	2,080	1,520	1,240	1,580	1,380	1,960	7,210	20,600	8,920	3,510	1,790	4,170
20	2,020	1,580	1,380	1,580	1,430	2,020	6,720	17,600	8,310	3,430	1,790	4,440
21	1,960	1,510	1,550	1,500	1,420	2,080	6,720	16,000	7,740	3,350	1,740	4,260
22	1,960	1,560	1,750	1,410	1,370	2,080	7,210	14,800	7,210	3,200	1,680	4,000
23	1,900	1,520	1,880	1,200	1,330	2,200	8,310	14,800	6,960	3,040	1,740	3,830
24	1,900	1,540	1,950	1,150	1,310	2,270	10,200	16,000	6,720	2,970	1,790	3,830
25	1,960	1,520	1,960	1,300	1,320	2,400	11,600	18,900	7,210	2,970	1,740	3,910
26	1,960	1,540	1,900	*1,490	1,370	2,610	11,900	20,200	6,960	2,970	1,740	3,910
27	1,960	a1,590	1,900	1,650	1,330	2,900	12,600	18,900	6,480	2,820	1,740	4,260
28	1,900	h1,640	1,840	1,650	1,340	3,120	13,400	16,800	6,250	2,820	1,790	4,440
29	1,960	h1,660	1,840	1,570	-	3,510	14,800	15,600	6,720	2,750	1,740	4,350
30	2,020	h1,600	1,740	1,500	-	4,000	16,800	15,600	7,210	2,820	1,680	4,350
31	2,080	-	1,670	1,440	-	4,630	-	16,800	-	2,680	1,680	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	62,540	2,400	1,790	2,017	0.454	0.52	124,000
November	50,260	2,080	1,400	1,675	.377	.42	99,690
December	48,320	1,960	1,000	1,559	.351	.40	95,840
Calendar year 1940	2,281,020	40,100	900	6,232	1.40	19.09	4,524,000
January	44,930	1,650	1,150	1,449	.326	.38	89,120
February	38,010	1,460	1,190	1,358	.306	.32	75,390
March	68,270	4,630	1,420	2,202	.496	.57	135,400
April	262,040	16,800	5,410	8,735	1.97	2.20	519,700
May	560,300	25,900	11,600	18,070	4.07	4.69	1,111,000
June	337,820	20,200	6,250	11,260	2.54	2.83	670,100
July	129,520	6,960	2,680	4,178	.941	1.08	256,900
August	61,390	2,610	1,680	1,980	.446	.51	121,800
September	95,220	4,440	1,670	3,174	.715	.80	188,900
Water year 1940-41	1,758,620	25,900	1,000	4,818	1.09	14.72	3,488,000

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
h Computed from staff-gage readings.
Note.- Stage-discharge relation affected by ice Nov. 12-26, Dec. 16-24, Jan. 1 to Mar. 6.

Flathead River near Kalispell, Mont.

Location.- Chain gage, lat. 48°13', long. 114°15', in NE¼ sec. 10, T. 28 N., R. 21 W., at highway bridge, 3 miles east of Kalispell. Datum of gage is at mean sea level (Somers datum).

Records available.- May 1928 to September 1941.

Extremes.- Maximum elevation observed during year, 2,907.94 feet May 14; minimum observed, 2,899.75 feet Dec. 17.
1928-41: Maximum elevation observed, 2,913.95 feet May 27, 1928; minimum observed, that of Dec. 17, 1940.

Remarks.- Records fragmentary but reliable. They were collected for profile study of Flathead River above Flathead Lake. Gage read once daily.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	1.04	0.66	0.74	-	0.46	2.80	6.82	-	3.43	1.34	0.68
2	0.98	-	.66	.68	0.50	.60	3.24	7.25	6.54	3.34	1.28	.70
3	-	-	.68	.60	.46	.74	-	-	6.85	-	1.24	.76
4	.94	.94	-	.50	.40	.82	3.46	7.45	-	3.22	1.20	-
5	.94	.94	.72	.44	.28	.82	3.52	7.14	6.42	3.10	-	.88
6	.92	.94	.76	-	.20	.84	3.60	-	6.24	2.98	1.10	.94
7	.90	.94	-	.68	-	-	3.60	6.34	6.14	-	1.06	1.00
8	.86	.92	.72	.68	-	.88	-	5.88	5.92	2.78	-	-
9	-	-	.72	.70	.48	-	3.50	5.62	-	2.62	1.00	1.02
10	.76	-	.70	.70	-	.96	3.72	5.20	5.52	2.26	.96	1.08
11	.76	.50	-	-	.54	.96	-	-	5.32	1.88	.94	1.14
12	-	.44	.24	.68	.54	.92	4.15	5.40	5.10	-	-	1.20
13	1.20	.42	.10	.66	.52	.84	4.25	-	5.06	2.28	.90	-
14	1.26	.38	-.08	-	.44	.82	4.24	7.94	5.05	2.22	.88	1.46
15	1.20	-	-.17	.60	.32	-	4.24	7.75	-	2.10	-	1.56
16	1.16	.62	-.21	.58	-	.66	4.18	7.20	4.92	2.00	.88	1.70
17	1.10	-	-.25	.54	.18	-	-	6.90	4.60	-	.86	-
18	1.06	.60	-	.60	.20	.80	3.95	7.35	4.45	1.94	.84	1.96
19	-	.58	.30	-	.26	.90	-	7.30	4.20	-	-	2.06
20	1.00	.58	-	.72	.30	.92	3.68	7.80	4.10	1.80	.76	2.16
21	.98	.56	.34	-	.20	.98	3.50	6.28	-	1.76	.72	2.28
22	.94	.56	.36	.46	-	.98	3.62	6.10	-	1.68	-	-
23	-	-	.90	.42	.02	1.06	3.98	5.96	3.55	1.60	.76	2.12
24	.90	.60	.92	.40	.10	1.18	4.72	-	3.55	1.56	.78	2.22
25	.90	.64	-	-	.52	-	4.98	6.68	3.58	-	.76	-
26	-	.64	.90	.62	-	1.34	-	6.82	3.60	1.52	.74	2.06
27	.92	.64	-	.62	.38	1.42	5.26	6.95	3.54	1.48	.72	2.32
28	.92	.64	.86	.64	.40	1.64	5.52	6.50	-	1.44	.74	2.34
29	.92	-	.80	-	-	-	5.78	-	3.45	1.40	-	2.34
30	.92	.66	.76	.38	-	2.06	6.30	6.06	3.62	1.38	.74	2.40
31	-	-	.76	.36	-	2.54	-	6.32	-	1.36	-	-

Note.- Add 2,900 feet to obtain elevation above mean sea level (Somers datum).

Flathead River at Demersville, near Kalispell, Mont.

Location.- Wire-weight gage, lat. 48°10', long. 114°16', in NE¼ sec. 28, T. 28 N., R. 21 W., at Demersville, 3 miles south of Kalispell. Datum of gage is at mean sea level (Somers datum).

Records available.- April 1909 to July 1912, April 1928 to September 1941.

Extremes.- Maximum elevation observed during year, 2,893.83 feet June 3; minimum, 2,883.31 feet Mar. 27.
1909-12, 1928-41: Maximum elevation observed, 2,904.94 feet June 17, 1933; minimum, 2,881.86 feet Dec. 18-26, 1936.

Remarks.- Records reliable. They were collected for profile study of Flathead River above Flathead Lake. Gage read once or twice daily. Since April 1938 elevation of water surface has been subject to regulation by Kerr Dam, below outlet of Flathead Lake.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89.45	88.66	87.79	87.10	85.34	83.89	83.74	88.20	93.41	93.29	92.80	91.78
2	89.37	88.57	87.74	87.08	85.33	83.87	84.00	88.98	93.73	93.17	92.74	91.73
3	89.32	88.60	87.67	86.98	85.24	83.86	84.16	89.84	93.83	93.15	92.80	91.68
4	89.38	88.56	87.73	86.90	85.16	83.85	84.22	89.91	93.77	93.13	92.72	91.67
5	89.30	88.50	87.76	86.86	85.10	83.85	84.34	89.70	93.67	93.21	92.60	91.71
6	89.25	88.50	87.77	86.84	85.08	83.83	84.48	89.56	93.55	93.17	-	91.74
7	89.22	88.46	87.73	86.74	84.95	83.79	84.44	89.20	93.47	93.21	92.57	91.82
8	89.21	88.48	87.79	86.73	84.98	83.81	84.44	88.94	93.61	93.23	92.57	91.65
9	89.20	88.34	87.81	86.60	84.88	83.68	84.49	88.83	93.56	93.15	92.56	91.59
10	89.14	88.34	87.85	86.59	84.88	83.69	84.63	88.72	93.51	93.13	92.50	91.61
11	89.15	88.30	87.83	86.56	84.84	83.61	84.75	88.74	93.45	93.11	92.46	91.60
12	89.12	88.28	87.77	86.46	84.77	83.67	85.02	88.98	93.43	93.13	92.50	91.58
13	89.06	88.22	87.75	86.40	84.71	83.53	85.10	89.86	93.47	93.03	92.50	91.57
14	89.06	88.18	87.71	86.38	84.66	83.57	85.19	90.84	93.49	93.05	92.39	91.54
15	89.02	88.20	87.67	86.34	84.57	83.55	85.22	91.78	93.46	93.07	92.28	91.58
16	89.02	88.17	87.55	86.28	84.53	83.47	85.31	92.38	93.41	93.05	92.30	91.58
17	88.96	88.17	87.53	86.20	84.46	83.47	85.29	91.34	93.37	93.05	92.24	91.50
18	89.00	88.08	87.53	86.18	84.43	83.57	85.21	91.78	93.34	93.07	-	91.48
19	88.97	88.05	87.53	86.14	84.39	83.49	85.12	92.15	93.39	93.06	92.22	91.50
20	88.91	87.99	-	86.06	84.37	83.42	85.06	91.94	93.50	93.10	92.16	91.52
21	-	88.01	87.49	86.00	84.24	83.42	85.12	91.78	93.29	93.19	92.10	91.50
22	88.86	87.95	87.51	85.96	84.19	83.35	85.28	91.74	93.20	93.00	92.10	91.50
23	88.86	87.92	87.51	85.88	83.99	83.35	85.64	91.88	93.21	92.97	92.08	91.51
24	88.82	87.89	87.41	85.72	84.01	83.35	86.08	92.11	93.25	93.01	92.05	91.48
25	88.83	-	87.45	85.75	84.01	83.33	86.18	92.58	93.35	92.87	91.98	91.50
26	88.72	87.86	87.37	85.70	83.99	83.35	86.26	93.21	93.29	92.96	91.92	91.54
27	88.70	87.83	87.37	85.61	83.93	83.31	86.42	93.16	93.21	92.91	91.96	91.60
28	88.70	87.87	87.33	85.58	83.91	83.33	86.72	93.06	93.25	92.97	91.90	91.56
29	88.69	87.87	87.27	85.54	-	83.38	87.02	92.86	93.29	92.87	91.88	91.62
30	88.70	87.84	87.23	-	-	83.47	87.82	93.06	93.35	92.85	91.84	91.62
31	88.66	-	87.23	-	-	83.61	-	93.10	-	92.83	91.82	-

Note.- Add 2,800 feet to obtain elevation above mean sea level (Somers datum).

Flathead River at Damon Ranch, near Kalispell, Mont.

Location.- Wire-weight gage, lat. 48°09', long. 114°08', in NW¼ sec. 32, T. 28 N., R. 20 W., at Damon Ranch, 7 miles southeast of Kalispell. Datum of gage is mean sea level (Somers datum).

Records available.- April 1909 to July 1912, May 1928 to September 1941.

Extremes.- Maximum elevation observed during year, 2,893.42 feet June 19, 20; minimum observed, 2,883.18 feet Mar. 26, 27.
1909-12, 1928-41: Maximum elevation observed, 2,900.94 feet June 17, 1933; minimum, 2,881.55 feet Jan. 27-31, 1937.

Remarks.- Records reliable. They are collected for profile study of Flathead River above Flathead Lake. Gage read twice daily. Since April 1938 elevation of water surface has been subject to regulation by Kerr Dam, below outlet of Flathead Lake.

Elevations in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89.38	88.60	87.75	87.04	85.30	83.85	83.42	86.70	92.87	93.15	92.82	91.76
2	89.34	88.57	87.73	87.00	85.25	83.87	83.53	87.26	93.06	93.13	92.78	91.72
3	89.34	88.55	87.69	86.96	85.22	83.82	83.68	87.82	93.14	93.08	92.73	91.76
4	89.37	88.52	87.69	86.92	85.18	83.79	83.70	87.93	93.18	93.12	92.68	91.70
5	89.27	88.50	87.71	86.86	85.12	83.79	83.82	88.00	93.12	93.14	92.64	91.66
6	89.23	88.45	87.73	86.79	85.07	83.77	83.90	88.04	93.04	93.19	92.61	91.65
7	89.20	88.43	87.74	86.73	85.00	83.74	83.90	87.99	93.09	93.14	92.59	91.62
8	89.18	88.43	87.71	86.70	84.95	83.74	83.92	88.03	93.22	93.16	92.56	91.59
9	89.18	88.33	87.77	86.68	84.90	83.69	83.92	88.02	93.23	93.18	92.54	91.57
10	89.16	88.29	87.77	86.59	84.83	83.62	84.06	88.06	93.22	93.14	92.51	91.52
11	89.10	88.22	87.76	86.55	84.79	83.58	84.23	88.16	93.21	93.08	92.49	91.51
12	89.02	88.22	87.75	86.54	84.74	83.55	84.32	88.39	93.23	93.06	92.43	91.55
13	89.01	88.24	87.72	86.38	84.70	83.47	84.39	89.04	93.25	93.02	92.38	91.52
14	89.00	88.15	87.69	86.30	84.63	83.44	84.45	90.04	93.26	93.04	92.34	91.49
15	89.00	88.12	87.65	86.30	84.58	83.42	84.48	90.16	93.22	93.02	92.35	91.48
16	88.96	88.12	87.59	86.28	84.56	83.41	84.55	90.19	93.16	93.00	92.30	91.46
17	88.95	88.08	87.53	86.23	84.46	83.44	84.55	90.28	93.19	93.05	92.25	91.43
18	88.91	88.04	87.50	86.17	84.39	83.42	84.55	90.80	93.23	93.04	92.21	91.43
19	88.89	88.00	87.48	86.14	84.34	83.39	84.53	90.95	93.35	93.06	92.19	91.45
20	88.88	87.96	87.45	86.08	84.29	83.35	84.53	91.02	93.37	93.04	92.14	91.47
21	88.81	87.94	87.44	85.96	84.22	83.32	84.58	91.10	93.20	93.06	92.10	91.47
22	88.74	87.93	87.46	85.91	84.12	83.28	84.65	91.26	93.18	93.01	92.07	91.47
23	88.75	87.88	87.48	85.84	84.00	83.25	84.75	91.41	93.19	92.95	92.09	91.48
24	88.74	87.86	87.48	85.77	84.00	83.24	84.97	91.60	93.18	92.90	92.04	91.47
25	88.74	87.84	87.46	85.75	84.00	83.22	85.14	91.98	93.20	92.89	92.00	91.48
26	88.75	87.84	87.40	85.71	83.96	83.19	85.30	92.27	93.16	92.91	-	91.57
27	88.66	87.84	87.41	85.63	83.92	83.19	85.45	92.33	93.13	92.84	91.89	91.50
28	88.64	87.82	87.36	85.57	83.89	83.23	85.65	92.29	93.27	92.89	91.85	91.49
29	88.64	87.80	87.26	85.47	-	83.22	85.84	92.34	93.31	92.87	91.83	91.53
30	88.63	87.78	87.18	85.44	-	83.30	86.25	92.47	93.21	92.83	91.82	91.58
31	88.63	-	87.11	85.37	-	83.35	-	92.65	-	92.84	91.78	-

Note.- Add 2,800 feet to obtain elevation above mean sea level (Somers datum). During winter period readings occasionally made to ice surface and do not indicate water surface.

Flathead River at Therriault Ferry, near Kalispell, Mont.

Location.- Staff gage, lat. 48°08', long. 114°09', in NW¼ sec. 4, T. 27 N., R. 20 W., at Therriault Ferry, 9 miles southeast of Kalispell. Datum of gage is at mean sea level (Somers datum)

Records available.- October 1934 to September 1941.

Extremes.- Maximum elevation observed during year, 2,893.26 feet June 20; minimum observed, 2,883.17 feet Mar. 25-27.
1934-41: Maximum elevation observed, 2,894.23 feet May 16, 1936; minimum observed, 2,881.28 feet Jan. 21-23, 1937.

Remarks.- Records reliable. They are collected for profile study of Flathead River above Flathead Lake. Gage read twice daily. Since April 1938 the elevation of water surface has been subject to regulation by Kerr Dam, below outlet of Flathead Lake.

Elevations in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89.36	88.52	87.76	87.03	85.34	83.77	83.28	86.04	92.60	93.10	92.80	91.76
2	89.34	88.49	87.66	86.97	85.22	83.77	83.38	86.45	92.77	93.03	92.72	91.76
3	89.33	88.46	87.64	86.89	85.18	83.77	83.49	86.86	92.88	93.03	92.70	91.75
4	89.31	88.44	87.66	86.85	85.12	83.75	83.58	87.11	92.93	93.06	92.67	91.73
5	89.21	88.42	87.66	86.81	85.08	83.73	83.62	87.27	92.89	93.09	92.65	91.69
6	89.25	88.40	87.68	86.77	85.04	83.72	83.67	87.45	92.85	93.11	92.62	91.62
7	89.21	88.38	87.69	86.71	84.95	83.70	83.70	87.55	92.89	93.11	92.59	91.59
8	89.17	88.28	87.72	86.67	84.88	83.69	83.74	87.60	92.96	93.10	92.57	91.60
9	89.13	88.26	87.74	86.63	84.83	83.66	83.78	87.71	93.03	93.08	92.54	91.55
10	89.09	88.24	87.72	86.58	84.80	83.61	83.84	87.79	93.04	93.06	92.51	91.51
11	89.05	88.22	87.74	86.48	84.75	83.55	83.92	87.92	93.05	93.06	92.46	91.48
12	89.01	88.20	87.73	86.39	84.72	83.53	84.02	88.10	93.08	93.05	92.47	91.46
13	88.98	88.18	87.65	86.35	84.67	83.50	84.08	88.60	93.11	93.02	92.41	91.48
14	88.96	88.14	87.59	86.31	84.60	83.46	84.14	89.21	93.13	93.03	92.37	91.47
15	88.94	88.13	87.57	86.27	84.54	83.42	84.19	89.48	93.08	93.02	92.31	91.47
16	88.92	88.09	87.54	86.20	84.50	83.39	84.26	89.54	93.02	93.03	92.29	91.45
17	88.90	87.99	87.49	86.14	84.44	83.37	84.30	89.84	93.05	93.02	92.24	91.43
18	88.88	88.01	87.45	86.10	84.38	83.34	84.34	90.26	93.12	93.02	92.24	91.42
19	88.87	87.97	87.43	86.03	84.33	83.32	84.37	90.51	93.20	93.04	92.23	91.44
20	88.86	87.88	87.41	85.99	84.26	83.28	84.38	90.59	93.24	93.04	92.17	91.46
21	88.84	87.89	87.41	85.93	84.19	83.25	84.41	90.81	93.12	93.04	92.14	91.45
22	88.81	87.84	87.43	85.86	84.13	83.23	84.44	90.95	93.06	93.03	92.09	91.42
23	88.77	87.78	87.37	85.78	84.01	83.22	84.48	91.11	93.07	92.94	92.06	91.44
24	88.74	87.78	87.34	85.69	84.03	83.19	84.66	91.37	93.11	92.96	92.06	91.45
25	88.71	87.79	87.30	85.68	83.99	83.17	84.82	91.67	93.15	92.94	91.99	91.49
26	88.67	87.80	87.32	85.65	83.93	83.17	84.99	91.92	93.12	92.90	91.93	91.54
27	88.63	87.78	87.29	85.59	83.86	83.18	85.10	92.01	93.09	92.86	91.87	91.52
28	88.60	87.77	87.21	85.63	83.81	83.19	85.23	92.02	93.13	92.89	91.84	91.51
29	88.58	87.79	87.19	85.46	-	83.19	85.40	92.09	93.19	92.88	91.82	91.55
30	88.56	87.76	87.15	85.41	-	83.20	85.67	92.17	93.17	92.82	91.81	91.63
31	88.54	-	87.11	85.36	-	83.25	-	92.36	-	92.81	91.79	-

Note.- Add 2,800 feet to obtain elevations above mean sea level (Somers datum).

Flathead River near Holt, Mont.

Location.- Staff gage, lat. 48°06', long. 114°06', in NE¼ sec. 22, T. 27 N., R. 20 W., at Keller Ranch near Holt, Mont. Datum of gage is at mean sea level (Somers datum).

Records available.- April 1909 to July 1912, June 1928 to September 1937, October 1939 to September 1941.

Extremes.- Maximum elevation observed during year, 2,893.26 feet June 20; minimum observed, 2,883.10 feet Mar. 26, 27.
1909-12, 1928-37, 1939-41: Maximum elevation, 2,897.35 feet May 29, 30, 1928 (from floodmark); minimum observed, 2,881.24 feet Jan. 25-28, 1930.

Remarks.- Records reliable. They are collected for profile study of Flathead River above Flathead Lake. Since April 1938 elevation of water surface has been subject to regulation by Kerr Dam, below outlet of Flathead Lake.

Elevations, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	88.52	87.71	87.02	85.31	83.74	83.14	85.48	92.48	93.08	92.84	91.72
2	-	-	87.69	86.96	-	83.78	83.20	85.86	92.58	93.02	92.78	91.72
3	89.24	88.46	87.66	86.92	85.16	83.75	83.32	86.22	92.74	93.00	92.74	-
4	89.30	88.45	-	86.86	85.10	83.73	83.38	86.56	92.80	93.00	92.70	-
5	89.22	88.44	-	86.80	85.08	d83.62	83.42	86.80	92.78	93.08	92.64	91.70
6	89.17	88.42	87.66	86.76	-	-	83.46	87.00	92.83	93.08	92.64	91.66
7	89.14	88.38	87.66	86.72	84.92	83.64	83.56	87.22	-	93.16	92.58	91.58
8	89.12	88.36	87.71	86.66	84.86	83.62	83.60	87.36	92.90	93.10	92.58	91.58
9	89.08	88.32	87.74	d86.70	84.82	83.62	83.63	87.50	92.96	93.10	92.55	-
10	89.04	88.26	-	86.52	84.78	83.52	83.66	87.64	92.98	93.04	92.50	91.50
11	89.00	-	87.72	-	84.72	83.54	83.76	87.74	-	93.02	92.45	91.46
12	88.94	-	87.69	86.42	84.68	83.50	83.84	87.98	93.02	93.04	92.46	91.44
13	88.94	-	87.66	86.34	84.66	83.44	83.92	88.16	93.06	93.00	92.43	91.44
14	88.93	88.10	87.60	86.27	84.56	-	83.96	88.70	93.10	92.98	-	91.46
15	-	88.09	87.59	86.25	84.52	83.42	84.06	89.06	93.02	93.00	92.31	91.46
16	-	88.06	87.54	86.16	84.46	83.38	84.08	89.38	92.98	-	92.32	-
17	-	88.00	87.48	86.11	84.42	83.36	-	89.58	93.04	93.00	92.28	91.46
18	88.86	87.96	87.43	86.10	84.36	83.32	84.16	90.02	93.08	93.06	92.26	91.42
19	88.84	87.92	87.37	-	84.30	83.28	84.22	90.16	93.16	-	-	91.42
20	88.80	87.88	87.35	85.96	84.22	-	84.26	90.52	93.26	93.08	92.18	91.42
21	88.76	-	87.36	-	-	83.22	84.26	90.64	93.11	93.08	92.16	91.42
22	88.72	87.86	87.38	85.82	84.12	83.20	84.30	90.80	-	-	-	91.42
23	88.68	87.82	87.36	-	83.98	83.20	84.35	91.00	93.10	-	92.10	-
24	88.66	87.80	87.32	85.67	83.96	83.16	84.44	91.22	93.08	-	92.06	91.44
25	-	87.81	87.34	-	83.94	83.12	84.54	91.46	93.12	92.98	-	-
26	-	87.76	87.28	85.62	-	83.10	-	91.74	93.12	92.88	-	91.54
27	88.58	87.77	-	85.54	83.86	83.10	-	91.84	-	-	-	91.50
28	88.58	87.74	87.22	85.49	83.80	83.12	84.92	91.94	93.14	92.98	91.86	91.51
29	88.56	-	87.16	-	-	83.14	85.02	92.04	93.20	-	-	91.57
30	-	87.74	87.10	85.40	-	-	85.22	92.08	93.18	92.84	91.84	91.60
31	88.54	-	87.08	-	-	83.16	-	92.26	-	-	-	-

d Doubtful gage reading; inconsistent with profile indicated by adjacent stations.
Note.- Add 2,800 feet to obtain elevations above mean sea level (Somers datum).

Flathead Lake at Somers, Mont.

Location.- Water-stage recorder, lat. 48°04', long. 114°13', in NE¼ sec. 26, T. 27 N., R. 21 W., at steamboat dock at Somers. Datum of gage is at mean sea level (Somers datum).

Records available.- April 1922 to September 1941.

Extremes.- Maximum elevation during year, 2,893.45 feet (regulated) July 6; minimum, 2,883.02 feet (regulated) Mar. 30.
1922-41: Maximum elevation, 2,896.26 feet June 19, 1933; minimum, 2,881.07 feet Dec. 5, 1936.

Remarks.- Since April 1938 the lake elevation has been subject to regulation by Kerr Dam, 4 miles below outlet. Slight diversion and regulation above Flathead Lake.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89.33	88.45	87.66	86.96	85.23	83.71	83.05	85.18	h92.25	92.97	92.69	91.68
2	89.27	88.44	87.62	86.90	85.18	83.71	83.12	85.44	h92.43	92.90	92.65	91.68
3	89.24	e8.42	87.61	86.84	85.12	83.70	83.19	85.74	h92.56	92.92	92.63	91.70
4	89.24	88.40	87.60	86.78	85.06	83.69	83.24	86.08	92.64	92.93	92.59	91.66
5	89.18	88.36	87.64	86.74	85.01	83.67	83.33	86.41	92.63	92.97	92.56	91.61
6	89.12	88.34	87.63	86.68	84.95	83.64	83.40	86.70	92.61	92.99	92.54	91.58
7	89.09	88.35	87.64	86.64	84.89	83.62	83.43	86.93	92.67	93.01	92.50	91.53
8	89.07	88.31	87.68	86.59	84.83	83.59	83.48	87.16	92.80	92.98	92.49	91.51
9	89.03	88.23	87.68	86.52	84.77	83.55	83.52	87.32	92.83	92.97	92.46	91.51
10	89.03	88.21	87.68	86.46	84.73	83.54	83.55	87.48	92.86	92.94	92.42	91.47
11	89.00	88.17	87.68	86.41	84.68	83.50	83.63	87.63	92.89	92.93	92.39	91.43
12	88.93	88.14	87.65	86.33	84.63	83.46	83.69	87.78	92.91	92.94	92.37	91.46
13	88.88	88.10	87.62	86.28	84.59	83.42	83.75	88.02	92.95	92.92	92.35	91.45
14	88.87	88.06	87.58	86.22	84.52	83.40	83.82	88.36	92.95	92.91	92.31	91.40
15	88.86	88.04	87.51	86.18	84.46	83.35	83.89	88.73	92.89	92.93	92.25	91.40
16	88.83	88.02	87.47	86.12	84.40	83.31	83.93	89.08	92.88	92.93	92.22	91.38
17	88.81	87.98	87.42	86.06	e4.34	83.30	83.97	89.39	92.91	92.93	92.19	91.35
18	88.80	87.94	87.38	86.04	84.29	83.29	84.04	89.70	92.98	92.94	92.18	91.34
19	88.77	87.92	87.34	85.98	84.22	83.25	84.09	89.98	93.07	92.96	92.16	91.37
20	e8.74	87.88	87.32	85.92	84.16	83.21	84.13	h90.23	93.11	92.94	92.12	91.37
21	88.74	87.85	87.33	85.86	84.11	83.17	84.17	h90.46	92.97	92.95	92.07	91.37
22	88.70	87.83	87.35	85.80	84.05	83.15	84.19	h90.66	92.94	92.93	92.03	91.37
23	88.66	87.80	87.32	85.74	83.96	83.13	84.23	h90.91	92.97	92.86	92.03	91.38
24	88.66	87.77	87.29	85.67	83.93	83.11	84.30	h91.13	92.99	92.81	92.01	91.37
25	88.66	87.75	87.28	85.63	83.89	83.09	84.37	h91.35	93.01	92.77	91.92	91.39
26	88.58	87.72	87.23	85.58	83.83	83.05	84.48	h91.55	93.00	92.80	91.86	91.41
27	88.56	87.71	87.21	85.50	83.77	83.05	84.59	h91.65	92.98	92.78	91.83	91.39
28	88.55	87.71	87.15	85.45	83.73	83.03	84.71	h91.74	93.03	92.77	91.80	91.41
29	88.52	87.72	87.10	85.39	-	83.03	84.83	h91.85	93.08	92.79	91.78	91.45
30	88.52	87.69	87.05	85.34	-	83.04	84.99	h91.92	93.06	92.74	91.77	91.48
31	88.48	-	87.02	85.27	-	83.05	-	h92.11	-	92.72	91.73	-

h Twice-daily staff-gage readings.
Note.- Add 2,800 feet to obtain elevations above sea level (Somers datum).

Flathead Lake at Polson, Mont.

Location.- Water-stage recorder, lat. 47°42', long. 114°09', in E½ sec. 4, T. 22 N., R. 20 W., at south end of lake at Polson. Datum of gage is at mean sea level (Somers datum).

Records available.- August 1908 to September 1926, June 1928 to September 1941.

Extremes.- Maximum elevation during year, 2,893.08 feet (regulated) June 28; minimum, 2,882.80 feet (regulated) Mar. 18.
1908-26, 1928-41: Maximum elevation, 2,896.26 feet June 19, 1933; minimum, 2,881.12 feet Dec. 13, 1936.

Remarks.- Records reliable. Since April 1938 elevation of water surface has been subject to regulation by Kerr Dam, 4 miles below outlet. Acceptable capacity table not available. Slight diversion and regulation above Flathead Lake.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89.25	88.43	87.56	86.92	85.18	83.66	83.09	85.08	92.17	92.94	92.68	91.62
2	89.28	88.43	87.57	86.88	85.13	83.67	83.09	85.35	92.36	92.88	92.67	91.63
3	89.21	88.41	87.50	86.83	85.10	83.64	83.10	85.66	92.51	92.91	92.63	91.53
4	89.13	88.37	87.53	86.75	85.04	83.62	83.17	85.97	92.61	92.92	92.60	91.53
5	89.13	88.35	87.48	86.69	84.92	83.60	83.24	86.21	92.58	92.93	92.55	91.50
6	89.12	88.32	87.54	86.64	84.87	83.56	83.28	86.53	92.56	92.95	92.52	91.50
7	89.08	88.26	87.59	86.61	84.80	83.55	83.36	86.83	92.63	92.93	92.49	91.53
8	89.04	88.27	87.58	86.55	84.76	83.47	83.42	87.05	92.65	92.90	92.45	91.47
9	88.98	88.36	87.61	86.48	84.71	84.51	83.46	87.24	92.72	92.88	92.42	91.40
10	88.93	88.28	87.67	86.41	84.65	83.50	83.50	87.41	92.78	92.92	92.38	91.42
11	88.89	88.22	87.65	86.35	84.62	83.49	83.53	87.56	92.82	92.91	92.37	91.40
12	88.94	88.15	87.65	86.28	84.60	83.45	83.59	87.71	92.86	92.93	92.31	91.32
13	88.90	88.06	87.60	86.23	84.50	83.40	83.71	87.94	92.89	92.97	92.27	91.27
14	88.87	88.01	87.52	86.16	84.48	83.34	83.75	88.25	92.90	92.93	92.25	91.28
15	88.83	87.96	87.51	86.11	84.44	83.33	83.76	88.64	92.84	92.92	92.23	91.30
16	88.82	87.92	87.46	86.05	84.36	83.33	83.87	88.95	92.82	92.92	92.19	91.29
17	88.79	87.90	87.39	86.00	84.29	83.26	83.97	89.25	92.82	92.92	92.18	91.33
18	88.74	87.92	87.34	85.96	84.23	83.09	83.99	89.52	92.87	92.92	92.14	91.33
19	88.74	87.86	87.31	85.93	84.16	83.18	84.02	89.84	92.95	92.90	92.09	91.33
20	88.72	87.83	87.29	85.89	84.11	83.17	84.06	90.13	93.02	92.88	92.05	91.35
21	88.64	87.82	87.29	85.85	84.05	83.14	84.09	90.39	92.95	92.83	92.03	91.35
22	88.66	87.76	87.29	85.7e	84.00	83.12	84.14	90.64	92.92	92.63	91.98	91.33
23	88.66	87.73	87.29	85.72	84.02	83.09	84.17	90.82	92.93	92.86	91.93	91.33
24	88.63	87.69	87.26	85.72	83.93	83.06	84.24	91.01	92.93	92.87	91.88	91.38
25	88.60	87.67	87.22	85.59	83.80	83.05	84.32	91.24	92.93	92.83	91.92	91.35
26	88.62	87.65	87.19	85.51	83.78	83.06	84.41	91.54	92.97	92.77	91.85	91.35
27	88.58	87.63	87.14	85.48	83.72	83.03	84.51	91.58	92.98	92.74	91.78	91.42
28	88.49	87.62	87.10	85.43	83.68	83.00	84.63	91.67	93.04	92.72	91.78	91.40
29	88.47	87.60	87.07	85.38	-	82.99	84.75	91.82	93.01	92.70	91.73	91.40
30	88.40	87.59	87.03	85.30	-	82.99	84.89	91.93	93.00	92.70	91.67	91.40
31	88.41	-	86.95	85.25	-	83.02	-	92.07	-	92.68	91.62	-

Note.- Add 2,800 feet to obtain elevations above mean sea level (Somers datum).

Flathead River near Polson, Mont.

Location.- Water-stage recorder, lat. 47°39', long. 114°20', in sec. 19, T. 22 N., R. 21 W., at highway bridge at Norrisvale, 12 miles downstream from Polson. Datum of gage is 2,629 feet above sea level (river-profile survey).

Drainage area.- 7,010 square miles.

Records available.- July 1907 to September 1941.

Average discharge.- 34 years, 11,150 second-feet.

Extremes.- Maximum discharge during year, 22,200 second-feet June 4 (gage height, 8.56 feet); minimum 120 second-feet (estimated from power-plant record) Dec. 8; minimum daily, 400 second-feet Dec. 8.
1907-41: Maximum discharge, 82,100 second-feet May 29, 30, 1928 (gage height, 17.1 feet); minimum, probably less than 5 second-feet April 13, 1938 (caused by power regulation); minimum daily, 32 second-feet April 12, 1938.

Remarks.- Records excellent except those for periods of fragmentary or no gage-height record, which are good. Several small diversions from tributaries above Flathead Lake. Flow regulated since April 1938 by Kerr Dam, 4 miles below Flathead Lake. (see p. 146).

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,020	4,020	3,780	5,170	5,260	3,150	4,320	6,340	11,400	12,500	4,080	2,420
2	4,020	4,020	3,620	5,000	5,610	3,820	3,810	5,850	11,200	9,340	4,080	2,190
3	4,020	4,020	3,700	5,340	5,180	4,200	4,340	5,270	13,800	7,070	4,080	3,550
4	4,020	4,020	f1,960	5,520	5,520	4,340	4,340	4,400	18,200	5,580	4,080	4,080
5	4,020	4,020	f2,050	5,520	5,160	4,340	4,840	3,640	21,600	5,800	4,080	4,080
6	4,020	4,020	f1,450	5,520	6,120	4,340	5,150	3,880	17,100	5,960	3,900	4,080
7	4,020	4,020	f1,060	5,520	5,000	4,340	4,780	4,340	12,500	6,840	4,080	4,080
8	4,020	4,020	f400	4,760	5,310	4,340	5,660	4,340	11,200	a6,930	4,080	4,080
9	4,020	4,020	f1,680	5,520	5,400	3,680	5,850	4,340	13,100	a5,430	4,080	3,800
10	4,020	4,020	f1,640	5,700	5,340	4,470	5,950	4,340	12,400	a5,210	4,080	4,000
11	4,020	3,870	2,420	5,390	5,320	4,340	6,060	4,340	11,500	a4,580	4,080	3,880
12	4,020	4,020	2,850	6,190	5,330	4,340	6,250	4,340	10,900	a4,580	4,080	3,490
13	4,020	3,720	3,460	5,700	5,360	4,340	6,440	4,100	11,400	a4,660	4,080	3,940
14	4,020	3,690	4,020	6,280	5,340	4,340	6,630	4,140	15,800	a4,750	4,080	3,430
15	4,020	3,560	4,020	5,460	5,540	4,340	6,630	4,280	16,100	4,080	4,080	3,710
16	4,020	3,620	4,020	6,270	5,550	4,340	6,420	4,240	12,400	4,030	4,080	4,080
17	4,020	4,020	4,020	5,250	5,470	4,340	6,060	4,310	8,260	3,900	3,240	4,080
18	4,020	3,520	4,020	5,520	5,440	4,340	6,130	4,340	6,660	4,000	3,400	4,040
19	4,180	3,400	4,180	5,340	5,560	4,340	6,060	4,340	4,620	4,010	4,080	3,700
20	4,020	3,740	4,180	5,340	5,600	4,540	6,060	4,340	11,200	4,080	4,080	3,900
21	3,720	4,020	2,450	5,130	5,460	4,580	6,070	4,340	15,000	4,080	4,080	4,080
22	3,720	3,600	2,760	6,480	5,340	4,580	6,060	4,180	7,900	4,080	4,080	4,080
23	3,720	4,020	4,300	4,860	5,520	4,500	6,090	4,340	7,230	4,080	4,080	4,080
24	4,020	4,020	4,580	6,120	5,340	4,500	5,950	4,340	7,460	3,900	3,200	4,240
25	4,180	3,490	4,660	5,520	5,340	4,500	6,250	4,180	7,380	3,970	4,080	4,040
26	4,180	4,020	4,960	5,520	5,520	4,500	6,440	9,630	7,470	4,080	4,080	3,780
27	4,020	4,020	4,980	5,460	4,980	4,500	6,440	19,600	7,460	3,590	4,080	3,690
28	4,020	4,020	5,230	5,580	4,650	4,500	6,870	15,000	7,220	3,780	4,080	3,030
29	4,020	3,670	5,000	5,440	-	4,500	7,140	10,500	8,720	4,080	3,760	3,460
30	4,020	3,640	5,000	5,540	-	4,500	6,670	9,400	11,600	3,930	3,920	4,240
31	4,020	-	5,000	5,720	-	4,500	-	9,760	-	4,080	3,880	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	124,200	4,180	3,720	4,006	246,300
November	115,880	4,020	3,400	3,863	229,800
December	107,450	5,230	400	3,466	213,100
Calendar year 1940	2,496,858	32,500	400	6,822	4,953,000
January	171,680	6,480	4,760	5,538	340,500
February	150,560	6,120	4,650	5,377	298,600
March	134,280	4,580	3,150	4,332	266,300
April	175,760	7,140	3,810	5,859	348,600
May	184,780	19,600	3,640	5,961	366,500
June	338,780	21,600	4,620	11,290	672,000
July	156,980	12,500	3,590	5,064	311,400
August	123,220	4,080	3,200	3,975	244,400
September	113,330	4,240	2,190	3,778	224,800
Water year 1940-41	1,896,900	21,600	400	5,197	3,762,000

a No gage-height record; discharge computed on basis of power-plant records at Kerr Dam 7 miles upstream.
f Fragmentary gage-height record; discharge computed from gage heights which were partly estimated on basis of power-plant records.

Middle Fork of Flathead River at Essex, Mont.

Location.- Water-stage recorder, lat. 48°16', long. 113°36', in SW¼ sec. 14, T. 29 N., R. 16 W., 0.6 mile upstream from Ole Creek, 0.7 mile southeast of Essex, and 4 miles downstream from Bear Creek.

Drainage area.- 517 square miles.

Records available.- October 1939 to September 1941.

Extremes.- Maximum discharge during year, 3,410 second-feet May 14 (gage height, 5.90 feet); minimum discharge, 17 second-feet (ice jam upstream) Jan. 11 (gage height, 1.30 feet); minimum daily discharge, 70 second-feet Feb. 23 (stage-discharge relation affected by ice).

1939-41: Maximum discharge, 6,140 second-feet May 11, 1940 (gage height, 7.09 feet); minimum, that of Jan. 11, 1941; minimum daily, 30 second-feet (estimated) Jan. 22, 1940 (stage-discharge relation affected by ice).

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

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.8	67	3.2	545	5.0	2,060
2.0	107	3.6	780	5.8	3,230
2.4	220	4.0	1,080		
2.8	363	4.5	1,520		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	149	166	130	105	130	132	584	2,680	1,830	697	240	140
2	149	160	130	100	124	132	622	2,900	1,880	633	230	143
3	146	152	140	95	122	135	638	2,900	1,780	584	223	163
4	146	149	154	85	120	138	644	2,600	1,670	572	214	172
5	146	143	154	90	114	*143	673	2,390	1,620	545	208	166
6	143	138	160	95	105	149	655	2,000	1,530	500	202	157
7	140	135	152	100	100	152	616	1,720	1,420	477	196	160
8	138	130	*135	105	105	166	622	1,470	1,380	450	190	160
9	135	120	152	115	115	172	691	1,330	1,280	424	187	157
10	130	115	149	110	115	166	801	1,240	1,160	406	187	154
11	143	110	110	95	110	154	872	1,280	1,080	389	181	152
12	169	115	85	100	110	140	940	1,780	1,040	393	175	154
13	172	120	90	110	110	135	948	2,900	1,000	376	175	184
14	166	130	90	115	105	135	918	3,230	1,000	355	172	196
15	160	140	95	115	100	135	955	2,600	932	340	166	233
16	154	*150	100	115	95	149	932	2,190	836	324	163	246
17	152	150	105	115	95	166	858	2,120	780	317	160	230
18	149	140	115	120	100	175	767	2,320	734	313	154	227
19	146	130	140	120	100	175	728	2,000	691	302	152	243
20	140	120	150	120	100	175	715	1,720	655	295	149	246
21	140	120	160	115	95	175	767	1,520	616	284	146	240
22	138	130	160	110	90	181	858	1,470	572	267	149	227
23	138	140	163	105	70	193	1,080	1,520	556	260	166	217
24	138	146	160	90	80	199	1,380	1,720	556	256	163	233
25	138	138	152	*110	100	208	f1,520	1,880	562	264	154	246
26	140	132	152	110	115	230	f1,470	1,830	515	260	146	253
27	140	130	154	115	120	256	f1,570	1,620	490	250	152	295
28	138	132	152	120	124	278	1,780	1,520	525	243	152	310
29	143	135	146	125	-	320	2,060	1,420	655	264	154	310
30	146	135	129	132	-	393	2,390	1,520	697	274	149	324
31	154	-	115	138	-	464	-	1,780	-	250	143	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	4,526	172	130	146	0.282	0.33	8,980
November	4,051	166	110	135	.261	.29	8,040
December	4,179	163	85	135	.261	.30	8,290
Calendar year 1940	216,173	5,610	30	591	1.14	15.55	428,700
January	3,395	138	85	110	.213	.25	6,730
February	2,969	130	70	106	.205	.21	5,890
March	5,921	464	132	191	.369	.43	11,740
April	30,054	2,390	584	1,002	1.94	2.16	59,610
May	61,170	3,230	1,240	1,973	3.82	4.40	121,300
June	30,042	1,880	490	1,001	1.94	2.16	59,590
July	11,564	697	243	373	.721	.83	22,940
August	5,398	240	143	174	.337	.39	10,710
September	6,338	324	140	211	.408	.46	12,570
Water year 1940-41	169,607	3,230	70	465	.899	12.21	336,400

* Winter discharge measurement made on this day.
f Discharge computed on basis of partly estimated gage-height record.
Note.- Stage-discharge relation affected by ice Nov. 7-23, Dec. 11-22, Dec. 31 to Jan. 29, Feb. 6-27, Mar. 12-15.

Middle Fork of Flathead River near Belton, Mont.

Location.- Staff gage, lat. 48°29'50", long. 114°00'30", in NE¼ sec. 34, T. 32 N., R. 19 W., three-quarters of a mile downstream from McDonald Creek, 1¼ miles west of Belton, and 3½ miles upstream from mouth.

Drainage area.- 1,140 square miles.

Records available.- October 1939 to September 1941.

Extremes.- Maximum discharge observed during year, 7,620 second-feet May 14 (gage height, 5.22 feet); minimum observed, 268 second-feet Dec. 17 (gage height, 1.14 feet).
1939-41: Maximum discharge observed, 12,800 second-feet May 12, 1940 (gage height, 6.66 feet); minimum observed, 232 second-feet Jan. 21, 1940 (gage height, 1.08 feet).

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

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

1.1	250	2.2	1,070	3.8	3,610
1.4	400	2.7	1,680	4.5	5,410
1.8	680	3.2	2,440	5.2	7,620

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	640	565	430	460	400	372	1,750	6,000	5,700	2,440	815	430
2	640	565	430	430	400	372	1,820	6,630	6,310	2,280	770	460
3	600	565	430	372	372	400	1,900	6,950	5,700	2,280	725	495
4	600	565	460	372	372	400	1,900	6,310	5,410	2,120	725	640
5	640	495	495	460	372	400	1,970	5,700	5,120	1,900	680	725
6	600	530	495	460	330	430	1,970	5,410	4,840	1,900	640	725
7	600	530	495	460	340	430	1,970	4,570	4,570	1,820	640	770
8	565	565	460	430	372	460	1,900	4,060	4,570	1,750	640	725
9	565	495	495	430	400	495	2,120	3,830	4,310	1,680	600	725
10	530	400	430	430	400	495	2,280	3,610	4,060	1,540	600	680
11	530	372	372	372	400	495	2,440	3,390	3,830	1,480	600	725
12	815	372	340	372	400	495	2,440	4,060	3,830	1,480	600	725
13	770	372	300	372	372	430	2,440	6,000	3,830	1,480	565	815
14	770	372	310	430	372	430	2,440	7,620	3,830	1,350	565	910
15	725	372	310	430	372	400	2,440	6,630	3,610	1,290	565	1,020
16	680	400	272	430	320	460	2,610	5,700	3,390	1,290	565	1,120
17	680	400	268	430	310	495	2,440	5,410	3,180	1,240	565	1,120
18	600	430	310	430	320	495	2,280	6,630	2,980	1,290	530	1,120
19	640	430	400	460	372	530	2,120	5,700	2,790	1,180	530	1,240
20	640	400	460	430	372	530	2,120	5,120	2,440	1,120	530	1,240
21	600	430	495	430	372	565	2,120	4,570	2,440	1,070	495	1,240
22	600	400	495	430	372	565	2,120	4,310	2,280	1,070	495	1,180
23	565	430	495	320	372	565	2,440	4,310	2,280	1,020	530	1,120
24	565	400	495	320	310	600	3,180	4,840	2,280	960	530	1,120
25	565	430	495	310	330	640	3,610	5,700	2,440	910	495	1,180
26	565	430	495	430	372	725	3,610	6,000	2,280	910	495	1,180
27	565	430	530	430	340	770	3,830	5,120	2,120	860	460	1,350
28	565	400	495	430	372	860	4,060	4,840	1,820	860	495	1,350
29	530	430	495	400	-	960	4,570	4,310	2,440	815	495	1,350
30	530	430	495	372	-	1,120	5,120	4,570	2,610	860	460	1,290
31	565	-	460	372	-	1,350	-	5,120	-	815	460	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	19,045	815	530	614	0.538	0.62	37,780
November	13,405	565	372	447	.392	.44	26,590
December	13,407	530	268	432	.379	.44	26,590
Calendar year 1940	653,107	12,400	232	1,784	1.56	21.32	1,296,000
January	12,704	460	310	410	.360	.42	25,200
February	10,208	400	310	365	.320	.33	20,250
March	17,734	1,350	372	572	.502	.58	35,170
April	78,010	5,120	1,750	2,600	2.28	2.54	154,700
May	163,020	7,620	3,390	5,259	4.61	5.32	323,300
June	107,290	6,310	1,820	3,576	3.14	3.50	212,800
July	43,060	2,440	815	1,389	1.22	1.41	85,410
August	17,860	815	460	576	.505	.58	35,420
September	28,770	1,350	430	959	.841	.94	57,060
Water year 1940-41	524,513	7,620	268	1,437	1.26	17.12	1,040,000

South Fork of Flathead River near Columbia Falls, Mont.

Location.- Water-stage recorder, lat. 48°22', long. 114°03', in NE¼ sec. 17, T. 30 N., R. 19 W., 2 miles upstream from mouth and 9 miles east of Columbia Falls. Datum of gage is 3,031.3 feet above mean sea level, datum of 1929 (Corps of Engineers, U. S. Army, bench mark).

Drainage area.- 1,640 square miles.

Records available.- September 1910 to September 1916, April 1923 to September 1941.

Average discharge.- 12 years (1928-32, 1933-41), 2,906 second-feet.

Extremes.- Maximum discharge during year, 11,200 second-feet May 14 (gage height, 9.12 feet); minimum daily, 340 second-feet Dec. 15, but may have been less during period of ice effect; minimum gage height, 1.02 feet Jan. 3.
1910-16, 1923-41: Maximum discharge observed, 46,200 second-feet June 19, 1916 (gage height, 16.6 feet, site and datum then in use), from rating curve extended above 20,000 second-feet; minimum, 206 second-feet Dec. 6, 1935 (stage-discharge relation affected by ice).

Remarks.- Records excellent except those for periods of ice effect, which are fair.

Rating table, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

1.1	420	3.0	1,690	6.0	5,420
1.5	600	4.0	2,680	7.5	8,000
2.0	910	5.0	3,960	9.0	11,000

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	496	575	520	440	470	670	2,410	7,460	6,920	1,920	744	496
2	496	575	520	420	500	770	2,680	8,360	8,180	1,780	720	492
3	488	555	520	410	510	800	2,740	8,550	7,280	1,740	696	550
4	488	540	520	400	490	*810	2,740	7,920	6,740	1,690	672	642
5	505	530	520	410	480	810	2,790	7,280	6,390	1,640	648	648
6	492	515	520	440	460	810	2,790	6,390	6,060	1,560	624	618
7	480	515	520	480	480	810	2,680	5,420	5,580	1,520	606	636
8	476	550	*515	480	500	840	2,570	4,810	5,260	1,490	590	595
9	464	545	510	470	520	875	2,680	4,380	4,960	1,360	580	570
10	456	505	500	450	530	875	2,910	3,960	4,660	1,280	580	565
11	464	500	460	420	540	840	3,100	4,100	4,240	1,240	570	575
12	530	400	410	420	530	810	3,240	5,420	4,100	1,240	580	580
13	555	360	380	420	510	738	3,300	8,550	3,960	1,160	560	672
14	570	380	360	430	480	732	3,240	11,000	3,960	1,120	550	678
15	570	400	340	440	470	756	3,240	9,320	3,820	1,080	540	780
16	555	*424	350	460	460	732	3,100	7,820	3,560	1,050	530	875
17	540	440	360	480	450	750	2,910	7,460	3,240	980	520	840
18	525	470	370	500	460	762	2,620	7,820	3,100	980	500	840
19	515	490	390	520	470	810	2,460	7,100	2,910	945	492	910
20	505	500	430	540	490	840	2,310	6,060	2,740	945	480	910
21	496	490	510	530	500	875	2,410	5,420	2,520	910	472	910
22	488	490	540	520	500	875	2,620	5,110	2,310	840	468	875
23	484	480	550	*496	480	910	3,100	5,260	2,210	810	492	840
24	480	480	550	460	480	980	3,690	5,900	2,110	810	510	875
25	496	490	550	440	490	1,020	4,240	6,920	2,160	810	500	910
26	505	510	540	480	520	1,120	4,240	7,460	2,060	840	488	945
27	500	500	540	520	550	1,240	4,380	6,740	1,920	810	500	1,080
28	505	500	530	520	610	1,360	4,660	5,900	1,920	780	515	1,200
29	525	500	510	500	-	1,520	5,420	5,260	2,060	810	520	1,200
30	545	520	490	470	-	1,740	6,390	5,740	2,010	810	510	1,240
31	565	-	470	460	-	2,060	-	6,220	-	774	496	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	15,759	570	456	508	0.310	0.36	31,260
November	14,729	575	360	491	.299	.33	29,210
December	14,795	550	340	477	.291	.34	29,350
Calendar year 1940	834,007	14,500	340	2,279	1.39	18.91	1,654,000
January	14,426	540	400	465	.284	.33	28,610
February	13,910	610	450	497	.303	.32	27,590
March	29,540	2,060	670	953	.581	.67	58,590
April	97,660	6,390	2,310	3,255	1.98	2.21	193,700
May	205,010	11,000	3,960	6,613	4.03	4.65	406,600
June	118,940	8,180	1,920	3,965	2.42	2.70	235,900
July	35,724	1,920	774	1,152	.702	.81	70,860
August	17,253	744	468	557	.340	.39	34,220
September	23,547	1,240	492	785	.479	.53	46,700
Water year 1940-41	601,293	11,000	340	1,647	1.00	13.64	1,193,000

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 12 to Mar. 4.

Stillwater River near Whitefish, Mont.

Location.- Water-stage recorder, lat. 48°19', long. 114°23', in SW¼ sec. 34, T. 30 N., R. 22 W., 600 feet downstream from highway bridge, 7 miles southwest of Whitefish, and 10 miles upstream from Whitefish Creek.

Records available.- November 1930 to September 1941.

Average discharge.- 11 years, 306 second-feet.

Extremes.- Maximum discharge during year, 408 second-feet May 8 (gage height, 3.81 feet); minimum, 52 second-feet Aug. 22, 23 (gage height, 0.64 foot).
1930-41: Maximum discharge, 2,680 second-feet Apr. 28, 1934 (gage height, 14.47 feet); minimum, probably less than 50 second-feet during period of ice effect, Jan. 21-31, 1940.

Remarks.- Records good except those for periods of ice effect and those computed on basis of once-daily gage readings, which are poor. Some water stored during high-water periods and released for logging operations during summer. No diversion.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	60				71	178	276	370	167	63	54
2	64	60				*74	184	304	333	167	63	55
3	64	58	80			77	195	370	348	167	60	56
4	64	58		65	70	80	207	393	356	162	59	58
5	63	69				84	231	393	356	156	58	60
6	62	69	*81				244	408	340	150	56	58
7	61	66	81				244	408	333	145	55	58
8	61	66	81	65	70	90	244	408	318	140	54	57
9	60	61					244	393	318	135	54	57
10	62	60					244	370	304	125	54	59
11	61	69					244	356	297	119	54	61
12	58	69	70				244	340	290	112	55	61
13	58	69		65	70	95	250	326	276	105	54	61
14	58	*70					250	326	263	91	56	62
15	58	71					256	326	256	94	56	64
16	58	72					256	340	256	92	56	67
17	59	72					256	356	250	91	56	68
18	58	72	60	70	65	105	256	370	231	89	54	71
19	58	72					250	378	231	86	53	74
20	58	72				106	244	378	225	84	54	76
21	58			69		102	237	393	207	82	53	77
22	58			*68		102	231	393	207	81	53	78
23	58	70	70	67		104	231	378	201	78	53	78
24	58			66		105	231	340	195	74	54	81
25	58				70	108	225	326	189	74	53	88
26	56					113	225	326	184	74	53	88
27	58			65		119	231	326	178	71	54	95
28	58	75	70			124	244	348	167	69	55	93
29	58					145	256	378	150	71	56	99
30	58				-	172	263	393	156	71	56	102
31	58	-			-	172	-	393	-	67	56	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,843	64	56	59.5	3,660
November	2,060	-	58	68.7	4,090
December	2,205	-	-	71.1	4,370
Calendar year 1940	61,397	688	-	168	121,800
January	2,050	-	-	66.1	4,070
February	1,935	-	-	69.1	3,840
March	3,203	172	71	103	6,350
April	7,095	263	178	236	14,070
May	11,213	408	276	362	22,240
June	7,785	370	150	260	15,440
July	3,289	167	67	106	6,520
August	1,720	63	53	55.5	3,410
September	2,116	102	54	70.5	4,200
Water year 1940-41	46,514	408	53	127	92,260

* Winter discharge measurement made on this day.
Note.- Discharge computed on basis of once-daily gage readings Oct. 12 to Dec. 5. Stage-discharge relation affected by ice Nov. 14 to Mar. 19.

Logan Creek at Tally Lake, near Whitefish, Mont.

Location.- Staff gage, lat. 48°27', long. 114°34', in NW¼ sec. 17, T. 31 N., R. 23 W., about 2½ miles north of Tally Lake and 10 miles west of Whitefish.

Records available.- April 1936 to September 1941. August 1931 to April 1933 and May to September 1934 at site about 2½ miles upstream.

Extremes.- Maximum discharge observed during year, 90 second-feet May 6 (gage height, 1.91 feet); minimum observed, 2.2 second-feet Oct. 1-3.
1931-33, 1934, 1936-41: Maximum gage height, 7.22 feet May 28, 29, 1933, site and datum then in use (discharge not determined); minimum discharge observed, 0.7 second-foot Sept. 1, 2, 1940.

Remarks.- Records good except those for period of backwater from beaver dam, which are poor. Gage read twice daily. Natural storage in Tally Lake.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.2	10	15	14	13	12	31	72	52	22	4.1	
2	2.2	10	16	14	13	14	37	72	52	22	4.1	
3	2.2	11	16	14	13	14	43	79	52	21	4.6	5
4	2.5	11	16	14	13	15	63	84	52	21	4.6	
5	2.9	11	16	14	14	15	68	88	51	21	4.3	
6	2.9	12	16	14	13	15	70	90	50	20	4.3	
7	2.9	12	16	13	13	15	72	88	50	19	4.1	
8	2.9	12	16	13	13	15	72	88	50	18	4.1	5
9	3.1	14	16	13	12	14	72	84	47	13	3.9	
10	3.1	13	15	13	12	14	72	81	45	11	3.9	
11	3.3	12	15	13	11	14	72	79	43	11	3.7	
12	3.8	12	15	13	11	13	75	75	40	9.8	3.7	
13	4.1	12	16	13	11	12	79	75	38	9.4	3.9	6
14	4.4	11	16	13	11	12	79	72	38	8.6	3.9	
15	4.4	10	15	12	11	11	79	68	36	8.6	3.9	
16	4.4	10	15	11	11	11	77	66	34	8.6		
17	4.4	10	15	12	11	11	77	65	32	8.2		
18	4.4	10	15	12	12	10	77	61	31	7.4	4	7
19	4.4	10	14	13	12	10	73	58	30	7.0		
20	4.4	10	14	13	12	12	73	58	29	6.5		
21	4.7	11	14	13	13	12	75	58	27	6.0		
22	4.7	11	13	13	11	12	75	55	25	5.8		
23	4.7	11	13	13	11	12	77	52	24	5.2	4	8
24	4.7	11	13	13	11	13	77	50	24	4.8		
25	9.1	11	13	13	11	14	75	48	23	4.8		
26	7.6	12	13	13	11	15	77	44	22	4.5		
27	7.2	12	13	13	11	16	75	43	20	4.3		10
28	7.2	13	13	13	12	18	75	48	20	4.3	4	
29	7.6	14	14	13	-	20	73	50	20	4.5		12
30	8.0	14	14	13	-	24	73	51	22	4.3		10
31	9.0	-	14	13	-	28	-	54	-	4.3		-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	143.4	9.1	2.2	4.63	284
November	343	14	10	11.4	680
December	455	16	13	14.7	902
Calendar year 1940	10,898.9	186	.7	29.8	21,620
January	404	14	11	13.0	801
February	333	14	11	11.9	660
March	443	28	10	14.3	879
April	2,113	79	31	70.4	4,190
May	2,056	90	43	66.3	4,080
June	1,079	52	20	36.0	2,140
July	325.9	22	4.3	10.5	646
August	124.9	-	-	4.03	248
September	207	12	-	6.90	411
Water year 1940-41	8,027.2	90	2.2	22.0	15,920

Note.- Discharge for period of backwater from beaver dam, Aug. 16 to Sept. 28, computed on basis of one discharge measurement, gage heights, and records for Stillwater River near Whitefish. Discharge for Oct. 1 to Nov. 17, computed from readings on staff gage 400 feet downstream.

Whitefish Creek near Kalispell, Mont.

Location.- Water-stage recorder, lat. 48°19', long. 114°16', in SW¼ sec. 34, T. 30 N., R. 21 W., 8 miles north of Kalispell and 8 miles upstream from mouth. Datum of gage is 2,969.7 feet above mean sea level, datum of 1929 (Corps of Engineers, U. S. Army, bench mark).

Records available.- November to December 1906, July 1928 to September 1941.

Average discharge.- 12 years (1929-41), 175 second-feet.

Extremes.- Maximum discharge during year, 488 second-feet May 6 (gage height, 2.60 feet); minimum, 24 second-feet Sept. 1, 5, 6, (gage height, 1.06 feet).
1906, 1928-41: Maximum discharge, 1,260 second-feet June 3, 1932 (gage height, 4.26 feet); minimum, 4.5 second-feet Oct. 18, 1934 (gage height, 0.83 foot).

Remarks.- Records good except those for periods of ice effect, which are poor. Some regulation at Whitefish Lake. No diversion.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	47	49	47		51	118	221	362	108	65	24
2	59	49	49	46		59	129	247	355	103	65	25
3	59	51	49	42	50	*67	132	281	351	100	65	25
4	59	49	49	46		70	135	306	348	100	65	25
5	59	49	49	48		72	135	330	348	100	65	26
6	57	49	49			72	137	476	337	100	61	24
7	57	49	49			72	137	472	326	98	59	25
8	56	49	49	45	55	72	137	452	323	98	57	25
9	55	51	*49			74	140	437	323	100	57	103
10	53	49	49			74	143	414	320	98	57	121
11	53	48	48			72	146	392	306	96	53	124
12	53	45	h47			65	152	377	295	96	53	126
13	53	47	h44	45	55	66	155	373	281	96	53	126
14	53	49	h42			63	158	377	274	96	55	126
15	53	51	h40			63	158	384	270	93	55	124
16	51	49	h36	57		61	158	384	267	90	57	124
17	51	*47	h33	57		59	158	380	257	90	55	124
18	51	47	h38	57	45	59	158	392	247	88	53	121
19	51	45	h45	56		61	155	392	241	86	53	121
20	49	45	h57	54		61	155	388	234	86	53	118
21	47	45	67	52		63	155	380	228	86	53	118
22	47	43	75	*48		65	158	373	215	81	51	116
23	47	45	80	45	55	67	161	366	212	79	53	113
24	47	45	80	42		67	164	359	202	76	55	113
25	47	45	79	52		70	167	362	199	74	55	113
26	47	47	79		65	79	170	362	189	74	53	63
27	47	47	70		53	83	183	362	170	74	45	42
28	45	47	61		49	88	192	373	108	70	33	38
29	45	49	53	50	-	98	199	380	103	70	28	35
30	45	49	51		-	106	208	373	108	70	27	33
31	45	-	49		-	110	-	366	-	67	25	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	1,597	59	45	51.5	3,170
November	1,427	51	43	47.6	2,830
December	1,664	80	33	53.7	3,300
Calendar year 1940	49,875	530	33	136	98,930
January	1,499	57	-	48.4	2,970
February	1,467	-	-	52.4	2,910
March	2,208	110	51	71.2	4,380
April	4,653	208	118	155	9,230
May	11,531	476	221	372	22,870
June	7,799	362	103	260	15,470
July	2,743	108	67	88.5	5,440
August	1,634	65	25	52.7	3,240
September	2,440	126	24	81.3	4,840
Water year 1940-41	40,662	476	24	111	80,650

* Winter discharge measurement made on this day.
h Discharge computed on basis of once-daily staff-gage reading.
Note.- Stage-discharge relation affected by ice Nov. 11-14, 22, 23, Dec. 11-25, Jan. 1 to Feb. 26.

Ashley Creek near Kalispell, Mont.

Location.- Wire-weight gage and Cippoletti weir, lat. 48°11', long. 114°24', in SE¼ sec. 18, T. 28 N., R. 22 W., 4 miles west of Kalispell.

Records available.- April 1931 to March 1933, April 1934 to September 1941.

Extremes.- Maximum discharge observed during year, 19 second-feet Mar. 18, 19 (gage height, 3.78 feet); no flow for long periods.
1931-41: Maximum discharge observed, 285 second-feet Apr. 28, 1934 (gage height, 9.30 feet, former control and datum); no flow for long periods.

Remarks.- Records good. Gage read twice daily. Some diversions. Storage in Ashley and Smith Lakes.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

2.5	0	2.8	1.5	3.4	8.1
2.6	.4	3.0	3.1	3.6	12
2.7	.9	3.2	5.3	3.8	19

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1						0.2	7.5	5.1	2.5	0.9		
2						2.6	8.0	4.5	1.8	.8		
3						3.8	9.7	5.3	2.0	.8		
4						2.8	d8.8	6.9	1.9	.6		
5						1.6	d11	7.8	2.2	.6		
6						1.3	d5.8	8.5	2.5	.6		
7						1.3	d6.9	5.8	2.1	.5		
8						.7	d5.8	6.0	2.8	.5		
9						.7	5.4	3.9	2.9	.5		
10						.7	4.8	3.7	1.8	.4		
11						.8	6.6	4.6	1.0	.2		
12						.8	6.8	4.3	1.0	.2		
13						1.6	6.6	4.1	1.0	.1		
14						2.9	6.5	4.6	1.0	0		
15						4.6	9.9	4.0	.9	0		
16						6.9	6.5	4.2	1.0	0		
17						7.2	2.0	4.8	1.0	0		
18						17	3.9	4.8	1.0	0		
19						17	3.9	4.6	1.1	0		
20						15	4.5	3.7	1.4	0		
21						15	5.3	3.8	.8	0		
22						13	3.6	1.7	.6	0		
23						13	5.2	1.9	.7	0		
24						9.5	3.7	1.7	.6	0		
25						9.5	3.7	1.4	.8	0		
26						9.9	3.2	1.1	.8	0		
27						9.2	3.3	1.3	.4	0		
28						9.5	3.7	2.1	.5	0		
29						9.5	3.6	1.8	.7	0		
30						8.1	4.0	1.3	.9	0		
31						9.2	-	1.4	-	-		

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	0	0	0	0	0
November	0	0	0	0	0
December	0	0	0	0	0
Calendar year 1940	1,727.0	28	0	4.72	3,420
January	0	0	0	0	0
February	0	0	0	0	0
March	204.9	17	.2	6.61	406
April	170.2	11	2.0	5.67	338
May	120.7	8.5	1.1	3.89	239
June	39.7	2.9	.4	1.32	79
July	6.7	.9	0	.22	13
August	0	0	0	0	0
September	0	0	0	0	0
Water year 1940-41	542.2	17	0	1.49	1,080

d Doubtful gage-height record; discharge computed on assumption that inconsistent gage heights were reported 1 foot too low.

Swan River near Big Fork, Mont.

Location.- Water-stage recorder, lat. 48°01', long. 113°59', in NW¼ sec. 14, T. 26 N., R. 19 W., at outlet of Swan Lake, 7 miles southeast of Big Fork.

Drainage area.- 647 square miles.

Records available.- April 1922 to September 1941. October 1910 to May 1911 at site 2 miles upstream from Swan Lake.

Average discharge.- 15 years (1922-24, 1928-41), 974 second-feet.

Extremes.- Maximum discharge during year, 2,120 second-feet June 3 (gage height, 3.88 feet); minimum, 266 second-feet Aug. 22 (gage height, 1.97 feet).
1922-41: Maximum discharge, 8,280 second-feet June 18, 1933 (gage height, 7.00 feet); minimum, 85 second-feet Jan. 26-29, 1930 (gage height, 0.04 foot).

Remarks.- Records good. No diversions above station. Natural storage in Swan Lake.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	h371	381	387	381	326	292	540	1,150	1,800	960	411	292
2	h371	381	381	371	326	306	563	1,310	1,980	932	392	292
3	360	381	376	344	326	310	602	1,500	2,120	905	380	302
4	360	392	387	331	321	333	634	1,660	2,120	869	368	315
5	360	387	392	335	317	333	675	1,740	2,050	842	362	315
6	354	387	381	340	308	350	692	1,740	1,980	797	356	321
7	349	387	387	344	299	356	718	1,670	1,840	797	350	321
8	344	381	381	344	299	356	718	1,570	1,760	761	339	327
9	344	381	376	344	303	368	726	1,400	1,710	726	339	333
10	340	381	376	340	308	380	709	1,340	1,650	700	333	333
11	344	371	371	335	312	392	709	1,240	1,560	675	339	333
12	349	365	360	335	312	386	726	1,190	1,490	642	327	339
13	354	354	344	331	308	374	770	1,290	1,430	618	321	350
14	365	344	326	331	308	362	815	1,600	1,400	594	315	362
15	365	349	303	335	303	356	824	1,910	1,380	586	310	386
16	376	340	292	340	299	356	806	2,050	1,360	570	310	386
17	381	344	288	344	296	356	806	2,050	1,330	556	306	380
18	387	349	288	354	288	356	797	2,050	1,290	533	302	386
19	387	354	299	360	288	374	770	2,050	1,250	526	297	392
20	381	344	317	360	292	386	743	1,980	1,220	503	292	398
21	371	335	340	360	292	398	718	1,810	1,180	489	288	398
22	376	344	349	360	292	404	700	1,670	1,140	476	288	398
23	365	335	365	360	284	411	692	1,570	1,080	462	292	398
24	365	326	376	354	288	417	692	1,520	1,030	435	292	417
25	360	331	381	365	292	429	752	1,570	1,010	423	297	423
26	354	326	387	354	296	435	788	1,740	969	417	292	423
27	349	340	398	354	292	442	824	1,910	951	417	288	455
28	354	340	398	349	288	449	878	1,980	951	411	292	483
29	360	360	398	344	-	462	951	1,910	969	423	302	469
30	365	365	392	331	-	476	1,030	1,840	987	423	306	483
31	371	-	381	326	-	503	-	1,760	-	417	297	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	11,232	387	340	362	.560	.65	22,280
November	10,755	392	326	358	.553	.62	21,330
December	11,177	398	288	361	.558	.64	22,170
Calendar year 1940	309,642	3,650	288	846	1.31	17.80	614,100
January	10,756	381	326	347	.536	.62	21,330
February	8,463	326	284	302	.467	.49	16,790
March	11,908	503	292	384	.594	.68	23,620
April	22,368	1,030	540	746	1.15	1.28	44,370
May	51,770	2,050	1,150	1,670	2.58	2.97	102,700
June	42,987	2,120	951	1,433	2.21	2.47	85,260
July	18,885	960	411	609	.941	1.09	37,460
August	9,983	411	288	322	.498	.57	19,800
September	11,210	483	292	374	.578	.64	22,230
Water year 1940-41	221,494	2,120	284	607	.938	12.72	439,300

h Computed from staff-gage reading.

Priest Lake at outlet, near Coolin, Idaho

Location.- Water-stage recorder, lat. 48°29'30", long. 116°53'00", in SE¼ sec. 5, T. 59 N., R. 4 W., half a mile east of outlet and 1¾ miles northwest of Coolin. Datum of gage, 2,435.06 feet (Coast and Geodetic Survey datum) or 2,437.99 feet (Geological Survey datum), above mean sea level.

Drainage area.- 572 square miles.

Records available.- April 1928 to September 1941. June 1911 to September 1913 (fragmenta y gage-height records at Coolin) published as part of records for Priest River at outlet of Priest Lake, at Coolin.

Extremes.- Maximum gage height during year, 4.15 feet May 20; minimum, 0.07 foot Oct. 17. 1928-41: Maximum gage height observed, 5.94 feet May 23, 1932; minimum, -0.16 foot Nov. 23-25, Dec. 4-6, 1936.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Jul"	Aug.	Sept.
1	0.14	0.48	0.50	0.77	0.82	0.86	2.09	3.13	3.57	2.18	0.99	0.57
2	.15	.49	.50	.76	.82	.97	2.20	3.26	3.52	2.15	.96	.57
3	.13	.50	.50	.74	.81	1.10	2.30	3.36	3.46	2.12	.94	.57
4	.14	.50	.50	.73	.80	1.19	2.38	3.42	3.40	2.07	.92	.59
5	.14	.50	.51	.73	.79	1.22	2.45	3.45	3.33	2.02	.90	.62
6	.13	.50	.52	.73	.78	1.22	2.53	3.44	3.25	1.98	.88	.63
7	.12	.52	.54	.73	.78	1.22	2.61	3.41	3.17	1.93	.85	.64
8	.12	.55	.54	.72	.77	1.23	2.68	3.38	3.12	1.88	.83	.63
9	.10	.60	.54	.72	.77	1.25	2.75	3.34	3.08	1.85	.81	.66
10	.11	.58	.52	.71	.77	1.27	2.82	3.27	3.02	1.81	.79	.73
11	.10	f.58	.51	.70	.78	1.30	2.88	3.20	2.95	1.77	.77	.78
12	.12	-	.50	.69	.77	1.32	2.96	3.18	2.89	1.72	.76	.81
13	.12	-	.48	.68	.77	1.33	3.04	3.19	2.83	1.67	.76	.84
14	.11	-	.47	.69	.76	1.34	3.07	3.25	2.77	1.63	.75	.87
15	.11	-	.45	.71	.74	1.35	3.07	3.31	2.70	1.60	.73	.92
16	.10	-	.43	.71	.74	1.35	3.07	3.36	2.64	1.56	.71	.95
17	.10	-	.42	.73	.73	1.37	3.06	3.64	2.58	1.52	.69	.98
18	.12	-	.43	.80	.72	1.42	3.02	3.96	2.57	1.48	.68	1.02
19	.11	-	.45	.82	.71	1.47	2.98	4.10	2.57	1.45	.65	1.08
20	.12	-	.50	.82	.70	1.52	2.93	4.13	2.56	1.42	.64	1.15
21	.13	f.50	.54	.80	.70	1.55	2.91	4.10	2.54	1.36	.62	1.18
22	.14	.48	.56	.78	.69	1.58	2.89	4.06	2.49	1.31	.61	1.20
23	.16	.47	.58	.78	.69	1.60	2.89	3.99	2.44	1.28	.60	1.21
24	.22	.48	.60	.78	.70	1.62	2.90	3.93	2.38	1.25	.60	1.22
25	.28	.48	.62	.84	.70	1.64	2.92	3.88	2.33	1.22	.58	1.22
26	.32	.47	.65	.86	.70	1.67	2.92	3.82	2.31	1.18	.58	1.22
27	.33	.49	.69	.85	.71	1.70	2.95	3.74	2.26	1.15	.60	1.21
28	.35	.50	.72	.84	.77	1.74	3.00	3.67	2.25	1.12	.60	1.20
29	.38	.52	.75	.83	-	1.79	3.03	3.62	2.23	1.10	.60	1.18
30	.43	.51	.76	.82	-	1.83	3.07	3.57	2.21	1.07	.58	1.18
31	.47	-	.77	.82	-	1.98	-	3.58	-	1.03	.57	-

f Based on partial gage-height record.

Priest River at outlet of Priest Lake, near Coolin, Idaho

Location.- Water-stage recorder, lat. 48°29', long. 116°54', in SW¼ sec. 5, T. 59 N., R. 4 W., at southwest end of Priest Lake, 2 miles northwest of Coolin. Datum of gage is 2,435.06 foot (Coast and Geodetic Survey datum) or 2,437.99 feet (Geological Survey datum) above mean sea level.

Drainage area.- 572 square miles.

Records available.- June 1911 to September 1918 (fragmentary); May 1919 to September 1941.

Average discharge.- 27 years (1913-18, 1919-41), 1,066 second-feet.

Extremes.- Maximum discharge during year, 3,920 second-feet May 20 (gage height, 3.53 feet); minimum, 192 second-feet Oct. 17 (gage height, -0.11 foot).
1911-41: Maximum discharge, 7,290 second-feet May 30, 1917 (gage height, 6.83 feet); minimum, 118 second-feet Nov. 25, 1936 (gage height, -0.32 foot).

Remarks.- Records good except those for period of log effect, which are fair. No diversion above station.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	200	323	a314	416	456	474	1,360	2,430	3,020	1,450	570	336
2	202	328	a314	416	456	531	1,470	2,640	2,940	1,400	550	336
3	200	328	a314	411	462	570	1,560	2,720	2,870	1,360	537	336
4	205	332	a314	405	456	604	1,660	2,800	2,800	1,320	524	345
5	205	332	a319	405	451	631	c1,400	2,870	2,720	1,280	518	359
6	202	332	a323	411	445	652	c1,200	2,870	2,640	1,240	505	364
7	200	341	a332	411	445	680	c1,200	2,800	2,500	1,200	493	369
8	197	350	a332	400	439	694	c1,300	2,800	2,430	1,160	481	364
9	197	369	a332	400	439	716	c1,400	2,720	2,430	1,130	468	380
10	200	364	a323	400	445	737	c1,500	2,640	2,360	1,090	456	405
11	197	a350	a319	395	445	752	c1,600	2,570	2,290	1,070	445	439
12	200	a340	a314	390	445	774	c1,700	2,570	2,160	1,040	439	456
13	202	a330	a306	390	439	782	c2,000	2,570	2,100	1,010	439	474
14	200	a325	302	390	434	789	c2,200	2,640	2,030	969	434	487
15	200	a320	a295	400	434	797	2,430	2,720	1,960	945	428	518
16	200	a320	a287	400	428	804	2,430	2,720	1,900	921	422	537
17	200	a320	a283	416	422	812	2,360	3,100	1,840	905	405	557
18	202	a320	295	451	422	842	2,360	3,580	1,840	873	400	577
19	202	a320	295	462	416	881	2,290	3,840	1,780	842	390	611
20	202	a320	314	456	411	913	2,220	3,840	1,780	819	380	659
21	207	319	328	451	411	937	2,220	3,840	1,780	782	374	673
22	213	a306	328	445	a405	961	2,160	3,760	1,660	752	369	687
23	213	a302	336	445	a405	978	2,160	3,670	1,640	737	359	702
24	222	a306	345	451	411	995	2,160	3,580	1,580	716	359	709
25	236	a306	359	481	411	1,010	2,220	3,500	1,530	709	350	709
26	252	a302	364	487	411	1,040	2,220	3,420	1,530	680	350	709
27	262	a310	385	487	416	1,050	2,220	3,260	1,510	659	354	702
28	272	a314	400	481	445	1,090	2,290	3,180	1,500	645	350	694
29	280	a323	416	474	-	1,130	2,290	3,100	1,480	624	350	680
30	295	a319	416	468	-	1,190	2,360	3,020	1,470	604	345	680
31	310	-	422	462	-	1,280	-	3,020	-	583	341	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	6,775	310	197	219	0.383	0.44	13,440
November	9,771	369	302	326	.570	.64	19,380
December	10,326	422	283	333	.582	.67	20,480
Calendar year 1940	330,456	3,670	197	903	1.58	21.48	655,400
January	13,357	487	390	431	.753	.87	26,490
February	12,105	462	405	432	.755	.79	24,010
March	26,096	1,280	474	842	1.47	1.70	51,760
April	57,940	2,430	1,200	1,931	3.38	3.77	114,900
May	94,790	3,840	2,430	3,058	5.35	6.17	188,000
June	62,070	3,020	1,470	2,069	3.62	4.04	123,100
July	29,515	1,450	583	952	1.66	1.91	58,540
August	13,185	570	341	425	.743	.86	26,150
September	15,854	709	336	528	.923	1.03	31,450
Water year 1940-41	351,784	3,840	197	964	1.69	22.89	697,700

a No gage-height record; discharge computed on basis of records for station near Priest River or Priest Lake gage heights and stage-relation curve.
c Backwater from logs; discharge computed on basis of record for station near Priest River and weather records.

Priest River near Priest River, Idaho

Location.- Water-stage recorder, lat. 48°13', long. 116°55', in NE¼ SE¼ sec. 11, T. 56 N., R. 5 W., 500 feet downstream from Saddler Creek, a quarter of a mile downstream from Lower West Branch, 2½ miles north of Priest River, and 3½ miles upstream from mouth.

Drainage area.- 902 square miles.

Records available.- October 1930 to September 1941. June 1903 to April 1905, November 1910 to April 1911, May to December 1923 and February 1929 to September 1930 at site 3 miles downstream.

Average discharge.- 11 years (1930-41), 1,462 second-feet.

Extremes.- Maximum discharge during year, 5,100 second-feet May 18 (gage height, 5.69 feet); minimum, 289 second-feet Oct. 8, 9 (gage height, 0.89 foot).
1903-5, 1910-11, 1923, 1929-41: Maximum discharge, 8,890 second-feet May 23, 1932 (gage height, 8.03 feet); minimum recorded, 184 second-feet Jan. 7, 1937 (gage height, 0.54 foot).

Remarks.- Records good except those for periods of ice or log effect, which are fair. No diversion above station. Some regulation on tributary.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	310	565	490	663	766	1,200	2,230	c3,100	3,800	1,760	714	507
2	315	524	496	651	800	1,670	2,280	c3,200	3,610	1,710	695	518
3	324	501	496	644	800	1,690	2,450	c3,300	3,490	1,670	688	542
4	338	484	507	626	780	1,670	2,560	c3,400	3,370	1,620	688	571
5	334	479	571	626	753	1,560	2,560	c3,500	3,250	1,570	663	559
6	315	473	632	626	734	1,500	2,080	c3,500	3,190	1,520	651	548
7	302	524	595	620	734	1,470	2,030	c3,400	3,070	1,490	632	559
8	293	638	565	614	727	1,480	1,930	3,370	3,010	1,420	620	542
9	293	657	536	601	734	1,520	1,980	3,310	3,010	1,370	608	559
10	297	601	512	595	766	1,480	2,030	3,190	2,890	1,330	595	638
11	310	524	496	583	807	1,450	2,130	3,070	2,780	1,290	589	727
12	315	501	473	577	800	1,420	2,230	3,010	2,670	1,260	595	688
13	324	484	468	571	780	1,380	2,400	3,070	2,560	1,220	595	676
14	319	473	b460	577	740	1,350	3,130	3,190	2,450	1,180	589	676
15	310	468	b450	583	714	1,350	3,190	3,250	2,400	1,150	583	714
16	310	468	b430	589	701	1,340	3,190	3,310	2,280	1,110	571	720
17	306	462	*b390	589	682	1,370	3,190	4,130	2,230	1,070	553	720
18	310	473	b450	695	682	1,540	c3,100	5,100	2,230	1,040	536	746
19	315	468	473	807	676	1,650	c3,000	4,960	2,280	1,040	524	800
20	315	*468	571	780	676	1,640	c2,900	4,820	2,230	1,010	512	883
21	324	473	720	*746	670	1,630	c2,800	4,680	2,180	969	507	918
22	329	457	720	714	670	1,620	c2,700	4,540	2,130	926	507	897
23	334	457	682	701	651	1,610	c2,700	4,400	2,030	904	507	890
24	388	457	676	695	670	1,600	c2,700	4,260	1,980	876	553	876
25	490	462	760	820	657	1,600	c2,700	4,130	1,880	862	524	876
26	479	457	814	1,010	651	1,620	c2,700	4,000	1,880	841	512	876
27	457	473	786	926	657	1,680	c2,800	3,870	1,820	827	571	862
28	446	490	760	862	897	1,730	c2,850	3,800	1,830	807	595	848
29	462	501	740	814	-	1,800	c2,900	3,740	1,880	793	559	834
30	530	496	727	780	-	1,930	c3,000	3,680	1,810	766	530	848
31	601	-	714	753	-	2,130	-	3,870	-	746	518	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	11,095	601	293	358	0.397	0.46	22,010
November	14,958	657	457	499	.553	.62	29,670
December	18,160	814	390	586	.650	.75	36,020
Calendar year 1940	461,369	4,540	281	1,261	1.40	19.02	915,100
January	21,438	1,010	571	692	.767	.88	42,520
February	20,375	897	651	728	.807	.84	40,410
March	48,680	2,130	1,200	1,570	1.74	2.01	96,560
April	78,440	3,190	1,930	2,615	2.90	3.24	155,600
May	116,150	5,100	3,010	3,747	4.15	4.78	230,400
June	76,220	3,800	1,810	2,541	2.82	3.15	151,200
July	36,147	1,760	746	1,166	1.29	1.49	71,700
August	18,084	714	507	583	.646	.74	35,870
September	21,618	918	507	721	.799	.89	42,880
Water year 1940-41	481,365	5,100	293	1,319	1.46	19.85	954,800

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
c Backwater from logs; discharge computed on basis of one discharge measurement and records for station near Coolin.

Salmon River near Waneta, British Columbia

Location.- Staff gage, lat. 49°01'30", long. 117°22'30", three-quarters of a mile upstream from mouth and 15 miles upstream from Waneta.

Records available.- March 1936 to September 1941.

Extremes.- Maximum discharge observed during year, 6,820 second-feet May 18 (gage height, 12.38 feet); minimum daily discharge, 127 second-feet Dec. 14, 15 (occurred during period of ice effect).

1936-41: Maximum discharge observed, 9,060 second-feet May 26, 1938 (gage height, 14.55 feet); minimum, 78 second-feet Feb. 19, 1937 (result of discharge measurement during period of ice effect); discharge may have been less sometime during periods of ice effect.

Remarks.- Records good except those for period of ice effect, which are poor. Gage read twice daily.

Cooperation.- Complete record furnished by Dominion Water and Power Bureau, Department of Mines and Resources, Canada. Some discharge measurements made by the U. S. Geological Survey.

Rating table, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

2.2	122	3.5	470	7.0	2,100
2.4	159	4.0	645	8.0	2,770
2.6	204	4.5	835	9.0	3,570
2.9	281	5.0	1,040	10.0	4,460
3.2	370	6.0	1,540	12.0	6,400

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	172	491	301	315	259	554	2,560	3,740	2,740	1,630	348	376
2	246	442	241	295	270	827	2,520	4,320	2,430	1,520	327	505
3	186	426	236	186	*276	647	2,320	3,880	2,170	1,410	364	634
4	188	409	246	287	273	823	2,110	4,030	2,070	1,520	389	470
5	186	383	259	287	262	803	1,990	2,830	1,930	1,380	351	719
6	172	373	298	265	268	787	1,910	2,500	1,870	1,260	333	631
7	163	*376	265	270	273	803	1,880	2,320	1,760	1,160	312	614
8	155	396	254	276	281	823	1,820	2,050	1,810	1,110	298	592
9	151	380	259	270	287	891	1,920	1,930	1,790	1,010	287	540
10	172	330	216	273	287	807	2,010	1,640	1,640	939	276	662
11	223	276	141	265	298	867	2,150	1,970	1,560	883	265	1,080
12	306	216	b134	259	295	863	2,360	2,690	1,520	859	270	1,060
13	270	211	b130	265	292	863	2,500	3,470	1,560	787	318	1,170
14	249	292	b127	259	273	811	2,430	3,880	1,480	723	292	1,370
15	228	321	b127	265	190	795	2,480	3,720	1,310	690	270	1,490
16	216	273	b140	262	190	783	2,270	3,670	1,300	645	265	1,360
17	209	268	b174	262	193	835	2,040	6,180	1,260	645	249	1,390
18	214	298	b223	268	190	1,100	1,860	6,820	1,390	662	249	1,330
19	221	233	a245	289	211	1,150	1,770	4,120	1,660	578	233	1,540
20	216	226	268	276	287	1,150	1,740	3,630	2,270	589	226	1,660
21	a241	265	330	236	276	1,120	1,860	3,070	2,040	554	223	1,600
22	a266	259	351	211	276	*1,110	2,110	2,970	1,760	512	218	1,480
23	292	246	392	265	268	1,060	2,230	2,810	1,660	477	257	1,470
24	316	259	345	259	281	1,040	2,430	2,930	1,520	477	345	1,340
25	935	246	345	259	281	1,100	2,480	2,910	1,480	491	273	1,210
26	715	244	345	270	273	1,200	2,500	2,910	1,960	460	265	1,140
27	589	254	348	273	295	1,250	2,630	2,570	1,550	428	298	1,110
28	526	246	330	262	364	1,370	2,740	2,380	1,560	412	442	987
29	491	246	333	259	-	1,540	2,830	2,420	1,500	412	402	1,020
30	533	246	330	246	-	1,730	2,360	2,360	1,610	389	345	1,050
31	526	-	327	249	-	2,230	-	2,690	-	373	402	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	9,575	935	151	309	18,990
November	9,133	491	211	304	18,110
December	8,060	392	127	260	15,990
Calendar year 1940	337,062	6,190	119	921	668,500
January	8,183	315	186	264	16,230
February	7,469	364	190	267	14,810
March	31,932	2,230	554	1,030	63,340
April	66,810	2,830	1,740	2,230	132,500
May	99,610	6,820	1,840	3,210	197,600
June	52,260	2,740	1,260	1,740	103,700
July	24,985	1,630	373	806	49,560
August	9,392	442	218	303	18,630
September	32,100	1,870	376	1,070	63,670
Water year 1940-41	359,509	6,820	127	985	713,100

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
b Stage-discharge relation affected by ice.

Sheep Creek near Northport, Wash.

Location.- Water-stage recorder, lat. 48°56'40", long. 117°46'40", in NE¼NE¼ sec. 25, T. 40 N., R. 39 E., at county highway bridge, 1 mile upstream from mouth and 1½ miles north of Northport. Datum of gage is 1,300 feet above mean sea level, subject to correction to datum of 1929.

Drainage area.- 225 square miles.

Records available.- June 1929 to September 1941.

Average discharge.- 12 years, 211 second-feet.

Extremes.- Maximum discharge during year, 1,540 second-feet (regulated) May 18 (gage height, 26.27 feet), from rating curve extended above 1,200 second-feet; minimum, 21 second-feet (regulated) Oct. 24 (gage height, 22.58 feet).
1929-41: Maximum discharge, 2,450 second-feet Apr. 29, 1933 (gage height, 27.46 feet), from rating curve extended above 1,200 second-feet; minimum not determined, probably less than 8 second-feet sometime during period of ice effect, Dec. 25, 1929, to Apr. 7, 1930.

Remarks.- Records good except those for period of ice effect, which are poor. Flow partly regulated by flash dam 6½ miles upstream occasionally used for logging operations. No diversion.

Rating table, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

22.6	22	24.0	283
22.8	37	24.3	385
23.0	61	24.6	513
23.2	93	25.0	705
23.4	130	25.5	1,000
23.7	199	26.0	1,350

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	69	57	72	76	165	1,280	970	554	425	81	63
2	34	73	57	67	79	240	1,310	1,210	545	417	78	63
3	33	78	56	66	79	341	1,280	1,210	541	385	78	64
4	31	81	56	66	79	393	1,170	1,070	429	385	78	66
5	29	83	59	67	78	405	1,100	1,000	409	381	76	69
6	28	83	59	69	78	417	1,000	845	401	363	75	72
7	28	84	57	69	78	434	938	732	401	331	72	72
8	28	86	57	67	78	472	906	635	401	295	70	69
9	27	86	57	67	79	504	875	597	409	286	69	70
10	29	86	53	66	81	504	875	545	397	260	66	84
11	29	86	47	66	84	482	938	504	364	246	64	117
12	33	86	41	66	86	468	1,040	527	345	237	64	156
13	30	84	34	66	84	442	a1,040	655	331	221	64	176
14	30	84	30	67	84	421	a1,040	906	328	189	63	186
15	29	83	28	67	84	405	1,040	1,140	345	184	64	212
16	27	79	27	69	84	405	1,040	1,140	348	179	63	221
17	27	76	28	70	84	429	938	1,210	355	167	60	218
18	27	76	30	72	84	513	845	1,420	374	156	59	215
19	27	75	31	72	*84	597	732	1,210	500	147	50	246
20	27	72	34	72	88	621	705	1,040	518	147	46	283
21	30	69	35	*72	88	606	705	906	705	124	61	292
22	29	69	39	72	88	601	705	815	680	102	56	295
23	29	66	44	72	88	564	758	705	616	115	54	283
24	31	64	50	73	90	545	815	680	550	115	54	268
25	47	63	59	73	90	550	845	640	504	111	53	254
26	49	61	64	73	90	582	845	611	508	107	53	243
27	48	60	72	75	91	640	845	568	518	102	64	229
28	53	59	76	75	111	705	875	51e	472	97	66	218
29	*60	57	81	75	-	705	875	504	425	93	64	207
30	61	57	83	75	-	906	875	490	397	88	64	196
31	64	-	79	75	-	1,140	-	513	-	83	64	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	1,064	64	27	35.0	0.156	0.18	2,150
November	2,235	86	57	74.5	.331	.37	4,430
December	1,580	83	27	51.0	.227	.26	3,130
Calendar year 1940	83,261	1,500	20	227	1.01	13.76	165,100
January	2,173	75	66	70.1	.312	.36	4,310
February	2,367	111	76	84.5	.376	.39	4,690
March	16,202	1,140	165	523	2.32	2.68	32,140
April	28,235	1,310	705	941	4.18	4.67	56,000
May	25,516	1,420	490	823	3.66	4.22	50,610
June	13,670	705	328	456	2.03	2.25	27,110
July	6,538	425	83	211	.938	1.08	12,970
August	1,993	81	46	64.3	.286	.33	3,950
September	5,207	295	63	174	.773	.86	10,330
Water year 1940-41	106,800	1,420	27	293	1.30	17.66	211,800

* Winter-discharge measurement made on this day.
a No gage-height record; discharge interpolated.
Note.- Stage-discharge relation affected by ice, Nov. 13 to Jan. 30.

Kettle River near Ferry, Wash.

(International gaging station)

Location.- Water-stage recorder, lat. 48°58'40", long. 118°46'10", in lot 7, sec. 10, T. 40 N., R. 32 E., 1¼ miles south of international boundary and Ferry and 3 miles upstream from Toroda Creek. Datum of gage is 1,840.00 feet above mean sea level (subject to correction for datum of 1929).
Drainage area.- 2,220 square miles.
Records available.- August 1928 to September 1941.
Average discharge.- 13 years, 1,286 second-feet.
Extremes.- Maximum discharge during year, 9,310 second-feet May 2 (gage height, 16.38 feet); minimum not determined (occurred during period of ice effect).
1928-41: Maximum discharge, 14,000 second-feet June 17, 1933 (gage height, 18.4 feet); minimum, 14 second-feet (discharge measurement) Jan. 23, 1930, but may have been less during period of ice effect, Jan. 18-23, 1930.
Remarks.- Records excellent except those for period of shifting control, which are good, and those for periods of ice effect and no gage-height record, which are poor. Several small diversions above station for irrigation.
Cooperation.- This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1940-41, except during periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-16)

9.3	38	10.3	416	12.0	1,860	15.0	6,440
9.5	85	10.6	588	12.5	2,450	16.0	8,450
9.7	149	11.0	870	13.0	3,120		
10.0	269	11.5	1,330	14.0	4,660		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	125	292	168	b175	149	210	3,260	6,630	5,170	3,120	613	a700
2	122	283	171	b155	160	269	3,560	8,870	4,830	3,050	588	a800
3	112	283	171	b130	160	364	3,710	8,450	4,100	3,190	576	a880
4	122	269	175	b135	156	411	3,780	7,820	3,640	3,410	582	a880
5	132	256	179	142	153	444	3,640	6,630	3,260	3,640	588	a980
6	132	248	175	149	145	477	3,560	5,880	3,190	3,260	576	a1,000
7	122	239	171	156	132	494	3,340	5,170	3,780	2,910	546	a970
8	115	248	171	160	139	540	3,190	4,500	4,660	2,980	511	a920
9	112	243	b150	164	149	576	3,340	4,100	5,000	2,580	488	a900
10	112	218	b130	164	153	570	3,560	3,710	4,180	2,270	454	a940
11	109	160	b90	164	156	570	3,860	3,710	3,640	2,090	422	1,640
12	115	135	b60	160	156	582	4,100	4,340	3,340	1,920	422	a2,160
13	129	b120	b70	160	149	576	4,100	6,060	3,260	1,750	416	a2,260
14	142	b125	b85	164	b140	582	3,940	5,380	3,640	1,580	406	a2,300
15	135	b130	b100	153	b110	582	4,100	5,700	3,260	1,480	406	a2,350
16	132	b140	b105	*160	b100	607	4,100	5,170	3,050	1,380	411	2,390
17	125	b145	b110	160	b105	*664	3,640	5,880	2,910	1,250	400	a2,650
18	122	b150	125	164	b115	798	3,260	6,060	3,050	1,150	385	a3,750
19	118	b145	139	164	b130	1,010	3,050	5,000	3,480	1,070	365	a3,150
20	118	b140	142	168	b140	1,120	2,910	4,180	4,340	1,060	344	a3,100
21	118	b135	153	168	b160	1,120	2,980	3,860	4,180	1,060	330	2,980
22	125	b130	171	153	b135	1,120	3,190	3,780	3,640	1,000	320	2,710
23	129	149	164	149	b120	1,130	3,560	3,560	3,190	930	315	2,520
24	*171	171	168	156	b120	1,140	3,780	3,860	2,840	921	330	2,390
25	*243	171	182	160	b130	1,170	3,940	4,100	2,780	991	364	2,270
26	395	175	186	160	b150	1,300	4,100	4,020	3,120	964	a440	2,150
27	416	179	194	160	164	1,640	4,340	3,710	2,910	870	a460	2,210
28	359	175	194	156	171	2,030	4,500	3,640	2,580	806	a530	2,150
29	335	171	194	149	-	2,270	4,830	3,710	2,450	747	a700	2,090
30	320	171	194	146	-	2,640	5,170	3,710	2,640	698	a820	2,030
31	310	-	186	135	-	3,050	-	4,340	-	645	a760	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	5,372	416	109	173	10,660
November	5,596	292	120	187	11,100
December	4,673	194	60	151	9,270
Calendar year 1940	437,183	9,220	30	1,194	867,200
January	4,839	175	130	156	9,600
February	3,947	171	100	141	7,830
March	30,056	3,050	210	970	59,620
April	112,390	5,170	2,910	3,746	222,900
May	156,030	8,870	3,560	5,033	309,500
June	106,110	5,170	2,450	3,537	210,500
July	54,772	3,640	645	1,767	108,600
August	14,867	820	315	480	29,490
September	58,220	3,750	700	1,941	115,500
Water year 1940-41	556,872	8,870	60	1,526	1,105,000

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

Kettle River near Laurier, Wash.

(International gaging station)

Location.- Water-stage recorder, lat. 48°50'50", long. 118°13'00", in SW¼ sec. 11, T. 40 N., R. 36 E., 500 feet downstream from Deep Creek, 1¼ miles southeast of Laurier, and 12 miles upstream from Boulder Creek.

Drainage area.- 3,800 square miles.

Records available.- September 1929 to September 1941.

Average discharge.- 12 years, 2,548 second-feet.

Extremes.- Maximum discharge during year, 15,700 second-feet May 3 (gage height, 11.80 feet); minimum, 197 second-feet Oct. 1 (gage height, 2.60 feet).
1929-41: Maximum discharge, 23,800 second-feet June 17, 1933 (gage height, 14.48 feet); minimum not determined (probably occurred during winter of 1929-30).
Maximum stage known, about 22 feet sometime in May or June 1894, from information furnished by local residents.

Remarks.- Records excellent except those for periods of ice effect, which are poor, and those for periods of no gage-height record, which are fair. North Fork regulated by reservoir at Grand Forks, British Columbia. Numerous small diversions for irrigation and domestic supply.

Cooperation.- This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

2.8	277	4.5	1,340	8.0	6,370
3.0	365	5.0	1,810	9.0	8,520
3.3	512	5.5	2,360	10.0	10,900
3.6	680	6.0	3,000	11.0	13,500
4.0	942	7.0	4,520		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	220	754	456	517	481	663	7,630	11,200	8,980	5,220	1,250	1,470
2	224	741	451	b470	507	652	8,070	14,300	8,980	5,220	1,210	1,610
3	232	723	446	b440	b510	2,120	8,520	15,200	8,070	5,400	1,170	1,810
4	220	692	451	b430	b500	2,070	8,520	14,100	7,200	5,590	1,130	1,810
5	240	663	451	b450	b480	1,760	8,070	12,500	6,570	5,970	1,130	1,960
6	224	639	451	a460	b450	1,760	8,070	10,700	6,170	5,780	1,130	2,020
7	232	639	446	a470	b430	1,760	a7,600	9,450	6,570	5,220	1,090	1,910
8	232	639	441	a480	412	1,910	a7,200	8,290	7,410	5,040	1,050	1,860
9	228	639	441	a480	461	2,130	7,200	7,630	8,290	4,690	1,020	1,810
10	269	611	393	a490	507	2,180	7,630	6,990	7,630	4,190	942	1,860
11	290	497	342	a480	523	2,130	8,070	6,570	6,780	3,870	907	2,600
12	277	b410	b320	476	528	2,070	8,750	7,200	6,170	3,570	865	4,190
13	281	b360	b300	481	528	2,070	8,980	9,690	6,170	3,350	852	4,520
14	281	b370	b290	481	523	2,070	8,520	11,200	6,370	3,140	832	4,520
15	290	b380	b280	502	471	2,020	8,520	10,700	6,370	2,860	786	5,040
16	294	b390	b310	497	446	2,020	8,750	9,930	5,780	2,240	786	5,040
17	294	b400	b360	507	441	2,070	8,520	10,700	5,590	2,070	767	5,220
18	294	b420	b410	*502	461	*2,360	7,200	12,200	5,590	1,960	754	6,370
19	290	b400	471	507	476	3,070	6,780	10,400	5,970	1,960	741	5,970
20	290	b380	497	512	497	3,420	6,370	8,750	7,200	2,020	729	5,970
21	286	b380	512	497	523	3,420	6,370	7,850	7,630	2,020	710	5,970
22	281	b380	534	481	550	3,280	6,570	7,200	6,990	1,960	692	5,400
23	281	432	539	480	528	3,280	7,200	6,990	6,370	1,860	729	5,040
24	303	441	572	486	492	3,210	7,850	6,990	5,780	1,760	872	4,690
25	316	456	572	507	517	3,210	8,070	7,850	5,590	1,760	852	4,520
26	*356	451	555	517	528	3,420	8,290	7,850	5,590	1,760	907	4,190
27	616	476	583	507	550	3,940	8,520	7,410	5,590	1,660	942	4,190
28	625	481	572	507	583	4,860	8,980	7,200	5,220	1,560	1,090	4,030
29	812	476	577	497	-	5,400	9,210	6,990	4,860	1,520	1,590	3,870
30	792	461	577	481	-	5,970	9,950	6,990	4,860	1,420	1,810	3,720
31	767	-	566	471	-	6,990	-	7,410	-	1,340	1,610	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	10,837	825	220	350	21,490
November	15,181	754	360	506	30,110
December	14,166	583	280	457	28,100
Calendar year 1940	901,973	16,900	193	2,464	1,789,000
January	15,063	517	430	486	29,880
February	13,903	583	412	497	27,580
March	87,485	6,990	663	2,822	173,500
April	239,960	9,930	6,370	7,999	476,000
May	288,430	15,200	6,570	9,304	572,100
June	196,340	8,980	4,860	6,545	389,400
July	97,980	5,970	1,340	3,161	194,300
August	30,945	1,810	692	998	61,380
September	113,180	6,370	1,470	3,773	224,500
Water year 1940-41	1,123,470	15,200	220	3,078	2,228,000

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

Myers Creek near Myncaster, British Columbia

(International gaging station)

Location.- Water-stage recorder and 4-foot Cippoletti weir, lat. 49°00'00", long. 119°01'15", 50 feet north of international boundary, a quarter of a mile south of Myncaster, British Columbia, and 4½ miles downstream from Mary Ann Creek.

Drainage area.- 80 square miles.

Records available.- October 1929 to September 1941 (fragmentary), in water-supply papers of Geological Survey. May 1923 to September 1929, in bulletins of Dominion Water and Power Bureau, Department of Mines and Resources, Canada.

Extremes.- Maximum discharge recorded during period Aug. 13 to Sept. 30, 21.3 second-feet Aug. 27 (gage height, 2.54 feet); minimum, 6.5 second-feet Aug. 20 (gage height, 1.80 feet).
1923-41: Maximum discharge recorded, 99 second-feet June 14, 1923; no flow July 16-18, 25, 1926, Aug. 13-25, 1939.

Remarks.- Records good. Diversions above station for irrigation. Record published only for period when weir was in place.

Cooperation.- This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1											-	11.0
2											-	11.0
3											-	11.4
4											-	11.7
5											-	10.4
6											-	10.0
7											-	10.6
8											-	11.0
9											-	11.0
10											-	11.9
11											-	15.2
12											-	14.8
13											9.0	15.0
14											8.4	13.9
15											7.6	14.8
16											7.9	13.1
17											7.3	12.1
18											7.1	11.9
19											6.8	16.9
20											6.6	20.6
21											6.6	17.6
22											7.1	15.6
23											7.3	14.6
24											7.6	13.9
25											7.0	13.3
26											13.7	12.5
27											19.9	12.1
28											19.2	12.5
29											16.7	12.3
30											13.5	12.1
31											11.7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May	-	-	-	-	-
June	-	-	-	-	-
July	-	-	-	-	-
August 13-31	191.0	19.9	6.6	10.1	379
September	394.8	20.6	10.0	13.2	783
The period	-	-	-	-	1,160

Colville River at Kettle Falls, Wash.

Location.-Staff gage, lat. 48°36', long. 118°04', in sec. 29, T. 36 N., R. 38 E., 500 feet downstream from Stevens County Light & Power Co.'s plant at foot of Meyers Falls, half a mile south of town of Kettle Falls, and 5 miles upstream from mouth.

Records available.- October 1922 to September 1941.

Average discharge.- 19 years, 238 second-feet.

Extremes.- Maximum discharge observed during year, 880 second-feet Mar. 10, 11, 13 (gage height, 7.30 feet); minimum observed, 26 second-feet Aug. 21 (gage height, 4.48 feet).

1922-41: Maximum discharge observed, 2,720 second-feet Apr. 20, 1938; minimum observed, 0.5 second-foot Aug. 15, 1930.

Remarks.- Records fair except those for periods of ice effect, which are poor. Gage read twice daily. Several ditches divert water above station for irrigation. Slight regulation for power by small reservoir above falls.

Cooperation.- Gage-height record and three discharge measurements furnished by Washington Water Power Co.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-28, Nov. 6-18)

4.5	27	5.7	229
4.7	43	6.0	320
4.9	66	6.5	505
5.1	96	7.0	730
5.4	154		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	112	166	133	285	372	389	779	408	446	304	77	144
2	108	*177	133	260	372	485	779	426	465	288	80	177
3	110	177	144	215	372	591	779	426	446	288	78	103
4	116	166	144	195	372	682	829	426	446	273	86	202
5	110	154	154	190	337	636	829	426	446	258	96	190
6	110	154	154	185	337	682	829	426	426	229	96	177
7	99	*177	154	190	354	730	779	426	426	229	93	177
8	106	154	154	215	337	730	779	408	426	202	89	177
9	98	166	150	190	337	829	779	408	426	202	112	117
10	78	170	130	202	354	880	730	408	408	190	106	177
11	89	165	30	202	372	829	730	389	408	177	53	190
12	94	120	40	177	354	829	730	389	408	177	73	202
13	99	105	50	202	372	829	730	389	389	177	117	190
14	99	105	50	202	372	779	682	408	372	177	125	190
15	77	110	55	190	354	779	682	408	372	177	48	190
16	91	110	55	216	354	730	636	426	337	123	123	190
17	88	119	50	190	354	682	636	426	337	121	74	190
18	94	144	50	202	354	730	636	485	337	117	61	177
19	93	125	60	258	354	730	591	526	354	125	66	202
20	82	*125	70	258	320	730	547	526	389	125	110	216
21	94	115	140	273	320	730	526	505	354	119	39	229
22	94	100	200	273	304	730	505	505	320	93	106	216
23	105	115	220	288	304	730	505	485	337	103	99	216
24	106	145	244	288	288	682	485	465	304	77	99	202
25	131	160	273	288	288	682	465	465	288	91	112	190
26	127	154	288	320	288	730	446	446	304	96	77	177
27	144	133	288	320	288	682	446	389	288	83	133	177
28	144	144	304	*320	337	682	446	408	288	80	190	177
29	144	133	304	354	-	730	408	408	304	83	202	177
30	144	133	288	354	-	730	372	408	304	86	190	177
31	154	-	295	372	-	779	-	426	-	96	177	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	3,340	154	77	108	6,620
November	4,221	177	100	141	8,370
December	4,804	304	30	155	9,530
Calendar year 1940	91,637	1,450	30	250	181,800
January	7,674	372	177	248	15,220
February	9,521	372	288	340	18,880
March	22,168	880	389	715	43,970
April	19,095	829	372	636	37,870
May	13,470	526	389	435	26,720
June	11,155	465	288	372	22,130
July	4,966	304	77	160	9,850
August	3,187	202	39	103	6,320
September	5,516	229	103	184	10,940
Water year 1940-41	109,117	880	30	299	216,400

* Winter-discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 10-16, 20-25, Dec. 9-23, Dec. 31 to Jan. 8.

Mill Creek near Colville, Wash.

Location.- Water-stage recorder, lat. 48°34'55", long. 117°51'00", in lot 3, NW¼ sec. 35, T. 36 N., R. 39 E., 3 miles northeast of Colville and 5 miles downstream from North Fork. Datum of gage is 1,964.3 feet above mean sea level (Stevens County bench mark, subject to correction to datum of 1929).

Drainage area.- 82 square miles.

Records available.- February 1940 to September 1941.

Extremes.- Maximum discharge during year, 222 second-feet Mar. 2 (gage height, 3.68 feet); minimum, 7.2 second-feet Dec. 16 (gage height, 1.80 feet).
1940-41: Maximum discharge, 454 second-feet Mar. 27, 1940 (gage height, 4.55 feet); minimum recorded, 3.6 second-feet Aug. 28, 31, Sept. 1, 1940 (gage height, 1.69 feet), but stage and discharge may have been less sometime during period of no gage-height record, Feb. 1-4, 1940.

Remarks.- Records good. Some diversion for irrigation above gage. No regulation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 31 to Nov. 4)

Oct. 1 to Mar. 2				Mar. 3 to Sept. 30			
1.9	12	2.7	73	1.9	12	2.7	68
2.1	23	3.0	109	2.1	22	3.0	103
2.4	45	3.5	187	2.4	41	3.5	181

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	21	11	21	20	102	181	77	96	49	20	19
2	17	18	11	20	23	192	178	81	80	49	20	19
3	12	17	12	16	23	174	183	76	74	44	21	22
4	12	16	12	18	22	142	151	75	70	44	22	24
5	12	16	14	20	21	128	171	75	68	42	20	21
6	10	14	16	19	21	121	161	70	68	40	18	19
7	10	16	14	18	21	122	149	68	72	38	17	19
8	10	21	14	18	21	133	142	68	77	37	15	18
9	10	19	15	18	21	131	139	65	80	36	15	20
10	10	17	12	18	23	122	144	61	70	34	14	26
11	10	14	11	17	26	118	136	58	65	33	14	27
12	10	12	9.2	18	25	112	134	58	61	33	15	24
13	12	12	9.2	17	21	106	128	60	58	32	18	23
14	12	13	8.4	17	23	101	122	78	56	31	17	22
15	11	12	8.0	17	22	97	117	75	56	29	16	22
16	11	12	7.6	16	21	97	114	76	55	28	16	a22
17	11	12	7.6	16	21	111	110	112	58	27	15	a22
18	11	12	8.0	18	23	141	105	122	63	28	15	22
19	11	12	9.2	23	24	147	100	107	78	27	14	33
20	11	12	15	21	24	144	96	100	a71	26	14	36
21	14	12	26	19	24	136	91	94	a64	26	13	31
22	16	12	28	19	24	134	89	89	a56	24	13	27
23	14	12	27	18	23	126	85	84	49	24	16	25
24	20	12	26	18	24	124	82	81	48	24	16	22
25	29	12	32	20	23	124	a80	78	56	24	16	21
26	22	12	32	26	23	131	a78	74	56	23	20	21
27	18	12	31	23	23	142	a75	74	49	22	26	20
28	17	12	28	22	41	145	a73	72	48	22	28	20
29	18	12	26	20	-	150	71	73	54	22	26	20
30	23	12	24	20	-	167	68	73	52	21	21	20
31	28	-	23	20	-	190	-	88	-	21	19	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	450	29	10	14.5	0.177	0.20	893
November	418	21	12	13.9	.170	.19	829
December	528.2	32	7.6	17.0	.207	.24	1,050
Calendar year	-	-	-	-	-	-	-
January	589	26	16	19.0	.232	.27	1,170
February	651	41	20	23.2	.283	.30	1,290
March	4,110	192	97	133	1.62	1.86	8,150
April	3,582	183	68	119	1.45	1.62	7,100
May	2,442	122	58	78.8	.961	1.11	4,840
June	1,908	96	48	63.6	.776	.87	3,780
July	960	49	21	31.0	.378	.44	1,900
August	550	28	13	17.7	.216	.25	1,090
September	687	36	18	22.9	.279	.31	1,360
Water year 1940-41	16,875.2	192	7.6	46.2	.583	7.66	33,450

a No gage-height record; discharge interpolated.

Coeur d'Alene River at Enaville, Idaho

Location.- Water-stage recorder, lat. 47°34', long. 116°15', in NW¼ sec. 30, T. 49 N., R. 2 E., 800 feet upstream from highway bridge, a quarter of a mile northwest of Enaville post office, 1.1 miles upstream from South Fork of Coeur d'Alene River, and 3.5 miles downstream from North Fork of Coeur d'Alene River. Datum of gage is 2,100.00 feet above mean sea level.

Drainage area.- 895 square miles.

Records available.- October 1939 to September 1941. March 1911 to April 1913 (fragmentary records collected at site a quarter of a mile downstream and published as North Fork of Coeur d'Alene River at Enaville).

Extremes.- Maximum discharge during year, 5,800 second-feet May 18 (gage height, 65.96 feet); minimum, 185 second-feet Oct. 20, 21 (gage height, 60.69 feet).

1939-41: Maximum discharge, 10,000 second-feet Mar. 28, 1940 (gage height, 68.13 feet), from rating curve extended above 8,000 second-feet; minimum 160 second-feet Aug. 26, 27, Sept. 3, 4, 1940 (gage height, 60.55 feet).

From local information obtained concerning high-water marks, the flood in December 1933 reached a stage of 79.47 feet and that in April 1938 a stage of 78.16 feet.

Remarks.- Records good. No appreciable diversions or regulation above station.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 18

60.7	187	62.5	1,140
61.0	263	63.0	1,580
61.3	375	64.0	2,680
61.6	525	65.0	4,100
62.0	775	66.0	5,800

May 19 to Sept. 30

60.8	240	62.0	825
61.1	331	62.5	1,200
61.5	518	63.0	1,620

Note.- Same as preceding table above 63.5 feet.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	205	508	445	908	901	982	3,070	1,480	1,900	659	300	266
2	214	481	435	749	880	2,770	3,210	1,530	1,850	623	290	272
3	229	465	435	549	859	4,180	3,280	1,460	1,800	593	287	281
4	246	425	465	549	845	3,640	3,000	1,370	1,710	564	287	328
5	246	375	520	671	824	3,140	2,810	1,520	1,620	552	290	328
6	237	337	697	652	796	2,740	2,560	1,470	1,530	524	281	303
7	219	318	803	627	810	2,440	2,320	1,300	1,490	507	272	300
8	207	420	716	573	845	2,320	2,160	1,290	1,440	492	261	290
9	198	537	645	492	824	2,440	2,040	1,250	1,400	470	256	300
10	194	492	579	455	852	2,560	1,990	1,140	1,280	450	250	314
11	198	411	508	440	915	2,380	2,040	1,090	1,190	431	245	367
12	209	346	380	411	982	2,160	2,040	1,100	1,120	426	248	394
13	205	289	293	388	990	1,940	2,040	1,170	1,080	416	256	412
14	205	260	307	450	952	1,780	1,940	1,280	1,040	398	261	421
15	202	260	283	465	908	1,580	1,880	1,280	1,020	384	256	502
16	200	260	263	450	845	1,490	1,830	1,260	980	371	258	513
17	196	248	270	440	803	1,410	1,680	1,840	944	363	248	440
18	191	248	314	561	768	1,550	1,540	4,760	930	359	240	416
19	189	243	333	838	742	1,830	1,420	5,090	930	359	233	470
20	185	237	384	952	742	1,940	1,300	4,020	902	351	231	470
21	191	237	664	938	723	1,940	1,220	3,350	839	339	233	426
22	196	229	1,050	873	697	1,830	1,200	2,810	792	328	231	380
23	196	219	1,210	817	684	1,780	1,240	2,440	754	320	236	347
24	202	209	1,350	789	684	1,680	1,330	2,160	714	317	245	328
25	251	a216	1,520	824	671	1,630	1,430	1,950	708	317	258	306
26	307	a222	1,830	1,130	639	1,630	1,440	1,800	695	314	266	296
27	329	229	1,880	1,340	621	1,730	1,440	1,710	653	306	300	287
28	322	243	1,630	1,280	678	1,990	1,440	1,580	689	314	317	278
29	314	375	1,390	1,160	-	2,260	1,420	1,490	792	347	306	272
30	337	470	1,200	1,040	-	2,560	1,410	1,440	747	331	284	269
31	430	-	1,060	960	-	2,880	-	1,760	-	310	275	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	7,250	430	185	234	0.261	0.30	14,380
November	9,809	537	209	327	.365	.41	19,460
December	23,859	1,880	263	770	.860	.99	47,320
Calendar year 1940	497,370	9,790	162	1,359	1.52	20.68	986,500
January	22,771	1,340	388	735	.821	.95	45,170
February	22,480	990	621	803	.897	.93	44,590
March	67,182	4,180	982	2,167	2.42	2.79	133,300
April	57,720	3,280	1,200	1,924	2.15	2.40	114,500
May	59,190	5,090	1,090	1,909	2.13	2.46	117,400
June	33,539	1,900	653	1,118	1.25	1.40	65,520
July	12,835	659	306	414	.463	.53	25,460
August	8,201	317	231	265	.296	.34	16,270
September	10,576	513	266	353	.394	.44	20,980
Water year 1940-41	335,412	5,090	185	919	1.03	13.94	665,400

a No gage-height record; discharge interpolated.

Coeur d'Alene River near Cataldo, Idaho

Location.- Water-stage recorder, lat. 47°34', long. 116°18', in sec. 26, T. 49 N., R. 1 E., 1½ miles upstream from Cataldo and 3 miles downstream from South Fork of Coeur d'Alene River. Datum of gage is 2,100 feet above mean sea level.

Drainage area.- 1,220 square miles.

Records available.- April 1911 to December 1912, July 1920 to September 1941.

Average discharge.- 22 years, 2,339 second-feet.

Extremes.- Maximum discharge during year, 6,440 second-feet May 19 (gage height, 43.35 feet); minimum discharge, 265 second-feet Oct. 18; minimum gage height, 37.73 feet Oct. 1.

1911-12, 1920-41: Maximum discharge, 55,300 second-feet Dec. 22 or 23, 1933 (gage height, 56.9 feet, from floodmark), from logarithmic extension of rating curve above 24,000 second-feet; minimum discharge, 122 second-feet Dec. 4, 1929; minimum gage height, 37.03 feet Sept. 6, 1931.

Remarks.- Records good except those for October, November, and September, which are fair. No appreciable diversions or regulation above station.

Cooperation.- Gage-height record and results of seven discharge measurements furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	295	751	910	1,400	1,270	1,190	3,570	2,310	2,630	958	410	399
2	300	688	902	1,190	1,230	3,020	3,700	2,410	2,580	894	399	416
3	328	660	918	918	1,190	4,400	3,830	2,260	2,520	842	399	428
4	360	625	982	886	1,190	4,110	3,570	2,110	2,360	814	399	476
5	360	572	1,080	998	1,190	3,700	3,320	2,310	2,260	779	394	476
6	355	524	1,270	966	1,150	3,320	3,200	2,210	2,110	765	382	458
7	338	488	1,320	910	1,150	3,080	2,960	2,010	2,060	730	366	458
8	316	639	1,190	835	1,150	2,960	2,740	1,960	2,060	709	355	440
9	295	828	1,150	730	1,150	3,020	2,580	1,860	1,960	681	350	440
10	290	800	1,040	660	1,150	3,080	2,580	1,720	1,810	653	344	470
11	285	730	918	618	1,230	2,960	2,630	1,630	1,630	625	333	542
12	295	604	730	572	1,270	2,740	2,680	1,720	1,540	618	344	584
13	290	518	560	536	1,320	2,460	2,630	1,860	1,500	597	350	618
14	290	464	536	611	1,270	2,260	2,520	2,010	1,450	572	355	646
15	280	458	488	632	1,230	2,060	2,460	1,960	1,450	554	350	765
16	280	440	440	604	1,150	1,910	2,410	1,910	1,400	536	355	758
17	275	428	440	597	1,090	1,810	2,260	2,660	1,320	518	338	674
18	270	410	542	842	1,050	1,960	2,060	5,350	1,320	512	328	660
19	275	394	566	1,270	1,030	2,210	1,860	6,050	1,320	500	316	737
20	275	377	646	1,450	1,020	2,360	1,720	5,020	1,270	482	311	751
21	285	372	1,110	1,400	982	2,310	1,630	4,250	1,190	470	311	e680
22	295	355	1,500	1,320	950	2,260	1,630	3,830	1,110	452	311	e600
23	290	338	1,630	1,230	918	2,160	1,720	3,440	1,060	446	322	e540
24	306	335	1,810	1,190	926	2,060	1,910	3,200	1,020	440	350	e490
25	388	372	1,960	1,230	918	1,960	2,060	2,960	1,010	434	355	e460
26	458	350	2,160	1,680	856	1,960	2,060	2,680	998	428	377	e435
27	524	360	2,310	1,860	828	2,060	2,060	2,520	942	422	428	e415
28	506	399	2,160	1,760	856	2,310	2,110	2,260	1,050	434	446	e400
29	482	807	1,910	1,630	-	2,630	2,110	2,110	1,150	476	440	e390
30	512	966	1,720	1,500	-	3,020	2,110	2,060	1,060	452	416	e390
31	674	-	1,630	1,360	-	3,320	-	2,520	-	422	410	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	10,772	674	270	347	0.284	0.33	21,370
November	16,055	966	338	535	.439	.49	31,840
December	36,528	2,310	440	1,178	.966	1.11	72,450
Calendar year 1940	663,566	10,500	235	1,813	1.49	20.23	1,316,000
January	33,385	1,860	536	1,077	.883	1.02	66,220
February	30,714	1,320	828	1,097	.899	.94	60,920
March	80,660	4,400	1,190	2,602	2.13	2.46	160,000
April	74,680	3,830	1,630	2,489	2.04	2.28	148,100
May	83,160	6,050	1,630	2,683	2.20	2.54	164,900
June	47,140	2,630	942	1,571	1.29	1.44	93,500
July	18,215	958	422	588	.482	.56	36,130
August	11,344	446	311	366	.300	.35	22,500
September	15,996	765	390	533	.437	.49	31,730
Water year 1940-41	458,649	6,050	270	1,257	1.03	14.01	909,700

e Stage-discharge relation indefinite; discharge computed on basis of records for station at Enaville.

Coeur d'Alene Lake at Coeur d'Alene, Idaho

Location.- Water-stage recorder, lat. 47°40', long. 116°46', in sec. 24, T. 50 N., R. 4 W., 500 feet southwest of south end of Eleventh Street, Coeur d'Alene. Datum of gage is 2,100.00 feet above mean sea level, referred to originally accepted elevation (2,157.40 feet) of Geological Survey bench mark in southeast corner of Merriam Building (see Water Supply Paper 882).

Drainage area.- 3,750 square miles.

Records available.- February 1905 to September 1941. April 1903 to February 1905, from St. Joe Boom Co.'s gage at mouth of St. Joe River.

Extremes.- Maximum gage height during year, 28.43 feet May 31, June 1; minimum, 23.26 feet Oct. 23.

1903-41: Maximum gage height, 39.05 feet Dec. 25, 1933; minimum, 19.9 feet Oct. 10-12, 1904, Sept. 24, 25, 1905, and Oct. 14 to Nov. 3, 1906.

Maximum stage known prior to 1903, 37.6 feet May 31, 1894, from high-water marks.

Remarks.- Washington Water Power Co. stores considerable water in lake. Stage regulated by taintor gates and bear-trap dam at Post Falls.

Cooperation.- Gage-height record furnished by Washington Water Power Co.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	23.59	23 46	24.30	25.04	24.35	23.96	25.76	27.92	28.41	27.98	27.76	26.77
2	23.60	23.53	24.44	24.81	24.27	24.16	25.92	27.88	28.37	28.00	27.70	26.77
3	23.68	23.59	24.56	24.66	24.18	24.52	26.00	27.87	28.29	28.00	27.64	26.81
4	23.75	23.62	24.64	24.69	24.11	24.79	26.02	27.79	28.18	28.00	27.60	26.82
5	23.79	23.63	24.74	24.78	24.11	24.94	26.02	27.83	28.07	27.99	27.58	26.82
6	23.80	23.63	24.77	24.82	24.11	25.00	26.01	27.87	27.99	27.99	27.56	26.81
7	23.80	23.64	24.84	24.81	24.11	25.01	25.98	27.85	27.99	28.02	27.53	26.79
8	23.78	23.69	24.87	24.78	24.09	24.98	25.93	27.85	27.98	28.00	27.49	26.78
9	23.73	23.75	24.86	24.76	24.08	24.94	25.97	27.82	27.99	27.97	27.45	26.78
10	23.69	23.78	24.78	24.76	24.10	24.90	26.12	27.82	27.98	27.96	27.41	26.74
11	23..,	23.78	24.68	24.76	24.16	24.87	26.20	27.83	27.96	27.96	27.38	26.75
12	23.58	23.76	24.56	24.75	24.24	24.83	26.28	27.88	28.00	27.96	27.32	26.76
13	23.54	23.72	24.48	24.73	24.27	24.81	26.31	27.93	28.03	27.95	27.25	26.80
14	23.51	23.68	24.41	24.72	24.25	24.79	26.40	27.93	27.95	27.96	27.20	26.83
15	23.46	23.65	24.34	24.73	24.20	24.73	26.51	27.92	27.91	27.97	27.17	26.84
16	23.41	23.62	24.28	24.72	24.14	24.68	26.58	27.94	27.87	27.97	27.15	26.86
17	23.38	23.60	24.22	24.72	24.06	24.62	26.65	27.93	27.82	27.98	27.14	26.87
18	23.36	23.59	24.18	24.84	24.00	24.65	26.77	28.01	27.81	27.97	27.10	26.92
19	23.34	23.58	24.17	24.97	23.93	24.69	26.86	28.03	27.87	27.97	27.05	26.94
20	23.32	23.59	24.22	25.02	23.89	24.73	26.93	27.95	27.92	27.98	27.00	26.93
21	23.33	23.61	24.40	24.99	23.86	24.79	27.01	27.83	27.95	27.97	26.96	26.91
22	23.30	23.61	24.65	24.89	23.86	24.83	27.06	27.79	28.00	27.93	26.91	26.89
23	23.27	23.60	24.87	24.78	23.84	24.89	27.13	27.86	28.06	27.89	26.88	26.87
24	23.29	23.62	25.12	24.67	23.87	24.93	27.21	27.86	28.02	27.87	26.87	26.84
25	23.32	23.61	25.25	24.61	23.88	24.94	27.36	27.88	27.98	27.85	26.81	26.80
26	23.29	23.57	25.36	24.66	23.88	24.96	27.51	27.87	27.95	27.85	26.77	26.78
27	23.33	23.55	25.52	24.71	23.87	24.99	27.65	27.87	27.96	27.84	26.78	26.72
28	23.37	23.55	25.58	24.70	23.89	25.09	27.77	27.94	28.02	27.82	26.79	26.66
29	23.40	23.71	25.51	24.65	-	25.24	27.83	28.07	28.02	27.81	26.79	26.61
30	23.41	24.08	25.40	24.56	-	25.41	27.90	28.22	27.96	27.80	26.80	26.58
31	23.41	-	25.24	24.45	-	25.60	-	28.40	-	27.78	26.79	-

Note.- Add 2,100 feet to obtain elevations above mean sea level.

Spokane River at Post Falls, Idaho

Location.- Water-stage recorder, lat. 47°42', long. 116°58', in sec. 4, T. 50 N., R. 5 W., 1,500 feet downstream from power plant of Washington Water Power Co., 3,300 feet downstream from intake of Spokane Valley Farms Co.'s canal, and 1 mile west of Post Falls. Datum of gage is 2,000 feet above mean sea level.
Drainage area.- 3,880 square miles.
Records available.- January 1913 to September 1941.
Average discharge.- River alone, 28 years (1913-41), 5,836 second-feet; river and Spokane Valley Farms Co.'s canal, 28 years (1913-41), 5,923 second-feet.
Extremes.- Maximum daily discharge during year, 15,200 second-feet (estimated) May 19; minimum discharge recorded, 378 second-feet (regulated) Aug. 31 (gage height, 65.17 feet).
1913-41: Maximum discharge, 50,100 second-feet when recorder was not operating Dec. 25, 1933 (determined from unpublished records collected by Washington Water Power Co. for station at Liberty Bridge); minimum, that of Aug. 31, 1941.
Remarks.- Records good. Spokane Valley Farms Co.'s canal diverts water 3,300 feet above gage for irrigation (see p. 175). Flow partly regulated by Coeur d'Alene Lake.
Cooperation.- Gage-height record and results of four discharge measurements furnished by Washington Water Power Co.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

65.2	395	67.6	2,330	70.5	7,780
65.6	630	68.0	2,840	71.0	8,980
66.0	895	68.5	3,650	71.5	10,290
66.4	1,190	69.0	4,570	72.0	11,730
66.8	1,520	69.5	5,570	72.5	13,330
67.2	1,900	70.0	6,650	73.0	15,160

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	734	1,090	874	3,010	6,210	2,700	4,190	6,720	a7,600	1,610	1,020	688
2	498	799	1,080	5,980	6,210	2,770	5,610	7,320	a8,000	1,850	1,040	676
3	468	944	1,140	3,160	5,570	4,200	7,320	7,780	8,490	1,850	1,100	669
4	528	1,480	1,850	1,390	4,540	5,990	7,550	7,090	8,490	1,750	1,120	708
5	618	1,390	2,510	1,480	3,830	6,870	7,550	6,430	7,780	1,660	1,100	714
6	656	1,480	2,570	2,610	3,920	7,320	7,550	6,430	5,990	1,010	1,110	656
7	1,030	1,390	2,510	3,230	3,830	7,320	7,320	6,430	5,570	1,260	1,170	695
8	1,390	1,390	3,070	2,840	3,830	7,320	6,430	6,430	5,260	1,660	1,170	930
9	1,480	1,390	3,560	2,110	3,830	7,090	3,590	5,570	5,260	1,160	1,170	1,040
10	1,480	–,390	4,010	1,800	3,830	7,090	3,540	4,660	5,260	839	1,170	1,190
11	1,430	1,390	4,010	1,750	3,830	6,650	4,280	4,100	3,540	818	1,200	1,210
12	1,390	1,430	3,070	1,800	3,920	5,990	5,060	a4,300	2,570	806	1,270	919
13	1,350	1,430	2,390	2,280	4,480	5,570	4,280	a4,900	4,850	747	1,520	702
14	1,520	1,390	2,060	2,280	4,760	5,570	3,740	a6,300	4,570	740	1,340	909
15	1,430	1,430	1,950	2,220	4,860	5,570	3,400	a5,300	3,920	682	860	1,000
16	1,130	1,390	2,000	2,220	4,760	5,570	3,480	a5,800	4,470	594	832	1,000
17	1,080	1,390	2,060	2,220	4,660	4,330	2,640	a8,400	3,920	669	916	881
18	1,020	1,160	2,060	4,130	4,190	3,650	2,280	a12,500	2,510	618	1,120	1,010
19	1,020	944	2,060	6,870	3,830	3,650	2,220	a15,200	1,790	630	1,110	1,350
20	881	860	1,850	7,320	3,740	3,650	1,800	a13,500	1,750	616	1,060	1,480
21	1,090	812	1,430	7,320	3,150	3,740	2,220	a12,000	1,260	624	979	1,480
22	806	888	1,390	7,090	2,700	3,740	2,330	a8,300	1,270	624	951	1,480
23	1,070	799	2,020	6,870	2,640	3,740	2,280	a6,800	2,170	534	937	1,480
24	1,050	1,090	4,230	6,870	2,700	3,830	1,430	a7,400	2,570	522	937	1,560
25	948	1,480	6,210	6,650	2,700	3,830	1,270	a5,600	2,570	498	993	1,660
26	1,350	1,660	6,870	6,650	2,700	3,830	1,310	a5,900	1,750	480	965	1,660
27	1,060	1,700	7,550	6,870	2,640	2,920	1,700	a5,500	944	728	740	1,660
28	881	1,900	8,490	6,870	2,640	2,390	2,690	a3,500	2,190	1,000	570	1,660
29	1,160	2,000	8,490	6,650	-	2,390	4,100	a2,500	4,100	832	546	1,660
30	1,430	1,610	8,490	6,650	-	2,390	4,530	a1,350	3,020	747	444	1,660
31	1,270	-	8,490	6,430	-	3,360	-	a7,600	-	832	558	9

Month	Observed: Discharge in second-feet: Maximum	Observed: Discharge in second-feet: Minimum	Observed: Discharge in second-feet: Mean	Observed: Runoff in acre-feet	Diversion through Spokane Valley Farms Co.'s canal (acre-feet)	Corrected for diversion: Runoff in acre-feet	Corrected for diversion: Discharge in second-feet: Mean	Corrected for diversion: Discharge in second-feet: Per square mile	Corrected for diversion: Runoff in inches
October	1,520	468	1,073	65,950	353	66,303	1,078	-	-
November	2,000	799	1,317	78,340	163	78,503	1,319	-	-
December	8,490	874	3,589	218,900	14	218,914	3,560	-	-
Calendar year 1940	16,300	468	4,747	3,446,550	68,640	3,515,190	4,842	1.25	17.01
January	8,010	1,390	4,536	278,900	6.0	278,906	4,536	-	-
February	6,210	2,640	3,946	219,200	0	219,200	3,946	-	-
March	7,320	2,390	4,678	287,700	113	287,813	4,680	-	-
April	7,550	1,270	3,923	233,400	4,700	238,100	4,002	-	-
May	15,200	1,350	6,826	419,700	13,950	433,650	7,053	-	-
June	8,490	944	4,114	244,800	14,670	259,470	4,361	-	-
July	1,550	480	935	57,500	15,660	73,360	1,193	-	-
August	1,520	444	1,001	61,520	15,410	76,930	1,251	-	-
September	1,660	656	1,146	68,210	4,730	72,940	1,226	-	-
Water year 1940-41	15,200	444	3,086	2,234,120	69,969	2,304,089	3,183	0.820	11.13

a Incomplete or no gage-height record; discharge computed on basis of discharge measurement June 2, records for Spokane River at Liberty Bridge (Washington Water Power Co. station), and records for station at Spokane.
Note.- Monthly figures showing discharge in second-feet per square mile and runoff in inches are not published, owing to regulation by Coeur d'Alene Lake. The yearly figures represent more nearly the natural discharge and runoff.

Spokane River at Spokane, Wash.

Location.- Water-stage recorder, lat. 47°39'30", long. 117°26'50", in sec. 13, T. 25 N., R. 42 E., at Cochran Street in Spokane, half a mile upstream from Latah Creek. Datum of gage is about 1,700 feet above mean sea level, subject to correction to datum of 1929.

Drainage area.- 4,350 square miles.

Records available.- April 1891 to September 1941.

Average discharge.- 50 years, 6,767 second-feet, (adjusted).

Extremes.- Maximum discharge during year, 16,100 second-feet (regulated) May 19 (gage height, 23.44 feet); minimum, 750 second-feet (regulated) July 24 (gage height, 17.05 feet); minimum daily, 1,050 second-feet (regulated) July 24.

1891-1941: Maximum discharge, 49,000 second-feet May 31, 1894; minimum, 268 second-feet (regulated) Dec. 28, 1935 (gage height, 16.37 feet); minimum daily, 1,040 second-feet (regulated) Nov. 28, 1935.

Remarks.- Records excellent. Water for irrigation diverted above station by Spokane Valley Farms Co. Flow partly regulated by Coeur d'Alene Lake (see p. 168) and by pondage at Spokane. Capacity of Coeur d'Alene Lake between elevations 2,117 and 2,135 feet, 770,000 acre-feet.

Cooperation.- Gage-height record collected in cooperation with Washington Water Power Co., which also furnished results of two discharge measurements.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

17.1	800	19.0	3,400
17.3	1,010	20.0	5,450
17.6	1,360	21.0	8,010
18.0	1,870	22.0	11,000
18.5	2,560	23.0	14,500

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,580	1,730	†1,430	7,710	6,300	3,200	4,300	5,860	†7,580	2,430	1,480	1,250
2	1,280	1,330	1,420	6,760	†6,230	†3,230	5,150	7,160	7,780	2,480	1,510	1,300
3	1,190	†1,320	1,670	4,640	5,880	3,890	6,850	7,440	8,530	2,430	†1,590	1,290
4	1,120	1,750	1,960	2,230	5,120	5,590	7,480	†7,420	8,570	2,320	1,590	1,250
5	1,170	1,890	2,750	†2,140	4,220	6,720	7,510	6,350	8,120	2,340	1,580	1,300
6	†1,140	1,840	2,950	2,730	4,270	7,140	†7,480	6,400	6,860	†1,960	1,600	1,300
7	1,470	1,940	2,960	3,580	4,220	7,160	7,300	6,430	5,960	1,700	1,600	†1,220
8	1,580	1,860	†3,380	3,470	4,170	7,150	6,680	6,320	†5,500	2,270	1,620	1,440
9	1,660	1,890	3,660	2,900	†4,180	†7,060	4,820	5,920	5,540	1,990	1,640	1,510
10	1,900	†1,870	4,100	2,420	4,200	7,090	3,620	5,280	5,530	1,520	†1,620	1,700
11	1,900	1,850	4,120	2,380	4,180	6,790	4,530	†4,460	4,720	1,520	1,630	1,730
12	1,680	1,820	3,800	†2,340	4,190	6,230	4,890	4,470	3,340	1,490	1,670	1,720
13	†1,760	1,960	3,090	2,750	4,440	5,710	†5,110	4,840	4,230	†1,400	1,860	1,290
14	1,810	1,840	2,560	2,850	4,870	5,680	4,210	6,260	5,150	1,380	1,960	†1,370
15	2,010	1,880	†2,590	2,810	4,870	5,640	3,940	5,900	†4,630	1,340	1,490	1,510
16	1,840	1,890	2,490	2,740	†4,880	†5,600	3,930	5,700	4,420	1,310	1,370	1,620
17	1,670	†1,880	2,530	2,770	4,850	4,970	3,610	7,820	4,570	1,200	†1,380	1,440
18	1,530	2,020	2,610	3,650	4,560	4,050	2,920	†11,000	3,640	1,260	1,540	1,450
19	1,520	1,660	2,560	†6,160	4,160	4,030	2,930	14,200	2,760	1,210	1,620	1,840
20	†1,270	1,550	2,560	6,900	4,000	4,050	†2,660	13,800	2,630	†1,240	1,570	1,860
21	1,620	1,390	2,120	7,050	3,860	4,060	2,650	12,600	2,190	1,220	1,540	†1,960
22	1,340	1,360	†1,980	6,910	3,280	4,120	2,920	9,370	†2,010	1,220	1,490	1,940
23	1,620	1,480	2,090	6,790	†3,140	†4,090	2,920	7,290	2,550	1,230	1,480	1,950
24	1,550	†1,330	3,620	6,740	3,200	4,100	2,550	7,780	3,190	1,050	†1,500	1,930
25	1,350	1,850	5,360	6,650	3,210	4,080	1,910	†6,260	3,320	1,110	1,510	2,110
26	1,700	1,960	6,310	†6,600	3,160	4,080	1,850	6,300	2,920	1,100	1,550	2,090
27	†1,790	1,980	7,600	6,740	3,180	3,660	†1,950	6,210	1,800	†1,110	1,480	2,110
28	1,350	2,040	8,600	6,750	3,170	2,950	2,680	4,540	2,220	1,460	1,220	†2,090
29	1,480	2,410	†8,500	6,720	-	2,910	4,150	3,340	†4,220	1,440	1,180	2,130
30	1,910	2,370	8,500	6,620	-	†2,880	4,330	2,590	4,030	1,280	1,110	2,120
31	1,880	-	8,300	6,470	-	3,270	-	5,060	-	1,270	†1,060	-

Month	Observed: Discharge in second-feet: Maximum	Minimum	Mean	Observed: Runoff in acre-feet	Change in contents in Coeur d'Alene Lake (acre-feet)	Adjusted for change in lake contents: Runoff in acre-feet	Discharge in second-feet: Mean	Per square mile	Runoff in inches
October	2,010	1,120	1,584	97,370	-4,590	92,780	1,509	0.347	0.40
November	2,410	1,320	1,798	107,000	+18,190	125,200	2,104	.484	.54
December	8,600	1,420	3,812	234,400	+31,720	266,100	4,328	.995	1.15
Calendar year 1940	16,100	1,120	5,130	3,724,000	+46,400	3,770,000	5,193	1.19	16.27
January	7,710	2,140	4,780	293,900	-21,580	272,300	4,429	1.02	1.18
February	6,300	3,140	4,285	238,000	-15,270	222,700	4,010	.922	.96
March	7,160	2,880	4,876	299,800	+46,770	346,600	5,637	1.30	1.50
April	7,510	1,850	4,261	253,500	+82,000	335,500	5,638	1.30	1.45
May	14,200	2,590	6,915	425,200	+24,200	449,400	7,309	1.68	1.94
June	8,570	1,800	4,617	274,700	-21,320	253,400	4,259	.979	1.09
July	2,480	1,050	1,557	95,760	-8,520	87,240	1,419	.326	.38
August	1,960	1,060	1,517	93,300	-40,410	52,890	860	.198	.23
September	2,130	1,220	1,661	98,820	-7,190	91,630	1,540	.354	.40
Water year 1940-41	14,200	1,050	3,470	2,512,000	+84,000	2,596,000	3,585	.824	11.22

† Sunday.

Note.- Change in contents is based on mean gage heights for last day of each month.

Spokane River at Long Lake, Wash.

Location.- Water-stage recorder, lat. 47°50', long. 117°50', in SW¼ sec. 13, T. 27 N., R. 39 E., at Long Lake power plant, 12 miles north of Reardan. Datum of gage is 1,300.00 feet above mean sea level, subject to correction for datum of 1929.
Drainage area.- 6,100 square miles.
Records available.- April 1939 to September 1941.
Extremes (regulated).- Maximum discharge during year, 19,800 second-feet May 19 (gage height, 68.18 feet); minimum not determined, occurred during period of backwater from Little Falls power plant; minimum daily, 161 second-feet July 20, determined from records of power plant operation.
1939-41: Maximum discharge, 29,300 second-feet May 6, 1939 (gage height, 70.95 feet); minimum, 115 second-feet Oct. 6, 1939 (gage height, 57.66 feet), but may have been less sometime during period of backwater in water year 1940-41; minimum daily, that of July 20, 1941.
Remarks.- Records good. Water diverted above station for irrigation. Flow affected considerably by power regulation and by Coeur d'Alene Lake. Capacity of Coeur d'Alene Lake between elevations 2,117 and 2,135 feet, 770,000 acre-feet. Capacity of Long Lake between elevations 1,512 and 1,531 feet, 79,600 acre-feet.
Cooperation.- Gage-height record collected in cooperation with Washington Water Power Co., which furnished some discharge measurements and gage heights for Long Lake.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

57.5	130	58.7	552	61.0	2,750
57.7	175	59.0	710	62.0	4,420
57.9	232	59.3	905	63.0	6,340
58.1	300	59.6	1,140	64.0	8,480
58.3	376	60.0	1,500	66.0	13,400
58.5	460	60.5	2,060	68.0	19,200

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	f1,900	2,790	†3,000	9,800	8,370	5,100	5,370	3,820	†8,910	3,950	2,250	832
2	1,890	2,360	3,580	7,760	†8,570	†4,900	5,360	4,300	8,950	3,820	1,170	2,220
3	2,950	†1,440	3,740	4,630	7,960	6,220	8,960	6,680	8,500	3,780	†322	2,650
4	2,680	2,610	3,130	4,330	7,300	6,900	8,610	†8,620	9,890	1,390	2,350	2,380
5	2,030	2,750	2,980	†4,560	5,320	8,460	9,290	7,400	8,960	3,540	2,800	2,260
6	†1,300	2,630	4,310	4,460	6,560	8,490	†7,710	7,110	8,330	†2,570	3,160	1,990
7	3,010	2,660	5,500	4,390	5,340	9,460	9,280	f7,330	6,340	3,900	3,220	†783
8	2,850	2,860	†5,460	4,520	6,270	8,920	7,980	7,480	†6,700	3,420	2,820	2,700
9	3,040	1,980	3,950	4,400	†5,480	†8,130	6,480	6,930	6,570	2,740	1,260	2,760
10	3,010	†1,010	4,110	4,490	5,750	8,700	4,880	5,990	7,150	2,950	†490	2,400
11	2,850	1,510	4,320	3,760	6,480	8,580	4,910	†5,670	6,070	2,490	2,640	2,220
12	2,200	3,080	4,260	†2,740	6,530	7,640	5,610	5,730	4,450	1,380	2,440	2,040
13	†691	2,980	3,980	3,710	6,690	6,960	†6,790	5,330	3,[illegible]00	†682	3,020	1,480
14	2,620	3,120	3,410	3,060	6,950	7,370	5,580	7,330	6,810	1,860	3,080	†511
15	2,790	2,940	†2,260	3,720	6,680	7,590	4,680	7,070	†5,700	1,940	3,270	2,120
16	2,760	2,760	3,730	3,610	†5,950	†6,380	5,480	6,560	4,750	2,790	1,790	2,260
17	2,450	†1,580	3,780	3,950	6,970	6,360	5,070	8,480	5,730	3,010	†366	3,430
18	2,530	2,750	3,380	4,990	6,180	6,110	4,710	†11,400	5,400	2,090	2,410	3,130
19	1,690	3,500	3,260	†11,400	5,580	4,960	4,930	15,400	4,010	1,420	2,300	3,480
20	†1,060	3,600	3,390	10,900	5,550	5,360	†3,810	16,000	4,180	†161	2,520	3,690
21	2,140	2,090	5,730	10,900	5,570	5,160	3,530	14,900	3,890	1,750	2,460	†1,590
22	2,720	3,470	†4,790	8,410	5,360	5,530	4,220	10,900	†2,130	1,660	2,770	1,770
23	2,480	2,920	3,940	10,000	†4,000	†4,970	4,500	8,110	f2,910	2,310	1,420	2,200
24	2,500	†1,910	4,840	7,950	3,940	5,960	4,460	8,380	3,520	2,520	†569	1,920
25	2,260	2,940	7,770	9,940	4,030	5,140	5,100	†7,350	3,910	2,710	2,240	2,560
26	1,330	3,080	e,780	†11,900	4,780	4,950	3,870	7,450	4,260	1,800	2,410	3,240
27	†1,540	3,170	13,500	10,300	4,830	5,130	†2,840	7,550	4,030	†505	2,050	2,280
28	3,190	3,260	11,500	9,910	4,310	4,450	4,410	5,990	2,810	1,470	2,320	†1,260
29	3,260	3,110	†11,700	9,000	-	4,550	4,760	5,560	†3,230	2,610	2,700	2,250
30	2,810	3,800	10,200	8,750	-	†3,770	3,9eo	4,610	5,870	2,570	1,680	3,050
31	2,570	-	9,590	7,840	-	3,780	-	4,600	-	2,010	†774	-

Month	Observed: Discharge in second-feet: Maximum	Observed: Discharge in second-feet: Minimum	Observed: Discharge in second-feet: Mean	Observed: Runoff in acre-feet	Change in contents in Coeur d'Alene and Long Lakes (acre-feet)	Adjusted for change in lake contents: Runoff in acre-feet	Adjusted for change in lake contents: Discharge in second-feet: Mean	Adjusted for change in lake contents: Discharge in second-feet: Per square mile	Adjusted for change in lake contents: Run-off in inches
October	3,260	691	2,358	145,000	-6,990	138,000	2,244	0.368	0.42
November	3,800	1,010	2,689	160,000	+16,340	176,300	2,963	.486	.54
December	13,500	2,260	5,415	333,000	+33,770	366,800	5,965	.978	1.13
Calendar year 1940	20,600	604	6,369	4,623,000	+50,350	4,673,000	6,437	1.06	14.36
January	11,900	2,740	6,777	416,700	-18,180	598,500	6,481	1.06	1.22
February	8,570	3,940	5,975	331,800	-15,770	316,000	5,690	.933	.97
March	9,460	3,770	6,322	388,700	+47,020	435,700	7,086	1.16	1.34
April	9,290	2,840	5,573	331,600	+69,300	400,900	6,737	1.10	1.23
May	16,000	3,820	7,743	476,100	+37,650	513,800	8,356	1.37	1.58
June	9,890	2,150	5,595	332,900	-21,070	311,800	5,240	.859	.96
July	3,950	161	2,316	142,400	-14,270	128,100	2,083	.341	.39
August	3,270	322	2,106	129,500	-38,560	90,900	1,478	.242	.28
September	3,690	511	2,249	133,800	-5,040	128,800	2,165	.355	.40
Water year 1940-41	16,000	161	4.58e	3,322,000	+84,200	3,406,000	4,704	.771	10.46

† Sunday
f Computed on basis of partly estimated gage-height record.
Note.- Gage-height record affected by backwater June 27 to Sept. 30; discharge computed by Washington Water Power Co. from record of power production. Change in contents of Coeur d'Alene Lake based on mean gage heights for last day of each month, and for Long Lake on midnight gage readings.

St. Joe River at Calder, Idaho

Location.- Water-stage recorder, lat. 47°16', long. 116°11', in sec. 3, T. 45 N., R. 2 E., 150 feet southwest of Chicago, Milwaukee, St. Paul, and Pacific Ry. station at Calder. Datum of gage is about 2,100 feet above mean sea level.

Drainage area.- 1,080 square miles.

Records available.- July 1920 to September 1941. April 1911 to September 1912, at station 2½ miles downstream.

Average discharge.- 21 years (1920-41), 2,221 second-feet.

Extremes.- Maximum discharge during year, 5,280 second-feet May 18 (gage height, 83.86 feet); minimum recorded discharge, 235 second-feet sometime between Nov. 11 and 23 (gage height, 79.05 feet).

1911-12, 1920-41: Maximum discharge, 53,000 second-feet Dec. 23, 1933, computed on basis of slope between gages downstream; maximum gage height, 93.1 feet Apr. 18, 1938, from floodmark; minimum discharge, 96 second-feet Dec. 5, 1928 (gage height, 78.43 feet).

Remarks.- Records excellent except those for Nov. 11-21, Nov. 27 to Dec. 20, Jan. 24-27, Feb. 13-26, Apr. 2, which are fair, and those for Dec. 21 to Jan. 23, Apr. 3 to May 6, which are poor. No diversions above gage. Operation of splash dam on Marble Creek causes some diurnal fluctuation during log-driving season.

Cooperation.- Gage-height record and results of seven discharge measurements furnished by Washington Water Power Co.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

79.2	280	81.2	1,620	83.2	4,090
79.6	435	81.6	2,020	83.6	4,750
80.0	650	82.0	2,460	84.0	5,470
80.4	920	82.4	2,940		
80.8	1,250	82.8	3,480		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	480	602	e1,150		775	1,040	2,520		3,200	1,300	552	412
2	426	608	e900		S17	2,020	a2,800		3,140	1,250	530	417
3	568	590	e850		782	2,180			3,000	1,160	525	435
4	644	510	e900		749	1,970		a2,900	2,880	1,120	515	495
5	495	455	e1,050	a700	704	1,870			2,760	1,080	505	495
6	408	426	e1,200		710	1,720			2,640	1,040	495	470
7	370	426	e1,200		742	1,620		3,140	2,580	1,000	485	490
8	350	579	e1,050		762	1,620		3,140	2,640	976	475	480
9	340	614	e950		742	1,670	a2,300	2,880	2,460	920	470	460
10	329	5[illegible]	e800		756	1,620		2,760	2,300	905	475	540
11	336	a460	e650		824	1,570		2,760	2,180	868	465	535
12	362	a400	e500		831	1,430		3,070	2,080	831	470	574
13	362	a350	e400		a820	1,300		3,410	1,970	803	490	789
14	354	a320	a420		a800	1,250		3,560	1,970	762	480	730
15	336	a330	a400	a500	a760	1,200		a3,300	1,920	736	460	890
16	326	a340	a370		a720	1,160		3,070	1,820	730	445	730
17	318	a350	a370		a705	1,120		a3,900	1,820	736	430	579
18	315	a350	a430		a690	1,340		a5,200	1,820	736	412	525
19	312	a340	a470		a680	1,380		a5,100	1,770	704	399	562
20	308	a330	a800		a680	1,340		a4,600	1,820	686	394	530
21	326	a325		a850	a660	1,300		a4,100	1,620	662	394	505
22	332	336			a640	1,300		a3,700	1,520	644	408	475
23	318	315			a620	1,250	a2,000	a3,400	1,480	626	417	450
24	326	350		762	a620	1,200		a3,200	1,380	620	435	430
25	435	354		a800	a640	1,200		a3,100	1,430	614	404	426
26	440	358	a1,350	a900	a620	1,300		3,000	1,340	608	404	422
27	480	e360		a940	632	1,430		2,880	1,300	590	460	422
28	470	e380		845	723	1,620		2,700	1,670	608	475	417
29	426	e1,200		803	-	1,870		2,580	1,520	662	417	394
30	455	e1,500		736	-	2,020		2,700	1,380	608	394	390
31	495	-		762	-	2,300		3,200	-	562	426	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	12,242	644	308	395	0.366	0.42	24,280
November	14,373	1,500	315	479	.444	.50	28,510
December	29,710	-	370	958	.887	1.02	58,930
Calendar year 1940	631,024	7,880	298	1,724	1.60	21.73	1,252,000
January	21,798	-	-	703	.651	.75	43,240
February	20,204	831	620	722	.669	.70	40,070
March	47,210	2,300	1,040	1,523	1.41	1.63	93,640
April	65,220	-	-	2,174	2.01	2.24	129,400
May	101,850	5,200	-	3,285	3.04	3.50	202,000
June	61,410	3,200	1,300	2,047	1.90	2.12	121,800
July	25,147	1,300	562	811	.751	.87	49,880
August	14,106	552	394	455	.421	.49	27,980
September	15,459	890	390	515	.477	.53	30,660
Water year 1940-41	428,729	5,200	308	1,175	1.09	14.77	850,400

a Incomplete or no gage-height record; discharge computed on basis of records for nearby stations, weather records, and fragmentary gage heights, and available discharge measurements.
e Recorder time scale non-standard; discharge computed on basis of assumed time scale, records for nearby stations, and weather records.

St. Maries River at Lotus, Idaho

Location.- Staff gage, lat. 47°14', long. 116°37', in sec. 20, T. 45 N., R. 2 W., just downstream from Lotus. Datum of gage is approximately 2,160 feet above mean sea level.

Drainage area.- 420 square miles.

Records available.- July 1911 to October 1912, July 1920 to September 1941.

Average discharge.- 21 years (1920-41), 481 second-feet.

Extremes.- Maximum discharge observed during year, 3,260 second-feet Nov. 29 or 30 (gage height, 6.58 feet from floodmark); minimum daily discharge, 60 second-feet Nov. 23 (discharge measurement), 24 (estimated); minimum gage height observed, 3.48 feet Oct. 20, 21.

1911-12, 1920-41: Maximum discharge observed, 23,800 second-feet Dec. 22, 23, 1933 (gage height, 12.1 feet), from rating curve extended logarithmically above 4,000 second-feet; minimum discharge, 16 second-feet (estimated) Nov. 21, 1929; minimum gage height, 2.71 feet Nov. 20, 1929.

Remarks.- Records fair except those for Nov. 29, Jan. 19, 20, which are poor. Gage read once daily. No diversions above gage.

Cooperation.- Gage-height record and results of six discharge measurements furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept
1	111	193	693	b450	507	549	397	228	507	281	73	71
2	131	224	473	b300	600	1,100	428	257	654	224	73	71
3	138	215	460	b200	800	1,040	453	286	520	210	73	73
4	386	193	500	b220	556	977	493	291	397	215	73	98
5	228	152	460	b240	527	893	447	345	397	215	73	131
6	172	134	646	b220	473	856	428	556	397	185	73	95
7	104	172	493	b200	441	803	368	428	380	156	71	89
8	89	202	434	b190	428	638	351	441	549	149	71	81
9	79	281	340	b180	409	630	334	416	520	134	71	71
10	76	252	296	b170	428	600	334	362	434	131	71	79
11	71	172	252	b160	726	527	374	362	357	124	71	120
12	71	134	193	b150	884	480	416	362	323	114	71	124
13	73	104	b140	b140	638	391	409	313	302	114	73	176
14	73	b70	b120	b150	570	357	380	403	291	104	73	168
15	76	b75	b105	b160	493	323	340	380	291	104	73	160
16	73	b80	b80	b170	493	351	313	345	286	98	73	168
17	68	b80	b80	b150	422	329	302	1,010	252	98	71	104
18	66	b80	b120	b250	374	374	281	1,760	276	95	71	96
19	66	b75	b130	b500	397	391	262	1,010	296	92	71	104
20	63	b70	b200	b1,000	357	368	257	794	291	89	71	138
21	63	b70	b500	902	334	340	252	646	262	84	71	127
22	66	b65	b900	726	318	329	247	541	233	79	71	98
23	68	*b60	893	592	318	368	238	473	206	76	79	98
24	73	b60	1,030	527	323	345	224	397	197	76	73	79
25	104	b65	1,110	646	357	329	224	340	197	71	73	76
26	152	b70	1,200	1,440	313	329	215	334	197	71	71	76
27	172	b75	1,090	1,200	313	334	215	345	193	71	71	73
28	168	b90	d983	847	374	334	215	374	197	71	71	71
29	160	b1,700	d875	718	-	357	215	351	874	89	71	71
30	160	1,200	768	607	-	374	220	357	466	92	71	71
31	172	-	646	570	-	386	-	578	-	76	71	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	3,572	386	63	115	0.274	0.32	7,080
November	6,413	1,700	60	214	.510	.57	12,720
December	16,210	1,200	80	523	1.25	1.44	32,150
Calendar year 1940	153,655	4,220	31	420	1.00	13.61	304,800
January	13,975	1,440	140	451	1.07	1.23	27,720
February	12,973	884	313	463	1.10	1.14	25,730
March	15,802	1,100	323	510	1.21	1.40	31,340
April	9,632	493	215	321	.764	.85	19,100
May	15,065	1,760	228	486	1.16	1.34	29,880
June	10,722	874	193	357	.850	.95	21,270
July	3,788	281	71	122	.290	.33	7,510
August	2,233	79	71	72.0	.171	.20	4,430
September	3,059	176	71	102	.243	.27	6,070
Water year 1940-41	113,444	1,760	60	311	.740	10.04	225,000

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
d Doubtful gage-height record; discharge interpolated.

Hayden Lake at Hayden Lake, Idaho

Location.- Staff gage, lat. 47°46', long. 116°45', in sec. 18, T. 51 N., R. 3 W., at Avondale and Hayden Lake pumping plants, a quarter of a mile north of Bozanta Tavern. Datum of gage is 2,200.21 feet above mean sea level (general adjustment of 1929).

Records available.- May 1920 to September 1941.

Extremes.- Maximum gage height observed during year, 25.24 feet June 8-10; minimum observed, 21.59 feet Sept. 30.
1920-41: Maximum gage height, 40.62 feet (present datum), Apr. 30 to May 18, 1921; minimum observed, 19.38 feet Dec. 16, 1931.

Remarks.- Gage read once daily. Water is pumped from lake for irrigation and domestic supply.

Gage height, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22.04	21.82	21.72	22.19	23.06	23.68	24.65	24.64	25.20	24.92	23.32	21.88
2	22.06	21.84	21.72	22.20	23.12	23.76	24.66	24.65	25.21	24.91	23.24	21.86
3	22.06	21.84	21.71	22.20	23.14	23.88	24.68	24.66	25.23	24.90	23.18	21.86
4	22.06	21.82	21.70	22.19	23.16	24.00	24.70	24.66	25.23	24.88	23.12	21.84
5	22.06	21.80	21.72	22.20	23.19	24.10	24.73	24.68	25.22	24.86	23.06	21.82
6	22.04	21.80	21.74	22.22	23.21	24.18	24.74	24.68	25.22	24.83	23.00	21.80
7	22.02	21.80	21.74	22.22	23.23	24.24	24.75	24.68	25.22	24.80	22.95	21.78
8	22.00	21.82	21.74	22.22	23.25	24.28	24.75	24.69	25.24	24.76	22.90	21.78
9	21.98	21.84	21.73	22.22	23.28	24.32	24.75	24.68	25.24	24.68	22.86	21.78
10	21.96	21.83	21.72	22.22	23.31	24.35	24.75	24.68	25.24	24.62	22.81	21.77
11	21.94	21.82	21.72	22.22	23.36	24.38	24.75	24.67	25.23	24.57	22.76	21.76
12	21.92	21.80	21.71	22.22	23.39	24.41	24.75	24.68	25.23	24.53	22.68	21.74
13	21.91	21.78	21.70	22.21	23.42	24.43	24.76	24.68	25.22	24.48	22.62	21.72
14	21.89	21.76	21.68	22.22	23.45	24.44	24.76	24.71	25.21	24.42	22.56	21.70
15	21.87	21.74	21.67	22.23	23.48	24.46	24.76	24.74	25.21	24.36	22.52	21.70
16	21.86	21.72	21.66	22.23	23.50	24.47	24.75	24.76	25.20	24.30	22.48	21.68
17	21.84	21.70	21.66	22.23	23.52	24.48	24.74	24.77	25.18	24.26	22.44	21.68
18	21.82	21.69	21.66	22.28	23.53	24.50	24.73	24.86	25.17	24.22	22.39	21.70
19	21.80	21.68	21.65	22.38	23.54	24.52	24.72	24.94	25.16	24.15	22.34	21.74
20	21.79	21.66	21.66	22.50	23.55	24.53	24.71	25.02	25.14	24.08	22.28	21.73
21	21.78	21.67	21.72	22.60	23.55	24.54	24.70	25.06	25.11	24.01	22.24	21.72
22	21.77	21.67	21.74	22.66	23.55	24.56	24.70	25.09	25.08	23.94	22.19	21.71
23	21.75	21.66	21.78	22.68	23.56	24.58	24.70	25.10	25.04	23.86	22.14	21.70
24	21.74	21.64	21.80	22.72	23.58	24.59	24.69	25.12	25.02	23.80	22.10	21.68
25	21.75	21.64	21.86	22.76	23.60	24.60	24.68	25.12	24.97	23.76	22.06	21.66
26	21.78	21.64	21.92	22.84	23.60	24.61	24.67	25.11	24.94	23.69	22.02	21.65
27	21.82	21.64	22.00	22.90	23.62	24.61	24.67	25.11	24.90	23.64	22.02	21.63
28	21.82	21.66	22.06	22.96	23.65	24.61	24.66	25.11	24.90	23.60	22.01	21.62
29	21.82	21.70	22.10	22.98	-	24.62	24.65	25.12	24.94	23.53	21.98	21.60
30	21.82	21.71	22.14	23.01	-	24.63	24.65	25.15	24.92	23.46	21.94	21.59
31	21.82	-	22.17	23.04	-	24.64	-	25.19	-	23.40	21.92	-

Spokane Valley Farms Co.'s canal at Post Falls, Idaho

Location.- Water-stage recorder, lat. 47°43', long. 116°57', in sec. 3, T. 50 N., R. 5 W., 300 feet downstream from headgate and half a mile northwest of Post Falls.

Records available.- May 1911 to September 1917, September 1919 to September 1941.

Extremes.- Maximum discharge recorded during year, 268 second-feet June 26 (gage height, 5.45 feet present datum); no flow Dec. 7-30, Jan. 3 to Feb. 28.
1911-17, 1919-41: Maximum discharge observed, 304 second-feet May 28, 1936; no flow during non irrigation seasons.

Remarks.- Records good except those for period of no gage-height record, which are poor. Canal diverts water for irrigation from Spokane River in SE¼ sec. 3, T. 50 N., R. 5 W.

Cooperation.- Observers services furnished by Spokane Valley Farms Co. Results of eight discharge measurements furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	10	4	1	2			3	167	253	259	261	209
2	10	4	1	1			3	179	240	256	260	200
3	10	4	1	0			3	178	233	254	259	176
4	10	4	1	0			3	176	232	254	260	166
5	11	4	1	0			2	178	233	255	260	163
6	11	4	1	0		a1	2	180	235	254	260	162
7	10	4	0	0			2	179	238	255	260	162
8	10	4	0	0			3	213	238	254	260	154
9	8	4	0	0			3	241	237	253	261	145
10	4	4	0	0			3	246	235	254	260	138
11	4	4	0	0			36	248	237	253	261	122
12	4	4	0	0			89	249	239	253	260	110
13	4	4	0	0			100	248	235	253	258	98
14	4	3	0	0			99	246	235	253	256	98
15	4	3	0	0			100	247	236	257	256	98
16	4	3	0	0			100	248	246	259	256	41
17	4	3	0	0			100	240	250	261	255	11
18	4	3	0	0		a2	100	217	250	262	254	11
19	4	3	0	0			100	213	251	262	252	11
20	4	2	0	0			100	236	251	262	251	10
21	4	1	0	0			100	240	253	262	251	11
22	4	1	0	0			129	239	261	261	250	10
23	4	1	0	0			147	239	260	261	251	10
24	4	1	0	0			147	239	259	261	252	10
25	4	1	0	0		3	148	246	259	261	250	10
26	4	1	0	0		3	149	245	262	261	246	10
27	4	1	0	0		3	150	241	263	261	236	10
28	4	1	0	0		3	151	250	262	261	224	10
29	4	1	0	0		3	150	256	259	262	218	10
30	4	1	0	0		3	150	256	257	262	215	10
31	4	-	1	0		3	-	252	-	262	216	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	178	11	4	5.7	353
November	82	4	1	2.7	163
December	7	1	0	.2	14
Calendar year 1940	34,606	281	0	94.6	68,640
January	3	2	0	.1	6.0
February	0	0	0	0	0
March	57	3	1	1.8	113
April	2,372	151	2	79.1	4,700
May	7,031	256	167	227	13,950
June	7,398	263	232	247	14,670
July	7,998	262	253	258	15,860
August	7,768	261	215	251	15,410
September	2,386	209	10	79.5	4,730
Water year 1940-41	35,280	263	0	96.7	69,970

a No gage-height record January 18 to March 24; practically no flow or discharge estimated.

Okanogan River at Okanagan Falls, British Columbia

(International gaging station)

Location.- Water-stage recorder, lat. 49°21', long. 119°35', 400 feet downstream from falls at Okanagan Falls, British Columbia, and 800 feet downstream from Dog Lake.

Drainage area.- 2,550 square miles.

Records available.- October 1930 to September 1941 in water-supply papers of Geological Survey. March 1915 to September 1930 in bulletins of Dominion Water and Power Bureau, Department of Mines and Resources, Canada.

Average discharge.- 26 years, 441 second-feet.

Extremes.- Maximum discharge during year, 571 second-feet Sept. 26 (gage height, 2.00 feet); minimum, 79 second-feet May 27 (gage height, 0.72 foot).
1915-41: Maximum discharge observed, 2,680 second-feet June 10, 1928; minimum, 4.6 second-feet Mar. 14, 1931.

Remarks.- Records good. Diversions above station for irrigation. Flow regulated by control dam at outlet of Okanagan Lake.

Cooperation.- This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

0.8	94	1.2	196	1.7	406
1.0	135	1.4	271		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	176	176	203	218	244	406	486	321	343	271	292	356
2	182	179	207	218	246	406	482	325	396	271	296	361
3	176	176	207	218	252	406	488	325	396	279	283	352
4	169	165	207	214	252	417	482	321	366	296	296	356
5	162	162	211	214	256	422	482	321	325	300	304	356
6	157	162	211	214	248	428	466	304	321	296	308	361
7	157	179	211	214	214	422	455	300	347	300	312	361
8	157	200	211	218	186	438	444	283	376	283	308	356
9	151	196	214	211	162	433	444	267	386	271	316	356
10	148	176	218	207	143	433	449	263	366	263	321	376
11	154	172	218	214	131	433	460	252	330	260	312	396
12	157	169	214	218	124	428	449	248	300	256	312	406
13	157	165	211	222	113	433	449	279	296	252	316	417
14	154	162	207	237	124	433	428	267	283	244	325	422
15	154	165	211	237	146	438	444	229	275	241	325	428
16	157	162	214	233	179	444	438	186	263	222	325	438
17	154	169	207	233	214	449	433	162	260	193	325	444
18	154	179	207	241	252	449	422	157	271	176	321	449
19	154	172	207	241	283	455	422	138	279	176	325	460
20	157	182	211	248	300	460	406	128	279	186	321	466
21	159	186	218	244	326	460	391	126	292	207	321	466
22	154	179	222	241	343	466	381	115	296	222	325	471
23	157	176	222	241	343	471	371	107	283	229	330	476
24	196	186	226	237	347	471	366	105	279	226	325	482
25	203	186	226	241	347	471	352	100	279	233	312	482
26	203	186	229	241	356	476	338	90	292	252	325	498
27	189	193	233	241	371	482	321	83	296	267	371	493
28	182	196	226	244	386	488	308	94	283	271	366	482
29	179	207	229	244	-	488	300	126	275	287	356	482
30	179	207	229	241	-	482	300	189	275	292	356	476
31	179	-	226	244	-	488	-	275	-	296	347	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	5,167	203	148	167	10,250
November	5,370	207	162	179	10,650
December	6,693	233	203	216	13,280
Calendar year 1940	61,785	263	52	169	122,500
January	7,129	248	207	230	14,140
February	6,889	386	113	246	13,660
March	13,876	488	406	448	27,520
April	12,459	488	300	415	24,710
May	6,486	325	83	209	12,860
June	9,308	396	260	310	18,460
July	7,818	300	176	252	15,510
August	9,977	371	283	322	19,790
September	12,725	498	352	424	25,240
Water year 1940-41	103,897	498	83	285	206,100

Osoyoos Lake near Oroville, Wash.

(International gaging station)

Location.- Water-stage recorder, lat. 48°59'15", long. 119°27'15", in lot 1, sec. 8, T. 40 N., R. 27 E., on west shore, 1 mile south of international boundary and 3 miles north of Oroville. Datum of gage is at mean sea level, subject to correction for datum of 1929.

Drainage area.- 3,250 square miles.

Records available.- July 1928 to September 1941.

Extremes.- Maximum water-surface elevation during year, 915.84 feet Apr. 12; minimum, 913.93 feet Oct. 1, 23.
1928-41: Maximum water-surface elevation, 917.23 feet Apr. 28, 1934; minimum, 911.21 feet Oct. 14, 1929.

Remarks.- Diversion in Canada for irrigation. Okanogan River subject to natural regulation in several lakes, and to artificial regulation, as an aid to navigation in Okanagan Lake. Dam at Zosel's mill in Oroville may cause backwater in Osoyoos Lake.

Cooperation.- This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13.98	-	-	14.32	14.28	14.40	15.60	15.40	14.44	14.96	13.96	14.70
2	14.00	-	-	14.30	14.29	14.51	15.63	15.42	14.50	14.94	13.95	14.72
3	14.00	14.05	-	14.29	14.29	14.65	15.67	15.46	14.56	14.92	13.94	14.76
4	14.01	14.05	14.13	14.27	14.29	14.77	15.72	15.48	14.57	14.90	13.96	14.80
5	14.01	-	14.14	14.26	14.28	14.88	15.80	15.48	14.60	14.88	13.99	14.81
6	14.02	-	14.15	14.25	14.29	14.98	15.80	15.47	14.66	14.85	14.01	14.82
7	14.02	-	14.16	14.24	14.30	15.08	15.80	15.43	14.76	14.81	14.03	14.82
8	14.01	14.10	14.16	14.23	14.30	15.17	15.78	15.39	14.88	14.76	14.03	14.81
9	13.99	14.13	14.16	14.22	14.29	15.23	15.77	15.34	15.02	14.72	14.06	14.83
10	13.99	-	14.17	14.23	14.27	15.26	15.79	15.29	15.11	14.68	14.09	14.89
11	13.99	-	14.17	14.22	14.27	15.30	15.80	15.25	15.17	14.64	14.11	14.95
12	13.99	-	14.17	14.21	14.25	15.32	15.80	15.22	15.19	14.60	14.13	15.00
13	13.99	-	14.17	14.21	14.22	15.35	15.79	15.18	15.19	14.55	14.14	15.06
14	13.98	-	14.17	14.21	14.19	15.35	15.76	15.15	15.15	14.50	14.16	15.09
15	13.98	-	14.17	14.22	14.16	15.37	15.75	15.10	15.14	14.47	14.19	15.13
16	13.98	-	14.17	14.22	14.14	15.39	15.73	15.05	15.14	14.43	14.20	15.16
17	13.97	-	14.17	14.23	14.11	15.39	15.70	15.02	15.11	14.39	14.20	15.18
18	13.95	-	14.17	14.24	14.10	15.40	15.65	14.99	15.10	14.34	14.22	15.20
19	13.95	13.99	14.18	14.25	14.10	15.41	15.61	14.92	15.14	14.30	14.24	15.27
20	13.95	14.00	14.20	14.25	14.11	15.43	15.57	14.86	15.16	14.26	14.26	15.29
21	13.95	14.01	14.22	14.26	14.14	15.43	15.54	14.81	15.19	14.22	14.27	15.32
22	13.94	13.99	14.24	14.27	14.19	15.44	15.50	14.75	15.18	14.16	14.29	15.35
23	13.93	-	14.26	14.27	14.17	15.46	15.49	14.67	15.14	14.11	14.30	15.36
24	13.98	-	14.29	14.27	14.19	15.46	15.46	14.62	15.10	14.05	14.31	15.36
25	14.01	-	14.30	14.27	14.21	15.46	15.43	14.56	15.10	14.03	14.32	15.36
26	14.03	-	14.31	14.28	14.25	15.47	15.40	14.49	15.10	14.03	14.40	15.36
27	14.02	-	14.33	14.28	14.28	15.48	15.38	14.41	15.07	14.02	14.50	15.36
28	14.00	-	14.33	14.29	14.33	15.50	15.37	14.38	15.02	14.00	14.56	15.35
29	-	-	14.33	14.29	-	15.52	15.37	14.39	15.00	14.01	14.60	15.35
30	-	-	14.33	14.27	-	15.55	15.37	14.37	14.98	14.00	14.64	15.35
31	-	-	14.33	14.27	-	15.57	-	14.39	-	14.00	14.66	-

Note.- Add 900 feet to obtain elevation above mean sea level.

Okanogan River near Tonasket, Wash.

(International gaging station)

Location.- Water-stage recorder, lat. 48°38'00", long. 119°27'50", in lot 3, sec. 8, T. 36 N., R. 27 E., 1,000 feet upstream from Chewilliken Creek and 5½ miles south of Tonasket.

Drainage area.- 7,250 square miles.

Records available.- April 1929 to September 1941. May 1911 to September 1925 (equivalent records at site a quarter of a mile upstream from Salmon Creek at Okanogan, published as Okanogan River at Okanogan) in reports of Geological Survey. June 1911 to September 1933 in State Water-Supply Bulletin 5.

Average discharge.- 26 years (1911-25, 29-41), 2,668 second-feet.

Extremes.- Maximum discharge during year, 5,180 second-feet May 2, 3; maximum gage height, 9.81 feet May 3; minimum discharge, 374 second-feet Oct. 1, 3.
1911-25, 29-41: Maximum discharge recorded, 25,400 second-feet Apr. 27, 1934 (gage height, 18.3 feet); minimum recorded, 126 second-feet Sept. 5, 1931 (gage height, 3.43 feet).

Remarks.- Records excellent except those for periods of ice effect, which are poor, and those for periods of no gage-height record and shifting control, which are fair. Many diversions above station for irrigation. Flow subject to natural regulation in several lakes, and as an aid to navigation, to artificial regulation in Okanagan Lake. Power plant on Similkameen River affects low flow slightly.

Cooperation.- This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	413	f848	714	744	708	915	1,940	4,530	3,330	2,580	744	950
2	417	f845	738	732	714	808	2,160	4,990	3,700	2,580	702	950
3	417	f848	732	702	714	640	2,400	5,180	3,560	2,520	684	950
4	545	a840	726	674	726	602	2,720	4,990	3,400	2,460	684	950
5	570	a820	732	646	714	613	2,840	4,800	3,260	2,400	690	1,020
6	565	a800	732	b670	702	613	2,720	4,360	3,190	2,280	684	1,020
7	555	a820	738	b670	708	635	2,650	4,100	3,400	2,160	640	1,020
8	580	*815	744	679	696	652	2,580	3,860	4,180	2,160	608	1,020
9	575	776	744	696	702	738	2,580	3,630	4,990	2,100	602	1,060
10	570	750	744	696	732	796	2,720	3,480	4,800	1,940	586	1,100
11	550	6e4	b730	*702	738	815	2,910	3,330	4,620	1,830	580	1,180
12	560	b670	b710	702	714	815	3,120	3,330	4,440	1,730	565	1,260
13	586	b620	b670	690	702	848	3,190	3,860	4,440	1,680	550	1,350
14	744	b590	630	708	*690	848	3,190	4,800	4,620	1,680	555	1,440
15	732	b570	b590	738	690	880	3,190	4,440	4,440	1,480	586	1,480
16	738	565	b550	684	652	880	3,330	4,100	4,270	1,350	652	1,630
17	720	618	555	720	635	915	3,260	3,940	4,180	1,260	640	1,730
18	696	652	596	720	630	915	3,120	3,780	4,100	1,220	635	1,940
19	690	684	708	720	630	985	3,050	3,700	4,020	1,100	613	2,050
20	690	702	744	714	646	1,060	2,980	3,460	4,020	1,060	591	2,000
21	708	690	880	708	646	1,060	2,910	3,260	3,700	1,100	570	2,000
22	f808	690	985	708	646	1,100	2,980	3,190	3,480	1,060	570	2,000
23	f1,020	679	848	708	630	1,100	3,120	3,120	3,330	985	550	1,940
24	f1,060	668	848	708	652	1,060	3,330	3,120	3,120	985	560	1,880
25	f985	646	848	714	630	1,100	3,480	3,260	3,120	1,020	560	1,830
26	f985	668	802	708	646	1,100	3,630	3,330	2,980	1,060	618	1,830
27	f985	684	782	696	750	1,100	3,700	3,190	3,910	1,020	738	1,780
28	f950	708	796	690	782	1,220	3,780	3,050	2,780	915	880	1,730
29	a900	708	776	690	-	1,440	3,940	3,050	2,650	848	950	1,830
30	a860	708	770	684	-	1,630	4,100	3,120	2,580	815	985	1,830
31	a850	-	756	679	-	1,780	-	3,120	-	776	950	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	22,024	1,060	413	710	43,680
November	21,369	848	565	712	42,380
December	22,918	985	550	739	45,460
Calendar year 1940	483,234	7,360	182	1,320	958,600
January	21,700	744	646	700	43,040
February	19,225	782	630	687	38,130
March	29,663	1,780	602	957	58,840
April	91,620	4,100	1,940	3,054	181,700
May	117,490	5,180	3,050	3,790	233,000
June	111,610	4,990	2,580	3,720	221,400
July	48,154	2,580	776	1,553	95,510
August	20,522	985	550	662	40,700
September	44,750	2,050	950	1,492	88,760
Water year 1940-41	571,045	5,180	413	1,565	1,133,000

* Winter-discharge measurement made on this day.
a No gage-height record; discharge computed on basis of records for Similkameen River near Nighthawk.
b Stage-discharge relation affected by ice.
f Computed on basis of partly estimated gage-height record.
Note.- Shifting-control method used Oct. 1 to May 4, July 9 to Sept. 21.

Similkameen River near Nighthawk, Wash.

(International gaging station)

Location.- Water-stage recorder, lat. 48°59'10", long. 119°37'00", in NW¼ sec. 7, T. 40 N., R. 26 E., about 1½ miles downstream from Nighthawk and 12 miles upstream from mouth.

Drainage area.- 3,420 square miles.

Records available.- September 1928 to September 1941. May 1911 to September 1928 (mean monthly discharge including that of Oroville-Tonasket Irrigation District canal) at site 4 miles upstream from Oroville, published as Similkameen River near Oroville.

Average discharge.- 30 years, 2,063 second-feet.

Extremes.- Maximum discharge during year, 4,750 second-feet May 2, June 8; maximum gage height, 7.23 feet June 8; minimum discharge, 195 second-feet Dec. 16 (gage height, 2.54 feet).
1928-41: Maximum discharge, 27,200 second-feet Apr. 26, 1934 (gage height, 14.96 feet); minimum, 120 second-feet Jan. 6, 1930 (gage height, 2.05 feet).

Remarks.- Records excellent except those below 500 second-feet, which are good. Flow at high stages regulated by natural diversion into and release from Palmer Lake. Small diversions above station for irrigation.

Cooperation.- This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1940-41, except period of ice effect (gage height, in feet, and discharge, in second-feet)

2.6	215	3.2	470	4.0	950	5.5	2,430
2.8	292	3.5	626	4.5	1,380	6.0	3,040
3.0	378	3.7	745	5.0	1,870	7.0	4,430

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	313	610	432	410	360	369	1,620	4,290	3,430	2,260	667	661
2	296	598	432	374	374	360	1,770	4,750	3,430	2,140	649	643
3	309	593	432	330	378	378	2,140	4,590	3,300	2,090	661	667
4	330	571	432	309	382	410	2,310	4,280	3,170	2,090	678	721
5	330	550	446	b330	379	418	2,140	3,980	2,980	1,980	690	714
6	317	529	461	b340	374	414	1,920	3,700	3,040	1,870	684	690
7	300	*550	465	365	360	410	1,820	3,430	3,560	1,820	661	684
8	292	535	465	382	365	414	1,820	3,170	4,590	1,870	620	696
9	284	524	465	387	374	428	1,870	3,040	4,590	1,770	593	714
10	276	446	470	392	374	442	2,040	2,850	4,430	1,620	566	758
11	280	400	432	396	365	442	2,370	2,790	4,130	1,520	540	845
12	309	313	392	382	360	442	2,490	3,040	4,130	1,420	524	915
13	456	284	321	*392	360	442	2,490	4,130	4,280	1,340	529	990
14	442	276	305	400	347	451	2,490	4,280	4,280	1,290	566	1,070
15	428	276	b275	396	*317	456	2,490	3,840	3,980	1,200	620	1,160
16	418	334	256	392	300	470	2,610	3,700	3,840	1,110	626	1,290
17	423	369	268	396	309	490	2,490	3,560	3,700	1,030	588	1,380
18	418	423	b290	396	317	535	2,370	3,430	3,560	950	555	1,620
19	400	428	321	392	326	588	2,260	3,300	3,560	950	519	1,520
20	446	418	437	387	326	626	2,200	3,040	3,430	1,070	499	1,470
21	626	423	485	387	330	620	2,260	2,910	3,170	1,030	485	1,420
22	880	418	514	382	305	610	2,430	2,910	2,980	950	470	1,420
23	915	378	499	374	317	598	2,670	2,850	2,790	880	470	1,380
24	790	387	480	374	296	593	2,910	2,980	2,670	880	465	1,290
25	758	405	480	374	321	588	3,040	3,170	2,610	880	461	1,290
26	790	423	470	369	343	604	3,170	3,170	2,550	915	480	1,240
27	745	437	465	369	352	678	3,300	3,040	2,430	880	566	1,200
28	684	446	451	369	352	845	3,430	2,980	2,260	810	667	1,240
29	655	442	446	365	-	1,070	3,700	2,980	2,200	778	696	1,290
30	632	428	442	356	-	1,240	3,840	2,980	2,260	739	721	1,290
31	632	-	428	356	-	1,380	-	2,980	-	702	690	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	15,174	915	276	489	0.143	0.17	30,100
November	13,214	610	276	440	.129	.14	26,210
December	12,957	514	256	418	.122	.14	25,700
Calendar year 1940	421,546	7,350	202	1,152	.337	4.58	836,100
January	11,623	410	309	375	.110	.13	23,050
February	9,662	382	296	345	.101	.11	19,160
March	17,811	1,380	360	575	.168	.19	35,330
April	74,460	3,840	1,620	2,482	.726	.81	147,700
May	106,140	4,750	2,790	3,424	1.00	1.15	210,500
June	101,330	4,590	2,200	3,378	.988	1.10	201,000
July	40,834	2,260	702	1,317	.385	.44	80,990
August	18,206	721	461	587	.172	.20	36,110
September	32,268	1,620	643	1,076	.315	.35	64,000
Water year 1940-41	455,679	4,750	256	1,243	.363	4.93	899,800

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

Methow River at Twisp, Wash.

Location.- Water-stage recorder, lat. 48°21'40", long. 120°06'50", in sec. 17, T. 33 N., R. 22 E., at highway bridge at Twisp, a quarter of a mile downstream from Twisp River.

Drainage area.- 1,330 square miles.

Records available.- June 1919 to September 1929, October 1933 to September 1941.

Average discharge.- 18 years, 1,153 second-feet.

Extremes.- Maximum discharge during year, 5,240 second-feet May 2 (gage height, 6.10 feet); minimum, 215 second-feet Oct. 1.
1919-29, 1933-41: Maximum discharge observed, 15,200 second-feet Apr. 24, 25, 1934; maximum gage height observed, 10.4 feet June 5, 1921; minimum discharge observed, 134 second-feet Sept. 4, 5, 1926, Sept. 9, 10, 1929 (gage height, 1.42 feet), but may have been less sometime during period of ice effect, Jan. 6 to Mar. 4, 1937.

Remarks.- Records excellent except those for period of shifting control, which are good, and those for periods of no gage-height record or ice effect, which are poor. Water diverted above station for irrigation by two canals of Methow Valley Irrigation District, by Risley ditch, and by many other ditches.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Dec. 2S)

1.7	240	3.0	940	4.5	2,550
2.0	345	3.5	1,380	5.0	3,230
2.5	600	4.0	1,930	6.0	5,020

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	225	507	345	a290	277	325	1,760	5,020	3,770	1,480	333	426
2	230	490	345	a280	274	337	2,290	5,020	3,460	1,380	321	460
3	230	465	345	a270	270	337	2,740	4,490	3,230	1,330	329	564
4	228	455	345	a275	274	337	2,740	3,940	3,090	1,280	358	570
5	230	440	341	a280	274	341	2,480	3,530	3,020	1,190	368	546
6	228	440	341	a280	270	341	2,360	3,090	3,230	1,090	345	518
7	222	480	333	a285	277	341	2,230	2,810	4,390	1,090	325	496
8	222	465	333	a290	274	345	2,170	2,620	4,200	1,030	317	490
9	240	435	329	a290	274	368	2,230	2,360	3,610	910	302	480
10	246	408	291	*294	274	372	2,620	2,230	3,380	816	291	583
11	252	408	270	291	277	376	2,680	2,360	3,460	781	277	753
12	252	390	b265	277	274	386	2,810	3,160	3,690	760	291	725
13	261	376	b270	291	274	*386	2,740	4,110	3,940	712	305	725
14	264	394	b275	294	261	390	2,680	3,850	3,610	666	298	725
15	264	394	b280	291	*261	394	2,810	3,530	3,230	630	298	718
16	267	394	b285	291	264	426	2,680	3,230	2,880	552	333	712
17	261	404	b290	298	264	518	2,550	3,300	2,810	524	321	774
18	252	394	298	291	264	624	2,360	3,020	2,680	524	305	781
19	252	386	305	284	264	692	2,290	2,680	2,550	546	280	788
20	277	390	313	277	264	712	2,230	2,480	2,290	524	258	830
21	350	386	325	b260	267	718	2,290	2,360	2,050	496	249	823
22	381	358	345	b275	264	725	2,550	2,360	1,930	460	243	795
23	381	368	337	b280	261	732	2,950	2,620	1,930	440	240	774
24	455	368	333	280	270	732	3,160	3,090	1,810	440	238	767
25	600	368	329	280	264	753	3,300	3,460	1,700	475	235	746
26	588	358	329	277	270	823	3,460	3,230	1,540	455	258	725
27	552	354	321	274	270	956	3,610	3,020	1,430	426	358	712
28	524	368	313	274	277	1,090	3,770	2,880	1,330	394	445	692
29	512	372	a310	264	-	1,240	4,020	2,950	1,540	381	465	686
30	507	354	a300	267	-	1,430	4,390	2,680	1,540	376	445	880
31	490	-	a300	274	-	1,640	-	3,090	-	350	426	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	10,243	600	222	330	20,320
November	12,169	507	354	406	24,140
December	9,741	345	265	314	19,320
Calendar year 1940	338,153	8,500	162	924	670,700
January	8,724	298	260	281	17,300
February	7,548	277	261	270	14,970
March	19,187	1,640	325	619	38,060
April	82,950	4,390	1,760	2,765	164,500
May	98,570	5,020	2,230	3,180	195,500
June	83,320	4,390	1,330	2,777	165,300
July	22,508	1,480	350	726	44,640
August	9,857	465	235	318	19,550
September	20,064	830	426	669	39,800
Water year 1940-41	384,881	5,020	222	1,054	763,400

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

Stehekin River at Stehekin, Wash.

Location.- Water-stage recorder, lat. 48°19'50", long. 120°41'40", in SE¼ sec. 26, T. 33 N., R. 17 E., 1,200 feet upstream from Boulder Creek and 2 miles upstream from Lake Chelan and Stehekin.

Drainage area.- 372 square miles, including that of Boulder Creek.

Records available.- October 1910 to October 1915 and January 1927 to September 1941 (include flow of Boulder Creek).

Average discharge.- 19 years, 1,330 second-feet.

Extremes.- Maximum discharge during year, 4,210 second-feet Oct. 19 (gage height, 22.97 feet); minimum, 214 second-feet Feb. 15 (gage height, 19.04 feet).
1910-15, 1927-41: Maximum discharge, 12,900 second-feet June 2, 1936 (gage height, 27.18 feet), from rating curve extended above 8,500 second-feet; minimum, 56 second-feet Jan. 12, 1930.

Remarks.- Records good except those for period of no gage-height record, which are fair. At very high stages small part of flow is diverted above gage by natural sloughs; quantity diverted included in daily discharge.

Cooperation.- Gage-height record collected in cooperation with Washington Water Power Co., which also furnished results of seven discharge measurements.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

19.1	230	20.0	653	21.5	2,040
19.3	294	20.3	867	22.0	2,690
19.5	375	20.6	1,110		
19.7	475	21.0	1,490		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	485	660	a353	302	239	306	2,420	3,810	2,420	1,540	667	580
2	370	634	366	269	233	334	3,420	3,340	2,290	1,540	610	622
3	350	586	395	290	230	330	3,040	2,830	2,220	1,640	604	877
4	326	544	420	286	227	334	2,550	2,420	2,220	1,540	568	987
5	302	526	420	282	227	338	2,220	2,040	2,220	1,440	568	622
6	282	514	410	275	224	354	1,980	1,810	2,420	1,490	628	544
7	275	532	415	272	224	380	1,810	1,640	2,550	1,590	695	496
8	272	514	475	269	224	420	1,760	1,490	1,920	1,290	737	425
9	279	480	485	266	227	450	1,980	1,390	1,760	1,170	821	450
10	1,710	435	445	260	230	460	2,040	1,440	1,980	1,090	765	912
11	1,220	430	395	257	233	475	2,040	1,810	2,830	1,130	793	556
12	640	410	366	254	233	490	1,980	3,500	3,500	1,160	1,140	514
13	616	395	358	254	230	508	1,980	3,270	3,340	1,240	828	634
14	532	385	370	257	224	520	1,980	2,620	2,620	1,290	751	891
15	502	375	390	254	221	556	2,100	2,220	2,380	1,440	807	681
16	435	375	362	257	227	667	1,860	2,100	1,980	1,540	709	1,110
17	530	370	358	269	227	535	1,700	2,290	1,860	1,590	716	1,070
18	2,450	354	366	266	230	923	1,690	1,920	1,760	1,590	737	779
19	2,980	342	358	257	236	923	1,540	1,700	1,590	1,490	758	667
20	2,900	338	354	251	242	883	1,640	1,540	1,390	1,240	793	616
21	2,480	330	338	242	245	867	1,920	1,590	1,340	1,060	828	544
22	1,540	302	358	251	248	883	2,290	1,860	1,700	683	765	520
23	1,290	314	342	245	251	867	2,620	2,480	1,980	779	800	556
24	1,640	318	338	245	257	867	2,760	3,340	1,640	766	668	580
25	1,290	302	334	248	263	939	2,900	3,200	1,390	737	514	668
26	1,070	294	330	245	263	1,120	3,040	2,620	1,240	828	514	793
27	907	302	326	236	266	1,340	3,120	2,220	1,390	899	550	556
28	814	a315	326	236	272	1,590	3,120	2,100	1,590	939	490	485
29	765	a327	318	233	-	1,810	3,270	1,860	1,760	821	455	485
30	751	a340	314	230	-	2,040	3,570	1,760	1,590	793	420	550
31	716	-	314	239	-	2,220	-	2,360	-	758	550	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	30,719	2,980	272	991	2.66	3.07	60,930
November	12,343	660	294	411	1.10	1.23	24,480
December	11,499	485	314	371	.997	1.15	22,810
Calendar year 1940	446,426	7,020	240	1,220	3.28	44.63	885,500
January	7,997	302	230	258	.694	.80	15,860
February	6,653	272	221	238	.640	.67	13,200
March	25,029	2,220	306	807	2.17	2.50	49,640
April	70,240	3,570	1,540	2,341	6.29	7.02	139,300
May	70,570	3,810	1,390	2,276	6.12	7.06	140,000
June	60,850	3,500	1,240	2,028	5.45	6.08	120,700
July	37,343	1,640	737	1,205	3.24	3.73	74,070
August	21,149	1,140	420	682	1.83	2.11	41,950
September	19,670	1,110	425	656	1.76	1.97	39,010
Water year 1940-41	374,062	3,810	221	1,025	2.76	37.39	742,000

Peak discharge.- Oct.19 (4:45 p.m.) 4,210 sec.-ft.; May 12 (10:15 p.m.) 4,050 sec.-ft.; May 24 (10:30 p.m.) 3,970 sec.-ft.; June 12 (9:45 p.m.) 4,050 sec.-ft.
a No gage-height record; discharge interpolated.

Lake Chelan at Chelan, Wash.

Location.- Water-stage recorder, lat. 47°50'00", long. 120°03'40", in lot 3, sec. 15, T. 27 N., R. 22 E., 2 miles west of Chelan. Datum of gage is at mean sea level, adjustment of 1912.
Drainage area.- 950 square miles.
Records available.- September 1897 to December 1899, January to June 1905, December 1910 to September 1941.
Extremes.- Maximum elevation during year, 1,100.0 feet June 22, July 18; minimum, 1,085.7 feet Mar. 15.
1897-99, 1905, 1910-41: Maximum elevation, 1,100.0 feet July 19, 1937, July 1, 8, 1938, July 28, 1939, June 19, 1940, June 22, July 18, 1941; minimum, 1,076.78 feet Jan. 27, 28, Dec. 2, 3, 1898.
Remarks.- Reservoir is formed by low concrete dam at lake outlet, completed Sept. 3, 1927. Capacity, 676,100 acre-feet between elevations 1,079 and 1,100 feet above mean sea level. Regulation between these elevations is allowed by stipulation of Federal Power Commission. Water is used for power development. Elevation of lake maintained between elevation 1,092 and 1,100 feet above mean sea level during period Aug. 16 to Sept. 15 for scenic effect and recreational purposes.
Cooperation.- Gage-height record collected in cooperation with Washington Water Power Co.

Capacity table (elevations, in feet, and usable capacity, in acre-feet)

1,079.0	0	1,084.0	158,000	1,094.0	480,000
1,079.5	15,700	1,086.0	221,500	1,097.0	577,800
1,080.0	31,400	1,088.0	285,800	1,100.0	676,100
1,081.0	62,900	1,090.0	350,200		
1,082.0	94,500	1,092.0	415,000		

Note.- Computed by Geological Survey from surface areas, determined and furnished by Washington Water Power Co.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93.88	92.12	89.26	88.06	86.73	85.85	86.57	92.38	98.68	99.94	99.26	97.14
2	93.84	92.05	89.25	88.02	86.70	85.88	86.83	92.69	98.85	99.93	99.15	97.09
3	93.65	91.97	89.20	87.96	86.70	85.89	87.02	92.98	99.03	99.95	99.03	97.02
4	93.52	91.84	89.11	87.91	86.70	85.88	87.21	93.21	99.20	99.92	99.02	96.98
5	93.39	91.74	89.06	87.88	86.65	85.86	87.38	93.41	99.32	99.93	98.93	96.92
6	93.30	91.65	89.03	87.85	86.60	85.85	87.52	93.59	99.44	99.92	98.83	96.86
7	93.22	91.61	89.01	87.80	86.54	85.83	87.65	93.73	99.69	99.96	98.77	96.75
8	93.14	91.52	89.03	87.76	86.49	85.84	87.77	93.89	99.66	99.89	98.69	96.65
9	93.01	91.39	89.03	87.70	86.47	85.81	87.95	94.00	99.65	99.84	98.63	96.58
10	92.96	91.29	88.97	87.64	86.44	85.83	88.13	94.12	99.61	99.79	98.58	96.53
11	92.99	91.17	88.93	87.58	86.43	85.81	88.32	94.28	99.69	99.79	98.54	96.47
12	92.93	91.08	88.88	87.47	86.40	85.77	88.50	94.53	99.86	99.75	98.52	96.42
13	92.85	90.98	88.79	87.36	86.35	85.76	88.64	94.84	99.89	99.72	98.47	96.36
14	92.80	90.85	88.67	87.29	86.32	85.74	88.79	95.11	99.75	99.73	98.39	96.31
15	92.70	90.75	88.56	87.23	86.28	85.73	89.01	95.31	99.62	99.78	98.32	96.29
16	92.60	90.67	88.44	87.18	86.27	85.76	89.14	95.49	99.54	99.84	98.26	96.23
17	92.50	90.56	88.32	87.18	86.25	85.77	89.27	95.71	99.60	99.92	98.20	96.19
18	92.48	90.47	88.25	87.17	86.18	85.78	89.41	95.93	99.73	99.92	98.13	96.18
19	92.53	90.33	88.16	87.15	86.11	85.80	89.54	96.08	99.83	99.91	98.07	96.14
20	92.59	90.22	88.12	87.12	86.05	85.80	89.68	96.24	99.86	99.90	98.00	96.13
21	92.67	90.12	88.09	87.10	86.00	85.78	89.83	96.34	99.89	99.87	97.94	96.13
22	92.65	90.00	88.11	87.04	85.96	85.83	90.00	96.49	99.94	99.84	97.88	96.06
23	92.60	89.87	88.12	87.00	85.93	85.86	90.21	96.67	99.87	99.75	97.86	95.98
24	92.67	89.78	88.16	86.98	85.92	85.88	90.42	96.92	99.84	99.66	97.73	95.92
25	92.64	89.66	88.17	86.96	85.87	85.89	90.65	97.24	99.90	99.57	97.63	95.85
26	92.57	89.54	88.20	86.94	85.84	85.93	90.90	97.47	99.90	99.52	97.57	95.87
27	92.50	89.43	88.20	86.93	85.81	85.98	91.17	97.68	99.92	99.48	97.54	95.82
28	92.43	89.35	88.17	86.89	85.80	86.06	91.45	97.84	99.90	99.47	97.47	95.77
29	92.35	89.32	88.18	86.83	-	86.16	91.75	98.05	99.95	99.45	97.39	95.73
30	92.28	89.27	88.14	86.77	-	86.30	92.05	98.21	99.94	99.36	97.29	95.70
31	92.21	-	88.08	86.75	-	86.43	-	98.44	-	99.30	97.22	-

Note.- Add 1,000 feet to obtain elevation above mean sea level.

Monthly elevation and contents, water year October 1940 to September 1941

Date	Elevation (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	1,093.90	476,690	-
Oct. 31	1,092.21	421,750	-54,940
Nov. 30	1,089.30	327,610	-94,140
Dec. 31	1,088.06	287,680	-39,930
Calendar year 1940	-	-	+43,160
Jan. 31	1,086.74	245,430	-42,250
Feb. 28	1,085.85	216,950	-28,480
Mar. 31	1,086.48	237,110	+20,160
Apr. 30	1,092.18	420,780	+183,700
May 31	1,098.53	627,900	+207,100
June 30	1,099.89	672,510	+44,610
July 31	1,099.14	647,910	-24,600
Aug. 31	1,097.14	582,330	-65,580
Sept.30	1,095.61	532,440	-49,890
Water year 1940-41	-	-	+55,760

†Elevations are midnight means based on records for stations at Purple Point and Chelan.

Chelan River at Chelan, Wash.

Location.- Water-stage recorder, lat. 47°50'05", long. 120°00'40", in SE¼ sec. 12, T. 27 N., R. 22 E., in forebay upstream from control dam at Chelan. Datum of gage is at mean sea level, subject to correction to datum of 1929.

Drainage area.- 950 square miles.

Records available.- October 1903 to September 1941.

Average discharge.- 38 years, 2,022 second-feet (adjusted).

Extremes.- Maximum daily discharge during year, 5,610 second-feet (regulated) June 13; minimum daily, 66 second-feet (regulated) Apr. 13.

1903-41: Maximum daily discharge, 12,800 second-feet June 3, 1936; no flow part of day Jan. 30, 1917, when lake outlet was blocked with ice, and at other times because of artificial regulation.

Remarks.- Records excellent. Unmeasured water that is diverted for irrigation above station is small percentage of total runoff. Washington Water Power Co. diverts water at Chelan for power and irrigation, which quantity is included in records of daily discharge. Flow regulated by power plant at and storage in Lake Chelan.

Cooperation.- Records collected in cooperation with Washington Water Power Co.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,250	2,190	†500	510	1,110	669	988	80	†97	1,960	1,920	1,620
2	2,240	2,230	1,210	1,340	†428	†384	1,270	79	629	2,050	1,900	1,730
3	2,240	†2,160	1,660	1,380	961	1,170	1,170	162	464	2,360	†1,410	2,080
4	2,040	2,180	2,120	1,100	1,090	1,110	1,180	†77	685	2,340	1,440	1,900
5	2,130	2,210	2,050	†528	944	1,080	692	125	1,420	1,580	1,960	1,930
6	†2,030	2,230	1,010	1,510	939	1,030	†324	91	1,470	†1,960	1,990	1,610
7	2,110	2,220	624	1,100	1,020	1,100	1,100	93	1,640	2,840	2,000	†1,820
8	2,120	2,220	†268	1,060	741	627	640	81	†3,650	2,180	1,910	1,790
9	2,210	2,220	1,150	1,200	†411	†345	354	81	3,280	2,140	1,800	2,110
10	2,080	†2,180	1,350	1,300	1,030	1,100	177	96	2,210	1,700	†1,760	1,920
11	2,120	2,040	1,230	1,560	1,030	1,100	147	†92	1,610	1,580	1,750	1,810
12	2,100	1,870	1,480	†2,000	1,120	1,240	89	95	3,020	1,670	1,510	1,760
13	†1,460	2,220	1,880	2,110	1,180	1,150	†66	95	5,610	†1,290	2,110	1,760
14	1,960	2,220	2,210	1,790	1,220	1,220	134	80	5,520	1,260	2,090	†1,420
15	2,050	2,220	†2,210	1,310	695	643	91	82	†4,950	930	2,000	1,640
16	2,210	2,220	2,190	1,260	†473	†507	105	80	3,540	620	1,890	1,830
17	2,210	†2,230	2,180	1,130	1,130	1,190	104	80	1,210	1,170	†1,680	1,520
18	2,210	2,210	2,190	1,200	1,140	1,220	70	†76	842	2,560	1,860	1,130
19	2,240	2,210	2,160	†576	1,150	1,190	67	84	1,130	1,680	1,910	1,020
20	†2,170	2,210	1,890	1,100	1,160	1,330	†100	94	1,230	†2,030	1,810	753
21	2,240	2,210	767	1,180	1,140	1,030	190	126	1,340	1,760	1,890	†876
22	2,240	2,210	†412	1,100	624	917	226	154	†2,120	2,050	2,010	1,790
23	2,210	2,210	1,380	998	†266	†501	211	116	4,040	2,020	1,830	1,710
24	2,210	†2,210	678	1,040	1,290	1,240	121	175	1,480	1,750	†1,660	1,880
25	2,240	2,220	132	899	1,310	991	121	†81	1,270	1,780	1,800	1,320
26	2,140	2,220	700	†1,470	1,050	874	105	191	1,550	1,740	1,970	1,060
27	†2,150	2,210	1,010	979	1,140	906	†74	306	2,370	†1,420	1,820	1,280
28	2,170	2,180	1,070	1,140	1,130	868	80	311	2,140	1,420	1,920	†1,160
29	2,220	1,620	†508	1,120	-	668	103	126	†2,200	1,760	1,820	1,260
30	2,220	342	1,020	1,150	-	†454	395	149	2,570	1,970	1,990	1,060
31	2,200	-	1,020	1,170	-	1,000	-	109	-	1,950	†1,660	-

Month	Observed				Change in contents in Lake Chelan (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	2,250	1,460	2,143	131,700	-54,940	76,760	1,248	1.31	1.51
November	2,230	342	2,111	125,600	-94,140	31,460	529	.557	.62
December	2,210	132	1,299	79,850	-39,930	39,920	649	.683	.79
Calendar year 1940	7,200	0	1,653	1,200,000	+43,160	1,243,000	1,712	1.80	24.51
January	2,110	510	1,204	74,000	-42,250	31,750	516	.543	.63
February	1,310	266	962	53,400	-28,480	24,920	449	.473	.49
March	1,330	345	931	57,230	+20,160	77,390	1,259	1.33	1.53
April	1,270	66	350	20,810	+183,700	204,500	3,437	3.62	4.04
May	311	76	118	7,270	+207,100	214,400	3,487	3.67	4.23
June	5,610	97	2,176	129,500	+44,610	174,100	2,926	3.08	3.44
July	2,840	620	1,791	110,100	-24,600	85,500	1,391	1.46	1.68
August	2,110	1,410	1,841	113,200	-65,580	47,620	774	.815	.94
September	2,110	753	1,552	92,330	-49,890	42,440	713	.751	.84
Water year 1940-41	5,610	66	1,374	995,000	+55,760	1,051,000	1,451	1.53	20.74

† Sunday.

Note.- Change in contents based on midnight mean gage heights from stations at Purple Point and Chelan.

Railroad Creek at Lucerne, Wash.

Location.- Water-stage recorder, lat. 48°11'40", long. 120°35'50", in sec. 9, T. 31 N., R. 18 E., half a mile upstream from mouth and half a mile southwest of Lucerne.

Drainage area.- 64 square miles.

Records available.- December 1910 to June 1913, January 1927 to September 1941.

Average discharge.- 15 years (1911-12, 1927-41), 188 second-feet.

Extremes.- Maximum discharge during year, 604 second-feet May 13 (gage height, 3.82 feet); minimum, 19 second-feet Feb. 14.
1910-13, 1927-41: Maximum discharge, 1,910 second-feet June 8, 1927 (gage height, 5.3 feet); minimum, l ss than 9.4 second-feet, occurred sometime during period Jan. 15-25, 1930, when sta -discharge relation was affected by ice.

Remarks.- Records fair .cept those for periods of ice effect or no gage-height record, which are poor. No :version or regulation.

Cooperation.- Water-stage recorder inspected and results of eight discharge measurements furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83	97	56	41	31	56	236	528	359	296	152	104
2	70	97	58	b35	31	58	331	504	353	291	144	140
3	63	97	58	b35	31	56	316	461	353	301	140	140
4	56	88	61	a35	28	54	301	433	359	301	136	148
5	54	83	63	a40	27	50	276	377	347	286	128	128
6	50	77	61	a40	27	54	251	341	365	281	128	110
7	48	83	58	42	27	54	246	321	389	291	128	104
8	48	83	58	41	27	56	241	296	331	266	136	94
9	48	75	58	39	27	56	271	276	301	241	144	88
10	138	70	44	37	27	56	281	281	316	224	148	148
11	192	67	b35	34	27	56	281	316	407	220	152	140
12	124	67	b30	34	27	56	276	496	504	220	200	114
13	91	65	b30	34	28	58	271	528	520	224	184	100
14	83	63	b30	31	27	61	271	461	426	232	164	114
15	72	63	b30	31	30	65	281	395	383	246	156	114
16	65	63	b35	33	31	75	266	365	365	266	148	114
17	65	65	b40	33	33	91	256	371	331	276	144	128
18	157	61	b45	34	34	100	246	326	311	286	148	121
19	265	56	52	33	34	97	241	296	281	261	148	114
20	316	56	54	27	33	91	251	281	256	236	152	104
21	291	56	54	31	34	91	271	286	241	220	152	88
22	200	52	56	33	31	94	311	316	266	204	148	83
23	168	58	50	33	33	94	347	389	336	184	144	83
24	204	56	50	31	34	91	377	461	311	172	136	88
25	192	54	48	31	36	97	395	461	266	160	121	91
26	160	50	46	31	37	117	419	383	241	156	117	97
27	132	50	46	30	39	140	447	347	246	160	128	100
28	114	56	44	30	42	160	447	336	281	168	128	94
29	107	61	44	31	-	176	461	306	316	168	117	91
30	107	58	44	31	-	188	489	276	301	160	100	86
31	107	-	44	31	-	200	-	326	-	156	97	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	3,870	316	48	125	1.95	2.25	7,680
November	2,027	97	50	67.6	1.06	1.18	4,020
December	1,482	63	30	47.8	.747	.86	2,940
Calendar year 1940	62,188	1,130	26	170	2.66	36.12	123,400
January	1,052	42	27	33.9	.530	.61	2,090
February	873	42	27	31.2	.488	.51	1,730
March	2,748	200	50	88.6	1.38	1.60	5,450
April	9,354	489	236	312	4.88	5.44	18,550
May	11,540	528	276	372	5.81	6.71	22,890
June	10,062	520	241	335	5.23	5.85	19,960
July	7,153	301	156	231	3.61	4.16	14,190
August	4,368	200	97	141	2.20	2.54	8,660
September	3,268	148	83	109	1.70	1.90	6,480
Water year 1940-41	57,797	528	27	158	2.47	33.61	114,600

a No gage-height record; discharge computed on basis of one discharge measurement, observer's notes, and weather records.
b Stage-discharge relation affected by ice.

Wenatchee Lake near Plain, Wash.

Location.- Water-stage recorder, lat. 47°49'50", long. 120°46'30", in sec. 19, T. 27 N., R. 17 E., on north shore of Wenatchee Lake, 2⅜ miles upstream from outlet, 7⅞ miles northwest of Plain, and 33 miles upstream from Leavenworth. Datum of gage is 1,860.00 feet above mean sea level, subject to correction to datum of 1929; gage readings have been reduced to elevations above mean sea level.

Drainage area.- 277 square miles.

Records available.- January 1932 to September 1941.

Extremes.- Maximum elevation during year, 1,872.52 feet May 1; minimum, 1,869.54 feet probably Oct. 9, from recorded range of stage, recorder was not operating properly.
1932-41: Maximum elevation recorded, 1,876.57 feet June 16, 1933; minimum elevation, 1,869.27 feet Dec. 1, 1936.

Remarks.- Fish weir at lake outlet has some effect on late summer gage heights.

Elevation, in feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-	70.32	70.19	69.96	69.79	69.93	71.93	72.50	71.64	70.88	69.99	69.89
2	69.73	70.32	70.20	69.92	69.78	70.03	72.27	72.40	71.58	70.84	69.97	69.95
3	69.74	70.27	70.23	69.86	69.77	70.11	72.37	72.21	71.50	-	69.95	70.00
4	-	70.23	70.41	69.88	69.76	70.13	72.17	71.94	71.44	-	69.97	70.07
5	-	70.17	70.46	69.89	69.75	70.15	71.93	71.73	71.44	-	69.96	70.09
6	-	70.14	70.49	69.89	69.75	70.15	71.74	71.53	71.51	-	69.95	70.03
7	-	70.15	70.46	69.88	69.74	70.16	71.60	71.37	71.63	-	69.96	69.97
8	-	70.19	70.49	69.86	69.74	70.19	71.51	71.22	71.49	70.60	69.96	69.92
9	-	70.19	70.59	69.85	69.74	70.25	71.54	71.09	71.27	70.55	69.98	69.88
10	-	70.11	70.58	69.84	69.74	70.30	71.60	71.02	71.20	70.47	70.00	70.06
11	-	70.08	70.48	69.83	69.75	70.33	71.59	71.15	71.33	70.41	70.01	70.24
12	-	70.05	70.36	69.81	69.75	70.36	71.52	71.75	71.60	70.38	70.07	70.20
13	-	70.03	70.28	69.80	69.74	70.37	71.47	72.23	71.73	70.38	70.12	70.14
14	-	70.01	70.21	69.81	69.74	70.38	71.45	72.11	71.66	70.39	70.09	70.28
15	-	69.99	70.18	69.81	69.73	70.38	71.50	71.86	71.46	70.40	70.06	70.48
16	69.93	69.96	70.15	69.81	69.72	70.44	71.48	71.71	71.26	70.44	70.05	70.54
17	-	69.95	70.11	69.86	69.71	70.55	71.36	71.86	71.12	70.47	70.02	70.78
18	-	69.94	70.12	69.90	69.71	70.67	71.28	71.82	71.04	70.52	70.01	70.72
19	-	69.89	70.14	69.89	69.71	70.75	71.22	71.57	70.98	70.50	70.01	70.60
20	-	69.87	70.18	69.88	69.72	70.76	71.22	71.37	70.88	70.44	70.00	70.52
21	-	69.86	70.16	69.85	69.73	70.74	71.32	71.30	70.80	70.35	70.04	70.41
22	-	69.83	70.18	69.82	69.74	70.73	71.48	71.36	70.76	70.28	70.03	70.31
23	-	69.81	70.20	69.80	69.77	70.72	71.68	71.52	70.87	70.19	70.01	70.26
24	-	69.80	70.19	69.79	69.79	70.69	71.85	71.80	70.88	70.13	69.99	70.22
25	-	69.80	70.15	69.80	69.80	70.70	71.97	72.04	70.78	70.09	69.95	70.18
26	-	69.78	70.12	69.80	69.81	70.77	72.08	71.96	70.71	70.07	69.94	70.13
27	-	69.80	70.09	69.78	69.81	70.94	72.16	71.75	70.69	70.06	69.95	70.14
28	-	69.94	70.06	69.76	69.85	71.19	72.21	71.59	70.71	70.07	69.93	70.12
29	-	70.06	70.04	69.74	-	71.39	72.26	71.44	70.81	70.04	69.91	70.09
30	-	70.18	70.02	69.74	-	71.60	72.41	71.31	70.89	70.04	69.87	70.07
31	70.32	-	69.99	69.76	-	71.79	-	71.44	-	70.02	69.83	-

Note.- Add 1,800 feet to obtain elevation above mean sea level.

Wenatchee River below Wenatchee Lake, Wash.

Location.- Water-stage recorder, lat. 47°49'50", long. 120°46'30", in sec. 19, T. 27 N., R. 17 E., on north shore of Wenatchee Lake, 2¾ miles upstream from outlet, 7½ miles northwest of Plain, and 33 miles upstream from Leavenworth. Datum of gage is 1,860.00 feet above mean sea level, subject to correction to datum of 1929; gage readings have been reduced to elevations above mean sea level. Discharge measurements made at highway bridge half a mile downstream from lake outlet.

Drainage area.- 277 square miles.

Records available.- January 1932 to September 1941.

Extremes.- Maximum discharge during year, 2,750 second-feet May 1 (elevation, 1,872.52 feet); minimum, 183 second-feet probably Oct. 9, when recorder was not operating properly (elevation, 1,869.54 feet, from recorded range of stage).
1932-41: Maximum discharge recorded, 8,310 second-feet June 16, 1933 (elevation, 1,876.57 feet); minimum discharge, 134 second-feet Dec. 1, 1936 (elevation, 1,869.27 feet).

Remarks.- Records good except those for periods of no gage-height record, which are poor. No diversion above station. Flow subject to effect of fish weir at outlet to Wenatchee Lake.

Rating table, water year 1940-41, except periods of ice effect (elevation, in feet, and discharge, in second-feet)
(Shifting-control method used June 24 to Sept. 30)

1,869.8	281	1,870.2	498	1,870.6	796	1,871.0	1,150	1,871.7	1,850
1,870.0	380	1,870.4	637	1,870.8	969	1,871.3	1,450	1,872.0	2,180

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	270	579	492	359	277	344	2,100	2,730	1,790	969	323	277
2	252	579	498	338	273	397	2,480	2,620	1,730	925	314	304
3	235	545	552	309	268	442	2,590	2,410	1,650	900	304	328
4	225	518	645	319	264	455	2,370	2,110	1,590	860	314	364
5	220	479	683	323	260	467	2,100	1,880	1,590	820	309	375
6	215	461	706	*323	260	467	1,890	1,680	1,660	780	304	344
7	205	467	683	319	256	473	1,750	1,520	1,780	750	309	314
8	195	492	706	309	256	492	1,660	1,370	1,640	714	309	290
9	190	492	788	304	256	532	1,690	1,240	1,420	676	319	273
10	330	442	780	300	256	565	1,750	1,170	1,350	615	328	359
11	615	425	699	295	260	587	1,740	1,300	1,480	572	333	461
12	540	408	608	286	260	608	1,670	1,900	1,750	552	364	436
13	460	397	552	281	256	615	1,620	2,430	1,880	552	391	402
14	420	386	505	286	256	623	1,600	2,300	1,810	558	375	486
15	380	375	b475	286	252	623	1,650	2,030	1,610	565	359	623
16	344	359	b455	286	247	668	1,630	1,860	1,410	594	354	668
17	330	354	442	309	243	755	1,510	2,030	1,270	615	338	864
18	510	349	b440	328	243	856	1,430	1,980	1,190	652	333	813
19	710	323	b450	323	243	925	1,370	1,720	1,130	637	333	714
20	930	314	b460	319	247	934	1,370	1,520	1,040	594	328	652
21	1,120	309	473	304	252	916	1,470	1,450	969	532	349	572
22	960	295	486	290	256	907	1,630	1,510	934	486	344	505
23	820	286	498	281	268	899	1,830	1,670	1,030	430	333	473
24	920	281	492	277	277	872	2,020	1,960	1,030	397	323	448
25	940	281	467	281	281	881	2,150	2,220	934	375	304	425
26	750	273	448	281	286	943	2,270	2,140	864	364	300	397
27	640	*281	430	273	286	1,100	2,360	1,900	838	359	304	402
28	580	349	414	264	304	1,340	2,410	1,740	847	364	295	391
29	550	414	402	256	-	1,540	2,470	1,590	925	349	286	375
30	550	486	391	256	-	1,750	2,630	1,460	987	349	268	364
31	579	-	375	264	-	1,950	-	1,590	-	338	252	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	15,985	1,120	190	516	1.86	2.15	31,710
November	11,999	579	273	400	1.44	1.61	23,800
December	16,495	788	375	532	1.92	2.21	32,720
Calendar year 1940	369,717	5,600	190	1,010	3.65	49.64	733,300
January	9,229	359	256	298	1.08	1.24	18,310
February	7,343	304	243	262	.946	.99	14,560
March	24,926	1,950	344	804	2.90	3.35	49,440
April	57,210	2,630	1,370	1,907	6.88	7.68	113,500
May	57,030	2,730	1,170	1,840	6.64	7.66	113,100
June	40,128	1,880	838	1,338	4.83	5.39	79,590
July	18,243	969	338	588	2.12	2.45	36,180
August	9,999	391	252	323	1.17	1.34	19,830
September	13,699	864	273	457	1.65	1.84	27,170
Water year 1940-41	282,286	2,730	190	773	2.79	37.91	559,900

* Winter-discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- No gage-height record Oct. 1, 3-15, 17-30, and July 3-7; discharge computed on basis of records for station at Plain.

Wenatchee River at Plain, Wash.

Location.- Water-stage recorder, lat. 47°45'50", long. 120°39'30", in lot 8, sec. 12, T. 26 N., R. 17 E., at Plain, a quarter of a mile downstream from Beaver Creek, 7½ miles downstream from Nason Creek, and 12 miles north of Leavenworth. Datum of gage is 1,805 feet above mean sea level (from river-profile map).

Drainage area.- 591 square miles.

Records available.- November 1910 to September 1941 in reports of Geological Survey. August 1904 to September 1933 (monthly discharge) in State Water-Supply Bulletin 5.

Average discharge.- 37 years (1904-41), 2,172 second-feet.

Extremes.- Maximum discharge during year, 4,850 second-feet May 1 (gage height, 5.73 feet); minimum, 293 second-feet Oct. 9 (gage height, 1.58 feet).
1910-29, 1931-41: Maximum discharge observed, 20,800 second-feet Dec. 13, 1921 (gage height, 11.8 feet, site and datum then in use); minimum discharge, 191 second-feet Dec. 1, 1936 (gage height, 1.34 feet).

Remarks.- Records excellent. Wenatchee Park Land & Irrigation Co. diverte a maximum of about 12 second-feet from Chiwawa River during irrigation seasons. Natural regulation in Wenatchee Lake and late summer flow may be slightly influenced by fish weir at lake outlet.

Rating table, water year 1940-41 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.7	340	2.4	740	3.3	1,470	4.5	2,920
1.9	435	2.7	960	3.6	1,780	5.0	3,650
2.1	545	3.0	1,200	4.0	2,260	5.5	4,460

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	420	896	782	b570	474	612	3,380	4,780	3,030	a1,490	490	395
2	405	888	824	523	462	740	4,100	4,600	2,880	1,360	457	452
3	385	845	896	496	446	782	4,110	4,180	2,740	1,330	452	496
4	358	782	1,030	b510	435	782	3,750	3,650	2,650	1,310	484	534
5	336	733	1,050	b525	430	796	3,400	3,260	2,660	1,230	468	528
6	324	698	1,080	534	435	796	3,100	2,920	2,810	1,180	452	490
7	308	719	1,020	540	430	810	2,880	2,620	3,020	1,160	446	445
8	304	747	1,080	540	425	859	2,740	2,350	2,720	1,110	446	420
9	300	705	1,190	540	425	912	2,560	2,120	2,400	1,030	452	400
10	362	650	1,100	518	435	944	3,000	2,030	2,250	960	457	576
11	1,010	618	976	501	446	960	2,910	2,250	2,510	912	468	726
12	852	587	866	496	440	992	2,840	3,340	2,990	873	528	638
13	726	551	761	490	435	1,000	2,750	4,180	3,240	859	557	605
14	670	528	733	490	430	992	2,750	3,870	3,020	852	518	740
15	593	523	b700	490	415	1,000	2,890	3,410	2,650	845	496	960
16	540	518	b665	484	415	1,080	2,750	3,190	2,310	859	501	920
17	496	523	670	518	415	1,230	2,560	3,560	2,110	866	474	1,220
18	788	512	b700	534	415	1,370	2,430	3,360	2,000	912	462	1,100
19	1,170	490	b735	551	420	1,460	2,360	2,920	1,890	904	452	992
20	1,540	496	b760	523	425	1,450	2,400	2,640	1,740	838	452	912
21	1,650	490	775	501	435	1,410	2,610	2,520	1,590	775	462	824
22	1,530	468	810	484	440	1,420	2,890	2,610	1,550	719	462	740
23	1,260	452	817	474	462	1,410	3,260	2,890	1,740	657	440	691
24	1,410	479	796	468	474	1,390	3,560	3,460	1,710	605	435	664
25	1,420	474	768	474	474	1,410	3,760	3,660	1,560	593	415	638
26	1,230	468	733	474	484	1,540	3,950	3,650	1,420	563	410	624
27	1,060	479	712	457	496	1,820	4,080	3,220	1,350	551	425	631
28	928	605	691	446	523	2,230	4,180	2,960	1,410	557	430	605
29	866	740	670	440	-	2,530	4,310	2,720	1,530	534	410	593
30	866	838	650	435	-	2,850	4,650	2,470	a1,590	512	380	575
31	920	-	618	452	-	3,140	-	2,810	-	512	358	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	25,027	1,650	300	807	1.37	1.57	49,640
November	16,502	896	452	617	1.04	1.16	36,700
December	25,658	1,190	618	828	1.40	1.61	50,890
Calendar year 1940	601,452	8,600	300	1,643	2.78	37.85	1,193,000
January	15,478	570	435	499	.844	.97	30,700
February	12,441	523	415	444	.751	.78	24,680
March	40,717	3,140	612	1,313	2.22	2.56	80,760
April	97,210	4,650	2,360	3,240	5.48	6.12	192,800
May	98,400	4,780	2,030	3,174	5.37	6.19	195,200
June	67,070	3,240	1,350	2,236	3.78	4.22	133,000
July	27,458	1,490	512	886	1.50	1.73	54,460
August	14,139	557	358	456	.772	.89	28,040
September	20,135	1,220	395	671	1.14	1.27	39,940
Water year 1940-41	462,235	4,780	300	1,266	2.14	29.07	916,800

a No gage-height record; discharge computed on basis of records for station below Wenatchee Lake.
b Stage-discharge relation affected by ice.

Wenatchee River at Peshastin, Wash.

Location.- Water-stage recorder, lat. 47°34'50", long. 120°37'00", in SE¼SW¼ sec. 8, T. 24 N., R. 18 E., 1 mile northwest of Peshastin and 3½ miles upstream from Peshastin Creek. Datum of gage is 1,028.04 feet (revised) above mean sea level, datum of 1929.

Drainage area.- 1,000 square miles.

Records available.- October 1928 to September 1941 in reports of Geological Survey. October 1928 to February 1929 (monthly discharge) in Washington State Water-Supply Bulletin 5.

Average discharge.- 13 years, 2,739 second-feet.

Extremes.- Maximum discharge during year, 6,730 second-feet May 1 (gage height, 6.79 feet); minimum, 520 second-feet Nov. 19.
1929-41: Maximum discharge, 20,400 second-feet June 16, 1933 (gage height, 11.82 feet); minimum, 183 second-feet Oct. 14, 1939 (gage height, 1.26 feet).

Remarks.- Records excellent except those for periods of shifting control, which are good, and those for periods of ice effect, which are fair. Several diversions above station for irrigation. Slight artificial regulation at mill pond at Leavenworth and at power plant in Tumwater Canyon, and from operation of fish weir at Wenatchee Lake Outlet.

Rating table, water year 1940-41, except periods of ice effect or shifting control (gage height, in feet, and discharge, in second-feet)

1.7	355	2.7	960	3.7	1,940	5.0	3,580
2.0	515	3.0	1,210	4.0	2,300	5.7	4,610
2.3	690	3.3	1,500	4.5	2,920	6.5	6,080

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	582	1,150	1,060	b725	630	992	4,450	6,730	4,450	2,060	612	498
2	564	1,120	1,100	*654	618	1,130	5,290	6,290	4,150	1,940	588	570
3	554	1,060	1,200	618	618	1,180	5,480	5,670	4,000	1,940	582	630
4	537	968	1,350	b615	606	1,160	4,940	4,940	3,860	1,880	600	690
5	488	904	1,400	b630	600	1,170	4,610	4,450	3,860	1,780	594	722
6	460	869	1,450	b655	600	1,160	4,150	4,000	4,000	1,660	576	660
7	432	918	1,350	678	594	1,180	3,860	3,580	4,300	1,610	570	612
8	422	932	1,350	684	594	1,260	3,720	3,240	3,860	1,560	570	582
9	416	897	1,610	684	594	1,350	3,860	2,980	3,440	1,400	576	554
10	432	841	1,450	666	606	1,350	4,000	2,920	3,240	1,260	576	814
11	1,160	788	1,260	654	624	1,400	3,860	3,180	3,580	1,170	582	1,080
12	1,200	729	1,100	636	*618	*1,450	3,860	4,640	4,150	1,120	654	960
13	992	666	992	630	618	1,450	3,720	5,870	4,610	1,080	710	862
14	918	660	b915	630	606	1,450	3,580	5,290	4,150	1,060	678	1,030
15	820	666	904	630	582	1,450	3,860	4,610	3,720	1,030	636	1,450
16	736	648	b900	624	576	1,560	3,720	4,300	3,310	1,060	642	1,400
17	678	666	b900	654	582	1,780	3,440	4,940	3,050	1,060	618	1,780
18	736	648	b910	703	588	2,000	3,240	4,610	2,920	1,090	594	1,660
19	1,300	606	b920	729	594	2,120	3,180	4,000	2,790	1,130	570	1,450
20	1,720	612	b940	690	600	2,120	3,240	3,720	2,540	1,050	570	1,350
21	1,940	600	976	660	618	2,060	3,440	3,580	2,360	953	576	1,210
22	1,940	564	1,020	642	624	2,000	3,860	3,720	2,240	890	576	1,070
23	1,660	542	1,030	630	642	2,000	4,300	4,150	2,420	827	559	984
24	1,830	570	1,000	612	648	1,940	4,610	4,940	2,420	762	548	946
25	2,060	564	953	612	654	2,000	4,940	5,480	2,240	729	542	897
26	1,720	559	918	624	660	2,180	5,290	5,110	2,000	684	548	855
27	1,450	559	904	606	672	2,540	5,480	4,450	1,940	648	564	855
28	1,260	*762	876	600	742	2,980	5,670	4,000	1,940	690	576	834
29	1,140	1,070	855	582	-	3,440	5,870	3,860	2,060	678	576	800
30	1,110	1,200	834	576	-	3,960	6,510	3,440	2,120	636	532	788
31	1,150	-	794	600	-	4,150	-	4,150	-	636	504	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	32,407	2,060	416	1,045	64,280
November	23,338	1,200	542	778	46,290
December	33,221	1,610	794	1,072	65,890
Calendar year 1940	815,453	12,400	416	2,228	1,617,000
January	19,933	729	576	643	39,540
February	17,308	742	576	618	34,330
March	57,862	4,150	992	1,867	114,800
April	130,030	6,510	3,180	4,334	257,900
May	136,840	6,730	2,920	4,414	271,400
June	95,720	4,610	1,940	3,191	189,900
July	36,073	2,060	636	1,164	71,550
August	18,199	710	504	587	36,100
September	28,593	1,780	498	953	56,710
Water year 1940-41	629,524	6,730	416	1,725	1,249,000

* Winter discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- Shifting-control method used Oct. 13 to Feb. 9.

Chiwawa River near Plain, Wash.

Location.- Water-stage recorder, lat. 47°50'30", long. 120°39'40", in SE¼ sec. 13, T. 27 N., R. 17 E., half a mile upstream from Goose Creek, 6 miles north of Plain, 7 miles upstream from mouth, and 11 miles northeast of Chiwaukum. Datum of gage is 2,100 feet above mean sea level (from river-profile map).

Drainage area.- 169 square miles.

Records available.- August 1936 to September 1941. May 1911 to October 1914, at site 4 miles downstream, published as Chiwawa Creek near Leavenworth.

Extremes.- Maximum discharge during year, 1,360 second-feet May 2 (gage height, 6.04 feet); minimum daily, 70 second-feet Feb. 16.
1911-14, 1936-41: Maximum discharge recorded, 3,210 second-feet May 25, 26, 1938 (gage height, 7.66 feet); minimum recorded, 67 second-feet Nov. 28, 1936 (gage height, 3.74 feet), but may have been less during periods of ice effect.

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

Rating table, water year 1940-41 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

3.7	58	4.5	320	5.6	990
3.9	100	4.7	420	6.0	1,320
4.1	156	5.0	590		
4.3	229	5.3	780		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	95	194	116	105	88	126	666	1,320	808	442	126	103
2	93	190	116	100	88	156	885	1,260	780	415	123	116
3	88	180	123	95	88	163	843	1,130	767	420	123	132
4	84	163	132	*95	88	150	760	998	767	410	132	132
5	79	156	132	100	86	150	708	892	774	385	121	116
6	77	147	132	100	86	147	644	787	808	365	118	103
7	75	163	129	100	86	147	608	722	843	370	110	100
8	73	166	138	100	86	156	584	663	722	340	108	95
9	73	156	144	100	86	163	656	620	663	310	108	93
10	120	141	138	90	86	163	689	620	663	286	105	184
11	260	125	110	85	86	*163	682	702	794	268	105	173
12	150	105	85	85	86	166	696	1,010	934	263	129	138
13	129	90	75	85	85	166	682	1,170	990	250	121	132
14	123	80	80	85	*85	163	696	1,010	878	246	108	166
15	110	85	80	85	75	166	734	927	767	246	105	194
16	103	95	75	85	70	187	682	885	682	242	105	183
17	100	105	80	90	75	221	638	969	650	238	103	242
18	253	100	90	95	75	242	614	857	608	246	103	194
19	290	105	105	90	75	250	608	741	554	225	105	173
20	385	113	120	90	80	238	638	682	508	210	103	163
21	385	110	120	86	80	229	708	670	475	194	100	153
22	277	100	130	86	80	238	780	702	475	187	98	144
23	225	100	130	86	84	246	871	794	566	173	93	144
24	353	105	125	86	84	242	934	969	530	166	93	147
25	306	105	120	91	86	255	990	1,060	464	173	86	147
26	242	*103	120	88	86	306	1,050	969	431	159	88	147
27	210	110	115	86	88	375	1,080	864	420	153	100	153
28	194	120	115	86	103	436	1,150	822	470	147	103	138
29	187	125	110	84	-	492	1,180	754	514	141	98	135
30	198	123	110	84	-	536	1,270	696	480	138	88	132
31	*221	-	105	86	-	602	-	801	-	132	86	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	5,558	385	73	179	1.06	1.22	11,020
November	3,760	194	80	125	.740	.83	7,460
December	3,500	144	75	113	.669	.77	6,940
Calendar year 1940	145,684	2,470	73	398	2.36	32.05	289,000
January	2,809	105	84	90.6	.536	.62	5,570
February	2,351	103	70	84.0	.497	.52	4,660
March	7,430	602	126	240	1.42	1.64	14,740
April	23,723	1,270	584	791	4.68	5.22	47,050
May	27,066	1,320	620	873	5.17	5.96	53,680
June	19,785	990	420	660	3.91	4.35	39,240
July	7,940	442	132	256	1.51	1.75	15,750
August	3,294	132	86	106	.627	.72	6,530
September	4,372	242	93	146	.864	.96	8,670
Water year 1940-41	111,588	1,320	70	306	1.81	24.56	221,300

* Winter-discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 11-19, 22-24, 27-29, Dec. 11 to Jan. 20, Feb. 13-22.

Icicle Creek above Snow Creek, near Leavenworth, Wash.

Location.- Water-stage recorder, lat. 47°32'25", long. 120°42'55", in SE¼ sec. 28, T. 24 N., R. 17 E., three-eighths of a mile upstream from Snow Creek and 4½ miles southwest of Leavenworth.

Drainage area.- 193 square miles.

Records available.- September 1936 to September 1941.

Extremes.- Maximum discharge during year, 1,640 second-feet May 31 (gage height, 7.15 feet); minimum recorded, 93 second-feet Oct. 9 (gage height, 2.23 feet), but may have been lower sometime during period of ice effect.

1936-41: Maximum discharge, 4,320 second-feet June 3, 1937 (gage height, 10.10 feet), from rating curve extended above 3,000 second-feet; minimum may have been less than 55 second-feet sometime during period Nov. 29 to Dec. 2, 1936, or Jan. 2 to Mar. 10, 1937, when stage-discharge relation was affected by ice.

Remarks.- Records good except those for periods of ice effect, which are poor. No diversion. Some regulation in headwater lakes for irrigation.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet

Oct. 1-24				Oct. 25 to Sept. 30					
2.3	96	3.5	231	2.3	96	3.5	237	6.0	1,000
2.5	107	4.0	333	2.5	109	4.0	342	7.0	1,520
2.7	122	4.5	453	2.7	126	4.5	470		
3.0	153			3.0	159	5.0	622		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	*199	205	128	135	256	1,000	1,410	1,170	470	134	119
2	100	196	255	124	132	276	1,190	1,270	1,020	456	130	147
3	104	180	275	115	127	246	1,020	1,140	980	470	142	145
4	102	166	285	110	124	233	896	937	958	443	157	158
5	102	160	265	110	122	228	837	856	980	404	143	144
6	100	154	260	120	123	226	780	780	1,000	391	134	131
7	96	171	220	125	123	233	762	708	1,050	378	130	126
8	95	172	275	*130	122	256	744	656	856	354	128	121
9	94	160	275	130	122	266	818	606	780	319	127	121
10	139	133	225	125	122	266	818	639	818	297	123	309
11	316	120	170	125	122	276	780	799	980	276	125	266
12	190	110	165	127	122	*276	744	1,320	1,140	266	159	216
13	166	95	155	128	119	276	708	1,270	1,140	256	137	219
14	154	95	150	127	*111	266	726	1,020	937	256	127	366
15	136	100	150	126	107	276	762	876	799	256	128	456
16	126	105	145	124	105	319	708	916	744	246	126	417
17	122	110	150	125	110	366	656	1,240	726	246	119	527
18	137	100	155	154	110	417	622	1,000	744	246	118	404
19	145	100	160	154	115	417	622	837	691	246	117	354
20	174	105	165	131	115	391	656	818	639	223	117	319
21	229	100	170	136	120	378	726	837	573	207	116	286
22	227	95	185	131	122	378	818	937	573	197	113	256
23	201	95	185	126	126	366	937	1,090	606	183	110	232
24	427	105	175	124	127	366	980	1,380	573	178	108	212
25	417	*105	170	126	127	391	1,050	1,380	527	172	108	200
26	308	110	170	125	126	456	1,120	1,120	484	164	119	191
27	246	120	175	122	129	557	1,170	916	456	158	120	186
28	221	180	175	122	172	656	1,190	856	456	155	128	192
29	205	230	169	120	-	780	1,300	818	498	151	122	171
30	210	260	164	118	-	896	1,460	762	484	144	115	167
31	216	-	157	125	-	937	-	1,300	-	138	114	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff	
						Inches	Acre-feet
October	5,603	427	94	181	0.938	1.08	11,110
November	4,131	260	95	138	.715	.80	8,190
December	6,000	285	145	194	1.01	1.16	11,900
Calendar year 1940	160,751	2,770	90	439	2.27	31.00	318,900
January	3,913	154	110	126	.653	.75	7,760
February	3,437	172	105	123	.637	.66	6,820
March	11,927	937	226	385	1.99	2.30	23,660
April	26,600	1,460	622	887	4.60	5.13	52,760
May	30,494	1,410	606	984	5.10	5.88	60,490
June	23,382	1,170	456	779	4.04	4.51	46,380
July	8,346	470	138	269	1.39	1.61	16,550
August	3,894	159	108	126	.653	.75	7,720
September	7,158	527	119	239	1.24	1.38	14,200
Water year 1940-41	134,885	1,460	94	370	1.92	26.01	267,500

* Winter-discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice Nov. 11 to Dec. 27, Jan. 3-11, Feb. 16-21.

Yakima River near Martin, Wash.

Location.- Water-stage recorder, lat. 47°19'10", long. 121°20'10", just downstream from dam at outlet of Keechelus Lake, 3⅛ miles northwest of Martin, Kittitas County, and 12 miles upstream from Easton.
Drainage area.- 55 square miles.
Records available.- October 1903 to September 1941.
Average discharge.- 37 years (1904-41), 323 second-feet (adjusted for storage since January 1906).
Extremes (regulated).- Maximum discharge during year, 1,720 second-feet July 11 (computed from combined flow past gage and over lake spillway); no flow Oct. 30.
1903-41: Maximum discharge, 7,370 second-feet Mar. 26, 1915, when temporary crib dam was washed out; practically no flow when gates in Keechelus Lake Dam are closed.
Remarks.- Records good October to April, excellent May to September; except those for extremely low flow, which are poor. Flow regulated by Keechelus Lake (see p. 196).
Records of daily discharge not adjusted for change in contents of Keechelus Lake.
Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 15

2.2	4.2	3.0	47	4.5	230
2.4	12	3.5	95	5.0	316
2.7	26	4.0	155	5.5	419

Nov. 16 to Sept. 30

2.3	10	4.0	178	7.0	826
2.5	22	4.5	251	8.0	1,150
2.7	35	5.0	340	9.0	1,580
3.0	59	5.5	442		
3.5	113	6.0	553		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	356	1	13	10	10	10	14	340	421	442	464	464
2	356	1	12	10	10	10	15	370	421	475	464	442
3	356	1	10	10	10	10	15	370	421	542	464	400
4	356	2	10	10	10	10	15	350	421	612	464	312
5	356	2	10	10	10	10	15	390	421	638	464	244
6	316	2	12	10	10	10	15	400	421	664	464	214
7	297	1	10	10	10	10	15	421	421	706	464	206
8	297	1	10	10	10	10	15	464	421	750	464	206
9	297	1	10	10	10	10	15	475	421	765	464	206
10	297	1	10	10	10	10	15	497	421	795	464	206
11	297	1	10	10	10	10	15	519	421	1,340	442	206
12	297	1	10	10	10	10	15	530	421	826	432	206
13	297	1	10	10	10	10	15	530	421	706	432	206
14	297	1	10	10	10	10	15	530	421	625	432	206
15	135	1	10	10	10	10	15	530	421	625	432	206
16	26	23	10	10	10	10	15	530	432	625	432	206
17	26	28	10	10	10	10	15	410	442	612	432	206
18	26	28	10	10	10	10	15	340	442	600	432	206
19	25	28	10	10	10	10	15	302	442	600	432	206
20	17	28	10	10	10	10	15	284	442	600	442	206
21	12	28	10	10	10	10	15	284	442	600	464	206
22	19	28	10	10	10	10	15	284	442	600	475	206
23	38	18	10	10	10	11	15	284	442	625	475	206
24	18	10	10	10	10	12	15	284	442	1,380	475	206
25	1	9	10	10	10	13	71	321	442	1,340	475	206
26	1	9	10	10	10	14	141	340	442	1,340	475	206
27	1	9	10	10	10	14	167	370	442	998	475	206
28	1	13	10	10	10	14	170	400	442	486	475	206
29	1	16	10	10	-	14	199	421	442	464	475	206
30	1	16	10	10	-	14	267	421	442	464	475	297
31	1	-	10	10	-	14	-	421	-	464	475	-

Month	Observed				Change in contents in Keechelus Lake (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	356	1	156	9,560	-4,090	5,470	89.0	1.62	1.86
November	28	1	10.3	613	+10,990	11,600	195	3.55	3.95
December	13	10	10.2	629	+17,260	17,890	291	5.24	6.10
Calendar year 1940	952	1	288	209,100	-36,130	173,000	238	4.33	58.88
January	10	10	10.0	615	+6,080	6,700	109	1.98	2.28
February	10	10	10.0	555	+5,280	5,840	105	1.91	1.99
March	14	10	11.0	674	+17,500	18,170	296	5.38	6.19
April	267	14	45.8	2,730	+20,450	23,180	390	7.09	7.90
May	530	284	401	24,680	-4,870	19,810	322	5.85	6.75
June	442	421	431	25,660	-15,740	9,920	167	3.04	3.38
July	1,380	442	720	44,250	-39,290	4,960	80.7	1.47	1.69
August	475	432	458	28,150	-24,210	3,940	64.1	1.17	1.34
September	464	206	237	14,100	-3,070	11,030	185	3.36	3.76
Water year 1940-41	1,380	1	210	152,200	-13,710	138,500	191	3.47	47.19

Yakima River at Cle Elum, Wash.

Location.- Water-stage recorder, lat. 47°11'20", long. 120°56'40", in sec. 27, T. 20 N., R. 15 E., at highway bridge at Cle Elum, just upstream from Roslyn Creek and 7 miles upstream from Teanaway River.
Drainage area.- 500 square miles.
Records available.- August 1906 to September 1941.
Average discharge.- 35 years, 1,933 second-feet (adjusted for storage since October 1906 and diversions since 1930).
Extremes.- Maximum discharge during year, 3,200 second-feet (regulated) July 12 (gage height, 6.54 feet); minimum, 101 second-feet (regulated) Nov. 16 (gage height, 3.32 feet).
1906-41: Maximum discharge, 25,600 second-feet Nov. 14, 1906 (gage height, 12.5 feet, from floodmarks); minimum, 64 second-feet (regulated) Nov. 16, 17, 1929, Dec. 4, 1936.
Remarks.- Records excellent. Kittitas high-line canal diverts water above gage for irrigation. Flow partly regulated by Keechelus, Kachess, and Cle Elum Lakes. Records of daily discharge not adjusted for amount of diversion or for change in contents of lakes.
Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

3.4	123	4.3	580	6.0	2,370
3.6	191	4.6	820	6.5	3,120
3.8	278	5.0	1,190		
4.0	385	5.5	1,740		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	671	155	595	207	169	220	365	1,340	1,020	1,980	2,510	1,860
2	524	139	497	191	173	269	937	1,370	982	2,040	2,510	1,860
3	524	126	224	191	177	288	847	1,400	1,040	2,180	2,510	1,620
4	517	117	180	191	177	298	769	1,400	1,090	2,300	2,370	1,620
5	490	112	427	191	177	298	735	1,460	1,080	2,300	2,240	1,460
6	439	106	232	187	177	250	719	1,400	1,090	2,370	2,240	1,170
7	433	106	735	184	184	255	655	1,460	1,110	2,370	2,240	1,190
8	427	112	928	169	187	264	625	1,460	1,120	2,370	2,370	1,190
9	421	115	374	169	191	278	610	1,510	1,120	2,510	2,440	1,210
10	445	109	191	173	199	288	595	1,510	1,190	2,510	2,440	1,250
11	452	109	580	169	207	335	559	1,560	1,230	2,510	2,440	1,260
12	445	103	439	169	207	346	524	1,560	1,260	2,650	2,370	1,200
13	445	103	314	166	212	346	504	1,510	1,260	2,510	2,300	1,180
14	433	103	278	169	203	363	497	1,460	1,260	2,300	2,300	1,170
15	452	103	278	173	207	340	490	1,510	1,260	2,110	2,300	1,170
16	452	112	288	166	199	250	484	1,510	1,290	1,920	2,300	1,170
17	329	120	237	173	169	237	439	1,620	1,290	1,740	2,300	1,150
18	203	123	232	184	203	340	397	1,510	1,280	1,740	2,300	1,140
19	180	123	224	187	187	304	374	1,460	1,250	1,680	2,300	1,130
20	177	126	228	187	184	283	329	1,400	1,210	1,620	2,300	1,130
21	159	129	237	184	184	278	324	1,400	1,170	1,680	2,300	1,140
22	136	155	246	180	184	273	319	1,460	1,230	1,680	2,300	1,090
23	145	173	237	177	173	273	288	1,510	1,270	1,680	2,300	1,070
24	159	184	237	177	184	269	329	1,510	1,300	1,510	2,300	1,050
25	145	220	232	177	191	273	482	1,460	1,340	1,740	2,240	1,040
26	115	228	228	177	184	278	580	1,510	1,390	1,740	2,240	1,100
27	106	232	228	173	184	283	711	1,510	1,460	1,740	2,110	1,150
28	103	340	228	169	191	309	803	1,510	1,560	1,980	1,920	1,170
29	120	580	228	169	-	357	910	1,510	1,620	2,110	1,920	1,160
30	136	719	232	169	-	679	1,270	1,510	1,860	2,240	1,920	1,090
31	155	-	220	169	-	847	-	1,250	-	2,370	1,860	-

Month	Observed				Change in contents (acre-feet)†	Diverted by Kittitas Canal (acre-feet)	Adjusted			
	Discharge in second-feet			Runoff in acre-feet			Runoff in acre-feet	Discharge in second-feet		Runoff in inches
	Maximum	Minimum	Mean					Mean	Per square mile	
October	671	103	321	19,710	+3,820	9,150	32,680	531	1.06	1.22
November	719	103	176	10,480	+33,850	0	44,330	745	1.49	1.66
December	928	180	324	19,900	+61,170	0	81,070	1,318	2.64	3.04
Calendar year 1940	5,350	103	1,239	899,200	-171,400	261,200	988,900	1,362	2.72	37.08
January	207	166	178	10,940	+25,330	0	36,270	590	1.18	1.36
February	212	169	188	10,440	+19,520	0	29,960	539	1.08	1.12
March	847	220	322	19,780	+83,250	0	103,000	1,675	3.35	3.86
April	1,270	288	598	35,580	+118,000	6,290	159,900	2,687	5.37	5.99
May	1,620	1,250	1,469	90,350	-9,650	46,130	126,800	2,062	4.12	4.75
June	1,860	982	1,254	74,640	-48,010	42,700	69,330	1,165	2.33	2.60
July	2,650	1,510	2,070	127,300	-164,400	64,200	27,100	441	.882	1.02
August	2,510	1,860	2,274	139,800	-170,100	47,470	17,170	279	.558	.64
September	1,860	1,040	1,240	73,770	-44,310	18,720	48,180	810	1.62	1.81
Water year 1940-41	2,650	103	874	632,700	-91,530	234,700	775,800	1,072	2.14	29.07

† Change in contents in Keechelus, Kachess and Cle Elum Lakes.

Yakima River at Umtanum, Wash.

Location.- Water-stage recorder, lat. 46°51', long. 120°29', in NW¼ sec. 20, T. 16 N., R. 19 E., at Umtanum, half a mile upstream from Umtanum Creek and 10 miles south of Ellensburg. Datum of gage is 1,300.0 feet above mean sea level, datum of 1929.
Drainage area.- 1,620 square miles.
Records available.- August 1906 to September 1921 (fragmentary) and October 1935 to September 1941 in reports of Geological Survey. September 1906 to October 1928 (fragmentary) in State Water-Supply Bulletin 5.
Extremes.- Maximum discharge during year, 3,100 second-feet Apr. 2 (gage height, 32.29 feet); minimum, 228 second-feet Nov. 17 (gage height, 29.93 feet).
1906-41: Maximum discharge, 41,000 second-feet Nov. 15 or 16, 1906 (gage height, 41.1 feet, from floodmarks, present datum); minimum, 138 second-feet (regulated) Oct. 3, 1915 (gage height, 2.86 feet, datum then in use).
Remarks.- Records excellent. Flow partly regulated by Keechelus, Kachess and Cle Elum Lakes (see p.196). Water diverted above station for irrigation of about 91,000 acres.
Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-27, Jan. 4 to Feb. 18)

Oct. 1 to Feb. 18				Feb. 19 to Sept. 30			
30.1	332	30.7	795	30.5	650	31.3	1,500
30.3	470	31.0	1,090	30.7	830	31.6	1,900
30.5	624	31.3	1,430	31.0	1,140	32.0	·2,550

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,260	463	1,120	a490	532	1,370	2,550	1,620	1,900	2,050	2,550	2,300
2	1,130	478	1,050	a463	525	1,700	2,910	1,630	1,760	2,050	2,640	2,380
3	1,030	449	890	a455	509	1,630	2,820	1,700	1,620	2,130	2,730	2,210
4	1,010	406	769	485	510	1,540	2,550	1,760	1,590	2,300	2,820	2,130
5	968	392	814	493	541	1,470	2,640	1,830	1,510	2,380	2,640	2,050
6	927	379	960	471	575	1,400	2,460	1,760	1,550	2,380	2,550	1,830
7	867	366	990	456	750	1,370	2,210	1,700	1,580	2,460	2,550	1,700
8	828	372	1,260	471	891	1,380	2,050	1,760	1,560	2,460	2,730	1,620
9	782	386	1,200	450	882	1,460	2,130	1,760	1,500	2,460	2,730	1,590
10	781	379	814	422	922	1,420	2,300	1,760	1,440	2,460	2,730	1,620
11	807	372	769	415	1,060	1,370	2,130	1,760	1,420	2,460	2,730	1,630
12	788	352	871	401	1,020	1,350	1,980	1,900	1,400	2,550	2,730	1,620
13	769	339	804	401	1,110	1,270	1,830	1,900	1,380	2,550	2,550	1,550
14	777	319	900	402	966	1,220	1,760	1,830	1,380	2,380	2,550	1,530
15	775	300	920	416	867	1,180	1,630	1,830	1,380	2,210	2,550	1,540
16	829	294	769	416	819	1,160	1,620	1,830	1,450	1,980	2,550	1,630
17	773	a300	715	438	793	1,210	1,500	1,980	1,510	1,760	2,550	1,500
18	602	a315	592	438	766	1,320	1,370	2,050	1,600	1,700	2,550	1,500
19	493	a340	561	489	776	1,420	1,260	1,980	1,600	1,760	2,550	1,500
20	470	a370	725	497	758	1,330	1,180	1,900	1,630	1,700	2,550	1,490
21	455	a430	990	468	740	1,230	1,100	1,830	1,550	1,700	2,550	1,470
22	425	a470	a860	468	749	1,150	1,050	1,760	1,550	1,700	2,550	1,420
23	403	a550	a565	461	788	1,140	990	1,760	1,550	1,700	2,460	1,380
24	526	a600	a550	454	731	1,100	970	1,760	1,530	1,700	2,550	1,350
25	572	a660	a537	491	740	1,080	1,010	1,700	1,540	1,600	2,550	1,270
26	524	a710	a528	578	731	1,130	1,060	1,760	1,540	1,760	2,640	1,270
27	457	a750	a522	538	722	1,220	1,160	1,760	1,540	1,760	2,640	1,300
28	420	a900	a518	523	850	1,360	1,290	1,760	1,600	1,760	2,380	1,350
29	399	a1,100	a515	492	-	1,490	1,230	1,830	1,700	2,050	2,300	1,370
30	427	1,320	a512	477	-	2,050	1,410	1,900	1,830	2,130	2,300	1,360
31	470	-	a510	485	-	2,550	-	2,050	-	2,300	2,300	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	21,744	1,260	399	701	43,130
November	14,661	1,320	294	495	29,480
December	24,100	1,260	510	777	47,800
Calendar year 1940	628,491	6,480	294	1,717	1,247,000
January	14,434	578	401	466	28,630
February	21,593	1,110	509	771	42,830
March	43,070	2,550	1,080	1,389	85,430
April	52,150	2,910	970	1,738	103,400
May	56,110	2,050	1,620	1,810	111,300
June	46,690	1,900	1,380	1,556	92,610
July	64,340	2,550	1,600	2,075	127,600
August	79,750	2,620	2,300	2,573	158,200
September	48,360	2,380	1,270	1,612	95,920
Water year 1940-41	487,202	2,910	294	1,335	966,300

a No gage-height record; discharge computed on basis of records for station at Cle Elum.

Yakima River near Parker, Wash.

Location.- Water-stage recorder, lat. 46°29'40", long. 120°26'10", in sec. 28, T. 12 N., R. 19 E., just downstream from Sunnyside diversion dam, 1½ miles east of Parker and about 3 miles downstream from Ahtanum Creek.

Drainage area.- 3,560 square miles.

Records available.- April 1908 to September 1921, October 1931 to September 1941.

Extremes.- Maximum discharge during year, 3,850 second-feet Apr. 3 (gage height, 5.26 feet); minimum, 7 second-feet Apr. 18 (gage height, 0.39 foot).
1908-21, 1931-41: Maximum discharge, 54,300 second-feet Dec. 23, 1933 (gage height, 15.0 feet, from floodmarks); practically no flow several days during latter part of irrigation seasons as result of diversions.

Remarks.- Records good except those for periods of shifting control, which are fair. Water diverted above station for irrigation of a large area. Flow partly regulated by diversions and by Keechelus, Kachess, Cle Elum, and Bumping Lakes, and Tieton Reservoir (see p. 196). Record of daily discharge not adjusted for diversions or for change in contents of reservoirs.

Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation and the Office of Indian Affairs.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	158	1,300	2,620	1,080	1,080	1,970	3,090	375	166	75	148	116
2	79	1,210	2,040	1,020	1,120	2,850	3,420	177	128	68	270	699
3	88	1,210	1,830	976	1,120	2,930	3,680	188	41	62	174	944
4	118	1,350	1,510	1,020	1,120	2,850	3,010	71	154	85	355	730
5	59	1,210	1,400	1,080	1,120	2,540	3,010	103	94	131	282	646
6	35	944	1,700	1,080	1,160	2,400	2,400	48	43	109	70	470
7	32	1,120	1,630	1,040	1,300	2,320	1,900	39	240	166	22	186
8	32	880	1,830	1,080	1,510	2,250	1,510	92	171	76	148	91
9	26	992	2,040	1,040	1,570	2,540	1,350	43	203	36	270	37
10	30	1,030	1,630	1,010	1,570	2,700	1,350	67	60	51	100	35
11	86	1,020	1,260	960	1,830	2,620	1,160	34	94	174	128	100
12	36	1,010	1,350	944	1,760	2,250	960	482	109	207	244	154
13	31	976	1,260	928	1,760	2,180	765	542	74	65	94	114
14	55	936	1,160	960	1,700	2,110	428	151	107	73	24	39
15	191	912	1,120	952	1,350	1,830	146	46	48	39	36	51
16	165	904	1,210	920	1,210	1,700	82	59	73	119	135	105
17	254	904	1,210	984	1,350	1,630	21	365	216	122	45	103
18	191	896	1,400	1,210	1,300	1,630	20	365	207	161	63	133
19	36	960	1,400	1,400	1,300	1,830	41	139	174	365	95	171
20	18	880	1,460	1,160	1,300	1,760	53	194	154	237	197	230
21	163	896	2,180	1,080	1,300	1,460	54	46	73	76	56	128
22	488	896	2,040	1,040	1,300	1,210	62	30	31	64	71	139
23	494	944	1,630	1,040	1,300	984	40	50	128	107	55	111
24	864	920	1,510	1,040	1,350	888	49	168	99	105	71	55
25	1,350	928	1,510	1,120	1,300	816	51	53	74	39	144	26
26	1,300	952	1,400	1,350	1,300	702	63	82	47	135	345	22
27	1,210	1,020	1,400	1,120	1,300	681	75	75	38	28	345	83
28	1,160	1,020	1,300	1,080	1,400	786	63	52	73	89	210	52
29	1,160	1,400	1,210	1,040	-	1,040	28	207	39	161	89	40
30	1,120	2,470	1,160	1,040	-	1,630	79	216	142	61	76	83
31	1,120	-	1,160	1,040	-	3,010	-	325	-	42	28	-

Month	Mean discharge in second-feet						Change in contents (equivalent mean second-feet)†	Combined flow of Yakima River and canals adjusted for change in contents‡	
	Yakima River near Parker	Union Gap Canal (estimated)	New Reservation Canal	Old Reservation Canal	Sunnyside Canal	Combined flow, Yakima River and canals		Second-feet	Runoff in acre-feet
October...	392	5	487	1.13	434	1,319	-102	1,217	74,830
November..	1,070	-	0	10.6	0	1,081	+640	1,721	102,400
December..	1,534	-	0	5.17	0	1,539	+1,395	2,934	180,400
Calendar Year 1940.	1,184	-	865	397	646	2,755	-256	2,499	1,814,000
January...	1,059	-	0	1.84	0	1,061	+569	1,630	100,200
February..	1,360	-	0	2.48	0	1,362	+485	1,847	102,600
March.....	1,874	5	237	10.8	224	2,351	+1,779	4,130	253,900
April.....	965	30	1,359	55.9	948	3,358	+2,471	5,829	348,800
May.....	188	40	1,886	48.9	1,142	3,245	-247	2,998	184,300
June.....	110	40	1,523	18.3	1,066	2,757	-1,415	1,342	79,850
July.....	107	40	1,700	13.6	1,097	2,958	-3,805	-847	**-52,080
August....	142	35	1,553	8.66	1,059	2,798	-3,361	-563	**-34,620
September.	195	25	1,164	4.17	677	2,066	-1,073	993	59,090
Water year 1940-41..	744	-	828	15.2	557	2,163	-232	1,931	1,398,000

† Change in contents in Keechelus, Kachess, Cle Elum, and Bumping Lakes and Tieton Reservoir.
‡ Totals are equivalent with monthly results previously determined for Yakima River at Union Gap, near Yakima, Wash.
** Negative results due to unrecorded diversions.
Note.- Shifting-control method used Oct. 1-21 (a.m.), Apr. 21 to Sept. 30.

Yakima River at Kiona, Wash.

Location.- Water-stage recorder, lat. 46°15'10", long. 119°28'50", in sec. 19, T. 9 N., R. 27 E., at highway bridge at Kiona, 3½ miles downstream from intake of Kiona Canal and 25 miles upstream from mouth.
Drainage area.- 5,520 square miles.
Records available.- August 1896 to March 1915, February 1933 to September 1941.
Extremes.- Maximum discharge during year, 4,520 second-feet Apr. 3 (gage height, 5.92 feet); minimum, 840 second-feet Apr. 26, 27 (gage height, 2.90 feet).
1896-1915, 1933-41: Maximum discharge, 71,100 second-feet Dec. 23, 1933 (gage height, 21.57 feet); minimum, 105 second-feet (regulated) Sept. 11, 1906 (gage height, 2.35 feet).
Remarks.- Records excellent except those July to September, which are good. Water diverted above gage for irrigation of large acreage. Flow partly regulated by diversions and by Keechelus, Kachess, Cle Elum, and Bumping Lakes, and Tieton Reservoir (see p.196).
Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

3.0	900	4.5	2,430
3.2	1,030	5.0	3,120
3.5	1,270	5.5	3,880
4.0	1,800		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,860	2,300	2,910	1,980	1,980	2,300	3,680	870	1,860	1,140	1,140	1,570
2	1,860	2,360	3,120	1,860	2,040	2,980	4,040	930	1,860	1,220	1,060	1,570
3	1,800	2,360	2,840	1,800	2,100	3,880	4,360	1,100	1,860	1,140	1,180	1,800
4	1,740	2,240	2,560	1,800	2,100	3,880	4,520	1,030	1,820	1,180	1,220	2,300
5	1,740	2,300	2,360	1,800	2,040	3,720	4,040	1,100	1,570	1,180	1,270	2,240
6	1,680	2,300	2,170	1,800	2,040	3,500	3,880	1,060	1,570	1,220	1,360	2,170
7	1,620	2,040	2,360	1,860	2,040	3,420	3,570	1,060	1,620	1,270	1,220	2,040
8	1,570	2,170	2,430	1,800	2,170	3,420	3,120	1,060	1,680	1,270	1,140	1,860
9	1,520	1,980	2,500	1,800	2,430	3,420	2,770	1,060	1,680	1,180	1,100	1,680
10	1,520	1,980	2,630	1,800	2,500	3,500	2,560	1,100	1,570	1,180	1,180	1,680
11	1,520	2,040	2,430	1,740	2,500	3,500	2,500	1,100	1,460	1,180	1,220	1,570
12	1,520	1,980	2,100	1,680	2,770	3,420	2,430	1,140	1,360	1,320	1,180	1,570
13	1,570	1,920	2,040	1,680	2,700	3,200	2,170	1,270	1,270	1,360	1,220	1,620
14	1,520	1,920	1,980	1,680	2,700	3,050	2,040	1,620	1,180	1,410	1,270	1,620
15	1,460	1,920	1,920	1,740	2,630	2,980	1,800	1,460	1,140	1,270	1,180	1,570
16	1,460	1,860	1,860	1,740	2,360	2,700	1,360	1,320	1,140	1,180	1,140	1,460
17	1,620	1,800	1,860	1,800	2,100	2,560	1,220	1,270	1,100	1,100	1,180	1,460
18	1,620	1,800	1,860	2,170	2,240	2,500	1,140	1,360	1,180	1,100	1,180	1,520
19	1,620	1,800	2,040	2,430	2,170	2,560	1,060	1,620	1,270	1,180	1,180	1,520
20	1,570	1,800	2,170	2,700	2,100	2,700	1,000	1,520	1,270	1,410	1,180	1,570
21	1,570	1,740	2,560	2,360	2,100	2,630	960	1,360	1,270	1,460	1,270	1,620
22	1,740	1,740	3,200	2,170	2,100	2,560	930	1,360	1,270	1,360	1,360	1,570
23	1,800	1,740	2,980	2,100	2,100	2,500	900	1,270	1,220	1,320	1,320	1,520
24	1,860	1,800	2,700	2,040	2,170	2,360	900	1,270	1,180	1,220	1,320	1,460
25	2,040	1,740	2,500	2,040	2,100	2,170	870	1,270	1,460	1,180	1,460	1,460
26	2,560	1,740	2,430	2,240	2,100	2,040	840	1,320	1,320	1,180	1,680	1,410
27	2,630	1,740	2,360	2,770	2,100	2,040	840	1,320	1,270	1,180	1,740	1,320
28	2,500	1,800	2,300	2,360	2,100	1,980	870	1,360	1,180	1,180	1,800	1,270
29	2,430	1,800	2,170	2,170	-	2,040	870	1,520	1,140	1,180	1,800	1,320
30	2,430	2,040	2,100	2,100	-	2,300	840	1,570	1,180	1,140	1,680	1,320
31	2,300	-	2,040	2,040	-	2,840	-	1,800	-	1,180	1,620	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	56,250	2,630	1,460	1,815	111,600
November	58,750	2,360	1,740	1,958	116,600
December	73,480	3,200	1,860	2,370	145,700
Calendar year 1940	879,060	8,660	1,030	2,402	1,744,000
January	62,050	2,770	1,680	2,002	123,100
February	62,580	2,770	1,980	2,235	124,100
March	88,650	3,880	1,980	2,860	175,800
April	62,280	4,520	840	2,076	123,500
May	39,470	1,800	870	1,273	78,290
June	41,750	1,860	1,100	1,392	82,810
July	38,070	1,460	1,100	1,228	75,510
August	40,850	1,800	1,060	1,318	81,020
September	48,660	2,300	1,270	1,622	96,520
Water year 1940-41	672,840	4,520	840	1,843	1,334,000

Reservoirs in Yakima River Basin, Wash.

Keechelus Lake, on Yakima River, 3⅛ miles northwest of Martin, completed in 1917 for irrigation, has usable capacity of 153,000 acre-feet at spillway crest. Records furnished by Bureau of Reclamation.

Kachess Lake, on Kachess River, 2½ miles northwest of Easton, completed in 1912 for irrigation, has usable capacity of 239,000 acre-feet at spillway crest. Records furnished by Bureau of Reclamation.

Cle Elum Lake, on Cle Elum River, 4 miles northwest of Roslyn, completed in 1933 for irrigation, has usable capacity of 436,000 acre-feet at spillway crest. Records furnished by Bureau of Reclamation.

Bumping Lake, on Bumping River, 12 miles upstream from American River, 19 miles west of Nile, completed in 1910 for irrigation, has usable capacity of 33,800 acre-feet at spillway crest. Records furnished by Bureau of Reclamation.

Tieton Reservoir, on Tieton River just upstream from Wild Cat Creek at Rimrock, 22½ miles southwest of Naches, completed in 1925 for irrigation, has usable capacity of 197,000 acre-feet at spillway crest. Records furnished by Bureau of Reclamation.

Clear Creek Reservoir, on North Fork of Tieton River, 28 miles southwest of Naches, completed in 1918 for irrigation, has usable capacity of 5,300 acre-feet at spillway crest. No records for this reservoir.

Monthly gage height and contents, water year October 1940 to September 1941

Date	Keechelus Lake			Kachess Lake			Cle Elum Lake		
	Gage height (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)	Gage height (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)	Gage height (feet)†	Contents (acre-feet)	Change in contents during month (acre-feet)
Sept.30	43.92	24,180	-	26.73	96,980	-	51.50	95,190	-
Oct. 31	40.79	20,090	-4,090	27.05	98,100	+1,120	53.85	101,980	+6,790
Nov. 30	49.12	31,080	+10,990	29.12	105,400	+7,300	59.04	117,540	+15,560
Dec. 31	61.65	48,340	+17,260	32.78	118,580	+13,180	68.69	148,270	+30,730
Calendar year 1940	-	-	-36,130	-	-	-8,930	-	-	-126,500
Jan. 31	65.84	54,420	+6,080	34.50	124,920	+6,340	72.55	161,180	+12,910
Feb. 28	69.33	59,700	+5,280	35.72	129,450	+4,530	75.39	170,890	+9,710
Mar. 31	79.92	77,200	+17,500	40.20	146,520	+17,070	88.94	219,570	+48,680
Apr. 30	90.78	97,650	+20,450	45.43	167,360	+20,840	108.43	296,330	+76,760
May 31	88.32	92,780	-4,870	43.61	159,980	-7,380	109.06	299,930	+2,600
June 30	79.83	77,040	-15,740	40.87	149,130	-10,850	103.82	277,510	-21,420
July 31	54.06	37,750	-39,290	26.56	96,390	-52,740	85.04	205,170	-72,340
Aug. 31	35.73	13,540	-24,210	19.71	75,680	-20,710	46.04	79,990	-125,200
Sept.30	33.32	10,470	-3,070	19.49	75,050	-630	29.26	39,380	-40,610
Water year 1940-41	-	-	-13,710	-	-	-21,930	-	-	-55,830
	Bumping Lake			Tieton Reservoir					
Sept.30	93.00	2,540	-	74.07	90,540	-			
Oct. 31	93.41	2,810	+270	67.67	80,180	-10,360			
Nov. 30	97.28	5,390	+2,580	68.71	81,820	+1,640			
Dec. 31	106.59	12,520	+7,130	79.22	99,320	+17,500			
Calendar year 1940	-	-	-3,140	-	-	-11,140			
Jan. 31	104.97	11,150	-1,370	85.37	110,340	+11,020			
Feb. 28	102.94	9,520	-1,630	90.17	119,360	+9,020			
Mar. 31	113.18	18,750	+9,230	98.73	136,290	+16,930			
Apr. 30	118.87	24,960	+6,210	109.47	159,060	+22,770			
May 31	119.17	25,300	+340	106.77	153,170	-5,890			
June 30	112.87	18,430	-6,870	92.51	123,880	-29,290			
July 31	101.88	8,710	-9,720	56.86	63,990	-59,890			
Aug. 31	93.21	2,680	-6,030	31.60	33,460	-30,530			
Sept.30	93.05	2,570	-110	7.55	14,040	-19,420			
Water year 1940-41	-	-	+30	-	-	-76,500			

†Gage height is mean for the day.

Kachess River near Easton, Wash.

Location.- Water-stage recorder, lat. 47°15'30", long. 121°11'50", in sec. 3, T. 20 N., R. 13 E., three-quarters of a mile downstream from Kachess Lake and 2 miles northwest of Easton.
Drainage area.- 64 square miles.
Records available.- October 1903 to September 1941.
Average discharge.- 38 years, 282 second-feet (adjusted for storage since October 1905).
Extremes (regulated).- Maximum discharge during year, 1,960 second-feet July 11 (gage height, 6.53 feet); no flow Oct. 22-27, Nov. 3-28, Dec. 13-19.
1903-41: Maximum discharge, 2,240 second-feet (computed from gate opening) Aug. 27, 1920; no flow when gates in dam are closed.
Remarks.- Records good except those for extremely low flow, which are poor. No diversion. Flow regulated by Kachess Lake (see p. 196). Record of daily discharge not adjusted for change in contents of Kachess Lake.
Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used June 4-16, Aug. 6 to Sept. 8)

Oct. 1 to June 16				June 17 to Sept. 8				Sept. 9-30	
0.6	0.5	2.0	43	2.2	85	4.0	650	2.0	39
.8	1.5	2.5	119	2.6	162	5.0	1,120	2.5	108
1.0	2.5	3.0	245	3.0	270	6.0	1,660	3.0	227
1.3	5	3.5	420	3.5	447			3.5	383
1.6	14	4.0	620					4.0	574

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	204	15	2	1	1	1	2	215	287	848	546	68
2	188	1	1	1	1	1	2	242	261	894	546	67
3	168	0	1	1	1	1	2	284	251	942	526	65
4	132	0	1	1	1	1	2	328	247	942	526	64
5	98	0	1	1	1	1	2	346	240	990	486	64
6	68	0	2	1	1	1	2	368	226	1,060	445	63
7	68	0	2	1	1	1	1	405	211	1,090	414	63
8	68	0	2	1	1	1	1	420	200	1,090	404	82
9	68	0	2	1	1	1	1	447	196	1,120	380	108
10	68	0	1	1	1	1	1	485	208	1,140	364	149
11	70	0	1	1	1	1	1	517	235	1,550	363	85
12	70	0	1	1	1	2	1	537	258	1,140	361	61
13	70	0	0	1	1	1	1	537	276	1,170	359	61
14	68	0	0	1	1	1	1	517	291	1,040	358	61
15	38	0	0	1	1	1	1	497	308	848	356	61
16	14	0	0	1	1	1	1	485	317	650	355	61
17	14	0	0	1	1	1	1	454	319	567	336	61
18	14	0	0	1	1	2	1	412	309	567	317	61
19	14	0	0	1	1	2	1	401	283	567	316	61
20	7	0	1	1	1	2	1	375	252	567	315	61
21	2	0	1	1	1	2	1	364	223	567	334	61
22	0	0	1	1	1	2	1	364	223	546	359	61
23	0	0	1	1	1	1	10	364	255	526	411	71
24	0	0	1	1	1	1	110	390	312	1,170	450	101
25	0	0	1	1	1	1	140	401	372	1,330	482	171
26	0	0	1	1	1	1	140	401	428	1,280	431	268
27	0	0	1	1	1	1	168	401	506	1,040	305	336
28	18	0	1	1	1	1	204	401	608	526	221	369
29	33	2	1	1	-	1	215	401	714	526	173	383
30	33	2	1	1	-	2	215	378	780	546	123	566
31	33	-	1	1	-	2	-	342	-	546	82	-

Month	Observed				Change in contents in Kachess Lake (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	204	0	52.5	3,230	+1,120	4,350	70.7	1.10	1.27
November	15	0	.7	40	+7,300	7,340	123	1.92	2.14
December	2	0	.9	58	+13,180	13,240	215	3.36	3.87
Calendar year 1940	795	0	210	152,500	-8,930	143,500	198	3.09	42.03
January	1	1	1.0	61	+6,340	6,400	104	1.62	1.87
February	1	1	1.0	56	+4,530	4,590	82.6	1.29	1.34
March	2	1	1.3	77	+17,070	17,150	279	4.36	5.03
April	215	1	41	2,440	+20,840	23,280	391	6.11	6.82
May	537	215	403	24,750	-7,380	17,370	282	4.41	5.08
June	780	196	320	19,030	-10,850	8,180	137	2.14	2.39
July	1,550	526	883	54,320	-52,740	1,580	25.7	.402	.46
August	546	82	369	22,700	-20,710	1,990	32.4	.506	.58
September	566	61	127	7,560	-630	6,930	116	1.81	2.02
Water year 1940-41	1,550	0	186	134,300	-21,930	112,400	155	2.42	32.87

Cle Elum River near Roslyn, Wash.

Location.- Water-stage recorder, lat. 47°14'00", long. 121°03'30", in SW¼ sec. 11, T. 20 N., R. 14 E., 1,000 feet downstream from dam at Cle Elum Lake and 4 miles northwest of Roslyn.

Drainage area.- 202 square miles.

Records available.- October 1903 to September 1941.

Average discharge.- 38 years, 895 second-feet (adjusted for storage since January 1906).

Extremes (regulated).- Maximum discharge during year, 2,530 second-feet July 31 (gage height, 8.37 feet); minimum, 2 second-feet Nov. 4-8, Dec. 10-15, July 24-27, when gates in dam at Cle Elum Lake were closed.
1903-41: Maximum discharge, 18,700 second-feet Nov. 15, 1906 (gage height, 14.05 feet); practically no flow when gates in dam are closed.

Remarks.- Records excellent except those below 100 second-feet, which are fair. No diversion above station. Flow partly regulated by Cle Elum Lake (see p. 196). Record of daily discharge not adjusted for change in contents of Cle Elum Lake.

Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to July 24						July 24 to Sept. 30					
4.1	4	5.0	220	7.0	1,250	4.3	16	5.0	204	6.5	950
4.3	18	5.5	430	8.0	2,040	4.5	46	5.5	409	7.0	1,300
4.5	54	6.0	660			4.7	98	6.0	650	8.0	2,150
4.7	109	6.5	930								

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	391	21	23	28	31	31	34	960	844	1,470	2,440	1,790
2	282	21	23	28	31	31	34	990	816	1,500	2,440	1,620
3	282	21	23	28	31	31	36	1,020	901	1,580	2,440	1,490
4	262	9	23	28	31	31	36	1,020	930	1,620	2,290	1,450
5	269	a2	23	28	31	31	38	1,050	930	1,580	2,200	1,340
6	261	a2	24	28	31	31	38	1,050	930	1,580	2,240	1,150
7	261	a2	24	28	31	31	38	1,080	930	1,580	2,390	1,120
8	261	15	24	29	31	31	38	1,080	960	1,580	2,440	1,120
9	261	21	24	29	31	31	38	1,080	960	1,580	2,440	1,120
10	261	21	9	29	31	31	38	1,080	1,020	1,580	2,440	1,080
11	261	21	a2	29	31	31	38	1,080	1,050	697	2,440	1,080
12	261	21	a2	29	31	31	38	1,080	1,050	1,540	2,340	1,050
13	261	21	a2	29	31	31	38	990	1,050	1,540	2,290	1,050
14	261	21	a2	29	31	31	38	990	1,080	1,540	2,290	1,050
15	261	21	13	31	31	31	38	1,050	1,080	1,540	2,290	1,020
16	261	21	24	31	31	31	38	1,080	1,120	1,540	2,290	1,020
17	149	21	24	31	31	31	38	1,120	1,120	1,540	2,290	1,020
18	44	21	24	31	31	31	38	1,120	1,080	1,500	2,290	1,020
19	44	21	24	31	31	31	38	1,120	1,050	1,500	2,290	1,020
20	44	21	24	31	31	31	38	1,150	1,020	1,500	2,290	1,020
21	34	21	26	31	31	31	38	1,220	1,020	1,500	2,240	983
22	34	21	26	31	31	31	38	1,250	1,080	1,500	2,200	983
23	31	21	26	31	31	31	38	1,280	1,080	1,500	2,200	950
24	21	21	26	31	31	31	87	1,280	1,080	669	2,150	950
25	21	13	26	31	31	34	196	1,280	1,080	a2	2,100	918
26	21	13	26	31	31	34	316	1,280	1,120	a2	2,060	886
27	21	13	28	31	31	34	430	1,280	1,150	21	1,870	886
28	21	13	28	31	31	34	496	1,320	1,150	1,660	1,790	855
29	21	13	28	31	-	34	660	1,320	1,220	1,920	1,790	855
30	21	14	28	31	-	34	930	1,280	1,390	2,100	1,790	660
31	21	-	28	31	-	34	-	990	-	2,390	1,790	-

Month	Observed: Discharge in second-feet: Maximum	Minimum	Mean	Observed: Runoff in acre-feet	Change in contents in Cle Elum Lake (acre-feet)	Adjusted for change in reservoir contents: Runoff in acre-feet	Discharge in second-feet: Mean	Per square mile	Runoff in inches
October	391	21	159	9,770	+6,790	16,560	269	1.33	1.54
November	21	2	16.9	1,010	+15,560	16,570	278	1.38	1.54
December	28	2	21.2	1,300	+30,730	32,030	521	2.58	2.97
Calendar year 1940	3,900	2	837	607,600	-126,500	481,100	663	3.28	44.68
January	31	28	29.9	1,840	+12,910	14,750	240	1.19	1.37
February	31	31	31.0	1,720	+9,710	11,430	206	1.02	1.06
March	34	31	31.7	1,950	+48,680	50,630	823	4.07	4.70
April	930	34	133	7,890	+76,760	84,650	1,423	7.04	7.86
May	1,320	960	1,128	69,360	+2,600	71,960	1,170	5.79	6.68
June	1,390	816	1,044	62,120	-21,420	40,700	684	3.39	3.78
July	2,390	2	1,405	86,380	-72,340	14,040	228	1.13	1.30
August	2,440	1,790	2,221	136,600	-125,200	11,300	184	.911	1.05
September	1,790	660	1,085	64,570	-40,610	23,960	403	2.00	2.22
Water year 1940-41	2,440	2	614	444,400	-55,830	388,600	537	2.66	36.07

a No gage-height record because gates were closed; discharge estimated.

Naches River below Tieton River, near Naches, Wash.

Location.- Water-stage recorder, lat. 46°44'40", long. 120°46'00", in SW¼NE¼ sec. 36, T. 15 N., R. 16 E., half a mile downstream from Wapatox power canal, three-quarters of a mile downstream from Tieton River, and 3⅞ miles northwest of Naches. Datum of gage is 1,550 feet above mean sea level.

Drainage area.- 943 square miles.

Records available.- August to October 1905, November 1908 to October 1912, May 1915 to September 1941 (October 1928 to September 1935 yearly summaries only), in reports of Geological Survey. September 1905, October 1908 to September 1912, June 1915 to September 1929 (mean monthly discharge), in State Water-Supply Bulletin 5.

Average discharge.- 29 years (1908-12, 1916-41), 1,628 second-feet (adjusted for diversions by Selah Valley and Tieton Canals since 1909, city of Yakima at Oak Flat since 1935, and by Wapatox Canal since 1936, and adjusted for change in contents in Bumping Lake Reservoir since November 1910, and in Tieton Reservoir since October 1924).

Extremes.- Maximum discharge during year, 1,740 second-feet May 17 (gage height, 12.40 feet); minimum, 2 second-feet Dec. 31 (gage height, 9.21 feet).

1905, 1908-12, 1915-41: Maximum discharge, 32,200 second-feet Dec. 22, 23, 1933 (gage height, 14.33 feet, site and datum then in use); minimum, 2 second-feet (regulated) Jan. 7, 1937, Dec. 31, 1940.

Remarks.- Records good except those for period of ice effect, and those below 50 second-feet, which are fair. Flow regulated by Bumping Lake and Tieton Reservoir, by diversion at Oak Flat for supply of city of Yakima, and by diversion of Selah Valley, Tieton, and Wapatox Canals. Records of daily discharge not adjusted.

Cooperation.- Station is maintained by Bureau of Reclamation in cooperation with Pacific Power & Light Co. Records collected and prepared in cooperation with the Bureau of Reclamation. Information concerning municipal diversion at Oak Flat, which is very small in relation to flow past station, furnished by water superintendent of city of Yakima.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	49	69	3	15	85	1,240	1,630	668	804	103	98
2	78	39	17	3	15	196	1,590	1,480	570	775	53	83
3	79	31	14	3	12	169	1,460	1,400	542	716	101	70
4	41	22	33	7	10	131	1,280	1,190	975	638	93	96
5	38	16	63	11	10	93	1,220	1,200	944	563	85	89
6	71	21	144	16	10	*60	1,060	1,090	902	538	87	89
7	71	22	48	44	11	70	922	1,240	a923	468	115	78
8	57	38	28	41	10	113	851	1,250	944	387	98	80
9	66	24	18	11	11	172	880	1,210	933	352	96	103
10	64	19	*8	7	12	175	880	1,210	986	387	93	98
11	57	24	4	6	12	154	794	1,310	1,070	362	110	101
12	57	21	3	6	11	134	716	1,540	1,040	269	93	83
13	58	19	3	6	10	108	645	1,480	1,340	206	83	87
14	64	16	b11	6	9	66	602	1,160	1,350	393	105	89
15	41	19	b230	5	12	38	608	1,190	1,370	638	110	91
16	39	19	b350	5	12	59	596	1,240	1,470	964	96	66
17	32	15	b320	5	*13	131	532	1,510	1,370	1,100	96	74
18	60	12	b295	7	12	244	615	1,150	1,200	1,250	101	40
19	53	14	b250	9	10	265	860	1,070	1,150	1,240	113	39
20	56	24	b150	4	9	206	1,010	1,190	1,060	1,110	93	55
21	66	20	144	6	9	157	1,140	1,140	998	1,030	98	57
22	51	14	106	9	9	131	1,250	1,250	1,170	1,080	89	51
23	56	8	76	9	9	110	1,310	1,340	1,250	1,100	87	48
24	86	20	41	8	9	89	1,420	1,360	1,110	1,030	96	40
25	83	21	14	9	9	85	1,460	1,390	1,040	1,040	98	48
26	38	18	7	9	8	123	1,460	1,350	1,010	1,010	78	70
27	30	21	6	8	7	217	1,370	1,260	1,020	975	89	36
28	33	44	5	8	10	347	1,240	1,200	1,060	880	101	39
29	38	456	4	7	-	490	1,210	1,210	986	652	89	67
30	45	336	3	7	-	998	1,510	1,010	944	367	85	51
31	64	-	*3	7	-	1,210	-	870	-	300	93	-

Month	Observed: Discharge in second-feet: Maximum	Observed: Discharge in second-feet: Minimum	Observed: Discharge in second-feet: Mean	Observed: Runoff in acre-feet	Change in contents in Bumping Lake and Tieton Reservoirs (acre-feet)	Diversions by Tieton, Selah Valley and Wapatox Canals and City of Yakima (acre-feet)	Adjusted for change in reservoir contents and diversions: Runoff in acre-feet	Adjusted for change in reservoir contents and diversions: Discharge in second-feet: Mean	Adjusted for change in reservoir contents and diversions: Discharge in second-feet: Per square mile	Adjusted for change in reservoir contents and diversions: Runoff in inches
October....	86	30	56.1	3,450	-10,090	26,760	20,120	327	0.347	0.40
November...	456	8	47.4	2,820	+4,220	23,000	30,040	505	.536	.60
December...	350	3	79.6	4,890	+24,630	23,070	52,590	855	.907	1.05
Calendar year 1940	4,310	3	582	422,900	-14,280	477,500	886,100	1,221	1.29	17.62
January....	44	3	9.4	579	+9,650	22,870	33,100	538	.571	.66
February...	15	7	10.6	587	+7,390	22,860	30,640	555	.589	.61
March.....	1,210	38	214	13,140	+26,160	34,560	73,860	1,201	1.27	1.47
April.....	1,590	532	1,058	62,940	+28,980	40,700	132,600	2,228	2.36	2.64
May.....	1,630	870	1,263	77,630	-5,550	59,220	131,300	2,135	2.26	2.61
June.....	1,470	570	1,056	62,870	-36,160	46,910	73,620	1,237	1.31	1.46
July.....	1,250	206	730	44,870	-69,610	58,240	33,500	545	.578	.67
August.....	115	53	94.4	5,810	-36,560	51,370	20,620	335	.355	.41
September..	103	36	70.2	4,160	-19,530	39,570	24,220	407	.432	.48
Water year 1940-41	1,630	3	392	283,800	-76,470	449,100	656,400	907	.962	13.06

* Winter discharge measurement made on this day.
a No gage-height record; discharge interpolated.
b Stage-discharge relation affected by ice.

Bumping River near Nile, Wash.

Location.- Water-stage recorder, lat. 46°52', long. 121°18', a quarter of a mile downstream from spillway of Bumping Lake Dam and 19 miles west of Nile, Yakima County.
Drainage area.- 68 square miles.
Records available.- June to July 1906, April 1909 to September 1941.
Average discharge.- 32 years (1909-41), 287 second-feet (adjusted for storage since November 1910).
Extremes (regulated).- Maximum discharge during year, 666 second-feet Apr. 23 (gage height, 3.38 feet); minimum, 2 second-feet Dec. 31 (gage height, 0.91 foot).
1906, 1909-41: Maximum discharge, 5,180 second-feet Dec. 29, 1917 (gage height, 9.33 feet); practically no flow when gates in outlet conduit are closed.
Remarks.- Records good except those below 30 second-feet, which are fair. No diversion. Flow regulated by Bumping Lake (see p. 196). Record of daily discharge not adjusted for change in contents of lake.
Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation.

Rating tables, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 11				Dec. 12 to Sept. 30			
1.4	25	1.8	63	1.0	5	2.0	103
1.6	40	2.0	100	1.2	14	2.3	176
Note.- Same as following table below 1.4 feet.				1.4	25	2.6	275
				1.8	66	3.0	450

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	88	3	69	130	125	18	401	314	314	149	58
2	32	86	3	66	127	7	21	401	314	314	149	55
3	34	80	3	125	127	7	20	401	314	314	149	52
4	34	72	3	176	127	6	21	401	314	314	149	50
5	34	68	5	176	127	6	21	401	314	314	149	46
6	33	65	6	176	127	6	21	401	314	314	147	45
7	32	70	5	176	127	6	20	401	314	275	147	42
8	32	68	4	176	125	7	20	401	314	222	149	41
9	33	63	4	125	125	7	20	401	314	222	149	40
10	37	63	3	125	125	8	20	401	314	222	149	48
11	42	62	3	125	125	8	19	401	314	219	149	52
12	43	60	13	125	125	8	18	401	314	222	149	53
13	44	60	105	125	125	8	18	401	314	222	149	52
14	44	58	257	125	125	8	18	401	314	222	147	52
15	43	55	314	125	123	8	18	401	314	222	149	56
16	43	53	314	125	123	8	17	401	314	222	147	59
17	44	53	294	125	123	8	87	401	314	222	147	59
18	44	53	236	130	123	8	401	401	314	219	147	59
19	43	50	160	130	123	9	609	401	314	219	149	59
20	44	48	95	130	123	10	638	401	314	219	149	59
21	46	48	28	127	123	10	638	401	314	222	147	58
22	47	46	7	125	123	10	638	401	314	222	147	55
23	49	44	5	125	121	10	638	401	314	222	149	52
24	60	47	4	125	121	10	638	401	314	222	147	52
25	68	47	4	125	121	10	638	401	314	222	144	50
26	68	45	3	127	121	11	609	401	314	222	144	48
27	62	47	3	127	121	11	528	401	314	222	139	46
28	58	54	3	127	121	12	401	401	314	219	121	44
29	59	30	3	127	-	12	356	401	314	219	97	43
30	70	10	3	127	-	16	378	401	314	197	76	43
31	86	-	36	127	-	16	-	356	-	149	63	-

Month	Observed				Change in contents in Bumping Lake (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Runoff in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	86	32	46.5	2,860	+270	3,130	50.9	0.749	0.86
November	88	10	56.4	3,360	+2,580	5,940	99.8	1.47	1.64
December	314	3	62.2	3,830	+7,130	10,960	178	2.62	3.02
Calendar year 1940	956	3	219	159,200	-3,140	156,000	215	3.16	43.02
January	176	66	130	8,020	-1,370	6,650	108	1.59	1.83
February	130	121	124	6,900	-1,630	5,270	94.9	1.40	1.45
March	125	6	12.8	785	+9,230	10,020	163	2.40	2.76
April	638	17	250	14,890	+6,210	21,100	355	5.22	5.82
May	401	356	400	24,570	+340	24,910	405	5.96	6.87
June	314	314	314	18,680	-6,870	11,810	198	2.91	3.26
July	314	149	238	14,620	-9,720	4,900	79.7	1.17	1.35
August	149	63	140	8,610	-6,030	2,580	42.0	.618	.71
September	59	40	50.9	3,030	-110	2,920	49.1	.722	.81
Water year 1940-41	638	3	152	110,200	+30	110,200	152	2.24	30.38

American River near Nile, Wash.

Location.- Water-stage recorder, lat. 46°58'30", long. 121°10'10", in SW¼ sec. 12, T. 17 N., R. 13 E., 300 feet upstream from Bumping Lake road crossing, three-quarters of a mile upstream from mouth, and 16 miles northwest of Nile. Datum of gage is 2,700.0 feet above mean sea level (Washington State Highway Department bench mark).

Drainage area.- 79 square miles.

Records available.- April 1909 to September 1911, July 1913 to September 1915 (fragmentary), October 1939 to September 1941.

Extremes.- Maximum discharge during year, 680 second-feet May 17 (gage height, 74.26 feet); minimum, 12 second-feet Nov. 22.
1909-11, 1913-15, 1939-41: Maximum discharge observed, 1,580 second-feet June 2, 1909 (gage height, 4.55 feet, datum then in use), from rating curve extended above 750 second-feet; minimum discharge, that of Nov. 22, 1940.

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

Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation.

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	41	98	126	b94	90	139	428	482	342	123	43	41
2	45	90	115	b86	90	165	482	464	336	117	42	46
3	55	81	110	b92	85	155	464	425	333	110	46	45
4	49	73	112	b76	83	153	432	377	326	104	46	45
5	46	60	135	b76	81	142	411	364	333	102	43	42
6	43	56	142	86	80	142	374	326	336	98	42	39
7	43	66	121	85	80	148	355	299	342	96	39	38
8	38	70	117	*80	76	155	336	293	302	86	41	37
9	38	64	108	78	76	160	330	284	284	83	38	37
10	41	56	86	71	74	163	323	287	314	83	37	52
11	43	53	*b110	68	71	163	308	345	348	80	36	56
12	46	48	b85	65	68	163	290	520	364	74	41	53
13	48	43	b92	64	65	158	284	580	361	71	39	50
14	48	38	b102	62	62	153	281	501	314	70	36	50
15	45	37	b90	59	59	153	293	442	264	68	37	55
16	43	37	*b73	56	60	158	284	464	244	65	37	56
17	45	36	b132	59	*58	177	272	640	231	64	34	56
18	49	34	b126	88	60	192	258	560	231	64	33	59
19	46	32	110	102	60	190	252	464	231	60	38	58
20	45	32	119	88	60	180	252	418	220	58	55	62
21	50	29	146	83	62	177	258	401	202	55	48	60
22	53	22	158	80	62	177	284	411	192	53	42	58
23	59	27	144	74	64	177	326	446	197	55	39	55
24	137	27	130	73	64	175	355	501	177	58	38	50
25	137	24	121	74	64	180	367	540	163	60	38	49
26	106	22	115	70	64	197	391	464	151	53	46	46
27	92	25	110	68	71	220	401	404	144	49	43	43
28	81	55	106	65	98	244	414	358	142	50	45	39
29	78	225	102	65	-	272	428	330	139	48	42	38
30	92	158	98	64	-	336	464	311	130	46	39	38
31	108	-	94	68	-	374	-	326	-	45	41	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff: Inches	Runoff: Acre-feet
October	1,890	137	38	61.0	.772	.89	3,750
November	1,718	225	22	57.3	.725	.81	3,410
December	3,535	158	73	114	1.44	1.66	7,010
Calendar year 1940	72,816	900	22	199	2.52	34.27	144,400
January	2,319	102	56	74.8	.947	1.09	4,600
February	1,987	98	58	71.0	.899	.94	3,940
March	5,738	374	139	185	2.34	2.70	11,380
April	10,397	482	252	347	4.39	4.89	20,620
May	13,027	640	284	420	5.32	6.13	25,840
June	7,693	364	130	256	3.24	3.62	15,260
July	2,248	123	45	72.5	.918	1.06	4,460
August	1,264	55	33	40.8	.516	.60	2,510
September	1,453	62	37	48.4	.613	.68	2,880
Water year 1940-41	53,269	640	22	146	1.85	25.07	105,700

* Winter-discharge measurement made on this day.
b Stage-discharge relation affected by ice.
Note.- Shifting-control method used throughout the year.

Tieton River at Tieton Dam, near Naches, Wash.

Location.- Water-stage recorder, lat. 46°39'30", long. 121°07'20", 900 feet upstream from Wild Cat Creek, 1,200 feet downstream from Tieton Dam, 19 miles upstream from Oak Creek and 22 miles southwest of Naches, Yakima County.
Drainage area.- 187 square miles.
Records available.- August 1908 to September 1914 (fragmentary), October 1918 to March 1919, April 1925 to September 1941, in reports of Geological Survey. September 1908 to December 1913, July 1914 to September 1920, and May 1925 to September 1933, in State Water-Supply Bulletin 5.
Average discharge.- 22 years (1908-12, 1918-20, 1925-41), 461 second-feet (adjusted for storage since October 1925).
Extremes (regulated).- Maximum discharge during year, 1,820 second-feet July 17 (gage height, 5.50 feet); minimum, 7 second-feet Dec. 9-17.
1908-14, 1918-19 (revised), 1925-41: Maximum discharge, 8,450 second-feet Dec. 22, 1933 (gage height, 9.24 feet); no flow Apr. 4-6, 10, 1930.
Remarks.- Records good except those for very low flow, which are poor. No diversion. Flow regulated by Tieton Reservoir. Record of daily discharge not adjusted for change in contents of reservoir.
Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation.

Rating table, water year 1940-41 (gage height, in feet, and discharge, in second-feet)

1.5	10	2.4	88	4.0	695
1.7	18	2.7	142	4.5	1,020
1.9	32	3.0	216	5.0	1,400
2.1	51	3.5	420		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	308	232	8	9	10	10	10	544	436	1,020	761	695
2	375	222	8	9	10	10	10	500	420	1,020	666	644
3	390	216	8	9	10	10	10	473	768	1,020	666	610
4	324	174	8	9	10	10	10	462	780	953	655	599
5	272	144	8	10	10	10	10	489	707	918	649	593
6	295	144	8	10	10	10	10	593	818	884	666	588
7	320	142	8	10	10	10	10	780	818	851	780	582
8	324	142	8	10	10	10	10	818	818	851	755	582
9	342	140	7	10	10	10	10	884	851	851	672	604
10	361	140	7	10	10	10	10	953	918	918	690	604
11	338	142	7	10	10	10	10	988	918	884	684	593
12	329	118	7	10	10	10	10	851	755	793	661	571
13	338	104	7	10	10	10	10	500	774	818	649	554
14	352	104	7	10	10	10	10	484	851	1,020	731	576
15	304	104	7	10	10	10	9	672	988	1,360	786	604
16	261	104	7	10	10	10	10	713	1,100	1,610	749	582
17	232	104	7	10	10	10	10	473	1,100	1,740	768	582
18	232	104	8	10	10	10	10	316	1,020	1,780	818	571
19	225	104	8	10	10	10	54	560	988	1,780	851	554
20	228	104	8	10	10	10	188	690	918	1,690	793	538
21	232	104	9	10	10	10	308	725	988	1,650	774	527
22	235	104	9	10	10	10	352	812	1,170	1,690	786	511
23	228	128	9	10	10	10	338	818	1,210	1,690	780	489
24	235	153	9	10	10	10	395	719	1,130	1,650	786	484
25	232	169	9	10	10	10	415	678	1,100	1,610	737	538
26	232	181	9	10	10	10	356	707	1,100	1,610	644	604
27	235	181	9	10	10	10	320	731	1,210	1,610	604	554
28	232	181	9	10	10	10	295	818	1,210	1,440	604	527
29	232	181	9	10	-	10	431	851	1,170	1,250	610	538
30	232	119	9	10	-	10	582	755	1,100	1,020	610	473
31	232	-	9	10	-	10	-	498	-	953	690	-

Month	Observed				Change in contents in Tieton Reservoir (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Runoff in acre-feet		Runoff in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	390	225	281	17,270	-10,360	6,910	112	0.599	0.69
November	232	104	143	8,510	+1,640	10,150	171	.914	1.02
December	9	7	8.1	496	+17,500	18,000	293	1.57	1.80
Calendar year 1940	1,290	7	384	278,700	-11,140	267,600	369	1.97	26.84
January	10	9	9.9	607	+11,020	11,630	189	1.01	1.17
February	10	10	10.0	555	+9,020	9,580	172	.920	.96
March	10	10	10.0	615	+16,930	17,540	285	1.52	1.76
April	582	9	140	8,360	+22,770	31,130	523	2.80	3.12
May	988	316	673	41,370	-5,890	35,480	577	3.09	3.56
June	1,210	420	938	55,800	-29,290	26,510	446	2.39	2.66
July	1,780	793	1,256	77,220	-59,890	17,330	282	1.51	1.74
August	851	604	712	43,790	-30,530	13,260	216	1.16	1.33
September	695	473	569	33,860	-19,420	14,440	243	1.30	1.45
Water year 1940-41	1,780	7	398	288,500	-76,500	212,000	293	1.57	21.26

Tieton River at headworks of Tieton Canal, near Naches, Wash.

Location.- Water-stage recorder, lat. 46°40'10", long. 121°00'20", in sec. 30, T. 14 N., R. 15 E (unsurveyed), just downstream from intake of Tieton Canal, 12 miles upstream from Oak Creek, and 16 miles southwest of Naches.
Drainage area.- 240 square miles.
Records available.- April to September 1906 (fragmentary gage-height records), July 1907 to September 1941.
Average discharge.- 32 years (1907-16, 1918-41), 538 second-feet (adjusted for diversions since 1910 and for storage since October 1924).
Extremes (regulated).- Maximum discharge during year, 1,540 second-feet July 17-20 (gage height, 4.29 feet); minimum not determined, probably occurred during period of ice effect.
1907-41: Maximum discharge, 8,910 second-feet Dec. 22, 1933 (gage height, 9.70 feet); no flow at times in 1926, 1929, 1931, 1932, 1934.
Remarks.- Records good except those for periods of ice effect, which are poor. Diversions for irrigation by Tieton Canal. Flow regulated by Tieton Reservoir, 7 miles above gage. Record of daily discharge not adjusted for canal diversion or for change in contents of Tieton Reservoir.
Cooperation.- Records collected and prepared in cooperation with the Bureau of Reclamation.

Rating table, water year 1940-41 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.2	6	2.0	85	2.8	361	3.6	895
1.4	13	2.2	132	3.0	470	4.0	1,250
1.6	26	2.4	193	3.2	596		
1.8	50	2.6	269	3.4	740		

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	304	245	30	b10	23	47	40	323	149	762	482	403
2	356	241	29	*b10	24	50	63	249	127	748	377	361
3	371	233	28	b10	24	46	46	241	470	725	366	323
4	323	193	29	b10	24	56	41	193	513	666	361	313
5	282	167	37	b10	26	55	42	241	430	631	342	295
6	300	164	40	b10	26	47	33	327	583	610	351	300
7	327	161	33	b10	28	60	26	531	596	570	488	295
8	337	161	b27	b11	28	63	53	583	596	570	453	300
9	347	164	b11	b11	26	72	72	638	652	583	361	323
10	361	164	*b8	b12	26	70	72	666	710	624	366	337
11	351	161	b8	b13	26	63	74	755	703	603	387	332
12	342	152	b8	b13	26	60	68	631	525	500	351	313
13	351	122	b8	b14	26	55	66	282	531	519	323	300
14	371	120	b8	b15	26	47	63	200	610	725	397	313
15	323	120	b8	b16	28	47	64	377	718	1,020	482	351
16	300	122	b9	b17	30	52	60	453	863	1,300	447	327
17	253	122	b14	18	30	61	56	278	879	1,490	447	332
18	245	122	b20	20	32	66	50	49	815	1,540	500	337
19	237	120	b26	24	30	60	47	261	755	1,540	544	337
20	233	120	40	23	26	53	180	392	696	1,440	494	323
21	249	120	56	23	*26	42	287	430	740	1,390	470	313
22	253	122	68	23	28	24	291	531	929	1,440	482	313
23	245	127	52	21	28	18	245	550	1,010	1,490	476	309
24	*269	135	40	20	26	13	249	453	895	1,390	482	313
25	261	135	37	21	24	8	253	371	863	1,390	464	371
26	257	132	27	22	24	9	215	413	871	1,340	351	424
27	249	135	26	22	24	9	152	453	938	1,340	304	397
28	249	174	23	22	30	10	114	531	954	1,200	300	366
29	249	193	20	22	-	15	193	564	912	963	304	387
30	249	120	20	22	-	28	342	442	863	710	304	413
31	245	-	20	22	-	30	-	225	-	666	387	-

Month	Observed: Discharge in second-feet: Maximum	Observed: Discharge in second-feet: Minimum	Observed: Discharge in second-feet: Mean	Observed: Runoff in acre-feet	Change in contents in Tieton Reservoir (acre-feet)	Diverted by Tieton Canal (acre-feet)	Adjusted for change in reservoir contents and diversion: Runoff in acre-feet	Adjusted: Discharge in second-feet: Mean	Adjusted: Discharge in second-feet: Per square mile	Adjusted: Runoff in inches
October	371	233	293	18,030	-10,360	0	7,670	125	0.521	0.60
November	245	120	152	9,060	+1,640	992	11,690	196	.817	.91
December	68	8	26.1	1,600	+17,500	0	19,100	311	1.30	1.50
Calendar year 1940	1,030	8	271	196,400	-11,140	98,460	283,700	391	1.63	22.18
January	24	10	16.7	1,030	+11,020	0	12,050	196	.817	.94
February	32	23	26.6	1,480	+9,020	0	10,500	189	.788	.82
March	72	8	43.1	2,650	+16,930	762	20,340	331	1.38	1.59
April	342	26	119	7,060	+22,770	4,300	34,130	574	2.39	2.67
May	755	49	408	25,060	-5,890	17,860	37,030	602	2.51	2.89
June	1,010	127	697	41,450	-29,290	14,210	26,370	443	1.85	2.06
July	1,540	500	983	60,470	-59,890	18,170	18,750	305	1.27	1.46
August	544	300	408	25,080	-30,530	18,400	12,950	211	.879	1.01
September	424	295	337	20,070	-19,420	12,760	13,410	225	.938	1.05
Water year 1940-41	1,540	8	294	213,000	-76,500	87,450	224,000	309	1.29	17.50

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

North Fork of Ahtanum Creek near Tampico, Wash.

Location.- Water-stage recorder, lat. 46°33'40", long. 120°55'10", in NW¼ sec. 2, T. 12 N., R. 15 E., 100 feet downstream from Nasty Creek, 3½ miles northwest of Tampico and mouth of South Fork, and 20 miles west of Yakima.

Drainage area.- 69 square miles.

Records available.- August 1907 to September 1924 (incomplete), March 1931 to September 1941.

Average discharge.- 16 years (1909-15, 1931-41), 58.0 second-feet.

Extremes.- Maximum discharge during year, 173 second-feet Apr. 1 (gage height, 1.47 feet); minimum, 7.9 second-feet Dec. 12-20 (gage height, 0.17 foot).

1907-24, 1931-41: Maximum discharge, 755 second-feet Dec. 22, 1933; maximum gage height, 4.6 feet June 18, 1916; minimum discharge, 5.8 second-feet Dec. 24, 1939, but may have been less during periods of ice effect.

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

Cooperation.- Records collected in cooperation with Indian Service.

Rating table, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0.3	18	0.9	82
.5	36	1.1	109
.7	58	1.4	159

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	15	23	11	14	68	f134	148	83	34	15	15
2	15	15	21	b11	15	73	154	138	79	30	15	20
3	15	14	21	b12	15	66	138	124	79	29	16	16
4	15	12	21	b13	16	62	129	115	79	27	17	15
5	14	13	30	b14	17	61	121	108	79	25	16	14
6	14	15	28	b15	17	61	112	98	82	25	15	14
7	14	20	23	b15	17	*63	109	92	78	25	14	14
8	13	17	21	b15	*18	72	108	87	73	24	15	14
9	13	15	15	16	18	73	116	83	69	23	15	14
10	14	11	11	15	19	72	114	84	69	22	14	15
11	15	15	10	15	19	68	108	95	72	21	15	14
12	14	15	8.6	15	19	66	105	123	72	21	16	14
13	15	15	7.9	16	18	61	104	128	68	20	15	13
14	15	b15	7.9	16	18	59	105	116	64	20	15	13
15	14	b15	7.9	17	15	58	107	109	60	19	14	13
16	13	b15	7.9	18	17	62	98	107	58	17	15	13
17	14	b15	7.9	17	16	73	92	124	58	17	14	13
18	13	15	7.9	17	19	83	87	107	55	17	13	12
19	13	15	7.9	18	20	79	86	98	52	19	14	12
20	13	16	8.6	18	20	73	84	94	49	17	15	13
21	13	15	13	17	21	71	87	96	47	17	15	13
22	13	13	b20	16	22	68	96	101	44	17	14	13
23	15	16	b20	16	22	67	107	108	42	16	13	13
24	32	15	b20	16	23	66	110	121	46	16	13	13
25	21	15	b20	17	22	68	114	120	44	18	15	12
26	*16	15	21	16	22	73	118	108	40	18	21	12
27	15	16	20	15	24	82	121	101	37	17	16	12
28	15	25	19	15	33	87	124	98	36	17	15	12
29	15	58	18	15	-	f94	131	94	36	16	15	12
30	15	30	18	15	-	f118	141	87	35	15	15	12
31	16	-	15	15	-	f121	-	84	-	15	15	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Runoff Inches	Runoff Acre-feet
October	465	32	13	15.0	0.217	0.25	922
November	516	58	11	17.2	.249	.28	1,020
December	500.5	30	7.9	16.1	.233	.27	993
Calendar year 1940	17,690.5	218	7.0	48.3	.700	9.52	35,080
January	479	18	11	15.5	.225	.26	950
February	538	33	14	19.2	.278	.29	1,070
March	2,268	121	58	73.2	1.06	1.22	4,500
April	3,360	154	84	112	1.62	1.81	6,660
May	3,296	148	83	106	1.54	1.78	6,540
June	1,785	83	35	59.5	.862	.96	3,540
July	634	34	15	20.5	.297	.34	1,260
August	465	21	13	15.0	.217	.25	922
September	405	20	12	13.5	.196	.22	803
Water year 1940-41	14,711.5	154	7.9	40.3	.584	7.93	29,180

* Winter-discharge measurement made on this day.
b Stage-discharge relation affected by ice.
f Computed on basis of partly estimated gage-height record.

South Fork of Ahtanum Creek at Conrad Ranch, near Tampico, Wash.

Location.- Staff gage, lat. 46°30'30", long. 120°54'50", in W½ sec. 23, T. 12 N., R. 15 E., at Conrad Ranch, 2½ miles upstream from North Fork of creek, 2¾ miles southwest of Tampico, and 20 miles southwest of Yakima.

Drainage area.- 24.5 square miles.

Records available.- March 1915 to September 1924 (fragmentary), March 1931 to September 1941.

Extremes.- Maximum discharge observed during year, 34 second-feet Mar. 1 (gage height, 0.96 foot); minimum not determined, probably occurred during period of ice effect. 1915-24, 1931-41: Maximum discharge observed, 424 second-feet Dec. 23, 1933 (gage height, 3.10 feet); minimum, 2.6 second-feet Aug. 23, 25, 1931 (gage height, 0.35 foot).

Remarks.- Records good except those for periods of ice effect, which are poor. Gage read twice daily. A few diversions above station for irrigation.

Cooperation.- Records collected in cooperation with Indian Service.

Rating tables, water year 1940-41, except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 20		Dec. 21 to Sept. 30			
0.4	2.8	0.4	3.3	0.7	14
.5	5.2	.5	5.8	.8	20
.6	8.8	.6	9.2	.9	29
.7	14				

Discharge, in second-feet, water year October 1940 to September 1941

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.2	4.7	5.8	5.0	5.5	28	24	29	16	8.1	4.6	5.8
2	4.2	4.7	5.2	4.5	5.8	29	29	29	16	7.7	4.6	6.4
3	4.9	4.7	5.2	4.4	5.8	27	27	29	15	7.7	5.2	5.2
4	4.7	4.7	5.5	4.6	5.8	25	27	27	14	7.0	5.2	5.2
5	4.2	4.7	7.6	5.0	6.0	24	24	26	14	7.0	5.2	4.6
6	4.2	4.7	6.5	5.0	6.7	24	24	24	14	7.0	5.2	4.6
7	4.2	5.5	5.2	5.0	6.4	24	22	22	13	6.7	4.6	4.4
8	4.2	4.9	5.0	5.0	*7.0	24	24	20	13	6.7	4.6	4.4
9	4.2	4.7	5.0	5.0	7.7	25	25	19	12	6.4	4.6	4.4
10	4.2	4.9	4.9	4.6	7.7	24	27	19	12	6.4	4.6	4.4
11	4.2	4.9	4.5	4.5	7.7	22	25	19	11	6.4	4.2	4.4
12	4.2	4.7	4.3	4.6	7.7	20	24	22	11	6.4	4.6	4.4
13	4.4	4.8	4.2	4.8	7.4	18	24	24	10	5.8	4.6	4.6
14	4.7	5.0	4.1	5.0	6.7	18	23	24	10	5.8	4.6	4.6
15	4.2	5.4	4.0	5.2	6.4	18	22	23	10	5.8	4.4	4.6
16	4.2	5.4	4.0	5.2	7.4	17	20	24	10	5.5	4.2	4.6
17	4.2	5.3	4.1	6.0	7.7	19	20	27	10	5.5	4.2	4.6
18	4.2	4.9	4.3	6.4	7.7	20	19	24	10	5.2	4.2	4.6
19	4.2	4.7	4.4	5.8	7.7	20	19	22	10	5.2	3.8	4.6
20	4.2	4.7	4.7	5.8	8.4	19	18	21	10	5.2	6.7	5.2
21	4.2	4.7	5.0	5.2	8.4	18	18	20	10	5.2	5.2	4.9
22	4.2	4.2	5.4	5.2	8.4	16	19	20	10	5.2	4.6	4.6
23	4.7	4.2	5.7	5.2	8.4	16	20	20	9.6	5.2	4.6	4.6
24	6.5	4.2	6.0	5.5	8.4	16	22	20	9.2	5.2	4.4	4.6
25	4.9	4.2	6.4	5.8	8.4	16	23	22	9.2	5.2	6.0	4.4
26	*4.7	4.2	6.4	5.2	8.8	16	24	20	9.2	5.2	6.4	4.2
27	4.7	4.2	5.8	5.2	10	16	24	20	8.4	5.2	5.8	4.2
28	4.7	4.9	5.8	5.2	11	18	25	20	8.4	5.2	5.2	4.2
29	4.9	10	5.8	5.2	-	19	25	19	8.1	5.2	5.2	4.4
30	5.2	6.2	5.8	5.2	-	22	27	18	8.1	5.2	5.2	4.4
31	4.7	-	5.5	5.2	-	23	-	17	-	5.2	5.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Runoff in acre-feet
October	139.3	6.5	4.2	4.49	276
November	149.0	10	4.2	4.97	296
December	162.1	7.6	4.0	5.23	322
Calendar year 1940	4,613.0	45	3	12.6	9,160
January	159.5	6.4	4.4	5.15	316
February	211.0	11	5.5	7.54	419
March	641	29	16	20.7	1,270
April	694	29	18	23.1	1,380
May	690	29	17	22.3	1,370
June	331.2	16	8.1	11.0	657
July	184.7	8.1	5.2	5.96	366
August	156.7	8.8	4.2	5.05	311
September	140.1	6.4	4.2	4.67	278
Water year 1940-41	3,658.6	29	4.0	10.0	7,260

* Winter discharge measurement made on this day.
Note.- Stage-discharge relation affected by ice, Nov. 13-17, Dec. 8-24, Jan. 1-14.

In addition to the records of stream flow obtained at gaging stations and reported in the preceding pages, measurements of flow were made also at the points in the Pacific slope basins in Washington and upper Columbia River Basin indicated in the following table:

Miscellaneous discharge measurements in Pacific slope basins in Washington and upper Columbia River Basin during water year October 1940 to September 1941

McAllister Creek Basin, Wash.

Date	Stream	Tributary to or diverting from-	Locality	Discharge (sec.-ft.)
Aug. 26	McAllister Creek.	Puget Sound.....	N½ sec. 18, T. 18 N., R. 1 E., at first road bridge below McAllister Springs, near Nisqually.	77.0

Chambers Creek Basin, Wash.

Oct. 9	Clover Creek.....	Steilacoom Lake....	SE¼ sec. 7, T. 19 N., R. 3 E., just below Spanaway Creek at east edge of McChord Field, near Parkland.	2.12
Nov. 18	....do.....	....do.....	....do.....	4.74
Jan. 25	....do.....	....do.....	....do.....	30.2
28	....do.....	....do.....	....do.....	32.1
Mar. 13	....do.....	....do.....	....do.....	21.1
May 23	....do.....	....do.....	....do.....	12.1
July 15	....do.....	....do.....	....do.....	3.52
29	....do.....	....do.....	....do.....	1.80
Aug. 12	....do.....	....do.....	....do.....	1.14
26	....do.....	....do.....	....do.....	.76
Sept. 9	....do.....	....do.....	....do.....	1.18
Oct. 9	....do.....	....do.....	NE¼ sec. 18, T. 19 N., R. 3 E., just above Morey Creek in McChord Field, near Parkland.	3.32
Nov. 18	....do.....	....do.....	....do.....	6.29
Jan. 25	....do.....	....do.....	....do.....	37.1
28	....do.....	....do.....	....do.....	37.0
Mar. 13	....do.....	....do.....	....do.....	27.1
May 23	....do.....	....do.....	....do.....	12.3
July 15	....do.....	....do.....	....do.....	4.36
29	....do.....	....do.....	....do.....	2.54
Aug. 12	....do.....	....do.....	....do.....	2.04
26	....do.....	....do.....	....do.....	1.95
Sept. 9	....do.....	....do.....	....do.....	2.46
Oct. 9	....do.....	....do.....	SE¼ sec. 12, T. 19 N., R. 2 E., at west edge of McChord Field, near Fort Lewis.	4.80
Nov. 18	....do.....	....do.....	....do.....	8.18
Jan. 25	....do.....	....do.....	....do.....	49.6
28	....do.....	....do.....	....do.....	45.3
Mar. 13	....do.....	....do.....	....do.....	32.9
May 23	....do.....	....do.....	....do.....	15.3
July 15	....do.....	....do.....	....do.....	3.46
29	....do.....	....do.....	....do.....	1.68
Aug. 12	....do.....	....do.....	....do.....	.90
26	....do.....	....do.....	....do.....	.33
Sept. 9	....do.....	....do.....	....do.....	.78
Oct. 9	....do.....	....do.....	SE¼ sec. 11, T. 19 N., R. 2 E., at crossing of U. S. Highway 99, near Fort Lewis.	2.34
Nov. 18	....do.....	....do.....	....do.....	6.30
Jan. 24	....do.....	....do.....	....do.....	39.2
28	....do.....	....do.....	....do.....	41.0
Mar. 13	....do.....	....do.....	....do.....	30.4
May 23	....do.....	....do.....	....do.....	13.5
July 15	....do.....	....do.....	....do.....	1.74
29	....do.....	....do.....	....do.....	.07
Aug. 12	....do.....	....do.....	....do.....	0
26	....do.....	....do.....	....do.....	0
Sept. 9	....do.....	....do.....	....do.....	0
Oct. 9	....do.....	....do.....	NW¼ sec. 11, T. 19 N., R. 2 E., at lower end of Dwight Orr property, near Fort Lewis.	1.69
Nov. 18	....do.....	....do.....	....do.....	5.85
Jan. 24	....do.....	....do.....	....do.....	39.1
28	....do.....	....do.....	....do.....	38.5
Mar. 13	....do.....	....do.....	....do.....	27.5
May 23	....do.....	....do.....	....do.....	12.0
July 15	....do.....	....do.....	....do.....	.67
29	....do.....	....do.....	....do.....	0
Aug. 12	....do.....	....do.....	....do.....	0
26	....do.....	....do.....	....do.....	0
Sept. 9	....do.....	....do.....	....do.....	0
Oct. 9	....do.....	....do.....	NW¼ sec. 11, T. 19 N., R. 2 E., at crossing of Gravelly Lake road, near Fort Lewis.	.93
Nov. 18	....do.....	....do.....	....do.....	5.60
Jan. 24	....do.....	....do.....	....do.....	35.1
28	....do.....	....do.....	....do.....	34.9
Mar. 13	....do.....	....do.....	....do.....	26.3
23	....do.....	....do.....	....do.....	10.8
July 15	....do.....	....do.....	....do.....	0
29	....do.....	....do.....	....do.....	0
Aug. 12	....do.....	....do.....	....do.....	0
26	....do.....	....do.....	....do.....	0
Sept. 9	....do.....	....do.....	....do.....	0
Oct. 9	Morey Creek.....	Clover Creek.....	NE¼ sec. 18, T. 19 N., R. 3 E., at mouth, in McChord Field, near Fort Lewis.	1.68

Miscellaneous discharge measurements in Pacific slope basins in Washington and upper Columbia River Basin during water year October 1940 to September 1941--Continued

Chambers Creek Basin, Wash.--Continued

Date	Stream	Tributary to or diverting from-	Locality	Discharge (sec.-ft.)
Nov. 18	Morey Creek.....	Clover Creek.....	NE¼ sec. 18, T. 19 N., R. 3 E., at mouth, in McChord Field, near Fort Lewis.	1.96
Jan. 25	....do.....	....do.....	....do.....	5.20
28	....do.....	....do.....	....do.....	6.02
Mar. 13	....do.....	....do.....	....do.....	4.37
May 23	....do.....	....do.....	....do.....	2.88
July 15	....do.....	....do.....	....do.....	.56
29	....do.....	....do.....	....do.....	.42
Aug. 12	....do.....	....do.....	....do.....	.42
26	....do.....	....do.....	....do.....	.50
Sept. 9	....do.....	....do.....	....do.....	.79

Lake Washington Basin, Wash.

Nov. 8	Rock Creek.....	Cedar River.....	Landsberg-Issaquah road culvert near Landsberg.	25.0
Dec. 9	....do.....	....do.....	....do.....	57.6
Jan. 21	....do.....	....do.....	....do.....	41.3
Feb. 7	....do.....	....do.....	....do.....	18.9
Mar. 21	....do.....	....do.....	....do.....	13.6
Apr. 16	....do.....	....do.....	....do.....	26.0
May 22	....do.....	....do.....	....do.....	14.7
June 27	....do.....	....do.....	....do.....	14.2
July 29	....do.....	....do.....	....do.....	2.01
Aug. 18	....do.....	....do.....	....do.....	1.90
Sept.23	....do.....	....do.....	....do.....	10.2
Nov. 4	Bear Creek.....	Sammamish River....	E½ sec. 11, T. 25 N., R. 5 E., at mouth, near Redmond.	37.4
Dec. 10	....do.....	....do.....	....do.....	91.0
Jan. 17	....do.....	....do.....	....do.....	170
31	....do.....	....do.....	....do.....	76.6
Mar. 10	....do.....	....do.....	....do.....	47.2
Apr. 14	....do.....	....do.....	....do.....	41.6
May 20	....do.....	....do.....	....do.....	53.6
June 25	....do.....	....do.....	....do.....	25.2
July 21	....do.....	....do.....	....do.....	18.5
Aug. 15	....do.....	....do.....	....do.....	16.5
Sept.15	....do.....	....do.....	....do.....	35.4

Skagit River Basin, Wash.

Nov. 2	Day Creek.....	Skagit River.....	NW¼ sec. 28, T. 35 N., R. 6 E., at county road bridge, near Lyman.	302
Dec. 2	....do.....	....do.....	....do.....	273

Kootenai River Basin, British Columbia

Nov. 12	Kootenai River...	Columbia River.....	Groham Narrows, 2 miles below Nelson, British Columbia; measurements referred to gage No. 10 at Nelson; (8 N. J. 9 of Dominion Water and Power Bureau, Department of Mines and Resources, Canada).	9,000
Jan. 9	....do.....	....do.....	....do.....	8,220
Mar. 12	....do.....	....do.....	....do.....	9,090
May 14	....do.....	....do.....	....do.....	34,940
June 11	....do.....	....do.....	....do.....	47,820
July 18	....do.....	....do.....	....do.....	27,180
Nov. 12	....do.....	....do.....	Glade, British Columbia (station 8 N. J. 1 of Dominion Water and Power Bureau, Department of Mines and Resources, Canada).	10,780
Jan. 9	....do.....	....do.....	....do.....	9,110
Mar. 12	....do.....	....do.....	....do.....	10,190
May 14	....do.....	....do.....	....do.....	44,480
June 12	....do.....	....do.....	....do.....	57,760
July 18	....do.....	....do.....	....do.....	29,770
Nov. 13	Slocan River.....	Kootenai River.....	Near Crescent Valley, British Columbia (station 8 N. J. 13 of Dominion Water and Power Bureau, Department of Mines and Resources).	1,150
Jan. 10	....do.....	....do.....	....do.....	793
Mar. 13	....do.....	....do.....	....do.....	1,080
May 15	....do.....	....do.....	....do.....	7,460
June 12	....do.....	....do.....	....do.....	7,200
July 19	....do.....	....do.....	....do.....	2,740

Pend Oreille River Basin, Mont.

Oct. 21	Flint Creek.....	Clark Fork.....	SW¼ sec. 15, T. 9 N., R. 13 W.....	74.5
Mar. 20	Trout Creek.....	Flint Creek.....	NW¼ sec. 19, T. 5 N., R. 14 W. above Flint Creek Canal.	4.2
-	North Fork of Blackfoot River	Blackfoot River....	....(†).....	-
May 23	West Fork of Bitterroot River	Clark Fork.....	SW¼ sec. 10, T. 2 S., R. 22 W., above reservoir.	183

† For corrections of miscellaneous measurements made on North Fork of Blackfoot River during 1939-40, see table on page 209.

Miscellaneous discharge measurements in Pacific slope basins in Washington and upper Columbia River Basin during water year October 1940 to September 1941--Continued

Pend Oreille River Basin, Mont.--Continued

Date	Stream	Tributary to or diverting from-	Locality	Discharge (sec.-ft.)
Aug. 20	West Fork of Bitterroot River.	Clark Fork.....	SW¼ sec. 10, T. 2 S., R. 22 W., above reservoir.	44.8
28	....do.....	....do.....	....do.....	48.9
Oct. 9	....do.....	....do.....	NW¼ sec. 18, T. 2 N., R. 20 W., at Conner.	244
June 26	....do.....	....do.....	....do.....	560
Aug. 21	....do.....	....do.....	....do.....	104
Oct. 8	Bitterroot River.	....do.....	SW¼NE¼ sec. 11, T. 4 N., R. 21 W. at Charlos siding.	504
June 26	....do.....	....do.....	....do.....	868
Aug. 21	....do.....	....do.....	....do.....	127
Oct. 8	....do.....	....do.....	NW¼ sec. 25, T. 6 N., R. 21 W., at Hamilton.	575
June 25	....do.....	....do.....	....do.....	1,140
Aug. 22	....do.....	....do.....	....do.....	90.2
May 22	Overwhich Creek..	West Fork of Bitterroot River.	SE¼ sec. 10, T. 2 S., R. 22 W., above sawmill diversion.	73.9
Aug. 20	....do.....	....do.....	....do.....	11.0
28	....do.....	....do.....	....do.....	10.8
May 29	Blue Joint Creek.	....do.....	NW¼ sec. 3, T. 2 S., R. 22 W., below Little Blue Joint Creek.	122
Aug. 28	....do.....	....do.....	....do.....	25.3
May 22	Slate Creek.....	....do.....	NW¼ sec. 2, T. 2 S., R. 22 W., at county road.	42.2
Aug. 20	....do.....	....do.....	....do.....	5.6
28	....do.....	....do.....	....do.....	5.1
May 23	Little Boulder Creek.	....do.....	SE¼ sec. 26, T. 1 S., R. 22 W., near reservoir.	8.5
Aug. 20	....do.....	....do.....	....do.....	2.5
28	....do.....	....do.....	....do.....	2.2

Kettle River Basin, Wash.

Aug. 11	Deep Creek.....	Kettle River.....	NW¼ sec. 11, T. 40 N., R. 36 E., 200 feet above mouth, near Laurier.	2.40

Spokane River Basin, Idaho

Oct. 7	Coeur d'Alene River.	Coeur d'Alene Lake.	1,000 feet above Lost Creek, 5 miles north of Prichard, in NE¼ sec. 9, T. 50 N., R. 4 E., near Lost Creek dam site.	112
7	....do.....	....do.....	800 feet above Brown Creek, near Prichard, in NE¼ sec. 23, T. 50 N., R. 3 E., about 1½ miles below Leland Glen dam site.	154
6	North Fork of Coeur d'Alene River.	Coeur d'Alene River.	Near Enaville, Idaho, 300 feet above mouth, in NW¼ sec. 8, T. 49 N., R. 2 E.	43.7

Okanogan River Basin, Wash.

Oct. 21	Palmer Creek.....	Similkameen River..	NE¼ sec. 35, T. 40 N., R. 25 E., at bridge 1½ miles above mouth, near Nighthawk.	a22.8
Jan. 13	....do.....	....do.....	....do.....	b30.6
Mar. 15	....do.....	....do.....	....do.....	b28.3
May 6	....do.....	....do.....	....do.....	b520
22	....do.....	....do.....	....do.....	b352
Aug. 13	....do.....	....do.....	....do.....	b60.2
Sept.22	....do.....	....do.....	....do.....	b67.9

a Flow away from river.
b Flow toward river.

Methow River Basin, Wash.

May 4	Beaver Creek.....	Methow River.....	NE¼ sec. 26, T. 34 N., R. 22 E., at bridge on property of W. E. Burns, near Twisp.	124
21	....do.....	....do.....	....do.....	55.5
June 5	....do.....	....do.....	....do.....	48.2
Aug. 15	....do.....	....do.....	....do.....	14.8
Sept.24	....do.....	....do.....	....do.....	13.4
Oct. 17	Methow Valley irrigation district canal.	Left side of Methow River.	Just above point opposite gage on Methow River at Twisp.	21.6
Apr. 7	....do.....	....do.....	....do.....	0
May 3	....do.....	....do.....	....do.....	54.2
20	....do.....	....do.....	....do.....	58.8
June 4	....do.....	....do.....	....do.....	64.4
Aug. 15	....do.....	....do.....	....do.....	72.9
Sept.24	....do.....	....do.....	....do.....	36.1
Oct. 16	....do.....	Right side of Twisp River.	Road crossing ¼ mile west of Twisp...	17.6
Apr. 7	....do.....	....do.....	....do.....	0
May 3	....do.....	....do.....	....do.....	46.4
20	....do.....	....do.....	....do.....	46.8
June 4	....do.....	....do.....	....do.....	46.6
Aug. 15	....do.....	....do.....	....do.....	35.2

Miscellaneous discharge measurements in Pacific slope basins in Washington and upper Columbia River Basin during water year October 1940 to September 1941--Continued

Methow River Basin, Wash.--Continued

Date	Stream	Tributary to or diverting from-	Locality	Discharge (sec.-ft.)
Sept.24	Methow Valley irrigation district canal.	Right side of Twisp River.	Road crossing ⅛ mile west of Twisp...	8.09
Oct. 16	Risley ditch.....	....do.....	Above all diversions, in Twisp.....	27.0
Apr. 7	....do.....	....do.....	.....do.....	5.18
May 4	....do.....	....do.....	....do.....	11.8
20	....do.....	....do.....	....do.....	7.45
June 4	....do.....	....do.....	....do.....	11.5
Aug. 15	....do.....	....do.....	....do.....	14.6
Sept.24	....do.....	....do.....	....do.....	31.4

Yakima River Basin, Wash.

Oct. 26	Union Gap Canal..	Left Side of Yakima River.	Entrance to Union Gap, 1 mile southeast of town of Union Gap.	0
Apr. 2	....do.....	....do.....	....do.....	24.5
May 19	....do.....	....do.....	....do.....	44.6
July 12	....do.....	....do.....	....do.....	40.2
Sept.20	....do.....	....do.....	....do.....	26.2

Corrected miscellaneous discharge measurements for the water-year October 1939 to September 1940, superseding those published in Water-Supply Paper 902, are given herein:

Pend Oreille River Basin, Mont.

Date	Stream	Tributary to or diverting from-	Locality	Discharge (sec.-ft.)
Sept.18	North Fork of Blackfoot River.	Blackfoot River....	NW¼ sec. 14, T. 15 N., R. 11 W.....	44.9
July 14	....do.....	....do.....	NW¼ sec. 10, T. 14 N., R. 12 W.....	200
Sept.18	....do.....	....do.....	....do.....	124

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