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1939

PART 12

PACIFIC SLOPE BASINS IN WASHINGTON AND UPPER COLUMBIA RIVER BASIN

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Prepared in cooperation with the States of
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SURFACE WATER SUPPLY OF PACIFIC SLOPE BASINS IN WASHINGTON AND UPPER COLUMBIA RIVER BASIN, 1939

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, 1939. The work was begun in 1888 in connection with special studies relating to irrigation. Measurements of flow of streams and measurements of stage and contents of lakes and reservoirs have been made at about 8,240 gaging stations in the United States and also at many gaging stations in Alaska and Hawaii. In July 1939, 4,160 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. Acknowledgments for cooperation of the first kind are made in connection with the description of each station affected; cooperation of the second kind is acknowledged on page 9.

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 water flowing in a channel when the cross-sectional area is 1 square foot and the 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 run-off is distributed uniformly both as regards time and area.

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

An "acre-foot," equivalent to 43,560 cubic feet, is the quantity of water required to cover an acre to the depth of 1 foot. 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 run-off of 0.0372 inch from one square mile.

"Stage-discharge relation" is an abbreviation for the term "relation of gage height to discharge."

"Control" is a term used to designate the natural section or reach of the channel or artificial structure below the gage that determines the stage-discharge relation at the gage.

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 gage heights 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. Gaging station structures are shown on plate 1.

Rating tables giving the discharge for any stage are prepared from the discharge measurements. The application of the mean daily gage height to these rating tables gives the mean daily discharge, from which the monthly and yearly mean discharge are computed.

The data presented for each gaging station in the area covered by this report usually comprise a description of the station, a table showing the daily discharge of the stream, and a table of monthly and yearly discharge and run-off. Skeleton rating tables are published except for those stations whose 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 (except when it is of no importance). Unless otherwise qualified, the maximum discharge corresponds to the crest stage, obtained by use of a water-stage recorder or a nonrecording gage read at the time of the crest. Likewise the minimum represents the lowest discharge, unless otherwise qualified. The peak discharge for the year with the time of its occurrence is given below the table of monthly discharge for some stations. Selected lower peaks are also given if the peak discharge exceeded the mean discharge for that day by more than 10 percent. This supplementary information is generally not given for stations having drainage areas of less than 10 square miles or more than 10,000 square miles.

The table of daily discharge gives, for stations equipped with nonrecording gages, the discharge in second-feet corresponding to once-daily readings of the gage or the mean of twice-daily readings. For flashy floods the mean daily 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 mean daily gage height. For stations subject to such fluctuation the meandaily gage height may not indicate the true mean daily discharge, which must be obtained by averaging the discharge for intervals of the day or by using the discharge integrator, an instrument for obtaining the mean daily discharge from a continuous gage-height graph and containing as an essential element the rating curve of the station.

In the table of monthly discharge the column headed "Second-foot-days" gives the sum for each month of the figures for that month given in the table of daily discharge. The column headed "Maximum" gives the maximum daily discharge and not the discharge when the water surface was at crest height. Likewise, in the column headed "Minimum" the quantity

A. PUYALLUP RIVER AT PUYALLUP, WASH.

B. COLUMBIA RIVER AT GRAND COULEE, WASH.

GAGING-STATION STRUCTURES.

given is the minimum daily discharge. The column headed "Mean" gives the average flow in cubic feet per second during the month.

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 observation 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 indicated by monthly means at some stations may vary widely from natural yield, owing to diversions, amount consumed, 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 "run-off in inches" are not published unless reservoir records are included indicating the extent of the regulation, or 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 run-off 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, so that 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 gives a general idea of the flow at the station. The table of daily discharge allows more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data previously published, and that greater degrees of refinement in computations and records may be warranted with the increase in data and the use of improved equipment.

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 in regard to 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., Georgia School of Technology.
- Augusta, Maine, Statehouse.
- Boston, Mass., 945 Post Office Building.
- Charlottesville, Va., House B, University 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., 203 Federal Building.
- Indianapolis, Ind., 316 Federal Building.
- Louisville, Ky., 641 Federal Building.
- Madison, Wis., 337 N. State Capitol.
- Montgomery, Ala., 507 Post Office Building.
- Ocala, Fla., Post Office Building.
- St. Paul, Minn., 808 New Post Office Building.
- South Charleston, W. Va., Naval Ordnance Plant.
- Trenton, N. J., 228 Federal Building.
- Urbana, Ill., 14 Post Office Annex.

West of the Mississippi River:
- Austin, Tex., 300 State Highway Building.
- 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.
- Los Angeles, Calif., G-31 Post Office and Courthouse.
- Portland, Oreg., 606 Post Office Building.
- Rolla, Mo., Missouri Geological Survey Building, Missouri School of Mines and Metallurgy.
- St. Louis, Mo., 906 Customhouse, 1114-Market Street.
- Salt Lake City, Utah, 303 Federal Building.
- San Francisco, Calif., 208 Federal Office Building.
- Santa Fe, N. Mex., 204 United States Courthouse.
- Tacoma, Wash., 406 Federal Building.
- Topeka, Kans., 305 Federal Building.
- Tucson, Ariz., 210 Post Office Building.

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

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.

Stream-flow data in reports of the Geological Survey--Continued

Report	Character of data	Year
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 for streams east of the Mississippi River and Missouri River and tributaries above Kansas River.	1897.
W 16.....	Descriptions, measurements, and gage heights for 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 for streams east of the Mississippi River and Missouri River and tributaries.	1898.
W 28.....	Measurements, ratings, and gage heights for 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.- The reports that contain records for years after 1901 are given in the 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 1939. The data for any particular station will, in general, be found in the reports covering the years during which the station was maintained. For example, the data for 1910 to 1920 for any station in the area covered by part 3 are published in Water-Supply Papers 283, 303, 323, 353, 403, 433, 453, 473, and 503, which contain records for the Ohio River Basin for those years.

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

Numbers of water-supply papers containing results of stream measurements, 1899-1939

(For basins included see p. 3)

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1899 a...	35	b 35, 36	36	36	36	c 36, 37	37	37	d 37, 38	38, e 39	38, f 39	38	38	38
1900 g...	47, h 48	48	48, i 49	49	49	49, j 50	50	50	50	51	51	51	51	51
1901.....	65, 75	65, 75	65, 75	65, 75	k 65, 66, 75	66, 75	k 65, 66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75	66, 75
1902.....	82	b 82, 83	83	m 82, 83	k 83, 85	84	k 83, 84	84	85	85	85	85	85	85
1903.....	97	b 97, 98	98	97	k 98, 99, n 100	99	k 98, 99	99	100	100	100	100	100	100
1904.....	o 124, p 125, q 126	q 126, 127	128	129	k 128, 130	130, r 131	k 128, 131	132	133	133, s 134	134	135	135	135
1905.....	o 165, p 166, q 167	q 167, 168	169	170	171	172	k 169, 173	174	175, t 177	176, s 177	177	178	178	u 177, 178
1906.....	o 201, p 202, q 203	q 203, 204	205	206	207	208	k 205, 209	210	211, t 213	212, s 213	213	214	214	214
1907-8...	241	242	243	244	245	246	247	248	249	250, s 251	251	252	252	252
1909.....	261	262	263	264	265	266	267	268	269	270, s 271	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

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 junction with Gila River.
u Rogue, Umpqua, and Siletz Rivers only.

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, Surface water supply of the southern 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, 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, 1916.
617	1927	Colorado River, upper (Colo., Utah), and its utilization, 1929.
517	1920	Great Salt Lake Basin, Water powers of, 1924.
618	1926	Green River (Utah, Wyo.) and its utilization, 1930.
198	1906	Kennebec River Basin (Maine), Water resources of, 1907.
		Milk River. (See St. Mary and Milk Rivers.)
536	1920	New-Kanawha River Basin (N. C., Va., W. Va.), Surface water supply of, 1925.
279	1909	Penobscot River Basin (Maine), Water resources of, 1912.
192	1906	Potomac River Basin (Md., Va., W. Va., etc.), 1907.
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, 1920.
109	1904	Susquehanna River Basin (Pa., Md.), Hydrography of, 1905.

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

State reports containing 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.
Georgia.....	1920	Bull. 38, Water powers of Georgia....	Geological Survey of Georgia.
Illinois....	1937	Stream-flow data of Illinois.....	Division of Waterways.
Do.....	1911	Water resources of Illinois.....	Rivers and Lakes Commission.
Indiana.....	1927	Pub. 72, Surface water supply of Indiana.	Department of Conservation.
Do.....	[a]1930	Pub. 112, Surface water supply of Indiana.	Do.
Iowa.....	1932	Stream-flow records of Iowa.....	Iowa State Planning Board.

a Includes records for the years 1927-30.

State reports containing compilation of records of discharge--Continued

State	Year ending	Report	Issued by
Kansas.....	[b]1919	Surface waters of Kansas.....	Kansas Water Commission.
Do.....	[c]1924	....do.....	Do.
Do.....	[d]1928	....do.....	Kansas State Board of Agriculture.
Do.....	[e]1935	Stream-flow data of Kansas.....	Do.
Kentucky...	1920	Surface waters of Kentucky.....	Kentucky Geological Survey.
Minnesota..	1912	Water-resources investigation of Minnesota.	State Drainage Commission.
Missouri...	1926	Reports of Bureau of Geology and Mines, vol. 20, 2d series, Water Resources of Missouri.	Missouri Geological Survey and Water Resources.
Nebraska...	1914	1st hydrographic report.....	Bureau of Water Power, Irrigation and Drainage.
Do.....	[f]1928	2d hydrographic report.....	Do.
New Jersey.	1928	Bull. 33, Surface water supply of New Jersey.	Department of Conservation and Development.
Do.....	[g]1934	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.....	[h]1936	Bull. 39, Discharge records of North Carolina streams.	Do.
Oregon.....	1914	Bull. 4, Water resources of the State of Oregon.	Office of the State Engineer.
Do.....	[i]1924	Bull. 7, Water resources of the State of Oregon.	Do.
Do.....	[j]1930	Bull. 8, Water resources of the State of Oregon.	Do.
Do.....	[k]1936	Bull. 9, Water resources of the State of Oregon.	Do.
Pennsylvania	1911	Report of Water Supply Commission of Pennsylvania.	Water Supply Commission of Pennsylvania.
Do.....	[l]1932	Stream-flow records of Pennsylvania....	Department of Forests and Waters.
Tennessee..	1924	Bull. 34, Water resources of Tennessee.	Department of Education.
Do.....	[m]1930	Bull. 40, Surface waters of Tennessee..	Do.
Utah.....	1905	5th Biennial Report, State Engineer....	Office of the State Engineer.
Virginia...	1927	Bull. 31, Water resources of Virginia..	Conservation and Development 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.....	[n]1923	2d report of Railroad Commission of Wisconsin to Legislature on water powers.	Do.

b Includes records for the years 1895-1919.
c Includes records for the years 1919-24.
d Includes records for the years 1924-28.
e Includes records for the years 1928-35.
f Includes records for the years 1914-28.
g Includes records for the years 1928-34.
h Includes records for the years 1889-1936; records of daily and monthly discharge are not included.
i Includes records for the years 1914-24.
j Includes records for the years 1924-30.
k Includes records for the years 1930-36.
l Includes records for the years 1928-32.
m Includes average weekly discharge for the years 1920-30.
n Includes records for the 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, Idaho, Indiana, Missouri, Montana, Nebraska, New Mexico, New York (also New York City Board of Water Supply), North Dakota, Oregon, Pennsylvania, Utah, Washington, and Wyoming.

RECORDS OF DISCHARGE COLLECTED BY AGENCIES OTHER THAN THE GEOLOGICAL SURVEY

The table on the following page 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 1938 to September 1939 by agencies other than the Geological Survey. The records for these stations are not contained in publications of the Geological Survey.

Records of discharge collected by agencies other than the Geological Survey

Stream	Location	Period	Operated by	Remarks
Reservation drain	Alfalfa, Wash.....	1912-1939	Office of Indian Affairs	*Unpublished since 1923.
Satus Creek.....	Downstream from Dry Creek, near Toppenish, Wash.	1913-1939	....do.....	*Unpublished since 1924.
Satus Creek.....	Near Satus, Wash.....	1932-1939	....do.....	Unpublished.
Toppenish Creek..	Near Fort Simcoe, Wash..	1909-1939	....do.....	*Unpublished since 1924.
Toppenish Creek..	Near Alfalfa, Wash.....	1932-1939	....do.....	Unpublished.

*Records for earlier years published in water-supply papers of the Geological Survey.
Note.- Unpublished records of daily discharge for 1939 and earlier years have been collected by the Bureau of Reclamation and Office of Indian Affairs, in connection with irrigation and drainage projects, for many canals and drains in Washington.

COOPERATION

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

Idaho: Department of Reclamation, R. W. Faris, commissioner, until Jan. 1, 1939, succeeded by James Spofford.

Montana: Office of the State engineer, E. B. Donahue; and State Water Conservation Board.

Washington: Department of Conservation and Development, John Brooke Fink, director, 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, U. S. Army, in the operation of two gaging stations in Washington.

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

Funds for the construction, repair, and improvement of gaging stations were allocated to the Geological Survey by the Federal Emergency Administration of Public Works.

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.; R. G. Hall; Puget Sound Power & Light Co.; Washington Water Power Co.; and Western Washington Electric Light & Power Co.

The data for the stations in the several States were collected and prepared for publication under the 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, Kootenai River at Newgate, British Columbia, and Kootenai River near Rexford, Mont., T. R. Newell; in Montana (except for the stations noted above), A. H. Tuttle; in Washington and for Pend Oreille River at Priest River, Idaho, G. L. Parker.

Basins between Columbia River and Puget Sound

NASELLE RIVER BASIN

Naselle River near Naselle, Wash.

Location.- Staff gage, lat. 46°22', long. 123°44', in SW¼ sec. 1, T. 10 N., R. 9 W., 1½ miles upstream from Salmon Creek and 3½ miles east of Naselle.
Drainage area.- 66 square miles.
Records available.- May 1929 to September 1939.
Extremes.- Maximum discharge observed during year, 4,750 second-feet Feb. 18 (gage height, 10.2 feet); minimum observed, 27 second-feet Sept. 26, 27, 30; minimum gage height observed, 1.91 feet Oct. 1, 8.
1929-39: 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 except those above 3,000 second-feet, which are poor. Gage read twice daily. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used May 1 to July 11)

Oct. 1 to July 11						July 12 to Sept. 30	
1.8	20	3.5	430	8.0	3,070	2.0	26
2.0	37	4.0	645	9.0	3,790	2.2	54
2.2	65	5.0	1,140	10.2	4,750	2.5	109
2.5	124	6.0	1,740			3.0	237
3.0	255	7.0	2,370			3.5	405

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	1,040	690	2,510	740	390	152	99	124	109	54	57
2	30	940	1,260	2,650	645	532	150	89	111	109	54	48
3	35	1,440	1,560	2,300	645	600	147	83	103	133	52	45
4	37	1,500	1,260	1,620	740	532	147	83	155	153	52	42
5	37	1,260	1,380	1,260	1,040	470	142	83	241	140	51	39
6	32	645	990	990	1,090	555	133	81	241	131	51	39
7	29	470	840	790	990	555	126	81	214	123	48	36
8	28	470	740	790	790	532	126	79	227	116	45	34
9	33	578	740	645	645	450	126	74	227	109	45	34
10	53	532	578	600	645	510	126	74	200	103	44	31
11	147	450	470	555	1,440	790	126	70	186	95	44	36
12	370	410	430	470	3,790	1,140	124	69	150	91	44	36
13	332	390	390	430	2,100	1,090	124	62	140	89	42	34
14	186	370	350	390	2,300	940	124	62	133	89	42	34
15	95	430	315	510	3,070	840	120	62	131	116	42	44
16	76	1,740	285	450	1,740	790	114	60	147	107	42	39
17	72	1,260	255	1,090	1,090	740	107	60	150	91	40	39
18	62	890	241	1,560	840	600	103	60	165	89	40	36
19	59	740	227	1,560	645	510	103	60	214	97	39	34
20	59	740	200	1,320	532	450	103	65	200	95	38	31
21	56	555	241	990	470	390	101	74	173	85	38	29
22	53	430	227	740	390	332	95	64	152	75	38	29
23	59	390	300	645	370	300	95	60	142	75	38	29
24	83	370	450	532	332	285	99	60	133	71	36	29
25	83	332	645	490	370	255	126	74	133	69	38	29
26	136	300	510	600	350	227	124	81	129	64	38	27
27	332	285	600	1,140	370	214	116	62	126	62	38	30
28	255	255	840	1,090	390	200	114	173	122	61	40	35
29	450	255	1,090	1,140	-	186	111	332	116	57	48	31
30	578	430	990	990	-	170	109	200	111	57	39	29
31	940	-	1,140	840	-	163	-	152	-	57	51	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	4,825	940	28	156	2.36	2.72	9,570
November	19,897	1,740	255	663	10.0	11.16	39,470
December	20,234	1,560	200	653	9.89	11.40	40,130
Calendar year 1938	125,952	2,370	24	345	5.23	70.91	249,800
January	31,687	2,650	390	1,022	15.5	17.87	62,850
February	28,559	3,790	332	1,020	15.5	16.14	56,650
March	15,738	1,140	163	508	7.70	8.88	31,220
April	3,613	152	95	120	1.82	2.03	7,170
May	2,788	332	60	89.9	1.36	1.57	5,530
June	4,796	241	103	160	2.42	2.70	9,510
July	2,923	152	57	94.3	1.43	1.65	5,800
August	1,353	54	38	43.6	.661	.76	2,680
September	1,065	57	27	35.5	.538	.60	2,110
Water year 1938-39	137,478	3,790	27	377	5.71	77.48	272,700

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.

Records available.- August 1927 to September 1939.

Average discharge.- 12 years, 991 second-feet.

Extremes.- Maximum discharge during year, 7,100 second-feet Feb. 13 (gage height, 7.10 feet); minimum, 30 second-feet Oct. 1 (gage height, 1.24 feet).
1927-39: Maximum discharge, about 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 except those for period of missing gage heights, Apr. 13-24, which were computed on basis of records for Chehalis River near Grand Mound and are fair. Splash dam 800 feet above gage no longer operating.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 13

1.2	26	2.5	312	5.0	2,870
1.4	50	3.0	620	6.0	4,600
1.7	98	3.5	1,060	7.0	6,850
2.0	164	4.0	1,600	8.0	9,600

Feb. 14 to Sept. 30

1.3	45	2.0	178
1.5	75	2.5	340
1.7	112	3.0	620

Note.- Same as preceding table above 3.2 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	853	1,030	4,120	2,260	997	436	213	372	176	79	72
2	38	739	2,420	5,120	1,900	1,110	420	207	316	173	79	86
3	42	1,780	3,580	4,900	1,720	1,360	415	204	279	204	75	99
4	40	2,400	3,160	4,400	1,540	1,440	415	204	312	218	73	86
5	42	1,440	2,590	3,490	1,600	1,260	380	201	400	218	72	80
6	41	916	2,400	2,590	2,080	1,200	352	204	466	218	69	72
7	37	662	2,020	2,080	2,590	1,230	336	201	430	207	67	69
8	36	654	1,720	1,900	2,400	1,140	336	196	390	194	65	65
9	41	1,140	1,540	1,720	1,900	1,020	348	188	400	176	62	59
10	66	1,440	1,380	1,540	1,540	961	352	181	390	161	61	56
11	136	1,050	1,140	1,370	2,370	1,180	340	171	344	150	61	56
12	514	808	997	1,230	5,550	1,900	336	161	308	139	59	56
13	534	680	871	1,100	6,850	2,330	320	152	279	124	61	56
14	431	604	782	997	6,120	2,140	310	147	262	120	61	61
15	201	549	696	1,020	5,890	1,960	300	143	265	134	61	91
16	133	2,010	620	1,100	5,780	1,900	280	143	230	134	59	73
17	104	2,940	549	1,720	3,750	1,840	280	145	265	152	58	64
18	86	2,140	499	2,520	2,460	1,660	270	150	282	130	55	62
19	75	1,600	458	3,160	1,900	1,440	270	161	320	152	55	61
20	68	1,540	452	3,240	1,540	1,220	260	166	360	136	52	59
21	65	1,380	513	2,590	1,300	1,060	260	188	290	120	51	58
22	62	1,110	520	2,020	1,120	943	260	213	262	108	51	56
23	62	925	646	1,660	1,080	844	250	296	252	102	48	55
24	71	782	871	1,440	997	781	250	213	236	101	49	55
25	79	680	1,250	1,340	988	718	272	204	227	95	53	52
26	126	588	1,340	1,220	997	660	296	201	224	93	62	52
27	408	513	1,250	1,780	934	599	265	201	218	88	67	48
28	392	458	1,780	2,330	943	544	233	370	207	86	73	46
29	427	414	2,330	2,460	-	514	221	652	196	82	79	45
30	987	520	2,140	2,870	-	484	221	754	186	82	72	45
31	1,110	-	2,020	2,800	-	460	-	490	-	80	73	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	6,486	1,110	32	209	12,860
November	33,315	2,940	414	1,110	66,080
December	43,564	3,580	452	1,405	86,410
Calendar year 1938	275,879	3,840	25	756	547,200
January	71,827	5,120	997	2,317	142,500
February	70,099	6,850	934	2,504	139,000
March	36,895	2,330	460	1,190	73,180
April	9,284	436	221	309	18,410
May	7,320	754	143	236	14,520
June	8,968	466	186	299	17,790
July	4,354	218	80	140	8,640
August	1,962	79	48	63.3	3,890
September	1,895	99	45	63.2	3,760
Water year 1938-39	295,969	6,850	32	811	587,000

Chehalis River near Grand Mound, Wash.

Location.- Water-stage recorder, lat. 46°47', long. 123°02', 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. Zero of gage is 123.27 feet above mean sea level (general adjustment of 1929).

Drainage area.- 928 square miles.

Records available.- October 1928 to September 1939.

Average discharge.- 11 years, 2,695 second-feet.

Extremes.- Maximum discharge during year, 24,800 second-feet Feb. 16 (gage height, 14.39 feet); minimum, 127 second-feet Oct. 1.
1928-39: 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.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1 to Jan. 3, July 1 to Sept. 30)

2.3	116	3.1	450	5.0	2,460	11.0	13,750
2.5	174	3.4	666	7.0	5,350	14.0	23,100
2.8	288	4.0	1,230	9.0	9,050		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	141	1,750	2,310	4,700	6,910	3,020	1,690	683	588	386	204	222
2	144	1,460	6,510	11,400	5,510	3,160	1,630	635	545	374	204	293
3	150	2,160	12,700	14,300	4,890	4,000	1,630	596	516	370	200	298
4	241	4,740	9,680	15,700	4,290	4,140	1,630	596	503	432	197	254
5	222	2,740	8,050	13,800	4,140	3,720	1,470	596	696	457	200	211
6	181	1,810	7,290	10,300	6,510	3,510	1,350	604	1,240	444	190	190
7	159	1,320	5,190	7,290	8,850	3,300	1,270	566	1,040	414	190	194
8	153	1,160	4,140	6,010	7,480	3,020	1,230	552	840	37[illegible]	190	184
9	144	1,690	3,720	4,890	5,670	2,740	1,240	538	804	358	190	174
10	144	2,320	3,230	4,140	4,440	2,530	1,250	523	795	336	181	165
11	187	1,810	2,670	3,860	4,290	2,740	1,190	490	708	317	190	162
12	481	1,430	2,260	3,510	15,300	3,860	1,150	476	635	30[illegible]	187	162
13	1,370	1,220	2,000	3,090	22,300	5,670	1,170	476	566	29[illegible]	197	165
14	1,060	1,220	1,750	2,810	19,100	5,670	1,090	457	530	28[illegible]	204	165
15	566	1,410	1,630	2,740	21,100	5,190	1,030	450	516	307	204	159
16	408	2,600	1,470	2,740	22,700	5,670	980	438	523	503	204	165
17	322	7,100	1,350	2,810	16,000	5,670	921	432	538	457	197	162
18	266	4,590	1,220	4,000	10,100	5,350	894	432	559	37[illegible]	197	156
19	241	3,160	1,170	7,100	7,100	4,890	876	457	831	341	187	153
20	222	2,810	1,120	7,670	5,350	4,440	885	483	970	33[illegible]	181	147
21	211	2,530	1,130	6,010	4,290	4,000	831	516	849	317	181	141
22	200	2,060	1,230	4,740	3,720	3,860	831	619	700	29[illegible]	184	138
23	200	1,750	1,240	4,000	3,440	3,720	813	588	619	273	171	136
24	197	1,510	1,360	3,720	3,020	3,580	777	530	581	26[illegible]	171	133
25	204	1,350	2,060	4,140	3,160	3,300	813	503	545	254	177	133
26	215	1,220	2,530	3,860	3,090	2,880	903	523	516	245	190	136
27	237	1,100	2,260	5,040	2,950	2,460	849	545	476	241	181	147
28	390	990	4,750	7,290	3,160	2,120	759	509	444	234	174	133
29	470	940	5,510	8,250	-	1,930	716	624	426	215	177	141
30	970	980	5,190	9,470	-	1,750	708	885	402	215	184	147
31	1,490	-	4,290	9,050	-	1,690	-	691	-	215	190	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	11,586	1,490	141	374	0.403	0.46	22,980
November	62,930	7,100	940	2,098	2.26	2.52	124,800
December	111,010	12,700	1,120	3,581	3.86	4.45	220,200
Calendar year 1938	805,915	17,600	111	2,208	2.38	32.31	1,599,000
January	198,430	15,700	2,740	6,401	6.90	7.96	393,600
February	228,860	22,700	2,950	8,174	8.81	9.17	453,900
March	113,580	5,670	1,690	3,664	3.95	4.55	225,300
April	32,576	1,690	708	1,086	1.17	1.30	64,610
May	17,013	885	432	549	.592	.68	33,740
June	19,501	1,240	402	650	.700	.78	38,680
July	10,232	503	215	330	.356	.41	20,290
August	5,874	204	171	189	.204	.24	11,650
September	5,166	298	133	172	.185	.21	10,250
Water year 1938-39	816,758	22,700	133	2,238	2.41	32.73	1,620,000

Satsop River near Satsop, Wash.

Location.- Water-stage recorder, lat. 47°00', long. 123°30', in sec. 36, T. 18 N., R. 7 W., 1 mile west of Satsop and 1½ miles upstream from mouth. Datum lowered 20.9 feet Mar. 19, 1938; zero of gage at mean sea level (general adjustment of 1929).

Drainage area.- 315 square miles.

Records available.- March 1929 to September 1939.

Average discharge.- 10 years, 1,980 second-feet.

Extremes.- Maximum discharge during year, 25,600 second-feet Jan. 1 (gage height, 33.91 feet), from rating curve extended above 10,000 second-feet; minimum, 182 second-feet Oct. 7, 8.

1929-39: Maximum discharge observed, 52,500 second-feet Jan. 22, 1935 (gage height, 38.9 feet, present datum, from floodmarks), from rating curve extended above 17,000 second-feet; minimum discharge, 166 second-feet Sept. 21, 1938.

Remarks.- Records excellent except those for period of missing gage heights, Feb. 7-17 (computed on basis of records for Chehalis River near Grand Mound), and those above 10,000 second-feet, which are poor. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 31				Jan. 1 to Sept. 30					
23.2	170	25.5	2,130	22.8	219	25.0	1,860	29.0	9,750
23.6	300	26.0	2,880	23.0	265	25.5	2,610	30.0	12,400
24.0	510	27.0	4,780	23.5	475	26.0	3,440	32.0	18,400
24.5	950	28.0	7,120	24.0	800	27.0	5,270	34.0	26,000
25.0	1,500	29.0	9,700	24.5	1,250	28.0	7,350		

Note.- Same as following table above 29.5 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	201	3,140	2,720	19,000	3,180	1,660	1,320	730	1,010	383	280	283
2	201	2,000	4,930	13,500	2,930	1,930	1,260	709	894	373	274	286
3	201	3,510	5,650	10,800	3,020	2,070	1,250	695	814	459	271	260
4	198	2,800	4,060	7,790	2,850	1,930	1,210	681	772	511	268	250
5	192	1,870	5,670	6,090	2,930	1,860	1,110	654	765	505	268	245
6	188	1,490	3,960	4,880	3,180	1,930	1,030	640	723	470	265	240
7	188	1,290	3,680	4,140	3,700	1,930	986	614	681	443	262	238
8	182	1,270	3,400	4,140	3,500	1,800	995	595	667	407	258	236
9	190	1,460	3,050	3,700	3,150	1,690	1,030	577	744	383	255	232
10	225	1,350	2,560	3,270	3,000	1,640	986	559	688	369	255	230
11	426	1,190	2,200	2,930	2,900	2,140	942	541	640	360	255	230
12	1,460	1,120	1,870	2,610	4,000	2,770	934	517	595	348	258	227
13	1,740	1,190	1,680	2,290	7,000	3,020	902	499	571	344	258	225
14	800	1,260	1,560	2,140	6,000	3,020	878	481	553	344	258	225
15	552	1,400	1,420	2,140	6,500	3,100	856	464	565	378	252	492
16	444	5,660	1,290	2,070	7,000	3,180	842	458	602	387	248	667
17	380	4,260	1,190	3,820	4,500	3,100	821	464	565	360	245	443
18	345	2,720	1,130	5,670	3,700	2,930	807	464	565	339	245	352
19	322	2,720	1,060	7,790	3,100	2,850	800	487	577	373	240	306
20	300	2,560	1,040	6,510	2,610	2,530	779	505	547	407	238	286
21	288	2,060	1,130	4,600	2,290	2,290	772	511	523	369	236	268
22	276	1,740	1,100	3,610	2,070	2,530	751	505	499	348	234	260
23	276	1,500	1,430	3,020	1,930	2,610	723	464	481	331	234	255
24	304	1,360	2,000	2,850	1,800	2,450	723	432	464	320	232	250
25	486	1,230	2,880	2,690	1,800	2,140	793	487	448	313	245	248
26	412	1,120	2,340	2,530	1,650	1,860	1,010	716	432	306	250	242
27	900	1,030	2,340	4,480	1,650	1,660	934	589	426	299	238	238
28	840	980	3,580	4,500	1,600	1,490	835	1,360	411	295	242	236
29	1,270	940	4,160	4,320	-	1,380	800	2,780	397	289	258	234
30	2,640	1,170	4,360	4,410	-	1,330	765	1,630	392	286	271	232
31	3,860	-	6,380	3,780	-	1,340	-	1,220	-	283	260	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	20,287	3,860	182	654	2.08	2.40	40,240
November	57,390	5,660	940	1,913	6.07	6.77	113,800
December	85,820	6,380	1,040	2,768	8.79	10.13	170,200
Calendar year 1938	609,537	10,600	182	1,670	5.30	71.99	1,209,000
January	156,070	19,000	2,070	5,035	16.0	18.45	309,600
February	93,540	7,000	1,600	3,341	10.6	11.04	185,500
March	68,160	3,180	1,330	2,199	6.98	8.05	135,200
April	27,844	1,320	723	928	2.95	3.29	55,230
May	22,028	2,780	432	711	2.26	2.61	43,690
June	18,011	1,010	392	600	1.90	2.12	35,720
July	11,382	511	283	367	1.17	1.35	22,580
August	7,853	280	232	253	.803	.93	15,580
September	8,416	667	225	281	.892	1.00	16,690
Water year 1938-39	576,801	19,000	182	1,580	5.02	68.14	1,144,000

Peak discharge.- Jan. 1 (2 p.m.) 25,600 sec.-ft.

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. 9 W., 1 mile downstream from Oxbow and 24 miles northeast of Aberdeen. Discharge measurements made 1½ miles upstream.

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

Records available.- May 1925 to September 1939.

Average discharge.- 14 years, 767 second-feet.

Extremes.- Maximum discharge during year, 13,300 second-feet Jan. 1 (gage height, 25.55 feet), from rating curve extended above 7,500 second-feet; minimum, 88 second-feet Oct. 7, 8, 9.

1925-39: Maximum discharge, about 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. Discharge Sept. 27-30 interpolated. No diversion or regulation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

2.0	90	4.0	305	8.0	1,340	14.0	3,960	22.0	10,000
2.5	122	5.0	520	9.0	1,650	16.0	5,350	23.0	10,900
3.0	171	6.0	770	10.0	1,990	18.0	6,750	24.0	11,800
3.5	229	7.0	1,050	12.0	2,810	20.0	8,350	26.0	13,700

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	1,850	2,130	9,960	824	496	693	439	532	222	166	134
2	93	1,160	2,170	6,030	770	544	693	428	473	216	160	126
3	93	1,950	1,680	4,300	744	556	744	406	439	271	154	118
4	93	1,220	2,310	2,530	693	496	668	406	417	354	149	115
5	93	880	2,980	1,990	693	484	580	374	406	324	144	112
6	90	693	1,650	1,590	668	462	532	354	396	279	144	112
7	88	668	1,620	1,430	618	450	520	354	374	256	139	108
8	88	643	1,400	1,310	568	428	568	354	374	236	139	108
9	93	630	1,340	1,190	532	417	606	364	374	229	134	105
10	147	556	1,050	1,110	496	417	556	385	354	216	134	105
11	490	484	880	992	1,370	428	532	385	334	210	130	105
12	2,370	484	770	880	3,250	450	508	396	334	204	130	105
13	921	484	693	770	1,880	508	473	439	324	204	130	105
14	462	568	630	718	1,780	508	450	462	305	204	130	130
15	324	694	580	824	1,850	544	428	450	334	242	126	550
16	264	3,100	532	770	1,340	668	417	406	344	242	126	342
17	222	1,490	496	1,600	1,110	744	439	396	305	216	122	229
18	198	1,160	462	2,580	964	852	508	344	305	229	122	188
19	182	1,310	428	3,150	824	908	532	314	305	296	122	166
20	166	1,140	428	1,880	744	824	532	305	296	264	118	144
21	154	850	417	1,370	668	908	544	334	279	242	118	134
22	149	718	428	1,140	618	1,220	484	324	271	229	115	128
23	149	643	718	964	568	1,280	439	296	264	216	115	122
24	302	580	990	992	556	1,250	428	279	256	210	115	118
25	326	520	1,300	880	544	1,110	532	429	249	198	118	118
26	392	473	824	974	508	880	744	496	242	193	118	115
27	718	439	992	1,820	496	744	643	374	236	188	115	113
28	484	417	1,220	1,430	462	668	593	2,150	236	182	122	111
29	2,090	417	1,850	1,340	-	618	556	1,390	229	176	160	109
30	2,960	1,430	2,930	1,140	-	618	484	824	229	171	130	107
31	2,710	-	3,140	936	-	668	-	643	-	166	130	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	17,004	2,960	88	549	33,730
November	27,681	3,100	417	923	54,900
December	39,038	3,140	417	1,259	77,430
Calendar year 1938	235,147	3,780	88	644	466,400
January	58,590	9,960	718	1,890	116,200
February	25,938	3,250	462	926	51,450
March	21,148	1,280	417	682	41,950
April	16,426	744	417	548	32,580
May	15,300	2,150	279	494	30,350
June	9,816	532	229	327	19,470
July	7,085	354	166	229	14,050
August	4,075	166	115	131	8,080
September	4,380	550	105	146	8,690
Water year 1938-39	246,481	9,960	88	675	488,900

Peak discharge.- Jan. 1 (7 a.m.) 13,300 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 December 1922, July to November 1924, September 1925 to November 1932, and May 1933 to September 1939 in reports of Geological Survey. October 1911 to September 1933 (monthly discharge only) in State Water-Supply Bulletin 5.

Average discharge.- 28 years (1911-39), 2,706 second-feet.

Extremes.- Maximum discharge during year, 27,600 second-feet Jan. 1 (gage height, 14.06 feet), from rating curve extended above 15,000 second-feet; minimum, 376 second-feet Oct. 9 (gage height, 2.16 feet).

1911-22, 1924-32, 1933-39: Maximum discharge, 37,000 second-feet Dec. 12, 1921 (gage height, 16.3 feet, former datum), from rating curve extended above 25,000 second-feet; minimum, 285 second-feet Sept. 20, 1924 (gage height, 0.74 foot, former datum).

Remarks.- Records excellent except those for period of missing gage heights, June 21 to July 17 (computed on basis of records for Queets River near Clearwater), those below 700 second-feet, and those above 10,000 second-feet, all of which are fair. No diversion; slight regulation caused by natural storage in lake.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

2.1	340	4.0	1,910	7.0	6,730	11.0	16,900
2.5	580	4.5	2,500	8.0	8,880	12.0	20,300
3.0	950	5.0	3,210	9.0	11,200	13.0	23,800
3.5	1,400	6.0	4,800	10.0	13,800	14.1	27,600

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	442	7,780	5,160	24,500	2,910	1,400	2,080	2,310	3,510	1,550	1,160	622
2	430	5,720	6,310	23,800	2,560	1,450	2,130	2,130	2,980	1,550	1,100	615
3	430	5,720	6,310	16,900	2,370	1,500	2,250	2,080	2,700	1,900	1,050	594
4	436	5,530	6,310	11,800	2,250	1,450	2,250	2,080	2,500	2,200	1,010	568
5	436	4,300	10,000	8,440	2,130	1,400	2,130	2,020	2,440	2,100	974	556
6	424	3,210	8,000	6,310	2,080	1,400	1,960	1,910	2,440	1,950	942	538
7	406	2,840	7,150	4,980	1,960	1,400	1,910	1,860	2,370	1,850	910	520
8	388	2,630	6,730	4,460	1,800	1,350	1,910	1,860	2,370	1,800	870	502
9	388	2,500	6,310	3,900	1,700	1,300	2,020	1,910	2,310	1,700	846	490
10	424	2,310	5,160	3,580	1,600	1,260	2,020	2,020	2,310	1,650	822	472
11	742	2,080	4,300	3,360	2,110	1,350	1,960	2,080	2,310	1,600	814	472
12	2,490	1,910	3,510	3,060	5,340	1,400	1,910	2,130	2,310	1,600	798	460
13	4,140	1,800	3,060	2,770	5,340	1,500	1,860	2,310	2,310	1,550	776	442
14	3,060	1,750	2,700	2,560	4,980	1,600	1,800	2,560	2,310	1,650	755	472
15	2,190	1,860	2,370	2,560	4,980	1,600	1,750	2,910	2,250	1,750	727	904
16	1,750	4,860	2,190	2,500	4,140	1,650	1,750	2,910	2,250	1,850	706	1,160
17	1,400	5,910	2,020	3,210	3,510	1,750	1,750	2,840	2,080	1,750	685	1,090
18	1,210	4,800	1,860	4,800	2,910	1,860	1,860	2,560	2,020	1,700	664	982
19	1,060	4,630	1,750	8,440	2,500	2,020	2,020	2,310	2,080	1,800	650	886
20	942	4,630	1,700	7,780	2,190	2,080	2,190	2,080	2,130	1,750	622	798
21	862	3,980	1,700	5,910	1,960	2,130	2,310	2,020	2,100	1,650	608	734
22	790	3,280	1,650	4,460	1,800	2,500	2,310	2,020	2,000	1,600	594	678
23	762	2,770	1,860	3,740	1,650	3,060	2,250	1,960	1,850	1,550	580	629
24	838	2,370	2,250	3,280	1,600	3,360	2,130	1,910	1,650	1,550	568	587
25	1,010	2,130	3,210	2,980	1,600	3,510	2,130	1,960	1,550	1,500	574	562
26	1,090	1,960	3,060	2,700	1,500	3,280	2,310	2,310	1,550	1,500	574	544
27	1,600	1,860	3,140	3,360	1,450	2,840	2,370	2,310	1,550	1,450	562	520
28	1,650	1,750	3,580	3,740	1,350	2,440	2,500	4,160	1,550	1,450	568	502
29	2,940	1,700	4,140	3,900	-	2,250	2,560	7,150	1,600	1,350	587	484
30	6,310	2,380	6,180	3,740	-	2,080	2,500	5,720	1,600	1,300	594	472
31	8,440	-	11,800	3,360	-	2,020	-	4,460	-	1,210	608	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	49,480	8,440	388	1,596	6.05	6.98	98,140
November	100,950	7,780	1,700	3,365	12.7	14.17	200,200
December	135,470	11,800	1,650	4,370	16.6	19.14	268,700
Calendar year 1938	845,697	11,800	328	2,317	8.78	119.19	1,677,000
January	190,880	24,500	2,500	6,157	23.3	26.86	378,600
February	72,270	5,340	1,350	2,581	9.78	10.18	143,300
March	60,190	3,510	1,260	1,942	7.36	8.48	119,400
April	62,880	2,560	1,750	2,096	7.94	8.86	124,700
May	80,850	7,150	1,860	2,608	9.88	11.39	160,400
June	64,980	3,510	1,550	2,166	8.20	9.15	128,900
July	51,360	2,200	1,210	1,657	6.28	7.24	101,900
August	23,298	1,160	562	752	2.85	3.29	46,210
September	18,855	1,160	442	628	2.38	2.66	37,400
Water year 1938-39	911,463	24,500	388	2,497	9.46	128.40	1,808,000

Peak discharge.- Jan. 1 (4:30 to 5 p.m.) 27,600 sec.-ft.

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 mouth of Clearwater River and 4 miles southwest of Clearwater. Zero of gage is 14.5 feet above mean sea level (river profile survey).

Drainage area.- 454 square miles.

Records available.- September 1930 to September 1939.

Extremes.- Maximum discharge during year, 57,600 second-feet Jan. 1 (gage height, 20.29 feet), from rating curve extended above 30,000 second-feet; minimum, 401 second-feet Oct. 8, 9.

1930-39: Maximum discharge, about 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 tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1-12				Oct. 12 to Sept. 30			
4.8	395	8.0	4,250	4.6	405	9.0	6,830
5.0	520	8.5	5,250	5.0	655	10.0	9,310
5.5	890	9.0	6,320	5.5	1,060	12.0	15,600
6.0	1,320	10.0	8,700	6.0	1,600	14.0	23,400
6.5	1,870	11.0	11,600	6.5	2,250	16.0	32,800
7.0	2,550	12.0	15,000	7.0	2,980	18.0	43,700
7.5	3,350			8.0	4,780	20.3	57,600

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	572	8,520	11,300	46,400	4,880	3,110	2,530	2,040	3,060	1,560	1,100	961
2	514	5,580	11,600	31,300	4,380	3,820	2,460	1,920	2,680	1,470	1,040	755
3	533	14,000	8,940	23,500	4,380	3,820	3,300	1,920	2,460	2,280	1,060	662
4	627	7,540	12,000	14,200	3,910	3,060	2,680	2,110	2,460	3,300	1,060	641
5	546	5,180	16,600	10,400	4,980	2,760	2,250	1,980	2,980	2,760	1,020	634
6	474	4,100	9,580	7,780	4,680	2,900	2,040	1,720	2,680	2,460	952	613
7	437	4,000	11,900	7,080	4,000	3,060	1,980	1,850	2,460	2,110	898	578
8	413	4,480	10,100	6,860	3,380	2,760	2,250	1,780	2,460	1,920	872	566
9	419	4,480	9,040	6,210	2,900	2,390	2,760	1,850	2,460	1,780	880	559
10	869	3,560	6,420	5,790	2,680	2,530	2,390	1,780	2,320	1,720	889	546
11	3,930	2,980	5,080	5,380	15,100	4,000	2,110	1,850	2,180	1,720	872	540
12	14,300	2,830	4,280	4,680	23,100	4,100	2,250	1,780	2,110	1,580	840	514
13	6,450	2,830	3,730	4,190	11,300	4,580	1,980	1,980	2,040	1,490	808	514
14	3,140	3,060	3,220	3,730	11,900	4,280	1,850	2,250	1,980	1,520	778	752
15	2,180	4,360	2,900	4,680	10,400	4,280	1,780	2,320	1,980	2,620	748	6,490
16	1,660	21,700	2,600	4,480	7,080	4,100	1,720	2,040	2,110	2,600	725	3,060
17	1,380	9,640	2,320	11,400	5,580	4,100	1,780	2,110	1,780	1,980	704	1,600
18	1,210	7,540	2,110	14,300	4,880	4,190	2,040	1,720	2,040	1,850	697	1,180
19	1,080	9,040	1,980	18,600	4,190	4,000	2,040	1,450	2,390	2,600	683	970
20	988	7,310	1,920	11,600	3,560	3,560	2,040	1,370	2,180	2,110	676	880
21	934	5,380	2,680	7,540	3,140	3,560	2,110	1,500	1,980	1,850	662	824
22	880	4,380	2,530	6,000	2,830	4,480	1,920	1,660	1,980	1,850	669	778
23	979	3,640	6,280	5,180	2,600	4,680	1,720	1,480	1,850	1,780	669	740
24	1,970	3,140	7,820	5,580	2,530	4,680	1,660	1,370	1,660	1,720	648	690
25	2,230	2,760	9,720	4,880	3,060	4,480	2,140	1,780	1,540	1,600	648	655
26	2,770	2,530	5,580	4,910	2,530	3,560	3,140	2,600	1,500	1,600	655	627
27	4,870	2,320	7,730	9,310	2,460	2,980	3,220	1,920	1,660	1,580	620	606
28	2,900	2,110	8,780	8,520	2,320	2,600	2,760	11,100	1,660	1,520	641	585
29	9,180	2,110	9,850	9,850	-	2,390	2,760	8,590	1,660	1,380	778	566
30	14,600	5,960	24,000	7,780	-	2,320	2,390	5,180	1,720	1,250	697	559
31	12,900	-	29,200	6,210	-	2,460	-	3,820	-	1,200	762	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	95,935	14,600	413	3,095	6.82	7.86	190,300
November	167,060	21,700	2,110	5,569	12.3	13.72	331,400
December	251,790	29,200	1,920	8,122	17.9	20.64	499,400
Calendar year 1938	1,237,334	29,200	401	3,390	7.47	101.38	2,454,000
January	318,320	46,400	3,730	10,270	22.6	26.06	631,400
February	158,730	23,100	2,320	5,669	12.5	13.02	314,800
March	109,590	4,680	2,320	3,535	7.79	8.98	217,400
April	68,050	3,300	1,660	2,268	5.00	5.58	135,000
May	78,820	11,100	1,370	2,543	5.60	6.46	156,300
June	64,020	3,060	1,500	2,134	4.70	5.24	127,000
July	58,760	3,300	1,200	1,895	4.17	4.81	116,500
August	24,751	1,100	620	798	1.76	2.03	49,090
September	29,645	6,490	514	988	2.18	2.43	58,800
Water year 1938-39	1,425,471	46,400	413	3,905	8.60	116.83	2,827,000

Peak discharge.- Jan. 1 (8 a.m.) 57,600 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 1939. October 1931 to September 1932, at site a quarter of a mile upstream.

Extremes.- Maximum discharge during year, 26,200 second-feet Jan. 1 (gage height, 14.44 feet), from rating curve extended above 6,000 second-feet on basis of velocity-area studies; minimum, 92 second-feet Oct. 8.

1931-32, 1937-39: Maximum discharge, 29,200 second-feet Oct. 28, 1937 (gage height, 14.90 feet), from rating curve extended above 6,000 second-feet on basis of velocity-area studies; 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 good except those for period of reconstruction of well, June 21 to July 6 (determined from one or two gage readings daily), and those above 8,000 second-feet, which are poor. Discharge Sept. 18-22 interpolated. No diversion or regulation.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	141	2,740	3,080	19,000	1,630	1,020	584	496	853	271	208	271
2	113	1,780	3,790	11,600	1,410	1,360	566	445	730	302	202	175
3	125	5,080	2,650	8,420	1,370	1,370	921	429	630	530	191	140
4	157	2,540	4,350	4,770	1,230	1,060	660	496	670	908	180	130
5	141	1,640	5,470	3,320	1,690	963	557	462	631	700	175	126
6	116	1,210	3,420	2,350	1,620	996	504	413	670	660	170	126
7	104	1,280	3,920	2,210	1,360	1,050	479	437	602	557	165	118
8	95	1,420	3,520	2,070	1,100	941	557	389	593	479	160	110
9	107	1,420	3,020	1,870	952	842	710	358	593	421	155	106
10	362	1,130	2,140	1,740	842	928	602	337	513	373	150	102
11	1,340	902	1,620	1,630	8,810	1,380	539	316	470	344	145	106
12	5,770	860	1,310	1,400	10,300	1,410	575	309	429	309	145	102
13	1,840	830	1,100	1,220	4,440	1,630	504	295	405	295	145	110
14	895	924	941	1,090	4,660	1,610	462	289	373	302	140	308
15	618	1,610	831	1,520	3,720	1,630	421	277	413	760	135	2,300
16	502	9,230	740	1,420	2,520	1,540	397	271	445	602	130	983
17	418	3,200	660	4,280	1,860	1,480	381	365	397	488	130	530
18	360	2,540	602	5,400	1,610	1,470	381	295	470	479	126	475
19	330	2,970	548	7,040	1,310	1,330	365	271	504	602	130	421
20	300	2,250	557	4,140	1,120	1,160	344	277	421	496	126	366
21	276	1,520	864	2,540	974	1,120	337	295	381	429	122	312
22	254	1,130	855	1,890	864	1,290	316	309	344	397	122	257
23	312	880	2,470	1,550	790	1,280	295	283	351	358	118	202
24	687	720	3,470	1,720	790	1,260	323	259	337	330	118	196
25	598	593	3,630	1,470	919	1,110	522	419	289	309	118	180
26	849	522	2,140	1,630	770	897	800	530	295	289	118	175
27	1,270	470	3,370	3,220	750	770	820	365	337	271	114	165
28	902	407	3,520	3,020	680	680	660	3,470	295	253	130	160
29	2,800	394	3,920	3,720	-	620	680	2,450	271	241	180	155
30	4,820	1,390	13,900	2,820	-	602	575	1,490	309	230	150	155
31	4,570	-	13,000	2,170	-	593	-	1,090	-	218	202	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	31,172	5,770	95	1,006	61,830
November	53,582	9,230	394	1,786	106,300
December	95,408	13,900	548	3,078	189,200
Calendar year 1938	384,009	13,900	62	1,052	761,600
January	112,240	19,000	1,090	3,621	222,600
February	60,091	10,300	680	2,146	119,200
March	35,392	1,630	593	1,142	70,200
April	15,837	921	295	528	31,410
May	18,187	3,470	259	587	36,070
June	14,221	853	271	474	28,210
July	13,203	908	218	426	26,190
August	4,600	208	114	148	9,120
September	9,062	2,300	102	302	17,970
Water year 1938-39	462,995	19,000	95	1,268	918,300

Peak discharge.- Jan. 1 (6:15 a.m.) 26,200 sec.-ft.

Hoh River near Spruce, Wash.

Location.- Water-stage recorder, lat. 47°48', long. 124°06', in sec. 34, T. 27 N., R. 11 W., 2¾ miles downstream from Spruce and 5 miles downstream from South Fork.

Drainage area.- 193 square miles.

Records available.- August 1926 to September 1939.

Average discharge.- 13 years, 1,967 second-feet.

Extremes.- Maximum discharge during year, 20,200 second-feet Jan. 1 (gage height, 14.92 feet), from rating curve extended above 8,000 second-feet on basis of velocity-area studies; minimum, 489 second-feet Oct. 8 (gage height, 1.29 feet).

1926-39: Maximum discharge, about 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 above 4,000 second-feet, which are fair. No diversion or artificial regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 1						Jan. 1 to Sept. 30					
1.3	489	3.5	1,440	7.0	4,950	1.4	570	3.5	1,500	8.0	6,360
1.5	550	4.0	1,780	8.0	6,360	1.7	670	4.0	1,850	10.0	9,700
2.0	725	4.5	2,160	10.0	9,700	2.0	785	5.0	2,690	12.0	13,500
2.5	930	5.0	2,610			2.5	995	6.0	3,740	14.0	17,800
3.0	1,170	6.0	3,700			3.0	1,240	7.0	4,960	15.0	20,400

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	785	3,010	4,690	16,200	1,700	995	1,560	1,290	1,930	1,700	1,290	928
2	865	2,240	4,430	10,600	1,630	1,090	1,630	1,240	1,700	1,560	1,290	825
3	865	4,450	3,460	8,470	1,500	1,060	2,170	1,290	1,630	2,130	1,440	885
4	745	2,810	5,530	5,790	1,390	972	1,700	1,390	1,630	2,420	1,440	950
5	615	2,080	6,910	4,330	1,440	950	1,440	1,260	1,850	2,090	1,390	928
6	566	1,710	4,430	3,300	1,390	950	1,290	1,190	1,770	1,850	1,220	785
7	534	1,740	5,650	3,090	1,290	928	1,290	1,220	1,700	1,630	1,120	705
8	519	1,850	5,090	2,890	1,190	885	1,390	1,290	1,770	1,560	1,140	765
9	632	1,640	4,300	2,510	1,090	845	1,560	1,340	1,700	1,630	1,290	785
10	1,230	1,380	3,010	2,420	1,040	865	1,390	1,390	1,700	1,700	1,390	745
11	2,060	1,240	2,510	2,330	3,010	972	1,290	1,390	1,700	1,770	1,340	705
12	5,350	1,200	2,160	2,090	5,180	995	1,260	1,500	1,770	1,560	1,260	618
13	2,330	1,140	1,920	1,850	3,300	1,060	1,190	1,770	1,850	1,560	1,160	570
14	1,320	1,140	1,710	1,770	3,190	1,040	1,140	2,170	1,700	1,560	1,090	600
15	998	1,650	1,540	1,930	3,090	1,090	1,120	2,250	1,770	2,520	1,020	1,860
16	825	5,930	1,380	1,770	2,420	1,220	1,090	2,010	1,560	2,260	950	1,380
17	745	3,460	1,300	3,390	2,010	1,440	1,160	1,930	1,390	1,700	928	1,060
18	668	2,810	1,220	4,960	1,850	1,630	1,390	1,500	1,700	1,670	905	865
19	632	3,580	1,140	5,930	1,560	1,630	1,440	1,290	1,930	2,010	950	805
20	615	2,910	1,100	4,090	1,440	1,560	1,440	1,220	2,010	1,560	995	905
21	615	2,240	1,140	2,990	1,290	1,770	1,560	1,240	1,850	1,560	1,060	995
22	582	1,850	1,140	2,510	1,220	2,330	1,440	1,240	2,010	1,770	1,140	905
23	685	1,640	1,740	2,170	1,140	2,510	1,340	1,240	1,850	1,850	1,090	845
24	1,240	1,440	2,360	2,170	1,090	2,600	1,290	1,220	1,560	1,930	1,060	765
25	1,060	1,320	2,560	1,930	1,090	2,600	1,390	1,590	1,390	1,930	995	705
26	1,970	1,240	1,850	2,100	1,020	2,010	1,500	2,010	1,390	2,010	928	688
27	1,860	1,220	2,500	2,990	995	1,700	1,700	1,630	1,560	2,170	928	745
28	1,560	1,140	2,610	2,890	928	1,500	1,700	6,160	1,700	2,090	885	652
29	5,980	1,140	3,120	2,790	-	1,340	1,850	5,060	1,930	1,700	928	600
30	5,780	3,170	6,960	2,330	-	1,340	1,440	3,190	2,010	1,560	845	600
31	4,690	-	9,050	2,010	-	1,440	-	2,330	-	1,440	905	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	49,031	5,980	519	1,582	8.20	9.45	97,250
November	64,370	5,930	1,140	2,146	11.1	12.38	127,700
December	98,510	9,050	1,100	3,178	16.5	19.02	195,400
Calendar year 1938	615,245	9,050	519	1,686	8.74	118.60	1,220,000
January	116,590	16,200	1,770	3,761	19.5	22.48	231,300
February	49,483	5,180	928	1,767	9.16	9.54	98,150
March	43,317	2,600	845	1,397	7.24	8.35	85,920
April	43,150	2,170	1,090	1,438	7.45	8.31	85,590
May	56,840	6,160	1,190	1,834	9.50	10.95	112,700
June	52,010	2,010	1,390	1,734	8.98	10.02	103,200
July	56,450	2,520	1,440	1,821	9.44	10.88	112,000
August	34,372	1,440	845	1,109	5.75	6.63	68,180
September	25,169	1,860	570	839	4.35	4.85	49,920
Water year 1938-39	689,292	16,200	519	1,888	9.78	132.86	1,367,000

Peak discharge.- Jan. 1 (5:50 a.m.) 20,200 sec.-ft.

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 1939.

Average discharge.- 10 years, 644 second-feet.

Extremes.- Maximum discharge during year, 11,200 second-feet Jan. 1 (gage height, 9.73 feet), from rating curve extended above 3,000 second-feet; minimum, 62 second-feet Oct. 8, 9 (gage height, 1.13 feet).

1917-21, 1933-39: Maximum discharge, 24,300 second-feet Dec. 21, 1937 (gage height, 14.9 feet), from rating curve extended above 5,000 second-feet; minimum, 58 second-feet Sept. 29, Oct. 2, 3, 1918 (gage height, 0.48 foot, former datum).

Remarks.- Records excellent except those for periods of missing gage heights, Jan. 18 to Feb. 10, Feb. 23 to Mar. 8, May 31 to June 15 (computed on basis of records for Hoh River near Spruce), and those above 3,000 second-feet, which are poor. No diversion or regulation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 13-26)

1.1	59	1.7	157	3.0	610	5.0	2,250	8.0	7,390
1.3	81	2.0	230	3.5	910	6.0	3,610	10.0	12,000
1.5	114	2.5	396	4.0	1,300	7.0	5,350		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	820	1,600	8,680	550	280	605	454	600	367	194	100
2	67	575	1,600	4,670	480	310	646	430	550	350	187	94
3	75	1,390	1,340	3,240	420	300	960	438	500	430	185	93
4	75	850	2,690	1,880	380	290	706	494	500	442	180	92
5	69	595	2,910	1,380	400	270	575	430	550	407	175	90
6	65	473	1,520	1,060	360	270	511	392	500	364	171	92
7	64	511	1,700	1,020	330	250	498	396	500	339	159	88
8	62	507	1,520	1,020	300	230	556	419	500	322	155	86
9	62	442	1,300	910	270	212	616	430	500	325	153	82
10	943	378	945	860	250	217	538	423	500	325	150	81
11	374	339	790	820	1,070	230	498	438	500	315	146	82
12	1,600	322	664	730	1,780	225	465	473	500	288	142	81
13	524	318	585	658	960	225	434	575	550	281	139	80
14	259	346	528	600	910	220	426	730	500	278	137	82
15	185	518	477	622	850	233	411	730	500	482	133	184
16	150	2,410	442	565	676	298	396	646	415	426	129	137
17	129	1,260	415	1,250	580	378	426	634	385	328	124	103
18	112	910	389	1,700	515	454	538	486	490	318	118	92
19	103	1,220	371	2,000	457	528	542	415	502	360	112	87
20	96	910	353	1,100	419	565	565	389	469	308	110	82
21	92	670	350	900	392	762	622	407	457	285	109	81
22	87	551	342	750	367	1,100	575	411	477	285	107	79
23	87	481	469	700	340	1,220	502	396	434	281	105	77
24	149	434	685	700	320	1,340	465	389	382	275	103	75
25	180	400	757	600	300	1,180	494	490	356	262	101	74
26	356	378	528	650	280	850	570	556	356	250	101	73
27	515	367	738	1,000	260	670	646	465	382	247	98	71
28	332	356	760	950	250	565	610	2,580	396	236	101	71
29	1,450	353	1,060	900	-	502	634	1,370	419	222	110	71
30	1,420	871	3,790	750	-	494	524	820	411	212	101	70
31	1,380	-	4,430	650	-	556	-	650	-	204	100	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off: Inches	Run-off: Acre-feet
October	11,130	1,600	62	359	4.54	5.23	22,080
November	19,955	2,410	318	665	8.42	9.39	39,580
December	36,048	4,430	342	1,163	14.7	16.95	71,500
Calendar year 1938	185,717	4,430	62	509	6.44	87.41	368,400
January	43,335	8,680	565	1,398	17.7	20.41	85,950
February	14,486	1,780	250	517	6.54	6.81	28,730
March	15,224	1,340	212	491	6.22	7.17	30,200
April	16,574	980	396	552	6.99	7.80	32,870
May	18,356	2,580	389	592	7.49	8.64	36,410
June	14,081	600	356	469	5.94	6.63	27,930
July	9,814	482	204	317	4.01	4.62	19,470
August	4,135	194	98	133	1.68	1.94	8,200
September	2,650	184	70	88.3	1.12	1.25	5,260
Water year 1938-39	205,788	8,680	62	564	7.14	96.84	408,200

Peak discharge.- Dec. 30 (9:40 p.m.) 6,550 sec.-ft.; Jan. 1 (5, 6 a.m.) 11,200 sec.-ft.

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 McDonald Bridge, 7 miles upstream from mouth and 8 miles southwest of Port Angeles. Zero of gage is 200.00 feet above mean sea level (general adjustment of 1929).

Drainage area.- 202 square miles.

Records available.- October 1897 to December 1901, October 1918 to September 1939.

Average discharge.- 25 years, 1,464 second-feet, adjusted for storage since April 1927.

Extremes.- Maximum discharge during year, 17,100 second-feet Jan. 1 (gage height, 19.0 feet), from rating curve extended logarithmically above 4,000 second-feet; minimum, 8 second-feet (regulated) Oct. 3, 4; minimum daily discharge, 10 second feet (regulated) Oct. 3.

1897-1901, 1918-39: Maximum discharge, 26,700 second-feet Dec. 21, 1933 (gage height, 10.5 feet, former site and datum, from floodmarks), computed on basis of spillway and turbine records at Glines Canyon Reservoir; minimum daily discharge, that of Oct. 3, 1938.

Remarks.- Records good except those below 400 second-feet, which are fair, and those above 5,000 second-feet, which are poor. Shifting-control method used Oct. 30 to Jan. 1, Apr. 14 to July 19, and Aug. 8 to Sept. 30. Flow affected by regulation in Glines Canyon Reservoir. Glines Canyon Reservoir on Elwha River, lat. 48°00'05", long. 123°41'05", 4 miles north of Elwha, completed in 1927 for development of power. Usable capacity, 38,650 acre-feet at elevation 610 feet. Change in contents determined from average of two staff gage readings daily. Flow that is diverted through Glines Canyon powerhouse is returned to river upstream from gage. Reservoir gage heights furnished by Crown-Zellerbach Corporation.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	1,440	1,430	*11,600	1,120	1,150	1,160	1,680	1,540	1,520	1,050	681
2	*13	1,180	1,690	7,450	1,010	1,030	*1,530	1,550	1,500	*1,380	1,080	606
3	10	1,300	1,560	5,290	1,030	1,040	1,730	1,600	1,480	1,410	1,100	*381
4	554	1,340	*2,380	3,680	1,030	644	1,580	1,600	*1,470	1,470	1,080	54
5	1,030	1,200	4,070	2,610	*1,020	*148	1,460	1,550	1,350	1,470	1,010	398
6	996	*475	2,180	2,350	1,040	148	1,300	1,300	1,430	1,420	*685	703
7	968	604	3,110	2,200	994	736	1,330	*1,360	1,550	1,330	666	734
8	953	882	2,870	*1,990	1,060	1,070	1,320	1,310	1,430	1,240	803	760
9	*374	942	2,390	1,920	1,070	1,080	*1,130	1,470	1,190	*1,050	766	762
10	16	992	1,960	1,800	1,030	1,100	1,230	1,640	1,280	1,110	838	*532
11	22	986	*1,670	1,670	1,070	1,130	1,300	1,840	*1,390	1,200	812	56
12	72	880	1,470	1,550	*1,450	*824	1,240	1,740	1,510	1,350	738	404
13	746	*331	1,340	1,510	1,430	142	1,190	1,710	1,550	1,280	*374	596
14	1,090	548	1,220	1,480	1,510	133	1,080	*1,760	1,600	1,280	478	544
15	1,060	932	1,230	*1,340	1,430	139	1,110	2,660	1,550	1,430	794	532
16	*482	1,070	1,160	1,300	1,290	263	*1,190	2,510	1,350	*1,430	708	630
17	31	1,220	1,130	1,460	1,140	408	1,200	2,410	1,310	1,290	658	*228
18	686	1,230	*1,120	2,130	1,080	405	1,200	1,900	*1,470	1,150	666	353
19	1,020	1,290	1,110	2,900	*1,040	*246	1,330	1,790	1,600	1,100	578	422
20	1,000	*888	1,140	2,000	918	848	1,550	1,590	1,550	1,080	*378	444
21	953	972	1,130	1,790	963	1,150	1,630	*1,640	1,550	1,050	368	451
22	978	961	1,130	*1,640	1,030	1,440	1,680	1,680	1,620	1,110	674	406
23	*470	963	1,060	1,450	1,040	1,720	*1,640	1,640	1,540	*1,160	676	404
24	24	956	468	1,410	1,020	1,950	1,600	1,640	1,390	1,320	668	*208
25	18	920	*86	1,390	967	2,110	1,550	1,640	*1,300	1,240	642	316
26	20	859	1,000	1,340	*916	*1,600	1,510	1,850	1,330	1,270	601	497
27	200	*388	1,110	1,480	1,000	1,390	1,470	1,940	1,460	1,340	*338	548
28	332	614	1,040	1,490	1,150	1,510	1,390	*4,150	1,370	1,320	381	512
29	1,330	948	1,050	*1,360	-	1,390	1,560	3,380	1,460	1,100	610	502
30	*2,170	1,030	2,220	1,260	-	1,230	*1,680	2,020	1,670	*1,100	649	520
31	1,730	-	4,270	1,290	-	1,080	-	1,740	-	1,130	682	-

Month	Observed				Change in contents in Glines Canyon Reservoir (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	2,170	10	625	38,410	+5,310	43,720	711	2.71	3.12
November	1,440	331	945	56,210	-1,490	54,720	920	3.51	3.92
December	4,270	86	1,639	100,700	+1,190	101,900	1,657	6.32	7.29
Calendar year 1938	4,270	10	1,335	966,400	+2,850	969,300	1,339	5.11	69.37
January	11,600	1,260	2,391	147,000	+250	147,200	2,394	9.14	10.54
February	1,510	916	1,102	61,190	-2,620	58,570	1,055	4.03	4.20
March	2,110	133	944	58,020	+1,940	59,960	975	3.72	4.29
April	1,730	1,080	1,396	83,050	+680	83,730	1,407	5.37	5.99
May	4,150	1,300	1,880	115,600	+350	116,000	1,887	7.20	8.30
June	1,670	1,190	1,460	86,860	0	86,860	1,460	5.57	6.21
July	1,520	1,050	1,262	77,610	-90	77,520	1,261	4.81	5.54
August	1,100	338	695	42,750	-1,790	40,960	666	2.54	2.93
September	762	54	473	28,130	-2,370	25,760	433	1.65	1.84
Water year 1938-39	11,600	10	1,237	895,500	+1,360	896,900	1,239	4.73	64.17

Peak discharge.- Dec. 5 (12-12:30 a.m.) 6,470 sec.-ft.; Jan. 1 (7:30 a.m.) 17,100 sec.-ft.; May 28 4-4:50 p.m.) 6,760 sec.-ft.; peaks influenced by regulation.

*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 1939. July 1897 to July 1898, at site about 2 miles downstream. June 1923 to September 1930, at site half a mile downstream.

Extremes.- Maximum discharge during year, 3,850 second-feet Jan. 1 (gage height, 6.17 feet), from rating curve extended above 1,200 second-feet; minimum, 108 second-feet Sept. 30 (gage height, 2.52 feet).

1897-98, 1923-30, 1937-39: Maximum discharge, 5,380 second-feet Dec. 28, 1937 (gage height, 6.85 feet), from rating curve extended above 1,200 second-feet; minimum observed, 77 second-feet Sept. 10, 1928.

Remarks.- Records excellent except those above 1,200 second-feet, which are poor. Discharge for Nov. 4-7, July 17-19 interpolated. Discharge for period of missing gage heights, Nov. 13-15, computed on basis of records for Dosewallips River near Brinnon. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 1

2.5	106	4.0	770
2.7	129	4.5	1,250
3.0	202	5.0	1,870
3.5	435	5.5	2,650

Jan. 2 to Sept. 30

3.0	201	4.5	1,120
3.5	410	5.0	1,710
4.0	670		

Note.- Same as preceding table below 2.9 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	129	280	350	2,560	192	149	370	338	414	437	250	156
2	131	221	262	1,410	192	147	396	329	401	424	238	143
3	141	206	229	930	189	147	414	342	419	446	250	143
4	129	196	272	610	181	141	356	365	406	464	259	147
5	124	187	607	500	172	139	316	334	388	455	254	149
6	121	177	430	432	175	139	298	320	370	406	231	137
7	117	167	441	410	167	137	293	320	370	392	211	129
8	116	158	525	396	160	135	293	356	419	374	201	129
9	116	149	447	370	158	131	288	401	424	388	208	128
10	125	147	350	396	156	129	280	406	437	406	218	126
11	137	137	290	378	186	131	280	414	460	424	214	128
12	299	135	258	352	442	129	275	432	473	396	211	124
13	240	135	236	347	311	129	259	468	500	370	204	121
14	158	135	221	324	284	125	259	540	478	374	195	119
15	137	130	199	311	280	125	259	604	473	424	184	121
16	128	217	190	284	250	137	259	586	446	378	178	125
17	121	170	181	280	231	178	280	540	396	362	172	124
18	119	154	172	338	218	204	329	468	468	347	170	121
19	116	154	165	410	204	234	378	410	525	332	165	117
20	115	151	160	378	189	259	392	370	535	316	163	119
21	114	137	156	329	184	302	414	396	525	306	163	122
22	112	129	151	302	175	383	414	383	550	329	165	121
23	113	128	149	271	170	428	396	365	510	356	165	119
24	124	129	149	259	165	482	360	370	460	378	163	117
25	126	126	149	234	163	486	329	406	414	352	163	114
26	141	125	139	242	158	432	298	460	410	352	158	112
27	170	126	141	263	156	356	288	446	442	374	154	112
28	194	128	137	246	149	311	324	903	473	374	154	112
29	525	129	139	238	-	293	406	852	515	324	147	110
30	483	229	187	224	-	284	360	525	515	285	141	109
31	345	-	442	211	-	306	-	446	-	288	147	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	5,266	525	112	170	1.09	1.26	10,440
November	4,792	280	125	160	1.03	1.15	9,500
December	7,924	607	137	256	1.64	1.89	15,720
Calendar year 1938	134,234	1,230	112	368	2.36	32.03	266,200
January	14,235	2,560	211	459	2.94	3.39	28,230
February	5,657	442	149	202	1.29	1.34	11,220
March	7,108	486	125	229	1.47	1.70	14,100
April	9,935	414	259	329	2.11	2.35	19,560
May	13,895	903	320	448	2.87	3.31	27,560
June	13,616	550	370	454	2.91	3.25	27,010
July	11,636	464	288	375	2.40	2.77	23,080
August	5,896	259	141	190	1.22	1.41	11,690
September	3,754	156	109	125	.801	.89	7,450
Water year 1938-39	103,342	2,560	109	284	1.82	24.71	205,600

Peak discharge.- Jan. 1 (6:30 to 7:30 a.m.) 3,850 sec.-ft.; May 28 (7:30 to 7:50 p.m.) 1,460 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 1939.

Extremes.- Maximum discharge during year, 4,220 second-feet Jan. 1 (gage height, 6.50 feet); minimum, 97 second-feet Sept. 30 (gage height, 1.91 feet).

1930-39: Maximum discharge, about 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. No diversion or regulation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

1.9	95	3.5	690	5.5	2,670
2.2	152	4.0	1,050	6.0	3,380
2.5	233	4.5	1,500	6.5	4,220
3.0	420	5.0	2,030		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	133	532	718	3,070	246	176	480	420	505	490	252	162
2	139	386	548	1,920	246	174	500	420	495	480	246	144
3	142	480	434	1,400	233	171	500	452	520	515	268	150
4	125	377	592	970	224	166	434	470	490	532	276	154
5	116	304	1,040	746	218	162	390	429	470	485	259	152
6	112	262	630	594	215	159	365	411	470	416	236	133
7	107	246	748	542	206	157	361	416	475	398	215	125
8	105	233	837	515	198	152	373	465	526	390	215	131
9	114	218	704	460	192	148	373	526	505	416	227	129
10	152	200	520	452	187	148	361	542	564	438	233	127
11	181	187	424	429	256	148	361	554	588	460	227	127
12	530	181	377	398	500	146	349	588	630	416	227	118
13	264	174	341	373	361	146	330	704	660	403	215	114
14	164	171	315	353	337	142	333	872	618	390	200	114
15	137	169	286	337	333	144	337	900	588	465	190	144
16	125	333	268	315	304	162	341	816	495	398	179	144
17	116	262	255	337	282	203	365	684	460	345	174	133
18	112	224	246	447	265	230	447	564	564	341	171	122
19	109	233	233	576	249	259	520	475	606	349	164	116
20	107	221	224	475	236	279	542	434	612	322	166	123
21	105	195	218	411	227	357	606	480	618	318	174	137
22	104	179	212	373	218	480	588	465	642	349	179	127
23	114	174	206	337	212	559	526	456	570	373	171	122
24	152	169	212	322	203	654	465	460	500	381	174	118
25	139	162	212	293	195	642	424	526	447	369	174	112
26	204	157	195	300	190	515	403	612	456	377	159	109
27	218	157	203	315	187	429	394	542	505	394	159	114
28	298	157	195	304	179	386	434	1,480	554	377	154	110
29	1,190	171	212	304	-	361	515	1,200	642	326	154	104
30	1,220	627	319	282	-	357	452	746	594	300	144	102
31	718	-	769	262	-	398	-	576	-	282	159	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	7,552	1,220	104	244	2.60	3.00	14,980
November	7,541	627	157	251	2.67	2.98	14,960
December	12,693	1,040	195	409	4.35	5.02	25,180
Calendar year 1938	173,811	1,600	104	476	5.06	68.83	344,800
January	18,212	3,070	262	587	6.24	7.19	36,120
February	6,899	500	179	246	2.62	2.73	13,680
March	8,610	654	142	278	2.96	3.41	17,080
April	12,869	606	330	429	4.56	5.09	25,530
May	18,685	1,480	411	603	6.41	7.39	37,060
June	16,369	660	447	546	5.81	6.48	32,470
July	12,295	532	282	397	4.22	4.86	24,390
August	6,141	276	144	198	2.11	2.43	12,180
September	3,817	162	102	127	1.35	1.51	7,570
Water year 1938-39	131,683	3,070	102	361	3.84	52.09	261,200

Peak discharge.- Jan. 1 (8 a.m.) 4,220 sec.-ft.

Duckabush River near Brinnon, Wash.

(Formerly published as Duckabush River near Duckabush, Wash.)

Location.- Water-stage recorder, lat. 47°41'00", 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 (revised).

Records available.- June 1938 to September 1939. August 1910 to December 1911, staff gage at practically same site but different datum.

Extremes.- Maximum discharge during period June 1938 to September 1939, 4,960 second-feet Jan. 1 (gage height, 7.31 feet); minimum, 46 second-feet Oct. 8, 9.
1911-12, 1938-39: Maximum discharge, that of Jan. 1, 1939; minimum, that of Oct. 8, 9, 1938.

Remarks.- Records excellent. Staff gage read once or twice daily June 24 to Aug. 14, 1938. No diversion or regulation.

Rating tables, period June 1938 to September 1939 (gage height, in feet, and discharge, in second-feet)

June 24 to May 28

1.4	43	3.0	505	5.0	2,150
1.7	82	3.5	795	6.0	3,300
2.0	142	4.0	1,180	7.0	4,570
2.5	290	4.5	1,630	8.0	5,940

May 29 to Sept. 30

1.3	47	2.5	306
1.5	70	3.0	526
1.7	97	3.5	800
2.0	155		

Discharge, in second-feet, 1938-39

1938

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									-	530	166	76
2									-	486	154	77
3									-	*462	152	77
4									-	*437	149	76
5									-	413	149	74
6									-	458	144	72
7									-	467	*138	71
8									-	449	133	68
9									-	396	129	65
10									-	*381	*124	65
11									-	366	118	64
12									-	354	114	64
13									-	354	*111	62
14									-	370	*109	61
15									-	404	106	60
16									-	392	110	60
17									-	*371	116	60
18									-	350	116	60
19									-	321	106	71
20									-	302	100	92
21									-	310	100	104
22									-	298	95	80
23									-	283	91	68
24									736	*260	86	66
25									712	238	86	66
26									*679	224	86	62
27									646	215	86	59
28									646	204	84	56
29									670	187	80	56
30									604	176	79	58
31									-	*171	77	-

*Gage height missing; discharge interpolated.

Discharge, in second-feet, of Duckabush River near Brinnon, Wash., 1938-39--Continued

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	55	816	1,340	4,200	215	118	396	286	361	318	134	87
2	54	520	902	2,460	209	116	396	279	349	299	126	79
3	58	604	646	1,680	201	112	404	294	357	337	126	75
4	58	440	864	1,060	187	108	354	306	341	353	128	74
5	53	337	1,270	769	179	106	306	279	333	322	126	74
6	51	272	712	588	174	102	276	265	353	274	117	70
7	50	234	795	535	164	100	272	261	353	254	108	68
8	46	212	823	520	156	98	290	294	399	244	103	65
9	46	195	694	444	147	96	290	345	378	254	103	65
10	54	174	491	422	142	96	272	362	404	263	108	63
11	109	154	396	409	219	98	272	379	404	277	103	64
12	487	147	341	374	622	100	261	404	417	250	102	63
13	235	140	302	350	387	104	244	472	439	237	100	60
14	131	135	268	325	350	102	244	582	412	228	97	59
15	100	133	241	313	366	106	247	616	404	250	94	71
16	82	478	218	286	317	140	244	555	345	240	93	74
17	72	329	201	333	276	221	258	472	306	207	90	65
18	66	241	192	587	244	290	329	379	337	196	89	63
19	60	279	182	769	221	337	383	317	382	207	84	58
20	56	254	174	560	198	341	392	294	417	196	83	58
21	53	204	166	426	182	440	431	362	404	188	83	58
22	51	176	156	366	169	588	413	362	417	199	83	58
23	59	161	152	313	156	628	362	341	378	207	83	57
24	84	149	159	290	149	646	321	333	337	210	82	56
25	87	140	171	261	142	599	294	383	314	202	82	55
26	128	133	149	265	135	463	298	436	310	204	82	54
27	177	127	166	337	129	379	294	374	329	207	79	52
28	259	122	169	306	122	325	321	965	353	196	78	52
29	1,800	165	192	294	-	294	366	800	386	172	83	51
30	2,290	1,550	376	265	-	290	313	531	378	158	76	50
31	1,100	-	1,050	234	-	337	-	412	-	153	78	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
June 24-30	4,693	-	-	-	-	-	9,310
July	10,629	530	171	343	5.20	6.00	21,080
August	3,494	166	77	113	1.71	1.97	6,930
September	2,050	104	56	68.3	1.03	1.15	4,070
The period	-	-	-	-	-	-	41,390
October	8,011	2,290	46	258	3.91	4.51	15,890
November	9,021	1,550	122	301	4.56	5.09	17,890
December	13,958	1,340	149	450	6.82	7.86	27,690
Calendar year	-	-	-	-	-	-	-
January	20,341	4,200	234	656	9.94	11.46	40,350
February	6,158	622	122	220	3.33	3.47	12,210
March	7,880	646	96	254	3.85	4.44	15,630
April	9,543	431	244	318	4.82	5.38	18,930
May	12,740	965	261	411	6.23	7.18	25,270
June	11,097	439	306	370	5.61	6.26	22,010
July	7,302	353	153	236	3.58	4.13	14,480
August	3,003	134	76	96.9	1.47	1.70	5,960
September	1,898	87	50	63.3	.959	1.07	3,760
Water year 1938-39	110,952	4,200	46	304	4.61	62.55	220,100

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

Location.- Staff gage, lat. 47°31', long. 123°20', 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 1939.
Average discharge.- 15 years, 459 second-feet.
Extremes.- Maximum discharge during year, 8,580 second-feet Jan. 1 (gage height, 8.6 feet, from graph based on gage readings), from rating curve extended above 3,200 second-feet; minimum observed, 40 second-feet Sept. 30.
1924-39: Maximum discharge, about 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 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1-12				Oct. 13 to Sept. 30							
1.4	40	2.6	295	1.5	39	2.6	268	4.5	1,600	8.0	7,250
1.7	73	3.0	468	1.7	66	3.0	420	5.0	2,100	9.0	9,500
2.0	124	3.5	745	2.0	120	3.5	740	6.0	3,300		
2.3	196			2.3	186	4.0	1,140	7.0	5,150		

Note.- Same as following table above 3.95 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	51	*1,400	1,600	5,360	302	163	470	380	400	253	124	76
2	†50	*770	*1,670	2,770	268	174	530	380	400	238	118	74
3	†49	1,060	*1,390	2,000	253	174	590	400	400	285	120	74
4	†48	700	1,600	1,320	238	163	445	380	380	302	122	72
5	†47	500	1,900	900	238	174	445	360	380	268	124	71
6	†46	400	†1,500	700	224	174	420	340	380	224	141	63
7	45	340	1,100	590	211	163	380	321	360	224	120	60
8	45	321	940	590	198	141	400	360	380	211	112	59
9	43	302	900	560	186	141	400	420	360	224	112	59
10	†169	268	590	530	186	139	400	420	380	224	108	58
11	295	238	500	500	211	141	380	445	360	224	104	58
12	1,500	238	420	445	740	141	340	470	360	211	104	55
13	360	224	400	420	420	152	302	560	360	198	96	52
14	174	238	360	400	560	163	285	625	380	198	93	108
15	114	253	321	400	470	141	340	625	380	211	91	*110
16	98	*1,260	302	360	380	†182	321	625	340	211	89	66
17	82	660	285	625	340	224	400	560	302	186	86	59
18	76	445	268	†928	302	285	530	420	302	174	84	59
19	†68	530	253	1,230	285	340	530	360	321	198	82	53
20	60	470	238	1,060	253	380	590	360	321	†186	79	51
21	59	340	238	590	238	625	560	420	321	174	80	52
22	60	302	238	500	238	700	530	380	340	174	79	52
23	58	268	268	400	224	740	470	380	321	174	79	49
24	76	253	268	420	224	900	400	360	268	174	79	48
25	*100	238	321	360	198	980	380	400	253	174	77	48
26	*105	224	268	380	186	560	400	500	253	174	76	47
27	238	224	340	500	186	470	470	380	253	174	74	44
28	186	211	321	445	174	420	470	1,600	285	163	72	43
29	1,600	198	560	400	-	420	530	860	302	152	79	42
30	2,310	1,140	1,020	360	-	420	420	590	302	141	74	40
31	1,800	-	1,500	340	-	380	-	470	-	135	74	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	10,012	2,310	43	323	5.38	6.20	19,860
November	14,015	1,400	198	467	7.78	8.68	27,800
December	21,879	1,900	238	706	11.8	13.60	43,400
Calendar year 1938	157,971	2,310	43	433	7.22	97.93	313,300
January	26,383	5,360	340	851	14.2	16.37	52,330
February	7,933	740	174	283	4.72	4.92	15,730
March	10,370	980	139	335	5.58	6.43	20,570
April	13,128	590	285	438	7.30	8.14	26,040
May	15,151	1,600	321	489	8.15	9.40	30,050
June	10,144	400	253	338	5.63	6.28	20,120
July	6,261	302	137	202	3.37	3.88	12,420
August	2,952	141	72	95.2	1.59	1.83	5,860
September	1,802	110	40	60.1	1.00	1.12	3,570
Water year 1938-39	140,030	5,360	40	384	6.40	86.85	277,800

*Gage height missing; discharge computed on basis of records for South Fork of Skokomish River near Union.
†Discharge interpolated.

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., 2½ miles upstream from North Fork, 5 miles upstream from Varce Creek, and 8 miles west of Union.

Drainage area.- 81 square miles.

Records available.- August 1931 to September 1939.

Extremes.- Maximum discharge during year, 13,900 second-feet Jan. 1 (gage height, 9.86 feet), from rating curve extended by logarithmic plotting above 3,500 second-feet; minimum, 64 second-feet Oct. 6-9.

1931-39: Maximum discharge, 17,000 second-feet Jan. 22, 1935 (gage height, 11.0 feet), from rating curve extended above 4,000 second-feet; minimum, 62 second-feet Sept. 18, 1938.

Remarks.- Records good except those above 5,000 second-feet, which are poor. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 11				Feb. 12 to Sept. 30			
4.5	50	7.0	3,680	4.1	44	5.5	1,040
4.7	150	7.5	4,780	4.3	100	6.0	1,790
5.0	375	8.0	6,030	4.5	199	6.5	2,690
5.5	930	8.5	7,530	5.0	528	7.1	3,890
6.0	1,720	9.0	9,280				
6.5	2,660	10.0	13,300				

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	2,280	2,380	9,030	550	398	653	365	365	156	104	100
2	68	1,280	2,420	6,010	510	404	624	346	333	156	100	97
3	68	1,760	1,960	4,550	442	398	672	339	314	177	100	90
4	68	1,160	2,210	2,880	375	373	606	326	289	205	100	86
5	68	764	3,180	2,180	375	371	520	314	283	199	100	83
6	64	592	1,810	1,690	366	391	467	295	277	183	100	80
7	64	510	1,450	1,410	324	384	452	295	258	172	97	80
8	64	480	1,220	1,280	298	378	475	289	252	161	97	80
9	64	460	1,140	1,120	260	358	482	295	258	156	97	76
10	77	404	891	986	238	358	460	308	246	150	97	76
11	242	358	752	852	864	391	445	308	228	150	97	76
12	1,310	341	647	740	2,830	411	432	308	223	145	93	73
13	554	350	570	636	1,520	460	398	326	223	145	93	73
14	290	358	510	560	1,370	445	378	339	223	140	93	76
15	196	413	470	570	1,600	445	371	346	234	150	93	132
16	156	2,210	432	500	1,170	490	358	326	234	150	90	136
17	128	1,240	394	1,020	920	563	358	308	217	145	86	109
18	112	826	366	1,930	780	710	404	270	211	140	83	100
19	100	800	341	2,860	682	843	432	252	211	150	80	90
20	90	728	324	1,900	598	821	432	246	205	145	76	86
21	77	570	316	1,220	537	932	445	264	199	140	73	83
22	68	480	298	930	498	1,240	411	258	194	136	73	80
23	72	413	350	728	460	1,370	378	246	188	132	73	76
24	106	366	467	680	445	1,310	365	240	183	127	69	76
25	150	332	776	614	438	1,080	422	277	177	122	76	76
26	162	298	530	647	418	843	606	326	172	118	80	73
27	404	275	614	1,450	404	691	513	277	167	114	80	73
28	275	252	852	1,140	391	606	475	1,150	161	109	83	69
29	1,660	252	1,410	986	-	554	452	932	161	109	104	69
30	2,980	1,310	2,050	813	-	554	398	545	161	104	97	69
31	2,960	-	3,180	658	-	634	-	490	-	104	93	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	12,865	2,980	64	415	5.12	5.90	25,520
November	21,862	2,280	252	729	9.00	10.04	43,360
December	34,310	3,180	298	1,107	13.7	15.79	68,050
Calendar year 1938	212,985	3,180	63	584	7.21	97.74	422,400
January	52,570	9,030	500	1,696	20.9	24.10	104,300
February	19,663	2,830	238	702	8.67	9.03	39,000
March	19,211	1,370	358	620	7.65	8.82	38,100
April	13,884	672	358	463	5.72	6.38	27,540
May	11,206	1,150	240	361	4.46	5.14	22,230
June	6,847	365	161	228	2.81	3.14	13,580
July	4,490	205	104	145	1.79	2.06	8,910
August	2,777	104	69	89.6	1.11	1.28	5,510
September	2,543	136	69	84.8	1.05	1.17	5,040
Water year 1938-39	202,228	9,030	64	554	6.84	92.85	401,100

Peak discharge.- Jan. 1 (8:20 a.m.) 13,900 sec.-ft.

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 Alder and 8 miles downstream from Mineral Creek.

Drainage area.- 252 square miles.

Records available.- August 1931 to September 1939.

Extremes.- Maximum discharge during year, 6,660 second-feet Jan. 2 (gage height, 6.98 feet); minimum, 191 second-feet Oct. 8 (gage height, 1.50 feet).

1931-39: 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. Gage-height record collected in cooperation with city of Tacoma.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 15				Feb. 16 to Sept. 30			
1.5	191	4.0	1,790	1.7	236	3.5	1,240
2.0	374	4.5	2,340	2.0	362	4.0	1,740
2.5	650	5.0	3,010	2.5	592	4.5	2,330
3.0	980	6.0	4,700	3.0	865	5.0	3,010
3.5	1,340	7.0	6,660				

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	278	416	1,050	3,430	945	658	1,380	1,240	1,040	1,000	578	525
2	312	361	1,910	5,840	910	658	1,530	1,240	1,040	965	642	520
3	352	1,150	2,110	4,610	845	673	1,580	1,240	965	1,160	673	420
4	274	1,300	2,230	3,160	812	642	1,530	1,330	898	1,040	622	460
5	256	910	3,320	2,400	832	612	1,330	1,200	1,000	858	642	469
6	229	676	2,460	1,890	845	652	1,200	1,040	1,000	765	612	384
7	219	574	3,140	1,640	774	612	1,160	965	930	754	568	375
8	222	551	4,000	1,600	728	582	1,200	930	930	782	592	442
9	236	580	2,660	1,460	670	554	1,240	1,080	965	847	637	469
10	378	494	2,000	1,690	644	539	1,240	1,160	965	965	710	492
11	696	431	1,600	1,640	768	602	1,200	1,330	965	930	647	451
12	608	398	1,340	1,560	2,520	637	1,240	1,430	1,040	898	602	328
13	963	402	1,160	1,420	1,600	678	1,120	1,580	1,120	898	554	281
14	488	452	1,050	1,300	2,120	637	1,040	1,900	1,080	858	558	252
15	357	624	945	1,380	4,260	673	965	2,080	1,040	847	539	328
16	296	1,460	845	1,220	2,660	865	930	2,020	930	698	539	362
17	274	1,640	786	1,340	1,960	1,040	1,000	1,680	965	602	549	380
18	256	1,220	734	1,690	1,580	1,200	1,240	1,430	1,120	658	539	371
19	249	1,050	696	2,160	1,330	1,480	1,580	1,120	1,480	642	549	406
20	267	1,120	650	1,840	1,120	1,740	1,630	965	1,430	617	539	492
21	281	945	631	1,560	1,000	2,020	1,850	1,120	1,280	652	568	516
22	274	819	592	1,380	898	2,330	1,850	1,040	1,280	732	573	497
23	270	728	624	1,220	847	2,790	1,630	965	1,200	794	516	460
24	246	663	728	1,220	805	3,010	1,430	930	1,000	817	530	433
25	270	605	838	1,160	805	2,860	1,330	1,040	930	805	582	397
26	260	556	728	1,080	737	2,400	1,200	1,200	865	898	488	406
27	398	522	800	1,420	726	1,900	1,120	1,160	930	965	488	433
28	312	500	1,120	1,380	678	1,580	1,200	1,580	1,040	930	438	349
29	436	494	1,340	1,260	-	1,380	1,480	2,660	1,240	782	358	319
30	452	586	1,510	1,190	-	1,240	1,380	1,800	1,200	705	358	375
31	522	-	1,740	1,050	-	1,240	-	1,280	-	658	456	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	10,931	963	219	353	1.40	1.61	21,680
November	22,227	1,640	361	741	2.94	3.28	44,090
December	45,337	4,000	592	1,462	5.80	6.69	89,920
Calendar year 1938	379,107	8,350	219	1,039	4.12	55.93	751,900
January	57,190	5,840	1,050	1,845	7.32	8.44	113,400
February	34,419	4,260	644	1,229	4.88	5.08	68,270
March	38,484	3,010	539	1,241	4.92	5.67	76,330
April	39,805	1,850	930	1,327	5.27	5.88	78,950
May	41,735	2,660	930	1,346	5.34	6.16	82,780
June	31,868	1,480	865	1,062	4.21	4.70	63,210
July	25,525	1,160	602	823	3.27	3.77	50,630
August	17,246	710	358	556	2.21	2.55	34,210
September	12,392	525	252	413	1.64	1.83	24,580
Water year 1938-39	377,159	5,840	219	1,033	4.10	55.66	748,000

Peak discharge.- Jan. 2 (1:20-2:20 a.m.) 6,660 sec.-ft.

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 1939.

Average discharge.- 19 years, 122 second-feet.

Extremes.- Maximum discharge during year, 1,370 second-feet Jan. 2 (gage height, 4.9 feet); minimum, 6.5 second-feet Oct. 1, 2, 3.
1920-39: 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 below 25 second-feet, which are good. No diversion or regulation. Gage-height record collected in cooperation with city of Tacoma.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Nov. 16

0.5	3.6	1.5	105	3.0	525
.7	14.6	2.0	209	3.5	725
1.0	42	2.5	337	4.0	940

Nov. 17 to Sept. 30

0.6	7.e	2.0	202	4.0	945
.8	18.6	2.5	331	5.0	1,420
1.0	36	3.0	515		
1.5	102	3.5	724		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.5	85	170	725	107	73	141	78	43	20	9.8	23
2	6.5	71	521	1,080	99	75	153	71	37	19	9.8	19
3	29	304	430	746	88	76	174	68	35	23	9.8	12
4	16	232	325	463	79	69	159	69	35	23	9.4	12
5	11	137	459	307	80	66	130	64	54	23	9.4	11
6	9.2	98	277	225	82	66	111	58	52	23	9.8	10
7	8.0	82	202	187	73	62	102	53	46	21	9.4	9.0
8	8.0	77	172	172	67	59	111	51	44	19	9.8	9.0
9	8.0	77	151	153	63	55	116	52	44	19	9.8	8.6
10	24	66	124	153	59	54	111	54	39	18	9.8	8.6
11	70	58	102	151	107	63	107	54	36	17	9.8	8.6
12	104	53	88	133	471	79	107	57	35	16	9.8	8.6
13	120	53	78	116	254	82	97	62	33	16	9.8	8.6
14	67	65	69	107	415	76	88	68	31	15	9.8	8.6
15	48	86	62	118	833	79	80	69	31	21	9.8	8.6
16	38	417	55	109	444	113	76	62	33	20	9.4	8.2
17	31	248	52	133	282	165	83	54	35	17	9.4	8.2
18	28	178	49	247	214	232	109	49	40	16	9.4	8.2
19	23	135	46	388	174	293	124	43	43	18	9.0	7.8
20	20	124	43	277	143	331	120	39	42	16	9.0	7.8
21	19	102	42	204	122	374	128	51	40	15	9.0	7.8
22	18	83	40	161	107	425	116	49	38	14	8.6	7.8
23	15	72	40	130	97	475	99	44	36	13	8.6	7.4
24	15	63	44	130	91	436	91	42	34	12	8.6	7.4
25	16	55	79	113	88	338	99	42	32	12	9.0	7.4
26	18	49	63	118	80	249	102	44	29	12	9.0	7.0
27	32	47	88	230	78	191	94	42	28	12	9.0	7.0
28	32	44	149	220	73	153	92	52	25	11	9.4	7.0
29	45	43	260	191	-	130	100	75	23	11	11	7.0
30	65	63	252	157	-	118	92	59	22	10	9.4	7.0
31	96	-	254	130	-	124	-	49	-	10	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	1,046.2	120	6.5	33.7	1.24	1.43	2,080
November	3,267	417	43	109	4.01	4.47	6,480
December	4,789	521	40	154	5.66	6.52	9,500
Calendar year 1938	34,334.2	828	4.8	94.1	3.46	46.92	68,110
January	7,774	1,080	107	251	9.23	10.64	15,420
February	4,870	833	59	174	6.40	6.66	9,660
March	5,181	475	54	167	6.14	7.08	10,280
April	3,312	174	76	110	4.04	4.51	6,570
May	1,724	78	39	55.6	2.04	2.35	3,420
June	1,095	54	22	36.5	1.34	1.50	2,170
July	512	23	10	16.5	.607	.70	1,020
August	295.6	12	8.6	9.54	.351	.40	586
September	278.2	23	7.0	9.27	.341	.38	552
Water year 1938-39	34,144.0	1,080	6.5	93.5	3.44	46.64	67,740

Peak discharge.- Jan. 2 (2:30 a.m.) 1,370 sec.-ft.; Feb. 15 (2 a.m.) 1,080 sec.-ft.

Chambers Creek at Steilacoom Lake, near Steilacoom, Wash.

Location.- Water-stage recorder, lat. 47°01', long. 122°32', in SW¼NE¼ sec. 34, T. 20 N., R. 2 E., 450 feet downstream from outlet of Steilacoom Lake and 3 miles northeast of Steilacoom.

Records available.- October 1938 to September 1939.

Extremes.- Maximum discharge during year, 118 second-feet Mar. 2, 3, 4; maximum gage height, 2.05 feet Feb. 14; minimum discharge recorded, 0.7 second-foot Nov. 26, 27, 28; minimum gage height recorded, 0.43 foot Oct. 23-29.

Remarks.- Records good. Discharge for Nov. 29, July 28 to Aug. 22 interpolated. Shifting-control method used Nov. 5-7, Sept. 22-30. Some diversion by individuals for irrigation of small garden plots. Discharge is affected by operation of gates at outlet of Steilacoom Lake.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	16	0.8	9.6	63	108	104	60	33	17	13	7.6
2	18	16	.9	11	64	114	104	58	34	17	13	7.6
3	17	17	1.0	12	65	116	101	57	30	19	13	8.4
4	16	17	1.0	13	65	116	87	57	37	20	12	7.6
5	16	17	1.1	19	66	116	86	55	37	18	12	7.6
6	16	16	1.1	31	69	116	85	57	37	15	12	7.6
7	16	14	2.8	34	70	116	84	58	37	15	12	7.6
8	16	14	10	36	71	115	83	57	36	16	12	7.2
9	16	15	11	38	72	114	82	57	24	17	12	6.4
10	16	17	16	41	73	113	81	56	17	16	11	6.4
11	18	16	30	43	77	112	80	55	20	13	11	6.4
12	20	16	37	44	82	114	79	54	19	14	11	6.0
13	16	14	38	46	82	115	78	50	14	14	11	6.0
14	15	14	34	47	87	113	77	48	10	15	11	6.0
15	13	15	61	49	87	114	76	47	8.9	17	10	6.0
16	13	16	46	49	91	115	75	45	5.2	17	10	5.6
17	13	12	29	52	97	114	74	45	8.0	17	10	5.2
18	13	2.8	22	53	104	114	73	44	9.4	18	9.8	5.2
19	13	1.9	17	54	108	114	71	44	6.8	17	9.6	5.2
20	15	8.8	14	55	113	113	70	42	8.2	12	9.4	5.2
21	13	12	12	56	115	112	69	43	7.9	12	9.2	5.2
22	13	7.1	10	56	115	112	67	43	15	13	9.0	4.6
23	12	3.6	8.4	56	107	109	66	43	15	13	8.8	4.6
24	12	.8	9.2	57	107	107	66	43	12	14	8.8	4.3
25	12	.8	8.4	57	109	102	65	44	14	14	8.8	4.0
26	12	.7	7.7	58	110	101	64	43	15	14	8.4	4.3
27	12	.7	8.4	59	109	99	64	42	15	14	8.4	4.3
28	12	.7	8.4	60	109	105	63	41	13	14	8.0	3.7
29	13	.8	8.4	61	-	108	62	36	14	14	8.0	3.7
30	15	.8	8.0	62	-	106	62	30	16	13	7.6	3.7
31	16	-	7.4	62	-	105	-	32	-	13	7.6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	456	20	12	14.7	904
November	303.5	17	.7	10.1	602
December	470.0	61	.8	15.2	932
Calendar year	-	-	-	-	-
January	1,380.6	62	9.6	44.5	2,740
February	2,487	115	63	83.8	4,930
March	3,448	116	99	111	6,840
April	2,298	104	62	73.6	4,560
May	1,486	60	30	47.9	2,950
June	568.4	37	5.2	18.9	1,130
July	472	20	12	15.2	936
August	317.4	13	7.6	10.2	630
September	173.2	8.4	3.7	5.77	344
Water year 1938-39	13,860.1	116	.7	33.0	27,500

Chambers Creek below Leach Creek, near Steilacoom, Wash.

Location.- Water-stage recorder, lat. 47°02', long. 122°32', in NE¼NE¼ sec. 27, T. 20 N., R. 2 E., a quarter of a mile downstream from Leach Creek, 1½ miles downstream from outlet of Steilacoom Lake, and 3 miles northeast of Steilacoom.

Records available.- December 1937 to September 1939.

Extremes.- Maximum discharge during period Dec. 16, 1937, to Sept. 30, 1938, not determined but probably occurred during period of missing gage heights, Dec. 30 to Jan. 7; minimum, 54 second-feet Sept. 6, may have been less sometime during period of missing gage heights, Sept. 14-28.

Maximum discharge during water year 1938-39, not determined but occurred during period of missing gage heights, Feb. 13 to Mar. 6; minimum, 41 second-feet Aug. 30, 31, Sept. 27, 28.

Remarks.- Records fair except those for period of missing gage heights, Dec. 30, 1937, to Jan. 7, 1938 (computed on basis of records for Little Nisqually River near Alder), those for Feb. 4-7, May 31 to June 4, June 13-16, Sept. 14-28, 1938 (interpolated), those for Feb. 13 to Mar. 6, 1939 (computed on basis of records for station at Steilacoom Lake and for Little Nisqually River near Alder), and those for Mar. 30 to Apr. 6, Apr. 24 to May 4, Aug. 18-23, 1939 (interpolated), all of which are poor. Discharge is affected by operation of gates at outlet of Steilacoom Lake. Some diversions for domestic use and for irrigation of small garden plots.

Rating table, period December 1937 to September 1939 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Dec. 26, 1937, to Apr. 20, 1938, Aug. 26, 1938, to Jan. 3, 1939, Mar. 9 to July 8, 1939)

1.2	38	2.1	210
1.5	83	2.5	330
1.8	139	3.0	510

Discharge, in second-feet, 1937-39

1937-38

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			-	440	310	221	246	188	139	97	68	68
2			-	420	304	224	243	190	134	95	68	68
3			-	400	294	218	246	195	129	95	68	66
4			-	380	292	218	243	200	125	93	80	69
5			-	360	289	210	240	200	120	93	68	69
6			-	350	287	205	232	200	118	92	68	69
7			-	340	284	202	229	202	128	90	68	90
8			-	330	282	202	226	198	133	87	69	92
9			-	323	285	200	218	192	124	82	69	83
10			-	314	288	198	215	195	117	83	69	80
11			-	294	291	192	215	200	109	85	69	77
12			-	297	291	195	213	200	111	90	68	82
13			-	300	288	198	210	195	108	82	68	97
14			-	361	282	195	208	175	105	80	68	95
15			-	327	275	198	208	183	103	86	68	93
16			175	340	269	208	213	185	100	80	66	90
17			183	361	263	200	254	183	97	80	66	88
18			175	385	260	237	243	178	104	80	66	86
19			171	368	254	232	226	178	104	78	66	84
20			175	374	263	224	224	173	102	77	66	82
21			180	378	254	226	208	163	100	77	66	80
22			185	368	246	243	202	150	93	74	65	77
23			188	350	243	263	210	152	83	68	65	75
24			200	333	237	254	215	152	90	74	65	73
25			205	323	232	254	215	154	97	74	63	71
26			249	317	229	254	215	154	98	72	66	69
27			282	304	224	260	210	148	95	75	65	66
28			382	307	224	263	198	148	90	68	63	64
29			435	307	-	257	195	146	88	68	65	62
30			500	294	-	252	178	148	98	68	66	62
31			470	300	-	249	-	143	-	68	66	-

Discharge, in second-feet, of Chambers Creek below Leach Creek, near Steilacoom, Wash., 1937-39--Continued

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	65	53	90	128	200	167	113	82	59	53	47
2	60	65	66	92	133	200	165	112	82	57	50	45
3	66	74	60	97	135	200	162	111	80	56	50	45
4	60	69	57	92	135	200	160	110	85	60	50	45
5	59	68	54	90	137	200	158	109	85	59	50	45
6	56	68	48	86	152	200	156	109	85	54	48	45
7	54	68	50	90	146	200	154	111	83	54	45	44
8	51	71	54	93	143	200	152	109	83	54	45	42
9	51	77	54	93	143	198	148	111	77	54	45	45
10	56	77	60	97	143	192	146	107	69	56	45	48
11	62	74	66	98	159	195	143	107	69	53	44	48
12	62	71	69	98	195	218	141	105	69	51	45	48
13	59	71	69	100	180	208	139	104	65	50	45	48
14	56	71	68	104	220	198	137	102	60	50	45	47
15	54	74	104	107	250	202	135	100	60	53	45	48
16	53	85	117	107	240	205	133	100	60	53	44	47
17	51	71	105	111	230	200	131	102	62	53	44	45
18	51	62	100	115	220	200	128	102	60	50	44	45
19	51	62	95	120	210	198	126	100	60	51	44	45
20	51	66	93	118	210	195	126	98	60	48	44	45
21	51	68	90	117	200	195	126	104	59	48	44	44
22	53	65	88	117	200	192	124	98	63	50	44	44
23	54	60	86	118	200	188	122	98	62	51	44	44
24	57	57	86	126	200	185	121	95	62	51	44	44
25	56	56	85	124	200	183	120	95	60	51	44	44
26	59	53	82	124	200	180	119	95	59	50	44	42
27	66	51	86	128	200	178	118	92	59	48	44	42
28	60	50	86	126	200	175	117	92	59	48	44	41
29	62	48	78	131	-	173	116	86	59	48	44	42
30	66	50	78	131	-	171	114	82	59	53	44	42
31	66	-	78	128	-	169	-	80	-	54	44	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
December 16-31, 1937	4,155	500	-	260	8,240
Calendar year	-	-	-	-	-
January 1938	10,645	440	294	343	21,110
February	7,540	310	224	269	14,960
March	6,952	263	192	224	13,790
April	6,598	254	178	220	13,090
May	5,468	202	143	176	10,850
June	3,242	139	83	108	6,430
July	2,508	97	68	80.9	4,970
August	2,081	80	63	67.1	4,130
September	2,327	97	62	77.6	4,620
The period	-	-	-	-	102,200
October 1938	1,775	66	51	57.3	3,520
November	1,967	85	48	65.6	3,900
December	2,365	117	48	76.3	4,690
Calendar year 1938	53,468	440	48	146	106,100
January 1939	3,368	131	86	109	6,680
February	5,109	250	128	182	10,130
March	5,998	218	169	193	11,900
April	4,104	167	114	137	8,140
May	3,139	113	80	101	6,230
June	2,037	85	59	67.9	4,040
July	1,627	60	48	52.5	3,230
August	1,409	53	44	45.5	2,790
September	1,346	48	41	44.9	2,670
Water year 1938-39	34,244	250	41	93.8	67,920

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 1939.

Extremes.- Maximum discharge during year, 5,020 second-feet Feb. 15 (gage height, 7.64 feet); minimum, 70 second-feet (regulated) Sept. 13; minimum daily discharge, 128 second-feet Sept. 13.

1931-39: Maximum discharge (not determined), occurred Dec. 9 or 10, 1933; minimum, 54 second-feet (regulated) Oct. 5, 1936 (gage height, 3.50 feet); minimum daily discharge, 77 second-feet Oct. 5, 1936.

Remarks.- Records good. Discharge July 28-31 interpolated. Shifting-control method used throughout the year. Water that is diverted for Electron plant of Puget Sound Power & Light Co. is returned to river upstream from gage. Slight regulation due to pondage in connection with operation of Electron power plant.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	359	223	810	1,540	328	460	680	522	629	822	532	530
2	392	190	1,300	1,700	314	451	720	532	477	770	637	426
3	504	1,500	1,350	1,460	307	468	744	532	486	949	766	360
4	328	1,280	1,920	1,210	300	438	639	579	486	879	690	433
5	314	736	2,280	961	328	400	560	512	770	700	680	408
6	262	486	1,550	659	384	433	503	416	844	608	608	247
7	239	416	2,520	588	367	408	486	376	711	570	512	175
8	226	442	2,580	700	335	392	532	367	727	579	598	305
9	217	451	1,640	623	307	359	560	477	698	700	711	345
10	542	392	1,080	937	293	343	550	522	733	949	799	391
11	954	328	778	822	409	335	522	629	690	1,080	755	346
12	668	293	570	680	1,010	376	541	690	722	868	700	185
13	915	351	425	570	1,140	392	460	872	755	890	630	128
14	399	493	400	460	1,740	384	416	1,130	744	777	546	132
15	286	669	314	532	3,230	407	384	1,300	711	810	494	318
16	250	2,180	253	442	1,910	608	384	1,240	608	629	522	416
17	253	1,910	211	703	1,400	690	425	997	788	477	522	425
18	223	1,260	178	822	1,130	733	649	711	1,000	493	505	375
19	205	1,030	160	833	914	822	788	512	1,440	487	556	413
20	223	1,250	155	639	722	937	788	416	1,630	454	600	618
21	236	914	155	486	608	1,110	914	536	1,290	46[illegible]	601	684
22	211	700	142	416	532	1,310	844	550	1,130	66[illegible]	670	617
23	188	570	211	384	486	1,520	722	503	961	76[illegible]	503	418
24	220	486	321	596	451	1,600	579	468	690	844	560	380
25	244	433	396	588	494	1,480	512	611	711	86[illegible]	659	261
26	289	400	265	477	433	1,200	442	722	608	96[illegible]	458	278
27	390	384	369	494	503	973	408	649	649	1,16[illegible]	470	318
28	276	351	629	560	503	788	503	1,430	795	1,03[illegible]	386	182
29	370	392	602	503	-	659	779	2,200	1,060	90[illegible]	198	160
30	363	468	639	442	-	618	649	1,320	1,040	78[illegible]	217	195
31	303	-	799	376	-	618	-	902	-	65[illegible]	408	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	10,849	954	188	350	2.06	2.38	21,520
November	20,978	2,180	190	699	4.11	4.59	41,610
December	25,002	2,580	142	807	4.75	5.48	49,590
Calendar year 1938	233,665	4,970	142	640	3.76	51.13	463,500
January	22,203	1,700	376	716	4.21	4.85	44,040
February	20,878	3,230	293	746	4.39	4.57	41,410
March	21,712	1,600	335	700	4.12	4.75	43,070
April	17,683	914	384	589	3.46	3.86	35,070
May	23,223	2,200	367	749	4.41	5.08	46,060
June	24,583	1,630	477	819	4.82	5.38	48,760
July	23,605	1,160	454	761	4.48	5.16	46,820
August	17,493	799	198	564	3.32	3.83	34,700
September	10,469	684	128	349	2.05	2.29	20,760
Water year 1938-39	238,678	3,230	128	654	3.85	52.22	473,400

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. Zero of gage is at mean sea level (general adjustment of 1929).

Drainage area.- 948 square miles.

Records available.- May 1914 to September 1939.

Average discharge.- 25 years, 3,278 second-feet, adjusted for storage since October 1934.

Extremes.- Maximum discharge during year, 13,000 second-feet Feb. 15 (gage height, 16.68 feet); minimum, 800 second-feet (regulated) Sept. 15.
1914-39: Maximum discharge, about 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. Shifting-control method used Nov. 4 to Sept. 30. All diverted water returned to river above station. 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 Reservoir, lat. 47°14'20", long. 122°11'30", in sec. 8, T. 20 N., R. 5 E., completed in 1912; usable contents, 50,400 acre-feet, between elevations 505 and 541 feet. Records of change in contents in Lake Tapps furnished by Puget Sound Power & Light Co. Some pondage on upper Puyallup River and other tributaries.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,470	1,590	2,350	*5,620	2,940	2,620	3,180	3,280	3,890	3,400	2,470	1,830
2	*1,340	1,500	2,670	7,460	2,400	2,520	*3,260	3,260	3,410	*3,170	2,510	1,760
3	1,920	2,560	3,190	6,110	2,300	2,600	3,600	3,350	3,240	3,620	2,680	*1,360
4	1,990	3,040	*3,080	5,060	2,090	2,610	3,530	3,420	*3,320	3,670	2,570	1,300
5	1,700	2,240	4,610	4,130	*1,880	*2,490	3,290	3,370	3,740	3,470	2,320	1,830
6	1,620	*1,780	3,640	3,360	2,180	2,800	3,090	2,860	4,020	3,080	*2,020	1,820
7	1,640	1,600	6,180	3,110	2,340	2,710	2,910	*3,430	3,860	2,940	2,300	1,550
8	1,340	1,630	9,230	*3,560	2,140	2,720	3,030	3,630	3,930	2,730	2,380	1,560
9	*1,140	1,910	6,280	3,390	2,080	2,460	*3,200	4,060	3,750	*2,660	2,480	1,500
10	1,660	1,870	4,510	4,330	2,000	2,590	3,260	4,250	3,410	3,230	2,590	*1,240
11	2,760	1,650	*3,590	4,270	1,920	2,390	3,280	4,460	*3,380	3,690	2,560	1,520
12	2,420	1,790	2,910	3,860	*3,900	*2,280	3,420	4,410	3,970	3,410	2,100	1,540
13	3,220	*1,460	2,570	3,450	3,580	2,740	3,330	2,870	3,720	3,500	*1,930	1,560
14	2,180	2,010	2,740	3,160	3,990	2,620	3,010	*3,420	4,190	3,240	2,130	1,670
15	1,790	2,450	2,480	*3,290	10,800	2,860	2,810	4,660	4,960	3,130	2,220	1,580
16	*1,440	4,140	2,360	3,160	6,650	3,370	*2,680	4,860	4,760	*3,320	2,160	1,530
17	1,610	4,920	2,250	3,540	4,250	3,370	2,800	4,340	3,100	2,710	2,150	*1,600
18	1,620	3,110	*2,160	4,120	3,190	3,360	3,060	3,420	*3,080	2,740	2,080	1,570
19	1,550	2,540	2,350	4,280	*3,000	*3,530	3,960	2,890	4,670	2,640	1,850	1,500
20	1,510	*2,840	2,210	3,970	2,970	4,040	4,120	2,210	6,440	2,610	*1,580	1,650
21	1,520	2,550	2,320	3,490	2,660	4,560	4,450	*3,420	5,740	2,370	2,060	1,710
22	1,340	2,300	2,290	*3,340	2,460	5,500	4,480	3,860	5,210	2,300	2,250	1,750
23	*1,170	2,070	2,340	2,900	2,500	6,540	*3,800	3,810	4,450	*2,980	2,080	1,380
24	1,510	1,710	2,480	2,930	2,530	7,150	3,970	3,810	3,930	3,050	1,800	*1,340
25	1,630	1,800	*2,640	3,460	2,460	6,710	3,800	3,040	*3,240	2,960	2,020	1,510
26	1,650	1,930	2,350	3,020	*2,280	*5,220	3,390	2,860	3,160	2,980	1,660	1,500
27	1,770	*2,200	2,820	2,920	2,550	3,620	3,020	2,510	3,160	3,260	*1,810	1,630
28	1,620	2,240	3,460	3,010	2,680	3,160	3,040	*2,850	3,460	3,170	1,680	1,680
29	1,660	2,050	3,250	*2,830	-	2,890	3,330	7,790	3,910	2,960	1,460	1,580
30	*1,290	2,040	3,820	3,310	-	3,070	*3,300	5,840	4,220	*2,890	1,450	1,390
31	1,630	-	4,530	3,260	-	3,100	-	4,640	-	2,620	1,540	-

Month	Observed				Change in contents in Lake Tapps (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	3,220	1,140	1,700	104,500	-6,580	97,920	1,593	1.68	1.94
November	4,920	1,460	2,264	134,700	+11,800	146,500	2,462	2.60	2.90
December	9,230	2,160	3,344	205,600	+7,650	213,200	3,467	3.66	4.22
Calendar year 1938	27,900	1,140	3,050	2,208,000	+1,480	2,210,000	3,052	3.22	43.72
January	7,460	2,830	3,796	233,400	-2,900	230,500	3,749	3.95	4.55
February	10,800	1,880	3,098	172,000	+810	172,800	3,111	3.28	3.42
March	7,150	2,280	3,497	215,000	+640	215,600	3,506	3.70	4.27
April	4,480	2,680	3,380	201,100	-130	201,000	3,378	3.56	3.97
May	7,790	2,210	3,784	232,700	-130	232,600	3,783	3.99	4.60
June	6,440	3,080	3,976	236,700	+1,360	238,100	4,001	4.22	4.71
July	3,690	2,300	3,050	187,500	+790	188,300	3,062	3.23	3.72
August	2,680	1,450	2,093	128,700	-3,170	125,500	2,041	2.15	2.48
September	1,830	1,240	1,565	93,140	-6,830	86,310	1,450	1.53	1.71
Water year 1938-39	10,800	1,140	2,963	2,145,000	+3,310	2,148,000	2,967	3.13	42.49

*Sunday.

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., 1¼ miles northwest of Fairfax and 12 miles upstream from Voights Creek.
Drainage area.- 81 square miles.
Records available.- March 1929 to September 1939. November 1910 to July 1912 at site 1¼ miles upstream.
Average discharge.- 10 years (1929-39), 416 second-feet.
Extremes.- Maximum discharge during year, 2,640 second-feet Dec. 7 (gage height, 4.73 feet), from rating curve extended above 1,000 second-feet; minimum, 115 second-feet Sept. 14 (gage height, 1.23 feet).
1910-12, 1929-39: Maximum discharge, about 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 except those for period of missing gage heights, Oct. 3-19 (computed on basis of records for White River at Greenwater and Puyallup River near Orting), and those above 1,000 second-feet, which are poor. Some water diverted for use by lumber industry but returned to river upstream from gage.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to July 11

1.3	121	2.5	566	4.0	1,810
1.5	169	3.0	910	4.5	2,360
2.0	324	3.5	1,330	5.0	2,910

July 12 to Sept. 30

1.2	108	2.5	568
1.5	180		
2.0	338		

Note.- Same as preceding table above 3.6 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	136	186	354	990	212	180	434	392	531	597	317	300
2	139	175	494	950	203	186	481	396	459	560	342	241
3	175	919	543	740	194	183	497	425	476	733	384	214
4	135	729	1,010	585	189	172	430	497	486	693	389	229
5	135	454	1,330	481	189	164	358	420	554	543	384	264
6	130	339	854	396	186	166	324	354	531	470	349	214
7	130	321	1,900	379	175	159	317	321	497	444	300	180
8	130	310	1,700	439	164	151	351	339	537	454	314	186
9	130	300	1,110	434	151	141	396	425	525	514	334	200
10	260	255	726	616	146	141	379	470	543	591	357	197
11	400	221	537	578	204	151	371	525	554	680	349	200
12	300	212	434	486	449	156	366	520	616	604	361	154
13	400	221	371	420	324	156	332	680	680	583	320	132
14	260	271	324	366	618	146	307	886	667	503	290	117
15	220	439	290	375	1,150	169	290	990	660	552	273	159
16	190	1,170	261	332	686	252	290	950	549	483	290	175
17	170	896	236	481	481	314	317	802	543	384	280	214
18	155	585	218	578	384	379	465	603	707	397	260	188
19	145	551	206	560	324	476	603	444	1,040	401	270	172
20	130	693	194	454	277	578	585	371	1,150	393	270	197
21	130	486	197	371	249	700	667	388	934	384	286	248
22	125	375	189	324	230	838	609	410	846	434	310	232
23	121	317	242	290	212	990	503	388	720	483	280	202
24	134	280	324	393	203	1,030	434	405	609	530	303	180
25	159	255	321	354	209	934	379	543	520	518	317	172
26	176	239	261	314	186	720	328	616	481	563	251	162
27	264	242	310	307	209	543	321	554	537	649	260	180
28	227	258	328	310	189	434	371	1,240	648	549	223	154
29	246	271	375	277	-	375	560	1,610	795	440	172	132
30	212	290	485	252	-	347	476	998	747	397	175	128
31	215	-	781	233	-	362	-	733	-	380	235	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	5,879	400	121	190	2.35	2.71	11,660
November	12,260	1,170	175	409	5.05	5.63	24,320
December	16,905	1,900	189	545	6.73	7.76	33,530
Calendar year 1938	137,060	3,650	120	376	4.64	62.92	271,900
January	14,065	990	233	454	5.60	6.46	27,900
February	8,423	1,180	146	301	3.72	3.87	16,710
March	11,693	1,030	141	377	4.65	5.36	23,190
April	12,541	667	290	418	5.16	5.76	24,870
May	18,695	1,610	321	603	7.44	8.58	37,080
June	19,142	1,150	459	638	7.88	8.79	37,970
July	15,922	733	380	514	6.35	7.32	31,580
August	9,245	389	172	298	3.68	4.24	18,340
September	5,723	300	117	191	2.36	2.63	11,350
Water year 1938-39	150,493	1,900	117	412	5.09	69.11	298,500

Peak discharge.- Dec. 7 (8:40 p.m.) 2,640 sec.-ft.

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 1939. September 1911 to May 1912 (fragmentary), at site 2 miles upstream, published as White River near Enumclaw, Wash.

Average discharge.- 10 years (1929-39), 826 second-feet.

Extremes.- Maximum discharge during year, 2,470 second-feet May 29 (gage height, 4.59 feet); minimum, 236 second-feet Oct. 23 (gage height, 2.03 feet).
1911-12, 1929-39: 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. Shifting-control method used throughout the year. No diversion or regulation.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	371	283	371	1,060	351	316	1,040	1,080	1,220	1,200	687	524
2	390	271	407	1,260	347	316	1,100	1,130	1,180	1,120	757	453
3	402	670	440	1,020	337	316	1,120	1,160	1,190	1,070	830	497
4	337	606	629	840	333	307	1,040	1,230	1,100	1,010	821	503
5	361	484	944	696	328	294	925	1,140	1,060	934	757	478
6	311	412	757	590	328	294	858	1,030	1,020	868	687	418
7	290	402	1,210	574	316	290	858	982	1,020	849	645	396
8	286	402	1,530	582	298	279	867	1,050	1,040	668	679	429
9	283	396	1,280	582	286	275	934	1,130	1,040	934	748	440
10	361	385	972	679	290	275	896	1,180	1,090	1,060	775	465
11	490	356	794	662	333	279	916	1,270	1,160	1,100	748	418
12	454	347	662	629	590	275	925	1,340	1,270	1,030	722	347
13	574	356	582	598	453	275	849	1,450	1,420	1,030	687	320
14	371	366	538	560	553	267	794	1,660	1,390	944	645	311
15	324	418	497	546	925	283	757	1,910	1,350	934	621	328
16	298	816	453	510	730	320	748	1,950	1,170	757	629	356
17	283	766	424	538	582	375	821	1,660	1,060	696	621	366
18	267	524	396	606	524	472	1,000	1,440	1,040	722	567	371
19	264	478	375	653	472	606	1,170	1,200	1,110	670	582	396
20	260	553	361	598	429	766	1,220	1,080	1,180	629	598	478
21	253	459	351	538	396	1,010	1,340	1,050	1,220	696	629	524
22	246	396	333	503	385	1,280	1,350	1,010	1,280	821	662	459
23	242	366	351	465	371	1,520	1,270	992	1,230	878	621	407
24	267	361	375	478	361	1,670	1,150	1,010	1,120	906	645	380
25	256	333	371	459	356	1,550	1,030	1,150	992	925	687	380
26	279	324	333	440	337	1,320	954	1,300	992	1,030	567	366
27	311	316	371	440	333	1,090	916	1,300	1,040	1,120	538	390
28	279	316	366	429	320	944	1,030	1,670	1,180	1,070	484	337
29	328	307	418	412	-	866	1,230	2,290	1,390	906	412	324
30	320	333	503	396	-	840	1,150	1,810	1,350	830	407	316
31	316	-	637	375	-	896	-	1,430	-	794	524	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	10,074	574	242	325	1.50	1.73	19,980
November	12,802	816	271	427	1.98	2.21	25,390
December	18,081	1,580	333	583	2.70	3.11	35,860
Calendar year 1938	296,324	4,640	242	812	3.76	51.02	587,700
January	18,718	1,260	375	604	2.80	3.23	37,130
February	11,664	925	286	417	1.93	2.01	23,140
March	19,868	1,670	267	641	2.97	3.42	39,410
April	30,276	1,350	748	1,009	4.67	5.21	60,060
May	41,084	2,290	982	1,325	6.13	7.07	81,490
June	34,904	1,420	992	1,163	5.38	6.00	69,230
July	28,401	1,200	629	916	4.24	4.89	56,330
August	19,982	830	407	645	2.99	3.45	39,630
September	12,177	524	311	406	1.88	2.10	24,150
Water year 1938-39	258,033	2,290	242	707	3.27	44.43	511,800

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. Prior to Feb. 15, 1939, staff gage at same site and datum. Zero of gage is at mean sea level (general adjustment of 1929).

Drainage area.- 403 square miles.

Records available.- October 1938 to September 1939. October 1928 to November 1933, at site 3 miles upstream.

Extremes.- Maximum discharge recorded during year, 4,270 second-feet Mar. 24 (gage height, 803.18 feet); minimum (not recorded) occurred in October.

1928-33, 1938-39: Maximum discharge, about 17,000 second-feet Feb. 26, 1932 (gage height, 17.5 feet, former site and datum), from rating curve extended above 4,000 second-feet; minimum, 213 second-feet Nov. 21, 1929 (gage height, 1.78 feet, former site and datum); discharge may have been less at some time during Jan. 15-30, 1930, when stage-discharge relation was affected by ice.

Remarks.- Records excellent except those for period prior to establishment of gage, Oct. 1 to Nov. 25 (computed on basis of records for White River at Greenwater and for Greenwater River at Greenwater), which are poor, and those Nov. 26 to Feb. 14 (based upon one or two staff gage readings daily), which are good. No diversions. Slight regulation from construction operations at Mud Mountain Dam.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

799.2	467	800.5	1,080	802.0	2,570
799.5	560	801.0	1,520	802.5	3,210
800.0	770	801.5	2,020	803.2	4,270

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			745	*2,820	795	720	2,020	1,870	1,820	1,720	910	795
2			820	*3,330	770	720	2,180	1,870	1,720	1,620	940	698
3			1,120	2,520	745	720	2,240	1,920	1,720	1,570	1,010	675
4			*1,560	1,970	745	698	2,080	2,080	1,620	1,480	975	698
5			2,130	1,620	*729	655	1,820	1,920	1,620	1,340	945	698
6			1,670	1,340	720	698	1,620	1,720	1,620	1,300	868	770
7			2,810	1,200	698	655	1,570	1,620	1,570	1,250	820	615
8			3,880	*1,340	675	635	1,670	1,670	1,620	1,250	820	615
9			3,070	1,480	615	595	1,750	1,750	1,570	1,300	910	615
10			2,180	2,240	615	595	1,720	1,870	1,620	1,480	910	635
11			*1,720	2,020	635	635	1,720	2,020	1,670	1,520	898	615
12			1,380	1,820	*1,220	655	1,720	2,130	1,750	1,430	880	512
13		850	1,160	1,670	1,080	675	1,570	2,300	1,970	1,380	840	482
14			1,040	1,430	1,340	635	1,480	2,690	1,970	1,300	812	467
15			975	*1,330	3,210	720	1,430	3,070	1,920	1,340	777	496
16			880	1,200	2,180	1,080	1,380	3,210	1,750	1,160	782	527
17			850	1,520	1,670	1,340	1,430	2,810	1,720	1,010	769	544
18			*795	1,750	1,380	1,620	1,750	2,400	1,750	1,010	735	527
19			745	1,820	1,200	1,920	2,130	2,080	2,130	975	746	527
20			720	1,570	1,040	2,180	2,180	1,750	2,400	975	758	635
21			720	1,340	940	2,630	2,460	1,720	2,240	975	770	675
22			698	*1,180	880	3,210	2,460	1,670	2,180	1,080	820	635
23			880	1,040	820	3,800	2,300	1,570	2,020	1,120	782	560
24			*974	1,200	795	4,030	2,080	1,520	1,820	1,200	795	544
25			*943	1,160	820	3,800	1,920	1,720	1,620	1,160	880	527
26		675	*828	1,040	770	3,070	1,720	1,970	1,520	1,300	720	512
27		*648	880	1,040	795	2,460	1,620	1,970	1,520	1,360	735	544
28		635	1,010	1,080	745	2,080	1,720	2,410	1,720	1,340	675	496
29		635	1,160	*974	-	1,820	2,180	3,580	1,970	1,130	578	467
30		655	1,520	910	-	1,720	2,080	2,750	1,970	1,080	560	467
31		-	*1,840	850	-	1,750	-	2,180	-	1,040	675	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	17,050	-	-	550	1.36	1.57	33,820
November	24,498	-	-	817	2.03	2.26	48,590
December	41,703	3,880	698	1,345	3.34	3.85	82,720
Calendar year	-	-	-	-	-	-	-
January	47,804	3,330	850	1,542	3.83	4.42	94,820
February	28,627	3,210	615	1,022	2.54	2.64	56,780
March	48,521	4,030	595	1,565	3.88	4.47	96,240
April	56,000	2,460	1,380	1,867	4.63	5.17	111,100
May	65,810	3,580	1,520	2,123	5.27	6.08	130,500
June	54,110	2,400	1,520	1,804	4.48	5.00	107,300
July	39,215	1,720	975	1,265	3.14	3.62	77,780
August	25,095	1,010	560	810	2.01	2.32	49,780
September	17,573	795	467	586	1.45	1.62	34,860
Water year 1938-39	466,006	4,030	-	1,277	3.17	43.02	924,300

*Gage heights missing; discharge computed on basis of records for White River at Greenwater and Greenwater River at Greenwater.

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), May 1929 to September 1939.

Average discharge.- 10 years (1929-39), 206 second-feet.

Extremes.- Maximum discharge during year, 1,110 second-feet Dec. 8 (gage height, 4.80 feet), from rating curve extended above 500 second-feet; minimum, 30 second-feet Oct. 1, 2, 23, 24 (gage height, 2.10 feet).

1911-12, 1929-39: Maximum discharge, 4,140 second-feet Dec. 9, 1933 (gage height, 9.24 feet, former site and datum), from rating curve extended above 1,000 second-feet; minimum, 23 second-feet Oct. 7, 1934 (gage height, 2.06 feet).

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

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

2.0	25	3.0	177	4.5	930
2.2	37	3.5	358	5.0	1,220
2.5	73	4.0	639		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	35	65	451	121	93	390	474	339	201	70	67
2	30	36	78	616	116	95	440	457	315	193	69	62
3	35	92	91	491	110	98	474	462	298	188	67	52
4	34	95	166	369	108	95	429	479	281	182	66	47
5	36	72	234	294	106	89	369	451	273	174	65	48
6	34	57	207	241	104	87	334	412	266	170	65	89
7	33	53	572	219	100	86	320	390	258	162	63	63
8	31	55	900	225	93	83	339	390	266	154	60	53
9	31	54	599	241	87	81	353	401	266	147	59	48
10	34	51	412	334	86	79	348	412	262	140	58	46
11	62	46	302	353	91	81	353	434	262	138	57	45
12	59	44	241	324	134	81	348	462	266	129	55	44
13	66	48	207	290	127	81	324	508	273	123	55	43
14	51	55	185	252	158	78	294	593	273	118	54	42
15	41	76	167	234	294	84	277	680	273	123	54	44
16	37	182	152	210	234	112	277	703	269	121	53	43
17	35	192	140	219	193	145	298	662	281	112	52	41
18	33	136	134	238	172	193	369	599	281	108	51	40
19	32	129	123	258	154	258	457	514	306	108	48	39
20	31	182	116	244	140	334	491	434	320	110	47	39
21	31	140	114	219	129	457	571	396	310	100	46	38
22	31	110	112	196	118	633	588	358	302	97	45	37
23	30	93	150	180	114	784	542	344	285	91	44	37
24	31	83	185	177	108	842	479	334	266	87	44	37
25	33	75	177	167	108	784	434	339	255	86	51	36
26	31	69	154	157	102	656	401	358	234	83	51	36
27	36	65	152	152	102	514	385	358	222	81	46	36
28	34	60	160	152	97	418	418	374	216	79	45	36
29	36	59	180	145	-	363	519	418	213	76	45	36
30	34	59	231	138	-	339	514	418	210	75	44	36
31	37	-	298	129	-	334	-	374	-	72	47	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	1,139	66	30	36.7	0.496	0.57	2,260
November	2,503	192	35	83.4	1.13	1.26	4,960
December	7,004	900	65	226	3.05	3.52	13,890
Calendar year 1938	68,570	1,260	30	188	2.54	34.49	136,000
January	7,915	616	129	255	3.45	3.98	15,700
February	3,606	294	86	129	1.74	1.81	7,150
March	8,457	842	78	273	3.69	4.25	16,770
April	12,135	588	277	404	5.46	6.09	24,070
May	13,988	703	334	451	6.09	7.02	27,740
June	8,141	339	210	271	3.66	4.08	16,150
July	3,828	201	72	123	1.66	1.91	7,590
August	1,676	70	44	54.1	.731	.84	3,320
September	1,360	89	36	45.3	.612	.68	2,700
Water year 1938-39	71,752	900	30	197	2.66	36.01	142,300

Peak discharge.- Dec. 8 (12-12:30 a.m.) 1,110 sec.-ft.

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, 2½ miles downstream from North Fork, and 4 miles southeast of Palmer.

Drainage area.- 231 square miles.

Records available.- October 1931 to September 1939.

Extremes.- Maximum discharge during year, 6,300 second-feet Dec. 7 (gage height, 11.89 feet); minimum, 96 second-feet Oct. 1, 2, 8, 9 (gage height, 4.24 feet).
1931-39: 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. Discharge for Sept. 27-30 computed on basis of plant inspector's record at diversion dam, 1½ miles downstream. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 21

4.2	85	7.0	1,420
4.5	187	8.0	2,040
4.7	277	9.0	2,760
4.9	367	10.0	3,860
5.5	643	12.0	6,450
6.0	880		

Apr. 22 to Sept. 30

4.2	92	5.0	373
4.4	140	5.5	620
4.7	242	6.0	870

Note.- Same as preceding table above 6.6 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	99	218	532	4,160	832	714	1,840	1,360	795	530	201	201
2	99	210	690	5,060	784	737	2,040	1,300	720	503	197	201
3	130	780	784	3,620	737	737	2,040	1,300	695	515	194	167
4	120	714	1,320	2,680	714	690	1,840	1,390	720	510	190	155
5	113	555	2,110	2,110	737	643	1,600	1,270	795	470	190	173
6	105	430	1,780	1,720	690	620	1,420	1,120	820	445	187	262
7	99	408	3,660	1,480	643	596	1,300	1,100	795	415	184	187
8	99	426	4,940	1,600	596	578	1,330	1,120	820	387	177	164
9	96	408	3,260	1,780	564	564	1,480	1,210	795	363	173	152
10	155	358	2,390	2,390	550	555	1,480	1,210	770	353	170	143
11	272	326	1,780	2,250	643	591	1,480	1,270	745	341	170	140
12	403	326	1,420	2,040	1,330	620	1,480	1,330	720	333	167	146
13	449	376	1,180	1,780	1,180	620	1,330	1,420	695	314	164	149
14	272	458	1,030	1,540	2,120	573	1,210	1,660	665	305	164	146
15	205	784	905	1,450	3,380	620	1,160	1,840	665	339	167	161
16	179	2,780	808	1,300	2,180	832	1,160	1,720	645	345	164	164
17	159	2,360	737	1,900	1,660	1,030	1,210	1,480	795	309	161	152
18	144	1,600	690	2,530	1,420	1,300	1,450	1,240	895	287	158	149
19	133	1,700	643	2,600	1,210	1,600	1,720	1,020	1,360	314	158	140
20	127	2,250	620	2,250	1,080	1,900	1,720	895	1,840	363	155	137
21	120	1,540	596	1,780	980	2,250	1,900	845	1,390	309	152	135
22	120	1,130	620	1,510	905	2,760	1,900	820	1,120	287	146	135
23	113	930	930	1,300	832	3,500	1,660	795	1,020	271	146	135
24	123	784	1,540	1,360	808	3,860	1,480	770	895	253	143	135
25	127	690	1,720	1,300	832	3,620	1,360	820	795	254	146	135
26	133	620	1,330	1,160	784	2,850	1,210	870	720	242	149	130
27	163	564	1,330	1,100	784	2,180	1,150	845	655	234	143	135
28	167	522	1,660	1,180	737	1,840	1,300	1,040	620	227	149	117
29	187	495	2,440	1,080	-	1,660	1,660	1,240	600	218	146	110
30	196	495	3,050	980	-	1,540	1,600	1,100	570	218	140	112
31	232	-	3,150	905	-	1,600	-	945	-	206	149	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	5,139	449	96	166	0.719	0.83	10,190
November	25,237	2,780	210	841	3.64	4.08	50,060
December	49,645	4,940	532	1,601	6.93	7.99	98,470
Calendar year 1938	319,632	11,600	88	876	3.79	51.47	634,000
January	59,895	5,060	905	1,932	8.36	9.64	118,800
February	29,712	3,380	550	1,061	4.59	4.78	58,930
March	43,780	3,860	555	1,412	6.11	7.04	86,840
April	45,510	2,040	1,150	1,517	6.57	7.33	90,270
May	36,345	1,840	770	1,172	5.07	5.84	72,090
June	25,135	1,840	570	838	3.63	4.05	49,850
July	10,472	530	208	338	1.46	1.68	20,770
August	5,100	201	140	165	.714	.82	10,120
September	4,568	262	110	152	.658	.73	9,060
Water year 1938-39	340,538	5,060	96	933	4.04	54.79	675,400

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. Zero of gage is at mean sea level (general adjustment of 1929).

Drainage area.- 386 square miles.

Records available.- August 1936 to September 1939.

Extremes.- Maximum discharge during year, 5,420 second-feet Dec. 8 (elevation, 60.25 feet); minimum, 125 second-feet Oct. 1, 8, 9 (elevation, 54.70 feet).
1936-39; Maximum discharge, 14,400 second-feet Apr. 18, 1938 (elevation, 65.88 feet); minimum, 120 second-feet Sept. 29, 1938 (elevation, 54.69 feet).

Remarks.- Records excellent. City of Tacoma diverts about 85 second-feet for municipal supply. No regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 8				Dec. 9 to Sept. 30			
54.7	125	57.0	1,880	54.7	141	57.0	2,030
55.0	292	58.0	2,980	55.0	303	58.0	3,030
55.5	609	59.0	4,080	55.5	644	59.0	4,080
56.0	964	61.0	6,380	56.0	1,040	61.0	6,380
56.5	1,390			56.5	1,530		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	136	316	642	3,860	1,330	1,260	2,180	1,630	997	704	303	251
2	141	286	745	5,070	1,270	1,250	2,380	1,530	905	659	297	322
3	234	440	1,000	4,300	1,200	1,280	2,380	1,480	857	659	291	274
4	200	926	1,120	3,430	1,150	1,250	2,280	1,530	905	674	286	234
5	162	731	2,160	2,730	1,160	1,160	2,030	1,530	946	637	286	218
6	146	596	1,990	2,280	1,230	1,220	1,830	1,380	1,040	615	286	304
7	136	510	2,680	1,980	1,210	1,140	1,680	1,300	1,010	586	274	315
8	130	510	4,960	2,080	1,090	1,070	1,680	1,310	1,010	550	268	257
9	125	583	3,640	2,130	997	1,010	1,780	1,330	1,010	514	257	229
10	146	543	2,830	2,830	930	980	1,830	1,380	954	500	251	207
11	280	472	2,180	2,830	988	1,040	1,780	1,380	905	493	245	196
12	377	433	1,780	2,630	1,830	1,210	1,830	1,430	873	479	240	202
13	629	478	1,480	2,330	1,880	1,330	1,680	1,530	850	452	234	202
14	452	517	1,300	2,080	2,230	1,250	1,530	1,680	834	438	234	196
15	334	759	1,160	1,980	4,740	1,260	1,480	1,880	795	500	229	191
16	263	2,070	1,030	1,830	3,430	1,530	1,430	1,930	803	543	229	213
17	228	3,090	938	2,230	2,630	1,680	1,430	1,780	881	479	223	202
18	206	1,880	873	3,030	2,330	1,880	1,630	1,480	963	438	218	191
19	195	1,580	826	3,230	2,130	2,080	1,880	1,300	1,430	431	218	181
20	173	2,600	780	2,930	1,880	2,330	1,930	1,100	2,180	486	213	166
21	157	1,880	787	2,480	1,730	2,630	2,080	1,030	1,830	493	207	161
22	157	1,440	757	2,130	1,580	3,030	2,180	997	1,480	459	191	156
23	152	1,120	980	1,880	1,480	3,750	1,980	946	1,270	438	191	156
24	146	964	1,530	1,830	1,430	4,080	1,780	914	1,140	411	191	151
25	152	860	1,980	1,980	1,480	4,080	1,680	914	1,030	405	191	151
26	167	780	1,680	1,730	1,380	3,530	1,530	988	930	372	196	151
27	228	710	1,530	1,680	1,380	2,830	1,430	988	857	359	191	146
28	223	656	1,930	1,730	1,330	2,380	1,430	1,010	811	340	191	151
29	246	622	2,380	1,680	-	2,130	1,730	1,430	765	334	202	156
30	263	616	3,230	1,580	-	1,980	1,830	1,330	742	315	196	156
31	304	-	3,430	1,430	-	1,980	-	1,170	-	315	196	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	6,888	629	125	222	13,660
November	28,968	3,090	286	966	57,460
December	54,328	4,960	642	1,753	107,800
Calendar year 1938	427,118	12,200	125	1,170	847,200
January	75,920	5,070	1,430	2,449	150,600
February	47,425	4,740	930	1,694	94,070
March	59,610	4,080	980	1,923	118,200
April	54,300	2,380	1,430	1,810	107,700
May	41,607	1,930	914	1,342	82,530
June	31,003	2,180	742	1,033	61,490
July	15,078	704	315	486	29,910
August	7,225	303	191	233	14,330
September	6,086	322	146	203	12,070
Water year 1938-39	428,438	5,070	125	1,174	849,800

Peak discharge.- Dec. 8 (5:30 to 6:15 a.m.) 5,420 sec.-ft.; Feb. 15 (7, 7:30 to 9 a.m.) 5,300 sec.-ft.

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 1939.

Average discharge.- 25 years, 298 second-feet.

Extremes.- Maximum discharge during year, 1,100 second-feet (regulated) Jan. 25 (gage height, 7.07 feet); minimum, 36 second-feet (regulated) Nov. 11 (gage height, 4.91 feet).

1914-39: 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, due to regulation.

Remarks.- Records excellent. All diverted water returned to river above gage. Flow partly regulated in Cedar Lake Reservoir for operation of power plant. Gage-height record collected in cooperation with city of Seattle.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

4.9	36	5.3	90	6.0	319	7.1	1,130
5.1	53	5.5	139	6.5	605		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	67	159	*134	288	426	154	263	372	243	90	82
2	*51	78	107	349	252	439	*168	284	368	*234	90	80
3	53	74	116	720	208	438	110	338	372	193	90	*76
4	53	72	*376	839	232	438	156	332	*402	241	90	74
5	52	40	194	750	*226	*372	150	347	308	163	90	80
6	58	*38	292	661	226	424	146	328	292	147	*88	76
7	59	40	238	566	229	502	128	*264	303	172	90	74
8	51	43	168	*528	284	462	142	244	315	113	86	72
9	*51	38	162	510	326	470	*104	243	293	*122	86	72
10	64	37	96	579	329	461	118	237	380	103	86	*72
11	64	37	*90	612	382	472	146	286	*241	103	86	72
12	70	37	73	619	*172	*470	126	302	234	104	86	72
13	67	*42	68	572	144	468	126	328	264	127	*86	56
14	65	177	106	528	199	464	124	*349	231	122	86	58
15	55	218	88	*498	336	489	152	429	214	113	82	74
16	*55	142	239	452	435	527	*92	568	218	*103	80	68
17	56	95	72	542	409	458	126	577	207	111	80	*68
18	59	86	*70	630	369	458	128	600	*280	107	78	65
19	58	96	70	783	*346	*412	116	490	291	103	78	63
20	58	*266	70	826	360	462	115	364	420	105	*76	63
21	62	81	174	756	386	220	182	*329	506	103	76	62
22	52	82	228	*586	369	125	142	454	554	97	65	62
23	*56	72	104	586	428	112	*106	387	556	*97	67	60
24	60	64	88	540	383	148	138	292	380	105	76	*60
25	60	110	*98	540	362	154	154	342	*356	97	76	60
26	60	318	89	573	*318	*133	152	292	432	95	74	58
27	60	*58	99	412	396	154	172	238	384	95	*76	58
28	70	78	104	329	412	151	195	*260	338	97	76	58
29	54	204	246	*310	-	116	142	408	205	93	78	58
30	*56	120	224	293	-	88	*195	390	260	*93	76	58
31	65	-	129	331	-	98	-	424	-	95	76	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	1,817	70	51	58.6			3,600
November	2,910	318	37	97.0			5,770
December	4,437	376	68	143			8,800
Calendar year 1938	67,963	898	37	186	2.16	29.32	134,800
January	16,954	839	134	547			33,630
February	8,806	435	144	314			17,470
March	10,611	527	88	342			21,050
April	4,205	195	92	140			8,340
May	10,989	600	237	354			21,800
June	9,976	556	205	333			19,790
July	3,916	242	92	126			7,770
August	2,520	90	65	81.3			5,000
September	2,011	82	56	67.0			3,990
Water year 1938-39	79,152	839	37	217	2.52	34.21	157,000

*Sunday.

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

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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 1939. July 1895 to September 1898 (at site 2 miles downstream), and March 1901 to April 1912 (at site of Seattle water-supply intake) in reports of Geological Survey, records equivalent. August 1895 to April 1912 and May 1914 to September 1933 (monthly discharge) in State Water-Supply Bulletin 5. Records as previously published for the water years 1932-33 and 1933-34 did not include the flow of Rock Creek; revised figures of yearly discharge for these years including estimated flow of Rock Creek, are given on p.
Average discharge.- 41 years (1895-1911, 1914-39), 702 second-feet, including Rock Creek.
Extremes.- Maximum discharge during year, 1,500 second-feet Feb. 15 (gage height, 3.04 feet); minimum, 201 second-feet Nov. 11, 12 (gage height, 0.87 foot).
1895-98, 1901-12, 1914-39: Maximum discharge observed, 13,600 second-feet Nov. 19, 1911 (gage height, 9.7 feet former site and datum); minimum discharge, 83 second-feet Sept. 19, 1898.
Remarks.- Records excellent. All diversions except Rock Creek returned to river upstream from station. Monthly records have been adjusted for flow of Rock Creek which enters naturally just above gage, but has been diverted to a point below Seattle municipal water-supply intake to lessen danger of pollution; monthly discharge of creek estimated on basis of four discharge measurements and relation of flow of Rock Creek to difference in discharge between Cedar River at Cedar Falls and near Landsberg. Flow of river partly regulated by storage in Cedar Lake Reservoir. Gage-height record collected in cooperation with city of Seattle.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	264	237	364	593	735	868	576	587	712	582	382	369
2	250	240	366	783	687	869	586	619	684	588	378	364
3	258	261	378	1,100	633	874	583	655	688	554	374	342
4	250	258	624	1,170	651	854	578	680	728	573	374	342
5	247	231	502	1,100	645	804	571	677	704	541	374	360
6	247	210	572	1,020	645	842	558	664	684	499	369	356
7	250	213	646	925	635	911	539	598	671	522	374	346
8	244	228	606	925	675	879	543	590	684	445	369	338
9	240	228	523	958	723	860	510	584	670	450	364	333
10	261	213	405	1,100	723	862	504	568	738	435	360	328
11	272	207	374	1,100	800	896	537	596	566	425	360	328
12	283	207	338	1,060	786	903	518	622	584	420	360	328
13	299	219	320	1,020	642	890	511	650	594	425	360	320
14	258	314	346	958	792	878	504	676	562	445	360	311
15	244	450	304	958	1,220	909	526	764	549	460	356	324
16	240	552	492	892	1,050	990	488	892	548	435	351	320
17	240	408	299	1,060	970	940	467	890	584	425	351	320
18	240	334	287	1,170	928	950	502	914	678	420	346	315
19	237	336	291	1,290	880	910	489	814	787	415	346	311
20	237	566	287	1,330	870	952	481	702	970	415	346	311
21	234	334	352	1,250	879	792	540	658	970	400	342	307
22	231	309	480	1,060	838	666	526	744	964	400	338	307
23	231	294	360	1,020	888	664	475	698	980	396	333	303
24	234	280	369	1,020	841	704	493	600	823	400	342	303
25	231	312	415	958	850	718	520	636	766	396	346	303
26	237	500	369	1,060	786	715	518	613	836	387	342	299
27	240	268	396	892	838	656	522	546	762	387	342	303
28	244	273	450	840	856	616	540	591	716	382	346	299
29	234	390	684	795	-	579	508	758	592	382	346	299
30	231	322	686	765	-	529	529	730	606	378	338	299
31	244	-	549	777	-	540	-	744	-	387	342	-

Month	Observed				Rock Creek Diversion (acre-feet)	Adjusted for diversion			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	299	231	247	15,180	120	15,300	249		
November	566	207	306	18,240	180	18,420	310		
December	686	287	433	26,650	550	27,200	442		
Calendar year 1938	1,710	207	533	385,800	4,820	390,600	539	3.91	53.08
January	1,330	593	998	61,390	2,800	64,190	1,044		
February	1,220	633	802	44,560	3,100	47,660	858		
March	990	529	807	49,630	3,100	52,730	853		
April	586	475	525	31,260	1,700	32,960	554		
May	914	546	679	41,770	920	42,690	694		
June	980	548	713	42,450	1,600	44,050	740		
July	588	378	444	27,310	800	28,110	457		
August	382	333	355	21,840	180	22,020	358		
September	369	299	323	19,220	300	19,520	328		
Water year 1938-39	1,330	207	552	399,500	15,350	414,800	573	4.15	56.33

Note.- Monthly discharge in second-feet per square mile and run-off 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. Zero of gage is 32.13 feet above mean lower low-water as determined by the Corps of Engineers, U. S. Army.

Drainage area.- 91 square miles.

Records available.- January to September 1939.

Extremes.- Maximum stage observed during period, 5.11 feet Feb. 19; minimum observed, 0.25 foot Sept. 27, 30.

Remarks.- Records excellent. Gage read once daily. Gage not read Aug. 8. No known diversion. No regulation.

Gage height, in feet, period January to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				-	3.79	4.60	3.62	1.81	0.95	1.17	0.72	0.38
2				-	3.77	4.51	3.57	1.77	.92	1.17	.71	.40
3				-	3.73	4.46	3.49	1.73	.94	1.19	.71	.39
4				-	3.69	4.39	3.42	1.69	.92	1.18	.70	.38
5				-	3.66	4.32	3.34	1.68	.90	1.17	.68	.40
6				-	3.68	4.28	3.27	1.67	.90	1.14	.64	.40
7				-	3.64	4.22	3.19	1.60	.90	1.12	.62	.39
8				-	3.60	4.14	3.12	1.56	.96	1.00	-	.39
9				-	3.56	4.08	3.06	1.61	.97	1.10	.60	.38
10				-	3.52	4.00	3.00	1.45	.97	1.08	.58	.36
11				-	3.48	3.98	2.94	1.46	.95	1.05	.54	.39
12				-	3.62	3.97	2.86	1.41	.93	1.03	.52	.38
13				-	3.73	4.21	2.79	1.37	.90	1.01	.51	.38
14				-	3.82	4.24	2.72	1.33	.88	1.00	.51	.38
15				-	4.51	4.30	2.67	1.30	.89	1.02	.49	.38
16				-	4.86	4.35	2.60	1.28	.88	1.02	.47	.38
17				-	4.99	4.39	2.52	1.23	.90	1.01	.45	.36
18				-	5.07	4.40	2.47	1.18	.97	1.00	.42	.34
19				-	5.11	4.41	2.41	1.16	.99	.98	.41	.32
20				-	5.09	4.39	2.37	1.14	1.05	.96	.41	.31
21				-	5.04	4.35	2.30	1.12	1.11	.93	.40	.31
22				-	4.99	4.30	2.24	1.10	1.12	.91	.40	.30
23				-	4.93	4.26	2.18	1.09	1.19	.90	.39	.30
24				-	4.86	4.21	2.12	1.07	1.20	.88	.38	.29
25				-	4.83	4.18	2.10	1.05	1.20	.86	.37	.28
26				-	4.78	4.10	2.05	1.04	1.20	.84	.36	.26
27				-	4.70	4.02	2.00	1.01	1.21	.82	.37	.25
28				-	4.65	3.97	1.97	.99	1.20	.81	.37	.27
29				-	-	3.88	1.93	.99	1.20	.80	.35	.26
30				3.80	-	3.79	1.87	.98	1.19	.78	.33	.25
31				3.80	-	3.72	-	.97	-	.76	.32	-

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. Zero of gage is 32.13 feet above mean lower low-water as determined by Corps of Engineers, U. S. Army. Discharge measurements made at railway bridge a mile downstream from Bear Creek.

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

Records available.- January to September 1939, including flow of Bear Creek.

Extremes.- Maximum discharge observed during period, 605 second-feet Feb. 18, 19, 20 (gage height, 5.1 feet); minimum observed, 51 second-feet Sept. 27, 30 (gage height, 0.25 foot).

Remarks.- Records good. Discharge for Aug. 8 interpolated. Gage read once daily. No known diversion. No regulation.

Rating tables for period January to September 1939 (gage height, in feet, and discharge, in second-feet)

Jan. 30 to Feb. 19				Feb. 20 to Sept. 30					
3.0	344	4.5	527	0.2	48	1.5	155	4.0	457
3.5	404	5.1	605	.5	67	2.0	209	5.1	605
4.0	464			1.0	107	3.0	528		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1				-	440	535	405	187	102	122	84	59
2				-	440	522	405	182	100	122	83	60
3				-	428	522	392	182	102	124	83	59
4				-	428	509	379	176	100	123	82	59
5				-	428	496	366	176	98	122	80	60
6				-	428	496	366	170	98	120	77	60
7				-	416	483	353	165	98	118	76	59
8				-	416	470	340	160	103	107	75	59
9				-	416	470	340	155	104	116	74	59
10				-	404	457	328	155	104	114	73	58
11				-	404	457	316	150	102	112	70	59
12				-	416	457	316	145	101	110	68	59
13				-	428	483	304	140	98	108	68	59
14				-	440	483	292	140	96	107	68	59
15				-	527	496	286	135	97	109	66	59
16				-	579	509	280	135	96	109	65	59
17				-	592	509	268	130	98	108	64	58
18				-	605	509	262	123	104	107	61	56
19				-	605	509	256	121	106	105	61	55
20				-	605	609	250	120	112	103	61	55
21				-	591	509	244	118	117	101	60	55
22				-	591	496	238	116	118	99	60	54
23				-	577	496	232	115	124	98	59	54
24				-	577	483	220	113	125	96	59	53
25				-	563	483	220	112	125	95	58	53
26				-	563	470	214	111	125	93	58	52
27				-	549	457	209	108	125	92	58	51
28				-	535	457	204	106	125	91	58	52
29				-	-	444	204	106	125	90	57	52
30				440	-	431	192	105	124	68	56	51
31				440	-	418	-	104	-	87	55	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October							
November							
December							
Calendar year							
January 30-31	880	-	-	-	-	-	-
February	13,991	605	404	500	3.57	3.72	27,750
March	15,025	535	418	485	3.46	3.99	29,800
April	8,681	405	192	289	2.06	2.30	17,220
May	4,261	187	104	137	.979	1.13	8,450
June	3,252	125	96	108	.771	.86	6,450
July	3,296	124	87	106	.757	.87	6,540
August	2,077	84	55	67.0	.479	.55	4,120
September	1,697	60	51	56.6	.404	.45	3,370
The period	-	-	-	-	-	-	103,700

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. Discharge measurements made 1 mile upstream from gage.

Drainage area.- 355 square miles.

Records available.- October 1902 to September 1905, April 1911 to September 1939.

Average discharge.- 31 years, 2,361 second-feet.

Extremes.- Maximum discharge during year, 17,200 second-feet Jan. 1 (gage height, 14.0 feet); minimum, 240 second-feet Oct. 9.
1902-05, 1911-39: Maximum discharge observed, about 57,000 second-feet Dec. 18, 1917 (gage height, 22.6 feet, at former site); minimum observed, 214 second-feet Oct. 15-21, 23, 1925.

Remarks.- Records excellent. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 16						May 17 to Sept. 30					
2.0	244	4.0	1,600	9.0	7,400	2.3	275	4.0	1,380	9.0	7,250
2.5	502	5.0	2,450	11.0	10,700	2.5	373	5.0	2,180	11.0	10,700
3.0	827	6.0	3,420	13.0	14,700	3.0	659	6.0	3,130		
3.5	1,200	7.0	4,540	14.0	17,200	3.5	1,010	7.0	4,310		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	282	1,180	1,610	12,900	1,420	963	3,390	3,920	3,730	3,440	1,240	628
2	277	1,110	1,920	11,700	1,340	1,020	3,620	4,140	3,560	3,280	1,150	699
3	291	6,010	2,050	7,880	1,260	1,060	3,890	4,260	3,630	3,490	1,130	584
4	301	4,280	3,920	5,390	1,220	992	3,510	4,500	3,240	4,040	1,110	566
5	277	2,500	8,560	3,980	1,290	948	2,940	3,830	3,240	3,170	1,060	659
6	263	1,830	4,660	3,150	1,260	956	2,580	3,290	3,120	2,700	992	666
7	253	1,710	7,390	2,720	1,200	934	2,460	3,440	3,100	2,590	913	572
8	253	2,040	7,690	2,800	1,120	912	2,730	3,500	3,370	2,500	870	525
9	244	1,840	7,330	2,600	1,060	884	3,330	3,820	3,320	2,730	849	508
10	361	1,490	4,480	2,660	1,000	877	3,110	3,950	3,340	2,980	849	479
11	1,260	1,190	3,250	2,760	1,080	948	2,950	4,410	3,490	2,930	842	463
12	2,960	1,060	2,580	2,570	2,490	935	2,890	4,960	3,990	2,580	807	479
13	3,080	978	2,180	2,320	2,190	1,010	2,590	5,900	4,350	2,480	766	441
14	1,580	992	1,880	2,100	2,280	978	2,390	7,400	3,910	2,430	745	415
15	1,050	2,280	1,660	2,290	2,580	970	2,280	8,500	4,150	2,500	699	772
16	799	8,110	1,470	2,120	1,980	992	2,310	8,040	3,760	2,400	679	828
17	656	5,440	1,330	3,080	1,650	1,120	2,500	6,220	3,460	2,020	653	621
18	556	3,650	1,210	4,610	1,490	1,380	3,250	5,060	3,590	1,910	640	525
19	485	4,670	1,100	5,650	1,370	1,720	3,940	3,810	4,440	2,060	628	468
20	440	4,380	1,030	3,870	1,260	2,130	3,880	3,100	4,840	1,960	602	452
21	413	2,910	992	2,880	1,160	2,630	4,470	2,990	4,270	1,820	584	457
22	386	2,210	956	2,380	1,100	3,510	4,600	3,150	4,410	1,890	584	436
23	360	1,800	1,300	2,080	1,070	4,590	3,960	3,060	4,220	1,920	566	409
24	355	1,550	2,360	2,120	1,040	5,380	3,440	3,060	3,880	1,880	560	394
25	423	1,360	2,700	2,090	1,100	5,590	3,230	3,800	3,170	1,830	584	389
26	407	1,210	1,920	1,820	1,030	4,310	2,990	4,260	2,780	1,810	578	368
27	976	1,100	1,920	1,790	1,020	3,300	3,020	4,090	2,950	1,790	542	363
28	792	1,020	2,370	1,900	963	2,790	3,730	7,210	3,700	1,750	548	358
29	934	985	3,680	1,840	-	2,560	5,260	10,300	4,760	1,600	596	338
30	684	1,070	4,520	1,670	-	2,500	4,430	6,900	4,320	1,440	530	323
31	1,320	-	7,670	1,520	-	2,640	-	4,760	-	1,360	519	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	22,938	3,080	244	740	2.08	2.40	45,500
November	71,955	8,110	978	2,398	6.75	7.53	142,700
December	97,688	8,560	956	3,151	8.88	10.24	193,800
Calendar year 1938	730,072	20,500	244	2,000	5.63	76.42	1,448,000
January	109,240	12,900	1,520	3,524	9.93	11.45	216,700
February	39,043	2,580	963	1,394	3.93	4.09	77,440
March	61,579	5,690	677	1,986	5.59	6.44	122,100
April	99,670	5,260	2,280	3,322	9.36	10.44	197,700
May	149,630	10,300	2,990	4,827	13.6	15.68	296,800
June	111,890	4,840	2,780	3,730	10.5	11.71	221,900
July	73,280	4,040	1,360	2,364	6.66	7.68	145,300
August	23,415	1,240	519	755	2.13	2.46	46,440
September	15,185	828	323	506	1.43	1.60	30,120
Water year 1938-39	875,513	12,900	244	2,399	6.76	91.72	1,736,000

Peak discharge.- Jan. 1 (5:30 p.m.) 17,200 sec.-ft.; May 29 (1:30 a.m.) 12,900 sec.-ft.

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, 5 miles upstream from Wallace River and Startup. Zero of gage is 210.01 feet above mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 535 square miles.

Records available.- September 1928 to September 1939.

Average discharge.- 11 years, 3,789 second-feet.

Extremes.- Maximum discharge during year, 28,900 second-feet Jan. 1 (gage height, 12.92 feet); minimum, 382 second-feet Oct. 9 (gage height, 2.78 feet).
1928-39: Maximum discharge, 79,000 second-feet Dec. 21, 1933 (gage height, 21.3 feet); minimum, that of Oct. 9, 1938.

Remarks.- Records excellent except those for period of faulty gage heights, July 1 to Aug. 28, which were computed on basis of records for station on South Fork near Index and are fair. No diversion or regulation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

2.7	330	5.0	2,920	10.0	15,700
3.0	540	6.0	4,570	11.0	19,800
3.5	990	7.0	6,510	13.0	29,300
4.0	1,570	8.0	9,100		
4.5	2,200	9.0	12,200		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	480	2,310	2,680	22,000	2,150	1,450	5,160	6,000	5,960	5,700	2,100	980
2	451	2,150	3,210	18,500	1,990	1,560	5,520	6,290	5,770	5,500	1,900	1,140
3	488	8,970	3,370	11,700	1,860	1,650	5,860	6,440	5,660	5,700	1,800	940
4	572	7,120	5,850	7,860	1,770	1,520	5,350	6,790	5,350	6,500	1,800	880
5	472	4,120	12,800	5,800	1,860	1,430	4,480	5,800	5,390	5,400	1,700	1,010
6	437	3,070	6,990	4,640	1,820	1,410	3,960	5,060	5,200	4,400	1,600	1,090
7	423	2,820	11,800	4,060	1,710	1,370	3,770	5,390	5,160	4,300	1,500	920
8	395	3,330	12,200	4,260	1,570	1,310	4,230	5,500	5,580	4,200	1,400	824
9	388	3,020	11,500	4,060	1,470	1,230	5,160	5,880	5,500	4,600	1,400	786
10	686	2,510	6,830	4,060	1,350	1,210	4,860	6,040	5,540	5,100	1,400	750
11	2,540	2,110	5,060	4,250	1,590	1,330	4,620	6,690	5,820	5,000	1,400	741
12	6,410	1,910	4,090	3,960	3,890	1,460	4,530	7,550	6,510	4,300	1,300	768
13	5,520	1,760	3,490	3,550	3,550	1,490	4,060	9,160	6,950	4,200	1,300	714
14	2,880	1,810	3,090	3,210	3,660	1,440	3,740	11,600	6,250	4,100	1,200	680
15	1,970	3,780	2,760	3,570	4,230	1,400	3,570	13,100	6,670	4,300	1,200	1,350
16	1,500	12,500	2,470	3,260	3,250	1,440	3,610	12,200	6,100	4,200	1,200	1,500
17	1,220	8,480	2,260	4,550	2,650	1,610	3,960	9,700	5,690	3,500	1,100	1,090
18	1,030	5,710	2,070	6,950	2,370	2,070	5,100	7,880	5,840	3,300	1,100	920
19	900	7,180	1,930	8,430	2,150	2,620	6,040	6,140	7,020	3,500	1,000	814
20	824	6,860	1,820	5,960	1,940	3,310	5,960	5,200	7,500	3,300	1,000	759
21	786	4,610	1,770	4,520	1,810	4,120	6,790	4,990	6,690	3,100	1,000	750
22	741	3,570	1,730	3,730	1,710	5,420	6,880	5,290	7,040	3,200	1,000	714
23	696	2,920	2,230	3,260	1,630	6,920	5,960	5,200	7,070	3,200	950	671
24	688	2,550	3,760	3,280	1,590	8,120	5,230	5,230	6,080	3,100	950	654
25	862	2,270	4,370	3,260	1,710	8,600	4,950	6,230	5,350	3,000	1,000	620
26	814	2,070	3,230	2,840	1,580	6,530	4,640	6,860	4,700	2,900	1,000	596
27	1,990	1,910	3,180	2,860	1,560	5,010	4,700	6,620	5,010	2,800	1,000	580
28	1,630	1,800	3,870	3,010	1,460	4,260	5,780	13,400	6,230	2,800	1,000	572
29	1,930	1,760	5,670	2,940	-	3,920	8,040	17,000	7,800	2,600	1,070	556
30	1,860	1,970	8,300	2,640	-	3,890	6,760	10,500	7,040	2,400	871	540
31	2,560	-	14,300	2,370	-	4,110	-	7,310	-	2,200	824	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	44,143	6,410	388	1,424	2.66	3.07	87,560
November	116,950	12,500	1,760	3,898	7.29	8.13	232,000
December	158,880	14,300	1,730	5,125	9.58	11.04	315,100
Calendar year 1938	1,175,735	35,700	388	3,221	6.02	81.76	2,332,000
January	169,340	22,000	2,370	5,463	10.2	11.76	335,900
February	59,880	4,230	1,350	2,139	4.00	4.16	118,800
March	93,210	8,600	1,210	3,007	5.62	6.48	184,900
April	153,270	8,040	3,570	5,109	9.55	10.66	304,000
May	237,040	17,000	4,990	7,646	14.3	16.49	470,200
June	182,670	7,800	4,700	6,089	11.4	12.72	362,300
July	122,400	6,500	2,200	3,948	7.38	8.51	242,600
August	39,065	2,100	824	1,260	2.36	2.72	77,480
September	24,909	1,500	540	830	1.55	1.73	49,410
Water year 1938-39	1,401,757	22,000	388	3,840	7.18	97.47	2,780,000

Peak discharge.- Dec. 31 (8:15 a.m.) 16,200 sec.-ft.; Jan. 1 (4:50 p.m.) 28,900 sec.-ft.

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, 1¼ miles upstream from gage.

Records available.- July 1929 to September 1939.

Average discharge.- 10 years, 121 second-feet.

Extremes.- Maximum discharge during year, 720 second-feet Oct. 12 (gage height, 3.40 feet); minimum, 14 second-feet Mar. 11-16.
1929-39: 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, 1¼ miles upstream from gage. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 1				Jan. 2 to Sept. 30			
0.4	17	2.0	228	0.3	12	2.0	212
.7	31	2.5	378	.5	18	2.5	352
1.0	52	3.0	560	.7	27	3.0	515
1.5	113	3.5	760	1.0	48	3.5	710
				1.5	107		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	37	50	640	34	16	112	169	180	220	101	44
2	24	85	63	498	28	17	126	173	156	197	92	48
3	25	240	72	389	25	17	145	176	154	222	95	43
4	28	228	133	271	24	16	132	182	145	279	98	46
5	26	133	357	162	23	16	109	156	139	233	96	51
6	24	100	236	114	22	16	95	130	135	178	79	52
7	22	90	372	94	21	16	89	128	132	149	68	45
8	21	89	439	87	20	15	100	126	141	139	61	40
9	20	81	378	78	19	15	121	137	143	171	62	39
10	26	66	228	71	18	15	116	154	139	212	66	37
11	108	54	138	71	20	14	110	180	160	217	69	36
12	423	47	103	66	56	14	104	212	185	190	65	34
13	370	41	83	60	79	14	95	262	204	178	59	32
14	202	41	68	54	73	14	87	331	187	178	55	30
15	114	82	58	56	74	14	77	364	200	192	51	35
16	81	410	50	52	56	14	74	340	185	190	46	46
17	60	296	45	74	46	16	84	282	158	134	46	46
18	50	189	40	177	38	24	119	233	158	117	46	42
19	43	213	36	271	32	52	160	178	187	134	46	38
20	38	218	32	174	28	80	173	132	212	130	46	33
21	36	124	30	106	25	115	197	112	200	122	46	32
22	35	92	28	78	23	180	187	112	225	139	48	34
23	32	70	33	59	21	241	156	112	260	166	48	36
24	32	56	49	52	20	293	130	112	228	178	46	35
25	34	48	65	48	19	279	117	141	182	176	47	34
26	37	43	57	43	18	192	114	171	141	178	46	32
27	59	40	60	41	17	128	117	180	143	187	44	31
28	60	37	80	43	17	101	164	393	204	187	45	29
29	71	35	209	42	-	91	222	550	276	162	46	26
30	76	38	386	38	-	89	190	364	271	130	42	24
31	94	-	600	34	-	94	-	241	-	119	39	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	2,295	423	20	74.0	7.12	8.21	4,550
November	3,373	410	35	112	10.8	12.05	6,690
December	4,578	600	28	148	14.2	16.37	9,080
Calendar year 1938	37,167	730	14	102	9.81	133.98	73,720
January	4,043	640	34	130	12.5	14.41	8,020
February	896	79	17	32.0	3.08	3.21	1,780
March	2,218	293	14	71.5	6.88	7.93	4,400
April	3,822	222	74	127	12.2	13.61	7,580
May	6,533	550	112	211	20.3	23.40	12,960
June	5,430	276	132	181	17.4	19.41	10,770
July	5,404	279	117	174	16.7	19.25	10,720
August	1,844	101	39	59.5	5.72	6.60	3,660
September	1,130	52	24	37.7	3.62	4.04	2,240
Water year 1938-39	41,566	640	14	114	11.0	143.49	82,450

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., 1½ miles upstream from intake of Everett water-supply system and 7½ miles north of Startup.

Drainage area.- 75 square miles.

Records available.- May 1934 to September 1939.

Extremes.- Maximum discharge during year, 9,190 second-feet Oct. 12, May 28 (gage height, 12.6 feet), from rating curve extended above 3,000 second-feet; minimum, 61 second-feet Oct. 1, 2 (gage height, 3.41 feet).

1934-39: Maximum discharge, 15,600 second-feet Oct. 24, 1934 (gage height, 16.05 feet), from rating curve extended above 3,000 second-feet; minimum, 55 second-feet Sept. 22, 23, 24, 1938 (gage height, 3.32 feet).

Remarks.- Records excellent except those for period of missing gage heights, July 5-26 (computed on basis of records for North Fork of Snoqualmie River near Snoqualmie Falls), and those above 3,000 second-feet, which are fair. No diversion or regulation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

3.4	60	5.0	374	7.0	1,390	10.0	4,800
3.7	82	5.5	548	7.5	1,790	11.0	6,360
4.0	122	6.0	773	8.0	2,270	12.0	8,100
4.5	230	6.5	1,060	9.0	3,430	13.0	9,950

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	854	1,120	5,980	365	205	1,390	1,090	911	698	263	212
2	61	854	1,090	4,060	329	291	1,250	1,150	826	674	244	212
3	210	2,790	882	2,490	297	285	1,420	1,120	826	1,600	252	160
4	144	1,530	2,050	1,530	282	225	1,090	1,220	940	1,700	241	144
5	96	940	3,180	1,060	294	203	826	970	1,090	1,000	233	252
6	82	674	1,460	800	274	218	698	854	970	850	203	244
7	75	699	4,550	781	244	210	748	1,320	940	800	182	173
8	70	698	3,150	1,090	220	191	1,030	1,180	1,030	750	171	140
9	69	609	2,690	1,030	205	180	1,390	1,150	940	700	171	120
10	575	473	1,280	1,000	191	171	1,060	1,150	854	700	175	108
11	2,020	393	882	1,250	434	208	1,030	1,250	854	650	171	108
12	4,400	353	674	882	1,540	241	1,030	1,390	940	650	162	123
13	2,110	323	548	722	940	235	826	1,620	970	600	150	135
14	916	594	470	609	911	210	722	1,970	800	600	142	119
15	548	1,880	405	940	902	235	674	1,970	970	700	135	674
16	399	4,250	359	652	568	294	698	1,660	1,000	600	122	452
17	323	1,960	320	1,740	438	344	940	1,420	1,060	550	117	274
18	265	1,460	294	2,330	396	448	1,360	1,150	1,280	500	112	208
19	222	2,930	265	2,170	356	609	1,360	854	1,620	650	110	175
20	191	1,740	246	1,400	317	826	1,280	698	1,540	600	105	150
21	175	1,000	246	911	285	1,120	1,420	722	1,180	550	104	133
22	154	698	274	674	263	1,540	1,220	800	1,210	550	104	120
23	138	548	1,040	568	241	1,880	1,000	773	1,460	500	102	114
24	142	470	1,480	652	238	2,170	882	722	1,180	475	100	108
25	225	418	1,250	588	244	2,210	1,030	1,000	940	450	107	102
26	282	399	674	492	215	1,320	1,030	1,150	773	470	108	98
27	1,140	418	1,020	800	220	911	1,000	1,030	826	473	101	98
28	640	415	1,360	940	203	748	1,320	4,800	1,000	445	126	97
29	882	473	2,950	674	-	722	1,700	3,870	1,150	383	193	92
30	789	753	4,320	510	-	773	1,250	1,820	882	332	126	88
31	1,320	-	5,800	425	-	1,000	-	1,180	-	302	117	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	18,725	4,400	61	604	8.05	9.28	37,140
November	31,596	4,250	323	1,053	14.0	15.62	62,670
December	46,329	5,800	246	1,494	19.9	22.94	91,890
Calendar year 1938	241,205	9,520	55	661	8.81	119.50	478,400
January	39,750	5,980	425	1,282	17.1	19.71	78,840
February	11,412	1,540	191	408	5.44	5.66	22,640
March	20,223	2,210	171	652	8.69	10.02	40,110
April	32,674	1,700	674	1,089	14.5	16.18	64,810
May	43,053	4,800	698	1,389	18.5	21.33	85,390
June	30,962	1,620	773	1,032	13.8	15.40	61,410
July	20,502	1,700	302	661	8.81	10.16	40,670
August	4,749	263	100	153	2.04	2.35	9,420
September	5,233	674	88	174	2.32	2.59	10,380
Water year 1938-39	305,208	5,980	61	836	11.1	151.24	605,400

Peak discharge.- Oct. 12 (5 p.m.) 9,190 sec.-ft.; Nov. 16 (7:50 a.m.) 6,360 sec.-ft.; Dec. 7 (3:15 p.m.) 6,360 sec.-ft.; Dec. 31 (12:40 a.m.) 8,820 sec.-ft.; Jan. 1 (3 p.m.) 7,920 sec.-ft.; May 28 (8:30 p.m.) 9,190 sec.-ft.

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. Zero of gage is 42.96 feet above mean sea level (subject to correction for general adjustment of 1929). 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. Zero of gage is 52.48 feet above mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 605 square miles.

Records available.- February 1929 to September 1939 in reports of Geological Survey. October 1928 to February 1929 (monthly discharge only) in State Water-Supply Bulletin 5.

Average discharge.- 11 years (1928-39), 3,676 second-feet.

Extremes.- Maximum discharge during year, 22,900 second-feet Dec. 8 (gage height, 11.2 feet); minimum, 353 second-feet Sept. 30 (gage height, 2.29 feet).
1929-39: Maximum discharge, about 51,000 second-feet Feb. 26, 1932; maximum gage height recorded, 16.97 feet Nov. 13, 1932; minimum discharge, 342 second-feet Sept. 23, 1938; minimum gage height, 0.34 foot Sept. 11, 1930.

Remarks.- Records excellent except those for period of missing gage heights Nov. 1-17, which were computed on basis of records for Skykomish River near Gold Bar and are fair. Shifting-control method used Dec. 5, 7-9, Dec. 31 to Jan. 3, May 28, 29. Low-water flow diverted for operation of power plant at Snoqualmie Falls but returned to river above gage. Some regulation of flow caused by operation of power plant.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	488	1,900	3,320	13,600	3,230	2,310	4,420	4,220	4,120	3,700	1,360	860
2	450	1,800	3,900	19,700	2,940	2,400	4,740	4,320	3,800	3,500	1,300	1,210
3	548	9,600	4,620	13,200	2,760	2,580	4,840	4,320	3,800	4,010	1,230	999
4	563	6,400	5,670	7,850	2,580	2,400	4,740	4,630	3,900	5,750	1,230	754
5	546	4,100	14,500	6,160	2,670	2,220	3,920	4,420	4,760	4,760	1,220	986
6	512	3,000	8,070	4,940	2,760	2,400	3,420	3,720	4,760	3,800	1,160	1,140
7	488	2,700	15,100	4,320	2,580	2,310	3,230	4,120	4,430	3,500	1,090	973
8	450	3,000	20,800	5,160	2,400	2,220	3,620	4,320	4,870	3,210	1,050	825
9	458	2,600	14,100	5,380	2,220	2,040	4,120	4,420	4,870	3,210	973	790
10	591	2,300	7,350	6,860	2,070	1,950	4,120	4,420	4,320	3,400	960	744
11	2,190	2,000	5,490	6,860	2,090	2,120	3,720	4,740	4,120	3,210	936	690
12	2,760	1,800	4,320	6,390	5,250	2,580	3,920	5,050	4,430	3,020	973	759
13	5,350	1,700	3,720	5,160	5,050	2,760	3,520	5,490	4,650	2,660	912	773
14	2,650	1,800	3,230	4,520	5,070	2,580	3,140	6,620	4,220	2,660	900	748
15	1,760	3,800	2,850	4,840	9,420	2,400	2,940	7,350	4,220	2,660	864	1,020
16	1,340	10,400	2,580	4,520	6,860	2,760	2,940	7,100	4,430	3,210	829	1,960
17	1,050	10,000	2,400	6,100	5,160	3,140	3,230	5,930	5,200	2,570	763	1,350
18	949	5,880	2,140	7,850	4,420	3,520	4,120	5,050	5,530	2,220	785	1,040
19	850	6,610	2,040	9,420	4,020	4,020	4,940	4,120	8,060	2,310	741	886
20	777	8,340	1,900	7,100	3,520	4,630	4,630	3,420	8,780	2,570	763	774
21	726	5,290	1,900	5,490	3,140	5,050	5,160	3,320	7,110	2,220	741	752
22	691	4,000	1,920	4,630	2,850	5,930	5,160	3,620	6,190	2,140	719	711
23	630	3,320	3,040	4,120	2,670	7,350	4,520	3,520	5,530	2,220	680	704
24	660	2,840	5,710	4,120	2,490	7,850	3,920	3,420	5,310	2,140	710	668
25	630	2,470	6,160	4,740	2,670	8,370	4,020	3,820	4,650	2,060	720	623
26	735	2,200	4,420	3,920	2,580	6,620	3,820	4,630	4,010	1,950	700	603
27	1,450	2,060	3,920	4,020	2,490	5,050	3,620	4,420	3,700	1,900	729	570
28	1,620	1,970	5,490	4,520	2,490	4,220	4,120	5,990	4,120	1,840	680	540
29	1,600	1,990	7,350	4,520	-	3,820	5,710	12,900	4,760	1,710	790	536
30	1,560	2,380	8,630	4,020	-	3,620	5,050	7,340	4,540	1,560	757	545
31	2,010	-	12,700	3,620	-	3,820	-	5,200	-	1,480	688	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	37,082	5,350	450	1,196	1.98	2.28	73,550
November	118,250	10,400	1,700	3,942	6.52	7.27	234,500
December	189,240	20,800	1,900	6,105	10.1	11.64	375,400
Calendar year 1938	1,113,992	32,800	396	3,052	5.04	68.50	2,210,000
January	197,650	19,700	3,620	6,376	10.5	12.11	392,000
February	98,450	9,420	2,070	3,516	5.81	6.05	195,300
March	115,040	8,370	1,950	3,711	6.13	7.07	228,200
April	123,370	5,710	2,940	4,112	6.80	7.59	244,700
May	155,960	12,900	3,320	5,031	8.32	9.59	309,300
June	147,190	8,780	3,700	4,906	8.11	9.05	291,900
July	87,150	5,750	1,480	2,811	4.65	5.36	172,900
August	27,953	1,360	680	902	1.49	1.72	55,440
September	25,533	1,960	536	851	1.41	1.57	50,640
Water year 1938-39	1,322,868	20,800	450	3,624	5.99	81.30	2,624,000

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 1939.

Average discharge.- 10 years, 502 second-feet.

Extremes.- Maximum discharge during year, 4,610 second-feet Dec. 7 (gage height, 11.59 feet), from rating curve extended above 1,500 second-feet; minimum, 38 second-feet Oct. 2, 3, 9 (gage height, 1.97 feet).
1929-39: Maximum discharge, about 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 above 2,000 second-feet, which are poor. No diversion or regulation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

1.9	34	4.0	373	8.0	2,200
2.2	52	4.5	533	10.0	3,490
2.5	79	5.0	718	12.0	4,890
3.0	142	6.0	1,170		
3.5	239	7.0	1,670		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	418	738	2,680	289	182	738	622	550	482	138	89
2	39	344	679	2,200	263	178	698	698	533	48[illegible]	128	136
3	43	1,550	622	1,370	246	176	799	679	550	604	123	94
4	59	961	1,760	841	234	158	641	778	586	1,170	118	82
5	53	568	2,520	604	253	147	499	622	738	679	114	115
6	44	400	1,170	482	249	153	434	516	698	568	107	125
7	41	379	3,570	450	230	148	450	738	698	516	101	102
8	40	466	2,140	660	218	144	586	718	841	482	96	86
9	38	391	1,900	738	212	139	698	738	778	516	92	76
10	171	297	927	927	193	135	586	718	679	533	89	69
11	505	239	641	995	208	147	568	799	660	482	88	75
12	988	216	499	738	729	156	604	862	698	391	83	83
13	862	201	418	586	499	160	482	1,070	698	391	81	82
14	344	254	361	482	611	152	434	1,320	604	356	78	79
15	212	847	316	550	939	160	403	1,320	698	486	75	354
16	155	2,610	279	466	550	208	434	1,120	698	450	72	322
17	129	1,290	253	884	418	289	550	927	884	324	70	178
18	125	778	230	1,270	373	397	820	738	989	327	66	138
19	97	1,480	210	1,480	324	550	820	550	1,620	403	64	116
20	86	1,180	195	862	279	698	758	466	1,520	350	63	97
21	78	660	195	604	251	820	906	516	1,020	300	61	87
22	73	482	218	482	228	1,100	778	568	884	300	59	81
23	68	376	523	434	210	1,270	622	550	820	284	58	77
24	66	322	1,170	482	201	1,370	533	533	778	258	55	73
25	80	279	906	482	208	1,420	586	698	641	239	58	72
26	88	256	533	397	186	884	550	778	516	225	58	70
27	399	256	499	450	186	622	533	660	550	212	57	68
28	263	268	679	533	171	516	758	1,350	698	195	58	68
29	361	322	1,260	450	-	482	1,040	2,060	778	176	74	64
30	300	516	1,540	385	-	482	718	1,070	604	156	69	61
31	536	-	2,080	330	-	586	-	679	-	145	62	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	6,386	988	38	206	3.17	3.66	12.670
November	18,606	2,610	201	620	9.54	10.64	36,900
December	29,031	3,570	195	936	14.4	16.60	57,580
Calendar year 1938	149,954	4,840	33	411	6.32	85.83	297,400
January	24,294	2,680	330	784	12.1	13.95	48,190
February	8,958	939	171	320	4.92	5.12	17,770
March	14,029	1,420	135	453	6.97	8.04	27,830
April	19,026	1,040	403	634	9.75	10.88	37,740
May	25,961	2,060	466	837	12.9	14.87	51,490
June	23,009	1,620	516	767	11.8	13.17	45,640
July	12,682	1,170	145	409	6.29	7.25	25,150
August	2,515	138	55	81.1	1.25	1.44	4,990
September	3,219	354	61	107	1.65	1.84	6,380
Water year 1938-39	187,716	3,570	38	514	7.91	107.46	372,300

Peak discharge.- Nov. 16 (1:10 p.m.) 4,120 sec.-ft.; Dec. 5 (6 a.m.) 3,560 sec.-ft.; Dec. 7 (1:15 p.m.) 4,610 sec.-ft.; Jan. 1 (4 to 4:30 p.m.) 3,490 sec.-ft.

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. Zero of gage is 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 1939.

Extremes.- Maximum discharge during year, 4,800 second-feet Nov. 16 (gage height, 9.33 feet); minimum, 66 second-feet Oct. 1, 2 (gage height, 4.09 feet).
1928-32, 1937-39: Maximum discharge, 9,750 second-feet Apr. 18, 1938 (gage height, 11.51 feet), from rating curve extended above 4,500 second-feet; minimum, 64 second-feet Sept. 23, 1938 (gage height, 4.07 feet).

Remarks.- Records good except those for period of faulty gage heights, Nov. 8 to Feb. 14, which are fair, those for period of missing gage heights, Oct. 25 to Nov. 7 (computed on basis of records for Sultan River near Startup and North Fork of Snoqualmie River near Snoqualmie Falls), and those above 5,000 second-feet, which are poor. No diversion or regulation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

4.0	58	6.0	640	9.0	4,120
4.5	123	6.5	980	9.5	5,100
5.0	241	7.0	1,400		
5.5	420	8.0	2,530		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	67	450	819	3,270	558	376	882	630	586	460	194	167
2	67	400	910	2,380	522	388	826	688	554	440	186	181
3	104	2,500	798	1,540	484	396	924	676	550	874	181	136
4	104	1,500	1,850	2,070	464	368	749	756	605	1,220	176	125
5	84	750	2,280	889	472	360	595	610	1,000	721	172	274
6	76	650	1,260	749	448	380	540	558	819	586	167	204
7	72	670	3,630	742	424	372	558	840	805	540	158	169
8	70	676	2,020	1,140	384	356	700	749	1,050	492	154	141
9	69	586	1,820	1,260	364	336	917	721	875	492	149	127
10	329	472	966	1,440	340	326	756	714	714	484	145	118
11	593	404	735	1,540	382	340	700	770	664	448	141	149
12	1,080	384	610	1,180	1,130	392	756	819	652	396	139	154
13	908	392	550	973	777	408	605	959	640	384	137	152
14	432	598	514	840	1,050	384	554	1,140	572	368	134	134
15	269	1,480	480	1,060	1,740	392	522	1,100	646	456	132	541
16	194	3,820	440	931	973	488	522	924	714	424	130	405
17	186	1,640	412	1,870	749	568	620	882	1,060	340	128	224
18	143	1,100	384	2,130	646	652	896	688	1,250	322	125	179
19	128	2,100	368	2,030	572	819	854	563	1,900	368	123	156
20	116	1,900	352	1,360	514	924	812	484	1,540	380	118	139
21	107	1,490	360	988	436	1,040	952	527	1,040	330	112	130
22	102	1,220	432	847	444	1,260	798	576	875	322	112	123
23	98	996	900	735	416	1,440	635	554	805	316	114	118
24	98	812	1,540	889	404	1,490	581	522	749	295	112	114
25	120	688	1,300	868	416	1,490	721	645	630	279	119	110
26	150	605	791	707	384	980	682	798	554	269	116	107
27	500	558	852	805	400	721	640	635	545	260	110	105
28	350	532	1,360	966	376	615	840	2,170	590	247	118	109
29	450	545	2,200	854	-	572	1,040	2,220	625	229	141	104
30	350	605	2,610	707	-	581	742	1,050	545	212	118	102
31	500	-	2,780	620	-	700	-	728	-	204	118	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	7,916	1,080	67	255	3.19	3.68	15,700
November	30,523	3,820	384	1,017	12.7	14.17	60,540
December	36,323	3,630	352	1,172	14.6	16.83	72,050
Calendar year 1938	194,646	6,800	64	533	6.66	90.36	386,100
January	38,380	3,270	620	1,238	15.5	17.87	76,130
February	16,269	1,740	340	581	7.26	7.56	32,270
March	19,914	1,490	326	642	8.02	9.25	39,500
April	21,919	1,040	522	731	9.14	10.20	43,480
May	25,696	2,220	484	829	10.4	11.99	50,970
June	24,154	1,900	545	805	10.1	11.27	47,910
July	13,158	1,220	204	424	5.30	6.11	26,100
August	4,279	194	110	138	1.72	1.98	8,490
September	4,997	541	102	167	2.09	2.33	9,910
Water year 1938-39	243,528	3,820	67	667	8.34	113.24	483,000

Peak discharge.- Nov. 16 (8:30 a.m.) 4,800 sec.-ft.; Dec. 7 (11 a.m. to 1:20 p.m.) 4,500 sec.-ft.; Dec. 30 (8:30 p.m.) 3,940 sec.-ft.

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., 1½ miles upstream from Canyon Creek and 2 miles northeast of Granite Falls.

Drainage area.- 119 square miles.

Records available.- July 1928 to September 1939.

Average discharge.- 11 years, 1,035 second-feet.

Extremes.- Maximum discharge during year, 13,100 second-feet Oct. 12 (gage height, 12.88 feet), from rating curve extended above 6,000 second-feet; minimum, 74 second-feet Oct. 1, 9 (gage height, 3.18 feet).
1928-39: Maximum discharge, about 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 (gage height, 3.04 feet).

Remarks.- Records excellent except those below 200 second-feet, which are fair, and those above 6,000 second-feet, which are poor. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1-11				Oct. 12 to Sept. 30			
3.1	59	4.1	363	3.2	88	7.0	2,950
3.5	150	4.5	570	3.5	160	8.0	4,480
3.8	243			4.0	340	9.0	6,030
				4.5	580	10.0	7,830
Note.- Same as following table above 4.7 feet.				5.0	915	11.0	9,600
				6.0	1,760	13.0	13,300

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	84	1,190	1,860	8,340	618	366	1,580	1,270	1,020	840	302	217
2	78	1,160	1,810	5,930	549	478	1,540	1,360	982	802	282	271
3	327	3,540	1,380	3,830	508	508	1,720	1,360	1,050	1,990	282	164
4	302	1,860	2,500	2,290	483	416	1,400	1,440	1,310	2,670	290	149
5	153	1,150	4,430	1,620	513	371	1,060	1,230	1,540	1,400	282	202
6	113	832	1,760	1,230	488	449	900	1,010	1,190	1,070	252	275
7	91	825	4,860	1,280	435	430	900	1,400	1,110	945	216	200
8	82	998	3,530	1,810	389	384	1,190	1,270	1,190	848	200	152
9	76	922	3,040	1,540	362	349	1,910	1,270	1,110	885	200	136
10	834	665	1,490	1,540	336	332	1,400	1,310	982	930	210	121
11	2,500	533	1,050	1,670	645	430	1,230	1,440	1,030	870	210	138
12	6,280	478	818	1,270	2,680	549	1,270	1,620	1,110	683	200	155
13	2,830	444	677	1,050	1,400	498	1,050	1,910	1,150	653	187	172
14	1,150	957	575	892	1,400	430	922	2,300	1,010	647	172	141
15	671	2,580	508	1,540	1,490	459	848	2,360	1,150	902	163	762
16	488	5,860	454	1,070	945	498	832	1,960	1,190	1,070	152	561
17	389	2,460	407	2,370	716	564	968	1,620	1,190	716	146	311
18	319	1,860	375	3,230	635	695	1,400	1,360	1,400	608	141	230
19	363	3,610	344	3,160	586	870	1,490	1,110	1,620	702	138	187
20	230	2,250	327	2,090	508	1,070	1,440	885	1,540	723	138	163
21	213	1,270	349	1,310	459	1,360	1,670	908	1,230	608	131	141
22	193	900	380	1,010	425	1,610	1,490	975	1,230	624	131	138
23	175	702	1,570	878	402	2,240	1,230	968	1,490	641	131	131
24	181	602	2,010	1,020	393	2,680	1,060	908	1,230	596	131	123
25	608	533	1,980	960	454	2,880	1,360	1,270	998	559	136	114
26	480	493	998	758	402	1,720	1,440	1,620	818	564	141	107
27	1,620	508	1,690	1,600	398	1,230	1,190	1,360	870	564	128	109
28	864	523	1,860	1,580	380	1,010	1,440	5,230	1,070	538	151	111
29	1,510	618	3,930	1,230	-	915	2,120	4,550	1,270	454	273	105
30	1,400	1,160	5,000	930	-	952	1,580	2,030	1,070	389	155	98
31	2,020	-	6,760	723	-	1,150	-	1,310	-	353	141	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	26,624	6,280	76	859	7.22	8.32	52,810
November	41,473	5,860	444	1,382	11.6	12.94	82,260
December	58,722	6,760	327	1,894	15.9	18.33	116,500
Calendar year 1938	316,824	10,800	56	868	7.29	98.99	628,400
January	59,751	8,340	723	1,927	16.2	18.68	118,500
February	18,999	2,680	336	679	5.71	5.95	37,680
March	28,093	2,880	332	906	7.61	8.77	55,720
April	39,630	2,120	832	1,321	11.1	12.38	78,600
May	50,614	5,230	885	1,633	13.7	15.79	100,400
June	35,150	1,620	818	1,172	9.85	10.99	69,720
July	25,844	2,670	353	834	7.01	8.08	51,260
August	5,812	302	128	187	1.57	1.81	11,530
September	5,904	762	98	197	1.66	1.85	11,710
Water year 1938-39	396,616	8,340	76	1,087	9.13	123.89	786,700

Peak discharge.- Oct. 12 (4:50 p.m.) 13,100 sec.-ft.; Nov. 16 (7:10 a.m.) 8,700 sec.-ft.; Dec. 31 (2 a.m.) 9,080 sec.-ft.; Jan. 1 (3:50 p.m.) 11,600 sec.-ft.; May 28 (7:50 p.m.) 11,000 sec.-ft.

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., 1½ miles upstream from Jim Creek and 3 miles southeast of Arlington. Zero of gage is 80 feet above mean sea level.

Drainage area.- 199 square miles.

Records available.- October 1936 to September 1939.

Extremes.- Maximum discharge during year, 20,200 second-feet Oct. 12 (gage height, 21.6 feet), from rating curve extended above 10,000 second-feet; minimum, 142 second-feet Oct. 9; minimum gage height, 10.91 feet Sept. 27.

1936-39: Maximum discharge, 25,200 second-feet Apr. 17, 1938 (gage height, 23.27 feet), from rating curve extended above 10,000 second-feet; minimum, 117 second-feet Sept. 23, 24, 1938; minimum gage height, 10.79 feet Nov. 16, 1936.

Remarks.- Records excellent. Discharge for Nov. 9 interpolated. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1-12

11.0	140	13.5	2,010	17.0	8,550
11.5	290	14.0	2,650	18.0	10,800
12.0	540	14.5	3,400	20.0	15,800
12.5	920	15.0	4,300	22.0	21,400
13.0	1,430	16.0	6,350		

Oct. 13 to Sept. 30

10.7	115	13.5	2,150
11.0	220	14.0	2,840
11.5	445	15.0	4,600
12.0	725	17.0	8,600
12.5	1,110	19.0	13,200
13.0	1,590		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	150	2,080	2,620	11,500	1,120	659	2,410	1,860	1,590	1,240	470	334
2	146	1,800	2,640	8,180	988	784	2,340	1,970	1,490	1,170	435	475
3	471	5,140	2,170	5,750	916	908	2,480	1,970	1,590	2,690	440	318
4	525	2,840	3,480	3,790	876	764	2,030	2,030	1,970	3,880	450	264
5	246	1,910	6,210	2,690	916	677	1,590	1,740	2,410	2,150	435	296
6	188	1,440	2,550	2,090	900	764	1,390	1,490	1,910	1,690	400	425
7	162	1,390	6,940	2,100	832	744	1,390	2,030	1,740	1,440	345	332
8	150	1,690	5,170	3,340	725	683	1,860	1,860	1,860	1,290	322	264
9	146	1,460	4,820	2,760	671	623	2,920	1,860	1,740	1,290	318	236
10	910	1,240	2,340	2,920	623	594	2,220	1,860	1,540	1,390	322	212
11	3,540	972	1,690	3,080	781	689	1,860	2,030	1,540	1,290	318	232
12	8,640	884	1,340	2,340	4,060	876	2,030	2,220	1,640	1,060	309	272
13	4,360	818	1,110	1,970	2,340	853	1,640	2,550	1,690	988	292	304
14	1,800	1,260	956	1,690	2,340	744	1,440	3,080	1,490	988	276	252
15	1,160	3,760	839	2,600	2,690	770	1,340	3,170	1,640	1,290	264	1,160
16	839	9,020	751	1,970	1,800	860	1,290	2,690	1,740	1,590	252	966
17	677	4,150	683	3,770	1,340	1,010	1,540	2,220	1,860	1,110	240	528
18	578	2,920	629	4,980	1,190	1,240	2,150	1,860	2,090	932	236	395
19	506	5,420	583	4,790	1,090	1,490	2,280	1,590	2,550	964	228	322
20	450	3,800	561	3,490	948	1,740	2,220	1,240	2,480	1,110	228	280
21	420	2,090	600	2,220	853	2,150	2,480	1,290	1,910	892	228	252
22	385	1,540	635	1,690	784	2,920	2,150	1,390	1,860	908	224	244
23	355	1,240	2,520	1,490	732	3,520	1,800	1,390	2,150	932	224	232
24	345	1,050	3,170	1,590	719	4,150	1,590	1,290	1,860	868	224	216
25	1,000	924	3,320	1,690	818	4,510	1,910	1,700	1,540	811	228	204
26	655	868	1,640	1,340	732	2,620	2,150	2,340	1,290	811	240	196
27	2,530	900	2,150	2,340	719	1,910	1,740	1,910	1,290	804	216	200
28	1,290	932	3,190	2,620	689	1,590	2,150	6,190	1,590	764	220	244
29	2,180	1,040	5,420	2,220	-	1,440	3,080	6,590	1,800	659	430	228
30	2,300	1,690	6,900	1,640	-	1,490	2,340	3,000	1,590	572	276	212
31	3,450	-	9,700	1,340	-	1,800	-	1,970	-	522	244	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	40,554	8,640	146	1,308	6.57	7.57	80,440
November	66,268	9,020	818	2,209	11.1	12.38	131,400
December	87,327	9,700	561	2,817	14.2	16.37	173,200
Calendar year 1938	494,366	16,100	117	1,354	6.80	92.47	980,500
January	95,980	11,500	1,340	3,096	15.6	17.99	190,400
February	33,192	4,060	623	1,185	5.95	6.20	65,840
March	45,572	4,510	594	1,470	7.39	8.52	90,390
April	59,810	3,080	1,290	1,994	10.0	11.16	118,600
May	70,380	6,590	1,240	2,270	11.4	13.14	139,600
June	53,440	2,550	1,290	1,781	8.95	9.99	106,000
July	38,095	3,880	522	1,229	6.18	7.12	75,560
August	9,334	470	216	301	1.51	1.74	18,510
September	10,095	1,160	196	336	1.69	1.89	20,020
Water year 1938-39	610,047	11,500	146	1,671	8.40	114.07	1,210,000

Peak discharge.- Oct. 12 (5:30 p.m.) 20,200 sec.-ft.; Jan. 1 (4:20-4:50 p.m.) 15,800 sec.-ft.; May 28 (9:20 p.m.) 15,200 sec.-ft.

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 area.- 48.9 square miles.

Records available.- October 1937 to September 1939.

Extremes.- Maximum discharge during year, 2,730 second-feet Jan. 1 (gage height, 6.40 feet), from rating curve extended above 800 second-feet; minimum, 10 second-feet Oct. 1; minimum gage height, 0.92 foot Aug. 24, 25.
1937-39: 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 (gage height, 0.91 foot).

Remarks.- Records good below 1,000 second-feet, poor above. No diversion or regulation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 28						May 29 to Sept. 30			
0.9	6	2.5	203	4.5	1,050	0.9	12	2.0	112
1.2	17	3.0	350	5.0	1,400	1.2	24	2.5	210
1.5	40	3.5	525	6.0	2,300	1.5	45	3.0	350
2.0	100	4.0	750	7.0	3,460				

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	261	266	1,700	278	148	290	130	99	78	24	20
2	12	180	309	980	236	163	245	146	93	73	22	29
3	50	460	296	700	208	198	242	142	102	221	22	21
4	58	266	455	585	203	187	203	148	156	215	21	19
5	29	222	596	454	227	170	159	129	320	160	22	22
6	22	154	329	365	236	216	136	114	220	138	21	24
7	18	144	1,220	385	236	214	134	187	189	117	20	22
8	15	222	774	700	203	185	175	156	203	96	19	18
9	13	344	559	650	172	161	293	140	174	87	18	16
10	23	239	359	800	152	146	239	138	147	80	17	15
11	183	175	275	675	188	159	195	152	136	71	17	17
12	624	150	219	471	984	230	227	163	126	61	17	17
13	243	144	185	401	800	239	185	185	115	57	17	18
14	104	298	156	347	725	216	168	206	106	54	17	17
15	73	493	136	568	800	222	150	187	107	75	17	34
16	58	1,640	123	565	513	233	142	144	109	84	16	44
17	47	650	110	713	368	263	161	111	157	61	15	27
18	41	450	100	843	305	272	227	112	192	50	15	22
19	37	691	92	725	257	269	198	116	222	60	15	19
20	34	658	87	650	216	278	200	89	212	73	15	17
21	31	408	105	454	185	293	230	94	170	52	14	15
22	31	299	126	353	161	341	180	99	147	45	14	14
23	30	233	442	305	142	368	144	93	140	41	14	14
24	30	193	564	332	140	401	127	82	140	36	13	14
25	98	159	555	365	180	436	161	119	124	34	14	14
26	52	142	332	311	156	272	208	195	110	32	14	14
27	124	136	409	412	161	198	152	120	107	30	14	15
28	72	130	521	501	152	163	193	229	106	28	15	16
29	189	138	861	493	-	146	239	238	107	26	21	16
30	206	206	1,030	422	-	148	168	166	92	25	17	15
31	435	-	1,020	344	-	182	-	122	-	25	16	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	2,998	624	12	96.7	1.98	2.28	5,950
November	9,885	1,640	130	330	6.75	7.53	19,610
December	12,611	1,220	87	407	8.32	9.59	25,010
Calendar year 1938	64,990.1	2,200	6.4	178	3.64	49.46	128,900
January	17,569	1,700	305	567	11.6	13.37	34,850
February	8,584	984	140	307	6.28	6.54	17,030
March	7,117	436	146	230	4.70	5.42	14,120
April	5,771	293	127	192	3.93	4.38	11,450
May	4,452	238	82	144	2.94	3.39	8,830
June	4,428	320	92	148	3.03	3.38	8,780
July	2,285	221	25	73.7	1.51	1.74	4,530
August	533	24	13	17.2	.352	.41	1,060
September	585	44	14	19.5	.399	.45	1,160
Water year 1938-39	76,818	1,700	12	210	4.29	58.48	152,400

Peak discharge.- Nov. 16 (11 a.m.) 2,350 sec.-ft.; Dec. 7 (5:10 p.m.) 2,200 sec.-ft.; Jan. 1 (12:30 to 1:40 p.m.) 2,730 sec.-ft.

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.

Drainage area.- 269 square miles.

Records available.- July 1928 to September 1939.

Average discharge.- 11 years, 1,696 second-feet.

Extremes.- Maximum discharge during year, 15,400 second-feet Jan. 1 (gage height, 9.89 feet), from rating curve extended above 8,000 second-feet; minimum, 112 second-feet Oct. 9 (gage height, 1.24 feet).

1928-39: 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 tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 31

1.2	102	4.0	1,300
1.6	200	5.0	2,130
2.0	315	6.0	3,320
2.5	470	6.0	8,180
3.0	665	9.0	11,800
3.5	930	10.0	15,800

Jan. 1 to Sept. 30

1.2	201	3.5	1,090
1.5	285	4.0	1,400
2.0	440	4.5	1,790
2.5	615	5.0	2,200
3.0	830		

Note.- Same as preceding table above 5.6 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	148	2,480	2,770	12,200	1,510	905	2,660	1,950	1,630	1,030	475	333
2	126	1,860	2,710	9,700	1,360	1,180	2,520	2,030	1,470	955	458	375
3	428	4,940	2,800	6,110	1,240	1,240	2,660	2,070	1,550	1,480	458	327
4	423	2,770	4,010	4,220	1,180	1,060	2,290	2,070	1,910	2,200	458	309
5	210	1,900	6,500	3,090	1,270	955	1,870	1,790	2,070	1,590	440	327
6	160	1,380	3,240	2,470	1,270	1,030	1,590	1,550	1,750	1,330	419	339
7	138	1,220	7,220	2,420	1,180	980	1,550	1,990	1,750	1,120	393	306
8	121	1,460	5,820	3,240	1,030	930	1,990	1,870	1,750	1,000	378	282
9	116	1,620	4,990	3,090	955	855	2,520	1,830	1,590	980	375	270
10	375	1,140	2,890	3,240	880	808	2,240	1,830	1,400	1,000	378	256
11	2,040	870	2,130	3,410	1,060	1,000	1,990	2,030	1,440	980	375	276
12	7,340	785	1,700	2,560	4,370	1,270	2,070	2,240	1,470	855	369	288
13	3,560	688	1,420	2,290	3,240	1,150	1,790	2,560	1,510	808	354	268
14	1,500	1,140	1,180	2,030	3,020	1,060	1,590	3,020	1,360	785	345	265
15	870	3,670	1,040	3,020	2,890	1,030	1,440	3,090	1,440	958	333	723
16	620	9,960	870	2,420	2,200	1,060	1,400	2,720	1,440	1,420	324	634
17	488	4,780	785	4,030	1,790	1,270	1,590	2,200	1,670	955	312	416
18	414	3,320	710	4,770	1,670	1,510	2,290	1,830	1,910	808	306	351
19	357	5,460	665	4,880	1,550	1,710	2,380	1,630	2,340	880	300	312
20	324	4,250	620	4,080	1,300	1,990	2,380	1,360	2,110	855	294	291
21	303	2,540	642	2,720	1,180	2,340	2,660	1,330	1,750	740	291	282
22	276	1,860	685	2,240	1,090	3,020	2,420	1,400	1,590	718	288	273
23	258	1,460	3,060	2,030	1,000	3,600	2,030	1,360	1,550	718	288	259
24	261	1,180	3,370	2,030	1,000	4,210	1,750	1,300	1,440	695	282	256
25	789	1,040	3,380	1,990	1,120	4,660	1,950	1,690	1,210	675	288	245
26	470	900	1,860	1,670	1,000	2,960	2,340	2,380	1,060	655	291	239
27	2,180	870	2,070	2,600	980	2,290	1,910	1,910	1,060	655	279	245
28	1,040	870	3,240	3,020	930	1,910	2,240	4,120	1,180	635	285	250
29	2,220	965	4,320	2,610	-	1,710	2,960	5,300	1,360	580	412	231
30	2,840	1,740	7,920	2,160	-	1,750	2,420	2,890	1,270	545	327	225
31	4,640	-	10,600	1,790	-	2,030	-	2,070	-	510	303	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	35,035	7,340	116	1,130	4.20	4.84	69,490
November	69,118	9,960	688	2,304	8.57	9.56	137,100
December	95,217	10,600	620	3,072	11.4	13.14	188,900
Calendar year 1938	555,730	14,900	95	1,523	5.66	76.75	1,102,000
January	108,130	12,200	1,670	3,488	13.0	14.99	214,500
February	43,265	4,370	880	1,545	5.74	5.98	85,810
March	53,473	4,660	808	1,725	6.41	7.39	106,100
April	63,490	2,960	1,400	2,116	7.87	8.78	125,900
May	67,410	5,300	1,300	2,175	8.09	9.33	133,700
June	47,030	2,340	1,060	1,568	5.83	6.50	93,280
July	29,115	2,200	510	939	3.49	4.02	57,750
August	10,878	475	279	351	1.30	1.50	21,580
September	9,453	723	225	315	1.17	1.30	18,750
Water year 1938-39	631,614	12,200	116	1,730	6.43	87.33	1,253,000

Peak discharge.- Oct. 12 (5 p.m.) 14,200 sec.-ft.; Nov. 16 (9 to 10 a.m.) 13,800 sec.-ft.; Dec. 31 (2:20 a.m.) 13,000 sec.-ft.; Jan. 1 (7:10 p.m.) 15,400 sec.-ft.

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 international boundary, and 40 miles southeast of Hope, British Columbia.

Drainage area.- 370 square miles.

Records available.- October 1934 to September 1939, 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, 5,440 second-feet May 16 (gage height, 8.17 feet); minimum, 139 second-feet Oct. 24 (gage height, 2.25 feet).
1915-22, 1934-39: Maximum discharge, 7,560 second-feet June 17, 1916; minimum discharge recorded, 81 second-feet Feb. 9, 1937.

Remarks.- Records good. No diversion or regulation. This station is maintained by cooperation of city of Seattle and is one of the international gaging stations maintained by Canada under agreement with the United States.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 2				Jan. 2 to Sept. 30							
2.2	128	3.5	570	2.3	115	3.5	520	5.0	1,480	8.0	5,150
2.5	200	4.0	818	2.5	185	4.0	790	6.0	2,320	9.0	6,960
3.0	360			3.0	320	4.5	1,110	7.0	3,550		

Note.- Same as following table above 4.5 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	177	234	184	1,100	276	171	1,100	2,370	2,280	2,110	655	264
2	164	217	190	1,640	267	171	1,260	2,390	2,150	1,830	620	258
3	172	231	222	1,260	258	168	1,500	2,650	2,100	1,770	620	255
4	182	234	220	1,030	258	160	1,460	2,630	2,080	1,770	600	255
5	167	211	324	868	255	148	1,300	2,350	1,940	1,670	585	261
6	160	195	368	736	243	162	1,190	2,100	1,900	1,460	545	249
7	155	187	398	655	234	157	1,110	1,920	1,930	1,400	495	237
8	150	187	715	600	180	154	1,120	1,900	1,940	1,360	470	228
9	146	177	887	545	180	151	1,120	1,990	1,930	1,340	466	222
10	150	172	770	505	168	151	1,090	1,980	2,050	1,330	470	213
11	179	160	641	495	198	154	1,100	2,090	2,180	1,410	466	210
12	214	160	542	480	228	154	1,120	2,290	2,280	1,340	446	204
13	297	162	502	454	225	151	1,080	2,800	2,420	1,220	418	201
14	217	157	467	438	225	151	1,080	3,780	2,380	1,170	398	192
15	192	162	418	426	219	151	1,080	4,810	2,460	1,170	376	201
16	174	190	383	398	213	151	1,080	5,250	2,360	1,220	366	204
17	164	208	375	390	207	151	1,140	4,450	2,160	1,030	355	198
18	160	200	356	394	204	162	1,380	3,620	2,050	970	341	186
19	157	274	328	446	201	192	1,660	3,000	2,160	910	327	183
20	152	290	307	450	198	258	1,840	2,530	2,370	880	317	180
21	150	243	307	422	189	345	2,110	2,320	2,340	856	314	186
22	150	208	297	402	186	520	2,230	2,340	2,360	830	310	183
23	143	192	297	383	186	789	2,160	2,280	2,290	916	304	180
24	141	197	335	372	183	1,220	2,000	2,290	2,160	910	298	171
25	143	182	349	344	183	1,520	1,840	2,460	1,920	910	304	165
26	155	174	307	338	180	1,380	1,690	2,690	1,750	910	304	157
27	243	172	297	338	177	1,180	1,670	2,650	1,700	910	291	154
28	217	169	264	327	174	1,040	1,970	3,050	1,830	898	285	151
29	234	169	274	310	-	970	2,630	4,240	2,190	832	279	148
30	246	172	307	298	-	952	2,530	3,490	2,440	756	267	143
31	246	-	368	285	-	984	-	2,700	-	718	264	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	5,597	297	141	181	0.49	0.56	11,100
November	5,886	290	157	196	.53	.59	11,700
December	11,999	887	184	387	1.05	1.21	23,800
Calendar year 1938	327,348	6,190	141	897	2.42	32.95	650,000
January	17,129	1,640	285	553	1.49	1.72	34,000
February	5,895	276	168	211	.57	.59	11,700
March	14,168	1,520	148	457	1.24	1.43	28,100
April	45,640	2,630	1,080	1,520	4.11	4.59	90,500
May	87,410	5,250	1,900	2,820	7.62	8.78	173,000
June	64,100	2,460	1,700	2,140	5.78	6.45	127,000
July	36,966	2,110	718	1,190	3.22	3.71	73,300
August	12,556	655	264	405	1.09	1.26	24,900
September	6,039	264	143	201	.54	.60	12,000
Water year 1938-39	313,385	5,250	141	859	2.32	31.49	621,000

Skagit River near Newhalem, Wash.

Location.- Water-stage recorder, lat. 48°45', long. 121°02', in sec. 30, T. 38 N., R. 14 E., 1¼ miles upstream from Ruby Creek, 11 miles northeast of Newhalem, and 24 miles northeast of Marblemount.

Drainage area.- 765 square miles, of which 390 square miles are in Canada.

Records available.- March 1930 to September 1939.

Extremes.- Maximum discharge during year, 12,100 second-feet May 29 (gage height, 11.13 feet); minimum, 571 second-feet Oct. 24 (gage height, 3.96 feet).
1930-39: Maximum discharge, 25,700 second-feet Feb. 27, 1932 (gage height, 15.9 feet), from rating curve extended above 13,000 second-feet; minimum, 230 second-feet Feb. 21, 1937 (gage height, 3.27 feet).

Remarks.- Records excellent. Discharge for period of missing gage heights, Dec. 11-19, interpolated. No diversion or regulation. Gage-height record collected in cooperation with city of Seattle, which furnished results of many discharge measurements.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

3.8	480	5.0	1,380	7.0	3,800	10.0	9,470
4.0	595	5.5	1,850	8.0	5,350	11.2	12,300
4.5	940	6.0	2,420	9.0	7,270		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	778	1,150	709	4,460	1,010	691	2,710	5,490	5,300	5,250	2,160	1,060
2	750	996	743	5,860	988	697	3,020	5,470	4,850	4,690	2,040	1,020
3	845	1,050	800	4,680	964	685	3,560	5,900	4,790	4,430	2,170	1,010
4	868	996	815	3,740	932	673	3,600	5,990	4,630	4,680	2,180	1,060
5	715	908	1,490	3,110	924	655	3,270	5,450	4,440	4,190	2,100	1,190
6	661	830	1,520	2,640	892	667	2,990	4,870	4,300	3,800	1,860	1,030
7	625	792	1,460	2,350	868	649	2,790	4,430	4,380	3,650	1,670	900
8	613	771	2,190	2,140	808	637	2,780	4,300	4,400	3,580	1,610	908
9	601	743	2,820	1,950	743	631	2,780	4,430	4,320	3,630	1,710	908
10	820	697	2,400	1,810	729	637	2,710	4,480	4,660	3,920	1,820	852
11	996	667	2,260	1,720	750	661	2,690	4,680	5,000	4,070	1,850	860
12	1,060	643	2,120	1,660	868	655	2,710	5,090	5,190	3,740	1,740	785
13	1,110	631	1,980	1,590	845	643	2,640	5,960	5,420	3,420	1,590	736
14	884	625	1,840	1,520	838	631	2,600	7,610	5,290	3,380	1,510	715
15	764	649	1,690	1,480	830	625	2,620	9,420	5,420	3,530	1,420	743
16	697	800	1,550	1,420	800	613	2,630	10,300	5,190	3,630	1,350	838
17	655	822	1,410	1,390	785	613	2,740	9,260	4,660	2,990	1,330	830
18	625	815	1,270	1,410	771	649	3,200	7,790	4,440	2,720	1,290	757
19	607	964	1,130	1,680	764	729	3,880	6,470	4,600	2,590	1,230	722
20	607	1,050	988	1,730	743	956	4,250	5,420	4,980	2,470	1,200	750
21	613	948	956	1,620	729	1,210	4,730	4,930	5,140	2,430	1,240	845
22	601	845	924	1,530	722	1,500	5,010	4,810	5,400	2,720	1,280	876
23	589	778	908	1,440	715	1,960	5,010	4,810	5,250	3,020	1,280	830
24	595	743	948	1,390	709	2,960	4,730	4,850	4,890	3,140	1,280	808
25	643	709	1,020	1,330	703	3,650	4,400	5,270	4,360	3,170	1,340	729
26	689	685	956	1,260	697	3,510	4,060	5,940	4,010	3,230	1,340	697
27	1,270	667	940	1,240	697	3,090	3,920	5,990	3,980	3,280	1,240	715
28	956	655	884	1,200	685	2,720	4,430	7,390	4,430	3,350	1,220	673
29	1,320	643	868	1,160	-	2,540	5,860	11,000	5,470	2,950	1,180	643
30	1,340	655	996	1,110	-	2,460	5,900	8,450	6,130	2,670	1,060	625
31	1,330	-	1,490	1,060	-	2,520	-	6,510	-	2,480	1,020	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	25,227	1,340	589	814	1.06	1.22	50,040
November	23,927	1,150	625	798	1.04	1.16	47,460
December	42,075	2,820	709	1,357	1.77	2.04	83,450
Calendar year 1938	921,954	13,200	589	2,526	3.30	44.79	1,829,000
January	62,680	5,860	1,060	2,022	2.64	3.04	124,300
February	22,509	1,010	685	804	1.05	1.09	44,650
March	41,517	3,650	613	1,339	1.75	2.02	82,350
April	108,220	5,900	2,600	3,607	4.72	5.27	214,700
May	192,760	11,000	4,300	6,218	8.13	9.37	382,300
June	145,320	6,130	3,980	4,844	6.33	7.06	288,200
July	106,800	5,250	2,430	3,445	4.50	5.19	211,800
August	47,310	2,180	1,020	1,526	1.99	2.29	93,840
September	25,115	1,190	625	837	1.09	1.22	49,810
Water year 1938-39	843,460	11,000	589	2,311	3.02	40.97	1,673,000

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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. Zero of gage is 400 feet above mean sea level (levels of city of Seattle).

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 1939, in reports of Geological Survey. October 1908 to September 1933 (monthly discharge only), in State Water-Supply Bulletin 5.

Average discharge.- 31 years (1908-39), 4,388 second-feet, adjusted for storage since October 1929.

Extremes.- Maximum discharge during year, 22,400 second-feet May 29 (gage height, 89.3 feet); minimum, 262 second-feet (regulated) Nov. 29 (gage height, 79.12 feet); minimum daily, 801 second-feet Mar. 12.

1908-14, 1920-39: 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 Aug. 24, 1930.

Remarks.- Records excellent. Discharge Jan. 4, 5 determined on basis of power-plant operation at Diablo. Water is diverted 3 miles upstream (may be entire low-water flow) and is returned to river at Seattle power plant just upstream from station. Flow also partly regulated by Diablo Reservoir (capacity, 91,300 acre-feet at elevation, 1,205 feet). Gage-height record collected in cooperation with city of Seattle, which furnished results of several discharge measurements.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

79.0	225	80.0	640	81.5	1,790	83.0	3,620	85.0	7,150	88.0	16,700
79.2	290	80.5	945	82.0	2,330	83.5	4,400	86.0	9,820	89.0	21,000
79.5	400	81.0	1,330	82.5	2,930	84.0	5,200	87.0	12,900	90.0	26,000

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,640	1,550	1,450	*9,660	1,400	1,130	4,400	8,460	7,780	8,690	4,220	1,900
2	*1,320	1,780	1,540	10,300	1,500	1,140	*4,790	8,600	7,600	*8,200	3,860	1,690
3	2,100	1,710	1,370	7,570	1,430	1,100	5,600	9,250	7,690	7,530	4,120	*1,930
4	1,880	1,690	*1,340	4,880	1,260	956	5,400	9,440	*7,290	8,600	4,550	2,090
5	1,430	1,430	2,000	4,340	*1,180	*868	4,870	8,330	6,480	6,940	4,440	3,130
6	1,370	*1,240	1,570	4,000	1,570	1,030	4,270	7,120	6,870	6,470	*3,310	1,600
7	1,340	1,480	2,190	3,560	1,410	944	4,150	*6,220	6,680	6,360	3,420	2,170
8	1,240	1,460	4,510	*2,980	1,300	1,020	4,280	5,840	7,000	6,180	3,040	1,850
9	*1,090	1,490	5,170	3,100	1,270	998	*4,180	6,700	6,610	*6,480	3,310	1,500
10	1,510	1,470	4,020	2,640	1,240	1,030	3,960	6,880	7,660	7,350	4,150	*1,610
11	1,730	1,320	*2,800	2,710	1,200	912	3,890	7,110	*8,270	7,550	3,690	1,880
12	2,520	1,300	2,660	2,560	*1,230	*801	4,260	8,320	8,610	6,630	3,800	1,820
13	2,410	*1,160	2,390	2,340	1,530	1,040	4,290	9,660	9,110	5,670	*3,130	1,410
14	1,440	1,390	2,120	2,320	1,590	1,030	3,980	*12,800	8,960	6,370	3,030	1,340
15	1,260	1,430	2,570	*2,220	1,340	1,030	3,760	15,300	8,990	6,390	2,640	1,420
16	*1,110	1,660	1,480	2,150	1,250	980	*3,840	16,400	8,350	*6,430	2,790	1,330
17	1,390	1,670	1,690	2,050	1,220	1,030	4,400	13,800	7,210	4,470	2,450	*1,350
18	1,380	1,680	*1,380	2,170	1,140	938	4,710	11,400	*6,800	4,620	2,520	1,640
19	1,380	1,730	1,690	3,380	*962	*883	5,850	9,880	7,370	4,380	2,470	1,660
20	1,380	*1,200	1,550	3,000	1,240	1,110	6,470	7,800	8,100	4,320	*1,980	1,760
21	1,380	1,580	1,440	2,410	1,220	1,370	7,550	*7,490	8,880	4,160	2,870	1,840
22	1,200	1,550	1,400	*2,280	1,040	2,720	8,030	7,080	9,080	4,790	2,640	1,860
23	*1,210	1,540	1,490	2,300	1,150	3,770	*7,860	7,370	9,100	*5,670	3,080	1,600
24	1,410	1,190	1,550	1,970	1,240	5,890	7,380	7,560	7,900	5,690	2,740	*1,140
25	1,380	1,440	*1,520	2,290	1,040	6,690	6,670	8,550	*6,640	6,450	2,540	1,880
26	1,540	1,130	1,500	1,330	*984	*5,610	6,140	9,550	6,110	6,360	2,570	1,670
27	1,590	*1,190	1,660	1,680	1,170	4,740	6,000	9,620	6,710	6,890	*2,410	1,740
28	1,450	1,460	1,530	1,840	1,120	4,130	6,690	*14,600	7,760	7,140	2,510	1,410
29	1,490	1,360	1,440	*1,560	-	3,680	9,240	18,900	10,400	5,290	2,380	1,370
30	*1,630	1,480	1,700	1,570	-	3,750	*9,760	13,100	11,500	*5,180	2,060	1,240
31	2,490	-	3,710	1,370	-	3,990	-	9,930	-	4,810	1,940	-

Month	Observed				Change in contents in Diablo Reservoir (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	2,520	1,090	1,538	94,590	+460	95,050	1,546	1.33	1.53
November	1,780	1,130	1,459	86,800	-7,040	79,760	1,340	1.16	1.29
December	5,170	1,340	2,078	127,800	+6,850	134,600	2,189	1.89	2.18
Calendar year 1938	19,700	1,030	4,118	2,981,000	+1,060	2,982,000	4,119	3.55	48.18
January	10,300	1,330	3,175	195,200	-40	195,200	3,175	2.74	3.16
February	1,590	962	1,258	69,870	-3,100	66,770	1,202	1.04	1.08
March	6,690	801	2,139	131,500	-990	130,500	2,122	1.83	2.11
April	9,760	3,760	5,556	330,600	-1,000	329,600	5,539	4.78	5.33
May	18,900	5,840	9,779	601,300	+1,560	602,900	9,805	8.45	9.74
June	11,500	6,110	7,917	471,100	+240	471,300	7,920	6.83	7.62
July	8,690	4,160	6,195	380,900	+3,020	383,900	6,244	5.38	6.20
August	4,550	1,940	3,047	187,400	-240	187,200	3,045	2.62	3.02
September	3,130	1,140	1,694	100,800	-1,790	99,010	1,664	1.43	1.60
Water year 1938-39	18,900	801	3,837	2,778,000	-2,070	2,776,000	3,834	3.31	44.86

*Sunday.

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. Zero of gage is 130.0 feet above mean sea level (general adjustment of 1929).

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

Records available.- September 1924 to September 1939.

Average discharge.- 15 years, 14,420 second-feet, adjusted for storage in Lake Shannon Reservoir since October 1925 and Diablo Reservoir since October 1929.

Extremes.- Maximum discharge during year, 79,600 second-feet May 29 (gage height, 30.7 feet); minimum, 3,580 second-feet (regulated) Oct. 10 (gage height, 13.38 feet).

1924-39: 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 closed for first time.

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. All diversions returned to river upstream from gage. At low stages flow partly regulated by operation of power plants on Baker and upper Skagit Rivers, and by storage in Diablo and Lake Shannon Reservoirs (see p. 60). Records of daily discharge not adjusted for change in contents of reservoirs.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

13.4	3,580	18.0	13,200	28.0	62,000
14.0	4,500	20.0	19,900	31.0	81,500
15.0	6,270	22.0	28,800		
16.0	8,380	25.0	44,500		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,970	8,880	9,190	*52,600	8,340	6,260	13,900	23,900	25,400	29,100	13,000	7,310
2	*4,690	7,610	9,240	55,200	8,060	6,520	*14,200	23,500	23,300	*26,200	12,300	7,350
3	6,040	10,300	9,420	39,200	7,840	6,640	16,300	24,900	23,700	27,400	13,400	*6,660
4	6,750	9,780	*9,020	29,000	7,350	6,040	16,000	25,600	*22,600	31,300	13,800	6,580
5	5,530	7,660	20,000	22,600	*7,060	*5,830	14,400	23,600	21,400	26,700	13,200	8,620
6	5,200	*6,980	15,600	16,700	7,500	6,100	12,800	20,300	19,700	22,400	*11,500	8,100
7	5,090	6,760	19,300	13,700	7,530	6,000	12,400	*18,100	20,400	20,400	10,700	6,520
8	5,000	7,240	30,600	*13,300	7,110	5,920	12,800	16,800	22,100	20,300	10,500	6,370
9	*4,100	7,280	30,200	12,900	6,860	5,900	*13,200	17,700	21,300	*22,000	10,700	6,590
10	5,330	6,720	21,400	12,400	6,710	5,760	13,100	18,200	21,800	26,500	11,700	*5,660
11	8,790	6,010	*15,700	12,400	6,500	5,960	12,700	19,900	*24,800	27,000	12,300	6,400
12	13,300	6,200	12,700	12,100	*9,060	*5,540	13,000	22,400	27,000	22,900	11,300	6,340
13	15,300	*5,440	10,800	12,000	9,180	6,120	12,700	27,700	28,200	20,400	*10,600	6,280
14	8,360	5,890	9,840	12,000	9,170	6,110	12,200	*37,100	27,700	21,400	10,100	5,940
15	6,500	7,280	9,280	*12,300	9,370	6,060	11,500	45,600	29,200	23,500	9,440	6,800
16	*5,390	11,900	8,700	12,200	8,630	6,120	*11,000	46,600	27,700	*24,400	9,410	6,920
17	5,790	12,000	8,120	12,200	8,180	6,120	12,100	38,700	23,100	17,700	9,130	*5,460
18	5,680	10,000	*6,630	14,700	7,410	6,360	13,700	32,200	*22,200	15,800	8,850	6,190
19	5,540	11,000	7,460	19,600	*6,650	*6,250	16,600	27,600	25,700	15,600	8,860	6,010
20	5,600	*11,000	7,240	17,900	6,980	7,880	18,200	22,900	28,900	15,200	*8,000	5,860
21	5,540	9,390	7,160	13,900	6,960	8,960	20,200	*20,100	28,000	14,900	9,080	6,250
22	5,320	8,500	6,860	*12,200	6,560	11,200	23,200	21,300	29,700	17,200	9,080	6,280
23	*4,860	7,950	7,560	11,300	6,620	14,600	*22,100	20,400	29,800	*19,900	9,150	5,970
24	5,140	7,200	8,570	10,300	6,680	17,800	21,000	20,100	26,900	20,700	8,870	*5,540
25	6,140	6,870	*9,400	10,000	6,140	22,800	19,000	23,200	*22,600	20,600	9,000	5,670
26	5,700	6,660	8,700	9,330	*5,560	*17,600	17,500	29,200	19,900	21,500	9,080	5,820
27	8,200	*6,420	9,090	9,500	6,320	15,300	16,700	28,800	20,000	22,200	*8,620	5,900
28	7,000	6,710	9,860	9,560	6,200	13,300	18,500	*39,900	25,700	22,600	8,260	6,030
29	8,360	6,820	10,600	*9,220	-	12,500	25,300	68,400	34,200	19,300	7,990	5,670
30	*8,690	7,630	14,600	9,280	-	12,200	*26,100	45,200	37,000	*16,200	7,220	5,420
31	10,100	-	27,900	8,660	-	12,400	-	32,000	-	15,400	6,780	-

Month	Observed: Discharge in second-feet: Maximum	Observed: Discharge in second-feet: Minimum	Observed: Discharge in second-feet: Mean	Observed: Run-off in acre-feet	Change in contents in Diablo and Lake Shannon Reservoirs (acre-feet)	Adjusted for change in reservoir contents: Run-off in acre-feet	Adjusted: Discharge in second-feet: Mean	Adjusted: Discharge in second-feet: Per square mile	Adjusted: Run-off in inches
October	15,300	4,100	6,742	414,500	+9,210	423,700	6,891	2.55	2.94
November	12,000	5,440	8,003	476,200	+3,270	479,500	8,058	2.98	3.32
December	30,600	6,630	12,600	775,000	+29,910	804,900	13,090	4.85	5.59
Calendar year 1938	59,700	4,100	13,360	9,673,000	-9,610	9,664,000	13,350	4.94	67.07
January	55,200	8,660	16,720	1,028,000	-3,300	1,025,000	16,670	6.17	7.11
February	9,370	5,560	7,376	409,600	-25,910	383,700	6,909	2.56	2.67
March	22,800	5,540	9,102	559,600	-9,440	550,200	8,948	3.31	3.82
April	26,100	11,000	16,080	956,800	+33,060	989,900	16,640	6.16	6.87
May	68,400	16,800	28,450	1,749,000	+14,060	1,763,000	28,670	10.6	12.22
June	37,000	19,700	25,330	1,507,000	-300	1,507,000	25,330	9.38	10.46
July	31,300	14,900	21,510	1,322,000	+5,900	1,328,000	21,600	8.00	9.22
August	13,800	6,780	10,060	618,700	-22,050	596,600	9,703	3.59	4.14
September	8,620	5,420	6,350	377,900	-13,100	364,800	6,131	2.27	2.53
Water year 1938-39	68,400	4,100	14,080	10,190,000	+21,310	10,220,000	14,110	5.23	70.89

Peak discharge.- Jan. 1 (6:40 to 7:20 a.m.) 71,100 sec.-ft.; May 29 (3 to 3:20 a.m.) 79,600 sec.-ft.

*Sunday.

Reservoirs in Skagit River Basin, Wash.

(Location given is that of controlling dam or outlet work)

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. Zero of gage is 1,180 feet above mean sea level (subject to correction for general adjustment of 1929). Records available, October 1938 to September 1939. October 1929 to September 1938, change in reservoir contents published with monthly discharge table for Skagit River at Newhalem, Wash. Maximum contents during year, 92,400 acre-feet Jan. 1 (elevation, 1,206.17 feet); minimum, 83,800 acre-feet Dec. 3 (elevation, 1,196.62 feet).

Dam completed in 1930. Capacity of reservoir, 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. Zero of gage is at mean sea level (subject to correction for general adjustment of 1929). Records available, October 1938 to September 1939.

Dam completed in June 1927. Capacity of reservoir, 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).

Elevation, and contents, water year October 1938 to September 1939

Date	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)
Sept. 30	1,205.30	91,580	-	407.76	99,740	-
Oct. 31	1,205.79	92,040	+460	412.31	108,490	+8 750
Nov. 30	1,198.01	85,000	-7,040	417.50	118,800	+10,310
Dec. 31	1,205.59	91,850	+6,850	428.50	141,860	+23,060
Calendar year 1938	-	-	+1,060	-	-	-10,670
Jan. 31	1,205.54	91,810	-40	426.99	138,600	-3,260
Feb. 28	1,202.24	88,710	-3,100	416.00	115,790	-22,810
Mar. 31	1,201.19	87,720	-990	411.72	107,340	-8 450
Apr. 30	1,200.13	86,720	-1,000	428.29	141,400	+34,060
May 31	1,201.79	88,280	+1,560	433.96	153,900	+12,500
June 30	1,202.04	88,520	+240	433.72	153,360	-540
July 31	1,205.25	91,540	+3,020	435.00	156,240	+2,880
Aug. 31	1,205.00	91,300	-240	425.04	134,430	-21.810
Sept. 30	1,203.01	89,510	-1,790	419.62	123,120	-11,310
Water year 1938-39	-	-	-2,070	-	-	+23,380

*Elevations above mean sea level at midnight.

Ruby Creek near Newhalem, Wash.

Location.- Water-stage recorder, lat. 48°44', long. 121°02', in sec. 31, T. 38 N., R. 14 E., 1 mile upstream from mouth, 10½ miles northeast of Newhalem, and 24 miles northeast of Marblemount.

Drainage area.- 210 square miles.

Records available.- June 1919 to March 1920, April 1930 to September 1939.

Extremes.- Maximum discharge during year, 4,650 second-feet May 28 (gage height, 13.08 feet); minimum, 101 second-feet Nov. 11 (gage height, 6.33 feet).
1919-20, 1930-39: Maximum discharge, 6,730 second-feet Feb. 27, 1932 (gage height, 14.15 feet); minimum, 40 second-feet Feb. 22, 1937 (gage height, 5.87 feet).

Remarks.- Records excellent except those for October, those for period of ice effect, Feb. 9, 10 (computed on basis of gage heights and weather records), and those for period of missing gage heights, July 12-23 (computed on basis of records for Skagit River near Newhalem), all of which are fair. Discharge Feb. 16 interpolated. No diversion or regulation. Gage-height record collected in cooperation with city of Seattle, which furnished results of many discharge measurements.

Rating tables, water year 1938-39 except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 13-28)

Oct. 1 to May 28

6.3	98	8.0	370	10.0	1,030	12.0	2,660
6.5	119	8.5	490	10.5	1,300	12.5	3,460
7.0	183	9.0	637	11.0	1,650	13.1	4,690
7.5	268	9.5	820	11.5	2,090		

May 29 to Sept. 30

6.4	116	8.0	388
6.7	152	8.5	512
7.0	194	9.0	650
7.5	284		

Note.- Same as preceding table above 9.4 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	133	177	125	1,020	161	123	621	1,610	1,500	1,570	460	200
2	135	165	127	984	156	124	674	1,730	1,470	1,400	442	196
3	162	186	126	650	155	121	694	1,890	1,460	1,290	439	190
4	146	164	141	490	153	111	624	1,640	1,360	1,280	453	202
5	127	148	242	404	152	117	560	1,550	1,280	1,140	442	220
6	117	136	196	348	147	120	523	1,330	1,290	1,060	379	191
7	111	142	211	319	143	115	525	1,200	1,320	1,030	339	168
8	108	139	346	293	117	115	562	1,220	1,310	1,000	332	166
9	106	135	385	274	110	114	557	1,310	1,260	1,110	364	165
10	142	129	293	262	120	112	539	1,370	1,400	1,230	397	160
11	169	109	226	264	190	116	551	1,510	1,540	1,240	390	160
12	260	120	211	253	165	114	554	1,720	1,700	1,100	356	149
13	247	125	206	242	157	110	528	2,130	1,810	950	324	143
14	170	124	195	231	148	109	531	2,890	1,670	925	304	138
15	152	133	175	228	146	108	537	3,370	1,730	950	286	143
16	141	165	170	216	142	109	551	3,420	1,440	1,000	274	149
17	135	156	170	219	137	118	615	2,580	1,220	750	264	151
18	132	150	169	228	139	144	828	2,110	1,160	650	253	143
19	130	154	166	262	135	193	1,070	1,730	1,250	625	240	135
20	135	170	165	253	130	258	1,170	1,460	1,400	575	232	144
21	141	135	155	231	125	329	1,370	1,380	1,510	550	241	162
22	136	116	151	219	131	437	1,460	1,370	1,680	650	249	160
23	132	127	155	209	130	596	1,400	1,340	1,560	725	249	152
24	136	132	161	203	129	864	1,310	1,370	1,350	812	249	148
25	155	121	156	188	129	872	1,170	1,570	1,140	844	262	135
26	151	121	141	186	124	709	1,070	1,750	1,080	852	245	131
27	198	124	147	184	124	577	1,080	1,760	1,160	860	232	133
28	177	123	143	182	121	520	1,400	2,650	1,540	816	229	127
29	206	123	148	175	-	501	2,000	3,520	2,240	662	210	119
30	194	124	169	169	-	514	1,750	2,300	2,090	604	194	117
31	201	-	286	161	-	551	-	1,750	-	552	190	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	4,735	260	106	154	.733	0.85	9,490
November	4,203	186	109	140	.667	.74	8,340
December	5,857	385	125	189	.900	1.04	11,620
Calendar year 1938	229,788	4,050	106	630	3.00	40.73	455,800
January	9,547	1,020	161	308	1.47	1.70	18,940
February	3,916	190	110	140	.667	.69	7,770
March	9,021	872	108	291	1.39	1.60	17,890
April	26,824	2,000	523	894	4.26	4.75	53,200
May	58,730	3,520	1,200	1,895	9.02	10.40	116,500
June	43,920	2,240	1,080	1,464	6.97	7.78	87,110
July	28,802	1,570	550	929	4.42	5.10	57,130
August	9,600	489	190	310	1.48	1.71	19,040
September	4,697	220	117	157	.748	.83	9,320
Water year 1938-39	209,902	3,520	106	575	2.74	37.19	416,400

Peak discharge.- May 15 (11 p.m.) 3,930 sec.-ft.; May 28 (midnight) 4,650 sec.-ft.

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 1939.

Extremes.- Maximum discharge during year, 4,300 second-feet May 28 (gage height, 9.14 feet); minimum, 77 second-feet Mar. 14, 15, 16 (gage height, 1.70 feet).
1930-39: 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 except those above 3,500 second-feet, which are fair. Discharge Dec. 12-17 interpolated. No diversion or regulation. Gage-height record collected in cooperation with city of Seattle, which furnished results of many discharge measurements.

Rating table, water year 1938-39 (gage height in feet, and discharge, in second-feet)

1.7	77	3.0	313	4.5	810	7.0	2,320
2.0	122	3.5	441	5.0	1,050	8.0	3,150
2.5	208	4.0	606	6.0	1,620	9.2	4,370

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	514	264	135	1,010	141	92	378	690	757	1,340	990	606
2	547	233	138	975	136	94	404	740	753	1,180	1,090	537
3	710	275	141	659	133	92	432	801	775	1,320	1,380	643
4	404	231	174	504	130	87	398	806	694	1,520	1,380	788
5	327	203	355	415	128	84	362	678	639	1,160	1,140	1,040
6	313	185	272	353	125	85	336	588	643	1,040	891	574
7	313	185	450	322	122	84	331	530	698	1,030	788	501
8	324	177	842	302	109	83	348	540	698	1,060	886	585
9	311	170	637	281	108	83	348	585	690	1,260	1,130	540
10	890	158	429	266	106	81	338	617	819	1,520	1,390	507
11	540	146	338	258	116	83	338	678	900	1,610	1,280	472
12	670	141	317	245	141	81	341	753	990	1,270	1,120	324
13	405	140	297	233	127	78	329	945	1,070	1,240	945	308
14	279	140	276	223	125	78	327	1,350	1,000	1,260	878	281
15	233	157	256	219	124	77	324	1,680	1,040	1,370	814	611
16	206	204	235	208	119	77	329	1,660	832	1,100	806	602
17	190	199	214	206	116	81	358	1,250	674	828	779	582
18	181	183	194	212	116	91	447	1,000	682	806	766	424
19	185	227	181	239	111	111	544	779	819	846	719	454
20	225	214	174	231	106	146	588	643	990	797	795	641
21	229	177	169	214	102	188	674	606	1,050	905	910	824
22	214	155	164	204	10	241	698	624	1,150	1,240	985	715
23	195	148	165	194	100	324	655	651	1,080	1,500	955	666
24	269	148	181	186	100	460	613	694	950	1,570	975	571
25	258	140	172	176	100	517	547	850	753	1,760	1,030	472
26	342	136	157	170	96	438	491	990	732	1,890	860	493
27	450	133	155	169	96	375	482	950	864	2,090	891	564
28	320	132	152	165	92	338	624	2,160	1,220	2,060	819	385
29	450	130	152	160	-	346	910	2,780	1,930	1,580	636	360
30	353	133	176	153	-	324	757	1,430	1,770	1,450	578	380
31	331	-	306	146	-	343	-	950	-	1,250	585	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	11,178	890	181	361	3.68	4.24	22,170
November	5,264	275	130	175	1.79	2.00	10,440
December	8,004	842	135	258	2.63	3.03	15,880
Calendar year 1938	223,187	2,840	92	611	6.23	84.71	442,700
January	9,298	1,010	146	300	3.06	3.53	18,440
February	3,228	141	92	115	1.17	1.22	6,400
March	5,662	517	77	183	1.87	2.16	11,230
April	14,051	910	324	468	4.78	5.33	27,870
May	29,998	2,780	530	968	9.88	11.39	59,500
June	27,662	1,930	639	922	9.41	10.50	54,870
July	40,852	2,090	797	1,318	13.4	15.45	81,030
August	29,191	1,390	578	942	9.61	11.08	57,900
September	16,450	1,040	281	548	5.59	6.24	32,630
Water year 1938-39	200,838	2,780	77	550	5.61	76.17	398,400

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, 5½ miles northeast of Newhalem, and 18½ miles northeast of Marblemount.

Drainage area.- 21.4 square miles.

Records available.- September 1933 to September 1939. December 1913 to March 1914 and December 1914 to April 1915 at site half a mile downstream; records equivalent.

Extremes.- Maximum discharge during year, 2,560 second-feet May 28 (gage height, 6.64 feet), from rating curve extended above 1,000 second-feet; minimum, 25 second-feet Mar. 11 (gage height, 2.06 feet).

1913-15, 1933-39: Maximum discharge, 4,520 second-feet Nov. 5, 1934 (gage height, 10.4 feet, former site and datum), from rating curve extended above 500 second-feet; minimum, 9 second-feet Nov. 9, 10, 11, 1936.

Remarks.- Records excellent except those for period of shifting control, Oct. 12 to Dec. 4, which are fair, and those above 1,000 second-feet, which are poor. Discharge for period of missing gage heights, Nov. 3-6, computed on basis of records for Ruby Creek near Newhalem. No diversion or regulation. Gage-height record collected in cooperation with city of Seattle, which furnished results of several discharge measurements.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 12 to Dec. 4)

2.0	23	2.8	111	4.0	490	6.0	1,910
2.2	33	3.1	177	4.5	747	6.7	2,610
2.5	65	3.5	292	5.0	1,050		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	45	128	106	1,090	49	32	224	286	224	318	137	78
2	42	106	115	663	46	36	244	332	261	283	145	69
3	80	170	126	389	44	37	325	347	270	401	167	66
4	52	110	243	255	43	34	241	308	235	524	167	87
5	41	90	521	180	43	33	174	235	207	292	148	117
6	36	80	244	134	41	32	148	188	224	261	115	82
7	32	75	343	120	39	32	143	180	256	258	99	64
8	31	73	600	115	36	31	172	201	249	267	96	61
9	31	69	422	102	34	30	164	235	270	305	126	59
10	113	60	221	94	33	30	154	261	322	332	141	55
11	134	53	150	115	38	30	162	295	322	315	134	68
12	267	50	117	108	66	31	162	347	343	232	117	54
13	146	49	97	96	61	32	148	462	332	229	101	45
14	85	53	84	88	57	32	145	611	315	235	97	46
15	65	84	72	86	54	32	152	621	354	368	90	141
16	54	172	66	79	49	31	160	524	255	274	84	92
17	50	152	61	84	44	33	196	385	207	190	82	72
18	49	164	57	122	44	45	299	299	264	174	80	59
19	53	276	52	258	41	71	318	215	325	199	75	53
20	64	201	50	188	39	101	322	172	354	180	75	55
21	63	134	48	132	38	143	350	174	357	199	84	61
22	58	101	45	106	36	210	325	204	385	249	86	60
23	51	84	57	90	35	295	276	229	318	280	88	58
24	95	76	102	80	35	397	226	276	270	270	85	53
25	73	69	111	72	34	347	204	393	215	263	97	45
26	159	64	82	66	33	226	207	481	210	286	84	42
27	178	63	79	65	32	160	232	347	308	292	79	41
28	131	61	75	65	31	134	377	1,360	410	276	95	38
29	250	63	90	63	-	128	453	748	559	215	119	35
30	205	75	193	59	-	137	299	414	418	204	78	34
31	193	-	541	53	-	160	-	264	-	170	71	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	2,956	280	31	95.4	4.46	5.14	5,860
November	3,005	276	49	100	4.67	5.21	5,960
December	5,170	600	45	167	7.80	8.99	10,250
Calendar year 1938	59,548	933	31	163	7.62	103.53	118,100
January	5,217	1,090	53	168	7.85	9.05	10,350
February	1,175	66	31	42.0	1.96	2.04	2,330
March	3,102	397	30	100	4.67	5.38	6,150
April	7,002	453	143	233	10.9	12.16	13,690
May	11,394	1,360	172	368	17.2	19.83	22,600
June	9,041	559	207	301	14.1	15.73	17,930
July	8,361	524	170	270	12.6	14.53	16,580
August	3,242	167	71	105	4.91	5.66	6,430
September	1,690	141	34	63.0	2.94	3.28	3,750
Water year 1938-39	61,555	1,360	30	169	7.90	107.00	122,100

Peak discharge.- Jan. 1 (9:40 a.m.) 1,330 sec.-ft.; May 28 (5:35 p.m.) 2,560 sec.-ft.

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 1939.

Average discharge.- 11 years, 979 second-feet.

Extremes.- Maximum discharge during year, 7,870 second-feet May 28 (gage height, 8.19 feet), from rating curve extended above 3,500 second-feet; minimum, 251 second-feet Mar. 10, 11 (gage height, 1.59 feet).

1928-39: 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 above 3,000 second-feet, which are good. No diversion or regulation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

1.5	230	4.0	1,350	7.0	5,210
2.0	365	4.5	1,760	8.0	7,410
2.5	550	5.0	2,250	8.5	8,570
3.0	765	5.5	2,760		
3.5	1,020	6.0	3,410		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	402	590	530	3,410	430	283	992	1,390	1,470	2,200	1,080	630
2	408	550	502	2,840	412	286	1,020	1,510	1,470	2,050	1,110	590
3	570	765	494	1,950	395	294	1,110	1,630	1,590	2,250	1,280	550
4	429	610	678	1,470	385	289	992	1,630	1,430	2,350	1,280	610
5	331	502	1,380	1,180	382	276	865	1,350	1,320	1,800	1,140	890
6	314	437	915	992	368	270	815	1,140	1,350	1,590	915	652
7	297	422	1,860	890	359	266	790	1,080	1,470	1,590	840	502
8	292	419	2,650	865	337	260	865	1,020	1,550	1,720	890	482
9	281	412	2,100	790	328	256	865	1,080	1,470	2,000	965	478
10	642	378	1,350	765	320	251	840	1,180	1,590	2,300	1,050	459
11	675	346	1,020	815	328	258	815	1,390	1,850	2,250	1,020	550
12	1,250	334	865	765	448	268	840	1,630	2,000	1,800	940	430
13	910	322	765	698	402	273	765	2,150	2,150	1,800	865	375
14	550	328	675	652	416	268	742	2,870	1,900	1,800	815	356
15	426	419	610	652	419	263	720	3,260	2,150	1,900	765	660
16	365	610	570	610	398	263	720	2,990	1,800	1,800	720	590
17	334	675	530	652	375	273	790	2,400	1,510	1,320	698	510
18	328	570	494	790	368	322	1,050	1,900	1,510	1,240	675	455
19	331	765	463	940	356	398	1,240	1,510	2,000	1,280	652	430
20	375	720	444	865	340	510	1,320	1,210	2,400	1,240	652	490
21	375	570	430	765	328	652	1,550	1,180	2,250	1,350	720	570
22	337	474	416	675	320	915	1,510	1,240	2,400	1,720	742	550
23	317	426	490	630	317	1,210	1,320	1,240	2,300	1,850	720	494
24	338	402	590	590	311	1,550	1,180	1,320	2,100	1,850	698	470
25	463	375	590	550	308	1,630	1,050	1,670	1,630	1,900	815	419
26	457	368	506	530	297	1,240	965	1,950	1,390	2,000	720	412
27	698	375	506	530	294	992	965	1,800	1,590	2,100	675	448
28	539	391	506	550	289	890	1,300	3,950	2,310	2,000	698	382
29	840	408	570	530	-	840	1,900	4,880	3,190	1,630	610	353
30	720	470	856	486	-	815	1,510	2,650	2,700	1,430	530	350
31	720	-	1,560	455	-	840	-	1,850	-	1,320	530	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	15,314	1,250	281	494	2.74	3.16	30,370
November	14,433	765	322	481	2.67	2.98	28,630
December	25,915	2,650	416	836	4.64	5.35	51,400
Calendar year 1938	327,700	3,960	281	898	4.99	67.69	650,000
January	28,882	3,410	455	932	5.18	5.97	57,290
February	10,030	448	289	358	1.99	2.07	19,890
March	17,401	1,630	251	561	3.12	3.60	34,510
April	31,406	1,900	720	1,047	5.82	6.49	62,290
May	58,050	4,880	1,020	1,873	10.4	11.99	115,100
June	55,840	3,190	1,320	1,861	10.3	11.49	110,800
July	55,430	2,350	1,240	1,788	9.93	11.45	109,900
August	25,810	1,280	530	833	4.63	5.34	51,190
September	15,137	890	350	505	2.81	3.14	30,020
Water year 1938-39	353,648	4,880	251	969	5.38	73.03	701,400

Peak discharge.- Dec. 8 (12:30-2 a.m.) 2,990 sec.-ft.; Jan. 1 (3:30 p.m., 4:20 p.m.) 4,160 sec.-ft.; May 15 (12-1:30 a.m., 12 p.m.) 3,650 sec.-ft.; May 28 (12 p.m.) 7,870 sec.-ft.; June 29 (8-9 p.m.) 3,650 sec.-ft.

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 9½ 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 1939.

Average discharge.- 16 years (1917-22, 1928-39), 1,117 second-feet.

Extremes.- Maximum discharge during year, 7,010 second-feet May 29 (gage height, 7.60 feet); minimum, 150 second-feet Oct. 9 (gage height, 2.18 feet).
1917-22, 1928-39: 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 period of missing gage heights, Aug. 7-17, which were computed on basis of records for South Fork of Skykomish River near Index and are fair. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Jan. 1				Jan. 1 to Sept. 30					
2.1	132	4.0	1,430	2.2	200	4.0	1,530	7.0	5,950
2.5	251	4.5	1,980	2.5	310	4.5	2,110	7.6	7,010
3.0	525	5.0	2,590	3.0	600	5.0	2,780		
3.5	946	6.0	4,030	3.5	1,010	6.0	4,300		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	187	662	747	5,140	512	315	1,210	1,870	1,930	2,110	822	448
2	187	646	800	4,300	482	330	1,270	1,930	1,810	2,050	782	422
3	206	1,510	755	3,060	446	325	1,480	1,990	1,870	2,110	848	345
4	224	1,240	1,070	2,110	434	302	1,330	2,050	1,700	2,440	839	335
5	190	845	2,520	1,640	446	294	1,150	1,810	1,640	1,930	774	405
6	173	654	1,540	1,320	405	294	1,050	1,580	1,640	1,640	649	385
7	163	638	1,820	1,190	385	286	1,040	1,530	1,580	1,580	600	310
8	158	646	2,220	1,200	360	278	1,180	1,530	1,640	1,580	550	290
9	153	583	2,280	1,070	345	274	1,420	1,580	1,640	1,810	550	282
10	331	486	1,600	1,020	325	274	1,280	1,640	1,750	2,050	550	270
11	946	418	1,230	1,000	422	310	1,210	1,870	1,870	1,990	500	282
12	2,440	384	1,000	920	1,030	345	1,170	2,110	2,110	1,700	500	270
13	1,830	356	854	830	710	320	1,060	2,570	2,300	1,700	500	254
14	909	376	738	766	694	302	992	3,280	2,180	1,640	500	238
15	591	654	646	902	694	294	947	3,740	2,240	1,700	475	325
16	442	1,690	576	766	579	294	938	3,660	1,990	1,700	450	365
17	362	1,380	518	1,030	506	325	1,010	2,990	1,750	1,340	425	315
18	315	1,000	486	1,410	482	395	1,300	2,500	1,750	1,260	395	282
19	277	1,160	448	1,750	446	494	1,580	2,050	1,870	1,380	400	254
20	291	1,100	424	1,390	405	621	1,640	1,700	2,050	1,290	390	250
21	291	791	412	1,060	385	830	1,810	1,580	2,050	1,250	400	266
22	264	622	389	875	365	1,140	1,870	1,640	2,240	1,420	410	274
23	239	518	436	750	350	1,480	1,750	1,640	2,370	1,530	405	262
24	255	466	522	750	350	1,870	1,580	1,640	1,990	1,530	390	258
25	367	424	646	694	360	1,930	1,480	1,930	1,700	1,480	410	242
26	329	394	492	635	330	1,580	1,480	2,180	1,530	1,480	380	230
27	721	384	588	774	325	1,270	1,420	2,180	1,640	1,530	355	230
28	506	378	695	790	310	1,090	1,750	3,840	2,180	1,480	365	224
29	782	394	1,120	718	-	992	2,300	5,120	2,850	1,250	416	212
30	782	526	1,770	628	-	974	2,050	3,280	2,570	1,090	335	209
31	872	-	3,420	565	-	1,030	-	2,370	-	992	320	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	15,783	2,440	153	509	3.35	3.86	31,310
November	21,325	1,690	356	711	4.68	5.22	42,300
December	32,762	3,420	389	1,057	6.95	8.01	64,980
Calendar year 1938	330,528	6,030	153	906	5.96	80.85	655,600
January	41,053	5,140	565	1,324	8.71	10.04	81,430
February	12,883	1,030	310	460	3.03	3.16	25,550
March	20,858	1,930	274	673	4.43	5.11	41,370
April	41,747	2,300	938	1,392	9.16	10.22	82,800
May	71,380	5,120	1,530	2,303	15.2	17.52	141,600
June	58,430	2,850	1,530	1,948	12.8	14.28	115,900
July	50,032	2,440	992	1,614	10.6	12.22	99,240
August	15,685	848	320	506	3.33	3.84	31,110
September	8,734	448	209	291	1.91	2.13	17,320
Water year 1938-39	390,672	5,140	153	1 070	7.04	95.61	774,900

Peak discharge.- Jan. 1 (4:10 p.m.) 6,470 sec.-ft.; May 29 (12:50 a.m.) 7,010 sec.-ft.

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 and 5 miles southeast of Sauk. Zero of gage is 267 feet above mean sea level (river profile survey).

Drainage area.- 714 square miles.

Records available.- July 1928 to September 1939. August 1910 to August 1912, at various sites between a point 1 mile downstream from and a point 5 miles upstream from present site. All early discharge measurements made at point 5 miles upstream from present site.

Average discharge.- 11 years (1928-39), 4,182 second-feet.

Extremes.- Maximum discharge during year, 25,200 second-feet Jan. 1 (gage height, 9.96 feet); minimum, 792 second-feet Oct. 8, 9, 10 (gage height, 2.72 feet).
1910-12, 1928-39: Maximum discharge, 68,500 second-feet Feb. 26, 1932 (gage height, 15.83 feet); minimum, 572 second-feet Dec. 5, 1929, or may have been less sometime during period, Jan. 10-27, 1930, when stage-discharge relation was affected by ice.

Remarks.- Records excellent except those for period of missing gage heights, July 21 to Aug. 15, which were computed on basis of records for South Fork of Skykomish River near Index and are fair. No diversion or regulation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

2.7	770	4.5	3,680	7.0	11,000
3.0	1,120	5.0	4,880	8.0	15,200
3.5	1,810	5.5	6,200	9.0	20,000
4.0	2,650	6.0	7,670	10.0	25,200

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,140	2,560	3,250	18,800	2,560	1,630	4,500	6,060	6,770	8,300	3,400	2,300
2	1,130	2,300	3,250	18,000	2,380	1,720	4,660	6,340	6,480	7,820	3,200	2,130
3	1,330	4,430	3,360	11,400	2,300	1,800	5,260	6,620	6,770	6,140	3,100	1,860
4	1,370	3,800	4,110	8,630	2,220	1,660	4,880	6,920	6,200	8,960	3,000	1,970
5	952	2,840	8,960	6,480	2,220	1,570	4,260	6,060	5,920	7,360	2,900	2,300
6	904	2,300	5,520	5,260	2,130	1,580	3,800	5,390	5,780	6,340	2,800	2,000
7	869	2,130	7,410	4,760	2,050	1,560	3,680	5,260	5,780	6,060	2,800	1,600
8	847	2,380	9,300	4,880	1,940	1,510	4,020	5,130	6,060	6,200	2,700	1,570
9	847	2,300	8,630	4,500	1,890	1,470	4,760	5,260	5,920	7,060	2,700	1,500
10	1,450	2,000	5,920	4,380	1,810	1,440	4,380	5,390	6,200	8,140	2,600	1,560
11	3,360	1,740	4,630	4,380	1,950	1,540	4,140	6,060	6,770	8,140	2,600	1,630
12	7,230	1,630	3,910	4,020	4,490	1,690	4,020	6,920	7,360	7,060	2,600	1,410
13	6,320	1,540	3,360	3,680	3,570	1,680	3,800	8,300	8,140	6,770	2,500	1,290
14	3,040	1,570	3,040	3,460	3,360	1,620	3,570	10,700	7,520	6,920	2,500	1,230
15	2,130	2,560	2,740	3,680	3,460	1,540	3,460	12,600	8,140	6,920	2,400	1,700
16	1,700	6,260	2,560	3,460	2,940	1,520	3,360	12,600	7,360	7,060	2,380	1,910
17	1,470	5,260	2,380	4,020	2,650	1,640	3,570	10,300	6,480	5,390	2,300	1,740
18	1,320	3,910	2,220	5,650	2,470	1,950	4,380	8,630	6,060	5,130	2,220	1,560
19	1,220	4,260	2,080	7,520	2,380	2,300	5,390	7,060	6,920	5,260	2,220	1,380
20	1,280	4,500	2,000	6,060	2,220	2,840	5,520	5,920	7,980	5,000	2,110	1,470
21	1,290	3,250	1,940	4,760	2,080	3,360	6,200	5,520	7,820	4,500	2,220	1,700
22	1,180	2,650	1,870	4,020	2,000	4,380	6,480	5,780	8,300	4,600	2,300	1,630
23	1,100	2,300	2,220	3,570	1,920	5,520	5,920	5,520	8,960	4,600	2,300	1,500
24	1,080	2,130	2,560	3,460	1,860	6,770	5,390	5,520	7,670	4,500	2,220	1,470
25	1,600	1,990	3,040	3,360	1,870	7,360	5,130	6,480	6,480	4,400	2,380	1,290
26	1,340	1,870	2,380	3,040	1,760	5,920	4,880	7,360	5,780	4,300	2,220	1,240
27	2,740	1,840	2,650	3,570	1,740	4,760	4,760	7,360	6,060	4,200	2,080	1,340
28	2,020	1,860	3,250	3,570	1,660	4,140	5,650	12,200	8,140	4,100	2,110	1,200
29	2,800	1,950	4,140	3,460	-	3,800	7,670	19,000	11,000	3,900	1,990	1,100
30	2,940	2,470	6,380	3,140	-	3,680	6,770	11,400	10,300	3,700	1,720	1,100
31	3,250	-	12,200	2,840	-	3,910	-	8,300	-	3,500	1,750	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	61,249	7,230	847	1,976	2.77	3.19	121,500
November	82,580	6,260	1,540	2,753	3.86	4.31	163,800
December	131,260	12,200	1,870	4,234	5.93	6.84	260,400
Calendar year 1938	1,370,909	23,000	847	3,756	5.26	71.38	2,719,000
January	171,810	18,800	2,840	5,542	7.76	8.95	340,800
February	65,880	4,490	1,660	2,353	3.30	3.44	130,700
March	87,860	7,360	1,440	2,834	3.97	4.58	174,300
April	144,480	7,670	3,360	4,816	6.75	7.53	286,600
May	241,960	19,000	5,130	7,805	10.9	12.57	479,900
June	215,120	11,000	5,780	7,171	10.0	11.16	426,700
July	184,330	8,960	3,500	5,946	8.33	9.60	365,600
August	76,320	3,400	1,720	2,462	3.45	3.98	151,400
September	47,680	2,300	1,100	1,589	2.23	2.49	94,570
Water year 1938-39	1,510,529	19,000	847	4,138	5.80	78.64	2,996,000

Peak discharge.- Jan. 1 (7:30 p.m.) 25,200 sec.-ft.; May 29 (1 to 1:40 a.m.) 23,600 sec.-ft.

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. Prior to Aug. 24, 1938, staff gage at same site and datum.

Drainage area.- 335 square miles.

Records available.- July 1938 to September 1939.

Extremes.- Maximum discharge during period, 9,680 second-feet May 29 (gage height, 9.79 feet), from rating curve extended above 5,000 second-feet; minimum, 444 second-feet Oct. 8, 9 (gage height, 3.41 feet).

Remarks.- Records good except those for periods of missing gage heights, July 1-21, 31, Aug. 7, 14, 21, 1938, July 13 to Aug. 15, 1939, which were computed on basis of records for Sauk River near Sauk and Sauk River above Whitechuck River near Darrington and are poor. Staff gage read once or twice daily July 22 to Aug. 24, 1938. No diversion or regulation.

Rating table for period July 1938 to September 1939 (gage height, in feet, and discharge, in second-feet)

3.4	440	5.5	2,040	8.0	5,450
3.7	575	6.0	2,570	8.5	6,460
4.0	754	6.5	3,150	9.0	7,600
4.5	1,120	7.0	3,800	9.5	8,860
5.0	1,540	7.5	4,560	10.0	10,200

Discharge, in second-feet, 1938-39

1938

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1										3,300	1,280	1,080
2										2,750	1,160	1,240
3										2,500	1,120	1,320
4										2,400	1,160	1,240
5										2,400	1,240	865
6										2,600	1,200	916
7										2,900	1,100	774
8										2,950	938	648
9										2,650	998	642
10										2,300	1,040	690
11										2,300	1,040	761
12										2,200	976	837
13										2,150	983	880
14										2,550	1,050	909
15										2,650	916	894
16										2,600	1,010	938
17										2,600	1,200	946
18										2,300	1,240	924
19										2,250	1,020	938
20										2,300	983	894
21										2,400	1,000	844
22										2,190	815	844
23										2,140	808	788
24										1,890	909	1,010
25										1,790	968	802
26										1,840	1,080	716
27										1,790	1,120	709
28										1,640	983	684
29										1,540	894	748
30										1,360	880	851
31										1,250	946	-

Discharge, in second-feet, of Suiattle River near Mansford, Wash., 1938-39--Continued

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	648	829	1,040	5,720	961	597	1,940	2,570	2,910	4,090	1,750	1,240
2	654	836	1,020	4,900	924	608	1,990	2,740	2,910	3,940	1,650	1,030
3	851	1,350	1,010	3,660	887	614	2,090	2,850	3,030	4,090	1,500	998
4	614	1,040	1,250	2,850	858	580	1,840	2,970	2,790	4,090	1,450	1,080
5	516	844	2,460	2,350	865	560	1,640	2,570	2,620	3,400	1,450	1,320
6	498	728	1,740	1,990	829	565	1,540	2,350	2,570	3,030	1,450	1,010
7	489	748	3,090	1,840	781	550	1,540	2,300	2,740	2,970	1,500	802
8	484	741	3,800	1,840	735	530	1,690	2,240	2,850	3,150	1,450	851
9	489	728	3,260	1,690	709	525	1,740	2,300	2,740	3,660	1,450	865
10	1,010	654	2,300	1,690	672	516	1,640	2,400	2,910	4,090	1,400	836
11	1,200	580	1,790	1,740	722	540	1,590	2,620	3,270	4,090	1,450	887
12	2,220	586	1,540	1,590	1,160	560	1,590	3,030	3,530	3,530	1,450	684
13	1,630	570	1,360	1,500	998	555	1,500	3,800	3,940	3,300	1,400	636
14	931	592	1,240	1,360	1,010	530	1,400	5,080	3,530	3,500	1,400	619
15	696	808	1,160	1,400	1,020	530	1,400	6,040	3,800	3,500	1,350	985
16	592	1,550	1,040	1,280	931	535	1,360	5,840	3,400	3,600	1,360	953
17	565	1,400	991	1,450	872	570	1,500	4,560	2,970	2,700	1,320	894
18	555	1,120	946	1,790	851	654	1,890	3,800	2,970	2,600	1,280	781
19	545	1,320	894	2,040	802	774	2,190	3,150	3,400	2,600	1,240	735
20	575	1,320	858	1,840	754	938	2,300	2,620	4,090	2,500	1,240	858
21	570	1,040	829	1,590	722	1,160	2,680	2,570	3,940	2,200	1,280	998
22	520	894	802	1,450	696	1,500	2,680	2,680	4,240	2,150	1,360	909
23	484	815	946	1,320	672	1,990	2,460	2,620	4,400	2,100	1,280	844
24	512	768	1,040	1,320	660	2,460	2,300	2,620	3,800	2,050	1,280	808
25	709	728	1,040	1,200	660	2,620	2,090	3,030	3,150	2,000	1,400	690
26	617	703	909	1,160	624	2,190	1,940	3,400	2,850	1,900	1,200	684
27	976	716	961	1,200	624	1,790	1,940	3,400	3,150	1,800	1,160	781
28	703	728	976	1,240	597	1,590	2,400	5,510	4,240	1,750	1,160	614
29	1,120	774	1,160	1,160	-	1,500	3,270	7,420	5,640	1,750	998	580
30	976	938	1,720	1,080	-	1,450	2,790	4,730	5,080	1,750	901	580
31	1,030	-	3,030	1,020	-	1,540	-	3,530	-	1,700	953	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
July 1938	70,480	3,300	1,250	2,274	6.79	7.83	139,800
August	32,057	1,280	808	1,034	3.09	3.56	63,580
September	26,332	1,320	642	878	2.62	2.92	52,230
The period	-	-	-	-	-	-	255,600
October 1938	23,979	2,220	484	774	2.31	2.66	47,560
November	26,448	1,550	570	882	2.63	2.93	52,460
December	46,202	3,800	802	1,490	4.45	5.13	91,640
Calendar year	-	-	-	-	-	-	-
January 1939	58,260	5,720	1,020	1,879	5.61	6.47	115,600
February	22,596	1,160	597	807	2.41	2.51	44,820
March	31,021	2,620	516	1,020	3.04	3.50	62,720
April	58,920	3,270	1,360	1,964	5.86	6.54	116,900
May	107,340	7,420	2,240	3,463	10.3	11.87	212,900
June	103,460	5,640	2,570	3,449	10.3	11.49	205,200
July	89,580	4,090	1,700	2,890	8.63	9.95	177,700
August	41,512	1,750	901	1,339	4.00	4.61	82,340
September	25,552	1,320	580	852	2.54	2.83	50,680
Water year 1938-39	635,470	7,420	484	1,741	5.20	70.49	1,261,000

Peak discharge.- 1939: Jan. 1 (3-4 p.m.) 7,130 sec.-ft.; May 16 (12:30-1:30 a.m.) 6,900 sec.-ft.; May 29 (12-1:15 a.m.) 9,680 sec.-ft.

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, and 6 miles upstream from Glacier Creek and 4½ miles east of Glacier.

Drainage area.- 105 square miles.

Records available.- October 1937 to September 1939.

Extremes.- Maximum discharge during year, 5,100 second-feet May 28 (gage height, 7.53 feet), from rating curve extended above 2,000 second-feet; minimum, 104 second-feet (regulated) Mar. 14 (gage height, 2.42 feet).

1937-39: 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 good except those above 2,000 second-feet, which are poor. Shifting-control method used Oct. 1-5. No diversion. Some regulation at low water by operation of power plant at Excelsior.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	361	686	864	2,920	264	165	687	950	1,080	1,480	894	669
2	375	561	705	1,880	247	167	749	1,010	1,070	1,430	1,010	532
3	638	742	632	1,380	235	165	1,030	1,110	1,100	1,600	1,190	576
4	347	567	752	950	227	160	781	1,100	1,040	2,000	1,140	616
5	252	470	1,540	755	227	157	646	934	968	1,430	959	675
6	233	410	844	640	212	160	582	828	968	1,300	762	462
7	220	389	1,980	593	205	157	565	787	1,080	1,330	712	389
8	224	363	2,720	582	193	155	605	794	1,080	1,330	800	462
9	256	332	1,800	548	193	151	588	856	1,080	1,480	942	425
10	787	298	1,070	542	189	151	559	910	1,250	1,700	1,020	409
11	686	270	822	593	209	153	554	1,000	1,380	1,700	959	420
12	936	265	687	537	306	153	570	1,160	1,480	1,330	863	306
13	543	251	596	499	239	151	526	1,540	1,540	1,330	755	255
14	352	270	535	462	231	149	510	2,180	1,430	1,310	718	255
15	279	342	482	451	223	149	510	2,420	1,760	2,070	681	616
16	242	543	436	409	212	151	520	2,240	1,380	1,540	646	570
17	224	497	392	441	205	157	582	1,650	1,190	1,160	640	462
18	203	431	375	593	202	170	768	1,330	1,330	1,070	628	369
19	203	608	343	724	193	199	863	1,060	1,760	1,230	616	349
20	229	509	322	593	186	264	902	910	1,820	1,080	640	493
21	247	399	307	488	180	354	1,020	942	1,700	1,160	699	588
22	203	337	307	435	178	510	986	1,050	1,820	1,430	749	499
23	194	308	431	389	175	651	894	1,080	1,650	1,540	724	456
24	389	284	565	369	175	934	794	1,150	1,480	1,480	724	379
25	308	265	499	339	175	1,080	755	1,600	1,190	1,480	774	320
26	959	242	414	335	167	800	730	1,760	1,060	1,600	646	315
27	742	256	408	359	167	634	718	1,480	1,260	1,700	646	315
28	527	274	375	349	165	554	934	3,470	1,700	1,600	634	255
29	1,460	298	419	330	-	510	1,430	3,240	2,420	1,290	681	235
30	1,320	607	812	311	-	515	1,110	2,060	2,000	1,250	537	239
31	984	-	1,340	283	-	565	-	1,380	-	1,070	628	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	14,923	1,460	194	481	4.58	5.28	29,600
November	12,074	742	242	402	3.83	4.27	23,950
December	23,774	2,720	307	767	7.30	8.42	47,160
Calendar year 1938	247,182	2,720	130	677	6.45	87.41	490,300
January	20,079	2,920	283	648	6.17	7.11	39,830
February	5,780	306	165	206	1.96	2.04	11,460
March	10,391	1,080	149	335	3.19	3.68	20,610
April	22,468	1,430	510	749	7.13	7.96	44,560
May	43,981	3,470	787	1,419	13.5	15.56	87,240
June	42,066	2,420	968	1,402	13.4	14.95	83,440
July	44,500	2,070	1,070	1,435	13.7	15.79	88,260
August	24,017	1,190	537	775	7.38	8.51	47,640
September	12,911	675	235	430	4.10	4.57	25,610
Water year 1938-39	276,964	3,470	149	759	7.23	98.14	549,400

Peak discharge.- Dec. 7 (10:25 p.m.) 3,790 sec.-ft.; Jan. 1 (8:50 p.m.) 3,440 sec.-ft.; May 28 4:50 p.m.) 5,100 sec.-ft.

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. Zero of gage is 203.6 feet above mean sea level (general adjustment of 1929).

Drainage area.- 580 square miles.

Records available.- July 1935 to September 1939. 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, 23,000 second-feet Jan. 1 (gage height, 11.41 feet), from rating curve extended above 11,000 second-feet by logarithmic plotting and velocity-area studies; minimum, 625 second-feet Oct. 23.

1935-39: Maximum discharge, 33,200 second-feet Oct. 28, 1938 (gage height, 13.21 feet), from rating curve extended above 11,000 second-feet by logarithmic plotting and velocity-area studies; minimum, 560 second-feet Nov. 9, 10, 1936 (or may have been less sometime during periods of ice effect).

Remarks.- Records good except those above 10,000 second-feet, which are fair. No diversion. Slight regulation at power plant at Excelsior has little if any effect at this station.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Dec. 7

3.1	590	5.0	2,660	7.0	6,840
3.5	850	5.5	3,360	7.5	8,400
4.0	1,360	6.0	4,180	8.0	10,000
4.5	1,980	6.5	5,370	9.0	13,400

Dec. 8 to Sept. 30

3.0	700	5.5	3,820	9.0	13,400
3.5	1,110	6.0	4,750	10.0	17,000
4.0	1,640	6.5	5,790	11.0	21,000
4.5	2,260	7.0	6,990	12.0	26,000
5.0	2,980	8.0	9,980		

Note.- Same as following table above 9.0 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,000	2,730	4,180	19,000	2,400	1,420	4,000	3,730	3,640	4,280	2,330	1,640
2	1,000	2,110	3,740	13,400	2,260	1,580	4,090	3,820	3,560	4,000	2,400	1,380
3	1,600	3,550	3,900	8,720	2,130	1,700	5,050	4,090	4,000	4,370	2,760	1,410
4	1,400	2,660	4,140	6,120	2,000	1,530	4,000	4,090	5,360	5,150	2,680	1,530
5	868	2,040	8,120	4,950	2,000	1,420	3,300	3,640	4,850	4,280	2,470	1,880
6	763	1,660	4,280	4,090	1,880	1,530	2,900	3,300	4,180	3,820	2,060	1,400
7	700	1,520	9,050	4,000	1,820	1,530	2,830	3,730	4,000	3,730	1,880	1,160
8	676	1,460	13,400	4,750	1,640	1,400	3,060	3,470	4,090	3,640	1,940	1,210
9	688	1,360	9,420	4,280	1,530	1,320	3,060	3,470	3,730	3,910	2,260	1,160
10	1,320	1,170	5,680	4,460	1,480	1,280	2,980	3,560	3,910	4,280	2,400	1,100
11	2,450	1,070	4,280	5,150	1,690	1,330	2,830	4,000	4,280	4,280	2,330	1,080
12	5,280	1,040	3,560	4,370	4,520	1,480	3,060	4,370	4,370	3,640	2,130	922
13	2,870	1,000	3,060	3,910	3,380	1,530	2,760	5,260	4,560	3,470	1,880	826
14	1,520	1,090	2,760	3,470	3,380	1,420	2,540	6,860	4,280	3,470	1,820	810
15	1,100	2,240	2,540	4,090	3,300	1,360	2,470	7,540	4,750	4,850	1,700	2,040
16	877	5,500	2,330	3,730	2,760	1,390	2,470	6,860	4,180	4,780	1,640	1,880
17	770	3,360	2,060	4,640	2,400	1,530	2,680	5,460	4,000	3,300	1,580	1,420
18	714	2,730	1,940	6,120	2,260	1,880	3,560	4,560	4,460	3,060	1,580	1,160
19	688	5,560	1,820	7,540	2,060	2,260	3,820	3,820	6,860	3,730	1,580	1,060
20	700	4,080	1,760	5,790	1,880	2,680	3,910	3,380	6,360	3,300	1,580	1,200
21	707	2,870	1,760	4,370	1,760	2,980	4,560	3,300	5,460	3,140	1,700	1,410
22	658	2,310	1,760	3,640	1,640	3,910	4,280	3,730	5,360	3,560	1,760	1,310
23	640	1,980	4,610	3,220	1,580	4,460	3,730	3,730	4,950	3,730	1,700	1,190
24	829	1,780	5,680	3,140	1,530	5,840	3,300	3,730	4,560	3,640	1,700	1,110
25	1,010	1,590	5,050	2,900	1,700	6,990	3,300	4,720	3,820	3,560	1,760	984
26	1,450	1,480	3,560	2,680	1,530	4,750	3,220	5,570	3,470	3,730	1,580	957
27	3,070	1,530	3,910	3,060	1,530	3,640	3,060	4,750	3,640	3,820	1,530	1,030
28	1,780	1,560	4,660	3,640	1,410	3,140	3,820	7,920	4,460	3,730	1,530	834
29	3,160	1,660	5,350	3,300	-	2,830	5,570	9,150	5,680	3,220	1,640	778
30	3,560	2,450	10,500	2,900	-	2,760	4,560	6,120	5,260	2,980	1,380	786
31	3,990	-	15,100	2,610	-	2,980	-	4,460	-	2,680	1,480	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	47,838	5,280	640	1,543	2.66	3.07	94,890
November	67,140	5,560	1,000	2,238	3.86	4.31	133,200
December	153,960	15,100	1,760	4,966	8.56	9.87	305,400
Calendar year 1938	977,794	15,100	640	2,679	4.62	62.71	1,940,000
January	158,040	19,000	2,610	5,098	8.79	10.13	313,500
February	59,450	4,520	1,410	2,123	3.66	3.81	117,900
March	75,850	6,990	1,280	2,447	4.22	4.86	150,400
April	104,770	5,570	2,470	3,492	6.02	6.72	207,800
May	146,190	9,150	3,300	4,716	8.13	9.37	290,000
June	136,080	6,860	3,470	4,536	7.82	8.72	269,900
July	117,130	5,150	2,680	3,778	6.51	7.50	232,300
August	58,760	2,760	1,380	1,895	3.27	3.77	116,500
September	36,657	2,040	778	1,222	2.11	2.35	72,710
Water year 1938-39	1,161,865	19,000	640	3,183	5.49	74.48	2,304,000

Peak discharge.- Dec. 8 (12:45-2:20 a.m.) 16,200 sec.-ft.; Jan. 1 (2:45 p.m.) 23,000 sec.-ft.

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 1939.

Extremes.- Maximum discharge during year, 7,760 second-feet Jan. 1 (gage height, 8.49 feet); minimum, 77 second-feet Oct. 9, 10 (gage height, 2.15 feet).
1934-39: Maximum discharge, 12,900 second-feet Oct. 28, 1937 (gage height, 10.70 feet); minimum, 72 second-feet Sept. 28, 29, 1938.

Remarks.- Records good. No diversion or regulation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Jan. 1 to May 28

2.5	146	4.5	1,350	7.0	4,910
3.0	330	5.0	1,870	8.0	6,760
3.5	570	5.5	2,480	9.0	8,810
4.0	915	6.0	3,200		

Oct. 1 to Dec. 31, May 29 to Sept. 30

2.0	55	4.0	980	6.0	3,270
2.5	149	4.5	1,460	7.0	4,910
3.0	346	5.0	1,990		
3.5	615	5.5	2,590		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	96	598	1,770	6,000	456	290	1,260	955	842	766	267	173
2	87	472	1,360	3,600	420	375	1,140	1,050	882	724	258	155
3	202	1,270	1,280	1,980	398	380	1,220	1,080	1,030	1,000	272	152
4	192	644	1,480	1,350	380	314	931	1,050	1,510	1,180	258	144
5	107	455	2,580	1,050	388	294	718	899	1,360	890	242	267
6	94	356	1,260	851	362	330	642	899	1,070	744	218	204
7	85	341	3,710	907	334	326	666	1,110	1,040	692	204	158
8	80	366	3,330	1,050	306	298	820	955	1,050	686	196	139
9	77	346	2,190	979	282	274	859	923	908	699	204	126
10	90	280	1,190	1,070	278	262	790	971	962	724	204	120
11	696	238	858	1,260	554	290	768	1,140	1,110	673	196	120
12	2,530	234	692	955	1,370	352	805	1,300	1,060	570	193	116
13	755	218	593	843	828	362	678	1,600	1,080	559	182	114
14	336	300	526	732	820	322	624	1,980	998	542	173	114
15	226	836	461	899	711	306	594	1,980	1,100	942	164	491
16	176	2,160	418	746	548	322	612	1,650	926	972	155	313
17	149	944	377	1,160	460	398	760	1,260	989	587	155	190
18	134	759	351	1,740	442	485	1,120	1,060	1,300	526	149	152
19	120	1,990	327	2,350	402	618	1,120	875	1,820	766	146	134
20	114	1,160	308	1,450	362	732	1,170	775	1,510	627	142	122
21	107	711	322	971	330	883	1,350	812	1,210	548	142	116
22	103	559	352	768	310	1,170	1,170	939	1,120	581	139	114
23	99	472	1,260	660	294	1,400	955	939	1,020	565	139	111
24	122	418	1,670	636	302	1,820	805	939	874	515	136	107
25	181	372	1,360	570	310	1,850	867	1,320	718	493	142	105
26	206	346	795	515	282	1,150	867	1,450	656	488	149	101
27	614	361	917	666	282	828	812	1,140	724	472	134	99
28	276	377	1,150	820	258	697	1,130	2,680	935	445	144	99
29	659	472	1,600	704	-	660	1,600	2,280	1,150	377	210	98
30	805	772	3,330	594	-	690	1,170	1,460	926	346	149	98
31	1,090	-	4,480	505	-	835	-	1,030	-	312	152	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	10,608	2,530	77	342	3.32	3.83	21,040
November	18,827	2,160	218	628	6.10	6.81	37,340
December	42,297	4,480	308	1,364	13.2	15.22	83,890
Calendar year 1938	212,752	4,480	72	583	5.66	76.78	422,000
January	38,381	6,000	505	1,238	12.0	13.83	76,130
February	12,469	1,370	258	445	4.32	4.50	24,730
March	19,313	1,850	262	623	6.05	6.98	38,310
April	28,023	1,600	594	934	9.07	10.12	55,580
May	38,501	2,680	775	1,242	12.1	13.95	76,370
June	31,880	1,820	656	1,063	10.3	11.49	63,230
July	20,011	1,180	312	646	6.27	7.23	39,690
August	5,614	272	134	181	1.76	2.03	11,140
September	4,552	491	98	152	1.48	1.65	9,030
Water year 1938-39	270,476	6,000	77	741	7.19	97.64	536,500

Peak discharge.- Dec. 7 (5:50 p.m.) 5,810 sec.-ft.; Dec. 8 (10 p.m.) 4,910 sec.-ft.; Dec. 31 (1:20 a.m.) 5,270 sec.-ft.; Jan. 1 (10-10:20 a.m.) 7,760 sec.-ft.

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 Kootenay River, and 17 miles upstream from international boundary. Zero of gage is 1,338.01 feet above mean sea level (from levels by Geodetic Survey of Canada in 1930).

Drainage area.- 34,000 square miles.

Records available.- October 1937 to September 1939. April 1913 to September 1937, at Trail, 7 miles downstream.

Average discharge.- 26 years, 70,660 second-feet.

Extremes.- Maximum discharge during year, 196,000 second-feet June 1 (gage height, 33.63 feet); minimum, 12,700 second-feet Mar. 18 (gage height, 4.47 feet).

1913-39: Maximum discharge observed, 312,000 second-feet June 14, 15, 1913 (gage height, 41.6 feet, Trail gage); minimum observed, 8,940 second-feet Feb. 3, 1937 (gage height, 6.27 feet, Trail gage).

Remarks.- Records excellent. Discharge for periods of missing gage heights, Mar. 21-24, Apr. 5-14, July 15-17, 20-27, July 30 to Aug. 1, computed on basis of records for station at Trail. Small amount of water diverted upstream from station for irrigation. Slight fluctuation at low water caused by operation of power plant on Kootenay River. Natural storage in many lakes affects flow. This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

(Shifting-control method used Oct. 1 to May 1, Aug. 20 to Sept. 30)

4.5	12,500	8.0	27,000	15.0	60,600	24.0	115,000
5.0	14,400	10.0	35,900	18.0	76,800	28.0	146,000
6.0	18,400	12.0	45,400	22.0	101,000	34.0	199,000

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52,300	28,600	21,200	17,600	18,000	14,000	20,600	72,700	195,000	161,000	126,000	71,500
2	51,200	28,100	20,900	17,700	17,900	13,900	21,500	77,200	193,000	165,000	126,000	70,000
3	51,000	28,500	20,800	18,000	17,900	13,900	21,700	84,500	188,000	168,000	123,000	68,700
4	50,500	28,700	20,200	18,200	17,900	14,200	24,100	92,000	183,000	170,000	120,000	67,500
5	50,400	28,400	20,300	18,800	17,800	14,000	23,800	98,700	177,000	171,000	118,000	65,600
6	50,600	27,600	20,400	18,600	17,600	13,800	24,500	105,000	171,000	170,000	116,000	64,200
7	49,400	26,800	20,800	18,600	17,300	13,700	25,200	110,000	166,000	168,000	113,000	64,800
8	47,300	26,100	21,300	18,500	17,200	13,600	26,100	114,000	160,000	166,000	109,000	66,500
9	45,700	25,700	21,500	18,400	16,900	13,600	27,000	117,000	157,000	163,000	101,000	66,400
10	44,600	25,300	20,500	18,500	16,800	13,500	27,900	118,000	153,000	160,000	98,100	65,600
11	43,800	24,700	19,900	18,600	16,200	13,400	28,600	118,000	150,000	158,000	91,700	63,900
12	42,200	24,400	20,200	18,600	16,200	13,300	29,500	117,000	148,000	157,000	84,900	62,700
13	43,800	23,900	20,500	18,600	15,900	13,400	30,200	117,000	147,000	156,000	83,200	61,100
14	42,100	24,000	20,100	18,800	15,700	13,300	31,000	119,000	146,000	156,000	82,400	57,800
15	40,000	24,500	20,300	18,800	15,800	13,000	31,000	123,000	145,000	155,000	81,800	54,600
16	39,000	24,300	19,400	18,800	15,300	13,000	31,700	130,000	144,000	154,000	81,400	52,500
17	38,200	24,100	19,400	18,600	15,200	13,000	32,500	139,000	144,000	153,000	80,800	50,200
18	37,200	24,100	19,200	18,900	15,000	12,900	33,300	149,000	143,000	152,000	79,900	49,000
19	36,100	23,900	19,200	18,300	14,800	12,900	34,400	158,000	143,000	148,000	78,000	47,600
20	35,000	23,900	19,400	17,800	14,600	13,200	35,900	165,000	144,000	144,000	77,800	46,400
21	34,100	23,400	19,100	17,800	14,500	13,800	38,000	169,000	145,000	140,000	75,900	45,200
22	33,500	23,100	18,700	17,800	14,400	14,200	37,100	171,000	147,000	135,000	73,600	44,300
23	32,400	22,700	18,800	17,800	14,400	14,700	44,300	172,000	149,000	131,000	72,400	43,100
24	31,600	22,700	18,100	17,600	14,300	15,200	46,000	171,000	152,000	128,000	71,200	42,400
25	31,100	22,500	18,000	17,600	14,500	16,300	48,000	171,000	156,000	125,000	70,800	41,300
26	30,500	22,100	17,700	17,600	14,300	16,600	50,400	172,000	157,000	123,000	70,700	41,200
27	30,300	21,600	18,200	17,700	14,300	17,000	53,000	173,000	157,000	122,000	71,600	41,500
28	30,100	21,700	18,500	17,600	14,200	18,400	56,300	174,000	157,000	122,000	72,200	41,100
29	30,400	21,600	18,500	17,900	-	18,700	57,700	179,000	157,000	124,000	72,800	40,600
30	29,600	21,400	18,200	18,000	-	19,300	67,800	187,000	158,000	125,000	72,700	40,200
31	29,400	-	17,900	18,000	-	19,700	-	193,000	-	126,000	72,500	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	1,233,400	52,300	29,400	39,800	1.17	1.35	2,450,000
November	738,400	28,700	21,400	24,600	.72	.80	1,460,000
December	607,200	21,500	17,700	19,600	.58	.67	1,200,000
Calendar year 1938	25,560,600	259,000	15,700	70,000	2.06	27.98	50,700,000
January	564,100	18,900	17,600	18,200	.54	.62	1,120,000
February	444,900	18,000	14,200	15,900	.47	.49	882,000
March	453,500	19,700	12,900	14,600	.43	.50	900,000
April	1,059,100	67,800	20,600	35,300	1.04	1.16	2,100,000
May	4,256,100	193,000	72,700	137,000	4.03	4.65	8,440,000
June	4,732,000	195,000	143,000	158,000	4.65	5.19	9,390,000
July	4,596,000	171,000	122,000	148,000	4.35	5.02	9,120,000
August	2,768,400	126,000	70,700	89,300	2.63	3.03	5,490,000
September	1,637,500	71,500	40,200	54,600	1.61	1.80	3,250,000
Water year 1938-39	23,090,600	195,000	12,900	63,300	1.86	25.28	45,800,000

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., 3¼ miles upstream from Colville River, at Kettle Falls. Zero of gage is at mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 64,500 square miles.

Records available.- April 1913 to September 1939.

Average discharge.- 99,210 second-feet.

Extremes.- Maximum discharge during year, 280,000 second-feet May 31, June 1 (elevation, 1,190.45 feet); minimum (not determined), probably occurred on Feb. 11 or 12, when stage-discharge relation was affected by ice.

1913-39: 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 during flood of 1894, 700,000 second-feet, based on information from several sources.

Remarks.- Records excellent except those for period of ice effect, Feb. 12-14 (computed on basis of gage heights and weather records), and those for periods of missing gage heights, June 19-24, July 4-6, 16-23 (computed on basis of sum of records for Sheep Creek near Northport, Kettle River near Laurier, Pend Oreille River below Z Canyon, Salmon River near Waneta, B. C., and Columbia River at Birchbank, B. C.), which are good. Many diversions upstream from gage for irrigation, but quantity diverted is very small in proportion to flow past gage. Slight fluctuation at extreme low water caused by operation of power plant on Kootenai River. Natural storage in many lakes upstream tends to decrease floods and increase low-water flow.

Rating table, water year 1938-39 except period of ice effect (gage height, in feet, and discharge, in second-feet)

1,166.5	21,200	1,171.0	45,300	1,176.0	83,600	1,188.0	235,000
1,167.0	23,400	1,172.0	52,000	1,178.0	103,000	1,191.0	290,000
1,168.0	27,900	1,173.0	59,200	1,180.0	125,000		
1,169.0	32,900	1,174.0	66,900	1,182.0	148,000		
1,170.0	38,800	1,175.0	75,100	1,185.0	189,000		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64,100	41,100	30,400	28,400	28,700	26,300	41,700	133,000	279,000	208,000	146,000	82,900
2	63,700	39,300	30,100	28,500	28,600	26,200	44,500	138,000	276,000	211,000	146,000	81,200
3	63,300	40,000	30,000	29,000	28,600	26,100	47,100	148,000	271,000	213,000	144,000	79,800
4	63,200	39,900	29,600	29,200	28,700	26,000	49,200	159,000	265,000	215,000	141,000	78,200
5	62,600	39,600	29,000	29,100	28,700	26,100	50,800	169,000	258,000	216,000	138,000	77,000
6	63,000	38,900	29,600	29,400	28,500	26,100	51,600	176,000	251,000	213,000	136,000	74,800
7	62,000	38,100	29,800	29,600	28,400	25,700	53,000	182,000	244,000	210,000	132,000	74,200
8	60,200	37,400	30,300	29,600	28,300	25,300	53,800	188,000	238,000	206,000	130,000	76,000
9	58,400	36,300	31,000	29,600	26,800	25,100	55,200	193,000	232,000	202,000	122,000	76,800
10	56,800	35,900	30,600	29,600	23,500	25,000	56,300	196,000	227,000	199,000	117,000	76,100
11	56,300	35,100	29,100	29,600	22,700	24,700	55,500	197,000	223,000	194,000	112,000	75,500
12	55,100	34,400	28,500	29,800	24,000	24,300	60,000	199,000	220,000	192,000	102,000	73,400
13	54,400	33,900	29,600	29,600	25,200	24,300	60,400	199,000	217,000	190,000	99,000	71,900
14	54,900	33,200	29,100	29,600	26,600	24,500	61,600	203,000	214,000	190,000	97,300	69,500
15	52,000	33,700	29,400	30,000	26,300	24,200	64,100	210,000	211,000	188,000	96,000	66,000
16	51,700	34,200	29,100	30,200	26,200	23,800	65,500	218,000	208,000	185,000	95,100	63,400
17	50,300	33,200	28,500	30,100	26,100	23,900	66,900	227,000	206,000	183,000	94,000	61,300
18	49,400	33,400	28,400	29,900	26,200	24,100	68,500	238,000	204,000	181,000	93,500	59,600
19	48,200	33,200	28,200	30,100	26,400	24,000	70,300	244,000	202,000	176,000	91,900	58,500
20	47,200	33,100	28,200	29,100	26,500	24,200	72,400	250,000	202,000	170,000	90,400	57,200
21	46,300	32,900	28,000	28,700	26,600	24,900	75,500	253,000	203,000	165,000	89,000	56,200
22	45,700	32,800	27,900	28,500	26,600	25,500	80,200	256,000	204,000	160,000	86,800	54,000
23	44,600	32,100	27,400	28,200	26,500	26,500	83,200	259,000	206,000	154,000	85,400	54,100
24	43,800	31,900	27,300	28,300	26,600	27,900	89,400	259,000	209,000	152,000	84,000	53,400
25	43,200	31,800	27,000	28,200	26,300	31,000	92,500	258,000	211,000	148,000	82,900	52,600
26	42,600	31,400	26,400	28,200	26,300	33,000	94,400	259,000	212,000	145,000	82,800	52,000
27	42,200	30,900	26,100	28,300	26,100	33,400	96,600	260,000	212,000	144,000	83,200	52,100
28	42,000	30,600	26,400	28,800	26,200	35,700	102,000	262,000	211,000	144,000	83,200	51,900
29	41,900	30,900	26,400	28,700	-	37,200	110,000	265,000	208,000	144,000	83,800	51,400
30	42,300	30,600	26,500	29,000	-	38,800	124,000	273,000	208,000	145,000	83,600	51,000
31	41,500	-	27,800	28,800	-	39,900	-	278,000	-	146,000	83,400	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	1,612,900	64,100	41,500	52,030	0.807	0.93	3,199,000
November	1,039,800	41,100	30,600	34,660	.537	.60	2,062,000
December	885,700	31,000	26,100	28,570	.443	.51	1,757,000
Calendar year 1938	36,923,800	344,000	26,100	101,200	1.57	21.30	73,230,000
January	903,700	30,200	28,200	29,150	.452	.52	1,792,000
February	746,200	28,700	22,700	26,650	.413	.43	1,480,000
March	853,700	39,900	23,800	27,540	.427	.49	1,693,000
April	2,096,200	124,000	41,700	69,870	1.08	1.20	4,158,000
May	6,749,000	278,000	133,000	217,700	3.38	3.90	13,390,000
June	6,732,000	279,000	202,000	224,400	3.48	3.88	13,350,000
July	5,589,000	216,000	144,000	180,300	2.80	3.23	11,090,000
August	3,251,300	146,000	82,800	104,900	1.63	1.88	6,449,000
September	1,962,000	82,900	51,000	65,400	1.01	1.13	3,892,000
Water year 1938-39	32,421,500	279,000	22,700	88,830	1.38	18.70	64,310,000

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. Zero of gage is at mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 74,100 square miles.

Records available.- June to December 1923 and June 1928 to September 1939 (complete). April 1913 to June 1923 and January 1924 to May 1928 (monthly discharge only).

Average discharge.- 26 years, 107,700 second-feet.

Extremes.- Maximum discharge during year, 290,000 second-feet June 1, 2 (elevation, 967.25 feet); minimum, 25,500 second-feet Feb. 13 (elevation, 934.65 feet).

1913-39: 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 during flood of June 1894, 725,000 second-feet (estimated).

Remarks.- Records excellent. Discharge for period Sept. 2-5 determined from partial gage-height record and general trend of stage. Diversions for irrigation above station are small in proportion to flow past gage. Some diurnal fluctuation caused by operation of power plants on Spokane River and by construction at Grand Coulee Dam. Some regulation due to natural storage in many lakes above gage.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

934.4	24,500	938.0	40,700	942.0	62,200	950.0	120,000	958.0	189,000
935.0	26,900	939.0	45,700	944.0	74,500	952.0	136,000	961.0	218,000
936.0	31,200	940.0	51,200	946.0	88,200	954.0	153,000	964.0	250,000
937.0	35,700	941.0	56,700	948.0	104,000	956.0	171,000	967.2	290,000

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	66,400	43,800	34,200	31,800	33,400	30,400	56,500	150,000	290,000	215,000	152,000	85,800
2	65,500	43,600	33,700	31,200	33,300	30,400	58,900	158,000	289,000	218,000	152,000	85,000
3	64,100	41,000	33,400	31,500	32,100	30,200	61,100	165,000	285,000	219,000	151,000	83,400
4	65,200	42,500	32,400	32,400	31,500	29,300	64,500	176,000	276,000	221,000	149,000	81,800
5	64,900	42,700	31,400	32,500	32,700	28,600	67,700	187,000	271,000	223,000	146,000	78,500
6	64,800	41,800	31,900	32,300	30,300	28,800	68,900	196,000	265,000	222,000	143,000	76,800
7	64,100	40,600	32,400	33,200	30,300	29,400	70,200	205,000	260,000	220,000	140,000	72,700
8	63,500	40,600	31,800	33,800	29,400	29,600	72,400	209,000	252,000	217,000	135,000	73,400
9	61,400	40,700	30,200	33,300	30,200	28,800	72,200	214,000	245,000	213,000	134,000	75,900
10	59,600	37,700	32,500	33,500	28,500	28,700	73,600	218,000	241,000	206,000	126,000	75,200
11	58,900	38,000	31,600	33,300	27,400	28,400	74,400	220,000	235,000	205,000	120,000	74,000
12	57,900	35,000	29,200	33,200	26,600	27,900	73,800	222,000	233,000	201,000	115,000	72,800
13	56,800	35,300	29,100	33,600	27,200	28,300	78,500	222,000	230,000	196,000	109,000	67,600
14	56,900	35,800	31,200	33,500	26,400	29,500	78,000	223,000	226,000	196,000	102,000	67,400
15	55,700	36,700	32,400	33,100	29,400	30,200	79,200	224,000	223,000	196,000	97,400	68,800
16	54,000	37,000	32,300	33,300	31,400	29,900	81,900	231,000	220,000	194,000	98,000	68,800
17	52,600	37,400	32,000	33,700	32,000	28,600	82,700	240,000	217,000	189,000	99,300	67,200
18	52,800	36,600	31,000	34,100	31,800	28,900	84,400	250,000	216,000	189,000	99,400	62,800
19	52,300	36,600	30,700	33,900	31,900	29,800	83,900	259,000	212,000	187,000	95,500	58,700
20	51,200	36,200	31,200	32,900	31,200	32,700	86,800	267,000	212,000	184,000	94,200	58,000
21	50,100	35,000	31,500	32,300	31,300	36,500	89,700	270,000	209,000	180,000	93,400	58,000
22	48,900	35,900	31,600	32,500	31,200	37,600	94,800	273,000	211,000	174,000	94,000	58,900
23	47,700	36,100	31,800	32,000	30,900	37,600	99,300	275,000	211,000	168,000	91,900	60,800
24	45,900	35,800	30,600	32,000	31,000	39,400	106,000	277,000	214,000	159,000	86,800	60,600
25	46,200	34,800	29,700	32,200	30,900	41,700	112,000	277,000	217,000	155,000	84,000	58,200
26	45,700	35,300	28,500	32,500	30,700	46,200	115,000	274,000	218,000	153,000	83,900	56,700
27	44,900	34,900	28,100	32,500	30,100	49,400	118,000	273,000	220,000	149,000	84,500	53,300
28	44,600	33,800	28,500	32,800	30,200	50,300	121,000	275,000	221,000	149,000	84,500	53,700
29	44,700	34,200	28,800	32,900	-	53,000	126,000	272,000	218,000	149,000	84,400	53,700
30	44,300	34,600	29,300	32,400	-	54,100	135,000	274,000	216,000	149,000	84,700	53,700
31	43,700	-	31,000	33,000	-	55,600	-	284,000	-	149,000	85,400	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	1,695,300	66,400	43,700	54,690	0.738	0.85	3,363,000
November	1,130,000	43,800	33,800	37,670	.508	.57	2,241,000
December	964,000	34,200	28,100	31,100	.420	.48	1,912,000
Calendar year 1938	40,623,200	362,000	28,100	111,300	1.50	20.39	80,570,000
January	1,017,200	34,100	31,200	32,810	.443	.51	2,018,000
February	853,300	33,400	26,400	30,480	.411	.43	1,692,000
March	1,089,800	55,600	27,900	35,150	.474	.55	2,162,000
April	2,586,400	135,000	56,500	86,210	1.16	1.29	5,130,000
May	7,260,000	284,000	150,000	234,200	3.16	3.64	14,400,000
June	7,053,000	290,000	209,000	235,100	3.17	3.54	13,990,000
July	5,845,000	223,000	149,000	188,500	2.54	2.93	11,590,000
August	3,415,300	152,000	83,900	110,200	1.49	1.72	6,774,000
September	2,022,200	85,800	53,300	67,410	.910	1.02	4,011,000
Water year 1938-39	34,931,500	290,000	26,400	95,700	1.29	17.53	69,280,000

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, S½ miles downstream from Colocham Creek, and 12 miles downstream from Rock Island Dam. Zero of gage is 500.00 feet above mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 89,700 square miles.

Records available.- October 1930 to September 1939. January to December 1910 (gage heights only) and May 1913 to December 1916 at Wenatchee, January 1917 at Beverly, January 1917 to September 1930 at Vernita.

Average discharge.- 26 years, 117,900 second-feet.

Extremes.- Maximum discharge during year, 298,000 second-feet June 1 (gage height, 43.21 feet); minimum, 25,300 second-feet Mar. 6 (gage height, 17.27 feet).

1913-39: Maximum discharge, 528,000 second-feet June 15, 16, 1913 (gage height, 45.7 feet, on original U. S. Weather Bureau gage at Wenatchee); 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.

Remarks.- Records excellent. Considerable water diverted for irrigation upstream from gage but quantity small in proportion to flow past gage. Some diurnal fluctuation at low stages as result of operation of Rock Island power plant. Artificial regulation at Coeur d'Alene and Chelan Lakes. Flow affected by natural storage in many lakes upstream from gage.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

17.0	24,100	21.0	45,300	26.0	79,500	34.0	159,000
18.0	28,600	22.0	51,600	28.0	97,000	37.0	197,000
19.0	33,600	23.0	58,100	30.0	116,000	40.0	242,000
20.0	39,200	24.0	65,000	32.0	137,000	44.0	312,000

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70,900	48,100	38,300	35,000	35,000	32,500	60,200	146,000	295,000	228,000	150,000	87,400
2	70,300	48,000	38,000	37,500	35,300	32,400	62,300	159,000	297,000	224,000	151,000	87,600
3	69,600	47,700	37,700	38,200	35,500	32,400	65,000	167,000	295,000	225,000	151,000	87,500
4	68,500	46,400	37,200	38,400	35,800	34,700	67,800	175,000	290,000	225,000	150,000	86,100
5	69,000	45,500	36,700	38,400	34,500	34,500	70,100	186,000	282,000	226,000	148,000	84,200
6	68,800	53,000	36,400	38,300	33,100	27,000	72,900	196,000	277,000	227,000	145,000	81,500
7	68,500	39,300	36,400	36,600	34,100	30,700	74,500	205,000	271,000	226,000	142,000	79,900
8	68,100	45,100	37,200	35,900	32,800	31,400	78,500	211,000	265,000	223,000	140,000	76,400
9	67,300	44,900	37,800	37,800	31,100	31,900	77,300	216,000	257,000	218,000	136,000	76,400
10	65,900	44,700	36,500	36,900	32,200	31,100	76,000	221,000	250,000	213,000	134,000	78,400
11	63,600	43,400	37,000	37,000	31,200	30,900	79,200	225,000	246,000	208,000	126,000	77,700
12	63,000	47,700	37,700	37,000	29,400	30,700	79,600	227,000	242,000	209,000	120,000	76,800
13	62,300	37,100	34,700	36,900	29,700	30,300	79,500	231,000	239,000	203,000	115,000	75,600
14	61,400	34,700	34,100	37,100	30,200	30,400	82,900	234,000	237,000	199,000	109,000	71,200
15	60,900	39,600	34,200	36,100	29,100	30,700	84,900	238,000	233,000	197,000	103,000	70,700
16	60,000	40,200	36,100	36,300	30,700	32,100	80,900	245,000	230,000	196,000	99,300	71,700
17	58,100	40,900	36,100	36,600	33,500	33,000	85,500	255,000	225,000	195,000	99,900	71,700
18	56,900	41,400	36,200	36,600	34,000	31,400	87,700	261,000	223,000	189,000	100,000	70,600
19	56,900	41,400	35,400	37,300	33,500	31,100	89,600	268,000	222,000	189,000	99,900	66,800
20	56,300	39,700	34,900	37,200	34,100	32,200	91,400	273,000	218,000	186,000	97,100	62,300
21	55,100	40,800	35,300	36,500	33,500	35,800	95,300	277,000	218,000	183,000	96,100	61,000
22	54,100	39,400	35,500	34,500	33,400	40,500	99,200	279,000	216,000	178,000	95,600	61,100
23	53,000	39,500	35,400	35,100	33,400	42,400	105,000	281,000	218,000	173,000	95,700	61,500
24	51,900	39,700	35,600	35,000	33,300	42,300	109,000	283,000	220,000	167,000	93,800	63,700
25	50,300	39,900	34,400	35,100	33,300	44,900	116,000	284,000	222,000	160,000	89,600	63,400
26	50,200	38,700	33,900	35,200	33,000	46,200	120,000	284,000	224,000	156,000	90,000	61,600
27	49,700	38,700	33,100	35,300	32,800	50,400	123,000	283,000	224,000	155,000	86,500	59,700
28	49,000	38,500	32,300	35,300	32,500	54,500	125,000	282,000	226,000	151,000	80,300	58,200
29	48,600	37,900	32,400	35,000	-	55,200	128,000	288,000	228,000	152,000	86,500	56,700
30	48,800	38,000	33,000	35,200	-	56,800	136,000	288,000	229,000	151,000	86,200	56,900
31	48,800	-	33,100	35,100	-	58,300	-	290,000	-	150,000	86,400	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	1,845,800	70,900	48,600	59,540	0.664	0.77	3,661,000
November	1,259,900	53,000	34,700	42,000	.468	.52	2,499,000
December	1,102,600	38,300	32,300	35,570	.397	.46	2,187,000
Calendar year 1938	43,112,800	391,000	32,300	118,100	1.32	17.88	85,510,000
January	1,128,400	38,400	34,500	36,400	.406	.47	2,238,000
February	920,000	35,800	29,100	32,860	.366	.38	1,825,000
March	1,158,700	58,300	27,000	37,380	.417	.48	2,298,000
April	2,702,300	136,000	60,200	90,080	1.00	1.12	5,360,000
May	7,458,000	290,000	146,000	240,600	2.68	3.09	14,790,000
June	7,319,000	297,000	216,000	244,000	2.72	3.04	14,520,000
July	5,982,000	228,000	150,000	193,000	2.15	2.48	11,870,000
August	3,502,900	151,000	80,300	113,000	1.26	1.45	6,948,000
September	2,144,300	87,600	56,700	71,480	.797	.89	4,253,000
Water year 1938-39	36,523,900	297,000	27,000	100,100	1.12	15.15	72,450,000

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 international boundary, respectively.

Drainage area.- 7,660 square miles.

Records available.- October 1930 to September 1939.

Extremes.- Maximum discharge observed during year, 37,200 second-feet May 17; minimum, 1,280 second-feet (estimated) Feb. 9, 10.
1931-39: Maximum discharge observed, 83,500 second-feet June 18, 1933; minimum, 994 second-feet Feb. 7, 1936.

Remarks.- Records good except those for period of ice effect, Feb. 7-12, which were computed on basis of weather records and records for nearby stations on Kootenai River and are fair. Gages read once daily. Records give total flow of main channel and slough. 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 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,200	4,000	2,320	2,780	1,980	1,950	4,670	22,100	25,000	29,800	9,920	4,700
2	4,270	3,890	2,450	4,320	1,800	1,970	5,280	21,500	21,200	28,700	9,320	4,610
3	4,470	3,850	2,820	4,130	1,940	1,940	6,460	24,500	19,000	27,700	8,480	4,810
4	4,580	3,730	2,660	3,740	1,960	1,850	6,340	26,600	18,900	23,000	8,100	4,430
5	4,610	3,650	2,720	3,190	2,040	1,850	5,800	25,400	19,000	22,700	7,760	4,670
6	4,490	3,590	2,920	3,020	1,990	1,870	5,530	21,200	19,100	22,200	7,540	5,250
7	4,340	3,460	2,940	2,780	1,700	1,950	5,140	18,800	17,900	21,000	8,030	5,670
8	4,220	3,320	3,000	2,750	1,400	1,830	4,850	17,300	17,500	19,900	7,360	5,520
9	4,060	3,270	3,120	2,780	1,260	1,880	4,650	16,400	17,000	19,200	6,940	5,040
10	4,050	3,250	2,720	2,620	1,260	1,870	4,810	16,200	17,200	18,600	6,720	4,810
11	4,180	3,120	2,480	2,520	1,360	1,810	4,740	16,100	18,000	19,000	6,540	4,650
12	4,270	3,060	1,960	2,430	1,660	1,850	4,810	16,900	19,000	19,400	6,280	4,870
13	4,760	2,900	1,850	2,380	1,940	1,910	4,810	18,000	19,900	18,700	6,340	5,040
14	4,810	2,980	1,940	2,340	2,080	1,920	4,890	21,000	22,700	18,000	6,440	4,940
15	4,430	3,190	1,890	2,290	2,100	1,860	5,530	27,800	22,400	17,000	6,320	4,810
16	4,290	3,270	1,940	2,200	2,080	1,940	5,930	34,800	23,100	16,800	6,250	4,630
17	4,100	3,270	1,980	2,180	2,080	1,960	6,130	37,200	23,900	16,000	6,050	4,320
18	4,080	3,190	2,140	2,170	2,070	1,960	6,410	34,400	23,900	14,400	5,900	4,290
19	4,000	3,120	2,180	2,260	2,040	2,060	7,190	32,000	23,400	13,100	5,770	4,290
20	3,830	3,060	2,140	2,410	2,070	2,420	8,100	26,600	24,500	12,200	5,270	4,290
21	3,800	3,040	2,140	2,050	1,950	2,680	9,430	23,400	26,100	11,700	5,570	4,200
22	3,800	2,360	2,360	1,930	1,940	3,150	11,800	22,400	27,600	11,200	5,380	4,080
23	3,610	2,300	2,380	1,840	1,910	3,510	12,900	22,300	28,100	10,600	5,380	3,910
24	3,620	2,280	2,460	1,810	1,850	4,120	13,300	21,900	27,300	10,800	5,290	4,000
25	3,640	2,270	2,460	1,880	1,960	5,530	12,500	21,300	26,500	11,000	5,190	4,080
26	3,620	2,250	2,150	1,870	1,980	5,690	10,900	22,000	24,700	11,200	5,230	4,200
27	3,620	2,160	2,020	1,940	1,980	5,240	11,400	23,800	23,400	11,300	5,230	4,030
28	3,650	2,170	2,020	2,110	1,960	4,560	12,100	25,200	22,700	11,200	5,580	4,110
29	3,700	2,070	1,840	2,140	-	4,230	16,800	28,500	23,200	11,200	5,290	4,180
30	3,770	2,180	1,970	2,170	-	4,200	22,600	35,300	26,800	11,200	5,190	4,250
31	3,930	-	2,290	2,140	-	4,320	-	33,100	-	10,600	5,060	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	126,800	4,810	3,610	4,090	0.53	0.61	252,000
November	90,250	4,000	2,070	3,010	.39	.44	179,000
December	72,260	3,120	1,840	2,330	.30	.35	143,000
Calendar year 1938	3,918,020	68,800	1,840	10,700	1.40	19.01	7,770,000
January	77,190	4,320	1,610	2,490	.33	.38	153,000
February	52,340	2,100	1,260	1,870	.24	.25	104,000
March	85,930	5,690	1,810	2,770	.36	.42	170,000
April	245,800	22,600	4,650	8,190	1.07	1.19	488,000
May	754,000	37,200	16,100	24,300	3.17	3.66	1,500,000
June	669,000	28,100	17,000	22,300	2.91	3.25	1,330,000
July	519,400	29,600	10,600	16,800	2.19	2.52	1,030,000
August	199,720	9,920	5,060	6,440	.84	.97	396,000
September	136,680	5,670	3,910	4,560	.60	.67	271,000
Water year 1938-39	3,029,370	37,200	1,260	8,300	1.08	14.71	6,020,000

Kootenai River near Rexford, Mont.

(International gaging station)

Location.- Canfield wire-weight gage, lat. 48°52', long. 115°14", in sec. 21, T. 36 N., R. 28 W., at highway bridge, 300 feet downstream from Sullivan Creek and 1.1 miles southwest of Rexford.

Drainage area.- 8,420 square miles.

Records available.- March 1929 to September 1939.

Average discharge.- 10 years, 9,747 second-feet.

Extremes.- Maximum discharge observed during year, 39,100 second-feet May 17 (gage height, 10.59 feet); minimum, 1,200 second-feet (estimated) Feb. 10.

1929-39: Maximum discharge, 87,300 second-feet June 18, 1933 (gage height, 15.70 feet); minimum, 1,100 second-feet Feb. 7, 1936; minimum gage height, 0.12 foot Dec. 7, 1936.

Remarks.- Records good except those for periods of ice effect, Dec. 19-21, Jan. 24-26, Feb. 9-14, which were computed on basis of gage heights, weather records, and records for stations at Newgate, British Columbia, Libby, Mont., and Leonia, Idaho, and are fair. Gage read twice daily. No diversion or regulation.

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 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,330	3,970	2,490	3,100	2,060	2,080	4,800	23,200	29,000	30,900	10,500	4,980
2	4,420	3,880	2,800	3,880	2,100	2,060	5,370	22,700	23,700	30,900	9,820	5,080
3	4,600	3,880	2,880	4,420	2,160	2,100	6,070	23,200	21,100	27,700	9,220	4,800
4	4,700	3,860	2,950	4,060	2,140	1,930	6,700	26,500	20,100	24,800	8,640	4,700
5	4,890	3,880	2,880	3,080	2,210	1,960	6,490	26,500	19,600	23,700	8,360	4,700
6	4,890	3,720	2,940	2,910	2,180	2,060	5,970	23,700	20,100	23,200	8,360	5,080
7	4,700	3,630	2,940	3,010	1,790	1,980	5,570	20,600	19,600	22,100	8,100	5,770
8	4,600	3,550	2,980	2,940	1,430	2,020	5,370	17,800	18,300	21,100	7,840	5,770
9	4,330	3,470	2,980	2,840	1,250	2,040	5,080	17,000	17,800	20,100	7,360	5,370
10	4,240	3,470	2,990	2,670	1,200	2,030	5,180	16,600	16,300	19,600	6,920	4,980
11	4,240	3,550	2,750	2,650	1,350	1,990	5,180	16,200	18,700	19,600	6,700	4,890
12	4,420	3,390	2,060	2,570	1,700	2,100	5,180	16,600	19,600	19,600	6,600	4,800
13	4,600	3,240	1,910	2,650	2,000	2,020	5,180	17,400	20,600	20,600	6,600	5,080
14	4,890	3,250	1,950	2,470	2,150	2,020	5,270	19,600	23,200	19,200	6,600	5,180
15	4,890	3,280	2,130	2,520	2,360	1,980	5,670	26,000	24,600	17,800	6,600	5,080
16	4,510	3,310	2,080	2,440	2,330	2,000	6,280	32,200	23,700	17,800	6,490	4,800
17	4,330	3,300	2,140	2,530	2,380	2,030	6,490	39,100	25,400	17,000	6,380	4,600
18	4,150	3,250	2,340	2,520	2,360	2,180	6,700	36,200	24,800	15,400	6,180	4,510
19	4,150	3,310	2,350	2,580	2,380	2,410	7,140	33,500	24,800	13,900	6,180	4,420
20	4,060	3,310	2,300	2,550	2,310	2,700	8,100	30,200	24,800	12,800	5,970	4,420
21	3,880	3,280	2,300	2,400	2,310	2,850	9,220	27,100	26,500	12,100	5,770	4,330
22	3,600	3,130	2,390	2,180	2,250	3,260	11,100	23,700	28,300	11,800	5,570	4,150
23	3,880	2,880	2,470	2,180	2,170	3,630	12,800	23,200	28,300	11,100	5,570	4,150
24	3,800	2,590	2,510	2,100	2,110	3,970	13,600	23,200	29,600	11,100	5,470	4,150
25	3,800	2,430	2,690	2,050	2,120	5,180	13,600	22,700	27,700	11,400	5,470	4,150
26	3,720	2,400	2,290	2,050	2,190	6,070	12,800	22,700	26,500	11,400	5,470	4,240
27	3,720	2,310	2,070	2,270	2,180	5,570	11,800	24,600	24,800	11,800	5,370	4,240
28	3,880	2,280	1,920	2,340	2,120	4,510	12,100	26,000	23,700	11,800	5,670	4,060
29	3,720	2,250	1,840	2,360	-	4,510	15,400	29,600	23,700	11,800	5,570	4,240
30	3,970	2,380	1,960	2,360	-	4,420	20,600	34,200	26,500	11,800	5,370	4,240
31	3,970	-	2,380	2,380	-	4,420	-	35,500	-	11,100	5,270	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	132,080	4,890	3,720	4,261	0.506	0.58	262,000
November	96,450	3,970	2,250	3,215	.382	.43	191,500
December	75,660	2,990	1,840	2,441	.290	.33	150,100
Calendar year 1938	4,091,040	69,900	1,840	11,210	1.33	18.07	8,114,000
January	83,060	4,420	2,050	2,679	.318	.37	164,700
February	57,290	2,380	1,200	2,046	.243	.25	113,600
March	90,080	6,070	1,930	2,906	.345	.40	178,700
April	250,810	20,600	4,800	8,360	.993	1.11	497,500
May	777,300	39,100	16,200	25,070	2.98	3.44	1,542,000
June	703,400	29,600	17,800	23,450	2.79	3.11	1,395,000
July	545,000	30,900	11,100	17,580	2 09	2.41	1,081,000
August	209,990	10,500	5,270	6,774	.805	.93	416,500
September	140,960	5,770	4,060	4,699	.558	.62	279,600
Water year 1938-39	3,162,080	39,100	1,200	8,663	1.03	13.98	6,272,000

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.

Drainage area.- 10,240 square miles.

Records available.- October 1910 to September 1939.

Average discharge.- 13 years (1912-15, 1917-18, 1928-32, 1934-39), 10,550 second-feet.

Extremes.- Maximum discharge during year, 41,000 second-feet May 18 (gage height, 10.80 feet); minimum, probably less than 1,200 second-feet Feb. 8-10 (affected by ice).
1910-39: 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 period of faulty water-stage recorder operation, which are good, and for periods of ice effect, which are fair. No known diversions or regulation above station.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,620	4,490	3,030	3,150	2,640	2,590	6,420	28,800	31,600	29,200	10,600	5,410
2	4,620	4,490	3,150	*3,750	2,190	2,520	7,110	28,300	26,400	31,200	10,300	5,150
3	4,740	4,360	3,270	*4,620	2,710	2,460	8,240	28,800	22,400	29,200	9,660	5,150
4	4,990	4,360	3,270	*5,120	2,500	2,480	8,820	31,800	21,300	26,400	9,020	5,020
5	4,990	4,360	3,270	4,740	2,590	2,360	9,110	32,300	21,300	24,500	8,700	4,890
6	5,240	4,240	3,390	4,240	2,520	2,430	8,240	29,200	20,800	24,000	8,700	5,150
7	5,120	3,990	3,390	3,990	1,630	2,500	7,670	25,400	20,800	23,200	8,400	5,670
8	4,860	3,990	3,510	3,750		2,320	7,110	22,300	20,200	21,800	8,400	5,940
9	4,740	3,990	3,750	3,750	*1,200	2,410	6,830	21,000	19,700	21,000	8,100	5,600
10	4,620	3,990	3,870	3,630		2,590	6,830	20,600	18,600	20,200	7,500	5,410
11	4,620	3,990	3,630	3,270	*1,350	2,520	6,830	20,200	†19,000	19,800	7,200	5,150
12	4,740	3,750	2,680	3,270	*1,840	2,430	6,830	20,200	†20,000	20,200	6,920	5,150
13	5,120	3,630	*2,100	3,150	2,210	2,430	6,970	20,600	20,200	20,600	6,760	5,150
14	5,500	3,510	*2,050	3,030	2,410	2,430	6,970	22,700	23,000	20,200	6,920	5,410
15	5,370	3,630	*2,340	3,010	2,660	2,430	7,110	26,800	23,600	18,900	6,920	5,410
16	5,240	3,750	*2,340	3,030	*2,700	2,410	7,950	33,800	24,700	18,100	6,780	5,280
17	4,860	3,870	*2,400	2,960	*2,700	2,390	8,530	39,900	24,700	17,700	6,640	5,020
18	4,740	3,870	*2,520	2,960	*2,800	2,390	8,820	40,400	†25,000	16,100	6,500	4,890
19	4,620	3,750	*2,480	2,960	*2,750	2,640	9,400	37,600	25,200	14,600	6,360	4,760
20	4,490	3,670	*2,480	3,030	*2,680	2,940	10,600	33,800	25,800	13,400	6,360	4,630
21	4,360	3,750	*2,410	2,980	*2,640	3,390	12,400	30,200	25,800	12,700	5,940	4,630
22	4,360	3,630	*2,500	2,500	*2,500	3,870	14,600	27,300	26,900	12,400	5,940	4,500
23	4,240	3,390	*2,600	2,750	*2,450	4,620	16,900	25,900	28,600	11,700	5,800	4,380
24	4,120	3,150	*2,940	2,570	*2,480	5,240	18,100	25,400	29,800	11,300	5,670	4,380
25	4,240	2,850	*3,000	*2,450	2,520	6,290	18,100	25,000	30,400	11,300	5,670	4,380
26	4,120	2,750	*2,570	2,500	2,520	8,240	16,900	24,100	28,100	11,700	5,670	4,500
27	4,120	2,640	*2,120	2,670	2,570	7,960	15,700	24,700	26,400	11,700	5,670	4,500
28	4,120	2,640	*1,360	2,680	2,550	6,970	15,700	26,900	25,000	11,700	5,800	4,380
29	4,240	2,730	*1,230	2,800	-	6,420	19,300	29,800	24,500	11,700	5,800	4,380
30	4,360	2,850	*1,690	2,850	-	6,020	25,000	†35,500	25,400	11,700	5,670	4,500
31	4,360	-	2,300	2,730	-	6,020	-	38,000	-	11,300	5,540	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	144,480	5,500	4,120	4,661	0.455	0.52	286,600
November	110,260	4,490	2,640	3,675	.359	.40	218,700
December	83,640	3,870	1,230	2,698	.263	.30	165,900
Calendar year 1938	4,462,070	78,800	1,230	12,220	1.19	16.21	8,850,000
January	101,090	5,120	2,450	3,261	.318	.37	200,500
February	64,730	2,800	-	2,312	.226	.24	128,400
March	114,720	8,240	2,320	3,701	.361	.42	227,500
April	329,090	25,000	6,420	10,970	1.07	1.19	652,700
May	877,300	40,400	20,200	28,300	2.76	3.18	1,740,000
June	725,200	31,600	18,600	24,170	2.36	2.63	1,438,000
July	569,500	31,200	11,300	18,050	1.76	2.03	1,110,000
August	219,930	10,600	5,540	7,095	.693	.80	436,200
September	148,970	5,940	4,380	4,966	.485	.54	295,500
Water year 1938-39	3,478,910	40,400	-	9,531	.931	12.62	6,900,000

*Stage-discharge relation affected by ice; discharge computed on basis of two discharge measurements, gage heights, observer's notes, weather records and records for stations at Rexford and Leonia.

†Estimated.

Note.- Operation of water-stage recorder faulty May 26 to June 26; discharge computed on basis of observer's readings and stage-discharge relation for wire-weight gage at highway bridge, 1,200 feet upstream, or estimated.

241536

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. Zero 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 1939.

Average discharge.- 11 years, 12,500 second-feet.

Extremes.- Maximum discharge during year, 47,500 second-feet May 18 (water-surface elevation, 1,812.11 feet); minimum, 1,500 second-feet (estimated) Feb. 10; minimum water-surface elevation, 1,799.52 feet Feb. 10.

1928-39: Maximum discharge, 95,500 second-feet June 18, 1933 (water-surface elevation, 1,818.11 feet); minimum, 996 second-feet Dec. 9, 1936; minimum water-surface 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 excellent except those for periods of ice effect, Nov. 25-30, Dec. 11-24, 26-30, Feb. 2, 7-16, 19-23, which were computed on basis of one discharge measurement, gage heights, weather records, and records for stations at Libby, Mont. and Bonners Ferry, Idaho, and those below 3,000 second-feet, all of which are fair. No diversion or regulation above station.

Rating tables, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to May 16				May 17 to Sept. 30					
1,799.5	1,430	1,805.0	16,740	1,800.6	4,500	1,805.0	17,480	1,810.0	36,660
1,800.0	2,260	1,806.0	20,200	1,801.0	5,440	1,806.0	21,000	1,811.0	41,300
1,801.0	4,520	1,807.0	23,820	1,802.0	8,060	1,807.0	24,670	1,812.0	46,800
1,802.0	7,380	1,808.0	27,620	1,803.0	10,980	1,808.0	28,500	1,812.2	48,000
1,803.0	10,380	1,809.0	31,600	1,804.0	14,130	1,809.0	32,460		
1,804.0	13,480	1,810.0	35,800						

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4,930	4,630	3,370	3,240	2,910	2,810	8,190	34,900	37,500	30,200	11,400	5,820
2	4,900	4,630	3,530	4,130	2,700	2,870	9,480	35,100	31,100	32,800	10,900	5,620
3	5,010	4,660	3,650	5,270	2,850	2,870	10,900	36,100	26,900	31,700	10,400	5,540
4	5,270	4,660	3,660	6,100	2,870	2,850	11,800	39,400	24,800	28,900	9,690	5,390
5	5,240	4,570	3,800	5,320	2,890	2,610	11,800	39,200	24,200	26,500	9,200	5,270
6	5,320	4,490	3,850	4,710	2,890	2,670	10,900	35,600	23,800	25,400	9,000	5,320
7	5,350	4,360	3,950	4,340	2,200	2,750	9,870	31,300	23,500	24,700	8,940	5,690
8	5,180	4,210	3,950	4,130	1,700	2,750	9,120	27,800	22,500	23,400	8,850	6,190
9	5,010	4,210	4,210	3,980	1,550	2,750	8,880	26,100	21,600	22,200	8,510	6,240
10	4,850	4,180	4,360	3,900	1,500	2,710	8,880	25,100	21,300	21,400	8,030	5,940
11	4,870	4,210	3,900	3,750	1,800	2,850	8,700	24,400	21,300	20,600	7,700	5,560
12	5,010	4,180	3,200	3,530	2,200	2,830	8,730	24,200	22,000	20,600	7,460	5,460
13	5,290	3,980	2,600	3,560	2,700	2,830	8,910	24,900	22,700	21,000	7,270	5,460
14	5,640	3,920	2,500	3,460	2,900	2,810	8,850	27,200	23,900	21,200	7,270	5,640
15	5,730	3,880	2,750	3,440	3,150	2,810	9,210	31,400	26,600	19,700	7,320	5,760
16	5,500	4,030	2,800	3,370	3,200	2,770	9,990	38,000	27,100	18,400	7,210	5,620
17	5,240	4,160	2,900	3,260	3,170	2,770	10,700	45,400	27,700	18,000	7,060	5,390
18	5,010	4,160	3,200	3,330	3,190	2,830	11,200	46,700	28,800	17,100	6,970	5,200
19	4,850	4,080	3,200	3,370	3,150	2,960	12,600	43,500	28,500	15,500	6,840	5,080
20	4,710	4,130	3,100	3,330	3,050	3,260	14,400	39,200	28,400	14,100	6,810	4,980
21	4,570	4,160	3,050	3,240	3,000	3,730	16,500	35,200	29,100	13,400	6,580	4,910
22	4,520	4,000	3,150	3,040	2,900	4,340	19,300	31,900	30,600	12,900	6,370	4,840
23	4,470	3,820	3,150	3,000	2,800	5,100	21,500	30,400	31,900	12,300	6,240	4,710
24	4,390	3,460	3,400	2,960	2,670	6,020	22,900	30,000	32,400	11,800	6,160	4,640
25	4,360	3,150	3,510	2,930	2,890	7,680	22,500	29,400	32,100	11,800	6,120	4,660
26	4,360	2,950	3,150	2,850	2,870	9,960	20,900	28,700	30,700	11,900	6,140	4,710
27	4,390	2,850	2,600	2,960	2,890	10,300	19,600	29,200	29,000	12,000	6,090	4,800
28	4,390	2,850	1,800	3,100	2,810	8,940	20,300	30,900	27,300	12,000	6,040	4,780
29	4,440	2,900	1,550	3,080	-	8,040	25,500	33,400	26,300	11,900	6,190	4,710
30	4,520	3,100	1,900	3,130	-	7,560	31,600	37,000	26,800	11,800	6,060	4,820
31	4,570	-	2,690	3,060	-	7,500	-	41,000	-	11,800	5,940	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	151,890	5,730	4,360	4,900	0.417	0.48	301,300
November	118,570	4,660	2,850	3,952	.337	.38	235,200
December	98,450	4,360	1,550	3,176	.271	.31	195,300
Calendar year 1938	5,226,500	82,800	1,550	14,320	1.22	16.55	10,370,000
January	112,910	6,100	2,850	3,642	.310	.36	224,000
February	75,600	3,200	1,500	2,700	.230	.24	150,000
March	135,550	10,300	2,610	4,373	.372	.43	268,900
April	423,710	31,600	6,190	14,120	1.20	1.34	840,400
May	1,032,600	46,700	24,200	33,310	2.84	3.27	2,048,000
June	810,400	37,500	21,300	27,010	2.30	2.57	1,607,000
July	587,000	32,800	11,800	18,940	1.61	1.86	1,164,000
August	234,780	11,400	5,940	7,574	.645	.74	465,700
September	158,750	6,240	4,640	5,292	.451	.50	314,900
Water year 1938-39	3,940,210	46,700	1,500	10,800	.920	12.48	7,815,000

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. Zero of gage is 1,700.00 feet above mean sea level (U. S. Coast and Geodetic Survey datum).

Records available.- October 1927 to September 1939 in reports of Geological Survey. April 1925 to September 1927 in reports of Dominion Water and Power Bureau (Canada).

Extremes.- Maximum water-surface elevation during year, 1,767.54 feet May 18; minimum, 1,755.65 feet Feb. 9.
1927-39: Maximum water-surface elevation recorded, 1,776.58 feet June 18, 1933; minimum elevation, 1,755.53 feet Dec. 9, 1936.

Remarks.- Records excellent. Fragmentary record July 4, 10; none July 5-9. Elevations affected by backwater from Kootenai Lake about May 1-8, May 14 to June 3, June 24-28, July 2-4.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57.68	57.58	56.89	56.91	56.69	56.72	59.32	65.38	66.01	63.90	59.97	58.09
2	57.67	57.59	56.98	57.47	56.84	56.66	59.77	65.53	64.81	64.49	59.84	58.00
3	57.73	57.61	57.07	58.03	56.63	56.66	60.24	65.73	63.79	64.45	59.69	57.97
4	57.85	57.60	57.07	58.43	56.66	56.68	60.46	66.31	63.28	64.09	59.49	57.92
5	57.85	57.56	57.14	58.08	56.65	56.58	60.42	66.36	63.07	-	59.32	57.88
6	57.89	57.50	57.18	57.75	56.71	56.53	60.13	65.78	62.98	-	59.25	57.89
7	57.89	57.44	57.24	57.55	56.48	56.60	59.83	64.94	62.92	-	59.22	58.03
8	57.82	57.37	57.24	57.43	56.12	56.58	59.61	64.16	62.73	-	59.18	58.24
9	57.74	57.38	57.39	57.32	56.03	56.56	59.56	63.76	62.54	-	59.08	58.28
10	57.67	57.35	57.46	57.27	56.01	56.53	59.53	63.56	62.44	62.38	58.92	58.14
11	57.69	57.36	57.37	57.22	56.08	56.65	59.48	63.40	62.44	62.28	58.82	58.01
12	57.76	57.36	57.26	57.06	56.52	56.63	59.50	63.33	62.53	62.22	58.72	57.96
13	57.89	57.25	56.84	57.08	56.79	56.63	59.54	63.43	62.66	62.26	58.65	57.95
14	58.03	57.22	56.76	57.03	56.87	56.62	59.54	63.88	62.87	62.31	58.64	58.02
15	58.07	57.18	56.59	57.01	56.91	56.63	59.70	64.68	63.32	62.00	58.66	58.08
16	57.96	57.29	57.02	56.97	56.97	56.60	59.94	65.88	63.57	61.74	58.63	58.02
17	57.85	57.36	56.83	56.91	56.86	56.58	60.15	67.05	63.69	61.62	58.58	57.93
18	57.75	57.35	56.81	56.94	56.91	56.62	60.32	67.48	63.89	61.44	58.54	57.86
19	57.68	57.30	56.88	56.95	56.93	56.68	60.69	67.18	63.88	61.10	58.49	57.80
20	57.62	57.34	56.78	56.91	56.89	56.93	61.16	66.52	63.84	60.77	58.47	57.76
21	57.58	57.35	56.76	56.87	56.95	57.23	61.71	65.71	63.93	60.57	58.40	57.72
22	57.53	57.26	56.81	56.94	56.91	57.61	62.36	64.96	64.17	60.46	58.30	57.70
23	57.51	57.15	56.82	56.80	56.75	58.01	62.80	64.59	64.42	60.31	58.26	57.64
24	57.46	56.94	56.97	56.73	56.71	58.44	63.09	64.44	64.54	60.17	58.22	57.60
25	57.45	57.02	57.03	56.80	56.73	59.11	63.01	64.30	64.54	60.12	58.19	57.61
26	57.45	56.80	57.57	56.92	56.72	59.85	62.69	64.12	64.29	60.13	58.21	57.64
27	57.46	56.87	56.87	56.69	56.69	59.88	62.42	64.15	63.98	60.14	58.19	57.67
28	57.47	56.99	56.55	56.84	56.74	59.46	62.61	64.44	63.64	60.15	58.16	57.67
29	57.49	56.78	56.03	56.80	-	59.17	63.66	64.87	63.42	60.13	58.22	57.62
30	57.54	56.75	56.05	56.82	-	59.03	64.81	65.55	63.39	60.10	58.18	57.65
31	57.57	-	56.55	56.77	-	59.03	-	66.26	-	60.08	58.13	-

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 on Bonners Ferry. Zero of gage is 1,743.005 feet above mean sea level (U. S. Coast and Geodetic Survey datum).

Drainage area.- 13,000 square miles.

Records available.- October 1927 to September 1939. 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.- 11 years, 13,500 second-feet.

Extremes.- Maximum daily discharge during year, 50,200 second-feet May 18; maximum water-surface elevation observed, 1,763.56 feet May 18; minimum daily discharge, 1,600 second-feet (estimated) Feb. 10; minimum water-surface elevation, 1,741.56 feet Mar. 17.

1927-39: Maximum discharge, 99,800 second-feet June 18, 1933; maximum water-surface elevation, 1,774.98 feet June 19, 1933; minimum daily discharge, 1,300 second-feet, Feb. 8, 1936; minimum water-surface elevation, 1,741.14 feet Dec. 5, 1929.

Maximum water-surface elevation known, 1,777.2 feet in June 1894.

Remarks.- Records excellent except those for periods of ice effect, Nov. 25-29, Dec. 10-14, 16, 17, 26-29, Jan. 22-26, Feb. 2, 7-16, 18-23, which were computed on basis of one discharge measurement, weather records, and records for station at Leonia and other stations on Kootenai River and are fair. Gage-height record good; gage read twice daily. Discharge for periods of backwater from Kootenay Lake May 1-8, May 14 to June 3, June 24-28, July 2-4 computed on basis of fall between gages at Boom Camp and near Bonners Ferry; that for remainder of year, on basis of stage-discharge relation for station at Boom Camp. Discharge measurements are made at station near Bonners Ferry. No diversion or artificial regulation above station.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44.66	44.68	43.86	43.58	42.54	41.93	45.48	58.64	61.98	57.14	49.16	47.16
2	44.68	44.66	43.94	44.08	42.38	41.83	46.29	59.38	60.56	58.25	48.90	47.10
3	44.76	44.68	44.07	44.88	42.36	41.86	47.12	59.90	59.03	58.61	48.65	46.96
4	44.90	44.75	44.06	45.28	42.39	41.82	47.74	60.92	57.76	57.84	48.24	46.92
5	44.93	44.70	44.03	44.91	42.31	41.79	47.77	61.40	57.14	57.25	47.95	46.98
6	44.93	44.62	44.02	44.42	42.47	41.66	47.36	60.91	56.79	56.66	47.82	46.99
7	44.90	44.52	44.06	44.10	42.79	41.75	46.82	59.76	56.49	56.30	47.62	47.09
8	44.87	44.45	44.10	43.92	42.31	41.66	46.42	58.42	56.25	55.94	47.49	47.22
9	44.81	44.44	44.20	43.70	42.08	41.65	46.32	57.62	55.71	55.37	47.31	47.34
10	44.70	44.47	44.31	43.60	42.56	41.67	46.24	57.09	55.35	55.00	47.04	47.20
11	44.72	44.48	44.18	43.53	42.92	41.78	46.21	56.72	55.16	54.58	46.86	47.12
12	44.79	44.44	44.22	43.35	43.50	41.73	46.22	56.51	55.18	54.35	46.80	47.02
13	44.99	44.41	44.04	43.30	43.52	41.68	46.29	56.62	55.29	54.36	46.79	46.98
14	45.16	44.36	43.73	43.26	43.30	41.68	46.31	57.23	55.59	54.36	46.82	46.97
15	45.32	44.36	43.84	43.17	43.10	41.68	46.48	58.62	56.19	54.04	46.90	46.98
16	45.13	44.44	43.78	43.02	42.82	41.62	46.99	60.51	56.84	53.46	46.96	46.85
17	45.02	44.50	43.80	42.95	42.64	41.58	47.36	61.95	57.08	53.14	47.00	46.87
18	44.88	44.47	43.82	42.98	42.54	41.64	47.68	63.50	57.48	52.78	47.06	46.82
19	44.77	44.44	43.90	42.93	42.56	41.71	48.34	63.40	57.58	52.08	47.13	46.80
20	44.68	44.48	43.67	42.91	42.46	42.02	49.24	62.69	57.52	51.58	47.08	46.76
21	44.70	44.49	43.56	42.95	42.26	42.46	50.31	61.66	57.60	51.02	47.12	46.74
22	44.63	44.46	43.52	43.07	42.12	42.92	51.68	60.58	57.94	50.68	47.06	46.72
23	44.58	44.30	43.42	42.86	42.06	43.44	52.83	59.86	58.44	50.29	47.05	46.66
24	44.52	44.22	43.42	42.88	41.98	44.06	53.57	59.48	58.68	49.94	47.06	46.66
25	44.48	44.11	43.48	42.70	42.08	44.98	53.78	59.24	58.84	49.74	47.10	46.62
26	44.50	43.96	43.40	42.66	42.15	46.30	53.29	58.90	58.54	49.68	47.20	46.66
27	44.51	44.02	44.11	42.73	42.02	46.64	52.76	58.82	58.04	49.62	47.23	46.71
28	44.58	43.96	44.38	42.88	42.09	45.99	52.88	59.13	57.46	49.54	47.16	46.75
29	44.58	43.93	43.64	42.66	-	45.44	54.90	59.72	56.95	49.50	47.15	46.67
30	44.62	43.88	43.24	42.66	-	45.16	57.35	60.72	56.84	49.39	47.22	46.66
31	44.61	-	43.32	42.62	-	45.16	-	61.85	-	49.22	47.18	-

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

Discharge, in second-feet, of Kootenai River at Bonners Ferry, Idaho, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,060	4,840	3,410	3,450	3,040	3,100	9,640	37,900	40,800	30,400	11,800	5,980
2	5,040	4,860	3,580	4,590	2,850	2,990	11,200	39,000	34,200	32,800	11,300	5,760
3	5,180	4,900	3,760	5,900	2,930	2,990	12,900	40,500	29,100	32,700	10,800	5,680
4	5,460	4,880	3,760	6,960	2,990	3,020	13,700	44,200	26,800	30,000	10,100	5,560
5	5,460	4,790	3,900	6,030	2,970	2,850	13,600	44,200	25,700	27,900	9,540	5,460
6	5,560	4,660	3,980	5,220	3,080	2,760	12,500	40,500	25,200	26,600	9,310	5,480
7	5,560	4,530	4,100	4,770	2,350	2,880	11,400	35,500	24,900	25,900	9,220	5,830
8	5,390	4,380	4,100	4,510	1,800	2,850	10,600	31,100	23,900	24,500	9,090	6,370
9	5,200	4,400	4,420	4,270	1,650	2,810	10,400	29,500	22,900	23,300	8,780	6,480
10	5,040	4,340	4,500	4,170	1,600	2,760	10,300	28,400	22,400	22,000	8,290	6,110
11	5,090	4,360	4,050	4,060	1,900	2,970	10,200	27,500	22,400	21,500	7,990	5,780
12	5,250	4,360	3,350	3,740	2,300	2,930	10,200	27,100	22,800	21,200	7,700	5,660
13	5,560	4,120	2,750	3,780	2,800	2,930	10,400	27,600	23,500	21,400	7,500	5,630
14	5,900	4,060	2,600	3,680	3,000	2,920	10,400	29,300	24,600	21,600	7,470	5,800
15	6,000	3,980	2,860	3,640	3,300	2,930	10,900	33,900	27,000	20,100	7,530	5,960
16	5,730	4,210	2,900	3,560	3,350	2,880	11,800	41,400	28,400	19,000	7,440	5,800
17	5,460	4,360	3,050	3,450	3,350	2,850	12,500	48,500	29,100	18,400	7,300	5,580
18	5,220	4,340	3,260	3,510	3,350	2,920	13,200	50,200	30,300	17,600	7,190	5,410
19	5,060	4,230	3,390	3,520	3,350	3,020	14,600	47,700	30,200	16,200	7,050	5,270
20	4,930	4,310	3,200	3,450	3,200	3,490	16,600	43,600	30,000	14,800	6,990	5,180
21	4,840	4,340	3,170	3,370	3,150	4,080	19,000	39,200	30,500	14,000	6,800	5,090
22	4,730	4,150	3,260	3,200	3,100	4,900	22,000	35,200	32,000	13,600	6,530	5,040
23	4,680	3,920	3,280	3,150	3,000	5,860	24,200	33,300	33,500	13,000	6,420	4,900
24	4,570	3,510	3,560	3,100	3,080	6,990	25,800	32,600	33,200	12,500	6,310	4,810
25	4,550	3,250	3,680	3,050	3,110	8,960	25,300	31,900	33,200	12,300	6,240	4,840
26	4,550	3,100	3,300	3,000	3,100	11,400	23,700	30,900	31,800	12,400	6,290	4,900
27	4,570	2,950	2,700	3,040	3,040	11,500	22,300	31,100	30,200	12,400	6,240	4,970
28	4,590	2,950	1,900	3,320	3,130	10,100	23,300	32,700	28,300	12,400	6,160	4,970
29	4,640	3,000	1,650	3,240	-	9,150	28,900	35,100	27,600	12,400	6,310	4,860
30	4,750	3,150	2,010	3,280	-	8,710	35,800	39,100	27,400	12,200	6,210	4,930
31	4,810	-	2,800	3,190	-	8,710	-	42,900	-	12,200	6,080	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October 1938	158,430	6,000	4,550	5,111	0.393	0.45	314,200
November	123,230	4,900	2,950	4,108	.316	.35	244,400
December	102,230	4,500	1,650	3,298	.254	.29	202,800
Calendar year 1938	5,700,560	89,800	1,650	15,620	1.20	16.30	11,310,000
January 1939	121,200	6,960	3,040	3,910	.301	.35	240,400
February	79,870	3,350	1,600	2,852	.219	.23	158,400
March	149,210	11,500	2,760	4,813	.370	.43	296,000
April	487,340	35,800	9,640	16,240	1.25	1.40	966,600
May	1,131,600	50,200	27,100	36,500	2.81	3.24	2,244,000
June	851,900	40,800	22,400	28,400	2.18	2.43	1,690,000
July	607,300	32,800	12,200	19,590	1.51	1.74	1,205,000
August	241,980	11,800	6,080	7,806	.600	.69	480,000
September	164,090	6,480	4,810	5,470	.421	.47	325,500
Water year 1938-39	4,218,380	50,200	1,600	11,560	.889	12.07	8,367,000

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. Zero 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 1939.

Extremes.- Maximum water-surface elevation during year, 1,762.98 feet May 18, 19; minimum, 1,740.23 feet Mar. 11, 17.
1928-39: Maximum water-surface elevation, 1,774.17 feet June 20, 1933; minimum, 1,740.23 feet Mar. 11, 17, 1939.

Remarks.- Records excellent except those for June 29 to July 2, which were computed on basis of records for stations at Klockmann ranch and near Copeland and are good. Elevations affected by backwater from Kootenay Lake.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44.12	44.20	43.51	42.52	41.66	40.57	44.31	57.97	61.48	56.90	48.76	46.92
2	44.15	44.20	43.52	43.03	41.46	40.55	45.14	58.76	60.16	57.85	48.51	46.82
3	44.21	44.19	43.56	43.69	41.48	40.55	46.03	59.31	58.60	58.13	48.22	46.76
4	44.34	44.30	43.57	44.26	41.52	40.52	46.78	60.33	57.44	57.59	47.87	46.76
5	44.40	44.25	43.56	44.15	41.42	40.44	46.94	60.83	56.82	56.82	47.53	46.78
6	44.38	44.18	43.56	43.67	41.37	40.36	46.51	60.39	56.43	56.23	47.48	46.83
7	44.38	44.10	43.55	43.38	41.26	40.32	45.93	59.29	56.15	55.90	47.25	46.92
8	44.32	44.00	43.56	43.17	40.82	40.32	45.48	58.02	55.78	55.52	47.09	47.06
9	44.25	44.00	43.62	43.02	40.61	40.29	45.31	57.20	55.34	55.01	46.89	47.16
10	44.14	44.06	43.71	42.90	40.56	40.26	45.29	56.67	54.98	54.61	46.62	46.99
11	44.13	44.08	43.67	42.79	40.52	40.30	45.24	56.31	54.80	54.24	46.44	46.94
12	44.22	44.04	43.40	42.63	40.63	40.41	45.22	56.08	54.79	54.02	46.34	46.83
13	44.42	44.00	43.13	42.53	40.87	40.41	45.32	56.14	54.90	54.00	46.41	46.77
14	44.57	43.98	42.97	42.48	41.01	40.36	45.30	56.78	55.22	53.98	46.46	46.69
15	44.75	43.94	43.02	42.40	41.13	40.32	45.60	58.06	55.79	53.65	46.52	46.69
16	44.64	44.02	42.90	42.32	41.15	40.29	46.03	59.94	56.40	53.11	46.63	46.68
17	44.54	44.13	42.88	42.21	41.14	40.28	46.43	61.85	56.66	52.82	46.68	46.63
18	44.39	44.04	42.96	42.18	41.09	40.31	46.83	62.86	57.01	52.44	46.84	46.63
19	44.32	43.99	43.04	42.09	41.14	40.42	47.50	62.83	57.09	51.80	46.85	46.63
20	44.26	44.13	42.93	42.11	41.09	40.47	48.45	62.20	57.06	51.23	46.83	46.59
21	44.21	44.13	42.81	42.12	40.97	40.55	49.56	61.18	57.16	50.72	46.86	46.57
22	44.17	44.13	42.79	41.94	40.86	40.88	50.93	60.14	57.44	50.35	46.80	46.55
23	44.16	43.97	42.75	41.92	40.78	41.44	52.12	59.47	57.95	49.95	46.82	46.51
24	44.07	43.85	42.75	41.97	40.73	42.43	52.93	59.08	58.20	49.59	46.85	46.53
25	44.04	43.74	42.82	41.88	40.76	43.54	53.13	58.83	58.35	49.40	46.89	46.50
26	44.06	43.68	42.57	41.83	40.73	45.05	52.71	58.51	58.10	49.34	47.06	46.50
27	44.02	43.58	42.48	41.83	40.66	45.48	52.16	58.41	57.64	49.26	47.08	46.56
28	44.10	43.53	42.42	41.89	40.60	44.87	52.32	58.70	57.06	49.18	46.96	46.61
29	44.08	43.52	42.20	41.82	-	44.28	54.12	59.26	56.55	49.13	46.96	46.53
30	44.14	43.52	42.00	41.82	-	43.96	56.51	60.24	56.47	48.98	47.04	46.52
31	44.13	-	42.26	41.80	-	43.90	-	61.30	-	48.87	47.00	-

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 Railway and 8 miles north of Bonners Ferry. Zero of gage is 1,700.00 feet above mean sea level (U. S. Coast and Geodetic Survey datum).

Records available.- May 1928 to September 1939.

Extremes.- Maximum water-surface elevation during year, 1,761.03 feet May 19; minimum, 1,739.11 feet Mar. 18.
1928-39: Maximum water-surface elevation, 1,771.24 feet June 20, 1933; minimum, that of Mar. 18, 1939.

Remarks.- Records of water-surface elevation good except those for June 15-30, which are fair. Elevations for Oct. 1, 2, Feb. 9-12, June 14 to July 1 computed on basis of records for stations near Bonners Ferry and Copeland; elevation for Oct. 3 based on 14½ hours' record. Elevations affected by backwater from Kootenay Lake.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43.65	43.77	43.15	42.06	41.07	39.70	42.76	55.93	59.76	55.18	47.81	46.56
2	43.68	43.78	43.15	42.44	40.94	39.64	43.43	56.77	58.68	56.10	47.55	46.47
3	43.74	43.80	43.16	42.84	40.91	39.65	44.22	57.34	57.27	56.42	47.30	46.42
4	43.84	43.87	43.16	43.21	40.91	39.62	44.96	58.31	56.20	55.99	47.00	46.42
5	43.91	43.82	43.17	43.12	40.81	39.52	45.20	58.86	55.58	55.33	46.71	46.44
6	43.88	43.76	43.17	42.80	40.80	39.48	44.89	58.52	55.20	54.76	46.66	46.50
7	43.86	43.70	43.19	42.60	40.54	39.46	44.41	57.57	54.91	54.46	46.41	46.56
8	43.82	43.62	43.18	42.48	40.18	39.46	44.04	56.42	54.56	54.11	46.23	46.64
9	43.78	43.63	43.23	42.39	40.10	39.42	43.86	55.64	54.14	53.66	46.04	46.73
10	43.70	43.68	43.26	42.32	40.02	39.35	43.85	55.17	53.79	53.28	45.82	46.60
11	43.70	43.69	43.22	42.24	40.00	39.34	43.81	54.82	53.59	52.95	45.69	46.60
12	43.78	43.67	42.97	42.14	40.10	39.34	43.81	54.58	53.53	52.71	45.63	46.47
13	43.94	43.65	42.77	42.08	40.20	39.33	43.86	54.61	53.58	52.66	45.73	46.41
14	44.03	43.66	42.67	42.01	40.26	39.28	43.89	55.12	53.83	52.64	45.80	46.35
15	44.18	43.63	42.69	41.97	40.35	39.24	44.13	56.30	54.23	52.36	45.89	46.33
16	44.09	43.70	42.57	41.87	40.29	39.19	44.52	58.07	54.77	51.91	46.00	46.31
17	44.02	43.74	42.55	41.78	40.26	39.15	44.87	59.88	54.99	51.63	46.09	46.28
18	43.91	43.68	42.59	41.73	40.22	39.14	45.24	60.86	55.28	51.28	46.27	46.31
19	43.87	43.67	42.60	41.66	40.26	39.18	45.84	60.94	55.37	50.74	46.29	46.31
20	43.82	43.78	42.50	41.68	40.19	39.34	46.68	60.37	55.35	50.22	46.29	46.27
21	43.78	43.74	42.40	41.66	40.09	39.58	47.74	59.51	55.43	49.77	46.35	46.25
22	43.75	43.75	42.36	41.49	40.00	39.95	49.05	58.58	55.66	49.39	46.33	46.24
23	43.74	43.60	42.32	41.46	39.92	40.42	50.24	57.99	56.12	49.04	46.37	46.21
24	43.67	43.51	42.30	41.46	39.90	41.01	51.06	57.63	56.31	48.69	46.42	46.21
25	43.65	43.44	42.36	41.41	39.91	41.91	51.30	57.40	56.43	48.48	46.47	46.20
26	43.64	43.36	42.12	41.31	39.89	43.17	50.96	57.11	56.23	48.39	46.63	46.22
27	43.63	43.28	42.06	41.30	39.82	43.69	50.48	57.00	55.85	48.28	46.66	46.26
28	43.69	43.25	42.04	41.35	39.76	43.26	50.60	57.22	55.28	48.21	46.57	46.30
29	43.68	43.20	41.85	41.26	-	42.76	52.26	57.70	54.95	48.13	46.54	46.23
30	43.73	43.18	41.73	41.26	-	42.49	54.50	58.58	54.83	48.00	46.62	46.23
31	43.73	-	41.89	41.21	-	42.45	-	59.52	-	47.87	46.60	-

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

Kootenai River near Copeland, Idaho

(International gaging station)

Location.- Water-stage recorder, lat. 48°54'45", long. 116°25'00", in NW¼NW¼S¼ 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. Zero of gage is 1,700.00 feet above mean sea level (U. S. Coast and Geodetic Survey datum).

Drainage area.- 13,400 square miles.

Records available.- October 1927 to September 1939 (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.- 10 years (1929-39), 14,140 second-feet.

Extremes.- Maximum daily discharge during year, 49,200 second-feet May 18; maximum water-surface elevation, 1,758.30 feet May 19; minimum daily discharge, 1,670 second-feet Feb. 10, during ice period; minimum water-surface elevation, 1,738.94 feet Mar. 18.

1929-39: Maximum daily discharge, 90,500 second-feet June 19, 1933; maximum water-surface elevation, 1,767.98 feet June 20, 1933; minimum daily discharge, 1,350 second-feet Feb. 8, 1936; minimum water-surface elevation, that of Mar. 18, 1939.

Remarks.- Records of discharge good except those for periods of ice effect, Nov. 25 to Dec. 4, Dec. 11 to Mar. 20 (computed on basis of four 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.

Records of elevation excellent except those for Feb. 8-14, which are fair. Elevations affected by backwater from Kootenay Lake.

Drainage district No. 7, adjacent to Kootenai River above station and below station at Bonners Ferry, was not repaired prior to freshet period of 1939 and was partly inundated.

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

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43.43	43.58	43.05	41.89	40.92	39.43	41.52	53.21	57.43	53.29	47.01	46.39
2	43.46	43.59	43.04	42.14	40.80	39.40	42.02	54.01	56.70	53.97	46.79	46.31
3	43.51	43.59	43.04	42.37	40.75	39.43	42.65	54.65	55.61	54.28	46.56	46.26
4	43.57	43.66	43.03	42.60	40.72	39.39	43.28	55.50	54.72	54.02	46.33	46.26
5	43.64	43.63	43.03	42.59	40.64	39.33	43.52	56.06	54.17	53.53	46.10	46.28
6	43.61	43.57	43.03	42.40	40.61	39.29	43.36	55.87	53.77	53.07	46.05	46.35
7	43.59	43.52	43.04	42.27	40.37	39.27	43.01	55.15	53.45	52.81	45.80	46.40
8	43.56	43.49	43.03	42.21	40.12	39.26	42.76	54.25	53.14	52.54	45.62	46.44
9	43.53	43.50	43.08	42.14	40.03	39.22	42.65	53.63	52.76	52.18	45.46	46.50
10	43.47	43.54	43.08	42.09	39.92	39.16	42.64	53.22	52.42	51.87	45.30	46.42
11	43.51	43.55	43.04	42.04	39.88	39.15	42.63	52.95	52.20	51.58	45.21	46.42
12	43.55	43.54	42.88	41.96	39.96	39.15	42.63	52.77	52.09	51.37	45.22	46.32
13	43.67	43.55	42.73	41.90	39.97	39.14	42.67	52.80	52.08	51.29	45.35	46.26
14	43.72	43.54	42.64	41.84	39.98	39.11	42.71	53.25	52.22	51.22	45.44	46.18
15	43.83	43.54	42.62	41.80	40.06	39.06	42.92	54.25	52.49	51.02	45.52	46.16
16	43.79	43.60	42.51	41.72	39.97	39.02	43.19	55.63	52.95	50.67	45.64	46.15
17	43.75	43.61	42.48	41.63	39.92	38.98	43.45	57.08	53.14	50.40	45.76	46.12
18	43.68	43.56	42.48	41.58	39.90	38.96	43.76	58.01	53.36	50.10	45.95	46.17
19	43.65	43.57	42.45	41.51	39.90	38.97	44.25	58.25	53.46	49.67	45.98	46.18
20	43.62	43.64	42.35	41.53	39.85	39.05	44.90	57.92	53.45	49.27	46.00	46.15
21	43.59	43.62	42.27	41.52	39.77	39.20	45.76	57.29	53.51	48.86	46.07	46.12
22	43.57	43.63	42.22	41.37	39.71	39.42	46.88	56.57	53.68	48.52	46.07	46.11
23	43.55	43.51	42.17	41.34	39.65	39.74	47.92	56.09	54.08	48.21	46.13	46.09
24	43.50	43.46	42.12	41.31	39.61	40.14	48.68	55.77	54.31	47.91	46.18	46.08
25	43.48	43.39	42.17	41.28	39.63	40.73	48.98	55.56	54.43	47.69	46.26	46.08
26	43.48	43.32	42.00	41.18	39.61	41.61	48.79	55.32	54.31	47.58	46.41	46.10
27	43.48	43.24	41.95	41.16	39.54	42.08	48.47	55.21	54.01	47.47	46.46	46.15
28	43.52	43.19	41.95	41.16	39.50	41.86	48.59	55.38	53.58	47.36	46.39	46.18
29	43.51	43.14	41.82	41.07	-	41.51	49.99	55.75	53.20	47.30	46.34	46.13
30	43.55	43.08	41.71	41.07	-	41.33	51.92	56.40	53.01	47.17	46.42	46.12
31	43.54	-	41.79	41.03	-	41.30	-	57.12	-	47.06	46.42	-

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

Discharge, in second-feet, of Kootenai River near Copeland, Idaho, for water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,150	4,880	3,510	3,520	3,260	3,210	10,200	37,900	42,600	30,000	12,100	5,980
2	5,210	4,950	3,670	4,660	2,980	3,080	11,600	39,900	37,800	33,400	11,500	5,800
3	5,240	4,890	3,880	6,020	3,040	3,080	13,100	40,800	32,200	34,300	11,100	5,630
4	5,500	4,980	3,880	7,020	3,150	3,150	14,400	43,500	28,600	32,300	10,800	5,630
5	5,640	4,900	4,060	6,560	3,110	3,010	14,600	44,800	26,900	29,600	9,740	5,640
6	5,630	4,820	4,120	5,660	3,200	2,860	13,800	43,100	26,200	27,600	9,700	5,510
7	5,570	4,670	4,200	5,070	2,650	2,980	12,600	39,200	25,900	26,800	9,560	5,760
8	5,490	4,450	4,390	4,720	2,130	2,950	11,800	34,900	25,000	25,600	9,350	6,220
9	5,360	4,330	4,590	4,480	1,760	2,920	11,300	31,900	24,100	24,200	9,150	6,610
10	5,280	4,340	4,720	4,370	1,670	2,890	11,300	30,400	23,500	23,200	8,530	6,070
11	5,040	4,340	4,300	4,240	1,960	3,010	11,200	29,300	23,200	22,300	8,160	5,990
12	5,310	4,200	3,610	3,970	2,230	3,020	11,100	28,400	23,600	21,700	7,600	5,870
13	5,650	4,060	2,990	3,890	2,800	3,060	11,100	28,500	24,000	21,900	7,420	5,780
14	6,070	4,130	2,710	3,880	3,020	3,070	11,200	29,900	25,200	22,300	7,340	5,830
15	6,350	4,050	3,000	3,750	3,330	3,050	11,500	33,400	26,900	21,400	7,380	5,960
16	5,990	4,140	3,050	3,770	3,460	3,020	12,400	39,500	28,700	19,900	7,370	5,810
17	5,740	4,360	3,130	3,610	3,490	2,970	13,100	46,300	29,500	19,300	7,170	5,510
18	5,410	4,270	3,280	3,650	3,400	3,040	13,700	49,200	30,500	18,600	7,190	5,360
19	5,280	4,130	3,530	3,680	3,450	3,150	14,900	48,500	30,900	17,100	7,140	5,360
20	5,090	4,500	3,400	3,510	3,330	3,690	16,700	45,400	30,600	15,400	6,890	5,200
21	4,890	4,360	3,280	3,610	3,290	4,470	18,900	41,800	31,000	14,500	6,910	5,190
22	4,880	4,360	3,410	3,300	3,260	5,320	21,600	37,800	31,800	13,900	6,580	5,110
23	4,870	4,040	3,420	3,230	3,140	6,270	24,200	35,500	33,400	13,300	6,400	5,020
24	4,790	3,660	3,660	3,280	3,180	7,420	26,100	34,400	33,700	12,500	6,410	5,020
25	4,720	3,330	3,750	3,190	3,180	9,250	26,400	33,600	33,900	12,300	6,090	4,940
26	4,720	3,210	3,590	3,130	3,250	11,900	25,100	32,600	33,000	12,500	6,360	4,940
27	4,650	3,060	2,830	3,140	3,150	12,700	23,500	32,300	31,600	12,500	6,380	5,040
28	4,670	2,980	2,020	3,460	3,260	11,500	23,500	33,300	29,500	12,600	6,130	5,050
29	4,730	3,170	1,910	3,370	-	10,400	27,800	35,200	28,600	12,500	6,120	4,870
30	4,810	3,240	2,050	3,400	-	9,740	33,700	38,400	28,600	12,400	6,290	4,950
31	4,870	-	2,800	3,330	-	9,600	-	42,300	-	12,200	6,070	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	162,600	6,350	4,650	5,245	0.391	0.45	322,500
November	124,800	4,980	2,980	4,160	.310	.35	247,500
December	106,740	4,720	1,910	3,443	.257	.30	211,700
Calendar year 1938	5,884,360	87,400	1,910	16,120	1.20	16.33	11,670,000
January	126,470	7,020	3,130	4,080	.304	.35	250,800
February	83,130	3,490	1,670	2,969	.222	.23	164,900
March	159,780	12,700	2,860	5,154	.385	.44	316,900
April	502,400	33,700	10,200	16,750	1.25	1.40	996,500
May	1,162,000	49,200	28,400	37,480	2.80	3.23	2,305,000
June	881,000	42,600	23,200	29,370	2.19	2.44	1,747,000
July	628,100	34,300	12,200	20,260	1.51	1.74	1,246,000
August	244,930	12,100	6,070	7,901	.590	.68	485,800
September	165,650	6,610	4,870	5,522	.412	.46	328,600
Water year 1938-39	4,347,600	49,200	1,670	11,910	.889	12.07	8,623,000

Kootenai River at Lucas Creek, near Port Hill, Idaho

Location.- Staff gage, lat. 48°57'25", long. 116°28'55", in sec. 28, T. 65 N., R. 1 W., at mouth of Lucas Creek, 3 miles southeast of Port Hill. Zero of gage is 1,700.00 feet above mean sea level (U. S. Coast and Geodetic Survey datum).

Records available.- May 1928 to September 1930, May 1932 to July 1935, May 1937 to August 1939.

Extremes.- Maximum water-surface elevation observed during year, 1,756.89 feet May 19; minimum water-surface elevation occurred during period of no record.
1928-30, 1932-35, 1937-39: Maximum water-surface elevation observed, 1,765.95 feet May 31, 1938; minimum water-surface elevation occurred during period of no record.

Remarks.- Records reliable. No records obtained during periods Aug. 13, 1938, to Apr. 21, 1939, Aug. 10 to Sept. 30, 1939. Elevation affected by backwater from Kootenay Lake.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	51.90	56.30	52.44	46.77	
2							-	52.73	55.66	53.04	46.56	
3							-	53.32	54.74	53.32	46.36	
4							-	54.18	53.94	53.08	46.08	
5							-	54.67	53.49	52.73	45.88	
6							-	54.55	53.08	52.35	45.90	
7							-	53.92	52.83	52.08	45.65	
8							-	53.21	52.48	51.90	45.46	
9							-	52.72	52.17	51.58	45.32	
10							-	52.40	51.85	51.30	-	
11							-	52.15	51.62	51.04	-	
12							-	51.99	51.50	50.85	-	
13							-	52.02	51.48	50.75	-	
14							-	52.45	51.59	50.66	-	
15							-	53.33	51.78	50.51	-	
16							-	54.55	52.18	50.18	-	
17							-	55.86	52.33	49.96	-	
18							-	56.64	52.49	49.65	-	
19							-	56.89	52.54	49.25	-	
20							-	56.67	52.56	48.93	-	
21							-	56.11	52.61	48.61	-	
22							46.22	55.55	52.76	48.24	-	
23							46.99	55.14	53.02	47.95	-	
24							47.69	54.86	53.26	47.66	-	
25							47.97	54.67	53.41	47.46	-	
26							47.83	54.48	53.31	47.35	-	
27							47.59	54.36	53.04	47.22	-	
28							47.75	54.52	52.71	47.11	-	
29							49.01	54.81	52.42	47.05	-	
30							50.84	55.41	52.24	46.94	-	
31							-	56.01	-	46.80	-	

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

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. Zero 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 and October 1927 to April 1928 (gage heights only) and April 1928 to September 1939 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.- 11 years, 14,260 second-feet.

Extremes.- Maximum daily discharge during year, 51,100 second-feet May 18; maximum water-surface elevation, 1,755.66 feet May 19; minimum daily discharge, 1,720 second-feet Feb. 10; minimum water-surface elevation, 1,738.69 feet Mar. 18.

1928-39: Maximum daily discharge, 93,200 second-feet June 19, 1933; maximum water-surface elevation, 1,764.08 feet May 31, 1938; minimum daily discharge, 1,380 second-feet Feb. 8, 1936; minimum water-surface elevation, that of Mar. 18, 1939.

Maximum water-surface elevation known, 1,772.7 feet sometime in June 1894.

Remarks.- Records of discharge good except those Nov. 25 to Dec. 4, Dec. 11 to Mar. 20, which are fair. Daily discharges, which represent the entire flow passing international boundary, were obtained by adding tributary inflow, including that of Boundary Creek, to discharge at station near Copeland. Boundary dike of Reclamation Farm repaired prior to freshet season, and flow of river confined throughout year to main channel, upon which gage and cableway are located.

Records of water-surface elevation excellent. Elevations affected by backwater from Kootenay Lake.

Drainage district No. 10, Severn's Bend district, and Klockmann Boundary farm adjacent to Kootenai River above this station and below station near Copeland were repaired prior to freshet period and were not inundated.

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

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43.14	43.31	42.84	41.63	40.65	39.14	40.82	50.70	55.22	51.67	46.38	46.08
2	43.16	43.31	42.82	41.61	40.54	39.12	41.19	51.46	54.73	52.14	46.20	46.01
3	43.22	43.34	42.80	41.95	40.48	39.13	41.67	52.10	53.98	52.38	46.00	45.98
4	43.28	43.40	42.80	42.10	40.44	39.08	42.19	52.87	53.30	52.26	45.80	45.98
5	43.33	43.36	42.81	42.13	40.36	39.04	42.42	53.38	52.85	51.96	45.61	46.00
6	43.30	43.31	42.80	42.00	40.33	39.00	42.32	53.30	52.50	51.64	45.56	46.08
7	43.29	43.27	42.81	41.91	40.10	38.98	42.09	52.84	52.20	51.42	45.31	46.11
8	43.26	43.22	42.77	41.86	39.94	38.97	41.92	52.23	51.92	51.23	45.15	46.13
9	43.24	43.25	42.79	41.82	39.85	38.93	41.86	51.86	51.58	50.94	44.98	46.17
10	43.17	43.30	42.80	41.78	39.75	38.87	41.85	51.55	51.26	50.68	44.86	46.11
11	43.21	43.31	42.75	41.74	39.69	38.86	41.83	51.33	51.06	50.44	44.79	46.12
12	43.25	43.31	42.63	41.67	39.76	38.86	41.86	51.21	50.91	50.27	44.83	46.00
13	43.36	43.31	42.49	41.62	39.71	38.85	41.90	51.23	50.88	50.16	44.97	45.95
14	43.38	43.31	42.42	41.58	39.71	38.82	41.93	51.60	50.95	50.05	45.06	45.88
15	43.49	43.29	42.39	41.54	39.74	38.78	42.13	52.44	51.08	49.89	45.15	45.84
16	43.46	43.35	42.29	41.47	39.65	38.75	42.31	53.51	51.41	49.66	45.27	45.84
17	43.43	43.36	42.25	41.39	39.60	38.72	42.52	54.54	51.53	49.43	45.40	45.85
18	43.37	43.31	42.23	41.34	39.58	38.70	42.79	55.32	51.68	49.15	45.59	45.90
19	43.35	43.32	42.18	41.27	39.57	38.71	43.17	55.61	51.72	48.81	45.62	45.90
20	43.33	43.38	42.10	41.28	39.53	38.77	43.69	55.47	51.76	48.52	45.66	45.88
21	43.32	43.36	42.04	41.26	39.46	38.89	44.39	55.03	51.79	48.16	45.72	45.86
22	43.29	43.37	41.98	41.13	39.41	39.06	45.30	54.59	51.91	47.84	45.75	45.86
23	43.28	43.26	41.92	41.09	39.35	39.31	46.16	54.28	52.19	47.56	45.82	45.84
24	43.22	43.22	41.86	41.06	39.31	39.63	46.76	54.02	52.37	47.30	45.87	45.84
25	43.21	43.17	41.93	41.03	39.33	40.09	47.05	53.87	52.49	47.10	45.97	45.84
26	43.20	43.11	41.78	40.93	39.31	40.74	46.97	53.70	52.42	46.97	46.10	45.86
27	43.20	43.03	41.74	40.91	39.24	41.11	46.79	53.60	52.21	46.84	46.13	45.89
28	43.26	42.98	41.73	40.88	39.20	40.99	46.95	53.70	51.92	46.73	46.07	45.93
29	43.24	42.92	41.62	40.81	-	40.76	48.09	53.95	51.67	46.66	46.04	45.88
30	43.28	42.87	41.52	40.80	-	40.65	49.70	54.46	51.51	46.53	46.10	45.87
31	43.27	-	41.56	40.76	-	40.65	-	54.94	-	46.43	46.11	-

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

Discharge, in second-feet, of Kootenai River at Port Hill, Idaho, for water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	5,190	5,070	3,580	3,690	3,340	3,270	10,600	39,900	43,600	30,400	12,200	6,020
2	5,250	5,110	3,740	4,940	3,060	3,140	12,100	42,100	38,700	33,800	11,600	5,840
3	5,340	5,040	3,960	6,250	3,120	3,140	13,600	43,600	33,100	34,700	11,200	5,670
4	5,610	5,100	3,970	7,190	3,230	3,210	14,900	46,000	29,500	32,900	10,900	5,670
5	5,700	4,990	4,160	6,700	3,190	3,070	15,100	46,800	27,700	30,100	9,800	5,690
6	5,680	4,900	4,230	5,780	3,280	2,920	14,200	44,700	27,000	28,000	9,760	5,600
7	5,620	4,780	4,300	5,170	2,730	3,040	13,000	40,600	26,700	27,200	9,620	5,820
8	5,530	4,550	4,510	4,820	2,180	3,010	12,200	36,400	25,800	25,900	9,410	6,270
9	5,400	4,420	4,760	4,580	1,810	2,980	11,700	33,600	24,900	24,500	9,210	6,650
10	5,320	4,430	4,860	4,460	1,720	2,950	11,700	32,000	24,300	23,500	8,590	6,110
11	5,210	4,420	4,420	4,330	2,010	3,070	11,600	30,900	24,000	22,600	8,210	6,040
12	5,500	4,290	3,690	4,060	2,280	3,080	11,500	30,100	24,400	21,900	7,650	5,960
13	5,890	4,140	3,070	3,980	2,860	3,120	11,500	30,500	24,800	22,100	7,470	5,840
14	6,190	4,220	2,790	3,960	3,080	3,140	11,600	32,400	26,000	22,500	7,390	5,880
15	6,440	4,140	3,080	3,830	3,390	3,110	12,000	36,200	27,800	21,600	7,430	6,010
16	6,070	4,230	3,130	3,850	3,520	3,090	13,000	42,400	29,800	20,100	7,420	5,860
17	5,810	4,440	3,210	3,690	3,550	3,040	13,700	48,700	30,500	19,500	7,220	5,550
18	5,480	4,360	3,360	3,730	3,460	3,110	14,400	51,100	31,400	18,800	7,240	5,400
19	5,340	4,220	3,610	3,760	3,510	3,240	15,700	50,300	31,800	17,200	7,180	5,400
20	5,150	4,580	3,480	3,590	3,390	3,810	17,700	46,900	31,600	15,500	6,930	5,240
21	4,950	4,430	3,360	3,680	3,380	4,640	20,100	43,200	31,800	14,600	6,750	5,230
22	4,940	4,420	3,490	3,370	3,320	5,530	23,000	39,600	32,500	14,000	6,620	5,150
23	4,930	4,100	3,500	3,290	3,200	6,510	25,500	37,200	34,100	13,400	6,440	5,060
24	4,850	3,710	3,740	3,350	3,240	7,730	27,500	36,100	34,400	12,600	6,450	5,060
25	4,800	3,380	3,830	3,270	3,240	9,670	27,600	35,200	34,600	12,400	6,130	4,980
26	4,800	3,260	3,670	3,220	3,310	12,300	26,100	34,200	33,600	12,600	6,400	4,980
27	4,810	3,110	2,910	3,230	3,210	13,100	24,600	34,000	32,100	12,600	6,420	5,080
28	4,790	3,020	2,100	3,540	3,320	11,800	25,200	35,000	30,000	12,700	6,170	5,080
29	4,880	3,220	1,990	3,450	-	10,700	30,400	37,100	29,100	12,600	6,160	4,900
30	5,000	3,300	2,130	3,480	-	10,100	36,100	39,900	29,000	12,500	6,320	4,980
31	5,090	-	2,880	3,410	-	9,960	-	43,500	-	12,300	6,100	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	165,560	6,440	4,790	5,341	0.390	0.46	328,400
November	127,370	5,110	3,020	4,246	.310	.35	252,600
December	109,510	4,860	1,990	3,533	.258	.30	217,200
Calendar year 1938	6,078,730	91,100	1,990	16,650	1.22	16.50	12,060,000
January	129,650	7,190	3,220	4,182	.305	.35	257,200
February	84,900	3,550	1,720	3,032	.221	.23	168,400
March	164,580	13,100	2,920	5,309	.388	.45	326,400
April	527,900	36,100	10,600	17,600	1.28	1.43	1,047,000
May	1,220,200	51,100	30,100	39,360	2.87	3.31	2,420,000
June	904,600	43,600	24,000	30,150	2.20	2.46	1,794,000
July	635,100	34,700	12,300	20,490	1.50	1.73	1,260,000
August	246,590	12,200	6,100	7,955	.581	.67	489,100
September	167,020	6,650	4,900	5,567	.406	.45	331,300
Water year 1938-39	4,482,980	51,100	1,720	12,280	.896	12.18	8,892,000

244'38 O—40——7

Granite Creek near Libby, Mont.

Location.- Staff gage and concrete control, lat. 48°18', long. 115°35', in SW¼ sec. 5, T. 29 N., R. 31 W., at Glacier silver-lead mine, 7 miles southwest of Libby.

Drainage area.- 23.6 square miles.

Records available.- January to September 1933, August 1936 to September 1939.

Extremes.- Maximum discharge observed during year, 534 second-feet May 3 (gage height, 3.96 feet); minimum observed, 5.2 second-feet Sept. 29, 30 (gage height, 1.81 feet).
1933, 1936-39: Maximum discharge observed, 1,960 second-feet Apr. 18, 1938; no flow Jan. 4, 1933 (creek blocked by snowslide).

Remarks.- Records good except those estimated for periods of ice effect, Dec. 12-19, 27-30, Jan. 24-26, Feb. 9, 10, which are poor. Gage read once daily.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.1	21	12	22	13	10	119	267	156	106	22	8.1
2	8.1	21	12	24	13	13	134	413	129	93	21	7.5
3	22	21	12	31	12	13	156	534	129	81	20	8.1
4	24	20	11	24	12	13	156	386	156	85	19	8.1
5	20	20	30	22	11	13	119	247	129	74	19	9.3
6	18	18	23	21	10	13	106	172	106	64	18	9.9
7	16	18	22	18	10	11	89	150	106	56	17	10
8	13	18	38	18	9.9	11	85	156	101	54	16	10
9	11	17	49	18	9.0	11	81	190	106	48	15	9.9
10	17	17	42	17	9.5	10	78	208	106	52	14	9.3
11	23	16	31	16	9.9	10	78	202	106	54	13	8.7
12	27	16	29	15	9.9	10	74	215	101	54	14	8.1
13	93	15	20	15	13	10	74	229	106	52	13	8.1
14	47	16	13	15	14	10	78	311	117	49	13	7.5
15	33	17	12	14	14	10	85	413	110	47	13	9.6
16	25	18	12	14	13	10	93	386	106	38	12	10
17	22	17	14	14	13	13	97	360	129	33	11	9.6
18	20	17	16	17	12	15	110	267	119	31	11	8.1
19	18	17	16	15	12	20	161	247	106	30	11	7.5
20	18	16	17	13	11	27	184	184	110	29	10	7.2
21	17	16	16	13	11	42	229	145	119	28	9.9	7.2
22	16	15	16	13	10	51	271	156	129	25	9.3	6.8
23	16	14	15	13	11	59	215	161	150	27	9.3	7.0
24	15	13	16	12	15	71	229	178	129	29	9.0	7.0
25	15	12	14	11	11	150	199	178	115	30	9.3	7.2
26	14	12	13	10	11	156	156	184	101	31	9.3	6.8
27	21	11	12	14	11	115	150	196	71	31	9.3	7.0
28	23	10	12	13	10	93	311	247	74	31	9.6	5.5
29	21	10	11	13	-	85	335	267	85	30	9.0	5.2
30	22	10	17	13	-	78	335	335	101	28	8.7	5.2
31	21	-	22	13	-	85	-	215	-	25	8.7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	684.2	93	8.1	22.1	0.936	1.08	1,360
November	479	21	10	16.0	.678	.76	950
December	595	49	11	19.2	.814	.94	1,180
Calendar year 1938	27,945.8	1,960	5.1	76.6	3.24	43.98	55,420
January	501	31	10	16.2	.686	.79	994
February	321.2	15	9.0	11.5	.487	.51	637
March	1,238	156	10	39.9	1.69	1.95	2,460
April	4,587	335	74	153	6.48	7.23	9,100
May	7,799	534	145	252	10.7	12.34	15,470
June	3,408	156	71	114	4.83	5.39	6,760
July	1,445	106	25	46.6	1.97	2.27	2,870
August	403.4	22	8.7	13.0	.551	.64	800
September	239.5	10	5.2	8.0	.339	.38	475
Water year 1938-39	21,700.3	534	5.2	59.5	2.52	34.28	43,060

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 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 1939. April to November 1928, at site 1¼ miles downstream.

Average discharge.- 10 years (1929-39), 110 second-feet.

Extremes.- Maximum discharge during year, 854 second-feet May 3 (gage height, 3.36 feet); minimum, 6 second-feet Aug. 31, Sept. 1; minimum gage height, 0.25 foot Nov. 11, 23, Aug. 31, Sept. 1.

1928-39: 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, Sept. 5, 1931.

Remarks.- Records good except those for periods of ice effect or of missing gage heights, Nov. 24 to Dec. 2, Dec. 12-23, 27-31, Jan. 22-26, Feb. 8-14, which were computed on basis of weather records and comparison with flow of Moyie River at Eastport and Eileen and Deep Creek at Moravia and are fair. Discharge interpolated July 13-19. No diversion or regulation.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9	16	12	40	17	14	212	524	160	49	11	6
2	9	15	12	66	17	14	255	575	148	45	11	7
3	17	10	13	49	16	14	280	685	140	38	10	7
4	18	10	13	35	15	14	227	580	146	29	10	7
5	13	14	33	30	15	15	187	466	133	36	9	8
6	11	15	34	27	15	14	168	371	129	39	9	9
7	11	14	26	24	15	14	150	366	125	40	9	9
8	10	14	48	24	12	14	150	412	125	38	9	8
9	10	15	63	22	9	14	171	438	131	35	9	7
10	11	15	36	22	7	14	152	398	122	33	9	7
11	34	11	18	22	9	14	142	384	114	31	8	9
12	34	14	15	20	12	14	148	389	110	29	8	14
13	33	14	12	20	15	14	136	420	108	28	8	11
14	19	14	10	20	17	14	150	474	103	26	8	10
15	15	15	8	20	17	14	190	479	108	25	8	10
16	13	17	10	19	16	14	199	456	125	24	8	9
17	12	16	12	19	16	15	212	376	120	23	8	9
18	11	15	13	19	15	17	251	315	105	22	8	8
19	11	15	13	20	15	24	344	299	103	20	8	8
20	11	17	13	19	15	41	389	262	107	19	8	7
21	11	14	13	14	14	70	438	241	97	18	7	8
22	11	11	14	13	15	89	466	248	90	17	7	7
23	11	9	16	12	15	105	452	265	84	16	7	7
24	11	9	20	13	15	148	434	276	76	15	7	7
25	11	9	19	13	15	258	344	258	85	14	8	7
26	11	8	14	14	15	215	299	251	76	14	8	7
27	21	8	12	19	14	150	340	258	67	13	8	7
28	19	8	8	17	14	127	492	251	62	12	7	7
29	17	8	8	16	-	120	695	331	58	12	7	7
30	17	9	10	16	-	125	580	241	53	11	7	7
31	17	-	15	15	-	148	-	182	-	11	7	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	469	34	9	15.1	0.285	0.33	930
November	379	17	8	12.6	.238	.27	752
December	563	63	8	18.2	.343	.40	1,120
Calendar year 1938	44,857	1,570	7	123	2.32	31.51	88,970
January	699	66	12	22.5	.425	.49	1,390
February	402	17	7	14.4	.272	.28	797
March	1,877	258	14	60.5	1.14	1.31	3,720
April	8,653	695	136	288	5.43	6.06	17,160
May	11,471	685	182	370	6.98	8.05	22,750
June	3,212	160	53	107	2.02	2.25	6,370
July	782	49	11	25.2	.475	.55	1,550
August	256	11	7	8.3	.157	.18	508
September	241	14	6	8.0	.151	.17	478
Water year 1938-39	29,004	695	6	79.5	1.50	20.34	57,520

Peak discharge.- Apr. 29 (8 p.m.) 820 sec.-ft.; May 3 (8:30 p.m.) 854 sec.-ft.

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., 1,000 feet downstream from international boundary at Eastport.

Drainage area.- 570 square miles.

Records available.- August 1929 to September 1939, in reports of 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.- 10 years, 618 second-feet.

Extremes.- Maximum discharge during year, 3,740 second-feet May 4 (gage height, 7.50 feet); minimum, 45 second-feet Sept. 4 (gage height, 3.42 feet).
1929-39: Maximum discharge, 6,240 second-feet Apr. 28, 1934; minimum, 23 second-feet Nov. 7, 1936 (gage height, 3.20 feet).

Remarks.- Records good except those for periods of ice effect or of missing gage heights, Nov. 22 to Dec. 1, Dec. 10-24, Dec. 26 to Jan. 2, Jan. 21-27, Feb. 1-5, Feb. 8 to Mar. 18, Apr. 17-22, 24, Apr. 27 to May 1, which were computed on basis of weather records, two discharge measurements (results of which are shown for Dec. 20 and Feb. 20), records for station at Eileen and are fair. No regulation or diversion above station. This station is one of international gaging stations maintained by United States under agreement with Canada.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	62	89	75	220	100	80	1,090	3,200	1,310	743	132	50
2	62	86	80	330	100	80	1,260	3,300	1,210	693	129	50
3	73	94	80	270	100	80	1,510	3,520	1,110	657	124	48
4	89	94	82	202	100	80	1,360	3,600	1,110	671	115	47
5	75	84	84	174	100	80	1,160	3,150	1,050	623	109	50
6	71	89	69	157	102	80	1,030	2,730	1,040	590	106	77
7	71	84	92	148	77	80	942	2,390	1,030	558	104	77
8	64	82	106	141	65	80	951	2,260	994	521	104	64
9	64	82	132	135	55	80	1,000	2,260	951	485	99	59
10	66	84	120	132	50	80	968	2,200	934	457	96	59
11	80	86	100	129	50	80	960	2,070	908	423	94	62
12	94	84	90	126	55	80	1,010	2,070	851	387	82	75
13	104	82	80	118	60	80	960	2,130	851	367	77	73
14	92	82	70	115	70	80	1,040	2,390	960	348	75	66
15	82	86	65	118	80	80	1,250	2,730	934	325	73	64
16	82	99	65	118	85	80	1,260	2,870	1,210	299	71	62
17	77	94	75	112	90	90	1,300	2,800	1,460	282	66	59
18	77	89	80	112	90	100	1,500	2,590	1,410	266	64	57
19	75	86	80	112	85	141	1,800	2,460	1,460	254	62	55
20	73	92	81	109	83	184	2,000	2,260	1,410	242	60	54
21	73	80	80	100	80	254	2,200	2,070	1,360	235	57	54
22	73	77	85	90	80	382	2,300	2,070	1,310	227	55	54
23	73	73	95	90	80	521	2,130	2,200	1,220	216	54	54
24	73	71	100	90	82	729	2,250	2,010	1,170	205	54	57
25	73	69	92	90	85	1,140	2,010	1,890	1,130	198	54	62
26	73	67	80	90	85	1,050	1,890	1,840	1,100	191	55	59
27	84	64	70	120	85	773	1,900	1,780	1,010	180	55	57
28	92	62	65	135	80	685	2,300	1,720	917	170	54	57
29	84	60	60	129	-	693	3,300	1,720	860	160	54	55
30	89	70	100	115	-	729	3,600	1,620	804	151	52	55
31	89	-	150	104	-	851	-	1,460	-	144	52	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	2,409	104	62	77.7	0.136	0.16	4,780
November	2,441	99	60	81.4	.143	.16	4,840
December	2,703	150	60	87.2	.153	.18	5,360
Calendar year 1938	295,667	5,740	57	810	1.42	19.30	586,400
January	4,231	330	90	136	.239	.28	8,390
February	2,254	102	50	80.5	.141	.15	4,470
March	9,602	1,140	80	310	.544	.63	19,050
April	48,231	3,600	942	1,608	2.82	3.15	95,660
May	73,360	3,600	1,460	2,366	4.15	4.78	145,500
June	33,074	1,460	804	1,102	1.93	2.15	65,600
July	11,268	743	144	363	.637	.73	22,350
August	2,438	132	52	78.6	.138	.16	4,840
September	1,772	77	47	59.1	.104	.12	3,510
Water year 1938-39	193,783	3,600	47	531	.932	12.65	384,400

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 1939.

Average discharge.- 14 years, 782 second-feet.

Extremes.- Maximum discharge during year, 4,500 second-feet May 3, 4 (gage height, 3.54 feet); minimum daily, 75 second-feet (estimated) Feb. 11, stage-discharge relation affected by ice; minimum gage height, -0.34 foot Sept. 4, 5.

1925-39: Maximum discharge, 8,780 second-feet Apr. 29, 1934; 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, that of Sept. 4, 5, 1939.

Remarks.- Records good except those for periods of ice effect or missing gage heights Nov. 24 to Dec. 2, Dec. 13-24, 27-31, Jan. 12 to Feb. 6, Feb. 9 to Mar. 3, which were computed on basis of weather records, two discharge measurements (results of which are shown for Dec. 2 and Feb. 4), and records for station at Eastport and are fair. No diversion or regulation above station.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 3				Mar. 4 to Sept. 30					
-0.30	91	0.50	260	-0.40	71	0.80	373	2.50	1,975
-.10	119	.70	327	-.20	100	1.00	461	2.80	2,540
+.10	158	.90	406	.00	138	1.30	630	3.10	3,215
.30	205	1.10	501	+.20	184	1.60	853	3.40	4,040
				.40	238	1.90	1,140	3.60	4,700
				.60	300	2.20	1,510		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	107	132	120	357	150	135	1,260	3,740	1,570	941	184	81
2	108	132	130	481	150	135	1,480	3,830	1,430	879	177	81
3	130	148	135	461	150	130	1,810	4,300	1,300	845	172	81
4	135	143	130	313	154	124	1,700	4,360	1,290	845	165	80
5	130	137	139	263	150	120	1,430	3,800	1,240	821	156	84
6	119	130	145	237	150	138	1,250	3,320	1,220	772	147	104
7	116	130	150	223	126	128	1,160	2,930	1,210	728	142	118
8	116	130	163	210	116	128	1,140	2,750	1,160	684	140	107
9	113	137	188	203	95	132	1,210	2,750	1,120	644	138	97
10	113	141	181	195	80	132	1,170	2,640	1,100	611	136	90
11	124	130	141	191	75	132	1,150	2,540	1,090	568	130	98
12	145	128	123	180	80	134	1,220	2,500	1,040	523	122	105
13	154	132	110	170	95	134	1,160	2,580	1,030	486	118	107
14	152	132	100	160	110	136	1,210	2,910	1,140	466	114	102
15	133	137	95	160	130	128	1,440	3,270	1,120	433	113	98
16	130	152	95	160	140	126	1,510	3,470	1,420	402	107	97
17	126	154	110	150	145	124	1,520	3,340	1,750	377	105	92
18	124	143	120	150	145	136	1,670	3,050	1,720	358	102	87
19	123	141	120	150	135	167	1,990	2,950	1,730	339	102	86
20	123	148	120	150	130	224	2,210	2,730	1,690	324	100	84
21	121	139	120	140	130	321	2,600	2,460	1,640	310	98	83
22	121	126	125	130	130	476	2,820	2,460	1,540	300	95	83
23	119	108	130	120	135	657	2,500	2,600	1,460	284	94	83
24	119	105	140	120	135	888	2,540	2,400	1,400	268	92	84
25	118	100	145	130	135	1,310	2,340	2,260	1,350	258	90	90
26	118	95	113	130	135	1,360	2,080	2,170	1,340	247	90	90
27	124	90	100	180	130	1,010	2,100	2,100	1,240	238	87	87
28	135	88	90	200	125	888	2,600	2,040	1,150	224	86	87
29	133	86	90	200	-	888	3,830	1,980	1,080	213	84	86
30	132	100	150	170	-	915	4,140	1,890	1,020	208	84	86
31	133	-	220	150	-	1,020	-	1,700	-	194	83	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	3,894	154	107	126	0.167	0.19	7,720
November	3,794	154	86	126	.167	.19	7,530
December	4,038	220	90	130	.172	.20	8,010
Calendar year 1938	370,243	6,770	86	1,014	1.34	18.24	734,300
January	6,234	481	120	201	.266	.31	12,360
February	3,561	154	75	127	.168	.17	7,060
March	12,476	1,360	120	402	.532	.61	24,750
April	56,240	4,140	1,140	1,875	2.48	2.77	111,600
May	87,820	4,360	1,700	2,833	3.75	4.32	174,200
June	39,590	1,750	1,020	1,320	1.75	1.95	78,530
July	14,765	941	194	477	.632	.73	29,330
August	3,653	184	83	118	.156	.18	7,250
September	2,738	118	80	91.3	.121	.14	5,430
Water year 1938-39	238,823	4,360	75	654	.866	11.76	473,800

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 1939 (except winters prior to 1933).

Extremes.- Maximum discharge observed during year, 450 second-feet Apr. 29 (gage height, 2.40 feet); minimum observed, 10 second-feet several days in August and on Sept. 1 (gage height, 0.10 foot).

1928-39: Maximum discharge observed, 1,300 second-feet Dec. 22, 1933; maximum gage height, 4.20 feet Dec. 22, 1933, Apr. 18, 1938; minimum discharge, 7 second-feet Aug. 15, 24, 25, 1931; minimum gage height, 0.10 foot several days in August 1939.

Remarks.- Records good except those for periods of ice effect, Dec. 12-16, 23-31, Jan. 5-7, Feb. 1-3, 8-25, and those for period of doubtful gage observations, June 21-29, which were computed on basis of weather records, records for other tributaries to Kootenai River, one discharge measurement (result of which is shown for Dec. 31) and are poor. Staff gage read once daily. One small diversion above station for irrigation.

Rating table, Jan. 2 to Sept. 30 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0.10	10	0.70	55	1.30	156	1.90	303
.30	21	.90	81	1.50	201	2.10	360
.50	36	1.10	115	1.70	250	2.40	450

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	38	48	162	38	34	260	411	135	55	13	10
2	42	24	50	220	38	38	292	402	135	45	13	11
3	42	34	52	192	38	40	309	390	131	49	13	12
4	21	28	48	174	38	38	325	354	111	45	14	12
5	20	30	49	140	37	40	360	314	106	47	14	12
6	19	23	54	100	36	36	337	292	108	45	14	13
7	19	23	54	70	38	36	250	292	104	43	12	13
8	19	23	52	60	30	36	245	292	101	41	13	14
9	19	25	50	53	25	36	250	295	101	40	14	15
10	55	23	52	47	20	43	260	287	97	38	14	15
11	51	22	50	47	25	53	266	290	91	34	13	16
12	40	25	45	45	30	53	260	292	91	33	14	17
13	36	26	35	45	35	55	260	292	89	30	10	16
14	34	26	30	43	35	47	260	292	84	30	12	14
15	35	28	25	45	35	49	260	348	84	28	10	15
16	30	38	30	49	35	53	260	343	81	27	11	15
17	30	27	32	51	35	62	266	343	81	25	10	12
18	21	29	32	53	35	73	287	325	78	24	12	12
19	20	32	33	49	35	106	325	292	78	22	10	12
20	21	34	35	47	35	139	287	292	75	27	10	12
21	23	38	35	47	35	187	271	240	73	21	10	12
22	23	29	41	43	35	240	250	230	70	22	11	11
23	23	26	43	41	35	245	230	235	68	22	10	11
24	23	27	41	43	35	260	271	218	65	22	12	11
25	21	29	43	41	35	303	271	211	63	22	11	11
26	21	25	35	40	36	303	271	213	61	21	12	12
27	20	25	30	41	34	287	390	201	58	19	11	14
28	23	25	25	38	33	240	414	183	56	16	10	12
29	23	26	25	38	-	235	450	178	53	16	10	12
30	23	26	35	42	-	225	444	146	51	15	11	12
31	30	-	44	38	-	250	-	148	-	14	10	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	846	55	19	27.3	0.205	0.24	1,680
November	834	38	22	27.8	.209	.23	1,650
December	1,253	54	25	40.4	.304	.35	2,490
Calendar year 1938	69,500	1,260	11	190	1.43	19.45	137,800
January	2,144	220	38	69.2	.520	.60	4,250
February	951	38	20	34.0	.256	.27	1,890
March	3,842	303	34	124	.932	1.07	7,620
April	8,881	450	245	296	2.23	2.49	17,620
May	8,641	411	146	279	2.10	2.42	17,140
June	2,579	135	51	86.0	.647	.72	5,120
July	938	55	14	30.3	.228	.26	1,860
August	364	14	10	11.7	.088	.10	722
September	386	17	10	12.9	.097	.11	766
Water year 1938-39	31,659	450	10	86.7	.652	8.86	62,810

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., on U. S. Forest Service bridge at mouth of canyon, 4 miles southwest of Port Hill.

Drainage area.- 29 square miles.

Records available.- May 1928 to September 1939 (except winters prior to 1935).

Extremes.- Maximum discharge during year, 455 second-feet May 15 (gage height, 3.47 feet); minimum discharge recorded, 6 second-feet Nov. 5, Aug. 28 to Sept. 5, Sept. 19-30, may have been less sometime during winter; minimum gage height recorded, 1.14 feet Nov. 5.
1928-39: Maximum daily discharge, 950 second-feet (estimated) June 15, 1933; maximum gage height, 6.55 feet (drift jam) June 15, 1933; minimum discharge, 3 second-feet Nov. 1-3, 28, Dec. 4-10, 1936, Jan. 6-8, 1937; minimum gage height, 0.91 foot Nov. 8, 1930.

Remarks.- Records good except those for periods of missing gage-height record or of ice effect, Nov. 30 to Dec. 4, Dec. 11-30, Jan. 21 to Mar. 9, which were computed on basis of weather records, one discharge measurement (result of which is shown for Feb. 6), and records for other tributaries to Kootenai River and are poor. No diversion above gage.

Rating table, June 5 to Sept. 30 (gage height, in feet, and discharge, in second-feet)

1.10	5.1	2.10	51	3.10	234
1.30	8.7	2.30	73	3.30	294
1.50	15.3	2.50	104	3.50	367
1.70	24.5	2.70	143		
1.90	36	2.90	186		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	7	14	9	17	9	8	55	274	151	53	12	6
2	7	13	10	31	9	8	62	293	134	49	12	6
3	14	14	11	27	9	8	69	345	121	49	12	6
4	12	13	12	17	9	8	65	341	119	53	11	6
5	8	9	14	14	9	8	60	284	112	48	11	9
6	7	11	13	13	9	8	56	259	102	43	10	14
7	7	13	11	12	9	8	54	237	99	40	10	10
8	7	11	14	12		8	53	232	99	38	10	8
9	7	11	16	11		8	53	240	94	35	10	7
10	7	11	10	11	7	8	52	237	101	34	10	7
11	19	8		11		8	51	237	101	33	9	9
12	20	10		10		8	51	245	99	31	9	12
13	24	10		10		8	50	268	104	29	9	8
14	13	10		10		8	52	320	106	28	8	8
15	11	10		10		8	55	372	110	26	8	8
16	10	11		10		8	58	385	121	25	8	8
17	9	11		10		8	62	327	110	23	8	7
18	9	10		10		8	74	280	101	22	8	7
19	9	10		10		10	92	264	106	21	8	6
20	9	10		10		14	104	236	108	20	8	6
21	9	8	9		8	24	134	223	101	19	8	6
22	9	8				31	164	240	96	18	7	6
23	8	7				37	169	230	92	17	7	6
24	8	7				45	185	224	83	17	7	6
25	10	7				58	173	217	77	16	7	6
26	9	7		9		53	164	222	68	15	7	6
27	19	7				43	169	223	63	15	7	6
28	14	7				39	216	225	62	14	7	6
29	15	7			-	36	306	249	62	14	6	6
30	17	8			-	37	310	211	60	14	6	6
31	16	-	11		-	44	-	178	-	12	6	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	350	24	7	11.3	0.390	0.45	694
November	293	14	7	9.8	.338	.38	581
December	311	16	-	10.0	.345	.40	617
Calendar year 1938	26,592	782	6	72.9	2.51	34.12	52,750
January	365	31	-	11.8	.407	.47	724
February	266	-	-	9.5	.328	.34	528
March	615	58	8	19.8	.683	.79	1,220
April	3,218	310	50	107	3.69	4.12	6,380
May	8,121	385	178	262	9.03	10.41	16,110
June	2,962	151	60	98.7	3.40	3.79	5,880
July	871	53	12	28.1	.969	1.12	1,730
August	266	12	6	8.6	.297	.34	528
September	218	14	6	7.3	.252	.28	432
Water year 1938-39	17,856	385	-	48.9	1.69	22.89	35,420

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 1939 (except winters prior to 1935).

Extremes.- Maximum discharge during year, 1,400 second-feet May 15 (gage height, 5.50 feet); minimum, 8 second-feet Sept. 2 (gage height, 1.38 feet).

1928-39: Maximum discharge, 3,060 second-feet June 14, 1933 (gage height, 7.15 feet), from rating curve extended above 1,600 second-feet; minimum, 4 second-feet Dec. 4-10, 1936; minimum gage height, 0.80 foot Sept. 15-18, 1929, Sept. 10, 1930.

Remarks.- Records good except those for periods of ice effect or of missing gage heights, Nov. 2, Nov. 6 to Mar. 9, which were computed on basis of weather records, three discharge measurements (results of which are shown for Dec. 3, Jan. 5, Feb. 6), and records for stations on nearby tributaries to Kootenai River and are poor. No diversion above gage.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.30	6	2.70	126	4.30	649
1.50	12	2.90	160	4.60	811
1.70	21	3.10	202	4.90	990
1.90	34	3.30	252	5.20	1,190
2.10	51	3.50	312	5.50	1,400
2.30	72	3.70	381		
2.50	97	4.00	505		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	90	26	75	32	23	172	811	389	153	25	9
2	10	80	29	125	32	23	195	899	352	137	24	9
3	30	73	32	100	32	23	221	1,160	342	147	23	9
4	46	61	36	80	33	23	209	1,020	352	261	22	9
5	23	45	40	68	33	23	187	739	335	200	20	11
6	16	35	45	50	33	23	174	580	309	160	19	30
7	15	45	42	44	33	23	166	514	315	140	18	18
8	13	42	50	41		23	162	565	335	126	18	13
9	12	40	75	40		23	168	654	306	116	18	11
10	12	38	65	38	18	24	164	634	338	108	18	10
11	87	35	55	37		24	160	639	319	101	17	15
12	98	38		37		25	166	685	306	93	15	37
13	122	36		36		25	160	811	322	87	14	19
14	59	36		34		25	172	1,060	345	85	14	15
15	43	36		34		24	212	1,190	349	77	14	13
16	36	36		33		25	224	1,190	428	71	13	14
17	30	35		33		25	234	960	385	66	12	13
18	28	35		33		28	269	723	338	62	12	11
19	26	35		33		37	345	691	385	57	12	10
20	26	34		33	24	57	393	585	374	54	12	10
21	26	30	30	30		74	501	542	328	51	11	10
22	25	24		27		88	575	670	290	47	11	10
23	24	22		25		103	546	665	275	45	10	10
24	24	20		27		136	575	649	278	42	10	10
25	36	19		31		187	457	629	266	40	10	10
26	33	17		37		174	397	644	231	36	10	10
27	88	17		37		153	453	659	209	34	10	10
28	65	16		34		136	723	675	195	32	9	10
29	81	18		33	-	129	1,160	755	187	29	9	10
30	98	22		33	-	131	960	604	174	27	9	9
31	94	-		33	-	140	-	457	-	26	9	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	1,337	122	10	43.1	0.616	0.71	2,650
November	1,110	90	16	37.0	.529	.59	2,200
December	1,095	75	-	35.3	.504	.58	2,170
Calendar year 1938	76,978	1,790	8	211	3.01	40.90	152,700
January	1,351	125	25	43.6	.623	.72	2,680
February	702	-	-	25.1	.359	.37	1,390
March	1,977	187	23	63.8	.911	1.05	3,920
April	10,500	1,160	160	350	5.00	5.58	20,830
May	23,059	1,190	457	744	10.6	12.22	45,740
June	9,357	428	174	312	4.46	4.98	18,560
July	2,710	261	26	87.4	1.25	1.44	5,380
August	448	25	9	14.5	.207	.24	889
September	385	37	9	12.8	.183	.20	764
Water year 1938-39	54,031	1,190	9	148	2.11	28.68	107,200

Peak discharge.- Apr. 29 (7 p.m.) 1,300 sec.-ft.; May 3 (10 p.m.) 1,330 sec.-ft.; May 15 (9-11:30 a.m.) 1,400 sec.-ft.

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 1939.

Extremes.- Maximum discharge during year, 1,400 second-feet May 15 (gage height, 4.13 feet); minimum discharge recorded, 16 second-feet Sept. 29 (gage height, 0.57 foot).
1928-39: 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 during period Nov. 10 to Dec. 3, 1936 (gage height, 0.27 foot).

Remarks.- Records good except those for periods of ice effect or of missing gage heights, Nov. 23 to Dec. 5, Dec. 12 to Jan. 3, Jan. 22-27, Feb. 2-4, Feb. 8 to Mar. 9, which were computed on basis of weather records, one discharge measurement (result of which is shown for Dec. 3), and records for stations on nearby streams and are fair. No diversion above gage. This station is one of international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-13)

0.50	13	1.70	149	2.90	590	4.10	1,360
.80	29	2.00	225	3.20	750	4.40	1,610
1.10	54	2.30	325	3.50	930		
1.40	92	2.60	446	3.80	1,130		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	77	26	60	30	25	169	840	406	162	32	18
2	20	55	28	100	30	25	192	900	367	151	31	18
3	49	52	30	80	30	25	219	1,100	352	156	30	19
4	50	42	32	55	30	25	211	1,020	348	276	29	19
5	28	28	37	47	30	25	192	840	340	197	28	23
6	25	27	42	42	30	25	179	695	322	176	27	38
7	22	42	38	39	30	25	169	605	322	156	27	27
8	21	38	45	38		25	167	630	355	141	27	22
9	20	35	68	38		25	171	695	322	126	27	21
10	20	35	57	36	20	25	169	668	348	117	27	20
11	53	30	48	35		26	169	640	333	107	25	23
12	63	36		35		26	181	695	311	99	24	32
13	84	34		34		26	176	780	318	91	24	25
14	42	34		33		27	192	960	333	88	23	22
15	34	34		33		26	240	1,130	359	81	22	22
16	30	35		32		27	250	1,160	487	74	22	22
17	27	34		32		27	263	960	455	69	22	21
18	25	34		32		28	300	780	398	64	22	20
19	25	34		32		32	352	750	406	61	21	18
20	25	33		32	26	39	398	640	420	57	21	18
21	25	29	32	29		53	502	600	355	55	20	18
22	24	24		27		66	570	750	308	53	20	18
23	24	23		25		79	536	750	294	50	20	18
24	24	22		27		106	536	695	322	46	20	18
25	30	21		30		143	460	668	304	44	20	19
26	28	20		35		156	411	668	266	42	20	18
27	45	20		35		153	451	695	234	40	20	18
28	38	19		32		136	668	695	214	38	19	17
29	45	21		31	-	130	1,020	750	197	35	18	17
30	62	23		31	-	134	960	605	179	33	18	17
31	99	-		31	-	143	-	478	-	32	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	1,129	99	20	36.4	0.375	0.43	2,240
November	991	77	19	33.0	.340	.38	1,970
December	1,091	68	-	35.2	.363	.42	2,160
Calendar year 1938	77,704	1,920	14	213	2.20	29.78	154,100
January	1,198	100	25	38.6	.408	.47	2,380
February	726	-	-	25.9	.267	.28	1,440
March	1,833	156	25	59.1	.609	.70	3,640
April	10,473	1,020	167	349	3.60	4.02	20,770
May	23,842	1,160	478	769	7.93	9.14	47,290
June	9,975	487	179	332	3.42	3.82	19,790
July	2,919	276	32	94.2	.971	1.12	5,790
August	724	32	18	23.4	.241	.28	1,440
September	626	38	17	20.9	.215	.24	1,240
Water year 1938-39	55,527	1,160	-	152	1.57	21.30	110,200

Peak discharge.- Apr. 29 (9 to 10 p.m.) 1,130 sec.-ft.; May 3 (10:30 p.m.) 1,240 sec.-ft.; May 15 (10 p.m.) 1,400 sec.-ft.; May 22 (3 p.m.) 840 sec.-ft.; May 29 (10 a.m.) 840 sec.-ft.

Clark Fork above Missoula, Mont.

Location.- Water-stage recorder, lat. 46°53', long. 113°56' (revised), in NW¼ sec. 19 (revised), T. 13 N., R. 18 W., 3 miles (revised) downstream from Blackfoot River and 3 miles (revised) east of Missoula.

Drainage area.- 5,740 square miles.

Records available.- March 1929 to September 1939.

Average discharge.- 10 years, 2,272 second-feet.

Extremes.- Maximum discharge during year, 11,000 second-feet May 5 (gage height, 7.10 feet); minimum, 260 second-feet Feb. 10 (gage height, 1.05 feet); minimum daily, 360 second-feet (estimated) Feb. 10, 12.

1929-39: 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 jammed above gage).

Remarks.- Records good except those for period of ice effect, Dec. 10 to Mar. 10, which were computed on basis of two discharge measurements, gage heights, weather records, and records for station below Missoula and are fair. Discharge for Nov. 24, 25, July 27, 28, 31, Aug. 1, computed on basis of records for station below Missoula. Observer's daily readings used Nov. 23, July 25, 26, 29, 30 Aug. 23. Regulation from operation of power plant at Bonner. Several diversions for irrigation above station.

Rating table, water year 1938-39 except period of ice effect (gage height, in feet, and discharge, in second-feet)

1.3	360	2.1	940	3.5	2,810	5.0	5,770
1.5	470	2.5	1,390	4.0	3,670	6.0	8,140
1.8	690	3.0	2,060	4.5	4,680	7.0	10,700

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,050	1,510	1,470	1,230	890	1,040	2,580	9,130	5,660	2,650	1,080	770
2	1,110	1,560	1,440	1,190	930	1,010	2,810	9,380	5,110	2,500	1,060	762
3	1,060	1,550	1,490	1,230	880	1,040	3,050	9,380	4,680	2,350	990	754
4	1,080	1,600	1,470	1,150	890	1,030	3,130	9,900	4,360	2,350	990	770
5	1,080	1,620	1,230	1,110	980	880	3,130	10,400	4,580	2,280	1,010	778
6	1,150	1,550	1,310	1,110	870	960	2,970	10,200	5,220	2,200	940	754
7	1,110	1,490	1,390	1,060	600	1,020	2,730	9,130	4,890	2,200	931	778
8	1,110	1,480	1,420	1,080	400	1,140	2,730	8,140	4,580	2,130	970	794
9	1,120	1,510	1,510	1,040	400	1,020	2,650	7,420	4,260	2,060	980	786
10	1,120	1,490	1,510	1,060	360	1,080	2,730	7,180	4,280	1,990	990	802
11	1,130	1,520	1,330	1,070	460	1,150	2,650	6,700	3,620	1,920	990	818
12	1,230	1,380	1,110	1,100	360	1,210	2,580	6,460	3,760	1,920	1,020	810
13	1,350	1,380	820	1,080	950	1,320	2,650	6,230	3,670	1,920	913	868
14	1,310	1,330	950	1,070	1,060	1,330	2,580	6,000	3,570	1,780	922	960
15	1,420	1,470	890	1,060	1,110	1,200	2,580	6,230	3,480	2,280	940	1,050
16	1,390	1,480	1,170	1,040	980	1,210	2,500	6,940	3,760	1,490	931	1,020
17	1,620	1,530	1,150	990	1,070	1,260	2,500	7,660	3,960	1,720	850	1,020
18	1,420	1,570	1,210	1,000	1,000	1,520	2,160	8,380	4,060	1,750	859	960
19	1,550	1,470	1,010	1,030	1,060	1,770	2,480	7,900	4,580	1,720	868	960
20	1,510	1,430	1,100	1,010	1,010	2,890	2,810	7,420	4,680	1,690	802	960
21	1,480	1,490	970	970	980	3,350	3,130	6,700	4,580	1,650	826	922
22	1,490	1,380	980	790	910	4,060	3,480	6,230	4,360	1,820	826	1,010
23	1,510	1,270	1,040	710	990	3,970	4,160	6,700	4,260	1,420	826	1,020
24	1,490	1,350	1,260	920	1,020	3,940	4,890	6,700	4,060	1,170	754	970
25	1,440	1,050	1,110	1,020	1,030	4,240	4,740	6,230	3,960	1,480	794	931
26	1,490	1,390	1,030	990	1,030	3,840	4,780	5,660	3,670	1,430	770	950
27	1,490	1,290	870	830	1,060	3,480	4,680	5,440	3,480	1,200	730	980
28	1,470	1,220	1,020	1,060	1,030	2,890	4,780	5,440	3,200	1,170	859	1,070
29	1,460	1,060	1,050	1,040	-	2,580	5,550	5,550	2,970	1,150	714	1,070
30	1,480	1,340	1,150	1,030	-	2,420	7,420	6,000	2,810	1,130	778	1,060
31	1,480	-	1,220	1,020	-	2,420	-	6,230	-	1,100	762	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	41,200	1,620	1,050	1,329	81,720
November	42,760	1,620	1,050	1,425	84,810
December	36,680	1,510	820	1,183	72,750
Calendar year 1938	1,047,860	19,100	350	2,871	2,078,000
January	32,090	1,230	710	1,035	63,650
February	24,310	1,110	360	868	48,220
March	62,270	4,240	880	2,009	123,500
April	101,610	7,420	2,160	3,387	201,500
May	227,060	10,400	5,440	7,325	450,400
June	124,130	5,660	2,810	4,138	246,200
July	55,620	2,650	1,100	1,794	110,300
August	27,675	1,080	714	893	54,890
September	27,157	1,070	754	905	53,870
Water year 1938-39	802,562	10,400	360	2,199	1,592,000

Clark Fork below Missoula, Mont.

Location.- Water-stage recorder, lat. 46°52' (revised), 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 1939.

Average discharge.- 4,196 second-feet.

Extremes.- Maximum discharge during year, 22,000 second-feet May 5 (gage height, 7.29 feet); minimum, 887 second-feet Aug. 29 (gage height, 0.67 foot).
1929-39: 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 ice effect, Feb. 7-12 (computed on basis of gage height, weather records, and records for stations above Missoula and at St. Regis), and those for period of observer's once-daily gage readings, Dec. 5-12, which are good. Slight regulation from operation of power plant at Bonner. Many diversions for irrigation above station.

Rating tables, water year 1938-39 except period of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 12, Aug. 26 to Sept. 30		Feb. 13 to Aug. 25					
0.8	1,030	0.8	1,040	3.0	5,090	5.5	13,950
1.0	1,270	1.1	1,440	3.5	6,520	6.0	16,070
1.3	1,680	1.5	2,050	4.0	8,170	6.5	18,240
1.7	2,300	2.0	2,910	4.5	9,980	7.2	21,510
2.1	3,010	2.5	3,930	5.0	11,890		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,600	2,560	2,470	2,380	1,620	1,790	4,720	19,600	13,500	4,840	1,580	1,110
2	1,640	2,640	2,560	2,300	1,620	1,790	5,090	19,600	11,500	4,480	1,580	1,070
3	1,650	2,640	2,560	2,300	1,570	1,840	5,630	19,100	9,980	4,260	1,580	1,080
4	1,710	2,640	2,560	2,220	1,680	1,810	6,070	20,500	9,610	4,040	1,520	1,070
5	1,700	2,730	1,980	2,220	1,710	1,670	6,220	21,500	9,610	4,040	1,440	1,050
6	1,820	2,640	2,470	2,140	1,720	1,640	5,920	21,000	10,700	3,930	1,410	1,070
7	1,860	2,560	2,560	2,090	1,320	1,720	5,350	18,200	9,980	3,820	1,300	1,070
8	1,890	2,560	2,560	2,030	997	1,860	5,220	16,100	9,240	3,710	1,380	1,110
9	1,920	2,560	2,920	2,040	1,080	1,700	4,960	14,400	8,520	3,500	1,360	1,050
10	1,900	2,560	2,920	2,040	1,230	1,780	4,960	14,000	8,520	3,300	1,400	1,130
11	1,960	2,560	2,730	2,090	1,310	1,840	4,840	13,500	7,650	3,300	1,380	1,080
12	2,000	2,380	2,380	2,080	1,300	1,970	4,720	12,700	7,480	3,300	1,400	1,160
13	2,220	2,300	2,040	2,090	1,860	2,210	4,720	12,700	7,650	3,300	1,290	1,200
14	2,220	2,300	1,780	2,030	2,130	2,210	4,600	12,700	7,480	3,200	1,240	1,430
15	2,380	2,470	1,940	2,030	2,130	2,050	4,370	13,500	7,320	3,600	1,270	1,650
16	2,380	2,560	2,080	2,030	1,970	2,030	4,260	15,600	7,820	2,820	1,260	1,700
17	2,730	2,640	2,380	1,960	2,000	2,050	4,260	17,800	8,340	2,820	1,160	1,710
18	2,470	2,730	2,220	1,960	1,920	2,290	4,150	19,100	8,000	2,820	1,130	1,650
19	2,560	2,560	2,110	2,000	1,950	2,630	4,370	18,700	8,170	2,630	1,130	1,570
20	2,560	2,560	2,140	1,980	1,950	3,600	4,960	18,200	8,170	2,630	1,090	1,550
21	2,560	2,560	2,120	1,920	1,910	4,260	5,920	15,600	8,170	2,540	1,030	1,530
22	2,560	2,380	2,110	1,710	1,780	5,090	7,150	14,400	8,000	2,630	1,080	1,550
23	2,560	2,380	2,220	1,570	1,810	5,490	8,700	14,400	8,000	2,290	1,030	1,580
24	2,560	1,880	2,380	1,760	1,860	5,630	9,980	14,000	7,820	1,920	1,030	1,510
25	2,560	1,800	2,300	1,940	1,910	6,220	9,980	12,700	7,320	2,130	1,020	1,500
26	2,560	2,040	2,040	1,840	1,920	6,370	9,240	11,900	6,830	2,130	1,070	1,500
27	2,560	1,950	1,650	1,650	1,840	6,220	8,880	11,500	6,370	1,870	1,040	1,510
28	2,560	1,860	1,780	1,840	1,840	5,490	9,060	12,300	5,780	1,770	1,170	1,580
29	2,470	2,040	2,080	1,940	-	4,840	10,700	13,100	5,220	1,730	1,010	1,620
30	2,470	2,380	2,220	1,920	-	4,600	15,200	14,800	4,960	1,670	1,080	1,610
31	2,560	-	2,380	1,770	-	4,600	-	15,200	-	1,630	1,070	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	69,150	2,730	1,600	2,231	137,200
November	72,420	2,730	1,800	2,414	143,600
December	70,640	2,920	1,650	2,279	140,100
Calendar year 1938	1,896,340	35,700	810	5,195	3,761,000
January	61,870	2,380	1,570	1,996	122,700
February	47,937	2,130	997	1,712	95,080
March	99,290	6,370	1,640	3,203	196,900
April	194,200	15,200	4,150	6,473	385,200
May	488,400	21,500	11,500	15,750	968,700
June	247,710	13,500	4,960	8,257	491,300
July	92,660	4,840	1,620	2,989	183,800
August	38,530	1,580	1,010	1,243	76,420
September	41,000	1,710	1,050	1,367	81,320
Water year 1938-39	1,523,807	21,500	997	4,175	3,022,000

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 1939.

Average discharge.- 23 years, 7,367 second-feet.

Extremes.- Maximum discharge during year, 26,100 second-feet May 5 (gage height, 12.81 feet); minimum, about 1,220 second-feet Feb. 9 (gage height, 3.58 feet), stage-discharge relation affected by ice.

1910-23, 1929-39: Maximum discharge observed, 62,800 second-feet May 30, 31, 1913 (gage height, 19.1 feet); minimum discharge, 1,050 second-feet Feb. 19-22, 1929 (stage-discharge relation affected by ice).

Remarks.- Records excellent except those for periods of ice effect, Feb. 9, 10 (computed on basis of gage heights and records for station below Missoula), and those for periods of missing gage heights, Feb. 1, 3, 5-7 (computed on basis of records for station below Missoula). Discharge based on observer's once-daily readings Feb. 2, 4. Many diversions and slight regulation above station.

Rating tables, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 8				Feb. 9 to Sept. 30					
4.3	1,770	5.1	2,990	4.1	1,600	6.0	4,540	9.0	12,500
4.5	2,040	5.4	3,510	4.5	2,000	6.5	5,610	10.0	15,800
4.8	2,510			4.9	2,530	7.0	6,730	11.5	21,120
				5.5	3,560	8.0	9,490	12.8	26,100

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,040	3,080	2,750	2,910	2,280	2,170	6,730	21,900	17,200	6,500	2,170	1,600
2	2,040	3,160	2,990	2,990	2,120	2,230	7,220	24,100	15,100	6,050	2,170	1,640
3	2,120	3,240	3,080	2,910	2,160	2,170	7,750	24,500	13,400	5,830	2,110	1,600
4	2,190	3,240	3,080	2,990	2,190	2,230	8,310	25,300	12,200	5,500	2,110	1,640
5	2,190	3,240	3,080	2,910	2,080	2,170	8,600	26,100	11,900	5,280	2,110	1,600
6	2,270	3,330	2,990	2,830	1,980	2,060	8,310	25,700	12,500	5,280	2,000	1,640
7	2,350	3,240	2,990	2,750	1,880	2,060	7,750	23,800	12,500	5,060	2,000	1,640
8	2,430	3,160	3,160	2,670	1,770	2,110	7,220	21,100	11,600	4,860	1,890	1,640
9	2,430	3,160	3,330	2,670	1,280	2,170	6,970	19,700	11,000	4,640	1,940	1,690
10	2,510	3,080	3,600	2,670	1,790	2,060	6,730	18,600	10,700	4,440	1,940	1,640
11	2,590	3,080	3,600	2,670	2,620	2,170	6,730	17,900	10,100	4,330	1,940	1,640
12	2,750	3,080	3,420	2,670	2,730	2,230	6,730	17,200	9,790	4,230	1,890	1,640
13	2,830	2,910	2,910	2,670	2,370	2,370	6,500	17,200	9,790	4,130	1,940	1,740
14	2,990	2,910	2,670	2,500	2,370	2,530	6,500	16,300	9,490	4,130	1,890	1,790
15	2,990	2,910	2,510	2,590	2,730	2,530	6,270	17,500	9,490	4,130	1,840	2,000
16	3,080	3,080	2,670	2,590	2,700	2,450	6,270	18,900	9,490	4,130	1,840	2,110
17	3,080	3,160	2,830	2,590	2,530	2,370	6,270	20,600	10,100	3,560	1,790	2,170
18	3,330	3,160	2,990	2,510	2,450	2,450	6,270	22,200	10,100	3,650	1,740	2,230
19	3,160	3,240	2,910	2,510	2,370	2,780	6,730	22,600	9,790	3,470	1,690	2,170
20	3,160	3,240	2,750	2,590	2,300	3,300	7,480	21,900	10,100	3,380	1,690	2,110
21	3,160	3,160	2,830	2,510	2,300	4,440	8,890	20,400	10,100	3,300	1,690	2,060
22	3,160	3,160	2,750	2,430	2,230	5,390	10,400	18,200	10,100	3,300	1,640	2,060
23	3,160	2,990	2,670	2,270	2,110	6,500	12,200	17,200	9,790	3,300	1,640	2,110
24	3,160	2,830	2,750	2,120	2,170	6,730	13,100	17,200	9,790	2,870	1,640	2,110
25	3,160	2,910	2,990	2,190	2,230	7,480	13,800	16,500	9,190	2,620	1,640	2,060
26	3,160	2,270	2,830	2,350	2,230	8,310	12,800	15,500	8,890	2,780	1,600	2,000
27	3,160	2,510	2,510	2,350	2,230	8,030	12,200	14,800	8,310	2,700	1,640	2,000
28	3,160	2,430	2,350	2,190	2,230	7,480	12,500	15,100	7,750	2,530	1,600	2,060
29	3,080	2,430	2,430	2,430	-	6,730	14,400	15,800	7,220	2,370	1,690	2,110
30	3,080	2,510	2,670	2,510	-	6,270	17,900	17,200	6,730	2,300	1,600	2,110
31	3,080	-	2,830	2,430	-	6,270	-	17,900	-	2,230	1,600	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	87,050	3,330	2,040	2,808	172,700
November	89,900	3,330	2,270	2,997	178,300
December	89,920	3,600	2,350	2,901	178,400
Calendar year 1938	2,530,670	45,700	1,260	6,933	5,020,000
January	80,060	2,990	2,120	2,583	158,800
February	62,530	2,780	1,280	2,233	124,000
March	120,240	8,310	2,060	3,879	238,500
April	269,530	17,900	6,270	8,984	534,600
May	609,600	26,100	14,800	19,630	1,209,000
June	314,210	17,200	6,730	10,470	623,200
July	122,880	6,500	2,230	3,984	243,700
August	56,670	2,170	1,600	1,828	112,400
September	56,610	2,230	1,600	1,887	112,300
Water year 1938-39	1,959,200	26,100	1,280	5,368	3,886,000

Clark Fork near Plains, Mont.

Location.- Water-stage recorder, lat. 47°26', long. 114°51', on lot. 7, SW¼ sec. 1 (revised), T. 19 N., R. 26 W., 2 miles (revised) upstream from Plains and 6 miles (revised) downstream from Flathead River.

Drainage area.- 19,900 square miles.

Records available.- October 1910 to September 1939.

Average discharge.- 23 years (1912-15, 1917-19, 1920-24, 1925-39), 18,620 second-feet.

Extremes.- Maximum discharge during year, 68,000 second-feet about May 20 (gage height, 13.07 feet, from recorded range in stage); minimum discharge recorded, 4,430 second-feet Aug. 23 (gage height, 3.31 feet).
1910-39: 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).

Remarks.- Records good except those for periods of missing or faulty gage heights, Oct. 1-11, 17, Nov. 5 to Dec. 18, Dec. 23 to Feb. 19, Mar. 3 to Apr. 23, May 8-20, July 29 to Aug. 21, which were computed on basis of power-plant records at Thompson Falls and sum of flow of Clark Fork at St. Regis and Flathead River near Polson and are fair. Stage-discharge relation affected by ice Oct. 16, Feb. 21, 22. Many diversions above station for irrigation. Partial regulation since April 1938 to Kerr Dam, 4 miles below Flathead Lake.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

3.5	5,060	6.0	15,060	11.0	49,000
3.7	5,770	7.0	20,100	12.0	57,500
4.0	6,870	8.0	26,000	13.0	67,000
4.5	8,800	9.0	33,000		
5.0	10,800	10.0	40,500		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,500	6,680	5,700	6,200	7,800	7,430	11,000	45,600	58,400	25,400	8,800	7,240
2	9,400	6,680	5,700	7,500	7,600	7,240	12,000	51,500	55,800	23,500	8,600	7,060
3	8,400	6,680	5,700	7,800	7,700	7,200	12,600	54,000	53,200	21,800	8,600	6,870
4	8,000	6,680	5,800	7,800	7,600	7,200	13,300	56,600	51,500	21,200	7,600	6,870
5	7,700	6,400	5,800	7,800	7,700	7,100	14,000	59,300	49,800	19,600	6,800	6,870
6	7,200	6,500	5,700	7,800	7,400	7,000	14,800	60,200	49,000	19,000	5,700	7,060
7	7,200	6,600	5,700	7,700	6,500	6,900	15,600	61,200	48,100	19,600	5,800	7,240
8	7,300	6,400	5,700	7,600	5,900	6,800	15,600	62,000	46,400	20,100	6,000	7,240
9	7,200	6,200	5,700	7,600	5,200	6,800	15,000	60,000	43,800	20,100	5,600	6,870
10	7,300	6,100	5,900	7,500	5,400	6,700	15,000	59,000	40,500	19,000	6,000	7,060
11	7,500	6,000	6,100	7,500	6,400	6,700	15,100	57,000	36,800	19,000	6,400	7,060
12	7,620	5,900	6,300	7,400	7,800	6,700	15,200	56,000	33,800	18,500	7,000	7,060
13	7,810	5,800	6,100	7,400	8,700	6,700	15,300	56,000	27,300	16,400	7,600	7,240
14	8,000	5,700	5,800	7,400	9,300	6,800	15,400	56,000	26,000	13,700	8,000	7,430
15	8,200	5,700	5,700	7,300	9,600	6,800	15,500	57,000	26,000	13,300	8,000	7,240
16	8,300	5,800	5,700	7,200	9,800	6,800	15,700	60,000	27,300	12,900	8,000	7,430
17	8,400	5,900	5,700	7,200	9,600	6,800	15,900	62,000	29,400	9,200	7,810	7,430
18	8,600	6,100	5,700	7,200	9,600	6,800	16,100	64,000	35,200	8,800	7,620	7,620
19	8,800	6,200	5,950	7,200	9,700	7,000	16,700	67,000	39,800	9,200	7,240	7,620
20	8,600	6,200	5,770	7,400	9,600	7,500	17,200	68,000	40,500	10,000	6,320	7,620
21	8,600	6,000	5,770	8,000	9,000	8,400	18,800	66,000	39,800	10,000	6,870	7,620
22	8,600	5,900	6,500	8,500	8,600	9,300	21,500	63,000	39,800	10,800	5,770	7,620
23	8,400	5,800	6,900	8,400	8,200	10,000	23,500	62,100	39,000	10,400	5,770	7,620
24	8,400	5,800	7,500	8,300	8,000	10,400	26,600	61,200	39,000	10,800	6,680	7,620
25	8,400	5,800	7,800	8,200	7,810	11,000	28,000	59,300	38,800	10,400	6,680	7,620
26	8,000	5,800	6,800	8,400	7,810	12,200	28,600	57,500	28,000	10,800	6,870	7,430
27	6,870	5,800	5,700	8,300	7,620	12,000	29,400	55,800	29,400	10,800	6,680	7,430
28	6,680	5,700	6,000	8,200	7,620	11,300	30,000	54,900	30,800	10,400	6,870	7,430
29	6,680	5,700	6,900	8,200	-	11,000	33,000	54,900	30,000	10,000	6,870	7,620
30	6,680	5,700	6,800	8,200	-	10,700	38,200	56,600	29,400	9,500	7,240	7,620
31	6,680	-	5,800	8,000	-	10,800	-	58,400	-	9,200	7,240	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	245,020	9,500	6,680	7,903	486,000
November	182,220	6,680	5,700	6,074	361,400
December	188,690	7,800	5,700	6,087	374,300
Calendar year 1938	6,300,740	86,900	4,500	17,260	12,500,000
January	239,200	8,500	6,200	7,716	474,400
February	223,560	9,800	5,200	7,984	443,400
March	256,070	12,200	6,700	8,260	507,900
April	574,600	38,200	11,000	19,150	1,140,000
May	1,822,100	68,000	45,600	58,780	3,614,000
June	1,157,600	58,400	26,000	38,590	2,296,000
July	453,400	25,400	8,800	14,630	899,300
August	217,030	8,800	5,600	7,001	430,500
September	219,760	7,620	6,870	7,325	435,900
Water year 1938-39	5,779,250	68,000	5,200	15,830	11,460,000

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 1939.
Average discharge.- 11 years, 19,220 second-feet.
Extremes.- Maximum discharge during year, 73,800 second-feet May 20 (gage height, 32.30 feet); minimum, 3,110 second-feet (regulated) Feb. 8 (gage height, 9.06 feet), from rating curve extended below 4,000 second-feet.

1928-39: 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 except those for Dec. 13, 14, Feb. 9, 10, which are fair. Discharge for days of ice effect, Dec. 13, 14, Feb. 9, 10, and of doubtful gage-height record, Aug. 27 to Sept. 5, computed on basis of weather records, records for Clark Fork near Plains, Mont., for Pend Oreille Lake, and for Pend Oreille River at Priest River, Idaho. Operation of power plant at Thompson Falls causes diurnal fluctuation during low-water periods. Considerable water diverted from tributaries upstream for irrigation.

Rating table, water year 1938-39 except days of ice effect (gage height, in feet, and discharge, in second-feet)

9.00	3,040	11.50	6,890	15.00	14,110	20.00	27,830	30.00	64,350
9.50	3,740	12.00	7,800	16.00	16,500	22.00	34,460	32.00	72,530
10.00	4,490	12.50	8,750	17.00	19,050	24.00	41,460	33.00	76,730
10.50	5,240	13.00	9,750	18.00	21,780	26.00	48,780		
11.00	6,030	14.00	11,860	19.00	24,710	28.00	56,430		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,350	7,250	5,710	6,030	8,560	8,370	15,500	49,900	63,200	31,400	11,000	8,000
2	10,200	7,430	6,200	5,240	6,750	8,160	16,500	56,000	62,000	28,200	10,200	7,900
3	8,950	7,430	6,370	8,370	6,180	7,990	17,500	61,600	59,600	26,600	10,400	7,800
4	10,600	7,430	6,540	8,370	8,370	7,990	18,500	66,000	57,200	25,000	9,950	7,800
5	7,610	7,430	6,540	8,560	8,560	7,800	18,800	68,400	55,300	23,800	9,950	7,900
6	8,750	7,250	6,540	8,560	8,560	7,800	19,000	69,200	54,100	21,600	9,750	7,990
7	7,800	6,690	6,710	8,560	8,560	7,610	19,000	69,200	53,300	21,800	8,370	7,990
8	8,180	7,070	6,370	8,370	6,370	7,430	18,800	67,600	52,200	22,400	7,070	7,800
9	8,180	7,250	6,710	6,370	7,000	7,430	18,500	66,000	49,900	22,400	7,800	7,800
10	7,250	7,070	6,890	8,180	6,000	7,430	18,500	64,400	47,300	22,400	7,610	7,610
11	7,990	6,890	7,070	8,370	5,710	7,250	18,500	63,200	44,300	21,500	7,250	7,610
12	8,180	6,540	7,250	8,180	5,710	7,430	18,800	62,400	41,100	21,200	7,610	7,800
13	8,560	6,540	7,000	8,370	7,800	7,430	19,000	62,000	37,600	20,400	9,350	8,370
14	8,560	6,890	6,500	8,370	9,750	7,610	18,800	61,600	33,100	18,300	9,350	8,180
15	8,560	6,540	5,710	8,370	10,200	7,610	18,800	62,800	31,800	16,000	8,750	7,990
16	9,150	6,370	5,240	7,990	10,800	7,610	19,000	64,400	31,800	15,500	8,750	7,990
17	8,560	6,540	6,200	8,180	10,800	7,430	19,600	66,800	32,800	14,300	9,150	7,990
18	8,560	7,430	6,710	8,180	10,800	7,250	20,100	69,600	35,100	11,600	8,950	8,750
19	8,950	6,370	5,090	8,180	11,000	7,430	20,900	72,500	40,700	11,200	8,560	8,180
20	9,150	6,710	6,540	8,180	10,800	7,600	22,600	73,400	43,600	11,200	8,370	8,180
21	9,350	6,710	6,710	8,560	10,200	8,180	24,700	73,000	44,300	11,400	8,370	8,370
22	9,350	6,710	6,710	8,750	9,750	9,350	28,200	71,300	44,300	11,600	7,610	8,180
23	8,950	6,710	7,610	8,950	9,550	10,800	30,800	69,200	43,600	11,900	7,430	8,370
24	8,950	6,540	8,370	8,950	9,150	12,700	32,800	67,600	43,300	11,900	7,070	8,370
25	8,950	6,370	6,200	8,750	9,150	14,800	34,800	66,400	41,800	11,000	7,070	8,560
26	8,950	6,540	7,250	8,750	8,750	16,000	35,800	64,400	36,500	11,200	7,610	8,180
27	8,560	6,200	8,370	8,950	8,560	16,500	36,500	62,400	32,400	11,900	7,600	7,990
28	7,430	5,870	8,560	8,950	8,560	16,000	38,300	61,200	33,400	11,900	7,700	7,990
29	7,430	6,030	7,990	8,750	-	15,800	41,500	60,000	33,400	11,600	7,800	7,990
30	7,430	5,870	7,430	8,750	-	15,300	46,600	61,200	32,800	11,400	8,000	8,370
31	7,250	-	6,370	8,950	-	14,800	-	62,400	-	11,200	8,100	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	265,690	10,600	7,250	8,571	527,000
November	202,670	7,430	5,870	6,762	402,400
December	209,460	8,560	5,090	6,757	415,500
Calendar year 1938	7,202,870	95,800	3,460	19,730	14,290,000
January	258,040	8,950	5,240	8,324	511,800
February	245,950	11,000	5,710	8,784	487,800
March	303,110	16,500	7,250	9,778	601,200
April	726,700	46,600	15,500	24,220	1,441,000
May	2,016,900	73,400	49,900	65,060	4,000,000
June	1,311,800	63,200	31,800	43,730	2,602,000
July	534,000	31,400	11,000	17,230	1,059,000
August	262,550	11,000	7,070	8,469	520,800
September	242,000	8,750	7,610	8,067	480,000
Water year 1938-39	6,579,070	73,400	5,090	18,020	13,050,000

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 Railway Station at Hope. Zero 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 1939. March 1914 to September 1922, at site at Sandpoint.

Extremes.- Maximum water-surface elevation during year, 2,059.98 feet May 24; minimum, 2,047.30 feet Dec. 1.
1921-39: Maximum water-surface elevation, 2,068.78 feet June 21, 1933; minimum, 2,046.47 feet Feb. 17, 1936.
Maximum known water-surface elevation, 2,076.08 feet, June 1894.

Remarks.- Records excellent. Considerable water diverted from tributaries of Clark Fork for irrigation.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	47.91	47.78	47.32	47.65	47.95	48.10	49.31	54.10	59.46	54.56	49.29	47.75
2	47.94	47.74	47.34	47.62	47.94	48.08	49.43	54.61	59.40	54.37	49.19	47.75
3	48.00	47.78	47.38	47.64	47.93	48.05	49.58	55.20	59.29	54.16	49.11	47.71
4	48.01	47.79	47.38	47.70	47.91	48.03	49.74	55.83	59.18	53.93	49.01	47.71
5	48.00	47.75	47.40	47.72	47.92	48.00	49.90	56.43	59.03	53.69	48.96	47.74
6	48.00	47.72	47.41	47.76	47.92	47.97	50.01	56.95	58.84	53.43	48.89	47.71
7	47.96	47.71	47.41	47.78	47.93	47.94	50.11	57.41	58.65	53.16	48.75	47.69
8	47.94	47.68	47.41	47.80	48.01	47.90	50.21	57.77	58.46	52.96	48.66	47.72
9	47.92	47.67	47.45	47.81	48.04	47.86	50.29	58.04	58.27	52.77	48.53	47.71
10	47.89	47.66	47.47	47.82	48.04	47.82	50.35	58.26	58.04	52.62	48.44	47.70
11	47.92	47.63	47.47	47.82	48.02	47.81	50.40	58.41	57.80	52.48	48.35	47.71
12	47.90	47.61	47.46	47.83	48.02	47.80	50.47	58.54	57.49	52.35	48.26	47.69
13	47.90	47.59	47.46	47.83	47.98	47.79	50.55	58.63	57.17	52.16	48.22	47.69
14	47.88	47.56	47.48	47.84	48.00	47.79	50.60	58.73	56.74	52.04	48.19	47.72
15	47.84	47.56	47.47	47.85	48.07	47.78	50.64	58.84	56.35	51.83	48.19	47.73
16	47.83	47.56	47.42	47.85	48.12	47.77	50.68	58.97	56.04	51.64	48.14	47.70
17	47.83	47.56	47.40	47.87	48.16	47.75	50.70	59.12	55.74	51.42	48.11	47.73
18	47.83	47.54	47.40	47.89	48.20	47.75	50.77	59.29	55.51	51.17	48.11	47.74
19	47.82	47.54	47.38	47.90	48.21	47.75	50.83	59.46	55.41	50.95	48.06	47.74
20	47.83	47.55	47.35	47.90	48.23	47.75	50.94	59.65	55.42	50.71	48.05	47.75
21	47.84	47.55	47.35	47.90	48.23	47.78	51.09	59.79	55.45	50.51	48.01	47.75
22	47.85	47.53	47.37	47.89	48.23	47.82	51.28	59.90	55.47	50.36	47.99	47.74
23	47.87	47.50	47.40	47.89	48.21	47.90	51.54	59.95	55.49	50.19	47.95	47.75
24	47.86	47.49	47.42	47.92	48.20	48.02	51.84	59.97	55.50	50.06	47.90	47.75
25	47.89	47.46	47.50	47.95	48.20	48.21	52.15	59.95	55.49	49.93	47.87	47.71
26	47.88	47.43	47.47	47.94	48.19	48.44	52.43	59.90	55.39	49.80	47.84	47.74
27	47.90	47.41	47.54	47.95	48.17	48.64	52.66	59.83	55.17	49.68	47.80	47.73
28	47.86	47.39	47.58	47.96	48.13	48.82	52.93	59.72	54.97	49.61	47.80	47.71
29	47.83	47.36	47.61	47.96	-	48.97	53.27	59.65	54.82	49.54	47.79	47.71
30	47.82	47.33	47.63	47.96	-	49.10	53.64	59.59	54.71	49.45	47.73	47.71
31	47.81	-	47.63	47.96	-	49.21	-	59.52	-	49.39	47.76	

Note.- Add 2,000 feet to obtain elevation 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. Zero of gage, 2,000 feet above mean sea level. 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 and October 1921 to September 1939. June 1903 to September 1921, at Newport, Wash., 6 miles downstream; records equivalent.

Average discharge.- 36 years, 25,390 second-feet, adjusted for storage in Pend Oreille Lake.

Extremes.- Maximum discharge during year, 75,800 second-feet May 23 (elevation, 2,056.08 feet); minimum (not determined) occurred during period of ice effect.

1903-39: Maximum discharge, 136,000 second-feet June 15, 1913, 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 excellent except those for periods of ice effect, Dec. 26 to Jan. 1, Jan. 15-22, Jan. 24 to Feb. 19 (computed on basis of one discharge measurement, gage heights, weather records, and records for station below Z Canyon), and those for periods of backwater effect from logs, Oct. 1-31, Sept. 6-30 (computed on basis of records for station below Z Canyon), all of which are fair. Many small diversions from upper tributaries for irrigation. Flow subject to natural regulation in several lakes and to slight regulation during log-driving seasons, owing to operations of flash dam on tributary of Priest River. Gage-height record collected in cooperation with U. S. Weather Bureau.

Rating table, water year 1938-39 except for periods of ice effect and periods of backwater from logs (gage height, in feet, and discharge, in second-feet)

44.0	4,750	46.0	12,100	49.0	27,500	54.0	61,200
44.5	6,200	47.0	16,800	50.0	33,600	56.1	76,000
45.0	7,950	48.0	21,800	52.0	47,200		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,800	9,590	7,720	9,000	9,800	11,000	16,200	38,800	72,000	41,200	15,600	8,820
2	9,500	9,300	7,680	9,220	9,900	11,100	16,700	41,800	71,700	40,000	15,200	8,860
3	9,300	9,190	7,530	9,060	9,900	11,100	16,800	44,900	71,200	38,600	15,100	8,860
4	9,300	9,260	7,910	9,430	9,900	11,400	17,700	48,900	70,100	37,400	14,400	8,780
5	9,300	9,300	7,800	9,670	10,000	10,800	18,500	52,700	68,900	36,000	13,800	8,540
6	9,400	9,140	8,070	9,670	9,200	10,700	19,100	56,100	67,800	34,700	13,700	8,700
7	9,400	9,060	8,180	9,840	7,400	10,600	19,400	58,900	66,700	33,100	13,600	8,800
8	9,400	8,980	8,180	9,920	6,000	10,600	19,800	61,000	65,600	32,100	13,000	8,700
9	9,500	8,980	8,030	9,960	5,800	10,300	20,000	63,200	64,500	31,300	12,700	8,800
10	9,400	8,900	8,180	9,960	6,000	10,100	20,500	64,700	63,000	30,400	12,100	8,800
11	9,500	8,900	8,380	9,840	7,000	9,960	20,900	65,600	61,300	29,400	11,700	8,600
12	9,600	8,620	8,260	9,880	8,000	10,200	21,000	66,400	59,500	29,000	11,100	8,700
13	9,700	8,580	8,300	9,920	9,000	10,100	21,400	66,900	57,500	28,500	11,100	8,800
14	9,600	8,540	8,380	10,000	9,800	9,960	21,500	67,600	55,300	27,300	10,900	8,800
15	9,800	8,460	8,500	10,000	10,200	10,100	21,300	68,200	52,500	26,100	10,800	8,700
16	9,800	8,220	8,260	10,100	10,400	10,000	21,900	69,100	50,300	25,300	10,800	8,800
17	9,700	8,420	8,070	10,000	10,700	9,920	22,100	70,000	48,600	24,600	10,500	8,700
18	9,600	8,260	8,030	10,000	11,000	9,760	22,200	71,100	47,100	23,500	10,500	8,600
19	9,600	8,340	8,140	10,000	11,200	9,840	22,500	72,100	46,400	22,300	10,500	8,700
20	9,600	8,580	7,990	9,900	11,400	9,980	23,000	73,400	46,600	21,500	10,300	8,900
21	9,700	8,540	7,720	9,900	11,600	10,100	23,700	74,500	46,800	20,800	10,200	9,000
22	9,800	8,460	7,720	9,900	11,700	10,300	24,400	75,100	46,600	20,000	10,100	8,900
23	9,900	8,380	7,840	10,000	11,600	10,800	25,700	75,400	46,700	19,400	9,920	8,800
24	9,800	8,340	7,840	10,000	11,600	11,400	26,900	75,400	46,600	18,900	9,630	8,900
25	9,700	8,220	7,680	10,000	11,300	11,900	28,400	75,200	46,600	18,400	9,430	9,100
26	9,900	8,140	7,600	10,000	11,400	13,400	30,000	75,000	46,200	18,000	9,340	8,900
27	9,800	8,110	7,800	10,100	11,500	13,900	31,300	74,600	45,000	17,500	9,340	8,600
28	10,000	7,950	8,000	10,200	11,400	14,400	32,500	73,800	43,900	17,000	8,860	8,600
29	10,000	7,910	8,300	10,200	-	14,800	33,200	72,900	43,000	16,700	8,980	8,700
30	9,900	7,720	8,500	10,100	-	15,300	35,500	72,600	41,900	16,300	8,940	8,700
31	9,600	-	8,800	10,100	-	15,600	-	72,200	-	15,600	8,860	-

Month	Observed				Change in contents in Pend Oreille Lake (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	10,000	9,300	9,642	592,900	-10,920	582,000	9,465	0.391	0.45
November	9,590	7,720	8,613	512,500	-40,150	472,400	7,939	.328	.37
December	8,800	7,530	8,045	494,700	+25,030	519,700	8,452	.349	.40
Calendar year 1938	93,000	7,350	23,970	17,360,000	-52,040	17,310,000	23,900	.988	13.41
January	10,200	9,000	9,867	606,700	+27,720	634,400	10,320	.426	.49
February	11,700	5,800	9,811	544,900	+14,280	559,200	10,070	.416	.43
March	15,600	9,760	11,270	693,000	+91,530	784,500	12,760	.527	.61
April	35,500	16,200	23,140	1,377,000	+385,600	1,763,000	29,630	1.22	1.36
May	75,400	38,800	65,750	4,043,000	+531,500	4,574,000	74,390	3.07	3.54
June	72,000	41,900	55,330	3,292,000	-436,200	2,856,000	48,000	1.98	2.21
July	41,200	15,600	26,160	1,608,000	-465,500	1,142,000	18,570	.767	.88
August	15,600	8,860	11,320	696,000	-137,900	558,100	9,077	.375	.43
September	9,100	8,540	8,772	522,000	-4,200	517,800	8,702	.360	.40
Water year 1938-39	75,400	5,800	20,700	14,980,000	-19,210	14,960,000	20,670	.854	11.57

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 1939. November 1908 to September 1910 and October 1912 to September 1928 at site at Metaline Falls.

Average discharge.- 27 years (1912-39), 25,960 second-feet, adjusted for storage in Pend Oreille Lake.

Extremes.- Maximum discharge during year, 76,400 second-feet May 24, 26 (gage height, 33.75 feet); minimum (not determined) occurred during period of ice effect.

1912-39: Maximum discharge, 139,000 second-feet June 16, 1913 (gage height, 41.2 feet, at site at Metaline Falls); minimum, 2,500 second-feet Dec. 12, 1919 (gage height, -2.4 feet, at site at Metaline Falls).

Remarks.- Records excellent except those for periods of ice effect and of faulty or missing gage heights, which are fair. Many small diversions from upper tributaries for irrigation. No artificial regulation of any consequence. Flow regulated by natural storage in Pend Oreille Lake. This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1938-39 except period of ice effect (gage height, in feet, and discharge in second-feet)

9.8	5,230	13.0	12,000	16.0	21,800	20.0	34,900	28.0	59,300
11.0	7,480	14.0	14,900	17.0	25,400	22.0	40,900	31.0	68,200
12.0	9,560	15.0	18,100	18.0	28,800	25.0	50,000	34.0	77,200

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9,900	9,710	8,040	*9,100	*10,000	11,200	16,400	38,000	73,400	†43,000	15,800	9,100
2	9,900	9,600	8,000	*9,300	*9,900	11,000	16,900	40,400	73,200	†42,000	15,700	9,020
3	9,630	9,580	7,960	*9,500	*10,000	10,800	17,600	43,200	72,800	†40,500	15,400	8,990
4	9,450	9,340	7,860	*9,500	*10,000	10,800	17,700	46,200	†72,000	†39,000	15,100	8,990
5	9,450	9,230	7,960	9,410	*10,000	11,000	18,000	50,000	†71,000	†38,000	14,700	8,990
6	9,380	9,270	7,980	9,690	*9,800	10,700	18,900	53,600	†70,000	†36,000	14,000	8,830
7	9,490	9,300	8,060	9,760	*8,400	10,700	19,800	56,600	†68,500	†35,000	13,700	8,830
8	9,450	9,190	8,200	9,920	*7,200	10,500	20,400	59,700	†67,500	†34,000	13,600	8,850
9	9,490	9,140	8,320	10,000	*6,000	10,500	20,700	61,800	†66,500	†32,500	13,200	8,760
10	9,560	9,120	8,160	9,960	*5,000	10,300	21,100	64,000	†65,000	†31,500	12,900	8,930
11	9,520	8,970	8,080	9,990	*5,700	10,100	21,600	65,700	†64,000	†30,500	12,400	8,870
12	9,630	9,020	8,220	10,000	*7,000	9,940	22,400	67,000	†62,000	†30,000	11,900	8,700
13	9,740	8,760	8,200	9,920	*8,600	10,100	22,700	67,800	†60,000	†29,000	11,400	8,830
14	9,760	8,760	8,160	9,960	9,920	10,100	23,100	68,600	†58,000	†28,000	11,100	8,930
15	9,650	8,680	8,240	10,100	10,100	9,830	23,300	69,300	†55,000	†27,500	10,900	8,850
16	9,870	8,680	8,320	10,200	10,200	9,920	23,200	70,100	†52,000	†26,500	10,700	8,760
17	9,940	8,430	8,340	10,100	10,600	9,900	23,800	70,500	†50,000	†25,500	10,600	8,850
18	9,800	8,430	8,160	10,200	10,900	9,940	24,200	71,100	†48,500	†24,500	10,400	8,830
19	9,710	8,430	8,160	10,400	11,100	9,900	24,200	72,000	†46,000	†23,500	10,300	8,740
20	9,690	8,340	8,100	10,200	11,600	10,000	24,800	72,700	†48,000	†22,500	10,400	8,780
21	9,740	8,490	8,160	10,100	11,900	10,200	25,300	73,800	†48,000	†22,000	10,200	8,970
22	9,760	8,570	7,980	10,100	11,900	10,500	26,200	75,100	†48,000	†21,000	10,200	9,080
23	9,850	8,510	7,860	10,200	11,800	10,900	26,600	75,800	†48,000	†20,500	10,100	9,020
24	9,960	8,490	*7,800	10,100	11,600	11,300	27,900	76,200	†48,000	†20,000	9,940	8,950
25	9,920	8,410	*7,800	10,100	11,500	11,800	28,900	76,200	†48,000	19,500	9,780	9,020
26	9,830	8,340	*7,700	10,100	11,200	12,300	30,100	76,400	†47,500	18,900	9,630	9,230
27	9,960	8,280	*7,900	*10,200	11,300	13,400	31,400	76,100	†47,000	18,400	9,430	8,970
28	9,850	8,300	*8,100	*10,300	11,200	14,200	32,900	75,800	†46,000	17,900	9,470	8,740
29	10,100	8,160	*8,400	*10,300	-	14,800	34,800	75,100	†45,000	17,200	9,250	8,720
30	10,100	8,120	*8,600	*10,200	-	15,400	36,200	74,300	†44,000	16,800	9,060	8,830
31	10,000	-	*8,800	*10,200	-	15,900	-	73,700	-	16,400	9,210	-

Month	Observed				Change in contents in Pend Oreille Lake (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	10,100	9,380	9,745	599,200	-10,920	588,300	9,568	0.380	0.44
November	9,710	8,120	8,788	522,900	-40,150	482,800	8,114	.322	.36
December	8,800	7,700	8,116	499,000	+25,030	524,000	8,522	.338	.39
Calendar year 1938	96,500	7,700	25,330	18,340,000	-52,040	18,290,000	25,260	1.00	13.61
January	10,400	9,100	9,971	613,100	+27,720	640,800	10,420	.413	.48
February	11,900	5,000	9,801	544,300	+14,280	558,600	10,060	.399	.42
March	15,900	9,900	11,220	690,100	+91,530	781,600	12,710	.504	.58
April	36,200	16,400	24,040	1,430,000	+385,600	1,816,000	30,520	1.21	1.35
May	76,400	38,000	65,700	4,040,000	+531,500	4,572,000	74,360	2.95	3.40
June	73,400	44,000	57,160	3,401,000	-436,200	2,965,000	49,830	1.98	2.21
July	43,000	16,400	27,340	1,681,000	-465,500	1,216,000	19,780	.785	.90
August	15,800	9,060	11,630	715,000	-137,900	577,100	9,386	.372	.43
September	9,230	8,700	8,899	529,500	-4,200	525,300	8,828	.350	.39
Water year 1938-39	76,400	5,000	21,090	15,270,000	-19,210	15,250,000	21,060	.836	11.35

*Stage-discharge relation affected by ice; discharge computed on basis of gage heights, weather records, and records for station at Priest River, Idaho.

†Gage heights faulty or missing; discharge computed on basis of records for station at Priest River, Idaho.

245360 40 8

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 to September 1939.

Extremes.- Maximum discharge observed during period, 157 second-feet June 5 (gage height, 3.43 feet); minimum observed, 26 second-feet July 3, Aug. 19 (gage height, 1.83 feet).

Remarks.- Records good. Gage read twice daily. Many diversions for irrigation above and below station. During irrigation season the 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 storage and release of water in Georgetown Lake.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	128	64	28	72	64
2							-	110	56	29	80	56
3							-	106	56	26	80	52
4							-	137	47	28	80	52
5							-	106	128	31	84	50
6							-	88	119	36	84	56
7							-	76	101	34	88	56
8							-	68	88	43	76	60
9							-	68	92	47	88	60
10							-	72	88	64	84	60
11							-	60	88	72	80	56
12							-	48	88	76	60	72
13							128	52	84	84	56	92
14							128	64	76	88	50	80
15							128	64	84	84	46	76
16							128	64	119	80	39	68
17							128	76	119	80	33	68
18							128	72	128	80	29	64
19							137	101	119	72	27	68
20							101	92	119	72	30	68
21							96	84	119	72	36	60
22							96	96	110	60	40	56
23							92	96	101	51	41	52
24							92	92	96	42	46	52
25							84	80	92	39	52	51
26							76	68	80	38	52	52
27							76	68	68	46	56	51
28							84	60	51	64	60	56
29							92	64	40	72	68	56
30							147	80	34	68	76	56
31							-	76	-	72	76	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 12-30	1,941	147	76	108	3,850
May	2,516	137	48	81.2	4,990
June	2,654	128	34	88.5	5,260
July	1,778	88	26	57.4	3,530
August	1,869	88	27	60.3	3,710
September	1,820	92	50	60.7	3,610
The period	-	-	-	-	24,950

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., about three-quarters of a mile southwest of Maxville and 1½ miles upstream from Boulder Creek.

Records available.- April to September 1939.

Extremes.- Maximum discharge observed during period, 192 second-feet Apr. 30 (gage height, 2.62 feet); minimum observed, 33 second-feet July 1-5 (gage height, 1.34 feet).

Remarks.- Records good. Discharge interpolated for period of missing gage height, Apr. 13, 14. Gage read once daily. Many diversions for irrigation above and below station. During irrigation season the 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 storage and release of water in Georgetown Lake.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	127	62	38	77	67
2							-	113	56	38	77	59
3							-	113	51	38	77	57
4							-	120	40	33	82	45
5							-	120	120	35	82	54
6							-	94	113	38	88	61
7							-	77	100	34	94	62
8							-	67	100	38	88	61
9							-	67	94	41	82	58
10							-	67	88	56	82	60
11							-	61	88	67	88	59
12							134	56	88	72	67	72
13							134	52	82	106	61	94
14							134	60	77	94	55	77
15							134	72	77	88	50	72
16							127	52	150	77	42	67
17							127	77	127	82	42	67
18							127	77	142	82	35	67
19							142	113	127	77	34	67
20							100	94	134	67	34	67
21							94	82	142	72	36	63
22							100	113	113	61	42	57
23							94	106	106	55	42	57
24							88	94	100	47	43	54
25							82	82	94	42	53	53
26							77	67	77	41	55	53
27							72	82	72	44	55	51
28							82	63	51	61	62	55
29							88	61	48	72	64	57
30							192	77	42	65	67	56
31							-	72	-	72	72	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 12-30	2,128	192	72	112	4,220
May	2,578	127	52	83.2	5,110
June	2,761	150	40	72.0	5,460
July	1,813	106	33	58.5	3,600
August	1,928	94	34	62.2	3,820
September	1,851	94	45	61.7	3,670
The period	-	-	-	-	25,900

Flint Creek near Hall, Mont.

Location.- Wire-weight gage, lat. 46°31'45", long. 113°13'35", in SW¼ sec. 15, T. 9 N., R. 13 W., 1½ miles upstream from Douglas Creek and 4 miles south of Hall.

Records available.- April to September 1939 (discontinued because water-supply study completed).

Extremes.- Maximum discharge observed during period, 269 second-feet June 20 (gage height, 1.82 feet); minimum observed, 3.5 second-feet Sept. 18-20 (gage height, 0.20 foot).

Remarks.- Records fair except those interpolated or estimated, which are poor. Many diversions above and below station. During irrigation season the 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 storage and release of water in Georgetown Lake.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	262	29	4.3	11	13
2							-	*256	21	18	18	*12
3							-	*250	17	13	22	*11
4							-	244	†20	23	23	*10
5							-	*217	†25	16	23	*9.5
6							-	190	139	*13	24	8.6
7							-	*156	*121	9.2	*25	*8.6
8							-	122	103	*9.8	26	8.6
9							-	*111	100	*10	23	*8.6
10							-	100	*95	11	22	8.6
11							142	82	*91	14	21	8.6
12							*142	52	86	21	11	16
13							*143	33	*80	*30	14	39
14							*144	*32	75	*40	11	28
15							145	*30	†75	50	9.5	†28
16							*145	29	177	35	14	4.3
17							145	74	204	30	*13	3.9
18							*139	58	226	24	*11	3.5
19							133	79	226	15	10	†3.5
20							*116	*64	262	13	*16	†3.5
21							100	50	*243	*12	21	48
22							*98	*72	*223	12	*24	*48
23							95	95	204	7.5	26	*48
24							*89	82	*182	7.0	*24	48
25							*83	58	*161	5.4	23	54
26							77	40	139	7.0	23	*61
27							†80	*40	*96	6.7	*22	*67
28							†85	41	54	19	20	74
29							†90	*38	*32	14	17	†75
30							†120	*35	11	14	*16	†75
31							-	*32	-	12	*14	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 11-30	2,311	145	77	116	4,580
May	3,024	262	29	97.5	6,000
June	3,517	262	11	117	6,980
July	515.9	50	4.3	16.6	1,020
August	577.5	26	9.5	18.6	1,150
September	834.8	75	3.5	27.8	1,660
The period	-	-	-	-	21,390

*Missing gage height; discharge interpolated.
†Missing gage height; discharge determined from observer's notes.

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 to September 1939.

Extremes.- Maximum discharge observed during period, 67 second-feet Aug. 7 (gage height, 2.14 feet); minimum, 8.1 second-feet May 20 (gage height, 1.17 feet).

Remarks.- Records fair. Gage read once daily except May 16, 18, 19, 21-23, 26, 28, 29, 31, for which discharge was interpolated. Many diversions above station. At times during irrigation season the 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 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								-	24	24	60	26
2								-	24	23	60	26
3								-	22	24	60	26
4								-	22	19	60	26
5								-	22	11	60	26
6								-	26	18	59	40
7								-	38	22	67	37
8								-	31	30	64	34
9								-	30	29	61	34
10								-	26	31	59	32
11								-	22	30	58	32
12								15	24	30	42	34
13								15	36	38	42	36
14								16	35	42	35	37
15								10	35	42	35	32
16								10	38	43	26	30
17								10	39	42	24	30
18								9.4	39	43	22	33
19								8.7	39	44	24	33
20								8.1	40	43	24	33
21								9.0	38	46	25	34
22								10	37	37	26	33
23								11	37	35	25	32
24								12	35	32	26	29
25								11	35	29	27	27
26								15	34	28	22	27
27								19	34	33	18	27
28								21	28	56	22	27
29								24	24	62	24	28
30								26	24	53	24	28
31								25	-	58	24	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October					
November					
December					
Calendar year					
January					
February					
March					
April					
May 12-31	285.2	26	8.1	14.3	566
June	940	40	22	31.3	1,860
July	1,097	62	11	35.4	2,180
August	1,206	67	18	38.9	2,390
September	929	40	26	31.0	1,840
The period	-	-	-	-	8,840

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 above mouth and 2½ miles north of Philipsburg.

Records available.- April to September 1939.

Extremes.- Maximum discharge observed during period, 20 second-feet Apr. 30 (gage height, 1.42 feet); no flow July 4-7, 9.

Remarks.- Records fair. Gage read once daily. Discharge interpolated Aug. 14; gage height missing. Small diversions above station. At times during irrigation season the 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 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	19	3.3	0.8	3.3	17
2							-	15	1.6	.8	9.3	9.0
3							-	16	2.0	.8	11	5.4
4							-	15	2.3	0	13	7.4
5							-	13	9.3	0	14	7.8
6							-	7.8	9.3	0	15	8.4
7							-	6.4	9.6	0	15	11
8							-	6.8	5.6	.7	8.1	12
9							-	4.6	5.2	.1	13	12
10							-	4.2	4.0	4.0	9.3	13
11							-	2.8	2.0	9.0	9.3	13
12							-	1.9	2.0	9.6	9.3	14
13							-	1.9	1.2	5.4	13	16
14							5.6	1.9	.9	9.6	10	17
15							5.6	1.9	1.2	18	7.1	15
16							5.6	1.9	8.7	16	6.1	14
17							5.2	2.5	5.6	15	2.3	7.1
18							5.6	4.6	5.2	14	2.0	8.7
19							7.1	4.6	4.4	17	2.0	12
20							8.1	4.6	8.7	12	1.0	9.3
21							11	2.2	6.1	3.8	1.2	10
22							12	2.2	5.6	1.0	1.8	3.3
23							14	1.9	7.6	1.0	2.0	2.0
24							14	1.9	7.1	.8	5.6	.7
25							11	1.9	7.1	.8	6.1	.6
26							11	1.7	4.0	.8	11	.4
27							11	1.0	3.6	.8	11	.7
28							11	.6	1.8	.8	12	.6
29							11	.6	1.0	1.1	13	4.8
30							20	.6	.9	1.1	17	7.1
31							-	3.8	-	.8	18	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 14-30	168.8	20	5.2	9.93	335
May	154.8	19	.6	4.99	307
June	136.9	9.6	.9	4.56	272
July	145.6	18	0	4.70	289
August	271.8	18	1.0	8.77	539
September	259.3	17	.4	8.64	514
The period	-	-	-	-	2,256

Boulder Creek at Maxville, Mont.

Location.- Wire-weight gage, lat. 46°28'30", long. 113°14'00", in SE¼ sec. 4, T. 8 N., R. 13 W., one-eighth of a mile upstream from mouth and three-quarters of a mile north of Maxville.

Records available.- April to September 1939.

Extremes.- Maximum discharge observed during period, 120 second-feet at various times during April to June; minimum observed, 9.0 second-feet at various times during August and September.

Remarks.- Records fair. Gage read once daily. Several diversions above station for irrigation.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	120	74	63	12	12
2							-	120	63	53	9.0	12
3							-	120	63	53	9.0	9.0
4							-	120	53	53	9.0	9.0
5							-	120	74	53	9.0	11
6							-	120	74	53	9.0	12
7							-	108	74	53	9.0	12
8							-	96	63	42	9.0	12
9							-	96	74	32	9.0	12
10							-	96	85	33	9.6	12
11							-	85	74	32	9.0	12
12							-	85	74	40	9.0	12
13							-	85	74	32	9.0	17
14							-	85	74	32	9.0	17
15							19	96	63	32	9.0	17
16							19	108	108	32	9.0	17
17							19	120	108	26	9.0	17
18							19	120	120	20	9.0	17
19							24	120	120	22	9.0	17
20							30	108	120	20	17	17
21							37	96	120	20	17	17
22							44	96	108	20	17	17
23							53	96	108	20	17	17
24							53	102	108	20	17	17
25							53	85	96	20	17	17
26							44	85	85	20	17	17
27							53	85	85	20	17	17
28							63	85	74	16	12	17
29							74	85	74	16	12	17
30							120	96	74	16	12	17
31							-	85	-	16	12	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 15-30	724	120	19	45.2	1,440
May	3,124	120	85	101	6,200
June	2,564	120	53	85.5	5,090
July	980	63	16	31.6	1,940
August	358.6	17	9.0	11.6	711
September	443	17	9.0	14.8	879
The period	-	-	-	-	16,260

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 above the East Fork, 2½ miles above the West Fork, and 15 miles southwest of Philipsburg.

Records available.- September 1937 to September 1939.

Extremes.- Maximum discharge observed during year, 566 second-feet May 4 (gage height, 3.20 feet); minimum observed, 9 second-feet Dec. 12 (gage height, 0.73 foot).
1937-39: Maximum discharge observed, 980 second-feet May 29, 1938 (gage height, 3.96 feet); minimum observed, that of Dec. 12, 1938.

Remarks.- Records fair except those for periods of ice effect, Nov. 11-13, Nov. 22 to Mar. 21, which were estimated on basis of gage heights, observer's notes, and weather records and are poor. Gage read twice daily. A few small diversions for irrigation.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	48					41	435	306	158	55	34
2	38	48					47	435	275	158	55	33
3	37	45					51	435	260	148	53	33
4	36	43					53	566	260	138	52	31
5	34	46					53	521	275	148	51	31
6	34	43					39	456	260	148	51	38
7	35	40					51	376	232	148	50	39
8	35	42					39	357	232	129	49	39
9	35	43					53	340	246	129	51	36
10	36	43				20	54	322	218	120	51	34
11	40	42					53	322	205	129	50	32
12	45	42					56	306	205	129	48	36
13	40	46					55	306	192	120	44	50
14	41	55					57	322	192	129	44	46
15	52	52					57	376	205	112	43	45
16	46	43					68	415	260	104	41	43
17	42	45					68	521	246	104	39	41
18	37	37					76	456	205	102	36	39
19	38	35				112	92	456	205	94	36	39
20	51	40				205	102	395	205	89	36	40
21	48	44				205	129	340	218	88	36	39
22	47					51	158	357	218	85	34	39
23	46					39	169	322	218	81	33	39
24	45					41	169	290	205	76	36	39
25	48					44	169	275	192	70	34	38
26	46	40				47	169	275	180	66	33	37
27	45					43	169	290	169	60	34	37
28	45					39	192	290	169	59	34	36
29	46					40	260	322	180	58	34	36
30	53					41	499	415	158	56	34	35
31	51	-				43	-	376	-	56	34	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	1,305	53	33	42.1	2,590
November	1,282	55	-	42.7	2,540
December	930	-	-	30	1,840
Calendar year	-	-	-	-	-
January	775	-	-	25	1,540
February	560	-	-	20	1,110
March	1,310	205	-	42.3	2,600
April	3,248	499	39	108	6,440
May	11,670	566	275	376	23,150
June	6,591	306	158	220	13,070
July	3,291	158	56	106	6,530
August	1,311	55	33	42.3	2,600
September	1,134	50	31	37.8	2,250
Water year 1938-39	33,407	566	-	91.5	66,260

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 1939.

Extremes.- Maximum discharge observed during year, 138 second-feet June 1, July 10-16, 18; minimum observed, 6.4 second-feet Dec. 22-31, Sept. 27-30.
1935-39: Maximum discharge observed, 269 second-feet June 15, 1935 (gage height, 3.06 feet, former site and datum); minimum observed, 2.1 second-feet Jan. 8-17, 1938 (gage height, 0.56 foot).

Remarks.- Records good. Flow regulated by storage in Rock Creek Reservoir (capacity, 16,000 acre-feet). Water running over spillway May 20 to July 7. Gage read once or twice daily.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	44	6.9	*8.1	*6.6	7.6	8.5	40	*7.7	138	106	99	46
2	44	*6.9	*8.3	6.9	*7.6	*8.5	40	7.7	114	106	99	46
3	44	*6.9	8.5	*6.9	*7.6	*8.5	*40	*7.7	106	106	99	46
4	44	*6.9	*8.5	6.9	7.6	8.5	40	7.7	99	*106	99	46
5	44	6.9	8.5	*6.9	8.5	7.6	*40	14	99	106	*99	46
6	44	*7.2	*8.5	*6.9	*8.5	*7.6	40	20	99	122	99	46
7	44	7.6	*8.5	6.9	8.5	*7.6	*40	20	84	130	*99	46
8	44	*7.6	*8.5	6.9	*8.5	7.6	40	29	71	130	99	46
9	44	*7.6	*8.5	6.9	*8.5	*7.6	*40	29	71	130	99	46
10	44	*7.6	8.5	*6.9	*8.5	*7.6	40	*27	72	138	99	46
11	44	*7.6	7.6	6.9	8.5	7.6	*40	25	72	138	99	46
12	44	7.6	*7.6	*6.9	9.3	*8.0	40	36	72	138	98	46
13	44	*8.0	*7.6	*6.9	*9.3	8.5	40	54	72	138	94	39
14	44	8.5	*7.6	6.9	*9.3	*8.5	38	67	79	138	94	36
15	7.6	*8.5	*7.6	*6.9	9.3	8.5	24	67	87	138	70	31
16	7.6	*8.5	*7.6	6.9	*9.3	*8.5	12	67	99	138	70	30
17	*7.6	*8.5	7.6	*6.9	*9.3	*8.5	*11	72	*95	130	70	30
18	*7.6	*8.5	*7.2	6.9	9.3	8.5	*9.1	72	*92	138	70	30
19	*7.6	8.5	6.9	*6.9	*8.9	*8.5	7.7	72	88	122	70	26
20	*7.6	*8.0	*6.7	*6.9	8.5	8.5	7.0	72	88	92	68	24
21	*7.6	7.6	*6.6	6.9	*8.5	*8.9	*7.0	72	88	68	67	24
22	7.6	*7.6	6.4	*6.9	8.5	9.3	7.0	72	98	66	67	24
23	22	*7.6	*6.4	6.9	*8.5	16	7.7	83	114	66	80	9.6
24	6.9	*7.6	6.4	*6.9	*8.5	22	*7.7	80	114	66	80	9.6
25	6.9	*7.6	*6.4	6.9	8.5	22	7.7	74	*114	76	80	7.2
26	7.2	7.6	6.4	*6.9	8.5	*22	*7.7	70	114	99	80	7.2
27	*7.1	*7.6	*6.4	*6.9	*8.5	22	7.7	83	99	99	80	6.4
28	*7.0	7.6	6.4	6.9	*8.5	29	*7.7	92	96	99	80	6.4
29	6.9	*7.8	*6.4	*6.9	-	40	7.7	106	99	99	80	6.4
30	6.9	*8.0	*6.4	6.9	-	40	7.7	130	106	106	63	6.4
31	*6.9	-	6.4	*7.2	-	40	-	130	-	106	52	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	754.6	44	6.9	24.3	1,500
November	230.9	8.5	6.9	7.70	458
December	229.0	8.5	6.4	7.39	454
Calendar year 1938	8,709.7	122	2.1	23.9	17,270
January	213.9	7.2	6.6	6.90	424
February	240.4	9.3	7.6	8.59	477
March	434.4	40	7.6	14.0	862
April	704.4	40	7.0	23.5	1,400
May	1,765.8	130	7.7	57.0	3,500
June	2,839	138	71	94.6	5,630
July	3,440	138	66	111	6,820
August	2,602	99	52	83.9	5,160
September	905.2	46	6.4	30.2	1,800
Water year 1938-39	14,359.6	138	6.4	39.3	28,480

*Missing gage height; discharge interpolated.

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., about 2 miles upstream from Buffalo Creek and 3 miles west of Finn.

Records available.- April to September 1939. May 1934 to February 1939, at site 3 miles downstream.

Extremes.- Maximum discharge observed during period, 160 second-feet Apr. 30 (gage height, 3.00 feet); minimum observed, 2.9 second-feet Sept. 2 (gage height, 1.39 feet).

Remarks.- Records good. Several small diversions for irrigation above station.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	131	23	16	5.9	3.0
2							-	140	22	16	5.0	2.9
3							-	101	21	16	5.3	3.0
4							-	118	24	14	4.8	3.0
5							-	122	44	14	5.0	4.6
6							-	101	43	11	8.4	4.2
7							-	86	30	11	8.0	3.8
8							-	73	30	11	7.4	3.8
9							-	64	28	11	7.1	3.6
10							-	57	27	9.6	6.8	3.6
11							-	51	26	8.4	6.2	3.4
12							-	48	28	12	6.2	3.6
13							-	43	21	10	6.2	6.2
14							-	35	19	11	5.6	5.0
15							-	23	31	8.8	5.0	4.4
16							-	27	25	7.1	4.6	4.2
17							-	27	39	8.4	4.6	3.8
18							-	35	73	8.0	4.6	3.6
19							-	44	51	7.4	4.6	3.6
20							41	34	42	8.8	4.6	3.6
21							49	31	33	7.7	4.6	3.6
22							63	122	29	6.8	4.6	3.6
23							71	75	32	6.2	4.8	3.6
24							73	49	30	6.2	5.0	3.8
25							73	38	27	6.5	5.0	3.8
26							67	32	22	6.8	5.6	3.8
27							63	30	20	7.4	5.0	4.2
28							75	29	16	6.8	4.8	7.4
29							104	25	13	6.5	4.2	5.6
30							160	27	18	5.9	3.4	4.8
31							-	25	-	5.3	3.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October					
November					
December					
Calendar year					
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April 20-30	839	160	41	76.3	1,660
May	1,843	140	23	59.5	3,660
June	887	73	13	29.6	1,760
July	293.6	18	5.3	9.47	582
August	166.1	8.4	3.2	5.36	329
September	121.1	7.4	2.9	4.04	240
The period	-	-	-	-	8,230

Nevada Creek near Finn, Mont.

Location.- Staff gage, lat. 46°48', long. 112°48', in NE¼ sec. 13, T. 12 N., R. 10 W., 6 miles west of Finn.

Records available.- May 1934 to February 1939; discontinued because of backwater from Nevada Creek storage-project dam.

Extremes.- Maximum discharge observed during period, 20 second-feet Nov. 15, 16, 18-20; minimum observed, 9.0 second-feet, Oct. 1, 2 (gage height, 1.20 feet).

1934-39: Maximum discharge, 1,200 second-feet (estimated) Apr. 11, 1936 (gage height, 4.26 feet, from floodmark); minimum observed, 4.6 second-feet Sept. 18-20, 1937.

Remarks.- Records fair except those for periods of ice effect, Nov. 9, 11, Nov. 21 to Dec. 10, Dec. 12 to Feb. 11, which were estimated and are poor. Gage read twice daily. Some diversions above gage.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	9.0	17										
2	9.0	19										
3	9.8	18	18									
4	9.8	18										
5	11	18										
6	12	19			15							
7	11	18										
8	12	18	17									
9	13	18										
10	13	19										
11	14	19	17									
12	15	19	16									
13	15	18	15									
14	14	18	15									
15	17	20	15									
16	19	20										
17	18	19										
18	16	20										
19	17	20										
20	17	20										
21	16											
22	16											
23	17	19										
24	16		15									
25	18											
26	17											
27	18											
28	18	18										
29	17											
30	17											
31	17	-										

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	458.6	19	9.0	14.8	910
November	560	20	-	18.7	1,110
December	493	-	-	15.9	978
Calendar year 1938	16,027.2	344	-	43.9	31,790
January	465	-	-	15	922
February 1-11	165	-	-	15	327
The period	-	-	-	-	4,250

Bitterroot River near Darby, Mont.

Location.- Water-stage recorder, lat. 45°59', long. 114°09', in NE¼ sec. 33, T. 3 N., R. 21 W., just downstream from bridge on U. S. Highway 93, a quarter of a mile downstream from Chaffin Creek and 4 miles southeast of Darby. Prior to Aug. 2, wire-weight gage at bridge 25 feet upstream at same datum.

Drainage area.- 1,050 square miles.

Records available.- April 1937 to September 1939.

Extremes.- Maximum discharge observed during year, 4,920 second-feet Apr. 30, May 4 (gage height, 6.14 feet); minimum observed, about 71 second-feet Feb. 9 (stage-discharge relation affected by ice).
1937-39: Maximum discharge observed, 5,480 second-feet May 29, 1938 (gage height, 6.51 feet); minimum observed, that of Feb. 9, 1939.

Remarks.- Records good except those for periods of ice effect, Nov. 25, 27, Dec. 8-11, 13-29, Jan. 7-17, Jan. 21 to Mar. 8, which were based on two discharge measurements, gage heights, weather records, and records for station on the East Fork at Conner and are fair. Gage read twice daily Oct. 1 to Aug. 1. Diversions for irrigation above gage.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	166	296	275	248	150	190	952	4,500	2,120	969	247	141
2	172	296	260	236	140	206	1,200	4,220	2,000	919	234	141
3	193	296	260	252	160	200	1,220	4,220	2,000	863	230	141
4	216	322	256	244	180	185	1,420	4,500	1,880	895	218	141
5	206	296	260	248	190	175	1,320	4,360	2,000	837	238	141
6	209	279	244	230	200	178	1,080	4,080	1,820	855	242	153
7	219	268	244	200	150	185	1,030	3,530	1,700	783	226	163
8	209	279	275	190	100	190	986	3,200	1,640	715	218	160
9	202	275	300	185	80	209	1,010	2,940	1,640	658	210	153
10	196	268	270	185	100	219	1,000	2,880	1,580	665	210	147
11	230	216	240	195	125	209	936	2,940	1,480	683	203	144
12	305	183	193	205	200	219	936	2,750	1,480	745	192	163
13	287	230	188	203	195	223	870	2,750	1,410	775	182	234
14	271	252	185	200	190	216	799	3,080	1,530	715	172	273
15	300	252	190	200	182	212	815	3,080	1,530	715	169	238
16	309	275	195	210	175	219	799	3,400	1,580	637	163	214
17	287	313	205	220	183	234	784	4,080	1,390	583	156	196
18	279	291	202	230	190	268	902	3,660	1,330	531	150	189
19	275	287	200	237	175	331	1,370	4,080	1,310	547	144	178
20	283	283	197	193	160	409	1,790	2,940	1,330	547	141	175
21	291	241	194	170	155	541	1,900	2,560	1,340	521	136	172
22	296	216	190	150	150	680	2,440	2,560	1,290	514	133	166
23	279	196	200	200	155	768	2,560	2,490	1,280	477	130	166
24	275	193	230	220	200	870	2,500	2,360	1,210	447	130	163
25	283	185	220	200	210	986	2,320	2,120	1,150	401	133	163
26	287	199	200	180	207	1,220	2,140	2,120	1,080	374	136	163
27	283	205	190	185	202	1,060	2,140	2,300	1,030	323	139	156
28	287	212	205	200	195	870	2,440	2,820	1,000	283	141	153
29	283	256	220	195	-	784	3,270	2,620	994	277	147	153
30	300	260	230	190	-	807	4,640	2,300	1,020	264	147	156
31	309	-	237	170	-	815	-	2,120	-	254	147	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	7,987	309	166	258	0.246	0.28	15,840
November	7,620	322	183	254	.242	.27	15,110
December	6,955	300	185	224	.213	.25	13,800
Calendar year 1938	270,969	5,340	135	742	.707	9.60	537,400
January	6,371	252	150	206	.196	.23	12,640
February	4,699	210	80	168	.160	.17	9,320
March	13,878	1,220	175	448	.427	.49	27,530
April	47,569	4,640	784	1,586	1.51	1.68	94,350
May	97,560	4,500	2,120	3,147	3.00	3.46	193,500
June	44,144	2,120	994	1,471	1.40	1.56	87,560
July	18,789	969	256	606	.577	.67	37,270
August	5,464	247	130	176	.168	.19	10,840
September	5,096	273	141	170	.162	.18	10,110
Water year 1938-39	266,132	4,640	80	729	.694	9.43	527,500

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., at 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 1939. September 1910 to September 1916, at site 2½ miles upstream.

Extremes.- Maximum discharge observed during year, 1,320 second-feet May 5 (gage height, 4.90 feet); minimum observed, 24 second-feet Oct. 2, Feb. 9; minimum gage height observed, 1.24 feet Oct. 2.

1937-39: Maximum discharge observed, 1,810 second-feet May 29, 1938; minimum observed, 1.4 second-feet Aug. 17, 1937.

Remarks.- Records good except those for periods of ice effect, Nov. 24-27, Dec. 14-31, Jan. 7-10, Jan. 21 to Mar. 11, which were computed on basis of two discharge measurements, gage heights, weather records, observer's notes and records for station near Darby and are fair. Gage read twice daily.

Rating tables, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Feb. 28		Mar. 1 to Sept. 30			
1.2	22	1.4	27	2.9	349
1.4	31	1.6	39	3.2	472
1.6	48	1.8	61	3.6	651
1.8	71	2.0	94	4.0	850
2.0	97	2.3	158	4.4	1,050
		2.6	242	4.8	1,260

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	25	81	84	83	40	33	144	1,050	628	245	51	30
2	25	90	82	82	38	40	158	1,000	564	242	45	28
3	34	87	82	77	42	45	171	1,080	537	224	43	28
4	42	86	79	69	45	40	198	1,180	511	218	38	30
5	40	79	73	63	48	33	187	1,260	550	242	44	29
6	42	81	73	60	50	33	132	1,120	586	242	49	32
7	43	83	76	60	40	33	158	1,000	537	233	64	32
8	43	84	72	58	30	37	151	925	528	201	61	33
9	45	79	82	58	24	43	148	850	537	168	57	32
10	44	73	81	60	30	48	144	800	515	171	51	32
11	55	61	69	63	40	53	141	775	468	168	47	28
12	79	42	42	63	50	58	139	750	472	171	57	28
13	70	61	34	64	47	65	141	750	426	179	55	72
14	64	72	39	64	45	58	128	775	397	144	51	92
15	75	76	50	65	41	52	134	875	389	195	39	60
16	77	82	60	61	37	53	136	950	494	161	29	49
17	76	86	70	63	47	46	130	1,100	481	153	28	45
18	71	86	69	64	42	53	144	1,050	447	146	27	42
19	69	81	68	61	38	83	176	1,050	447	139	28	49
20	72	83	67	55	34	105	239	900	455	141	27	44
21	81	72	67	53	31	117	293	800	464	144	27	40
22	84	66	64	51	30	130	353	800	418	136	27	40
23	83	40	72	57	33	151	405	800	405	126	27	38
24	82	37	80	60	38	161	410	700	414	115	27	35
25	83	35	70	53	42	166	389	604	349	100	28	31
26	83	38	60	45	40	190	373	595	311	73	29	33
27	82	41	55	50	38	163	381	604	275	67	29	30
28	84	46	60	52	35	136	485	651	282	68	30	28
29	83	73	66	55	-	128	595	700	268	64	30	27
30	84	82	73	49	-	124	975	775	245	59	30	30
31	94	-	80	43	-	141	-	725	-	60	29	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	2,014	94	25	65.0	0.161	0.19	3,990
November	2,083	90	35	69.4	.172	.19	4,130
December	2,099	84	34	67.7	.168	.19	4,160
Calendar year 1938	76,507	1,700	20	210	.520	7.06	151,700
January	1,861	83	43	60.0	.149	.17	3,690
February	1,095	50	24	39.1	.097	.10	2,170
March	2,618	190	33	84.5	.209	.24	5,190
April	7,758	975	128	259	.641	.72	15,390
May	26,994	1,260	595	871	2.16	2.49	53,540
June	13,400	628	245	447	1.11	1.24	26,580
July	4,797	245	59	155	.384	.44	9,510
August	1,207	64	27	38.9	.096	.11	2,390
September	1,147	92	27	38.2	.095	.11	2,280
Water year 1938-39	67,073	1,260	24	184	.455	6.19	133,000

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 July 1939.

Extremes.- Maximum discharge observed during period October to July, 492 second-feet Apr. 30 (gage height, 3.18 feet); minimum observed, 1.0 second-foot Oct. 1, 12, 13 (gage height, 0.50 foot).

1938-39: Maximum discharge observed, 606 second-feet May 28, 29, 1938 (gage height, 3.45 feet); minimum observed, 0.9 second-foot Aug. 1, 2, 1938 (gage height, 0.46 foot).

Remarks.- Records good except those for periods of ice effect, Nov. 25 to Dec. 3, Dec. 11-29, Feb. 7-15 (computed on basis of two discharge measurements, gage heights, weather records, and records for Bear Creek near Victor), and those above 400 second-feet, which are fair. Gage read once daily. Many diversions for irrigation above gage.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.0	2.3	11	14	11	7.6	45	312	107	27		
2	2.3	2.3	11	14	9.0	5.6	52	293	82	28		
3	2.3	4.5	13	14	9.0	5.6	57	369	90	26		
4	2.3	4.5	13	14	9.0	5.6	70	450	90	20		
5	2.3	4.5	13	14	9.0	5.6	54	389	95	15		
6	2.3	4.5	13	14	9.0	5.6	39	293	63	11		
7	2.3	4.5	13	13	12	6.3	36	154	55	11		
8	2.3	4.5	13	13	11	6.3	36	123	48	9.8		
9	2.3	4.5	41	13	12	6.3	36	145	59	-		
10	2.3	4.5	41	13	12	6.3	36	158	59	-		
11	2.3	4.5	23	13	10	6.3	33	145	59	-		
12	1.0	6.9	18	13	9	6.3	26	149	59	-		
13	1.8	6.9	9	13	9	8.2	22	149	68	-		
14	2.3	6.9	11	13	9	8.2	20	177	82	-		
15	2.3	6.9	13	13	9	8.2	20	217	85	-		
16	2.3	6.9	14	13	9.0	8.2	20	350	82	-		
17	2.3	6.9	16	13	7.6	8.2	20	450	52	-		
18	2.3	7.6	19	13	7.6	8.2	26	312	43	-		
19	2.3	7.6	20	12	7.6	11	36	275	39	-		
20	2.3	7.6	20	12	7.6	13	66	167	55	-		
21	2.3	7.6	19	11	7.6	20	87	113	54	-		
22	2.3	7.6	18	11	7.6	25	141	116	63	-		
23	2.3	7.6	18	11	7.6	32	137	110	107	-		
24	2.3	7.6	20	11	7.6	41	116	92	90	-		
25	2.3	6.3	20	12	7.6	55	104	90	70	-		
26	2.3	3.1	15	12	7.6	61	87	145	66	-		
27	2.3	6.3	13	12	7.6	55	85	172	55	-		
28	2.3	7.9	12	12	7.6	43	137	204	38	-		
29	2.3	7.9	13	11	-	43	257	257	55	-		
30	2.3	9.4	15	11	-	43	492	330	43	-		
31	2.3	-	15	11	-	43	-	154	-	-		

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	68.2	2.3	1.0	2.20	135
November	180.6	9.4	2.3	6.02	358
December	523	41	9	16.9	1,040
Calendar year	-	-	-	-	-
January	389	14	11	12.5	772
February	249.2	12	7.6	8.90	494
March	607.6	61	5.6	19.6	1,210
April	2,393	492	20	79.8	4,750
May	6,860	450	90	221	13,610
June	2,013	107	38	67.1	3,990
July 1-8	147.8	28	9.8	18.5	293
August	-	-	-	-	-
September	-	-	-	-	-
The period	-	-	-	-	26,650

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 1939. April 1920 to May 1924, at site about 1 mile upstream; records not equivalent.

Extremes.- Maximum discharge observed during year, 16.2 second-feet May 31; minimum observed, 0.1 second-foot Aug. 13 to Sept. 13.
1938-39: 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 good. Diversions for irrigation. Gage read once daily.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.3	6.6	6.9	6.1	5.4	5.2	6.9	5.2	15	9.0	3.0	0.1
2	.3	6.6	6.9	6.1	5.4	5.2	6.9	1.8	12	8.7	3.0	.1
3	.3	6.6	6.9	6.1	5.4	5.2	6.9	2.6	11	8.7	2.8	.1
4	.3	6.6	6.9	6.1	5.4	5.2	6.9	4.5	12	8.4	2.8	.1
5	.3	6.6	6.9	6.1	5.4	5.2	6.9	6.9	14	8.4	2.4	.1
6	.3	6.6	6.9	6.1	5.4	5.2	6.9	6.9	16	7.9	2.0	.1
7	.3	6.6	6.9	6.1	5.4	5.2	6.9	5.9	13	7.9	1.4	.1
8	.3	6.6	6.9	6.1	4.8	5.2	6.9	5.2	12	7.9	.6	.1
9	.3	6.6	6.9	6.1	4.3	5.2	6.9	6.9	11	6.9	.6	.1
10	.2	6.4	6.9	6.1	4.8	5.2	6.9	7.6	11	5.9	.3	.1
11	.3	6.4	6.9	6.1	5.4	5.2	6.9	7.6	12	5.4	.2	.1
12	.3	6.1	6.6	5.7	5.4	5.2	6.9	7.9	12	5.4	.2	.1
13	.3	6.9	6.6	5.7	5.4	5.2	6.9	8.2	12	5.4	.1	.1
14	.4	6.9	6.6	5.7	5.4	5.2	6.9	8.7	11	4.9	.1	1.3
15	.4	6.9	6.4	5.7	5.4	5.2	6.9	10	11	4.5	.1	1.3
16	6.6	6.9	6.4	5.7	5.4	5.2	6.9	11	12	4.1	.1	1.3
17	6.6	6.9	6.4	5.7	5.4	5.7	6.9	11	12	3.8	.1	1.2
18	6.6	6.9	6.4	5.7	5.4	5.9	6.9	13	14	3.6	.1	1.0
19	6.6	6.9	6.4	5.7	5.4	7.6	6.9	15	14	3.4	.1	.9
20	6.6	6.9	6.4	6.9	5.4	7.6	6.9	12	14	3.4	.1	.8
21	6.6	6.9	6.4	5.7	5.2	7.1	6.9	12	14	3.4	.1	.5
22	6.6	6.9	6.4	5.7	5.2	7.1	6.9	13	14	3.4	.1	.3
23	6.6	6.9	6.4	5.7	5.2	7.1	7.4	13	14	3.2	.1	.3
24	6.6	6.9	6.4	5.9	5.2	6.9	7.6	13	14	3.2	.1	.3
25	6.6	6.9	6.4	5.9	5.2	6.9	7.9	12	14	3.2	.1	.3
26	6.6	6.9	6.1	5.7	5.2	6.9	8.2	11	12	3.0	.1	.3
27	6.6	6.9	6.1	5.7	5.2	6.9	8.4	10	11	3.0	.1	.3
28	6.6	6.9	6.1	5.7	5.2	6.9	9.0	11	11	3.0	.1	.3
29	6.6	6.9	6.1	5.7	-	6.9	9.3	12	10	3.0	.1	.3
30	6.6	6.9	6.1	5.7	-	6.9	9.5	14	9.8	3.0	.1	.3
31	6.6	-	6.1	5.4	-	6.9	-	16	-	3.0	.1	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	110.3	6.6	0.3	3.56	219
November	202.5	6.9	6.1	6.75	402
December	202.7	6.9	6.1	6.54	402
Calendar year 1938	-	-	-	-	-
January	182.4	6.9	5.4	5.88	362
February	147.3	5.4	4.3	5.26	292
March	186.5	7.6	5.2	6.02	370
April	219.1	9.5	6.9	7.30	435
May	294.9	16	1.8	9.51	585
June	374.8	16	9.8	12.5	743
July	158.0	9.0	3.0	5.10	313
August	21.2	3.0	.1	.68	42
September	12.3	1.3	.1	.41	24
Water year 1938-39	2,112.0	16	.1	5.79	4,190

Bear Creek near Victor, Mont.

Location.- Staff gage, lat. 46°23', long. 114°13', in NE¼ sec. 9, T. 7 N., R. 21 W., 5 miles southwest of Victor.

Drainage area.- 26.6 square miles.

Records available.- April 1938 to September 1939.

Extremes.- Maximum discharge observed during year, 507 second-feet April 30 (gage height, 2.58 feet); minimum observed, 2.3 second-feet Sept. 1 (gage height, 0.13 foot).
1938-39: Maximum discharge observed, 865 second-feet Apr. 18, 1938 (gage height, 3.45 feet, from graph based on gage readings); minimum observed, that of Sept. 1, 1939.

Remarks.- Records good except those for periods of ice effect, Nov. 11, 12, 25-30, Dec. 10-23, 26-30, Jan. 22 to Feb. 3, Feb. 9-16, Feb. 24 to Mar. 9 (computed on basis of two discharge measurements, gage heights, observer's notes, and weather records), and those below 10 second-feet, which are fair. Gage read once or twice daily. No diversion or regulation above gage.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.2	23	20	19	10	9	69	312	154	99	13	2.8
2	6.0	21	18	18	11	9	80	312	125	80	11	3.0
3	6.6	21	16	18	12	9	91	394	146	76	11	3.0
4	6.8	20	13	18	13	9	105	394	166	78	10	2.8
5	6.8	18	16	18	13	9	83	332	146	71	10	2.6
6	8.9	18	15	15	13	9	68	254	116	68	9.2	3.6
7	8.0	18	16	30	11	9	57	206	99	62	8.6	4.9
8	7.4	18	178	20	11	9	54	181	87	56	8.0	3.8
9	6.8	20	66	14	11	9	53	206	114	56	7.8	3.0
10	6.6	22	54	15	11	10	48	236	103	57	7.6	2.8
11	10	20	34	16	11	10	45	216	121	56	7.6	2.9
12	13	17	20	14	11	10	43	213	105	50	7.6	4.1
13	15	18	15	15	11	11	38	236	123	45	6.8	7.4
14	18	16	14	15	11	11	39	273	144	43	6.2	7.6
15	16	15	15	15	11	11	39	373	130	39	5.8	7.2
16	15	18	22	15	12	11	38	373	107	34	5.2	6.2
17	13	15	27	14	13	11	42	394	97	31	5.0	5.4
18	13	15	30	14	13	12	50	352	97	28	4.7	4.7
19	13	15	32	14	13	14	80	292	103	25	4.7	4.4
20	15	14	34	15	13	19	103	219	125	28	4.7	4.1
21	16	16	35	14	13	24	138	172	125	25	4	4.1
22	18	16	37	12	13	32	190	172	116	24	4	4.1
23	17	13	38	12	13	39	200	169	138	22	3	4.0
24	18	13	37	12	11	52	187	135	123	21	3	3.8
25	24	11	25	11	10	73	146	146	97	18	3	3.8
26	20	9	11	11	9	74	116	172	89	18	3	3.8
27	20	9	13	11	9	63	135	200	95	16	3	3.7
28	21	9	14	11	9	54	213	254	95	17	4	4.6
29	18	12	16	11	-	52	352	332	97	15	3.8	4.0
30	25	21	16	10	-	52	460	312	109	15	3.3	3.7
31	25	-	18	10	-	50	-	203	-	13	3.3	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	433.1	25	6.0	14.0	0.526	0.61	859
November	491	23	9	16.4	.617	.69	974
December	915	178	11	29.5	1.11	1.28	1,810
Calendar year	-	-	-	-	-	-	-
January	457	30	10	14.7	.553	.64	906
February	322	13	9	11.5	.432	.45	639
March	776	74	9	25.0	.940	1.08	1,540
April	3,362	460	38	112	4.21	4.70	6,670
May	8,035	394	135	259	9.74	11.23	15,940
June	3,492	166	87	116	4.36	4.86	6,930
July	1,286	99	13	41.5	1.56	1.80	2,550
August	191.9	13	3	6.19	.233	.27	381
September	125.9	7.6	2.6	4.20	.158	.18	250
Water year 1938-39	19,886.9	460	2.6	54.5	2.05	27.79	39,450

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 (revised) southeast of Stevensville. Prior to April 1938 staff gage at same site, different datum.

Drainage area.- 74 square miles.

Records available.- May 1920 to August 1924, April 1938 to September 1939.

Extremes.- Maximum discharge observed during April to June 1938, 641 second-feet May 28 (gage height, 2.92 feet), from rating curve extended above 300 second-feet; minimum observed, 20 second-feet (discharge measurement) Apr. 15.

Maximum discharge observed during water year 1938-39, 192 second-feet May 4; minimum observed, 15 second-feet several times during February and March.

1920-24, 1938-39: Maximum discharge observed, that of May 28, 1938; minimum observed, 15 second-feet at times during March 1923, August 1924, February and March 1939.

Remarks.- Records good except those estimated or interpolated, which are fair, and those above 300 second-feet, which are poor. Several diversions above station. Gage read once daily except Sundays and holidays.

Discharge, in second-feet, 1938-39

1938

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							-	169	-			
2							-	140	-			
3							-	101	298			
4							-	70	-			
5							-	90	298			
6							-	101	316			
7							-	70	280			
8							-	53	262			
9							-	60	227			
10							-	60	188			
11							-	53	163			
12							-	50	157			
13							-	60	169			
14							-	66	175			
15							20	90	169			
16							-	90	163			
17							40	108	157			
18							101	99	262			
19							101	85	-			
20							70	94	-			
21							61	99	-			
22							45	124	-			
23							45	163	-			
24							45	204	-			
25							70	298	-			
26							90	436	-			
27							70	501	-			
28							70	641	-	*40		
29							90	-	-			
30							113	-	-			
31							-	-	-			

*Discharge measurement.

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Discharge, in second-feet, of Burnt Fork Creek near Stevensville, Mont., 1938-39--Continued

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		24	†19	‡20		15	37	158	119	53	27	20
2		25	†19	‡20		15	‡42	152	106	‡55	27	19
3		25	18	20		15	47	166	99	54	28	‡19
4		25	‡18	19		15	47	192	‡111	‡54	28	‡18
5		22	19	19	†20	‡15	41	180	123	54	28	17
6		‡22	19	19			32	152	106	49	‡28	21
7	‡17	21	19	19		†15	33	‡133	106	49	27	20
8		22	21	‡19			33	114	88	47	26	20
9		21	20	19			‡32	110	99	‡43	27	19
10		22	19	19	*21	15	32	106	92	44	26	‡19
11		‡22		19		15	30	106	‡88	50	25	19
12		†21		19		‡16	32	106	85	49	22	22
13		‡21		19		16	30	88	82	45	‡22	22
14	17	†21		19		15	30	‡101	78	44	21	26
15	19	21	†16	‡19	†22	15	30	114	78	44	21	21
16	‡19	21		19		16	‡31	127	102	‡42	22	20
17	19	21		19		15	32	186	99	39	22	‡20
18	17	21		19		15	34	169	‡96	37	24	19
19	17	21		19		‡18	47	186	92	33	21	19
20	19	‡21	†15	†18	20	20	54	147	92	35	‡20	19
21	19	21	†15	†17	†19	24	61	‡140	88	33	20	18
22	19		†15		†18	27	75	132	82	32	20	18
23	‡19		†19		†18	30	‡75	127	85	‡30	20	18
24	19	†20	†21		16	33	75	114	78	28	20	‡18
25	20				16	37	64	106	‡75	28	20	19
26	19		†20	†18	‡16	‡36	56	102	72	27	21	19
27	19				15	35	62	106	66	25	‡22	18
28	21	†15			15	32	78	‡116	64	25	22	19
29	21		21		-	32	110	127	61	24	22	19
30	‡20		20		-	32	‡134	‡132	58	‡26	20	19
31	19	-	20		-	32	-	137	-	28	20	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October 1938	563	21	-	18.2	1,120
November	616	25	-	20.5	1,220
December	561	21	-	18.1	1,110
Calendar year	-	-	-	-	-
January 1939	579	20	17	18.7	1,150
February	552	-	15	19.7	1,090
March	661	37	-	21.3	1,310
April	1,516	134	30	50.5	3,010
May	4,132	192	88	133	8,200
June	2,670	123	58	89.0	5,300
July	1,236	58	24	39.9	2,450
August	719	28	20	23.2	1,430
September	584	26	17	19.5	1,160
Water year 1938-39	14,389	192	-	39.4	28,550

†Stage-discharge relation affected by ice; discharge computed on basis of two discharge measurements, gage heights, and weather records.

‡Missing gage height; discharge Oct. 1-13 computed on basis of records for Willow Creek at Anfinson ranch, near Corvallis, and interpolated for other days.

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 1939 (except during winter).

Extremes.- Maximum daily discharge during year, 5,030 second-feet May 4 (gage height, 4.99 feet); minimum daily, 150 second-feet Nov. 23, stage-discharge relation affected by ice. Lower discharge may have occurred during winter, when no records were obtained.

1929-39: 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. Discharge for period of ice effect, computed on basis of records for stations in Kootenai River Basin and one discharge measurement, result of which is shown for Nov. 22, and those for period of missing gage heights, Sept. 12-25, interpolated. No records Nov. 24 to Mar. 24. Gage read twice daily. This station is one of international gaging stations maintained by Canada under agreement with the United States.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

1.00	135	2.20	825	3.40	2,140	4.60	4,200
1.40	280	2.60	1,190	3.80	2,740	5.00	5,050
1.80	520	3.00	1,620	4.20	3,420		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	208	208				-	612	4,590	1,600	1,070	315	193
2	208	212				-	697	4,500	1,420	1,010	310	190
3	216	208				-	910	4,590	1,050	964	300	186
4	216	204				-	893	5,030	1,130	902	295	193
5	224	200				-	850	4,540	1,260	834	280	220
6	232	200				-	801	3,040	1,390	601	280	232
7	232	196				-	745	2,550	1,360	777	280	224
8	232	196				-	697	2,400	1,370	753	285	220
9	224	193				-	681	2,610	1,380	737	280	216
10	224	193				-	713	2,770	1,360	681	280	206
11	228	193				-	713	2,900	1,340	650	280	204
12	248	200				-	729	2,930	1,410	635	272	204
13	248	196				-	737	3,100	1,550	605	264	204
14	240	193				-	859	3,260	1,910	590	260	204
15	240	196				-	1,070	4,240	1,920	576	256	204
16	236	200				-	1,130	4,500	1,870	562	248	202
17	232	196				-	1,210	4,610	1,790	562	240	202
18	240	193				-	1,310	4,430	1,730	548	236	202
19	236	200				-	1,630	4,280	1,670	520	232	202
20	232	193				-	2,150	3,910	1,680	492	224	202
21	232	*178				-	2,030	2,980	1,580	464	216	200
22	228	*164				-	2,610	2,250	1,520	438	212	200
23	224	*150				-	3,090	2,130	1,470	414	208	200
24	224	-				-	3,220	2,000	1,390	396	208	200
25	220	-				562	3,020	2,000	1,310	378	204	200
26	216	-				548	2,970	2,110	1,270	366	200	200
27	212	-				520	2,560	2,250	1,180	354	200	204
28	212	-				506	3,280	2,240	1,130	348	196	200
29	208	-				492	4,050	1,970	1,110	342	193	196
30	212	-				513	4,450	1,860	1,090	330	193	193
31	212	-				548	-	1,750	-	330	193	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	6,996	248	208	226	0.50	0.58	13,900
November 1-23	4,462	212	150	194	.43	.37	8,850
December	-	-	-	-	-	-	-
Calendar year	-	-	-	-	-	-	-
January	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-
March 25-31	3,689	562	492	527	1.17	.30	7,320
April	50,417	4,450	612	1,680	3.73	4.16	100,000
May	98,320	5,030	1,750	3,170	7.04	8.12	195,000
June	43,260	1,920	1,050	1,440	3.20	3.57	85,800
July	18,429	1,070	330	594	1.32	1.52	36,600
August	7,640	315	193	246	.55	.63	15,200
September	6,105	232	186	204	.45	.50	12,100
Water year	-	-	-	-	-	-	-

*Stage-discharge relation affected by ice.

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 1939.

Average discharge.- 11 years (1910-17, 1935-39), 2,897 second-feet.

Extremes.- Maximum discharge during year, 14,300 second-feet about Apr. 30 (gage height, 8.91 feet, from recorded range in stage); minimum, 323 second-feet Feb. 9 (stage-discharge relation affected by ice).

1910-17, 1929-39: Maximum discharge, 29,500 second-feet June 20, 1916 (gage height, 9.8 feet, former site and datum); minimum, that of Feb. 9, 1939.

Remarks.- Records good except those for periods of missing gage heights, Apr. 29 to May 5 (computed on basis of recorded range in stage, and records for stations at Columbia Falls and South Fork of Flathead River near Columbia Falls), and those for periods of ice effect, Dec. 9-24, Feb. 6 to Mar. 19 (computed on basis of two discharge measurements, temperature records, gage heights, and records for stations at Columbia Falls and South Fork of Flathead River near Columbia Falls), which are fair. Discharge interpolated July 5 and based on twice-daily staff-gage readings July 6 to Aug. 2. No diversion or regulation.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	747	761	663	1,030	483	465	2,000	12,000	7,560	4,420	1,470	832
2	747	754	645	1,080	465	475	2,530	10,500	6,560	4,420	1,420	832
3	810	775	633	1,080	501	480	3,250	11,000	5,860	4,240	1,380	818
4	908	796	615	984	535	455	3,570	12,500	5,640	4,070	1,330	810
5	885	761	621	900	540	415	3,250	12,000	5,860	3,820	1,290	803
6	848	727	645	832	500	446	2,950	11,200	5,640	3,570	1,250	862
7	818	701	639	747	355	465	2,660	9,300	5,640	3,410	1,250	915
8	782	694	663	714	325	465	2,460	8,110	5,420	3,100	1,200	900
9	761	688	730	682	330	475	2,460	8,110	5,210	2,950	1,250	862
10	740	701	720	645	350	475	2,600	8,110	5,210	2,950	1,200	832
11	768	663	600	615	410	475	2,600	8,110	5,210	2,800	1,160	810
12	855	663	420	604	465	480	2,530	8,110	5,210	2,800	1,120	803
13	945	657	400	576	515	465	2,600	8,700	5,210	2,800	1,080	818
14	1,010	663	460	565	540	455	2,730	9,600	5,640	2,730	1,080	810
15	960	694	560	571	570	436	3,100	11,200	5,640	2,660	1,040	789
16	915	734	580	593	560	445	3,410	12,500	6,090	2,460	1,020	782
17	885	761	610	576	560	445	3,410	13,200	6,090	2,340	1,010	768
18	840	734	640	576	560	450	3,570	12,200	5,860	2,220	984	747
19	818	720	660	576	545	490	4,240	11,200	5,860	2,100	968	727
20	796	782	680	566	495	555	5,210	10,200	6,090	2,000	945	714
21	810	754	560	520	480	633	6,090	9,000	6,090	2,000	922	708
22	832	657	640	404	465	727	7,560	8,110	5,860	1,840	900	708
23	825	525	660	478	465	825	8,700	7,830	5,860	1,790	892	694
24	810	530	700	555	480	952	8,700	7,300	5,860	1,740	878	688
25	803	555	694	555	495	1,290	8,400	7,050	5,640	1,700	878	727
26	789	576	571	478	495	1,840	7,300	7,050	5,210	1,650	900	720
27	775	506	474	510	480	1,940	6,800	7,560	4,800	1,650	892	701
28	768	510	411	576	475	1,890	7,300	7,830	4,610	1,600	892	708
29	761	525	506	588	-	1,840	10,000	8,700	4,420	1,560	885	714
30	761	610	651	571	-	1,790	14,000	9,600	4,420	1,560	855	714
31	761	-	855	555	-	1,790	-	8,700	-	1,560	848	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	25,533	1,010	740	824	0.509	0.59	50,640
November	20,177	796	506	673	.415	.46	40,020
December	19,006	855	400	613	.378	.44	37,700
Calendar year 1938	1,198,186	23,500	384	3,283	2.03	27.52	2,377,000
January	20,303	1,080	404	655	.404	.47	40,270
February	13,439	570	325	480	.296	.31	26,660
March	24,827	1,940	415	801	.494	.57	49,240
April	145,980	14,000	2,000	4,866	3.00	3.35	289,500
May	296,580	13,200	7,050	9,567	5.91	6.81	588,300
June	168,270	7,560	4,420	5,609	3.46	3.86	333,800
July	80,510	4,420	1,560	2,597	1.60	1.84	159,700
August	33,189	1,470	848	1,071	.661	.76	65,830
September	23,316	915	688	777	.480	.64	46,250
Water year 1938-39	871,130	14,000	325	2,387	1.47	20.00	1,728,000

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., about 200 feet downstream from highway bridge at Columbia Falls. Zero of gage is 2,978.44 feet above mean sea level.

Drainage area.- 4,440 square miles.

Records available.- May 1922 to September 1923 (fragmentary), June 1928 to September 1939.

Average discharge.- 11 years, 9,064 second-feet.

Extremes.- Maximum discharge during year, 65,600 second-feet Apr. 30 (gage height, 14.57 feet); minimum (not determined), Feb. 10 (stage-discharge relation affected by ice). 1922-23, 1928-39: 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, Dec. 12-21, Feb. 2 to Mar. 18, which were computed on basis of two discharge measurements, gage heights, weather records, and records for two stations upstream and are fair. Discharge for Oct. 1 based on observer's single gage reading. No diversion.

Rating tables, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 30						May 1 to Sept. 30					
1.0	1,760	4.0	6,960	9.5	28,940	1.0	1,680	4.0	6,950	9.5	28,400
1.5	2,340	5.0	9,620	11.0	38,280	1.5	2,270	5.0	9,620	11.0	37,100
2.0	3,060	6.5	14,850	12.5	49,110	2.0	2,970	6.5	14,850	12.5	46,500
3.0	4,810	8.0	21,090	14.0	60,700	3.0	4,700	8.0	21,090	14.0	57,000

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,980	2,100	1,920	2,910	1,600	1,290	8,450	52,800	30,000	16,400	4,400	2,200
2	1,920	2,040	1,920	3,220	1,500	1,300	11,200	43,800	25,400	15,200	4,220	2,140
3	2,040	2,100	1,870	3,140	1,430	1,300	13,700	46,500	23,000	14,500	4,030	2,140
4	2,280	2,160	1,920	2,840	1,480	1,250	14,500	55,600	22,500	13,400	3,940	2,080
5	2,220	2,100	1,870	2,540	1,500	1,200	13,000	54,200	22,500	12,600	3,850	2,080
6	2,100	2,040	1,980	2,400	1,400	1,230	11,200	45,200	21,100	11,900	3,680	2,140
7	2,100	1,980	2,040	2,340	1,300	1,260	9,930	37,100	19,700	10,900	3,590	2,340
8	2,040	1,920	2,340	2,280	1,200	1,300	9,320	32,300	18,900	10,200	3,510	2,200
9	1,980	1,920	3,640	2,220	1,100	1,350	9,320	32,300	18,400	9,930	3,510	2,140
10	1,920	1,920	3,640	2,160	1,000	1,400	9,620	33,500	18,000	9,620	3,430	2,080
11	2,040	1,870	3,140	2,100	1,070	1,500	9,320	33,500	18,000	9,620	3,270	2,020
12	2,340	1,870	2,500	2,100	1,160	1,500	9,020	33,500	18,000	9,620	3,200	1,960
13	2,470	1,820	2,220	2,040	1,260	1,500	9,020	34,700	18,400	9,320	3,120	2,020
14	2,680	1,820	2,140	1,920	1,400	1,450	9,020	37,700	18,900	8,740	3,040	2,080
15	2,680	1,920	2,200	1,920	1,450	1,400	10,200	45,200	18,900	8,460	2,970	2,080
16	2,540	2,100	2,240	1,980	1,400	1,500	10,900	52,100	19,700	7,930	2,900	2,080
17	2,400	2,100	2,240	1,920	1,340	1,600	10,900	55,600	19,300	7,430	2,820	2,020
18	2,340	1,980	2,230	1,920	1,300	1,700	11,900	52,800	18,400	6,950	2,750	1,960
19	2,280	1,980	2,230	1,980	1,280	1,820	14,800	43,800	21,600	6,710	2,680	1,840
20	2,220	2,160	2,220	1,920	1,250	1,980	18,900	37,700	23,500	6,470	2,610	1,840
21	2,220	2,040	2,220	1,870	1,240	2,340	23,000	32,300	22,500	6,470	2,540	1,790
22	2,220	1,870	2,220	1,820	1,240	3,060	28,900	30,000	21,100	6,010	2,470	1,790
23	2,220	1,820	2,220	1,820	1,250	3,980	33,000	28,900	21,100	5,780	2,400	1,740
24	2,220	1,820	2,280	1,920	1,250	4,810	32,400	27,400	20,200	5,450	2,400	1,740
25	2,160	1,820	2,280	1,870	1,260	6,640	30,100	26,400	18,900	5,340	2,340	1,790
26	2,160	1,820	1,980	1,870	1,260	10,200	26,100	26,900	17,600	5,230	2,340	1,790
27	2,100	1,820	1,820	1,820	1,270	9,320	24,500	29,400	16,400	5,120	2,340	1,740
28	2,100	1,820	1,820	1,870	1,280	8,180	29,500	33,500	15,600	5,020	2,340	1,740
29	2,100	1,820	1,820	1,920	-	7,430	43,200	35,900	15,600	4,910	2,340	1,740
30	2,040	1,820	2,160	1,870	-	7,430	60,700	40,700	16,400	4,800	2,270	1,740
31	2,100	-	2,540	1,870	-	7,430	-	36,500	-	4,600	2,200	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	68,210	2,680	1,920	2,200	0.495	0.57	135,300
November	58,370	2,160	1,820	1,946	.438	.49	115,800
December	69,860	3,640	1,820	2,254	.508	.59	138,600
Calendar year 1938	3,407,840	69,600	1,700	9,337	2.10	28.55	6,760,000
January	66,370	3,220	1,820	2,141	.482	.56	131,600
February	36,470	1,600	1,000	1,302	.293	.31	72,340
March	99,650	10,200	1,200	3,216	.724	.83	197,700
April	555,620	60,700	8,450	18,520	4.17	4.65	1,102,000
May	1,207,800	55,600	26,400	38,960	8.77	10.11	2,396,000
June	599,600	30,000	15,600	19,990	4.50	5.02	1,189,000
July	264,630	16,400	4,600	8,536	1.92	2.21	524,900
August	93,500	4,400	2,200	3,016	.679	.78	185,500
September	59,040	2,340	1,740	1,968	.443	.49	117,100
Water year 1938-39	3,179,120	60,700	1,000	8,710	1.96	23.61	6,306,000

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. Zero of gage is at mean sea level (Somers datum).

Records available.- May 1928 to September 1939.

Extremes.- Maximum water-surface elevation observed during year, 2,911.32 feet May 5; minimum observed, 2,900.16 feet Feb. 8.
1928-39: Maximum water-surface elevation observed, 2,913.95 feet May 27, 1928; minimum observed, that of Feb. 8, 1939.

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 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.17	1.26	1.14	-	1.02	-	4.35	11.02	8.30	6.00	2.50	-
2	-	-	1.16	1.72	1.98	0.82	-	10.30	8.10	-	2.38	1.22
3	1.31	1.26	-	1.98	.94	.86	6.04	10.45	7.90	5.85	-	1.20
4	1.37	1.24	1.14	-	-	.90	6.45	11.08	-	-	2.18	1.20
5	1.33	-	1.14	1.66	-	-	6.15	11.32	7.70	5.50	-	1.18
6	-	1.24	1.20	-	.92	.72	-	10.48	7.55	5.40	-	1.18
7	1.29	1.22	1.26	1.50	.90	.80	5.20	-	7.40	-	2.06	1.24
8	1.23	-	1.30	-	.16	.84	4.90	10.00	7.00	5.20	-	1.28
9	1.19	1.16	-	1.38	-	.84	-	9.60	-	-	-	-
10	1.14	1.15	2.32	1.36	.76	.82	-	9.15	6.90	4.95	1.94	-
11	1.20	1.15	-	1.34	.78	.82	4.90	-	-	4.70	-	1.14
12	1.30	1.12	1.66	1.26	-	-	4.84	9.15	6.85	4.65	1.76	1.14
13	1.50	-	1.68	1.18	1.02	.82	4.80	-	-	4.50	-	-
14	1.66	1.10	1.85	-	1.08	.82	4.78	-	6.85	4.40	1.68	1.16
15	-	1.10	-	-	1.12	-	4.55	10.44	-	-	-	-
16	1.58	1.22	1.96	1.18	1.16	.84	-	10.79	6.70	-	1.62	1.16
17	1.52	-	2.06	1.18	1.02	.86	5.50	11.10	6.70	-	-	-
18	1.40	1.24	-	-	-	.86	5.50	11.04	-	3.70	1.58	-
19	1.38	1.24	1.86	1.16	-	-	6.18	10.90	6.75	-	-	1.04
20	1.38	-	1.62	1.14	.98	1.36	6.93	10.40	6.85	3.45	-	1.04
21	1.38	1.28	1.46	1.02	.98	1.38	-	9.60	7.10	3.35	1.54	1.02
22	-	1.28	-	-	1.12	-	8.60	8.80	-	-	-	1.00
23	1.38	-	1.34	.86	1.06	2.38	-	8.65	7.30	3.10	1.40	-
24	1.36	.84	1.44	.92	.88	2.42	9.15	8.40	-	3.00	-	-
25	1.36	.78	-	1.02	.88	3.45	8.94	-	6.90	3.00	1.36	.96
26	-	.74	1.48	1.14	-	-	8.50	8.40	6.75	2.95	-	.96
27	1.32	-	1.20	-	.88	4.38	8.50	-	6.52	2.87	-	-
28	-	.68	.45	1.06	.88	4.32	8.52	-	6.30	2.80	1.32	.94
29	1.28	-	-	-	-	4.20	9.80	9.40	-	-	-	.94
30	-	.98	.96	1.06	-	4.15	11.24	9.10	6.20	2.63	1.30	.92
31	1.26	-	1.56	1.06	-	4.10	-	8.60	-	2.58	1.26	-

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. Zero of gage is at mean sea level (Somers datum).

Records available.- April 1909 to July 1912, April 1928 to September 1939.

Extremes.- Maximum water-surface elevation during year, 2,898.00 feet (estimated) May 17; minimum, 2,882.67 feet Mar. 13.
1909-12, 1928-39: Maximum water-surface elevation observed, 2,904.94 feet June 17, 1933; minimum, 2,881.86 feet Dec. 18-26, 1936.

Remarks.- Records good except those for July 4, Aug. 14-17, which were determined on basis of elevations at adjacent stations and are fair. Records 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 slight regulation by operation of Kerr Dam, 4 miles below outlet of Flathead Lake.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87.16	85.98	85.79	85.79	85.29	83.27	84.45	-	94.21	90.60	89.06	88.03
2	87.12	85.96	85.80	85.78	85.27	83.19	85.12	95.60	93.20	90.48	89.06	88.02
3	87.08	85.96	85.80	85.78	85.25	83.09	86.05	95.75	92.65	90.28	89.05	88.00
4	87.04	85.95	85.81	85.77	85.23	82.97	86.59	-	92.52	90.27	89.04	87.88
5	86.98	85.95	85.82	85.76	85.21	82.87	86.37	-	92.40	90.26	89.02	87.88
6	86.90	85.94	85.83	85.74	85.19	82.79	86.05	96.77	92.19	90.02	88.96	87.80
7	86.82	85.94	85.84	85.72	85.17	82.76	85.67	95.12	91.78	89.98	88.94	87.74
8	86.78	85.93	85.85	85.70	85.15	82.71	85.54	94.34	91.49	89.76	88.92	87.66
9	86.76	85.92	85.86	85.66	84.13	82.69	85.53	94.09	91.28	89.66	88.92	87.60
10	86.74	85.91	85.88	85.62	85.11	82.71	85.55	94.53	91.11	89.58	88.92	87.58
11	86.72	85.90	85.89	85.62	85.09	82.73	85.65	94.33	91.02	89.54	88.90	87.48
12	86.69	85.89	85.89	85.60	84.99	82.75	85.61	94.33	91.02	89.48	88.88	87.36
13	86.66	85.88	85.90	85.60	84.87	82.67	85.69	94.49	91.03	89.40	88.86	87.38
14	86.62	85.87	85.90	85.59	84.71	82.71	85.69	95.19	91.19	89.38	88.84	87.42
15	86.58	85.86	85.91	85.59	84.49	82.73	85.83	96.27	91.28	89.40	88.82	87.44
16	86.55	85.85	85.91	85.58	84.41	82.75	86.15	97.59	91.55	89.44	88.79	87.30
17	86.50	85.84	85.92	85.58	84.29	82.77	86.21	-	91.82	89.40	88.75	87.20
18	86.44	85.83	85.92	85.57	84.21	82.77	86.51	-	91.46	89.38	88.74	87.04
19	86.38	85.82	85.92	85.57	84.09	82.78	86.81	97.03	91.64	89.40	88.64	87.14
20	86.32	85.82	85.92	85.56	83.96	82.77	87.91	96.03	92.14	89.42	88.58	87.12
21	86.28	85.81	85.93	85.56	83.88	82.97	88.76	95.07	91.95	89.40	88.58	87.00
22	86.24	85.81	85.93	85.54	83.81	82.99	90.13	94.61	91.74	89.34	88.50	86.98
23	86.20	85.80	85.93	85.51	83.73	82.91	91.55	94.14	91.56	89.33	88.50	86.94
24	86.14	85.80	85.92	85.48	83.65	82.91	91.71	94.09	91.46	89.32	88.42	86.81
25	86.12	85.80	85.91	85.46	83.57	83.15	91.62	93.74	91.18	89.30	88.34	86.72
26	86.10	85.79	85.90	85.42	83.49	84.09	91.05	93.63	91.04	89.26	88.28	86.88
27	86.08	85.79	85.88	85.40	83.41	84.32	90.64	93.92	90.83	89.22	88.20	86.84
28	86.06	85.78	85.86	85.37	83.35	84.31	91.24	94.44	90.64	89.16	88.12	86.82
29	86.04	85.78	85.84	85.36	-	84.17	93.44	94.78	90.54	89.14	88.04	86.74
30	86.02	85.79	85.82	85.34	-	84.19	96.67	95.75	90.60	89.12	88.04	86.62
31	86.00	-	85.80	85.32	-	84.23	-	95.29	-	89.10	88.04	-

Note.- Add 2,800 feet to obtain elevation above mean sea level (Somers datum).

Flathead River at Damon ranch, near Kalispell, Mont.

Location.- Staff 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. Zero of gage is at mean sea level (Somers datum).

Records available.- April 1909 to July 1912, May 1928 to September 1939.

Extremes.- Maximum water-surface elevation observed during year, 2,894.81 feet May 18; minimum observed, 2,882.46 feet Mar. 20, 21.
1909-12, 1928-39: Maximum water-surface elevation observed, 2,900.94 feet June 17, 1933; minimum, 2,881.55 feet Jan. 27-31, 1937.

Remarks.- Records good except those for periods when gage readings were not used, Jan. 31 to Feb. 19, Sept. 10-15, which were determined on basis of records for stations at Theriault Ferry and Somers and are fair. Records 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 operation of Kerr Dam, 4 miles below outlet of Flathead Lake.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86.98	86.02	85.81	85.76	84.60	83.02	83.62	93.19	92.23	89.56	88.95	88.03
2	86.92	85.99	85.85	85.74	84.55	83.00	84.01	91.97	91.69	89.50	88.92	87.97
3	86.95	86.00	85.90	85.72	84.49	82.96	84.46	92.08	91.34	89.48	88.91	87.91
4	86.89	85.97	85.88	85.68	84.46	82.94	84.81	93.26	91.14	89.47	88.90	87.86
5	86.83	86.02	85.85	85.68	84.42	82.90	84.80	93.90	90.99	89.39	88.93	87.98
6	86.82	86.03	85.85	85.66	84.37	82.89	84.66	93.34	90.82	89.35	88.90	87.76
7	86.76	86.00	85.86	85.64	84.30	82.82	84.56	92.52	90.56	89.26	88.83	87.64
8	86.75	85.91	85.86	85.61	84.21	82.75	84.58	92.11	90.32	89.27	88.82	87.59
9	86.75	85.90	85.87	85.57	84.15	82.71	84.60	91.90	90.14	89.18	88.83	87.55
10	86.74	85.91	85.88	85.52	84.11	82.67	84.64	92.01	89.98	89.07	88.83	87.52
11	86.79	85.94	85.90	85.52	84.09	82.62	84.62	92.06	89.91	89.03	88.82	87.48
12	86.65	86.00	85.90	85.51	84.08	82.60	84.66	92.06	89.89	88.94	88.79	87.42
13	86.63	85.93	85.88	85.48	84.03	82.60	84.77	92.14	89.98	88.93	88.77	87.33
14	86.50	85.90	85.85	85.44	83.96	82.58	84.79	92.44	90.03	88.94	88.76	87.35
15	86.42	85.93	85.84	85.46	83.88	82.56	84.82	93.00	90.13	89.02	88.67	87.34
16	86.40	85.90	85.85	85.42	83.80	82.54	85.06	93.80	90.34	89.17	88.63	87.32
17	86.40	85.94	85.89	85.42	83.73	82.52	85.13	94.44	90.40	89.21	88.61	87.26
18	86.35	85.92	85.92	85.40	83.69	82.50	85.28	94.76	90.31	89.19	88.54	87.17
19	86.29	85.89	85.90	85.38	83.61	82.48	85.69	94.14	90.34	89.17	88.48	87.07
20	86.29	85.84	85.90	85.36	83.49	82.49	86.22	93.50	90.55	89.21	88.44	87.02
21	86.23	85.82	85.88	85.34	83.44	82.46	86.84	93.12	90.45	89.21	88.43	87.00
22	86.21	85.79	85.90	85.29	83.39	82.49	87.78	92.79	90.26	89.20	88.41	86.98
23	86.19	85.84	85.92	85.24	83.35	82.52	88.63	92.65	90.18	89.22	88.40	86.93
24	86.15	85.84	85.90	85.10	83.28	82.63	88.84	92.39	90.12	89.22	88.37	86.84
25	86.14	85.82	85.88	84.97	83.23	82.79	88.84	92.16	89.97	89.18	88.33	86.80
26	86.11	85.82	85.88	84.94	83.17	83.20	88.70	92.02	89.92	89.15	88.26	86.74
27	86.06	85.80	85.86	84.92	83.00	83.37	88.42	92.08	89.77	89.09	88.19	86.62
28	86.02	85.80	85.82	84.87	83.04	83.35	88.89	92.29	89.64	89.07	88.18	86.54
29	86.13	85.80	85.80	84.81	-	83.29	90.11	92.47	89.55	89.07	88.18	86.44
30	86.05	85.80	85.78	84.72	-	83.41	92.12	93.33	89.54	89.04	88.08	86.37
31	86.09	-	85.78	84.66	-	83.52	-	92.91	-	88.99	88.06	-

Note.- Add 2,800 feet to obtain elevation above mean sea level (Somers datum).

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. Zero of gage is at mean sea level (Somers datum).

Records available.- October 1934 to September 1939.

Extremes.- Maximum water-surface elevation observed during year, 2,893.08 feet May 18; minimum observed, 2,882.46 feet Mar. 21, 22.
1934-39: Maximum water-surface elevation observed, 2,894.23 feet May 16, 1936; minimum observed, 2,881.28 feet Jan. 21-23, 1937.

Remarks.- Records good. 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 operation of Kerr Dam, 4 miles below outlet of Flathead Lake.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	87.00	86.00	85.81	85.74	84.67	83.05	83.46	90.96	91.53	89.37	88.98	88.00
2	86.93	86.00	85.80	85.74	84.51	83.00	83.72	90.42	91.22	89.35	88.95	87.98
3	86.96	86.00	85.80	85.74	84.47	82.93	84.07	90.60	90.94	89.34	88.91	87.92
4	86.85	85.92	85.81	85.71	84.45	82.89	84.31	91.35	90.75	89.33	88.88	87.86
5	86.79	85.92	85.86	85.67	84.39	82.83	84.40	91.93	90.59	89.30	88.86	87.81
6	86.81	85.94	85.84	85.63	84.30	82.79	84.34	91.84	90.44	89.30	88.84	87.70
7	86.78	85.95	85.84	85.60	84.22	82.76	84.32	91.50	90.23	89.24	88.83	87.62
8	86.77	85.94	85.82	85.58	84.17	82.74	84.34	91.27	90.03	89.18	88.84	87.59
9	86.74	85.92	85.82	85.55	84.13	82.72	84.47	91.18	89.83	89.11	88.84	87.56
10	86.71	85.92	85.82	85.51	84.09	82.69	84.46	91.20	89.70	89.09	88.85	87.54
11	86.75	85.92	85.84	85.49	84.06	82.67	84.48	91.21	89.62	89.05	88.86	87.45
12	86.64	85.92	85.86	85.47	84.06	82.64	84.51	91.23	89.62	89.01	88.85	87.34
13	86.58	85.92	85.88	85.44	83.98	82.62	84.61	91.27	89.65	88.96	88.83	87.31
14	86.50	85.90	85.87	85.40	83.90	82.66	84.66	91.41	89.76	88.99	88.72	87.34
15	86.41	85.90	85.86	85.38	83.79	82.59	84.79	91.78	89.84	89.01	88.71	87.32
16	86.35	85.88	85.86	85.36	83.74	82.55	84.83	92.27	89.98	89.06	88.67	87.24
17	86.32	85.90	85.86	85.34	83.72	82.52	84.88	92.75	90.08	89.12	88.58	87.16
18	86.30	85.92	85.88	85.31	83.60	82.50	84.97	93.06	90.00	89.15	88.60	87.11
19	86.27	85.94	85.88	85.25	83.51	82.49	85.16	92.92	89.95	89.19	88.56	87.06
20	86.25	85.94	85.86	85.21	83.45	82.48	85.57	92.69	90.03	89.21	88.46	87.02
21	86.21	85.88	85.84	85.17	83.38	82.47	86.05	92.34	89.97	89.18	88.45	86.98
22	86.18	85.88	85.82	85.13	83.32	82.47	86.66	92.16	89.83	89.17	88.43	86.90
23	86.16	85.86	85.82	85.08	83.29	82.54	87.33	92.04	89.76	89.18	88.41	86.85
24	86.14	85.86	85.80	85.00	83.25	82.63	87.57	91.86	89.73	89.17	88.38	86.77
25	86.11	85.85	85.76	84.95	83.21	82.75	87.68	91.63	89.67	89.14	88.35	86.72
26	86.08	85.84	85.76	84.88	83.17	82.98	87.65	91.49	89.64	89.11	88.31	86.71
27	86.06	85.82	85.72	84.83	83.11	83.20	87.58	91.45	89.56	89.08	88.27	86.70
28	86.04	85.82	85.72	84.80	83.06	83.20	87.89	91.50	89.45	89.08	88.23	86.65
29	86.03	85.82	85.70	84.71	-	83.20	88.77	91.66	89.37	89.05	88.16	86.53
30	86.02	85.82	85.70	84.67	-	83.30	90.05	91.93	89.35	89.01	88.08	86.48
31	86.00	-	85.72	84.61	-	83.36	-	91.88	-	89.00	88.02	-

Note.- Add 2,800 feet to obtain elevation 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. Zero of gage is at mean sea level (Somers datum).

Records available.- April 1922 to September 1939.

Extremes.- Maximum water-surface elevation during year, 2,891.52 feet May 21; minimum observed, 2,882.40 feet Mar. 20-23.
1922-39: Maximum water-surface elevation, 2,896.26 feet June 19, 1933; minimum, 2,881.07 feet Dec. 5, 1936.

Remarks.- Records excellent except those Dec. 22 to Feb. 16, Mar. 7 to Apr. 11, May 11-16, and Aug. 19 to Sept. 30, which are mean of observer's twice-daily readings and are good. Since April 1938 elevation of water surface of lake has been subject to regulation by operation of Kerr Dam, below the outlet. Slight diversions and regulation above Flathead Lake.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86.98	85.97	85.79	85.66	84.56	82.98	83.10	87.90	90.65	88.99	88.92	87.95
2	86.90	85.96	85.80	85.66	84.50	82.92	83.22	88.38	90.55	89.01	88.88	87.92
3	86.90	85.97	85.82	85.65	84.46	82.85	83.31	88.73	90.37	89.03	88.85	87.86
4	86.85	85.94	85.80	85.63	84.42	82.78	83.48	89.10	90.21	89.06	88.87	87.80
5	86.80	85.93	85.82	85.56	84.40	82.78	83.60	89.57	90.05	89.06	88.87	87.77
6	86.78	85.93	85.80	85.53	84.33	82.76	83.73	89.95	89.91	89.08	88.84	87.69
7	86.76	85.93	85.80	85.52	84.23	82.69	83.85	90.17	89.77	89.05	88.81	87.61
8	86.72	85.91	85.91	85.50	84.18	82.66	83.94	90.26	89.58	89.00	88.81	87.60
9	86.69	85.88	85.82	85.49	84.11	82.66	83.98	90.25	89.43	88.96	88.82	87.52
10	86.68	85.87	85.81	85.46	84.07	82.64	84.02	90.22	89.30	88.93	88.80	87.50
11	86.67	85.84	85.82	85.41	84.01	82.64	84.09	90.22	89.23	88.92	88.80	87.48
12	86.61	85.87	85.83	85.38	83.99	82.60	84.17	90.23	89.21	88.86	88.78	87.34
13	86.54	85.86	85.84	84.34	83.91	82.60	84.24	90.22	89.26	88.82	88.74	87.30
14	86.46	85.84	85.83	85.30	83.82	82.56	84.28	90.22	89.32	88.84	88.70	87.32
15	86.38	85.86	85.84	85.30	83.72	82.50	84.32	90.34	89.40	88.88	88.76	87.31
16	86.35	85.86	85.84	85.27	83.70	82.48	84.36	90.52	89.54	88.94	88.63	87.20
17	86.32	85.86	85.85	85.24	83.62	82.47	84.43	90.78	89.62	89.02	88.58	87.16
18	86.29	85.87	85.97	85.20	83.56	82.44	84.50	91.07	89.59	89.04	88.52	87.11
19	86.25	85.87	85.87	85.18	83.46	82.42	84.66	91.38	89.48	89.05	88.48	87.07
20	86.21	85.84	85.87	85.17	83.41	82.40	84.69	91.47	89.42	89.12	88.46	87.00
21	86.17	85.84	85.87	85.08	83.35	82.40	84.88	91.45	89.38	89.11	88.40	87.00
22	86.13	85.83	85.84	85.00	83.29	82.40	85.11	91.37	89.30	89.09	88.40	86.98
23	86.10	85.84	85.82	84.98	83.22	82.40	85.42	91.28	89.23	89.10	88.40	86.88
24	86.07	85.83	85.78	84.90	83.20	82.44	85.77	91.15	89.17	89.11	88.30	86.80
25	86.04	85.81	85.78	84.83	83.16	82.47	86.07	90.99	89.16	89.08	88.28	86.72
26	86.01	85.81	85.78	84.78	83.11	82.53	86.32	90.83	89.21	89.05	88.26	86.70
27	86.00	85.80	85.75	84.75	83.06	82.64	86.49	90.69	89.18	89.02	88.23	86.69
28	85.98	85.79	85.71	84.72	82.99	82.75	86.65	90.61	89.11	89.02	88.19	86.59
29	85.98	85.79	85.66	84.69	-	82.86	86.90	90.58	89.03	89.01	88.13	86.50
30	85.98	85.77	85.67	84.63	-	82.92	87.33	90.61	88.98	88.97	88.00	86.50
31	85.99	-	85.65	84.60	-	83.00	-	90.66	-	88.95	88.00	-

Note.- Add 2,800 feet to obtain elevation above mean sea level (Somers datum).

Flathead Lake at Polson, Mont.

Location.- Water-stage recorder, lat. 47°42', long. 114°09', in E½ (revised) sec. 4, T. 22 N., R. 20 W., at south end of Lake at Polson. Zero of gage is at mean sea level (Somers datum).

Records available.- August 1908 to September 1926, June 1928 to September 1939.

Extremes.- Maximum water-surface elevation during year, 2,891.40 feet May 21; minimum, 2,882.32 feet Mar. 21.
1908-26, 1928-39: Maximum water-surface elevation, 2,896.26 feet June 19, 1933; minimum, 2,881.12 feet Dec. 13, 1936.

Remarks.- Records excellent except those Oct. 30 to Nov. 25, Mar. 25 to Apr. 2, Sept. 19-21, which are mean of observer's twice-daily readings and are good. Since April 1938 the elevation of water surface of lake has been subject to regulation by operation of Kerr Dam, 4 miles below outlet. Slight diversions and regulation above Flathead Lake.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86.96	85.96	85.72	85.61	84.48	82.89	82.92	87.82	90.56	88.91	88.83	87.88
2	86.90	85.92	85.72	85.57	84.42	82.86	83.09	88.28	90.48	88.92	88.82	87.82
3	86.84	85.86	85.71	85.51	84.38	82.87	83.18	88.63	90.34	88.93	88.80	87.78
4	86.83	85.84	85.76	85.55	84.29	82.85	83.30	89.01	90.16	88.95	88.77	87.75
5	86.80	85.85	85.71	85.58	84.23	82.75	83.55	89.42	89.98	88.98	88.71	87.66
6	86.74	85.85	85.75	85.53	84.35	82.70	83.63	89.80	89.82	89.01	88.85	87.60
7	86.73	85.83	85.73	85.52	84.26	82.66	83.76	90.05	89.62	89.00	88.81	87.60
8	86.68	85.80	85.74	85.47	84.14	82.64	83.80	90.09	89.47	88.98	88.80	87.52
9	86.62	85.81	85.72	85.44	84.08	82.61	83.87	90.16	89.33	88.93	88.81	87.51
10	86.56	85.82	85.78	85.43	84.04	82.58	84.00	90.15	89.22	88.88	88.76	87.42
11	86.45	85.85	85.82	85.39	83.96	82.54	84.07	90.16	89.16	88.78	88.74	87.35
12	86.42	85.84	85.82	85.36	83.89	82.53	84.09	90.14	89.17	88.78	88.65	87.39
13	86.41	85.78	85.81	85.31	83.83	82.52	84.19	90.14	89.24	88.81	88.65	87.35
14	86.46	85.74	85.92	85.32	83.78	82.50	84.23	90.16	89.34	88.85	88.64	87.30
15	86.48	85.72	85.83	85.26	83.73	82.47	84.26	90.24	89.38	88.83	88.58	87.12
16	86.38	85.68	85.83	85.22	83.65	82.44	84.37	90.42	89.45	88.83	88.56	87.13
17	86.33	85.72	85.82	85.20	83.58	82.42	84.40	90.68	89.51	88.90	88.52	87.08
18	86.28	85.74	85.83	85.18	83.51	82.40	84.46	90.94	89.47	88.97	88.52	87.02
19	86.23	85.74	85.83	85.14	83.47	82.38	84.54	91.18	89.38	89.02	88.46	86.97
20	86.20	85.76	85.85	85.12	83.39	82.37	84.63	91.31	89.32	89.10	88.40	86.92
21	86.17	85.80	85.84	85.12	83.31	82.37	84.79	91.31	89.27	89.05	88.41	86.87
22	86.13	85.84	85.81	85.03	83.28	82.37	85.03	91.24	89.21	89.02	88.37	86.83
23	86.09	85.83	85.77	84.90	83.20	82.38	85.35	91.17	89.15	89.03	88.33	86.82
24	86.03	85.80	85.72	84.86	83.15	82.39	85.66	91.04	89.09	89.02	88.30	86.85
25	85.97	85.78	85.78	84.83	83.07	82.33	85.95	90.88	89.07	89.02	88.25	86.76
26	85.99	85.79	85.74	84.82	83.06	82.56	86.23	90.73	89.13	89.00	88.22	86.65
27	85.94	85.79	85.72	84.75	83.02	82.66	86.42	90.60	89.11	88.98	88.21	86.52
28	85.97	85.76	85.72	84.67	82.97	82.70	86.57	90.47	89.06	88.95	88.14	86.57
29	85.96	85.76	85.65	84.63	-	82.79	86.81	90.44	88.99	88.93	88.10	86.48
30	85.98	85.75	85.57	84.59	-	82.79	87.26	90.45	88.90	88.91	88.05	86.43
31	85.95	-	85.62	84.55	-	82.83	-	90.55	-	88.83	88.00	-

Note.- Add 2,800 feet to obtain elevation 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.

Drainage area.- 7,010 square miles.

Records available.- July 1907 to September 1939.

Average discharge.- 32 years, 11,470 second-feet.

Extremes.- Maximum discharge during year, 45,900 second-feet May 20 (gage height, 12.42 feet); minimum, about 752 second-feet Oct. 3 (gage height, 0.05 foot, estimated, below intake pipe, caused by power regulation); minimum daily, 2,140 second-feet Dec. 31.

1907-39: Maximum discharge, 82,100 second-feet May 29, 30, 1928 (gage height, 17.1 feet); minimum, probably less than 5 second-feet Apr. 13, 1938 (caused by power regulation); minimum daily, 32 second-feet Apr. 12, 1938.

Remarks.- Records good. Discharge for periods of missing gage heights, Feb. 11-13, July 27 to Aug. 15, computed on basis of records of power-plant at Kerr Dam. Several small diversions from tributaries above Flathead Lake. Flow regulated since April 1938 by Kerr Dam, 4 miles below Flathead Lake.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

1.7	2,180	4.0	5,340	8.0	18,400	12.3	45,200
2.0	2,490	5.0	7,240	9.0	23,800		
2.5	3,060	6.0	9,900	10.0	30,000		
3.0	3,720	7.0	13,600	11.0	36,400		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,440	3,180	2,440	4,660	5,170	4,500	4,530	25,000	40,400	17,400	6,150	4,730
2	6,500	3,120	2,490	4,660	5,170	4,500	5,170	27,500	39,800	15,900	5,950	4,590
3	3,940	3,440	2,440	4,660	5,170	4,500	5,340	29,300	39,100	14,900	5,450	5,000
4	5,350	2,820	2,490	4,660	5,170	4,500	5,700	31,200	37,700	14,400	4,600	5,310
5	4,500	2,820	2,440	4,660	5,170	4,180	6,440	33,800	37,000	12,800	3,250	5,340
6	4,500	2,820	2,490	4,660	5,340	4,180	6,830	35,700	36,400	13,600	2,950	5,170
7	4,500	2,820	2,440	4,660	4,340	4,020	7,240	37,700	35,100	14,400	4,100	5,090
8	4,500	2,820	2,490	4,500	4,020	4,020	7,240	37,700	33,100	14,900	3,400	4,860
9	4,340	2,710	2,440	4,500	4,180	4,020	7,460	38,400	30,600	14,400	3,800	4,900
10	4,500	2,540	2,490	4,500	4,180	3,870	7,930	38,400	26,800	14,000	5,050	5,170
11	4,500	2,600	2,540	4,500	5,280	3,720	8,180	38,400	24,400	14,000	5,000	5,400
12	4,500	2,490	2,490	4,500	6,220	3,870	8,180	37,700	18,600	12,800	4,500	5,340
13	4,500	2,540	2,490	4,500	6,390	3,720	8,440	37,700	15,900	9,300	5,150	5,000
14	4,660	2,490	2,490	4,500	7,240	3,720	8,710	37,700	16,400	9,000	5,700	5,000
15	4,830	2,490	2,490	4,340	6,830	3,720	8,710	38,400	16,900	8,350	5,800	5,000
16	4,660	2,490	2,490	4,340	6,630	3,580	9,000	39,800	18,900	4,830	5,650	5,000
17	4,660	2,540	2,490	4,340	6,440	3,580	9,300	41,100	22,500	4,660	5,410	5,000
18	5,000	2,490	2,490	4,340	6,440	3,580	9,300	43,200	28,100	5,380	5,230	5,120
19	5,000	2,490	2,490	4,340	6,060	3,440	9,600	44,500	29,300	6,060	4,020	5,170
20	5,000	2,540	2,660	4,830	5,880	3,440	9,900	45,200	30,000	6,250	4,610	5,170
21	4,830	2,540	3,440	5,700	5,700	3,440	10,500	45,200	30,000	7,010	4,090	5,170
22	4,830	2,600	3,870	5,700	5,520	3,440	11,200	44,500	30,000	6,630	3,890	5,170
23	4,830	2,540	3,870	5,520	5,340	3,440	12,800	44,500	29,300	7,030	5,000	5,000
24	4,660	2,540	4,340	5,520	5,170	3,440	14,000	43,900	26,300	7,240	4,790	4,840
25	4,330	2,540	4,340	5,520	5,000	3,440	15,400	42,500	19,400	7,690	4,660	4,960
26	3,180	2,490	3,060	5,520	5,000	4,020	16,900	41,800	19,400	7,460	4,770	5,170
27	3,180	2,490	3,240	5,340	5,000	4,180	17,900	41,100	22,600	7,050	4,830	5,000
28	3,180	2,490	3,870	5,340	4,830	4,180	18,400	40,400	22,600	7,200	5,120	5,000
29	3,180	2,490	4,050	5,340	-	4,340	19,400	39,800	22,600	6,800	5,520	4,830
30	3,180	2,490	2,710	5,340	-	4,500	21,400	39,800	19,900	6,800	5,340	4,740
31	3,120	-	2,140	5,170	-	4,660	-	40,400	-	6,350	5,340	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	138,880	6,500	3,120	4,480	275,500
November	79,460	3,440	2,490	2,649	157,600
December	88,700	4,340	2,140	2,861	175,900
Calendar year 1938	3,558,902	48,500	32	9,750	7,059,000
January	150,660	5,700	4,340	4,860	298,800
February	152,880	7,240	4,020	5,460	303,200
March	121,740	4,660	3,440	3,927	241,500
April	311,400	21,400	4,830	10,380	617,700
May	1,202,300	45,200	25,000	38,780	2,385,000
June	819,100	40,400	15,900	27,300	1,625,000
July	304,590	17,400	4,660	9,825	604,100
August	149,120	6,150	2,950	4,810	295,800
September	151,540	5,400	4,730	5,051	300,600
Water year 1938-39	3,670,370	45,200	2,140	10,060	7,281,000

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.
Drainage area.- 1,640 square miles.
Records available.- September 1910 to September 1916, April 1923 to September 1939.
Average discharge.- 10 years (1928-32, 1933-39), 3,093 second-feet.
Extremes.- Maximum discharge during year, 27,000 second-feet Apr. 30 (gage height, 15.2 feet, from floodmarks); minimum, about 380 second-feet Feb. 9 (stage-discharge relation affected by ice); minimum gage height, 1.29 feet Oct. 3.
1910-16, 1923-39: Maximum discharge observed, about 46,200 second-feet June 19, 1916 (gage height, 16.6 feet, former site and datum), from rating curve extended above 20,000 second-feet; minimum discharge, 206 second-feet Dec. 6, 1935 (stage-discharge relation affected by ice).
Remarks.- Records excellent except those for periods of ice effect, Nov. 22 to Dec. 3, Dec. 11 to Mar. 24 (computed on basis of two discharge measurements, gage heights, weather records, and records for stations on Flathead River near and at Columbia Falls), and those for periods of missing gage heights, Apr. 23 to May 5, May 16 (computed on basis of records for stations on Flathead River near and at Columbia Falls), which are fair.

Rating tables, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Apr. 29						Apr. 30 to Sept. 30					
1.3	480	3.0	1,630	7.5	8,000	1.3	465	3.0	1,590	9.0	10,710
1.6	630	4.0	2,670	9.0	11,010	1.6	600	4.0	2,640	11.0	15,220
2.0	880	5.0	3,960	10.5	14,380	2.0	835	5.5	4,560	13.0	20,370
2.5	1,230	6.0	5,420	12.0	18,120	2.5	1,190	7.0	6,890	14.9	26,060

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	494	540	570	1,200	550	520	3,560	22,000	11,800	5,900	1,270	590
2	484	535	570	1,300	540	520	4,660	19,000	9,900	5,440	1,190	580
3	516	560	570	1,250	550	520	5,740	21,000	9,100	4,990	1,150	575
4	575	580	580	1,200	560	500	5,900	22,500	8,900	4,560	1,120	565
5	550	570	641	1,050	570	470	5,260	22,300	8,900	4,160	1,080	560
6	535	550	674	950	560	500	4,380	17,700	8,330	3,900	1,010	585
7	520	535	674	900	490	520	3,960	14,500	7,610	3,640	1,010	590
8	516	525	1,020	820	400	520	3,560	12,400	7,070	3,380	975	570
9	512	530	1,820	760	380	560	3,690	12,900	6,890	3,250	1,010	550
10	498	525	1,540	710	400	560	3,820	13,300	6,710	3,120	1,010	536
11	575	520	1,200	680	450	550	3,690	13,300	6,540	3,060	940	532
12	619	512	700	670	490	560	3,560	13,300	6,710	3,000	905	532
13	641	507	600	660	510	560	3,560	13,800	6,890	2,880	863	545
14	711	516	700	650	540	560	3,560	15,700	7,070	2,760	828	595
15	737	555	760	640	550	565	3,960	19,000	7,070	2,520	796	616
16	692	614	800	640	540	570	4,240	23,000	7,610	2,410	776	600
17	658	624	800	640	530	580	4,240	25,100	7,250	2,300	752	570
18	636	592	800	630	520	600	4,660	22,600	6,890	2,140	734	546
19	619	592	800	620	520	650	6,060	18,000	9,100	1,970	710	528
20	597	652	800	620	510	700	7,460	14,500	9,900	1,920	694	514
21	592	608	800	600	520	640	8,930	12,000	8,900	1,970	677	505
22	580	570	800	550	520	1,100	11,400	11,300	8,150	1,860	672	497
23	570	570	800	570	530	1,600	13,500	11,100	7,970	1,720	655	493
24	560	570	800	610	540	2,000	13,200	10,700	7,610	1,630	644	489
25	555	570	800	620	540	3,090	12,600	10,300	6,890	1,590	633	485
26	545	570	730	560	550	4,520	11,500	10,700	6,380	1,510	622	481
27	540	570	640	580	540	3,960	10,500	12,000	5,740	1,470	616	477
28	535	570	640	650	530	3,300	13,500	13,800	5,590	1,430	611	501
29	525	570	640	690	-	2,980	18,000	14,700	5,590	1,390	622	501
30	525	570	750	700	-	2,910	26,000	16,400	5,900	1,350	616	497
31	535	-	900	650	-	2,980	-	14,700	-	1,310	600	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	17,747	737	484	572	0.349	0.40	35,200
November	16,872	652	507	562	.343	.38	33,470
December	24,219	1,820	570	781	.476	.55	48,040
Calendar year 1938	1,103,888	22,800	471	3,024	1.84	25.03	2,190,000
January	23,370	1,300	550	754	.460	.53	46,350
February	14,430	570	380	515	.314	.33	28,620
March	40,365	4,520	470	1,302	.794	.92	80,060
April	222,550	26,000	3,560	7,418	4.65	5.19	453,300
May	493,600	25,100	10,300	15,920	9.71	11.20	979,000
June	228,960	11,800	5,590	7,632	4.65	5.19	454,100
July	84,530	5,900	1,310	2,727	1.66	1.91	167,700
August	25,791	1,270	600	832	.507	.58	51,160
September	16,205	616	477	540	.329	.37	32,140
Water year 1938-39	1,214,639	26,000	380	3,328	2.03	27.55	2,409,000

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 and 7 miles southwest of Whitefish.

Records available.- November 1930 to September 1939.

Extremes.- Maximum discharge during year, 1,300 second-feet May 7 (gage height, 8.75 feet); minimum (not determined) occurred during period of ice effect.
1930-39: Maximum discharge, 2,680 second-feet Apr. 28, 1934 (gage height, 14.47 feet); minimum, 55 second-feet Jan. 20-22, 1937 (stage-discharge relation affected by ice).

Remarks.- Records good except those for period of ice effect, Nov. 24 to Mar. 27, which were computed on basis of two discharge measurements, gage heights, observer's notes, and weather records and are poor. Discharge for Sept. 30 extrapolated. Some water stored during high-water periods and released for logging operations during summer. No diversion.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	102	114					292	1,080	634	448	144	86
2	102	112					334	1,140	616	416	144	86
3	107	105					386	1,220	598	401	149	86
4	116	105					512	1,260	563	386	154	86
5	120	102					546	1,280	563	378	144	86
			90	80	80	80						
6	116	98					529	1,280	546	364	139	87
7	115	96					512	1,280	546	356	134	89
8	114	98					496	1,260	529	341	130	89
9	114	99					496	1,220	512	327	130	87
10	115	101					512	1,140	512	320	125	86
11	112	103					512	1,040	512	306	125	85
12	114	98					512	986	496	292	120	84
13	120	97					546	910	496	278	120	84
14	120	99					563	872	480	259	115	84
15	125	102					580	872	464	252	113	84
			90	85	85	90						
16	125	108					616	872	480	246	112	84
17	120	114					616	891	480	233	110	83
18	120	116					616	910	480	227	108	82
19	116	116					634	929	480	221	103	82
20	120	116					634	948	512	215	98	81
21	120	116					688	929	529	203	96	80
22	120	114					778	872	512	186	96	80
23	116	113				100	872	834	512	186	96	79
24	116	112					853	834	512	186	95	79
25	116	113			75		929	834	529	186	94	78
			85	80								
26	115	100				186	967	778	512	180	93	78
27	115	89				252	986	742	512	175	89	79
28	115	89				278	1,000	724	496	159	86	78
29	115	92				266	967	688	480	139	86	77
30	115	90			-	272	986	670	464	144	85	77
31	114	-			-	266	-	652	-	144	86	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,590	125	102	116	7,120
November	3,127	116	89	104	6,200
December	2,735	-	-	88.2	5,420
Calendar year 1938	109,885	1,260	-	301	218,000
January	2,530	-	-	81.6	5,020
February	2,250	-	-	80.4	4,460
March	3,720	278	-	120	7,380
April	19,470	1,000	292	649	38,620
May	29,947	1,280	652	966	59,400
June	15,557	634	464	519	30,860
July	8,154	448	139	263	16,170
August	3,519	154	85	114	6,980
September	2,486	89	77	82.9	4,930
Water year 1938-39	97,085	1,280	-	266	192,600

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 1939. August 1931 to April 1933 and May to September 1934 at site about 2½ miles upstream; records equivalent.

Extremes.- Maximum discharge observed during year, 477 second-feet May 6 (gage height, 3.12 feet); minimum observed, 5.8 second-feet Sept. 29, 30 (gage height, 1.18 feet).
1931-33, 1934, 1936-39: Maximum gage height, 7.22 feet May 28, 29, 1933, former site and datum (discharge not determined); minimum discharge, 0.8 second-foot Sept. 6, 1931.

Remarks.- Records fair except those for periods of ice effect, Dec. 26-31, Feb. 1-12, 22-25 (computed on basis of gage heights and weather records), and those for periods of backwater from beaver dam, Oct. 1-8, Sept. 14-25, which are poor. Gage read twice daily. Natural storage in Tally Lake.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	16	22	24	19	24	54	360	116	73	16	6.8
2	13	16	21	24	18	24	61	410	108	66	14	6.8
3	16	17	21	24	18	24	70	438	106	63	12	6.2
4	16	17	22	24	18	24	79	465	102	60	12	6.2
5	16	17	22	24	19	23	84	465	98	55	11	6.2
6	16	18	24	24	17	23	90	465	94	55	9.8	6.8
7	16	18	24	24	15	24	94	438	90	51	9.8	6.8
8	16	18	24	24	14	24	96	410	88	50	9.8	7.0
9	15	18	25	24	12	24	98	360	86	47	9.8	7.8
10	14	18	25	24	13	24	102	317	84	44	9.8	7.8
11	16	18	25	24	16	23	104	298	83	43	9.4	8.2
12	16	18	24	24	19	24	106	280	83	40	9.4	8.2
13	16	18	23	24	25	24	112	247	81	38	9	8.6
14	16	19	21	24	24	24	114	247	79	37	9	8.6
15	16	19	20	24	24	24	110	232	75	34	9	8.6
16	18	20	18	24	24	24	114	217	79	33	9	8.6
17	17	22	17	24	23	24	119	217	83	30	9	7.8
18	16	24	16	24	23	24	123	203	86	27	9	7.0
19	16	25	14	24	21	24	130	189	96	26	8.2	7.0
20	16	27	13	24	20	24	140	189	102	25	8.2	6.5
21	17	27	12	24	20	26	167	189	102	24	8.2	6.5
22	17	26	11	23	18	28	203	184	100	23	8.2	6.8
23	16	24	11	21	16	28	232	173	100	22	7.8	6.5
24	16	23	11	21	16	30	264	167	102	20	7.4	7.0
25	16	23	11	20	20	32	298	160	98	20	7.4	6.5
26	16	22	10	18	23	34	317	157	94	19	7.4	6.5
27	16	21	9	16	23	37	317	157	92	19	7.4	6.5
28	16	21	9	13	23	40	298	152	88	19	7.4	6.2
29	16	20	9	15	-	43	298	140	84	19	7.4	6.0
30	16	21	12	18	-	47	338	123	77	18	7.4	5.8
31	16	-	16	20	-	47	-	123	-	16	7.4	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	491	18	12	15.8	974
November	611	27	16	20.4	1,210
December	542	25	9	17.5	1,080
Calendar year 1938	27,028.2	590	7.4	74.0	53,610
January	689	24	13	22.2	1,370
February	541	25	12	19.3	1,070
March	869	47	23	28.0	1,720
April	4,736	338	54	158	9,390
May	8,177	465	123	264	16,220
June	2,756	116	75	91.9	5,470
July	1,116	73	16	36.0	2,210
August	286.6	16	7.4	9.25	568
September	211.8	8.6	5.8	7.06	420
Water year 1938-39	21,026.4	465	5.8	57.6	41,700

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.

Records available.- November to December 1906, July 1928 to September 1939.

Average discharge.- 10 years (1929-39), 185 second-feet.

Extremes.- Maximum discharge during year, 757 second-feet May 20 (gage height, 3.22 feet); minimum observed, 22 second-feet Sept. 27-30 (gage height, 1.06 feet).
1906, 1928-39: 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, Dec. 11 to Jan. 10, Jan. 14-16, Jan. 21 to Mar. 19, which were computed on basis of 2 discharge measurements, temperature records, gage heights, and observer's notes and are fair. Discharge for Nov. 19 to Dec. 13, Dec. 18 to Feb. 13, Feb. 15 to Apr. 11, Sept. 18-20, 27-30, based on observer's once-daily gage readings. Some regulation at Whitefish Lake. No diversion.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	144	77	58	60	54	69	123	572	572	375	128	33
2	141	77	58	63	52	69	145	594	550	363	123	33
3	141	74	63	63	52	69	163	639	529	352	121	33
4	144	77	63	65	47	43	176	686	529	348	114	33
5	141	77	63	74	52	69	169	709	508	340	63	31
6	138	74	58	69	56	69	169	709	508	329	38	31
7	135	72	58	69	52	58	163	709	487	322	35	30
8	129	69	63	72	47	72	163	639	483	310	31	30
9	123	69	67	72	45	77	169	550	475	303	33	28
10	120	69	63	72	40	77	195	550	466	288	33	28
11	117	69	60	72	65	67	201	550	454	281	35	30
12	117	72	57	63	56	77	201	550	442	270	43	30
13	114	74	54	63	74	86	224	550	434	263	43	30
14	111	74	52	67	63	91	228	662	430	256	43	30
15	106	72	52	65	65	97	235	686	422	249	40	24
16	103	72	47	69	60	91	246	709	434	238	40	23
17	100	69	45	63	56	91	249	733	438	232	40	23
18	97	69	43	63	56	72	249	733	434	221	40	25
19	94	72	43	63	52	72	179	757	446	214	42	25
20	91	72	43	63	52	63	195	757	442	204	42	23
21	89	72	43	63	52	59	185	733	450	198	40	24
22	89	67	43	47	43	63	246	709	442	195	40	24
23	86	67	43	54	43	67	267	686	430	185	40	24
24	86	77	40	42	56	75	310	686	434	179	40	24
25	84	67	36	42	56	83	438	662	434	172	38	24
26	81	63	27	43	65	104	438	639	422	163	38	23
27	81	63	35	63	69	96	438	639	418	154	38	22
28	79	63	35	58	65	100	458	616	406	151	38	22
29	79	58	42	54	-	104	508	616	398	145	36	22
30	77	58	49	49	-	114	550	616	383	140	36	22
31	77	-	58	49	-	118	-	594	-	134	33	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	3,314	144	77	107	6,570
November	2,105	77	58	70.2	4,180
December	1,561	67	27	50.4	3,100
Calendar year 1938	63,704	758	-	175	126,400
January	1,894	74	42	61.1	3,760
February	1,545	74	40	55.2	3,060
March	2,462	118	43	79.4	4,880
April	7,680	550	123	256	15,230
May	20,240	757	550	653	40,150
June	13,700	572	383	457	27,170
July	7,574	375	134	244	15,020
August	1,544	128	31	49.8	3,060
September	804	33	22	26.8	1,590
Water year 1938-39	64,423	757	22	177	127,800

Ashley Creek near Kalispell, Mont.

Location.- Wire-weight gage and Cippoletti weir, lat. 48°11', long. 114°24', in SE¼ sec. 16, T. 28 N., R. 22 W., 4 miles west of Kalispell.

Records available.- April 1931 to March 1933, April 1934 to September 1939.

Extremes.- Maximum discharge observed during year, 46 second-feet Mar. 26, 28, 29 (gage height, 4.21 feet); minimum observed, 0.1 second-foot Sept. 19-26.
1931-39: Maximum discharge observed, 285 second-feet Apr. 26, 1934 (gage height, 9.30 feet, former control and datum); no flow at times.

Remarks.- Records good. Discharge for period of missing gage heights, Dec. 11-15, determined on basis of weather records. Gage read twice daily. Some diversion. Storage in Ashley and Smith Lakes.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.9	4.6	1.2	2.1	2.9	1.9	35	26	28	26	14	3.5
2	9.0	5.4	1.4	3.4	2.9	2.0	33	27	26	26	13	.9
3	11	9.0	1.4	3.5	2.9	2.1	35	31	27	26	12	.6
4	10	4.0	1.4	3.8	2.7	2.2	24	34	27	26	12	.5
5	10	4.4	1.5	3.9	2.7	2.2	25	35	27	26	12	.5
6	9.6	3.1	1.4	4.2	2.6	1.9	25	36	27	25	8.9	.4
7	9.2	4.2	1.6	4.0	2.2	1.7	25	34	27	25	7.8	.4
8	8.3	3.0	1.7	3.9	2.1	1.6	27	35	27	25	6.3	.3
9	9.2	4.2	3.0	3.7	1.8	1.7	25	34	26	24	6.3	.3
10	9.2	4.8	3.6	4.0	1.5	1.7	21	32	26	25	7.5	.3
11	12	2.2	2.0	4.2	1.1	1.8	19	32	26	25	8.2	.3
12	12	2.1	1.5	4.2	1.1	1.9	21	30	26	25	7.1	.2
13	9.6	2.1	1.5	4.2	1.1	2.0	21	28	26	23	6.8	.2
14	4.7	3.0	1.5	4.2	1.1	1.8	20	30	23	23	6.4	.2
15	2.5	6.6	1.5	4.2	1.2	1.6	19	28	28	22	5.5	.2
16	3.6	6.7	1.4	4.2	1.3	1.4	18	27	31	22	4.7	.2
17	4.2	7.2	1.5	4.2	1.4	1.4	17	25	32	21	4.2	.2
18	3.7	9.2	1.5	4.2	1.4	1.5	16	23	35	21	3.2	.2
19	4.7	9.0	1.6	4.0	1.4	1.6	18	27	35	21	1.8	.1
20	4.8	6.3	1.6	3.9	1.5	2.3	16	27	37	21	2.2	.1
21	4.9	3.0	1.6	4.0	1.7	11	16	29	38	20	2.6	.1
22	4.8	2.9	1.6	4.4	1.5	12	17	30	36	20	2.2	.1
23	4.4	2.8	1.8	4.3	1.4	14	19	30	35	20	2.3	.1
24	4.7	2.8	2.0	4.2	1.6	11	19	32	35	19	2.1	.1
25	5.8	2.7	2.1	3.9	1.6	29	20	34	35	18	1.6	.1
26	5.5	2.5	2.2	3.7	1.6	30	19	34	34	18	1.1	.1
27	6.6	1.9	1.9	3.4	1.8	23	20	33	30	17	1.0	.2
28	3.7	1.4	1.8	3.1	1.7	44	20	34	30	17	1.4	.3
29	4.6	1.3	1.7	3.1	-	45	20	34	29	16	2.2	.4
30	3.4	1.1	1.6	3.1	-	40	22	33	27	15	4.4	.2
31	3.6	-	1.8	2.9	-	40	-	30	-	15	5.3	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	208.2	12	2.5	6.72	413
November	123.5	9.2	1.1	4.12	245
December	53.9	3.6	1.2	1.74	107
Calendar year 1938	5,624.5	60	1.1	15.4	11,160
January	118.1	4.4	2.1	3.81	234
February	49.8	2.9	1.1	1.78	99
March	335.3	45	1.4	10.8	665
April	652	35	16	21.7	1,290
May	954	36	23	30.8	1,890
June	896	38	23	29.9	1,780
July	673	26	15	21.7	1,330
August	176.1	14	1.0	5.68	349
September	11.3	3.5	.1	.38	22
Water year 1938-39	4,251.2	45	.1	11.6	8,420

244536 O—40——10

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 1939. October 1910 to May 1911, at site 2 miles upstream from Swan Lake.

Average discharge.- 13 years (1922-24, 1928-39), 1,012 second-feet.

Extremes.- Maximum discharge during year, 4,350 second-feet May 6, 19 (gage height, 5.24 feet); minimum, 277 second-feet Feb. 10, 11 (gage height, 2.03 feet).
1922-39: 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. Discharge for Nov. 29 to Dec. 2, June 12-23, July 23 to Aug. 8, computed from once-daily readings of staff gage. No diversion above station. Natural storage in Swan Lake.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	340	360	360	381	335	326	886	3,260	3,260	1,760	650	392
2	340	360	371	387	331	321	990	3,950	3,170	1,700	650	387
3	349	365	376	392	326	321	1,140	4,050	2,900	1,700	620	387
4	360	360	381	392	331	321	1,220	4,150	2,560	1,640	591	392
5	354	365	376	392	335	321	1,220	4,250	2,480	1,570	576	387
6	354	371	376	387	335	312	1,230	4,250	2,400	1,570	562	387
7	349	365	376	387	340	312	1,220	4,050	2,250	1,510	547	381
8	344	360	381	381	303	312	1,190	3,550	2,110	1,420	533	387
9	344	371	387	376	292	312	1,160	3,080	2,040	1,360	526	387
10	349	365	392	376	281	312	1,160	2,820	1,970	1,320	533	381
11	365	360	398	376	281	312	1,160	2,640	1,900	1,270	526	365
12	371	360	392	376	292	326	1,120	2,560	1,760	1,230	519	365
13	376	365	371	376	303	331	1,120	2,560	1,760	1,220	505	371
14	387	371	354	371	317	335	1,120	2,560	1,700	1,160	492	381
15	392	376	344	376	331	335	1,090	2,730	1,700	1,120	498	387
16	387	403	349	376	326	331	1,080	3,080	1,830	1,090	492	392
17	387	421	360	376	321	326	1,060	3,550	1,900	1,060	478	392
18	381	434	360	376	326	331	1,040	3,950	2,040	1,010	464	381
19	376	446	349	376	326	331	1,050	4,250	2,180	960	452	365
20	371	464	365	376	326	349	1,110	4,150	2,480	940	446	371
21	371	471	365	371	331	360	1,230	3,850	2,640	912	434	365
22	365	471	360	371	326	376	1,380	3,450	2,480	886	434	360
23	365	458	365	344	317	398	1,570	3,170	2,480	861	427	365
24	365	415	360	344	321	434	1,830	2,990	2,400	828	415	354
25	365	409	365	349	326	485	1,970	2,820	2,320	796	403	335
26	371	398	371	349	321	583	1,970	2,640	2,180	773	409	335
27	360	387	360	335	326	680	1,900	2,560	2,040	757	415	335
28	360	387	335	340	326	749	1,900	2,560	1,900	742	415	340
29	349	360	349	349	-	789	2,040	2,730	1,760	711	398	340
30	349	360	360	349	-	812	2,480	2,990	1,700	695	403	340
31	365	-	365	349	-	836	-	3,170	-	665	398	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	11,261	392	340	363	0.561	0.65	22,340
November	11,758	471	360	392	.606	.68	23,320
December	11,373	398	335	367	.567	.65	22,560
Calendar year 1938	317,644	4,350	308	870	1.34	18.26	630,000
January	11,456	392	335	370	.572	.66	22,720
February	8,952	340	281	320	.495	.52	17,760
March	12,979	836	312	419	.648	.75	25,740
April	40,636	2,480	886	1,355	2.09	2.33	80,600
May	102,370	4,250	2,560	3,302	5.10	5.88	203,000
June	66,290	3,260	1,700	2,210	3.42	3.82	131,500
July	35,236	1,760	665	1,137	1.76	2.03	69,890
August	15,211	650	398	491	.759	.88	30,170
September	11,107	392	335	370	.572	.64	22,030
Water year 1938-39	338,629	4,250	281	929	1.44	19.49	671,600

Priest Lake at outlet, near Coolin, Idaho

Location.- Staff gage, lat. 48°29'30", long. 116°54', in W½ sec. 5, T. 59 N., R. 4 W., 400 feet north of lake outlet and 2 miles northwest of Coolin. Zero 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 1939. June 1911 to September 1913 (fragmentary gage-height records at Coolin) published as part of records for Priest River at outlet of Priest Lake, at Coolin.

Extremes.- Maximum gage height observed during year, 4.24 feet May 5; minimum, 0.08 foot Sept. 26-30.

1928-39: Maximum gage height observed, 5.94 feet May 23, 1932; minimum, -0.16 foot Nov. 23-25, Dec. 4-6, 1936.

Remarks.- Records good. Gage read once daily.

Gage height, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.18	0.30	0.32	0.54	0.66	0.52	1.02	3.74	3.34	2.36	1.08	0.30
2	.18	.32	.34	.58	.64	.50	1.10	3.90	3.24	2.30	1.06	.32
3	.20	.32	.36	.64	.64	.50	1.18	4.04	3.18	2.26	1.04	.30
4	.28	.34	.36	.66	.63	.50	1.24	4.18	3.10	2.22	1.00	.28
5	.30	.38	.36	.64	.62	.60	1.26	4.24	3.02	2.20	.98	.26
6	.32	.40	.40	.62	.62	.51	1.34	4.20	2.96	2.18	.94	.25
7	.30	.40	.46	.69	.62	.50	1.40	4.14	2.90	2.16	.90	.25
8	.30	.40	.44	.64	.60	.50	1.50	4.06	2.86	2.10	.86	.24
9	.28	.40	.44	.66	.58	.48	1.50	4.00	2.82	2.03	.84	.23
10	.26	.40	.42	.66	.55	.48	1.58	3.94	2.78	2.0[illegible]	.82	.22
11	.27	.40	.40	.68	.55	.47	1.62	3.90	2.72	1.93	.80	.22
12	.28	.40	.40	.68	.55	.50	1.66	3.86	2.70	1.9[illegible]	.76	.22
13	.26	.38	.36	.68	.55	.52	1.72	3.84	2.66	1.90	.74	.20
14	.30	.36	.36	.66	.58	.49	1.78	3.82	2.64	1.8[illegible]	.72	.19
15	.30	.36	.36	.64	.60	.49	1.82	3.90	2.62	1.80	.68	.19
16	.28	.36	.38	.67	.64	.49	1.89	3.98	2.58	1.74	.64	.18
17	.28	.34	.34	.68	.60	.48	1.97	4.02	2.60	1.70	.62	.18
18	.28	.32	.34	.69	.58	.48	2.02	3.98	2.60	1.63	.60	.18
19	.28	.32	.34	.69	.56	.48	2.23	4.00	2.63	1.64	.58	.18
20	.26	.34	.36	.66	.54	.48	2.24	3.96	2.66	1.56	.56	.18
21	.26	.36	.36	.62	.55	.48	2.33	3.88	2.68	1.49	.54	.18
22	.26	.38	.36	.64	.55	.49	2.54	3.84	2.68	1.44	.52	.16
23	.25	.38	.38	.66	.55	.51	2.74	3.76	2.60	1.40	.50	.16
24	.24	.36	.38	.68	.54	.53	2.82	3.72	2.56	1.38	.48	.14
25	.24	.34	.38	.69	.54	.60	2.92	3.68	2.58	1.34	.46	.10
26	.24	.32	.39	.72	.53	.66	3.02	3.62	2.58	1.31	.44	.08
27	.24	.32	.40	.70	.53	.70	3.12	3.56	2.54	1.28	.40	.08
28	.26	.30	.42	.67	.52	.78	3.25	3.42	2.50	1.24	.38	.08
29	.28	.30	.44	.66	-	.84	3.48	3.42	2.42	1.22	.36	.08
30	.28	.30	.46	.66	-	.86	3.60	3.42	2.38	1.18	.34	.08
31	.30	-	.50	.66	-	.98	-	3.40	-	1.10	.32	-

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 and 2 miles northwest of Coolin. Zero of gage is 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.- June 1911 to September 1918 (fragmentary), May 1919 to September 1939.

Average discharge.- 25 years (1913-18, 1919-39), 1,075 second-feet.

Extremes.- Maximum discharge during year, 4,010 second-feet May 5, 6; maximum gage height, 3.82 feet May 5; minimum discharge, 184 second-feet Sept. 30 (gage height, -0.10 foot). 1911-39: 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 ice effect Feb. 7-10 and of log effect May 2, 3, which were computed on basis of weather records, gage heights, and discharge measurement of Feb. 10 and are fair. No diversion above station.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

-0.10	184	0.70	524	1.70	1,330	2.90	2,870
+.10	239	.90	659	2.00	1,660	3.20	3,340
.30	310	1.10	804	2.30	2,030	3.50	3,840
.50	405	1.40	1,045	2.60	2,430	3.70	4,180

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	207	236	246	319	390	319	577	3,420	2,720	1,600	618	246
2	213	236	249	341	385	319	624	3,580	2,570	1,540	604	242
3	227	249	259	359	380	319	666	3,760	2,500	1,510	583	239
4	242	256	262	369	374	319	709	3,920	2,430	1,490	564	236
5	239	252	265	374	380	314	767	4,010	2,290	1,460	537	233
6	236	249	272	374	369	314	812	4,010	2,220	1,440	518	230
7	236	249	276	380	360	314	850	3,920	2,160	1,380	499	227
8	233	246	280	390	340	310	889	3,760	2,160	1,350	481	222
9	230	252	276	395	320	310	921	3,670	2,100	1,320	468	219
10	230	259	280	395	320	306	961	3,580	2,030	1,280	456	213
11	233	256	276	390	341	310	995	3,500	2,030	1,240	434	210
12	236	256	272	390	354	310	1,030	3,500	1,960	1,200	416	216
13	239	252	269	390	350	314	1,080	3,420	1,900	1,150	405	213
14	239	256	265	390	354	314	1,120	3,420	1,900	1,120	395	207
15	242	256	259	395	354	310	1,160	3,500	1,840	1,070	380	205
16	236	256	256	390	350	310	1,200	3,670	1,840	1,010	374	205
17	233	256	252	395	345	306	1,260	3,670	1,900	986	364	202
18	230	252	252	411	341	302	1,360	3,670	1,900	953	354	202
19	233	256	252	416	341	302	1,490	3,670	1,900	905	345	200
20	233	262	249	411	336	302	1,610	3,580	1,960	889	332	200
21	227	262	249	405	332	306	1,780	3,420	1,960	873	323	197
22	224	259	249	395	328	310	1,960	3,340	1,900	842	319	197
23	224	256	259	395	323	319	2,160	3,340	1,900	827	310	197
24	224	252	262	395	323	336	2,290	3,260	1,900	812	306	200
25	224	249	265	400	328	364	2,500	3,180	1,840	782	302	192
26	222	246	265	395	323	395	2,570	3,100	1,840	760	295	192
27	224	242	276	395	323	422	2,640	3,020	1,780	737	291	189
28	224	242	283	395	319	451	2,800	2,940	1,720	716	276	189
29	230	239	287	395	-	481	3,020	2,870	1,720	694	265	189
30	233	242	291	400	-	512	3,260	2,870	1,650	666	259	187
31	236	-	302	395	-	537	-	2,800	-	638	252	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	7,139	242	207	230	0.402	0.46	14,160
November	7,531	262	236	251	.439	.49	14,940
December	8,255	302	246	266	.465	.54	16,370
Calendar year 1938	467,888	5,780	207	1,282	2.24	30.42	928,000
January	12,039	416	319	388	.678	.78	23,880
February	9,683	390	319	346	.605	.63	19,210
March	10,657	537	302	344	.601	.69	21,140
April	45,061	3,260	577	1,502	2.63	2.93	89,380
May	107,370	4,010	2,800	3,464	6.06	6.99	213,000
June	60,520	2,720	1,650	2,017	3.53	3.94	120,000
July	33,240	1,600	638	1,072	1.87	2.16	65,930
August	12,325	618	252	398	.696	.80	24,450
September	6,296	246	187	210	.367	.41	12,490
Water year 1938-39	320,116	4,010	187	877	1.53	20.82	635,000

Priest River near Priest River, Idaho

Location.- Water-stage recorder, lat. 48°13', long. 116°55', in NE¼SE¼ sec. 11, T. 56 N., R. 5 W., 500 feet downstream from Saddler Creek, a quarter of a mile downstream from Lower West Branch, 2¾ miles north of Priest River, and 3½ miles upstream from mouth.

Drainage area.- 902 square miles.

Records available.- October 1930 to September 1939, 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.

Extremes.- Maximum discharge during year, 5,000 second-feet May 5 (gage height, 6.04 feet); minimum, 264 second-feet Sept. 30 (gage height, 0.80 foot).
1903-5, 1910-11, 1923, 1929-39: Maximum discharge, 8,890 second-feet May 23, 1932 (gage height, 8.03 feet); minimum discharge recorded, 184 second-feet Jan. 7, 1937 (gage height, 0.54 foot).

Remarks.- Records good except those during period of log effect, Oct. 1 to June 1, which were computed on basis of records for station on Priest River at outlet of Priest Lake near Coolin, gage height record, seven discharge measurements (results of which are shown for Oct. 21, Dec. 6, Jan. 7, Feb. 9, Mar. 16, Apr. 15, May 16), and weather records and are fair. No diversion above station. Some regulation on tributary.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	330	380	400	520	600	500	950	4,500	3,150	1,830	727	348
2	340	380	410	560	590	500	1,050	4,300	3,070	1,780	714	343
3	360	390	430	600	590	500	1,250	4,200	2,950	1,740	695	343
4	380	410	440	650	580	500	1,200	4,800	2,640	1,730	676	338
5	380	410	450	630	580	500	1,200	5,000	2,720	1,700	651	338
6	370	400	462	620	560	500	1,250	4,900	2,670	1,660	632	334
7	370	400	470	615	520	500	1,300	4,800	2,560	1,620	620	329
8	370	400	480	620	450	490	1,350	4,600	2,500	1,560	608	324
9	360	410	460	630	399	490	1,400	4,450	2,450	1,510	589	319
10	360	420	460	620	400	490	1,450	4,350	2,400	1,470	571	315
11	370	420	440	620	450	490	1,500	4,250	2,340	1,430	559	319
12	380	410	430	620	500	490	1,600	4,150	2,280	1,370	542	334
13	390	410	420	620	530	490	1,700	4,050	2,230	1,340	518	338
14	390	410	420	620	560	490	1,750	4,050	2,180	1,290	512	329
15	380	420	410	620	550	490	1,800	4,150	2,130	1,260	501	319
16	370	420	410	620	550	487	1,850	4,310	2,180	1,200	490	315
17	370	420	400	620	540	480	1,950	4,450	2,230	1,160	473	310
18	370	420	400	640	540	480	2,100	4,450	2,230	1,130	462	302
19	370	420	400	660	530	500	2,300	4,350	2,280	1,070	451	297
20	370	430	400	650	530	550	2,500	4,250	2,340	1,040	435	293
21	360	430	400	640	530	600	2,700	4,150	2,340	1,010	424	293
22	360	420	410	630	520	650	3,000	4,050	2,230	97[illegible]	413	289
23	360	410	420	620	520	700	3,200	3,950	2,230	95[illegible]	403	289
24	360	400	420	620	520	750	3,400	3,850	2,180	93[illegible]	398	285
25	360	390	430	620	520	800	3,500	3,750	2,180	90[illegible]	398	285
26	370	390	440	620	510	790	3,400	3,650	2,130	87[illegible]	388	276
27	370	390	450	620	510	780	3,300	3,550	2,080	84[illegible]	388	276
28	370	380	460	610	510	760	3,500	3,450	2,030	82[illegible]	377	272
29	370	380	470	610	-	780	3,800	3,350	1,930	80[illegible]	357	272
30	370	390	480	610	-	800	4,200	3,300	1,880	76[illegible]	352	268
31	380	-	500	610	-	850	-	3,200	-	75[illegible]	348	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	11,410	390	330	368	0.408	0.47	22,630
November	12,160	430	380	405	.449	.50	24,120
December	13,492	500	400	435	.482	.56	26,760
Calendar year 1938	674,119	6,960	330	1,847	2.05	27.80	1,337,000
January	19,165	660	520	618	.685	.79	38,010
February	14,689	600	399	525	.582	.61	29,140
March	18,177	850	480	586	.650	.75	36,050
April	65,450	4,200	950	2,182	2.42	2.70	129,800
May	128,610	5,000	3,200	4,149	4.60	5.30	256,100
June	70,940	3,150	1,880	2,365	2.62	2.92	140,700
July	38,537	1,830	753	1,243	1.38	1.59	76,440
August	15,672	727	348	506	.561	.65	31,080
September	9,292	348	268	310	.344	.38	18,430
Water year 1938-39	417,594	5,000	268	1,144	1.27	17.22	828,300

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, British Columbia.

Records available.- March 1936 to September 1939.

Extremes.- Maximum discharge observed during year, 6,720 second-feet Apr. 30 (gage height, 12.15 feet); minimum discharge(not determined), occurred during period of ice effect.
1936-39: Maximum discharge observed, 9,060 second-feet May 26, 1938 (gage height, 14.55 feet); minimum discharge, 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 periods of ice effect, Dec. 13 to Jan. 4, Jan. 22 to Feb. 21, which were computed on basis of two discharge measurements, gage heights, and weather records and are fair. Discharge May 2, 3, July 7 interpolated. Gage read twice daily. Complete record furnished by Dominion Water and Power Bureau (Canada). Some discharge measurements made by Geological Survey.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	127	406	244	290	115	179	1,330	5,600	2,180	1,510	327	163
2	126	397	224	537	183	187	1,540	5,710	1,870	1,390	324	172
3	197	394	229	494	185	183	1,750	5,820	1,780	1,380	324	172
4	279	376	222	403	181	179	1,880	5,940	1,790	1,540	298	172
5	197	329	232	364	191	171	1,790	4,900	1,880	1,430	284	172
6	177	306	253	332	160	187	1,680	4,060	1,680	1,250	270	257
7	150	301	253	323	143	183	1,610	3,380	1,840	1,180	267	199
8	145	290	284	318	91	154	1,590	3,160	2,030	1,110	259	183
9	143	281	295	306	90	177	1,580	3,380	1,840	1,010	249	172
10	136	290	295	298	90	173	1,610	3,240	1,810	960	249	168
11	239	268	220	284	90	173	1,700	3,300	2,070	895	241	186
12	358	263	169	276	91	173	1,790	3,460	1 980	843	228	246
13	406	246	232	253	92	183	1,820	3,880	1,910	787	221	204
14	319	239	250	246	95	181	1,930	4,520	2,030	751	218	188
15	295	253	275	248	98	181	2,300	5,550	1,990	708	211	186
16	220	268	253	248	100	187	2,310	5,750	2,580	687	204	177
17	204	271	248	248	103	183	2,360	5,060	2,420	638	199	186
18	193	253	199	253	110	193	2,560	3,990	2,320	610	195	172
19	185	248	189	248	115	208	2,750	3,550	2,360	582	190	163
20	177	306	118	246	120	234	2,930	3,120	2,680	575	190	163
21	173	271	246	206	123	306	3,490	2,790	2,590	550	188	156
22	167	232	163	154	126	449	3,880	3,340	2,370	537	183	151
23	165	161	199	236	212	609	4,260	3,180	2,230	498	179	155
24	165	212	210	229	169	849	4,220	2,900	2,300	477	174	157
25	181	177	189	202	202	1,180	3,860	2,820	2,250	445	174	156
26	181	258	152	187	183	1,220	3,310	2,790	2,030	422	190	155
27	334	276	302	244	183	1,130	3,400	3,100	1,880	409	186	153
28	315	376	332	210	187	1,100	4,190	3,160	1,790	389	177	155
29	309	346	332	204	-	1,120	6,330	3,220	1,750	364	170	151
30	424	239	337	200	-	1,220	6,720	3,230	1,660	345	166	151
31	418	-	304	191	-	1,200	-	2,570	-	327	163	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	7,105	424	126	229	14,100
November	8,533	406	161	284	16,900
December	7,450	337	118	240	14,800
Calendar year 1938	403,726	8,840	108	1,110	801,000
January	8,478	537	154	273	16,800
February	3,828	212	90	137	7,590
March	14,052	1,220	154	453	27,900
April	82,470	6,720	1,330	2,750	164,000
May	120,470	5,940	2,570	3,890	239,000
June	61,890	2,680	1,660	2,060	123,000
July	24,599	1,540	327	794	48,800
August	6,898	327	163	223	13,700
September	5,239	257	151	175	10,400
Water year 1938-39	351,012	6,720	90	962	697,000

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. Zero of gage is 1,300 feet above mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 225 square miles.

Records available.- June 1929 to September 1939.

Average discharge.- 10 years, 202 second-feet.

Extremes.- Maximum discharge during water year 1937-38, 2,080 second-feet May 2 (gage height, 27.26 feet, during period of backwater), from rating curve extended above 1,200 second-feet; minimum, 24 second-feet (revised) Sept. 19-24 (gage height, 22.64 feet).

Maximum discharge during water year 1938-39, 1,420 second-feet (gage height, 26.22 feet), from rating curve extended above 1,200 second-feet; minimum, 18 second-feet Oct. 10 (gage height, 22.55 feet).

1929-39: Maximum discharge, 2,450 second-feet Apr. 29, 1933 (gage height, 27.46 feet), from rating curve extended above 1,200 second-feet; minimum, probably less than 8 second-feet sometime during period Dec. 25, 1929, to Apr. 7, 1930.

Remarks.- Records good except those for periods of ice effect, Nov. 23-27, Dec. 11-29, 1938, Jan. 16-27, Feb. 1-16, 20-23, 1939, which were computed on basis of one discharge measurement, gage heights, and weather records and are poor. Flow partly regulated by flash dam used for logging operations 6½ miles upstream. No diversion.

Revisions.- Revised figures of discharge for June to September 1938 are given below and supersede those published in Water-Supply Paper 862. Figures of discharge for remainder of year are being published to complete the table.

Rating tables, water years 1937-38 and 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1, 1937, to May 26, 1938

22.6	18	24.0	273	26.0	1,280
22.8	34	24.5	460	27.0	2,000
23.0	56	25.0	695	27.5	2,400
23.5	140	25.5	965		

May 27, 1938, to Sept. 30, 1939

22.5	15	24.0	283	25.5	960
23.0	61	24.5	468	26.0	1,280
23.5	151	25.0	702	26.5	1,630

Discharge, in second-feet, 1937-39

1937-38

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	30	30	128	98	84	74	286	1,960	1,050	153	46	29
2	30	30	122	101	84	86	296	1,920	905	172	46	28
3	30	30	116	101	87	96	316	1,660	850	169	46	27
4	33	30	112	98	87	101	360	1,460	825	160	45	28
5	31	30	109	99	84	103	435	1,240	776	151	42	29
6	30	30	105	115	86	105	504	1,080	751	148	41	30
7	30	30	103	116	82	112	569	995	702	138	41	32
8	29	32	98	101	78	118	645	965	654	136	41	32
9	29	33	87	96	76	124	721	965	597	132	40	32
10	29	34	98	94	76	134	747	965	522	128	39	31
11	29	37	91	92	74	144	800	965	434	122	38	30
12	29	42	55	91	74	153	882	995	393	115	37	28
13	29	48	57	91	74	179	909	1,080	397	107	38	27
14	28	55	80	92	75	235	909	1,240	389	102	39	27
15	28	75	84	107	64	303	937	1,240	374	97	39	27
16	31	91	84	112	61	445	965	1,240	355	91	38	26
17	32	99	84	109	69	414	1,080	1,280	341	86	37	25
18	32	80	84	105	72	378	1,350	1,210	331	81	37	25
19	31	68	80	103	74	348	1,660	1,080	311	78	37	24
20	31	64	78	101	72	324	1,560	1,060	289	73	36	24
21	30	60	76	101	74	306	1,350	1,080	274	70	35	24
22	30	57	76	101	72	290	1,240	1,240	263	66	34	24
23	30	66	74	98	70	280	1,210	1,460	254	62	33	24
24	30	84	74	86	69	267	1,210	1,660	268	58	33	24
25	30	122	65	94	68	267	1,210	1,770	277	56	32	25
26	30	153	68	81	68	270	1,320	1,740	248	56	32	27
27	30	162	68	81	68	270	1,420	1,630	232	54	32	27
28	30	158	70	81	70	283	1,420	1,420	226	52	32	27
29	29	147	70	80	-	286	1,490	1,280	215	51	31	27
30	30	136	62	76	-	280	1,700	1,240	184	48	29	27
31	30	-	79	80	-	280	-	1,180	-	47	29	-

Discharge, in second-feet, of Sheep Creek near Northport, Wash., 1937-39--Continued

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	27	35	31	36	32	30	495	1,240	204	266	53	27
2	28	35	32	37	32	30	606	1,080	194	248	68	27
3	45	39	34	40	30	30	702	1,050	186	237	25	27
4	52	39	35	41	28	30	726	1,050	189	234	39	27
5	45	37	36	41	26	30	702	1,020	172	229	32	28
6	38	35	37	40	24	30	654	905	179	215	41	27
7	35	34	39	39	22	30	606	800	179	202	42	27
8	33	34	41	39	20	29	592	726	179	184	42	26
9	27	36	42	37	20	28	606	654	176	176	41	25
10	23	35	40	37	20	28	630	630	176	165	40	24
11	32	34	36	37	20	28	630	582	176	143	39	25
12	39	33	32	35	20	29	630	541	174	145	37	27
13	37	32	28	34	24	30	630	518	172	138	37	27
14	35	32	26	34	24	30	630	518	167	134	35	27
15	34	32	24	34	26	30	678	536	167	126	35	26
16	33	34	22	34	28	29	726	554	186	84	35	26
17	32	34	22	34	31	29	751	550	218	100	33	26
18	32	34	20	34	31	32	776	508	237	102	32	24
19	32	35	20	33	30	33	800	442	246	97	32	23
20	32	40	20	32	30	48	825	355	268	95	32	23
21	31	38	20	32	30	72	878	348	286	91	31	23
22	31	34	20	32	30	43	990	352	283	88	31	23
23	31	28	20	32	30	78	1,080	348	271	83	32	23
24	31	26	20	30	30	146	1,110	331	286	79	30	23
25	30	24	20	30	30	280	1,050	308	338	74	29	23
26	31	24	20	30	30	366	960	289	378	72	29	23
27	32	24	22	30	30	355	850	277	366	67	29	23
28	32	25	24	32	30	331	850	266	341	62	28	23
29	32	27	28	33	-	334	990	254	314	60	28	23
30	34	28	32	34	-	370	1,280	240	289	57	27	23
31	35	-	34	34	-	417	-	210	-	53	27	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October 1937	930	33	28	30.0	0.133	0.15	1,840
November	2,113	162	30	70.4	.313	.35	4,190
December	2,637	128	55	85.1	.378	.44	5,230
Calendar year 1937	54,997	940	-	151	.671	9.08	109,100
January 1938	2,981	116	76	96.2	.428	.49	5,910
February	2,092	87	61	74.7	.332	.35	4,150
March	7,055	445	74	228	1.01	1.16	13,990
April	29,501	1,700	286	983	4.37	4.88	58,510
May	40,300	1,960	965	1,300	5.78	6.66	79,930
June	13,687	1,050	184	456	2.03	2.26	27,150
July	3,056	172	47	98.6	.438	.50	6,060
August	1,155	46	29	37.3	.166	.19	2,290
September	817	32	24	27.2	.121	.14	1,620
Water year 1937-38	106,324	1,960	24	291	1.29	17.57	210,900
October 1938	1,041	52	23	33.6	.149	0.17	2,060
November	977	40	24	32.6	.145	.16	1,940
December	877	42	20	28.3	.126	.15	1,740
Calendar year 1938	103,539	1,960	20	284	1.26	17.11	205,400
January 1939	1,077	41	30	34.7	.154	.18	2,140
February	758	32	20	27.1	.120	.12	1,500
March	3,405	417	28	110	.489	.56	6,750
April	23,433	1,280	495	781	3.47	3.87	46,480
May	17,482	1,240	210	564	2.51	2.89	34,680
June	6,997	378	167	233	1.04	1.16	13,880
July	4,106	266	53	132	.587	.68	8,140
August	1,091	68	27	35.2	.156	.18	2,160
September	749	28	23	25.0	.111	.12	1,490
Water year 1938-39	61,993	1,280	20	170	.756	10.24	123,000

Peak discharge.- Apr. 30 (6:30 to 7 p.m.) 1,420 sec.-ft.

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. Zero of gage is 1,840.00 feet above mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 2,220 square miles.

Records available.- August 1928 to September 1939.

Average discharge.- 11 years, 1,272 second-feet.

Extremes.- Maximum discharge during year, 10,400 second-feet May 17 (gage height, 16.9 feet); minimum, 60 second-feet Dec. 10 (gage height, 9.10 feet); may have been less during period of ice effect.

1928-39: Maximum discharge, 14,000 second-feet June 17, 1933 (gage height, 18.4 feet); minimum, 14 second-feet (discharge measurement) Jan. 23, 1930, or may have been less sometime during period Jan. 18-23, 1930.

Remarks.- Records excellent except those for periods of ice effect, Nov. 13, 24-28, Dec. 11-31, Jan. 16 to Mar. 4 (computed on basis of gage heights and weather records), which are poor, and those for period of missing gage heights, Aug. 3-10 (daily discharge interpolated), which are fair. Many small diversions for irrigation above station. This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Aug. 25 to Sept. 30)

9.1	60	11.0	950	14.0	4,790
9.3	90	11.5	1,440	15.0	6,600
9.5	135	12.0	1,990	16.0	8,500
10.0	330	12.5	2,590	17.0	10,600
10.5	589	13.0	3,250		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	118	247	159	150	100	110	684	7,170	4,140	2,230	377	115
2	120	256	165	153	100	110	836	6,790	3,600	2,050	358	122
3	141	260	169	159	100	120	950	7,360	3,250	1,820	345	122
4	184	256	169	156	100	120	1,050	8,500	3,320	1,990	330	115
5	215	243	169	156	90	125	1,080	7,930	3,760	2,350	315	122
6	277	227	173	153	90	128	1,030	6,790	3,600	2,110	300	128
7	260	203	165	153	80	135	1,020	5,850	3,680	1,990	285	132
8	231	188	173	159	80	132	1,030	5,310	3,600	1,820	270	132
9	211	203	176	159	70	135	1,110	5,310	3,320	1,600	255	130
10	199	199	114	159	70	141	1,180	5,130	3,250	1,440	240	128
11	195	165	90	159	70	138	1,260	4,960	3,830	1,330	223	122
12	199	150	80	159	70	153	1,330	4,960	3,760	1,260	215	122
13	227	140	80	156	70	144	1,500	5,490	3,680	1,160	203	125
14	243	156	70	156	80	150	1,720	6,600	3,830	1,080	195	125
15	243	176	70	156	80	147	2,230	8,120	3,530	1,050	184	125
16	231	184	70	153	80	153	2,410	9,100	3,830	986	173	130
17	215	184	70	153	80	165	2,410	9,940	4,300	995	165	130
18	207	184	80	150	90	176	2,590	8,500	4,300	917	159	122
19	195	184	90	140	90	192	2,780	6,930	4,140	836	156	122
20	184	199	100	130	90	215	2,980	5,850	3,900	790	150	118
21	180	184	100	110	90	243	3,460	4,960	3,830	761	147	108
22	176	119	110	100	90	251	4,140	4,790	3,460	718	144	106
23	173	108	110	90	100	277	4,460	5,490	3,250	671	138	100
24	173	95	100	90	100	312	4,460	5,130	3,390	632	132	96
25	169	90	100	90	100	354	4,460	4,790	3,390	589	140	94
26	165	95	80	90	100	397	3,980	4,790	3,320	560	130	98
27	165	110	70	100	100	416	3,760	5,310	2,980	526	128	112
28	165	120	70	100	110	421	4,300	5,130	2,720	493	130	132
29	173	141	90	100	-	431	5,850	6,030	2,530	457	132	141
30	184	156	120	110	-	482	7,550	6,600	2,410	436	128	147
31	211	-	140	110	-	560	-	5,130	-	402	120	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	6,029	277	118	194	11,960
November	5,222	260	90	174	10,360
December	3,522	176	70	114	6,990
Calendar year 1938	518,663	11,500	70	1,421	1,029,000
January	4,159	159	90	134	8,250
February	2,470	110	70	88.2	4,900
March	7,033	560	110	227	13,950
April	77,650	7,550	684	2,588	154,000
May	194,790	9,940	4,790	6,284	386,400
June	105,900	4,300	2,410	3,530	210,000
July	36,049	2,350	402	1,163	71,500
August	6,367	377	120	205	12,630
September	3,621	147	94	121	7,180
Water year 1938-39	452,812	9,940	70	1,241	898,100

Peak discharge.- May 17 (9:20 p.m.) 10,400 sec.-ft.; May 29 (10:10 to 10:50 p.m.) 7,360 sec.-ft.

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, 1½ miles southeast of Laurier, and 12 miles upstream from Boulder Creek.

Drainage area.- 3,800 square miles.

Records available.- September 1929 to September 1939.

Average discharge.- 10 years, 2,504 second-feet.

Extremes.- Maximum discharge during water year 1937-38, 21,700 second-feet May 27 (gage height, 13.82 feet); minimum, 260 second-feet (revised) Sept. 23, 24 (gage height, 2.76 feet).

Maximum discharge during water year 1938-39, 16,300 second-feet May 17, 18 (gage height, 12.0 feet); minimum, 144 second-feet Dec. 11 (gage height, 2.51 feet).

1929-39: Maximum discharge, 23,800 second-feet June 17, 1933 (gage height, 14.48 feet); minimum occurred sometime during winter of 1929-30.

Maximum stage known, about 22 feet sometime in May or June 1894.

Remarks.- Records good except those for periods of ice effect, Dec. 7-11, 25-28, 1937, Jan. 4-9, 24-31, Feb. 15-18, Nov. 25-30, Dec. 12-31, 1938, Jan. 1, 22-31, Feb. 1-3, Feb. 8 to Mar. 5, 1939 (computed on basis of gage heights and weather records), which are poor, and those for periods of missing gage heights, Apr. 17-22, 24, 26-28, May 3-15, 1938 (computed on basis of records for station near Ferry), which are fair. North Fork regulated by storage at Grand Forks, British Columbia. Many small diversions for irrigation and domestic supply. This station is one of the international gaging stations maintained by the United States under agreement with Canada.

Revisions.- Revised figures of discharge for August and September 1938 are given below and supersede those published in Water-Supply Paper 862. Figures of discharge for remainder of year are being published to complete the table.

Rating tables, water years 1937-38 and 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

Oct. 1, 1937, to May 26, 1938

2.7	215	4.0	920
3.0	340	4.5	1,320
3.3	490	5.0	1,800
3.6	660		

Note.- Same as following table above 5.0 feet.

May 27, 1938, to Sept. 30, 1939

2.5	140	5.0	1,800	10.0	10,900
2.8	280	5.5	2,360	11.0	13,500
3.1	430	6.0	3,040	12.0	16,300
3.5	650	7.0	4,600	14.0	22,300
4.0	980	8.0	6,500		
4.5	1,350	9.0	8,600		

Discharge, in second-feet, 1937-39

1937-38

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	287	520	726	714	495	552	1,700	16,000	13,000	3,420	606	340
2	291	515	636	732	480	618	1,700	16,600	11,900	3,120	556	340
3	304	465	600	678	505	636	1,750	16,000	11,600	2,960	529	330
4	304	395	535	620	520	636	1,800	14,900	11,600	2,890	496	330
5	318	360	520	620	552	642	2,080	13,300	11,400	2,750	490	330
6	318	350	552	620	570	654	2,680	11,900	11,400	2,610	468	315
7	304	355	580	620	552	672	2,610	10,600	11,200	2,480	458	325
8	308	380	470	630	540	714	2,890	9,700	10,400	2,360	430	335
9	304	405	460	660	525	726	3,420	9,400	10,200	2,300	425	345
10	300	440	460	660	530	768	3,960	9,500	8,390	2,240	425	350
11	291	495	460	600	525	906	4,440	9,600	7,550	2,060	405	350
12	295	535	445	618	530	990	4,940	10,000	7,340	1,850	395	350
13	295	564	505	612	510	955	5,500	11,100	7,550	1,600	395	345
14	291	612	624	612	535	1,110	6,100	12,000	7,760	1,230	395	330
15	283	660	666	654	510	1,410	6,300	12,300	7,550	1,160	385	325
16	291	648	666	666	470	1,940	6,710	12,400	6,920	1,120	390	310
17	291	624	666	678	440	2,240	8,300	12,200	6,710	1,050	390	305
18	283	618	630	672	470	1,960	9,600	11,400	6,920	1,120	410	295
19	308	612	570	648	495	1,900	10,600	10,400	6,300	1,120	425	285
20	331	570	576	624	505	1,800	10,700	10,700	5,900	1,080	420	290
21	360	570	606	630	525	1,700	9,900	11,900	5,900	1,020	425	280
22	360	564	576	624	558	1,600	9,600	13,200	5,700	945	452	280
23	360	568	520	570	576	1,550	9,490	15,400	5,500	910	474	270
24	400	618	435	530	570	1,550	9,950	17,800	5,120	847	441	275
25	405	678	380	490	564	1,500	10,200	19,900	5,900	798	425	285
26	405	750	330	510	430	1,500	11,100	21,100	5,700	764	410	275
27	390	794	340	520	430	1,500	12,200	21,400	4,940	746	400	280
28	390	815	370	530	450	1,600	12,700	20,200	4,600	740	375	280
29	380	768	480	530	-	1,650	13,000	18,400	4,280	680	360	285
30	390	738	666	510	-	1,700	14,600	17,500	3,800	650	350	290
31	505	-	696	500	-	1,700	-	15,200	-	617	345	-

Discharge, in second-feet, of Kettle River near Laurier, Wash., 1937-39--Continued

1938-39

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	285	365	340	390	370	340	1,850	14,300	7,130	4,120	764	320
2	290	380	365	474	370	340	2,240	13,000	6,300	3,720	728	305
3	330	410	370	518	380	340	2,820	13,000	5,700	3,490	698	305
4	345	405	380	507	380	340	3,260	14,600	5,500	3,340	668	300
5	340	405	390	485	380	340	3,640	14,600	5,700	3,880	628	300
6	365	395	390	458	375	345	3,490	12,400	5,900	3,960	600	290
7	410	380	395	474	365	340	3,340	10,900	5,900	3,720	562	290
8	425	380	390	474	340	340	3,260	9,490	5,900	3,420	551	295
9	405	380	395	458	320	345	3,340	9,040	5,700	3,120	534	290
10	375	380	390	430	300	350	3,560	9,040	5,310	2,820	518	285
11	380	370	290	395	300	355	3,720	8,600	5,700	1,900	496	295
12	370	345	270	390	290	365	3,960	8,600	6,100	1,800	458	275
13	365	335	260	390	300	375	4,280	9,260	6,100	2,060	430	280
14	370	345	250	390	300	380	4,520	10,700	6,100	2,120	410	275
15	390	350	250	395	300	390	5,310	13,000	6,100	1,960	400	275
16	395	405	250	390	310	400	6,100	14,900	6,100	1,850	395	275
17	380	415	260	395	310	415	6,300	16,000	6,920	1,750	370	275
18	380	410	280	390	320	446	6,300	15,200	7,340	1,800	365	265
19	365	420	310	380	320	480	6,710	11,900	7,130	1,600	365	270
20	365	440	340	370	330	512	7,130	9,950	6,920	1,560	350	280
21	350	425	340	345	330	573	7,760	8,600	6,710	1,470	330	270
22	345	390	370	320	330	634	9,040	8,180	6,300	1,430	330	265
23	345	345	370	310	340	674	9,950	8,600	5,700	1,390	325	265
24	335	320	360	310	340	934	10,200	8,600	5,700	1,230	320	260
25	350	300	340	310	340	2,410	10,200	7,970	5,900	1,160	315	250
26	345	290	300	310	340	1,650	9,720	7,760	5,700	1,120	315	250
27	340	280	260	320	340	1,560	8,820	8,180	5,310	1,120	320	250
28	325	290	260	330	340	1,510	8,820	8,180	4,940	1,020	305	245
29	335	300	270	340	-	1,470	10,400	8,390	4,600	945	310	240
30	340	320	290	350	-	1,510	13,500	10,200	4,360	889	315	240
31	350	-	310	360	-	1,600	-	8,820	-	819	315	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October 1937	10,342	505	283	334	20,510
November	17,006	815	350	567	33,730
December	16,746	726	330	540	33,220
Calendar year 1937	720,709	14,200	110	1,975	1,430,000
January 1938	18,882	732	490	609	37,450
February	14,362	576	430	513	28,490
March	39,379	2,240	552	1,270	78,110
April	210,520	14,600	1,700	7,017	417,600
May	432,000	21,400	9,400	13,940	856,900
June	233,030	13,000	3,800	7,768	462,200
July	49,237	3,420	617	1,588	97,660
August	13,350	606	345	431	26,480
September	9,325	350	270	311	18,500
Water year 1937-38	1,064,179	21,400	270	2,916	2,111,000
October 1938	11,090	425	285	358	22,000
November	10,975	440	280	366	21,770
December	10,045	395	250	324	19,920
Calendar year 1938	1,052,195	21,400	250	2,883	2,087,000
January 1939	12,158	518	310	392	24,120
February	9,360	380	290	334	18,570
March	22,063	2,410	340	712	43,760
April	183,540	13,500	1,850	6,118	364,000
May	331,960	16,000	7,760	10,710	658,400
June	178,770	7,340	4,360	5,959	354,600
July	66,583	4,120	819	2,148	132,100
August	13,790	764	305	445	27,350
September	8,280	320	240	276	16,420
Water year 1938-39	858,614	16,000	240	2,352	1,703,000

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 the international boundary, a quarter of a mile south of Myncaster, British Columbia, and 4½ miles downstream from Mary Ann Cresk.

Drainage area.- 80 square miles.

Records available.- October 1929 to September 1939 (fragmentary), in water-supply papers of Geological Survey. May 1923 to September 1929, in bulletins of Dominion Water and Power Bureau (Canada).

Extremes.- Maximum discharge recorded during periods Oct. 1 to Nov. 9, May 26 to Sept. 30, 7.3 second-feet June 24 (gage height, 0.67 foot); no flow Aug. 13-25.
1923-39: Maximum discharge recorded, 99 second-feet June 14, 1923; no flow July 16-18, 25, 1926, Aug. 13-25, 1939.

Remarks.- Records good. Discharge estimated Oct. 22, 25-30, Nov. 7, 8. Discharge computed by weir formula. Diversions upstream from station for irrigation. No record during winter. 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 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.8	3.7						-	2.6	2.5	0.3	0.3
2	2.0	3.5						-	2.4	2.5	.3	.4
3	3.1	3.4						-	2.5	2.8	.2	.2
4	4.0	3.2						-	3.1	3.0	.2	.2
5	3.5	3.1						-	4.6	3.4	.2	.4
6	3.1	3.0						-	4.6	3.2	.1	.4
7	2.9	3.0						-	4.3	2.8	.1	.4
8	2.9	3.0						-	3.6	2.4	.2	.4
9	2.9	3.1						-	3.5	2.0	.2	.4
10	2.6	-						-	3.4	1.9	.1	.2
11	2.6	-						-	3.5	1.9	.1	.3
12	2.6	-						-	3.5	1.5	.1	.4
13	2.6	-						-	3.1	1.4	0	.5
14	2.6	-						-	2.8	1.3	0	.6
15	3.0	-						-	3.1	1.3	0	.5
16	2.9	-						-	4.3	1.3	0	.5
17	2.9	-						-	5.1	1.3	0	.4
18	2.8	-						-	5.7	1.3	0	.4
19	2.9	-						-	4.7	1.1	0	.4
20	2.9	-						-	4.3	1.2	0	.3
21	2.9	-						-	3.9	1.1	0	.4
22	2.9	-						-	3.4	.9	0	.3
23	2.9	-						-	3.4	.7	0	.4
24	2.9	-						-	6.2	.6	0	.2
25	2.9	-						-	5.0	.6	0	.2
26	3.0	-						3.7	4.4	.6	.2	.4
27	3.2	-						3.6	3.9	.6	.4	.4
28	3.3	-						3.6	3.5	.5	.2	.4
29	3.5	-						3.2	3.1	.4	.2	.4
30	3.6	-						2.9	2.8	.4	.2	.4
31	3.7	-						2.9	-	.3	.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	91.4	4.0	1.8	2.9	181
November 1-9	29.0	3.7	3.0	3.2	58
December	-	-	-	-	-
Calendar year	-	-	-	-	-
January	-	-	-	-	-
February	-	-	-	-	-
March	-	-	-	-	-
April	-	-	-	-	-
May 26-31	19.9	3.7	2.9	3.3	39.5
June	114.3	6.2	2.4	3.8	227
July	46.8	3.4	.3	1.5	93
August	3.5	.4	0	.1	6.9
September	11.1	.6	.2	.4	22
Water year	-	-	-	-	-

Colville River at Kettle Falls, Wash.

(Formerly published as Colville River at Meyers 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 about 5 miles upstream from mouth.

Records available.- October 1922 to September 1939.

Average discharge.- 17 years, 234 second-feet.

Extremes.- Maximum discharge observed during year, 620 second-feet Mar. 26-30; minimum observed, 18 second-feet Aug. 30.
1922-39: Maximum discharge observed, 2,720 second-feet Apr. 20, 1938; minimum observed, 0.5 second-foot Aug. 15, 1930.

Remarks.- Records good except those for periods of ice effect, Nov. 26 to Dec. 1, Dec. 15-31, Jan. 23, 24, Feb. 1-22, which were computed on basis of gage heights and weather records and are poor. Several ditches divert water, upstream from station, for irrigation. Slight regulation for power by small reservoir upstream from falls. Gage-height record and some discharge measurements furnished by Washington Water Power Co. Gage read twice daily.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

4.4	17	5.0	72	6.5	496
4.6	29	5.5	150	7.0	710
4.8	47	6.0	292		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	89	150	110	150	85	133	578	373	125	117	31	26
2	90	160	125	220	100	150	578	394	125	109	32	27
3	117	160	169	273	110	160	578	332	125	101	29	27
4	133	160	169	292	120	169	578	373	92	101	27	29
5	150	160	150	292	120	150	578	352	117	117	26	29
6	150	150	160	220	110	160	578	312	125	101	24	60
7	150	169	160	273	120	150	537	312	125	101	24	35
8	133	150	160	237	100	160	537	312	133	88	29	39
9	133	160	169	220	85	150	537	273	142	83	29	31
10	117	160	169	206	70	169	516	273	133	80	29	32
11	133	160	160	192	80	150	516	254	142	62	26	28
12	109	142	125	192	90	169	516	220	142	68	27	37
13	125	160	89	192	100	180	516	220	150	53	29	35
14	133	160	101	192	120	192	537	180	150	53	26	40
15	125	160	100	192	130	237	537	192	150	37	27	43
16	125	160	100	180	130	220	537	180	169	41	24	45
17	117	160	100	192	130	220	537	169	160	40	25	47
18	125	160	100	192	130	237	537	169	169	35	24	45
19	150	160	100	180	130	254	516	160	169	32	24	38
20	125	160	100	180	120	332	516	160	180	35	27	43
21	142	160	100	169	120	414	496	169	180	41	27	45
22	142	150	100	133	120	455	516	160	169	39	25	43
23	142	117	110	120	142	496	516	169	169	37	25	41
24	133	117	120	120	150	537	496	169	150	41	23	43
25	133	92	100	125	160	578	496	169	150	37	22	39
26	125	85	85	133	117	620	496	150	180	37	26	39
27	133	85	95	160	133	620	476	160	169	34	23	39
28	133	90	100	169	133	620	455	160	160	27	24	42
29	142	95	110	180	-	620	434	160	133	27	24	42
30	133	100	120	169	-	620	414	150	125	30	19	43
31	142	-	130	133	-	578	-	150	-	31	22	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	4,029	150	89	130	7,990
November	4,252	169	85	142	8,430
December	3,806	180	85	123	7,550
Calendar year 1938	178,453	2,600	51	489	354,000
January	5,878	292	120	190	11,660
February	3,255	160	70	116	6,460
March	9,900	620	133	319	19,640
April	15,655	578	414	522	31,050
May	6,976	394	150	225	13,840
June	4,408	180	92	147	8,740
July	1,835	117	27	59.2	3,640
August	799	32	19	25.8	1,580
September	1,152	60	26	38.4	2,280
Water year 1938-39	61,945	620	19	170	122,900

*Backwater from Grand Coulee Dam will cover site of town formerly known as Kettle Falls, which is on Columbia River 1 mile upstream from mouth of Colville River; town has been moved to site of Meyers Falls and the name of the town of Meyers Falls changed to Kettle Falls.

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. Zero of gage is 2,100.00 feet above mean sea level.

Drainage area.- 1,220 square miles.

Records available.- April 1911 to December 1912, July 1920 to September 1939.

Average discharge.- 20 years, 2,422 second-feet.

Extremes.- Maximum discharge during year, 13,000 second-feet Apr. 29 (gage height, 46.16 feet); minimum, 255 second-feet Sept. 24 (gage height, 37.71 feet).

1911-12, 1920-39: Maximum discharge, 55,300 second-feet Dec. 22 or 23, 1933 (gage height, 56.9 feet, from high-water mark), from rating curve extended above 24,000 second-feet by logarithmic plotting; minimum, 122 second-feet Dec. 4, 1923; minimum gage height, 37.03 feet Sept. 6, 1931.

Remarks.- Records good except those for periods of ice effect, Jan. 23-25, Feb. 7-11, which were computed on basis of weather records and records for other stations in Coeur d'Alene Basin and are fair. No appreciable diversion or regulation above station. Gage-height record and results of eight discharge measurements furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	311	333	394	632	536	500	7,680	10,200	2,060	966	416	285
2	311	322	458	793	476	512	9,510	9,510	1,860	934	404	290
3	350	355	548	1,270	494	518	9,750	10,500	1,760	934	394	290
4	388	410	548	1,500	524	518	9,030	10,500	1,810	982	388	290
5	388	428	653	1,360	524	476	7,680	8,340	1,810	942	382	300
6	388	382	910	1,150	512	470	6,640	6,640	1,680	894	372	311
7	360	350	998	1,010	475	464	5,870	5,520	1,580	849	366	311
8	338	333	1,070	926	425	452	5,350	5,180	1,580	814	366	306
9	328	328	1,320	849	375	458	5,350	5,350	1,540	772	355	290
10	322	344	1,360	786	450	470	5,520	5,350	1,450	737	355	285
11	476	316	1,150	758	550	560	5,690	5,180	1,400	716	355	280
12	625	306	870	744	618	695	6,050	4,860	1,360	688	350	285
13	632	295	716	737	614	765	5,690	4,860	1,320	653	344	300
14	578	300	709	702	886	779	5,180	5,020	1,270	660	338	344
15	488	366	716	737	863	723	5,180	5,520	1,270	625	333	372
16	428	506	716	730	786	702	5,870	5,520	1,320	597	322	355
17	388	709	625	709	716	702	6,440	5,020	1,320	572	316	322
18	366	639	584	709	681	886	6,840	4,400	1,270	554	311	306
19	350	560	560	828	660	1,360	8,570	3,970	1,270	542	300	300
20	338	618	518	926	625	2,160	9,510	3,440	1,400	542	300	290
21	328	674	488	894	578	3,440	10,200	3,200	1,400	542	295	285
22	316	597	488	765	542	4,700	11,200	3,020	1,360	518	290	280
23	306	506	488	600	560	5,870	11,000	2,850	1,360	512	290	275
24	300	452	482	640	542	6,840	9,990	2,680	1,320	494	290	270
25	300	422	488	660	560	8,570	8,800	2,520	1,270	482	290	270
26	295	377	416	618	524	9,990	7,470	2,410	1,230	470	290	270
27	300	360	388	653	518	8,340	7,050	2,410	1,150	458	290	270
28	300	338	404	674	512	6,840	8,570	2,360	1,100	452	290	275
29	311	355	476	653	-	6,050	12,300	2,410	1,050	434	285	270
30	311	377	536	611	-	5,870	12,500	2,520	1,010	428	285	275
31	328	-	584	584	-	6,050	-	2,260	-	428	285	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	11,548	632	295	373	0.306	0.35	22,910
November	12,658	709	295	422	.346	.39	25,110
December	20,661	1,360	388	666	.546	.63	40,980
Calendar year 1938	870,638	34,800	280	2,385	1.95	26.54	1,727,000
January	25,208	1,500	584	813	.666	.77	50,000
February	16,326	886	375	583	.478	.50	32,380
March	86,730	9,990	452	2,798	2.29	2.64	172,000
April	236,480	12,500	5,180	7,883	6.46	7.21	469,100
May	153,520	10,500	2,260	4,952	4.06	4.68	304,500
June	42,580	2,060	1,010	1,419	1.16	1.29	84,460
July	20,191	982	428	651	.534	.62	40,050
August	10,247	416	285	331	.271	.31	20,320
September	8,852	372	270	295	.242	.27	17,560
Water year 1938-39	645,001	12,500	270	1,767	1.45	19.66	1,279,000

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. Zero of gage is 2,100.00 feet above mean sea level.

Drainage area.- 3,750 square miles.

Records available.- February 1905 to September 1939. April 1903 to February 1905, from St. Joe Boom Co.'s gage at mouth of St. Joe River.

Extremes.- Maximum gage height during year, 31.06 feet May 6; minimum, 22.18 feet Sept. 30.

1903-1939: Maximum gage height, 39.05 feet Dec. 25, 1933; minimum, 19.9 feet Oct. 10-12, 1904, Sept. 24, 25, 1905, Oct. 14 to Nov. 3, 1906.

Maximum stage known prior to 1903, 37.6 feet, May 31, 1894, from high-water marks.

Remarks.- Records excellent. Washington Water Power Co. stores much water in lake. Stage regulated by operation of Taintor gates and bear-trap dam at Post Falls. Gage-height record furnished by Washington Water Power Co.

Bench mark.- The following information has been reprinted from Water-Supply Paper 672, page 95, to make it more readily available.

Original gage installed Feb. 11, 1905, and all gages since then installed by the Geological Survey are referred to Geological Survey bench mark in southeast corner of Merriam Building, at Sherman and Fourth Streets, Coeur d'Alene. The bench mark is firmly set in a substantial building, which has not been moved, and therefore the elevation of the bench mark should be the same now as when it was set. Levels referred to the bench mark, however, have sometimes been misinterpreted because various adjustments in level nets have resulted in changing its accepted elevation. These accepted elevations are as follows:

	Feet
Original, as published in U. S. Geol. Survey Twenty-first Ann. Rept., pt. 1, p. 518	2,157.404
Second, as published in U. S. Geol. Survey Bull. 487, p. 24, and Bull. 567, p. 79	2,157.909
Third, as determined by adjustment to fit the U. S. Coast and Geodetic Survey precise-level net	2,154.509

Coeur d'Alene Lake stages, published in Water-Supply Paper 272 and subsequent water-supply papers (including this one), refer to the original accepted elevation of the bench mark (2,157.404 feet). To obtain mean sea-level elevation corresponding to the original elevation of the bench mark, add 2,100.00 feet to published stages.

Gage height, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24.10	23.27	22.83	23.77	24.04	22.59	27.93	30.38	26.42	26.58	25.90	23.68
2	24.06	23.26	22.86	23.83	23.98	22.56	28.17	30.60	26.40	26.58	25.84	23.59
3	24.06	23.28	22.88	23.96	23.92	22.54	28.49	30.73	26.46	26.58	25.79	23.49
4	24.02	23.25	22.90	24.06	23.89	22.52	28.77	30.89	26.54	26.54	25.76	23.42
5	23.99	23.25	22.96	24.18	23.87	22.48	28.93	31.02	26.57	26.52	25.71	23.38
6	23.94	23.22	23.00	24.26	23.83	22.48	28.98	31.01	26.53	26.50	25.62	23.28
7	23.90	23.19	23.09	24.33	23.79	22.44	28.92	30.83	26.48	26.49	25.53	23.18
8	23.88	23.15	23.19	24.38	23.70	22.41	28.80	30.58	26.48	26.49	25.48	23.12
9	23.86	23.12	23.32	24.41	23.60	22.38	28.65	30.29	26.53	26.50	25.43	23.04
10	23.83	23.12	23.44	24.42	23.51	22.35	28.52	30.05	26.57	26.53	25.38	22.99
11	23.82	23.09	23.52	24.43	23.41	22.34	28.41	29.81	26.57	26.55	25.33	22.92
12	23.83	23.06	23.58	24.44	23.36	22.36	28.35	29.60	26.54	26.52	25.28	22.83
13	23.83	23.03	23.58	24.46	23.22	22.38	28.30	29.38	26.54	26.52	25.20	22.77
14	23.82	23.00	23.58	24.44	23.13	22.38	28.22	29.19	26.53	26.52	25.12	22.77
15	23.79	23.01	23.59	24.45	23.10	22.34	28.10	29.01	26.56	26.52	25.06	22.72
16	23.80	23.00	23.60	24.43	23.02	22.30	27.99	28.90	26.57	26.51	24.98	22.68
17	23.78	23.01	23.61	24.42	22.94	22.27	27.85	28.80	26.55	26.48	24.91	22.65
18	23.75	23.05	23.61	24.42	22.88	22.27	27.96	28.67	26.52	26.47	24.82	22.64
19	23.72	23.05	23.59	24.41	22.82	22.36	28.04	28.51	26.49	26.45	24.73	22.60
20	23.69	23.05	23.59	24.40	22.76	22.62	28.24	28.29	26.50	26.42	24.67	22.56
21	23.65	23.06	23.59	24.39	22.72	23.03	28.52	28.08	26.52	26.39	24.60	22.55
22	23.61	23.05	23.60	24.39	22.69	23.58	28.82	27.86	26.55	26.37	24.51	22.53
23	23.56	23.04	23.63	24.36	22.68	24.20	29.17	27.64	26.57	26.35	24.43	22.50
24	23.54	23.02	23.63	24.34	22.66	24.90	29.48	27.39	26.57	26.31	24.35	22.46
25	23.49	22.99	23.62	24.30	22.67	25.66	29.71	27.13	26.58	26.27	24.27	22.41
26	23.45	22.97	23.61	24.25	22.64	26.49	29.79	26.90	26.57	26.23	24.19	22.39
27	23.41	22.94	23.65	24.23	22.62	27.11	29.75	26.68	26.56	26.19	24.09	22.35
28	23.37	22.90	23.66	24.22	22.61	27.46	29.70	26.50	26.57	26.15	24.03	22.29
29	23.35	22.86	23.69	24.19	-	27.64	29.79	26.50	26.59	26.09	23.93	22.24
30	23.32	22.84	23.71	24.15	-	27.74	30.04	26.49	26.60	26.02	23.83	22.20
31	23.29	-	23.73	24.10	-	27.81	-	26.47	-	25.98	23.76	-

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. Zero of gage is 2,000 feet above mean sea level.

Drainage area.- 3,880 square miles.

Records available.- January 1913 to September 1939.

Average discharge.- River alone, 26 years (1913-39), 5,996 second-feet; river and Spokane Valley Farms Co.'s canal, 26 years (1913-39), 6,079 second-feet.

Extremes.- Maximum discharge during year, 23,200 second-feet May 5, 6; maximum gage height, 75.00 feet May 6; minimum discharge, 676 second-feet Nov. 30 (gage height, 65.67 feet).

1913-39: Maximum discharge, 50,100 second-feet Dec. 25, 1933 (determined from unpublished records collected by Washington Water Power Co. for station at Liberty Bridge); minimum, 422 second-feet Nov. 26, 1935, Oct. 14, 1937; minimum gage height, 65.32 feet Oct. 14, 1937.

Remarks.- Records good. Discharge for period of missing gage heights, Oct. 6 to Nov. 1, computed on basis of record for Spokane River at Spokane and of Washington Water Power Co.'s record for station at Liberty Bridge. Spokane Valley Farm Co.'s canal diverts water for irrigation 3,300 feet above gage. (See records for Spokane Valley Farm Co.'s canal at Post Falls.) Flow partly regulated by storage and release of water at Coeur d'Alene Lake. Table of monthly discharge corrected for diversion. Gage-height record and results of three discharge measurements furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,270	1,410	1,430	874	2,280	1,950	14,400	21,200	5,780	2,160	1,350	1,560
2	1,310	1,310	1,390	881	2,280	1,950	15,200	22,000	4,110	2,110	1,350	1,560
3	1,270	1,210	1,170	909	2,160	1,950	15,900	22,000	3,150	2,110	1,430	1,560
4	1,270	1,240	1,080	916	2,060	2,060	16,700	22,400	4,010	2,110	1,430	1,560
5	1,310	1,270	1,080	1,050	2,060	1,900	17,100	23,200	4,760	2,110	1,390	1,560
6	1,320	1,270	1,080	1,170	2,160	1,950	17,500	23,200	5,460	2,000	1,350	1,610
7	1,240	1,350	1,070	1,170	2,220	2,000	17,100	22,400	4,570	1,610	1,350	1,480
8	1,180	1,390	1,000	1,210	2,450	1,900	16,700	21,600	2,770	1,110	1,350	1,390
9	1,200	1,350	965	1,390	2,700	1,900	16,300	20,800	2,570	832	1,350	1,390
10	1,310	1,310	1,000	1,480	3,070	1,900	15,900	19,900	3,150	1,020	1,350	1,350
11	1,420	1,350	1,040	1,480	3,560	2,160	15,900	19,500	3,830	1,270	1,350	1,390
12	1,420	1,310	1,130	1,480	4,010	2,450	15,500	18,700	3,560	1,310	1,350	1,350
13	1,370	1,310	1,170	1,900	4,100	2,770	15,200	18,300	3,230	1,160	1,390	1,350
14	1,340	1,250	1,190	1,950	4,010	2,990	15,200	17,500	2,700	951	1,430	1,350
15	1,210	1,390	1,240	2,060	3,920	2,990	14,800	17,100	2,510	846	1,480	1,350
16	1,140	1,390	1,270	2,280	3,650	2,920	14,400	16,700	3,150	839	1,480	1,210
17	1,210	1,390	1,230	2,330	3,230	2,840	14,400	16,300	3,830	1,000	1,520	1,040
18	1,210	1,350	1,220	2,330	2,990	2,920	14,400	15,900	3,650	1,100	1,560	1,040
19	1,290	1,430	1,310	2,330	2,990	3,070	14,400	15,500	3,310	1,090	1,560	1,010
20	1,330	1,390	1,310	2,280	2,510	3,830	15,200	14,800	3,070	1,080	1,560	993
21	1,400	1,350	1,220	2,160	2,220	4,190	15,900	14,400	2,770	1,110	1,560	972
22	1,450	1,270	1,170	2,160	1,950	5,160	16,700	13,700	2,700	1,200	1,560	972
23	1,410	1,170	1,160	2,330	1,950	6,650	17,500	13,300	2,640	1,270	1,560	986
24	1,310	1,170	1,150	2,330	1,950	7,780	18,700	12,700	2,700	1,350	1,560	1,010
25	1,380	1,190	1,160	2,330	1,950	9,230	19,500	12,000	2,640	1,310	1,560	1,100
26	1,430	1,260	1,150	2,330	1,900	10,800	19,500	11,400	2,330	1,310	1,560	1,130
27	1,380	1,270	1,170	2,330	1,900	12,300	19,500	11,100	2,160	1,430	1,560	1,220
28	1,320	1,390	979	2,330	1,900	13,000	19,100	8,100	1,850	1,560	1,560	1,210
29	1,310	1,350	902	2,280	-	13,700	19,500	6,430	1,750	1,520	1,560	1,220
30	1,360	1,350	930	2,280	-	14,000	19,900	7,090	2,000	1,390	1,610	1,220
31	1,420	-	881	2,280	-	14,000	-	6,650	-	1,350	1,610	-

Month	Observed				Diversion through Valley Farms Co.'s canal (acre-feet)	Adjusted for diversion			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	1,450	1,140	1,316	80,910	666	81,576	1,327	-	-
November	1,430	1,170	1,315	78,230	133	78,363	1,317	-	-
December	1,430	881	1,137	69,910	0	69,910	1,137	-	-
Calendar year 1938	33,500	610	6,135	4,441,050	69,393	4,510,443	6,231	1.61	21.85
January	2,330	874	1,826	112,300	0	112,300	1,826	-	-
February	4,100	1,900	2,648	147,000	0	147,000	2,648	-	-
March	14,000	1,900	5,136	315,800	157	315,957	5,138	-	-
April	19,900	14,400	16,600	987,800	4,990	992,790	16,680	-	-
May	23,200	6,650	16,320	1,003,000	15,960	1,018,960	16,580	-	-
June	5,780	1,750	3,224	191,800	16,290	208,090	3,497	-	-
July	2,160	832	1,375	84,530	16,060	100,590	1,636	-	-
August	1,610	1,350	1,472	90,530	16,200	106,730	1,736	-	-
September	1,610	972	1,271	75,660	7,150	82,810	1,392	-	-
Water year 1938-39	23,200	832	4,472	3,237,470	77,606	3,315,076	4,580	1.18	16.01

Note.- Monthly figures showing discharge in second-feet per square mile and run-off in inches are not published, owing to regulation by Coeur d'Alene Lake. The yearly figures represent more nearly the natural flow.

Spokane River at Spokane, Wash.

Location.- Water-stage recorder, lat. 47°39'50", long. 117°26'50", in sec. 13, T. 25 N., R. 43 E., at Cochran Street, Spokane, half a mile upstream from Latah Creek. Zero of gage is about 1,700 feet above mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 4,350 square miles.

Records available.- April 1891 to September 1939.

Average discharge.- 48 years, 6,871 second-feet, adjusted for storage.

Extremes.- Maximum discharge during year, 23,300 second-feet May 5, 6 (gage height, 25.0 feet); minimum, 1,020 second-feet (regulated) Dec. 12 (gage height, 17.34 feet); minimum daily, 1,340 second-feet (regulated) Jan. 1.

1891-39: 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 upstream from station by Spokane Valley Farms Co. Flow partly regulated by storage and release of water at Coeur d'Alene Lake and by pondage at Spokane. Storage capacity in Coeur d'Alene Lake between elevation 2,117 and 2,135 feet, 770,000 acre-feet. Gage-height record collected in cooperation with Washington Water Power Co., which furnished many discharge measurements.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

17.3	980	19.0	3,400	23.0	14,500
17.5	1,200	20.0	5,450	24.0	18,600
18.0	1,830	21.0	8,010	25.0	23,300
18.5	2,550	22.0	11,000		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,740	1,890	1,820	*1,340	2,600	2,380	13,800	20,400	6,840	2,770	1,810	2,090
2	*1,720	1,830	1,950	1,350	2,620	2,390	*14,500	21,400	5,580	*2,680	1,870	2,090
3	1,790	1,760	1,750	1,360	2,590	2,350	15,300	21,800	4,110	2,820	1,840	*2,090
4	1,780	1,700	*1,600	1,390	2,530	2,500	16,100	22,300	*4,780	2,710	1,850	2,080
5	1,770	1,800	1,540	1,420	*2,580	*2,290	16,500	22,800	5,160	2,820	1,930	2,060
6	1,800	*1,790	1,540	1,580	2,600	2,300	16,900	22,800	6,120	2,650	*1,810	2,080
7	1,780	1,780	1,550	1,590	2,600	2,440	16,900	*22,300	5,620	2,400	1,820	2,090
8	1,670	1,870	1,530	*1,590	2,650	2,300	16,500	21,800	4,020	2,060	1,830	1,890
9	*1,720	1,860	1,450	1,700	3,010	2,280	*16,100	20,900	3,470	*1,720	1,780	1,870
10	1,800	1,770	1,440	1,860	3,150	2,290	16,100	20,400	3,850	1,590	1,820	*1,900
11	1,810	1,870	*1,490	1,870	3,650	2,480	15,700	19,500	*4,460	1,720	1,820	1,810
12	1,950	1,760	1,540	1,870	*3,890	*2,700	15,700	19,100	4,290	1,980	1,830	1,940
13	1,840	*1,780	1,590	1,980	4,230	2,860	15,300	18,600	4,100	1,820	*1,750	1,920
14	1,870	1,760	1,640	2,370	4,130	3,300	15,300	*17,700	3,640	1,800	1,880	1,910
15	1,810	1,800	1,630	*2,140	4,050	3,240	14,900	17,300	3,220	1,500	1,920	1,900
16	*1,620	1,860	1,720	2,500	3,830	3,200	*14,500	16,900	3,640	*1,450	1,910	1,790
17	1,770	1,850	1,720	2,550	3,560	3,130	14,500	16,500	4,370	1,540	1,900	*1,690
18	1,730	1,760	*1,640	2,530	3,270	3,210	14,500	16,500	*4,260	1,700	2,010	1,560
19	1,730	1,860	1,740	2,550	*3,230	*3,220	14,500	16,100	4,050	1,670	1,990	1,580
20	1,810	*1,850	1,740	2,530	3,050	3,670	14,900	15,300	3,780	1,680	*2,020	1,510
21	1,830	1,830	1,710	2,480	2,750	4,130	15,700	*14,900	3,550	1,680	2,060	1,540
22	1,880	1,820	1,610	*2,430	2,390	4,800	16,500	14,500	3,390	1,730	2,020	1,440
23	*1,920	1,670	1,570	2,580	2,370	5,970	*17,300	13,800	3,360	*1,660	2,040	1,520
24	1,800	1,620	1,650	2,580	2,390	7,130	18,200	13,400	3,290	1,840	2,010	*1,480
25	1,830	1,710	*1,590	2,600	2,380	8,440	18,600	12,600	*3,330	1,830	2,030	1,480
26	1,900	1,650	1,620	2,570	*2,360	*10,000	19,100	12,200	3,120	1,860	2,050	1,590
27	1,840	*1,760	1,660	2,610	2,340	11,600	19,100	11,600	2,890	1,870	*2,010	1,610
28	1,800	1,790	1,590	2,580	2,230	12,600	19,100	*9,540	2,700	1,860	2,040	1,690
29	1,760	1,890	1,370	*2,560	-	13,100	19,100	7,020	2,450	2,000	2,060	1,630
30	*1,770	1,830	1,410	2,620	-	13,500	*19,500	7,920	2,530	*2,030	2,020	1,670
31	1,870	-	1,360	2,650	-	13,600	-	7,540	-	1,810	2,110	-

Month	Observed				Change in contents in Coeur d'Alene Lake (acre-feet)†	Adjusted for change in lake contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	1,950	1,620	1,798	110,500	-23,470	87,030	1,415	0.325	0.37
November	1,890	1,620	1,792	106,700	-12,150	94,550	1,589	.365	.41
December	1,950	1,360	1,605	98,700	+24,160	122,900	1,999	.460	.53
Calendar year 1938	32,200	1,280	6,621	4,793,000	-44,210	4,748,000	6,559	1.51	20.45
January	2,650	1,340	2,140	131,600	+10,060	141,700	2,305	.530	.61
February	4,230	2,230	2,965	164,700	-40,430	124,300	2,238	.514	.54
March	13,600	2,280	5,142	316,200	+159,300	475,500	7,733	1.78	2.05
April	19,500	13,800	16,360	973,300	+112,300	1,086,000	18,250	4.20	4.69
May	22,800	7,020	16,630	1,022,000	-164,800	857,200	13,940	3.20	3.69
June	6,840	2,450	3,999	238,000	+4,130	242,100	4,069	.935	1.04
July	2,820	1,450	1,976	121,500	-18,760	102,700	1,670	.384	.44
August	2,110	1,750	1,930	118,700	-60,960	57,740	939	.216	.25
September	2,090	1,440	1,783	106,100	-42,280	63,820	1,073	.247	.28
Water year 1938-39	22,800	1,340	4,846	3,508,000	-52,900	3,456,000	4,773	1.10	14.90

*Sunday.

†Coeur d'Alene Lake based on mean gage heights for last day of each month.

Spokane River below Little Falls, near Long Lake, Wash.

Location.- Water-stage recorder, lat. 47°50', long. 117°56', in NW¼ sec. 19, T. 27 N., R. 39 E., 1½ miles downstream from Little Falls power plant of Washington Water Power Co., 4 miles downstream from Chamokane Creek, and 5 miles downstream from Long Lake. Zero of gage is 1,200 feet above mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 6,380 square miles.

Records available.- October 1912 to September 1939.

Average discharge.- 27 years, 7,651 second-feet, adjusted for storage in Coeur d'Alene Lake since October 1912 and Long Lake since December 1914.

Extremes.- Maximum discharge during year, 25,400 second-feet May 6 (gage height, 86.2 feet); minimum, not determined (water below intakes frequently because of regulation); minimum daily, 937 second-feet (regulated) Dec. 25.

1912-39: Maximum discharge, 48,000 second-feet Dec. 26, 1933 (gage height, 93.10 feet); minimum observed, 169 second-feet (regulated) Sept. 30, 1931 (discharge measurement); minimum daily discharge, 442 second-feet (regulated) Aug. 1, 1937.

Remarks.- Records excellent. Water diverted for irrigation above station. Flow affected considerably by regulation of power and by storage in 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. Gage-height record collected in cooperation with Washington Water Power Co., which furnished many discharge measurements, as well as gage heights for Long Lake.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

73.0	550	76.0	2,900	79.0	7,240	83.0	16,100
74.0	1,100	77.0	4,130	80.0	9,140	85.0	21,800
75.0	1,690	78.0	5,560	81.0	11,200	87.0	27,900

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,380	2,770	2,770	*1,680	3,690	3,660	15,800	20,500	8,040	3,630	2,660	2,810
2	*1,190	2,740	2,560	2,500	3,830	3,730	*16,000	22,300	8,370	*3,710	2,760	2,240
3	2,490	3,040	1,790	2,910	3,870	3,080	16,400	22,800	4,900	3,630	2,660	*1,590
4	2,700	2,710	*1,340	2,750	3,280	2,090	17,600	22,700	*4,120	3,930	2,620	1,130
5	3,020	2,120	2,360	2,390	*2,520	*2,610	17,500	22,800	5,740	2,930	1,960	2,490
6	2,710	*1,510	2,480	2,940	3,110	3,020	17,900	23,700	7,450	3,400	*1,720	2,840
7	2,630	2,600	2,350	3,970	3,230	3,940	18,700	*23,200	6,590	3,300	2,470	2,920
8	2,700	2,970	2,420	*3,110	3,640	3,210	18,000	22,500	5,210	2,770	2,870	2,930
9	*1,610	3,210	2,390	3,420	3,890	3,450	*16,800	21,700	4,680	*2,330	3,060	2,730
10	2,820	2,980	2,080	3,340	3,950	3,350	17,500	20,900	4,270	3,030	2,970	*1,630
11	2,590	2,600	*1,440	3,260	3,690	2,820	16,800	20,600	*5,430	2,530	3,160	2,960
12	2,540	2,650	2,660	3,470	*5.210	*3,120	17,100	19,700	5,270	1,930	2,420	3,040
13	2,550	*1,760	2,750	3,610	6 060	4,990	17,300	19,700	5,420	2,030	*2,030	3,250
14	2,490	2,890	2,910	2,930	5,330	5,660	15,300	*18,500	4,310	2,740	2,850	3,160
15	2,180	3,040	2,720	*3,060	4,970	5,370	17,300	18,400	4,620	2,700	2,950	2,920
16	*1,710	2,790	2,570	3,140	5,340	4,060	15,900	17,700	4,280	*2,270	3,110	2,460
17	2,660	2,540	1,990	3,640	5,240	4,520	16,300	16,700	5,740	2,820	3,060	*1,820
18	3,020	2,440	*1,570	3,520	5,190	4,680	14,600	17,100	*4,550	2,370	2,940	2,170
19	2,990	2,270	2,560	3,380	*4,030	*6,830	15,000	17,700	4,870	2,400	2,580	2,210
20	2,940	*1,260	2,840	3,500	4,330	9,900	15,900	17,100	4,840	2,510	*2,470	2,060
21	2,910	2,610	2,880	3,340	3,880	11,500	17,200	*15,600	4,360	2,500	2,920	2,760
22	2,350	2,780	3,640	*3,090	3,450	9,090	17,100	15,400	4,360	2,430	3,250	3,070
23	*1,510	3,040	2,820	3,200	3,740	11,400	*17,700	14,800	4,700	*1,430	3,080	2,440
24	2,770	2,150	1,940	3,300	3,510	11,600	19,000	14,500	3,980	2,640	3,260	*1,860
25	2,800	2,930	*937	3,300	3,520	14,200	19,300	14,400	*4,340	2,940	3,030	2,980
26	2,600	2,860	1,160	3,660	*2,890	*14,700	20,000	12,300	4,040	3,310	2,530	2,960
27	2,640	*2,030	2,310	3,690	3,420	14,600	20,200	11,800	3,580	2,930	*2,310	2,630
28	2,960	3,070	2,460	3,400	3,700	15,300	20,300	*10,900	3,670	2,930	2,800	2,630
29	2,350	3,300	2,700	*2,630	-	15,600	20,400	7,350	3,630	2,330	2,960	2,480
30	*1,740	3,120	2,320	3,120	-	15,200	*19,800	6,770	3,180	*1,430	2,930	1,860
31	2,550	-	2,250	3,500	-	15,400	-	8,460	-	2,520	2,960	-

Month	Observed				Change in contents in Coeur d'Alene and Long lakes (acre-feet)†	Adjusted for change in lake contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	3,020	1,190	2,487	152,900	-20,370	132,500	2,155	0.338	0.39
November	3,300	1,260	2,626	156,300	-15,250	141,000	2,370	.371	.41
December	3,640	937	2,322	142,700	+28,160	170,900	2,779	.436	.50
Calendar year 1938	33,300	860	7,926	5,738,000	-44,660	5,693,000	7,863	1.23	16.74
January	3,370	1,680	3,182	195,700	+4,610	200,300	3.258	.511	.59
February	6,060	2,520	4,018	223,200	-43,880	179,300	3.228	.506	.53
March	15,600	2,090	7,503	461,300	+157,400	618,700	10.060	1.58	1.82
April	20,400	14,600	17,490	1,041,000	+112,000	1,153,000	19,380	3.04	3.39
May	23,700	6,770	17,370	1,068,000	-153,500	914,500	14,870	2.33	2.69
June	8,370	3,180	4,951	294,600	+6,080	300,700	5,053	.792	.88
July	3,980	1,430	2,731	167,900	-21,360	146,500	2,383	.374	.43
August	3,260	1,720	2,753	169,300	-69,060	100,200	1,630	.255	.29
September	3,250	1,130	2,501	148,800	-43,880	104,900	1,763	.276	.31
Water year 1938-39	23,700	937	5,831	4,222,000	-59,050	4,162,000	5,750	.901	12.23

*Sunday.

†Coeur d'Alene Lake based on mean gage heights for last day of each month; Long Lake based 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 & Pacific Railway Station at Calder. Zero of gage is about 2,100 feet above mean sea level.

Drainage area.- 1,080 square miles.

Records available.- July 1920 to September 1939. April 1911 to September 1912 at site 2½ miles downstream.

Average discharge.- 20 years, 2,304 second-feet.

Extremes.- Maximum discharge during year, 13,800 second-feet Apr. 30 (gage height, 86.90 feet); minimum, 275 second-feet Nov. 28 (gage height, 79.25 feet).
1911-12, 1920-39: 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 high-water mark; minimum discharge, 96 second-feet Dec. 5, 1928 (gage height, 78.43 feet).

Remarks.- Records good except those for periods of ice effect or of missing gage heights, Dec. 14-31, Feb. 2-14, 21-23, computed on basis of weather records, one discharge measurement (result of which is shown for Dec. 15), and records for other stations in Coeur d'Alene Basin and are fair. Discharge interpolated Nov. 22, 23, Jan. 23, 24. No diversion above gage. Operation of splash dam at Marble Creek causes some diurnal fluctuation during log-driving season. Gage-height record and results of seven discharge measurements furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	412	444	500	546	404	382	5,280	11,400	3,200	1,270	579	345
2	408	416	530	699	380	386	5,560	11,400	2,940	1,230	574	352
3	485	436	562	855	390	393	6,060	12,700	2,820	1,230	552	362
4	480	574	500	765	410	390	5,470	12,400	2,820	1,270	540	355
5	386	490	795	663	410	396	4,750	10,400	2,640	1,150	525	355
6	390	428	825	601	400	390	4,250	8,670	2,520	1,120	505	358
7	386	408	855	562	370	382	3,930	7,630	2,400	1,080	505	358
8	368	404	1,390	540	330	396	3,930	7,150	2,300	1,040	495	348
9	358	408	1,270	525	300	396	4,330	7,630	2,240	1,010	485	339
10	358	424	1,010	515	330	404	4,170	7,390	2,180	1,010	480	332
11	628	372	711	546	380	480	4,330	7,150	2,080	978	472	326
12	729	352	500	584	450	557	4,750	6,920	2,030	945	462	335
13	645	390	428	568	500	590	4,090	6,700	1,980	915	454	376
14	675	412	465	540	520	540	3,780	7,150	1,930	915	454	520
15	495	458	583	546	505	510	4,250	7,630	1,880	885	444	485
16	444	705	600	530	476	495	5,100	7,630	1,980	855	440	386
17	416	855	575	520	432	530	5,470	7,150	1,830	855	432	352
18	404	584	550	520	416	717	6,480	6,270	1,830	825	428	342
19	396	510	525	579	424	1,230	8,140	6,270	1,780	795	420	332
20	393	612	475	584	440	1,830	8,670	5,280	1,930	795	416	323
21	393	540	450	515	420	2,460	9,220	4,750	1,880	795	404	320
22	386	485	450	412	380	3,000	10,400	4,500	1,780	759	416	316
23	386	431	450	455	400	3,560	10,100	4,170	1,740	741	396	313
24	379	376	450	497	412	4,010	9,510	3,930	1,740	717	362	310
25	379	348	450	540	412	5,280	7,880	3,860	1,600	705	379	304
26	382	345	400	525	412	5,660	6,700	3,780	1,560	681	382	304
27	386	310	375	525	390	4,250	7,150	3,780	1,470	657	379	298
28	390	326	385	510	379	3,700	9,220	3,780	1,430	634	362	307
29	390	416	425	490	-	3,560	12,700	3,860	1,390	618	358	304
30	416	458	490	449	-	3,560	13,000	4,010	1,310	606	355	298
31	436	-	530	440	-	3,780	-	3,560	-	606	348	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	13,579	729	358	438	0.406	0.47	26,930
November	13,717	855	310	457	.423	.47	27,210
December	18,504	1,390	375	597	.553	.64	36,700
Calendar year 1938	877,163	39,400	310	2,403	2.22	30.20	1,740,000
January	17,146	855	412	553	.512	.59	34,010
February	11,472	520	300	410	.380	.40	22,750
March	54,214	5,660	382	1,749	1.62	1.87	107,500
April	198,970	13,000	3,780	6,632	6.14	6.85	394,700
May	208,900	12,700	3,560	6,739	6.24	7.19	414,300
June	61,210	3,200	1,310	2,040	1.89	2.11	121,400
July	27,692	1,270	606	893	.827	.95	54,930
August	13,823	579	348	446	.413	.48	27,420
September	10,355	520	298	345	.319	.36	20,540
Water year 1938-39	649,582	13,000	298	1,780	1.65	22.38	1,288,000

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. Zero 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 1939.

Average discharge.- 19 years (1920-39), 496 second-feet.

Extremes.- Maximum discharge observed during year, 3,460 second-feet Mar. 26; maximum gage height, 7.08 feet Mar. 19, ice jam; minimum discharge observed, 32 second-feet Sept. 25-30; minimum gage height, 3.33 feet Aug. 20 to Sept. 3, Sept. 25-30.
1911-12, 1920-39: Maximum discharge observed, 23,800 second-feet Dec. 22, 23, 1933 (gage height, 12.1 feet); minimum discharge, 16 second-feet (estimated) Nov. 21, 1929; minimum gage height, 2.71 feet Nov. 20, 1929.

Remarks.- Records good except those for periods of ice effect, Nov. 22 to Dec. 1, Dec. 6, Dec. 12 to Mar. 19, which were computed on basis of weather records, three discharge measurements (results of which are shown for Dec. 16, Jan. 17, Mar. 2), and records for other stations in Coeur d'Alene Basin and are poor. Gage read once daily. No diversion above gage. Gage-height record and results of eight discharge measurements furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	50	81	150			110	2,440	1,440	271	117	54	34
2	50	86	197			108	2,440	1,320	257	114	54	34
3	50	111	247	300	100		2,530	1,260	238	117	54	34
4	73	185	257				2,280	1,320	296	111	54	36
6	61	145	266				1,700	1,200	271	114	52	36
6	66	98	280			110	1,500	987	252	120	52	36
7	56	86	296				1,150	803	252	117	50	36
8	52	61	486		90		1,110	702	242	111	48	36
9	52	86	409				1,320	702	238	101	45	36
10	56	95	276				1,320	623	233	98	43	36
11	68	79	189	140		200	1,320	623	238	92	43	36
12	202	63				300	1,440	549	228	89	41	38
13	134	95	120			400	1,260	549	206	84	41	39
14	120	76				380	1,200	549	193	84	39	48
15	101	95				350	1,200	549	181	86	38	66
16	84	189	84		120	350	1,200	549	193	84	38	66
17	71	247		143		450	1,200	549	197	81	38	56
18	66	193				600	1,320	480	202	79	36	45
19	61	134		140		900	1,630	480	247	79	36	38
20	61	134				1,560	1,630	480	266	76	34	38
21	59	134				1,700	1,700	514	257	76	34	38
22	59	120				1,900	1,700	514	215	73	34	34
23	59	110				1,980	1,630	480	193	7[illegible]	34	34
24	56	95	80			2,360	1,700	447	185	68	34	34
25	56	85			110	2,980	1,700	409	168	63	34	32
26	54	75		120		3,460	1,630	318	164	61	34	32
27	54	70				1,980	1,560	302	156	57	34	32
28	59	70				1,560	1,320	302	149	53	34	32
29	63	90			-	1,700	1,500	291	138	54	34	32
30	76	120			-	1,760	1,500	296	127	56	34	32
31	79	-			-	1,830	-	296	-	51	34	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	2,208	202	50	71.2	0.170	0.20	4,380
November	3,333	247	68	111	.264	.29	6,610
December	4,817	486	-	155	.369	.43	9,550
Calendar year 1938	187,084	7,980	38	513	1.22	16.57	371,100
January	4,923	-	-	159	.379	.44	9,760
February	3,030	-	-	108	.257	.27	6,010
March	29,798	3,460	-	961	2.29	2.64	59,100
April	47,330	2,530	1,110	1,578	3.76	4.20	93,880
May	19,883	1,440	291	641	1.53	1.76	39,440
June	6,453	296	127	215	.512	.57	12,800
July	2,646	120	54	85.4	.203	.23	5,250
August	1,264	54	34	40.8	.097	.11	2,510
September	1,156	66	32	36.6	.092	.10	2,300
Water year 1938-39	126,843	3,460	32	348	.829	11.24	251,600

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. Zero of gage is 2,200.00 feet above mean sea level (U. S. Coast and Geodetic Survey datum).

Records available.- May 1920 to September 1939.

Extremes.- Maximum elevation observed during year, 2,227.98 feet May 6, 7; minimum, 2,221.82 feet Sept. 30.
1920-39: Maximum elevation, 2,240.41 feet Apr. 30 to May 18, 1921; minimum, 2,219.38 feet Dec. 16, 1931.

Remarks.- Records good. Gage read once daily. Water is pumped from lake for irrigation and for domestic supply.

Gage height, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24.68	24.20	23.92	23.80	23.95	24.05	25.66	27.80	27.23	26.44	24.72	22.79
2	24.67	24.20	23.92	23.82	23.93	24.04	25.78	27.86	27.19	26.38	24.66	22.73
3	24.67	24.24	23.96	23.84	23.93	24.04	25.90	27.89	27.14	26.33	24.60	22.68
4	24.67	24.21	23.97	23.87	23.93	24.04	26.04	27.93	27.10	26.28	24.55	22.62
5	24.64	24.20	23.98	23.89	23.96	24.05	26.14	27.96	27.06	26.24	24.50	22.56
6	24.62	24.18	23.98	23.89	23.96	24.06	26.22	27.98	27.04	26.20	24.42	22.52
7	24.60	24.16	23.98	23.89	23.96	24.06	26.30	27.98	27.02	26.15	24.34	22.48
8	24.57	24.14	23.98	23.89	23.96	24.06	26.40	27.96	27.00	26.10	24.27	22.43
9	24.56	24.14	23.97	23.89	23.96	24.06	26.44	27.94	27.00	26.05	24.21	22.37
10	24.54	24.14	23.97	23.88	23.96	24.06	26.48	27.91	26.98	26.00	24.15	22.32
11	24.54	24.12	23.96	23.87	23.96	24.08	26.52	27.87	26.97	25.95	24.10	22.27
12	24.54	24.10	23.95	23.87	23.98	24.08	26.58	27.85	26.96	25.90	24.06	22.22
13	24.54	24.10	23.94	23.88	23.98	24.09	26.66	27.82	26.95	25.85	23.98	22.20
14	24.50	24.09	23.92	23.88	24.00	24.11	26.74	27.78	26.93	25.80	23.90	22.17
15	24.46	24.11	23.90	23.88	24.06	24.11	26.80	27.74	26.88	25.76	23.83	22.14
16	24.47	24.11	23.88	23.88	24.06	24.12	26.84	27.70	26.85	25.68	23.76	22.14
17	24.45	24.11	23.86	23.89	24.06	24.12	26.88	27.66	26.83	25.60	23.70	22.13
18	24.42	24.10	23.84	23.92	24.06	24.12	26.92	27.65	26.82	25.54	23.63	22.11
19	24.40	24.08	23.82	23.93	24.06	24.12	27.00	27.64	26.80	25.49	23.56	22.08
20	24.38	24.08	23.81	23.95	24.06	24.14	27.07	27.60	26.80	25.44	23.50	22.05
21	24.36	24.07	23.81	23.95	24.04	24.20	27.16	27.56	26.79	25.36	23.44	22.03
22	24.34	24.06	23.81	23.95	24.04	24.28	27.24	27.54	26.78	25.30	23.40	22.02
23	24.33	24.04	23.82	23.95	24.04	24.40	27.32	27.52	26.76	25.25	23.34	22.00
24	24.32	24.02	23.82	23.94	24.03	24.55	27.41	27.50	26.76	25.20	23.28	21.98
25	24.30	24.00	23.80	23.95	24.06	24.70	27.49	27.48	26.73	25.14	23.22	21.96
26	24.28	23.99	23.78	23.95	24.06	24.96	27.57	27.46	26.68	25.09	23.17	21.93
27	24.28	23.97	23.78	23.95	24.06	25.12	27.58	27.45	26.63	25.04	23.11	21.90
28	24.28	23.95	23.80	23.96	24.05	25.26	27.62	27.43	26.58	24.99	23.04	21.87
29	24.26	23.95	23.80	23.96	-	25.36	27.66	27.40	26.54	24.92	22.98	21.85
30	24.24	23.93	23.82	23.96	-	25.44	27.74	27.35	26.50	24.86	22.92	21.82
31	24.22	-	23.80	23.96	-	25.55	-	27.29	-	24.79	22.86	-

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 head gate and half a mile northwest of Post Falls. Prior to 1938, staff gage in NE¼ sec. 4, 1,200 feet downstream from head gates, at different datum.

Records available.- May 1911 to September 1917, September 1919 to September 1939.

Extremes.- Maximum discharge recorded during year, 300 second-feet June 2 (gage height, 5.61 feet, present datum); no flow Nov. 23 to Mar. 29.
1911-17, 1919-39: Maximum discharge observed, 304 second-feet May 28, 1936; maximum gage height, 5.06 feet Aug. 9, 1935, former datum; no flow during nonirrigation season.

Remarks.- Records good. Canal diverts water for irrigation from Spokane River in SE¼ sec. 3, T. 50 N., R. 5 W. Gage-height record furnished by Spokane Valley Farms Co. Results of four discharge measurements furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	68	3				0	31	186	274	262	263	264
2	62	3				0	31	193	278	261	263	261
3	36	3				0	32	213	280	260	263	260
4	19	3				0	32	223	279	259	263	257
5	18	3				0	32	225	277	259	263	229
6	16	3				0	31	225	277	260	264	205
7	14	3				0	44	230	282	257	264	213
8	14	3				0	61	240	279	255	264	213
9	14	3				0	61	248	278	257	266	213
10	8	3				0	61	260	279	260	265	213
11	4	3				0	62	264	278	257	263	213
12	4	3				0	62	270	277	257	264	212
13	4	3				0	62	272	277	261	262	209
14	4	3				0	62	272	278	262	263	209
15	3	3				0	61	272	278	261	263	209
16	3	3				0	61	278	276	261	262	86
17	3	3				0	86	280	274	261	263	16
18	3	3				0	98	280	272	261	262	13
19	3	3				0	98	279	271	263	263	12
20	3	3				0	100	278	271	264	263	12
21	3	3				0	100	278	273	264	264	8
22	3	3				0	102	278	270	264	265	10
23	3	1				0	117	278	270	264	264	10
24	3	0				0	120	278	267	263	264	10
25	3	0				0	129	278	268	263	262	9
26	3	0				0	129	280	268	263	262	8
27	3	0				0	128	278	266	263	263	8
28	3	0				0	155	281	267	263	262	8
29	3	0				17	178	277	265	264	263	8
30	3	0				31	181	277	263	264	265	8
31	3	-				31	-	278	-	262	266	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	336	68	3	10.8	666
November	67	3	0	2.2	133
December	0	0	0	0	0
Calendar year 1938	34,988	292	0	95.9	69,390
January	0	0	0	0	0
February	0	0	0	0	0
March	79	31	0	2.5	157
April	2,516	181	31	83.9	4,990
May	8,049	281	186	260	15,960
June	8,212	282	263	274	16,290
July	8,096	264	255	261	16,060
August	8,166	266	262	263	16,200
September	3,606	264	8	120	7,150
Water year 1938-39	39,127	282	0	107	77,610

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 1939, in water-supply papers of Geological Survey. March 1915 to September 1930, in bulletins of Dominion Water and Power Bur au (Canada).
Average discharge.- 24 years, 458 second-feet.
Extremes.- Maximum discharge during year, 543 second-feet May 8 (gage height, 1.95 feet); minimum, 117 second-feet Feb. 18, Mar. 1 (gage height, 0.92 foot); may have been less during period of ice effect.
1915-39: Maximum discharge observed, 2,680 second-feet June 10, 1928; minimum discharge, 4.6 second-feet Mar. 14, 1931.
Remarks.- Records good except those for periods of ice effect, Dec. 17-23, 26-31, Feb. 8-18 (computed on basis of gage heights and records for station at Penticton), and those for periods of missing or faulty gage heights, Oct. 14, 15, 21, 28, Nov. 4, 12, 18, 25, Dec. 2, 9, 16, 24, Jan. 1, 6, 10-13, 18-20, 25-27, Feb. 2, 3, 6, 7 (computed on basis of records for station at Penticton), all of which are fair. Diversions upstream from station for irrigation. Flow regulated by control dam at outlet of Okanagan Lake. This station is one of the international gaging stations maintained by Canada under agreement with the United States.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 22-27)

Oct. 1 to Apr. 27				Apr. 28 to Sept. 30			
0.9	113	1.8	434	1.2	196	1.8	460
1.2	189	2.0	533	1.4	271	2.0	571
1.6	347			1.6	356		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	205	197	197	148	137	117	364	515	498	422	361	334
2	205	182	205	150	132	121	368	521	493	417	361	325
3	208	172	212	150	132	126	376	526	488	411	356	312
4	216	179	212	150	132	134	385	532	488	417	366	308
5	216	172	216	150	137	128	389	532	488	417	376	312
6	208	169	220	146	132	134	389	532	488	411	356	300
7	205	162	228	150	132	141	389	532	488	411	347	283
8	197	153	228	155	132	144	402	532	476	396	343	292
9	208	165	236	153	130	141	402	515	476	396	352	287
10	212	172	244	153	128	139	402	510	471	391	356	287
11	216	165	240	153	127	144	402	498	460	406	371	283
12	193	158	228	150	125	148	407	493	449	391	386	279
13	205	158	228	148	122	150	407	493	449	391	376	275
14	205	155	228	148	122	150	416	493	433	381	386	271
15	193	162	236	155	122	150	420	488	438	386	396	271
16	179	169	236	150	125	153	420	515	455	381	381	271
17	179	175	236	148	120	153	425	526	471	376	386	279
18	172	182	236	148	117	150	430	532	471	381	381	279
19	172	182	240	148	124	146	430	526	476	376	371	283
20	172	189	240	150	122	148	430	515	476	371	371	283
21	172	182	244	150	122	158	439	515	476	376	376	283
22	186	182	236	144	122	193	453	510	482	376	376	287
23	189	175	228	137	122	228	468	504	471	381	381	292
24	182	179	244	132	122	255	472	498	460	381	386	292
25	179	182	251	128	128	287	477	498	444	381	406	287
26	169	189	216	128	124	291	472	510	438	381	406	283
27	179	189	205	128	121	307	482	498	433	376	396	292
28	179	193	193	128	119	315	488	493	433	376	371	279
29	179	193	172	132	-	323	515	515	433	376	352	283
30	182	197	150	134	-	331	515	510	433	376	352	287
31	193	-	155	139	-	351	-	504	-	371	352	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	5,955	216	169	192	11,800
November	5,279	197	153	176	10,500
December	6,840	251	150	221	13,600
Calendar year 1938	169,756	1,240	150	465	337,000
January	4,483	155	128	145	8,890
February	3,530	137	117	126	7,000
March	5,856	351	117	189	11,600
April	12,834	515	364	428	25,500
May	15,881	532	488	512	31,500
June	13,935	498	433	464	27,600
July	12,080	422	371	390	24,000
August	11,533	406	343	372	22,900
September	8,679	334	271	289	17,200
Water year 1938-39	106,885	532	117	293	212,000

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. Gage datum is at mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 3,250 square miles.

Records available.- July 1928 to September 1939.

Extremes.- Maximum water-surface elevation during year, 915.07 feet May 2, 3, 4; minimum recorded, 913.07 feet Mar. 4.
1928-39: Maximum water-surface elevation recorded, 917.23 feet Apr. 28, 1934; minimum elevation, 911.21 feet Oct. 14, 1929.

Remarks.- Records excellent. Gage not operating Jan. 9-11. Diversion in Canada for irrigation. Okanogan River is subject to natural regulation in several lakes and to artificial regulation in Okanagan Lake, as an aid to navigation. This station is one of international gaging stations maintained by United States under agreement with Canada.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13.40	13.19	13.30	13.49	13.23	13.10	14.19	15.05	14.19	14.06	13.95	13.98
2	13.38	13.20	13.32	13.47	13.22	13.10	14.28	15.06	14.17	14.02	13.95	13.99
3	13.39	13.21	13.34	13.48	13.22	13.10	14.37	15.06	14.17	13.98	13.94	14.00
4	13.41	13.21	13.36	13.46	13.22	13.09	14.44	15.05	14.18	13.97	13.94	14.02
5	13.41	13.22	13.38	13.46	13.21	13.09	14.47	15.05	14.18	13.95	13.94	14.05
6	13.37	13.22	13.40	13.45	13.21	13.09	14.50	15.02	14.18	13.95	13.92	14.05
7	13.35	13.23	13.40	13.44	13.21	13.09	14.53	15.00	14.19	13.96	13.88	14.04
8	13.35	13.23	13.41	13.44	13.23	13.09	14.56	14.97	14.19	13.96	13.86	14.05
9	13.34	13.24	13.42	-	13.23	13.09	14.60	14.92	14.19	13.97	13.85	14.04
10	13.32	13.24	13.42	-	13.23	13.10	14.62	14.86	14.20	13.98	13.85	14.04
11	13.31	13.24	13.44	-	13.23	13.11	14.64	14.82	14.19	13.98	13.86	14.03
12	13.27	13.22	13.44	13.39	13.22	13.12	14.67	14.76	14.20	13.98	13.87	14.03
13	13.27	13.21	13.44	13.39	13.22	13.14	14.70	14.73	14.20	13.99	13.85	14.02
14	13.27	13.21	13.44	13.38	13.21	13.15	14.73	14.70	14.18	13.97	13.86	14.01
15	13.27	13.22	13.45	13.38	13.19	13.16	14.74	14.67	14.19	13.97	13.87	13.99
16	13.22	13.22	13.45	13.37	13.16	13.17	14.75	14.63	14.21	13.99	13.87	13.99
17	13.21	13.21	13.45	13.37	13.15	13.17	14.76	14.61	14.22	13.99	13.88	13.99
18	13.19	13.21	13.46	13.36	13.15	13.18	14.81	14.60	14.26	14.01	13.87	13.99
19	13.19	13.22	13.46	13.35	13.14	13.19	14.82	14.57	14.28	14.01	13.86	13.98
20	13.19	13.24	13.46	13.35	13.13	13.20	14.83	14.51	14.30	14.02	13.86	13.98
21	13.18	13.24	13.47	13.33	13.12	13.23	14.87	14.48	14.30	14.02	13.88	13.98
22	13.17	13.24	13.47	13.32	13.12	13.28	14.92	14.45	14.31	14.02	13.88	13.99
23	13.16	13.22	13.47	13.31	13.11	13.35	14.96	14.43	14.30	14.04	13.89	14.00
24	13.16	13.22	13.48	13.30	13.11	13.43	15.01	14.40	14.27	14.04	13.91	14.00
25	13.15	13.24	13.49	13.29	13.11	13.54	15.03	14.36	14.24	14.03	13.94	13.99
26	13.14	13.25	13.48	13.28	13.11	13.62	15.04	14.34	14.22	14.03	13.94	13.99
27	13.14	13.25	13.51	13.26	13.11	13.70	15.02	14.32	14.20	14.02	13.97	13.99
28	13.14	13.26	13.51	13.25	13.10	13.80	15.02	14.29	14.17	14.02	13.96	13.98
29	13.14	13.27	13.51	13.25	-	13.88	15.03	14.28	14.13	14.02	13.97	13.97
30	13.17	13.28	13.51	13.25	-	14.00	15.03	14.26	14.12	14.00	13.98	13.97
31	13.18	-	13.51	13.24	-	14.10	-	14.23	-	14.00	13.99	-

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 Chewiliken Creek and 5½ miles south of Tonasket.

Drainage area.- 7,250 square miles.

Records available.- April 1929 to September 1939. 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.- 24 years (1911-25, 29-39), 2,767 second-feet.

Extremes.- Maximum discharge during year, 11,200 second-feet May 17 (gage height, 12.4 feet); minimum, 472 second-feet Sept. 29, 30 (gage height, 4.06 feet).

1911-25, 29-39: 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 good except those for periods of ice effect, Dec. 13-24, 26-30, Jan. 23-27, Feb. 1-23, which were computed on basis of gage heights, weather records, and observer's notes and are poor. Many diversions upstream from station for irrigation. Flow subject to natural regulation in several lakes, and, as an aid to navigation, to artificial regulation in Okanagan Lake. Operation of power plant on Similkameen River affects low-water flow slightly. This station is one of international gaging stations maintained by the United States under agreement with Canada.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 4 to May 16, June 1 to Sept. 30)

3.9	465	7.0	2,360	12.0	10,400
4.4	670	8.0	3,550	14.0	14,700
5.0	940	9.0	4,950		
6.0	1,450	10.0	6,600		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	625	872	760	918	770	692	1,300	6,080	6,960	4,650	1,060	520
2	648	872	782	940	720	692	1,520	6,080	6,250	4,360	1,030	520
3	670	872	805	985	680	692	1,800	6,420	5,910	3,940	1,030	520
4	692	918	782	1,160	650	692	2,140	7,140	5,910	3,680	985	520
5	692	895	782	1,200	620	670	2,300	7,140	5,910	3,550	940	560
6	715	872	782	1,130	600	648	2,140	6,600	5,580	3,310	850	540
7	670	828	782	1,100	570	648	1,990	6,250	5,580	3,190	805	520
8	670	805	828	1,060	560	670	1,990	5,910	5,580	3,010	828	540
9	738	805	872	1,030	540	692	1,990	5,910	5,420	2,830	782	560
10	692	805	1,060	1,010	530	692	2,040	6,250	5,260	2,710	760	560
11	692	805	1,200	1,010	520	692	2,040	6,080	5,260	2,590	738	560
12	670	782	1,030	985	520	670	2,090	6,250	5,420	2,530	692	520
13	670	782	880	962	530	692	2,250	6,500	5,580	2,420	625	520
14	670	760	770	940	540	692	2,250	7,500	5,580	2,300	670	520
15	715	760	730	940	540	692	2,250	9,020	5,580	2,090	670	500
16	850	760	720	918	540	670	2,360	10,200	5,740	2,040	648	500
17	828	782	720	895	530	670	2,360	11,000	6,080	1,940	625	495
18	805	782	730	895	520	692	2,470	10,400	5,740	1,940	580	500
19	782	782	740	895	530	738	2,770	9,400	5,740	1,800	560	520
20	760	782	750	872	560	805	3,190	8,450	5,740	1,720	670	520
21	760	805	760	872	600	872	3,550	7,690	5,910	1,640	560	500
22	782	805	780	872	660	940	4,220	6,960	5,910	1,600	540	520
23	760	782	790	860	690	962	4,500	6,960	5,740	1,520	520	500
24	760	692	820	840	715	962	4,500	6,600	5,580	1,450	520	500
25	760	670	872	810	715	1,030	4,500	6,600	5,420	1,420	560	493
26	760	648	870	760	715	1,180	4,360	6,780	4,950	1,420	580	500
27	738	670	800	730	715	1,450	4,080	6,960	4,650	1,370	602	500
28	760	692	740	738	715	1,450	4,220	6,960	4,360	1,300	580	500
29	782	715	770	782	-	1,280	4,950	7,140	4,360	1,260	520	482
30	850	715	820	828	-	1,200	6,250	8,830	4,360	1,200	520	476
31	850	-	918	805	-	1,180	-	7,880	-	1,160	520	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	22,816	850	625	736	45,250
November	23,515	918	648	784	46,640
December	25,445	1,200	720	821	50,470
Calendar year 1938	1,081,737	20,400	493	2,964	2,146,000
January	28,742	1,200	730	927	57,010
February	17,095	770	520	611	33,910
March	26,307	1,450	648	849	52,180
April	88,370	6,250	1,300	2,946	175,300
May	228,040	11,000	5,910	7,356	452,300
June	166,060	6,960	4,360	5,535	329,400
July	71,940	4,650	1,160	2,321	142,700
August	21,570	1,060	520	696	42,780
September	15,487	560	476	516	30,720
Water year 1938-39	735,387	11,000	476	2,015	1,459,000

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.
Drainage area.- 3,420 square miles.
Records available.- September 1928 to September 1939. 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); records equivalent.
Average discharge.- 28 years, 2,123 second-feet.
Extremes.- Maximum discharge during year (not determined), occurred during period of missing gage heights, May 16 or 17; minimum, 246 second-feet Feb. 9 (gage height, 2.59 feet), may have been less during period of ice effect.
1928-39: 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 for periods of ice effect, Nov. 25-29, Dec. 15-22, 27-29, Feb. 10, 11 (computed on basis of gage heights and weather records), and those for period of missing gage heights, May 15-21 (computed on basis of records for Methow River at Twisp), all of which are poor. Discharge for Apr. 28 to May 3 interpolated. Some regulation at high stages caused by natural diversion into Palmer Lake. Small diversions upstream from station for irrigation. This station is one of international gaging stations maintained by United States under agreement with Canada.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

2.5	225	3.5	630	4.5	1,380	6.0	3,010	9.0	8,200
3.0	379	4.0	950	5.0	1,870	7.0	4,440	11.0	13,400

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	401	575	481	564	457	428	1,200	5,320	6,210	4,290	887	375
2	401	570	486	619	419	428	1,380	5,750	5,640	3,840	860	371
3	423	554	471	848	397	433	1,620	6,170	5,450	3,620	815	367
4	433	533	461	915	457	423	1,770	6,800	5,450	3,400	763	375
5	452	522	457	867	476	388	1,670	6,400	5,260	3,270	725	383
6	461	507	461	808	481	392	1,570	5,830	5,080	3,080	694	375
7	457	481	502	776	481	410	1,470	5,450	5,080	2,880	682	363
8	442	476	564	738	357	423	1,470	5,260	5,080	2,760	665	375
9	428	496	731	719	298	419	1,520	5,450	4,910	2,580	630	363
10	423	486	958	700	285	405	1,570	5,450	4,910	2,460	602	351
11	414	457	808	688	295	401	1,570	5,450	5,080	2,400	580	343
12	410	437	602	671	328	410	1,670	5,640	5,080	2,290	548	339
13	423	433	517	653	371	410	1,670	6,210	5,260	2,180	538	332
14	486	433	424	636	452	401	1,670	7,600	5,260	2,020	522	332
15	554	447	395	619	502	392	1,770	9,000	5,260	1,920	502	336
16	517	471	380	602	486	401	1,870	10,000	5,640	1,870	491	336
17	486	476	365	592	461	405	1,870	9,700	5,450	1,870	481	332
18	461	491	380	586	452	414	2,070	9,100	5,450	1,720	466	328
19	452	486	395	580	452	452	2,520	8,200	5,450	1,570	447	325
20	442	496	410	575	457	502	2,940	7,400	5,450	1,520	437	322
21	442	512	430	570	442	564	3,400	6,900	5,450	1,420	419	318
22	452	486	460	554	419	619	3,990	6,600	5,450	1,380	401	311
23	457	383	481	517	419	671	4,140	6,600	5,260	1,290	392	308
24	457	351	512	512	442	770	4,140	6,400	5,080	1,290	379	339
25	452	335	564	512	452	950	3,990	6,400	4,750	1,240	379	298
26	452	330	512	471	447	1,240	3,840	6,800	4,440	1,200	388	295
27	457	330	480	437	437	1,290	3,620	6,800	4,140	1,160	379	295
28	476	350	460	476	437	1,200	4,050	6,800	3,990	1,110	383	292
29	570	400	460	533	-	1,160	4,470	8,000	4,140	1,030	375	292
30	564	442	471	517	-	1,110	4,900	8,200	4,290	1,010	371	292
31	580	-	502	491	-	1,110	-	7,200	-	943	371	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	14,325	580	401	462	0.135	0.16	28,410
November	13,746	575	330	458	.134	.15	27,260
December	15,560	958	365	502	.147	.17	30,860
Calendar year 1938	877,955	21,500	330	2,405	.703	9.55	1,741,000
January	19,346	915	437	624	.182	.21	38,370
February	11,859	502	265	424	.124	.13	23,520
March	19.021	1,290	388	614	.180	.21	37,730
April	75,400	4,900	1,200	2,513	.735	.82	149,600
May	212,680	10,000	5,260	6,861	2.01	2.32	421,800
June	153,440	6,210	3,990	5,115	1.50	1.67	304,300
July	64,613	4,290	943	2,084	.609	.70	128,200
August	16,572	887	371	535	.156	.18	32,870
September	10,063	383	292	335	.098	.11	19,960
Water year 1938-39	626,625	10,000	265	1,717	.502	6.83	1,243,000

Peak discharge.- May 29 (6 p.m.) 9,310 sec.-ft.

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 1939.

Average discharge.- 16 years, 1,175 second-feet.

Extremes.- Maximum discharge during year, 5,020 second-feet May 17 (gage height, 5.99 feet); minimum, 179 second-feet Sept. 27, 28 (gage height, 1.43 feet).

1919-29, 1933-39: 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, 1928, 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 periods of ice effect, Dec. 12-15, 20-23, Jan. 24, Feb. 10-12, which were computed on basis of gage heights and weather records and are fair. Water diverted upstream from station for irrigation by two canals of Methow Valley Irrigation District, by Risley ditch, and by many other ditches.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

1.0	112	3.0	930	5.0	3,230
1.5	192	3.5	1,380	6.0	5,020
2.0	330	4.0	1,930		
2.5	580	4.5	2,550		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	235	308	301	301	238	240	994	2,680	2,480	1,870	354	192
2	235	298	308	316	246	240	1,140	2,740	2,290	1,640	334	210
3	251	298	298	308	268	240	1,180	2,950	2,230	1,540	316	206
4	291	308	301	298	262	235	1,120	3,090	2,170	1,480	298	212
5	308	319	294	294	262	235	1,060	2,810	2,050	1,380	262	226
6	298	312	291	288	262	248	994	2,620	1,990	1,240	248	224
7	298	308	288	291	262	240	962	2,420	1,990	1,160	246	221
8	294	312	294	288	254	240	938	2,360	1,870	1,090	238	210
9	294	316	298	281	243	240	922	2,420	1,810	1,060	228	206
10	298	316	288	281	230	240	898	2,420	1,810	1,060	219	200
11	294	319	254	278	230	243	898	2,480	1,930	1,060	212	196
12	291	326	240	268	240	243	906	2,620	1,990	1,040	210	198
13	291	334	240	281	257	240	850	2,880	2,170	930	206	194
14	291	330	250	272	262	238	874	3,460	2,110	890	204	192
15	288	323	260	272	259	240	922	4,110	2,230	829	198	192
16	284	330	288	268	248	238	938	4,800	2,230	773	200	192
17	288	334	298	275	251	240	970	4,700	2,050	710	198	196
18	281	323	298	272	246	246	1,060	3,940	1,930	628	194	194
19	281	323	281	272	248	251	1,280	3,460	1,870	574	192	196
20	278	323	260	268	243	257	1,540	2,950	1,930	538	194	196
21	278	308	260	259	243	262	1,870	2,740	1,990	504	196	194
22	278	294	270	257	243	281	2,110	2,620	2,050	476	194	194
23	278	291	270	251	248	305	2,170	2,360	2,050	465	192	194
24	281	308	284	240	246	346	2,230	2,230	1,870	492	188	190
25	278	298	288	251	246	430	2,170	2,290	1,700	476	188	185
26	278	291	272	262	240	455	1,930	2,420	1,590	465	190	183
27	278	288	278	278	240	450	1,870	2,480	1,480	465	190	181
28	275	298	278	272	240	450	2,050	2,620	1,540	435	188	183
29	278	298	278	268	-	476	2,620	3,690	1,870	415	188	187
30	288	308	278	268	-	568	2,680	3,380	2,170	388	188	187
31	305	-	284	262	-	780	-	2,880	-	366	190	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	8,764	308	235	283	17,380
November	9,342	334	288	311	18,530
December	8,670	308	240	280	17,200
Calendar year 1938	562,304	12,800	192	1,541	1,115,000
January	8,540	316	240	275	16,940
February	6,957	268	230	248	13,800
March	9,637	780	235	311	19,110
April	42,146	2,680	850	1,405	83,600
May	91,620	4,800	2,230	2,955	181,700
June	59,440	2,480	1,480	1,981	117,900
July	26,439	1,870	366	853	52,440
August	6,843	354	188	221	13,570
September	5,931	226	181	198	11,760
Water year 1938-39	284,329	4,800	181	779	563,900

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. Flow of Boulder Creek included in records of discharge.
Drainage area.- 372 square miles.
Records available.- October 1910 to October 1915, January 1927 to September 1939.
Average discharge.- 17 years, 1,355 second-feet.
Extremes.- Maximum discharge during year, 9,150 second-feet May 29 (gage height, 25.60 feet); minimum, 204 second-feet Mar. 5 (gage height, 18.99 feet).
1910-15, 1927-39: 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 periods of ice effect, Jan. 24, 27-31, Feb. 7-11, which were computed on basis of gage heights and weather records and are fair. At very high stages a small part of flow is diverted upstream from gage by natural sloughs; quantity diverted included in daily discharge. Gage-height record collected in cooperation with Washington Water Power Co., which furnished many discharge measurements.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Jan. 15 to Mar. 27)

19.0	195	20.5	970	23.0	4,200
19.3	300	21.0	1,410	24.0	5,870
19.6	445	21.5	1,970	25.0	7,880
20.0	650	22.0	2,630	26.0	10,000

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	430	455	236	1,110	332	232	1,560	2,860	2,630	3,320	1,410	662
2	435	410	242	1,180	327	236	1,680	2,930	2,560	2,930	1,310	634
3	560	440	236	1,000	322	232	1,730	3,320	2,560	2,860	1,510	634
4	445	400	239	844	314	222	1,560	3,320	2,350	2,930	1,560	698
6	380	360	304	758	309	219	1,410	2,780	2,220	2,420	1,460	794
6	355	336	272	686	304	225	1,260	2,420	2,220	2,280	1,180	617
7	332	336	460	644	300	225	1,220	2,220	2,280	2,220	1,030	525
8	327	322	970	600	290	225	1,260	2,280	2,280	2,220	986	555
9	314	318	893	570	270	219	1,260	2,420	2,220	2,420	1,130	535
10	570	296	686	545	260	216	1,220	2,560	2,490	2,930	1,260	510
11	535	264	570	545	260	225	1,220	2,700	2,860	3,080	1,260	515
12	618	272	505	530	272	225	1,180	2,930	3,080	2,560	1,180	440
13	582	272	485	515	304	216	1,130	3,640	3,320	2,350	1,030	395
14	420	264	465	495	292	210	1,180	4,680	3,080	2,350	949	370
15	360	276	430	490	280	210	1,220	5,690	3,160	2,280	914	520
16	327	355	405	470	264	207	1,260	6,250	2,630	2,030	879	535
17	309	336	390	470	260	210	1,360	5,000	2,160	1,620	837	510
18	300	314	385	470	260	225	1,560	3,960	2,160	1,510	812	455
19	292	340	365	475	260	239	1,910	3,160	2,350	1,510	764	420
20	296	355	345	460	260	268	2,160	2,560	2,700	1,460	752	455
21	300	304	340	435	256	340	2,560	2,420	2,930	1,560	812	555
22	292	276	327	425	256	460	2,780	2,350	3,240	1,910	865	550
23	288	260	345	420	250	628	2,700	2,280	3,080	2,280	844	530
24	288	260	370	410	246	942	2,560	2,350	2,700	2,420	818	495
25	350	246	360	400	239	1,220	2,280	2,630	2,280	2,560	872	445
26	304	242	327	390	236	1,130	2,030	3,000	2,220	2,560	788	430
27	410	236	332	380	239	1,000	2,030	3,080	2,350	2,630	770	465
28	355	239	336	370	232	963	2,420	4,810	3,080	2,630	764	390
29	460	236	332	360	-	963	3,400	7,050	4,520	2,160	662	355
30	465	242	400	350	-	1,050	3,080	4,520	4,360	1,970	590	345
31	540	-	606	340	-	1,260	-	3,240	-	1,790	595	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	12,239	618	288	395	1.06	1.22	24,280
November	9,262	455	236	309	.831	.93	18,370
December	12,958	970	236	418	1.12	1.29	25,700
Calendar year 1938	518,527	8,090	236	1,421	3.82	51.85	1,028,000
January	17,137	1,180	340	553	1.49	1.72	33,990
February	7,694	332	232	275	.739	.77	15,260
March	14,442	1,260	207	466	1.25	1.44	28,650
April	54,180	3,400	1,130	1,806	4.85	5.41	107,500
May	105,410	7,050	2,220	3,400	9.14	10.54	209,100
June	82,070	4,520	2,160	2,736	7.35	8.20	162,800
July	71,750	3,320	1,460	2,315	6.22	7.17	142,300
August	30,593	1,560	590	987	2.65	3.06	60,680
September	15,339	794	345	511	1.37	1.53	30,420
Water year 1938-39	433,074	7,050	207	1,187	3.19	43.28	859,000

Peak discharge.- May 29 (1 to 1:45 a.m.) 9,150 sec.-ft.; June 29 (9:30 to 10:30 p.m.) 5,510 sec.-ft.

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. Zero of gage is at mean sea level (general adjustment of 1912).

Drainage area.- 950 square miles.

Records available.- September 1897 to December 1899, January to June 1905, December 1910 to September 1939.

Extremes.- Maximum water-surface elevation during year, 1,100.00 feet July 28; minimum, 1,084.04 feet Mar. 22, 23.
1897-99, 1905, 1910-39: Maximum water-surface elevation, that of July 19, 1937, July 1, 8, 1938, July 28, 1939; minimum, 1,076.78 feet Jan. 27, 28, Dec. 2, 3, 1898.

Remarks.- Records excellent. Reservoir is natural lake artificially regulated for scenic effect during tourist season and for power development during entire year. Usable capacity, 676,100 acre-feet between elevations 1,079 and 1,100 feet (range stipulated by the Federal Power Commission). Dead storage unknown. Control works completed in 1927. Gage-height record collected in cooperation with Washington Water Power Co.

Capacity table (elevation, in feet, and usable contents, in acre-feet)
(Prepared by Geological Survey from surface areas determined and furnished by Washington Water Power Co.)

1,079.0	0	1,084.0	157,950	1,094.0	479,950
1,079.5	15,700	1,086.0	221,750	1,097.0	577,750
1,080.0	31,400	1,088.0	285,750	1,100.0	676,120
1,081.0	62,900	1,090.0	350,150		
1,082.0	94,500	1,092.0	414,950		

Gage height, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	94.78	91.59	88.27	85.45	85.29	84.75	84.51	87.77	95.11	99.53	99.81	97.79
2	94.68	91.50	88.17	85.52	85.26	84.74	84.62	87.95	95.28	99.45	99.75	97.71
3	94.63	91.45	88.11	85.57	85.26	84.73	84.76	88.16	95.48	99.40	99.73	97.60
4	94.54	91.33	88.02	85.55	85.26	84.61	84.85	88.40	95.66	99.48	99.73	97.52
5	94.44	91.20	87.94	85.53	85.27	84.54	84.91	88.59	95.81	99.52	99.74	97.47
6	94.33	91.07	87.82	85.45	85.27	84.51	84.98	88.74	95.98	99.49	99.65	97.37
7	94.22	90.96	87.71	85.50	85.25	84.45	85.04	88.90	96.15	99.48	99.55	97.22
8	94.12	90.87	87.66	85.52	85.20	84.40	85.12	89.04	96.30	99.50	99.49	97.14
9	94.00	90.75	87.63	85.52	85.16	84.36	85.22	89.17	96.45	99.61	99.43	97.04
10	93.90	90.62	87.54	85.50	85.11	84.31	85.25	89.31	96.61	99.75	99.38	96.94
11	93.84	90.50	87.44	85.49	85.09	84.30	85.28	89.47	96.84	99.90	99.37	96.88
12	93.74	90.37	87.34	85.47	85.13	84.28	85.36	89.66	97.05	99.84	99.36	96.72
13	93.66	90.24	87.24	85.45	85.09	84.27	85.38	89.89	97.30	99.84	99.27	96.60
14	93.54	90.14	87.16	85.43	85.06	84.23	85.44	90.20	97.51	99.77	99.19	96.53
15	93.43	90.03	87.05	85.44	85.08	84.21	85.49	90.59	97.75	99.81	99.16	96.39
16	93.30	89.99	86.95	85.44	85.05	84.18	85.55	91.07	97.99	99.83	99.07	96.27
17	93.18	89.84	86.84	85.44	85.02	84.12	85.62	91.44	98.17	99.76	99.02	96.20
18	93.05	89.72	86.74	85.44	85.02	84.07	85.71	91.77	98.36	99.72	98.89	96.09
19	92.97	89.62	86.62	85.46	85.00	84.06	85.80	92.04	98.52	99.72	98.79	95.97
20	92.87	89.53	86.50	85.46	84.97	84.06	85.92	92.23	98.74	99.68	98.72	95.87
21	92.75	89.39	86.40	85.44	84.95	84.05	86.08	92.49	98.92	99.63	98.61	95.77
22	92.65	89.26	86.29	85.45	84.92	84.04	86.27	92.69	99.15	99.63	98.52	95.68
23	92.53	89.13	86.19	85.44	84.88	84.06	86.47	92.84	99.36	99.69	98.46	95.59
24	92.42	89.03	86.12	85.43	84.86	84.10	86.63	92.96	99.42	99.74	98.39	95.48
25	92.30	88.92	86.02	85.41	84.85	84.14	86.75	93.12	99.44	99.76	98.35	95.37
26	92.20	88.80	85.91	85.37	84.83	84.20	86.87	93.29	99.48	99.81	98.27	95.27
27	92.09	88.68	85.82	85.36	84.80	84.25	86.98	93.50	99.48	99.88	98.18	95.18
28	91.95	88.57	85.70	85.35	84.77	84.26	87.13	93.74	99.49	99.97	98.12	95.04
29	91.83	88.45	85.60	85.34	-	84.30	87.36	94.24	99.56	99.88	98.02	94.91
30	91.77	88.36	85.52	85.35	-	84.35	87.56	94.67	99.65	99.87	97.92	94.81
31	91.68	-	85.44	85.33	-	84.42	-	94.94	-	99.91	97.87	-

Note.- Add 1,000 feet to above gage heights to obtain elevations above mean sea level.

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. Prior to Feb. 22, 1939, water-stage recorder, lat. 47°48'40", long. 119°59'20", in NE¼ sec. 30, T. 27 N., R. 23 E., half a mile upstream from mouth and 2 miles southeast of Chelan. Zero of gage is at mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 950 square miles.

Records available.- October 1903 to September 1939.

Average discharge.- 36 years, 2,047 second-feet, adjusted for storage.

Extremes.- Maximum daily discharge during year, 6,500 second-feet (regulated) June 30; minimum daily, 130 second-feet (regulated) June 18.

1905-39: 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 times during winter because of artificial regulation.

Remarks.- Records excellent. Unmeasured quantity that is diverted for irrigation upstream from station is small in proportion to total run-off. Water diverted by Washington Water Power Co. at Chelan for power and irrigation is recorded as part of daily discharge. Flow regulated by storage in Chelan Lake and by operation of power plant. Records furnished by Washington Water Power Co.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,210	2,160	2,160	1,470	684	787	466	1,070	728	5,780	2,260	2,150
2	2,160	2,170	2,160	936	774	770	470	1,020	741	4,370	2,130	2,140
3	2,190	2,070	2,120	1,700	554	1,320	860	795	420	3,380	2,150	2,140
4	2,200	2,160	2,160	1,710	504	1,530	728	847	413	2,360	2,150	1,920
5	2,220	2,170	2,140	2,010	470	782	794	883	737	2,960	2,150	2,100
6	2,200	2,160	2,160	1,390	760	1,370	702	795	563	3,460	2,130	2,110
7	2,200	2,140	2,160	526	900	940	770	513	604	2,790	2,130	2,120
8	2,200	2,180	2,160	466	770	1,260	610	1,060	598	1,610	2,130	2,140
9	2,200	2,160	2,160	1,000	1,000	808	466	1,020	395	838	2,130	2,140
10	2,200	2,170	2,160	944	1,000	850	1,140	1,060	194	1,320	2,150	2,130
11	2,190	2,180	2,180	942	530	666	1,060	866	147	2,770	2,150	2,120
12	2,190	2,170	2,160	910	472	510	980	930	448	4,060	2,130	2,100
13	2,080	2,170	2,160	812	732	852	738	682	377	3,230	2,130	2,100
14	2,170	2,170	2,170	870	778	624	860	626	453	3,580	2,130	2,110
15	2,190	2,170	2,160	404	588	714	668	864	407	2,230	2,130	2,100
16	2,190	2,170	2,160	946	696	1,320	566	906	402	2,760	2,140	2,120
17	2,140	2,170	2,160	766	752	1,200	912	1,110	132	2,730	2,140	2,110
18	2,080	2,170	2,160	788	494	850	890	1,150	130	2,130	2,120	2,110
19	2,080	2,170	2,140	824	466	580	840	757	585	2,130	2,120	2,100
20	2,060	2,170	2,150	654	758	962	834	503	442	2,130	2,120	2,100
21	2,100	2,130	2,150	464	868	1,000	780	487	473	2,130	2,120	2,100
22	2,190	2,170	2,140	248	780	972	492	1,140	631	2,130	2,120	2,130
23	2,190	2,170	2,160	736	714	930	430	1,100	1,570	2,110	2,120	2,130
24	2,180	2,170	2,020	984	922	960	1,180	1,120	2,510	2,130	2,120	2,130
25	2,070	2,170	1,700	916	469	774	1,040	961	2,220	2,170	2,100	2,110
26	2,150	2,170	2,050	834	404	670	1,030	1,060	2,250	2,100	2,120	2,090
27	2,170	2,170	2,140	798	841	1,260	887	659	3,020	2,160	2,120	2,080
28	2,180	2,170	2,140	576	754	1,230	805	561	3,520	3,660	2,120	2,080
29	2,170	2,170	2,120	514	-	942	469	953	4,180	2,970	2,120	2,080
30	2,190	2,170	2,140	922	-	740	479	514	6,500	2,250	2,120	2,060
31	2,180	-	2,140	808	-	670	-	731	-	2,340	2,110	-

Month	Observed				Change in contents in Lake Chelan (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	2,220	2,060	2,165	133,100	-103,100	30,000	488	0.514	0.59
November	2,180	2,070	2,164	128,700	-107,600	21,100	355	.374	.42
December	2,180	1,700	2,130	131,000	-93,200	37,800	615	.647	.75
Calendar year 1938	11,900	404	2,257	1,634,000	-108,000	1,526,000	2,107	2.22	30.13
January	2,010	248	899	55,280	-3,520	51,760	842	.886	1.02
February	1,000	404	694	38,550	-17,240	21,310	384	.404	.42
March	1,530	510	931	57,250	-14,000	43,250	703	.740	.85
April	1,180	430	765	45,510	+101,600	147,100	2,472	2.60	2.90
May	1,150	487	863	53,040	+238,900	291,900	4,747	5.00	5.76
June	6,500	130	1,193	70,990	+148,200	219,200	3,684	3.88	4.33
July	5,780	838	2,670	164,200	+14,430	178,600	2,905	3.06	3.53
August	2,260	2,100	2,133	131,100	-71,510	59,590	969	1.02	1.18
September	2,150	1,920	2,105	125,300	-97,260	28,040	471	.496	.55
Water year 1938-39	6,500	130	1,566	1,134,000	-4,300	1,130,000	1,560	1.64	22.30

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 1939.
Average discharge.- 12 years (1927-39), 194 second-feet.
Extremes.- Maximum discharge during year, 1,200 second-feet May 29 (gage height, 4.34 feet); minimum, possibly less than 26 second-feet sometime during period of ice effect. 1910-13, 1927-39: Maximum discharge, 1,910 second-feet June 8, 1927 (gage height, 5.3 feet); minimum, less than 9.4 second-feet, occurred sometime during Jan. 15-25, 1930, when stage-discharge relation was affected by ice.
Remarks.- Records fair except those for period of missing gage heights, Oct. 15 to Nov. 7 (computed on basis of recorded range of stage and records for Stehekin River at Stehekin), and those for periods of ice effect, Nov. 22-29, Dec. 12-29, Jan. 17 to Feb. 13, Feb. 21, Mar. 5 (computed on basis of gage heights and weather records), all of which are poor. No diversion or regulation. Water-stage recorder inspected by employees of Washington Water Power Co. Results of many discharge measurements furnished by Washington Water Power Co.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used May 14-18, May 28 to June 1, June 13-15, 22-23, June 29 to July 3)

2.6	14	3.5	304
2.8	48	4.0	660
3.0	97	4.5	1,240
3.2	170		

Discharge, in second-fset, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	85	70	36	126	32	26	203	324	438	503	246	113
2	82	65	38	134	30	26	220	334	387	466	220	116
3	100	70	36	106	30	29	215	357	387	445	228	100
4	94	65	38	94	30	27	194	369	351	411	242	103
5	77	60	42	88	30	26	182	345	329	369	237	116
6	67	55	42	79	30	27	170	319	319	329	211	103
7	62	55	62	72	30	29	166	304	319	339	178	85
8	60	50	158	67	30	27	170	304	314	345	166	79
9	58	52	130	65	30	29	170	314	309	339	174	79
10	62	50	97	62	32	27	166	319	319	363	190	77
11	85	44	72	62	36	27	162	334	361	369	207	77
12	91	50	56	60	40	29	162	357	405	363	190	67
13	94	46	40	58	44	29	158	387	459	351	178	60
14	72	44	30	56	44	27	162	473	445	363	158	56
15	60	46	28	56	38	27	162	690	445	334	150	58
16	55	54	28	54	36	27	166	837	393	314	150	67
17	50	54	28	50	34	29	174	690	334	260	142	72
18	45	50	28	50	34	33	186	487	319	237	134	67
19	40	50	28	48	33	34	220	399	324	228	126	62
20	40	56	28	46	33	40	233	369	369	224	120	62
21	45	40	28	46	32	48	260	357	405	224	120	72
22	40	30	28	44	31	65	284	329	452	242	134	82
23	40	28	28	42	31	85	294	314	452	279	134	82
24	40	26	28	42	31	123	289	309	405	319	134	77
25	50	26	28	40	29	154	274	324	345	329	134	72
26	45	26	28	40	27	146	260	363	334	339	130	67
27	60	28	30	38	27	126	250	381	345	351	123	67
28	55	30	32	36	26	120	274	552	411	363	120	69
29	60	34	40	36	-	116	334	1,060	561	334	106	65
30	70	38	54	34	-	130	334	660	690	294	97	60
31	75	-	77	34	-	166	-	473	-	274	94	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	1,959	100	40	63.2	0.988	1.14	3,890
November	1,392	70	26	46.4	.725	.81	2,760
December	1,446	158	28	46.6	.728	.84	2,870
Calendar year 1938	75,235	1,380	26	206	3.22	43.76	149,200
January	1,865	134	34	60.2	.941	1.08	3,700
February	910	44	26	32.5	.508	.53	1,800
March	1,854	166	26	59.8	.934	1.08	3,680
April	6,494	334	158	216	3.38	3.77	12,880
May	13,434	1,060	304	433	6.77	7.80	26,650
June	11,746	690	309	392	6.12	6.83	23,300
July	10,400	503	224	335	5.23	6.03	20,630
August	4,973	246	94	160	2.50	2.88	9,860
September	2,332	116	56	77.7	1.21	1.35	4,630
Water year 1938-39	58,805	1,060	26	161	2.52	34.14	116,600

Peak discharge.- May 29 (3, 4, and 8 a.m.) 1,200 sec.-ft.; June 30 (2 to 5 a.m.) 793 sec.-ft.

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 lake, 7½ miles northwest of Plain and 33 miles upstream from Leavenworth. Zero of gage is at mean sea level (subject to correction for general adjustment of 1929).

Drainage area.- 277 square miles.

Records available.- January 1932 to September 1939.

Extremes.- Maximum water-surface elevation during year, 1,874.62 feet May 16; minimum, 1,869.47 feet Oct. 10.
1932-39: Maximum water-surface elevation recorded, 1,876.57 feet June 16, 1933; minimum water-surface elevation, 1,869.27 feet Dec. 1, 1936.

Remarks.- Records excellent. No diversion or regulation.

Elevation, in feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69.60	69.94	69.81	71.00	70.08	69.81	71.27	72.33	72.86	72.73	71.00	70.14
2	69.59	69.94	69.83	71.85	70.05	69.81	71.47	72.30	72.53	72.52	70.89	70.19
3	69.59	70.02	69.86	71.90	70.03	69.80	71.58	72.43	72.40	72.33	70.85	70.18
4	69.61	70.04	69.87	71.66	70.01	69.79	71.59	72.57	72.25	72.27	70.83	70.18
5	69.61	70.02	70.09	71.41	70.00	69.78	71.49	72.47	72.08	72.16	70.79	70.18
6	69.56	69.96	70.31	71.16	69.99	69.78	71.38	72.22	71.98	72.02	70.73	70.16
7	69.52	69.91	70.34	70.99	69.98	69.75	71.29	72.02	71.95	71.90	70.65	70.11
8	69.50	69.89	70.77	70.86	69.94	69.72	71.28	71.92	71.94	71.85	70.58	70.07
9	69.48	69.88	71.10	70.73	69.91	69.72	71.32	71.95	71.91	71.67	70.55	70.05
10	69.48	69.84	71.11	70.65	69.86	69.71	71.31	72.01	71.97	72.04	70.55	70.03
11	69.62	69.80	70.94	70.58	69.90	69.73	71.29	72.11	72.14	72.13	70.57	70.00
12	69.83	69.75	70.74	70.53	69.98	69.73	71.25	72.30	72.32	72.13	70.55	69.97
13	70.19	69.74	70.58	70.47	70.01	69.74	71.19	72.62	72.52	71.95	70.51	69.94
14	70.14	69.71	70.46	70.43	70.04	69.74	71.16	73.16	72.55	71.90	70.45	69.90
15	70.01	69.73	70.39	70.42	70.10	69.74	71.14	73.86	72.52	71.81	70.38	69.87
16	69.90	69.90	70.31	70.37	70.04	69.74	71.15	74.52	72.39	71.73	70.36	69.93
17	69.81	70.07	70.24	70.38	69.99	69.73	71.18	74.39	72.09	71.53	70.31	69.96
18	69.74	70.07	70.17	70.41	69.96	69.74	71.28	73.86	71.89	71.37	70.30	69.95
19	69.68	70.08	70.15	70.48	69.94	69.77	71.51	73.25	71.88	71.27	70.29	69.94
20	69.64	70.17	70.12	70.48	69.91	69.82	71.69	72.71	71.95	71.22	70.27	69.93
21	69.63	70.14	70.09	70.43	69.90	69.89	71.89	72.37	72.04	71.20	70.26	69.95
22	69.62	70.07	70.05	70.38	69.89	70.05	72.09	72.29	72.21	71.23	70.26	69.97
23	69.61	70.00	70.02	70.34	69.87	70.28	72.19	72.19	72.28	71.33	70.27	69.98
24	69.59	69.96	70.03	70.33	69.86	70.60	72.15	72.14	72.17	71.44	70.25	69.98
25	69.59	69.92	70.10	70.32	69.86	70.95	72.03	72.25	71.94	71.49	70.24	69.96
26	69.61	69.87	70.07	70.26	69.84	71.14	71.85	72.47	71.78	71.52	70.24	69.94
27	69.64	69.83	70.06	70.23	69.84	71.14	71.73	72.59	71.72	71.50	70.23	69.91
28	69.68	69.80	70.06	70.21	69.83	71.08	71.78	72.68	71.94	71.48	70.20	69.88
29	69.73	69.79	70.07	70.19	-	71.05	72.12	73.92	72.44	71.40	70.18	69.84
30	69.82	69.80	70.10	70.16	-	71.04	72.37	74.16	72.90	71.27	70.16	69.81
31	69.91	-	70.34	70.12	-	71.10	-	73.48	-	71.14	70.12	-

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, 2¾ miles upstream from outlet of Wenatchee Lake, 7½ miles northwest of Plain, and 33 miles upstream from Leavenworth. Gage heights reduced to mean sea-level datum (subject to correction for general adjustment of 1929). Discharge measurements made at highway bridge half a mile downstream from lake outlet.

Drainage area.- 277 square miles.

Records available.- January 1932 to September 1939.

Extremes.- Maximum discharge during year, 6,090 second-feet May 16 (elevation of lake surface, 1,874.62 feet); minimum, 168 second-feet Sept. 30.

1932-39: Maximum discharge recorded, 8,310 second-feet June 16, 1933 (elevation of lake surface, 1,876.57 feet); minimum discharge, 134 second-feet Dec. 1, 1936 (elevation of lake surface, 1,869.27 feet).

Remarks.- Records good. No diversion above station. Flow subject to natural regulation in Wenatchee Lake.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Apr. 18 to May 3, June 15 to Sept. 30)

Oct. 1 to May 3

1,869.2	120	1,871.5	1,710
1,869.5	188	1,872.0	2,210
1,870.0	391	1,872.5	2,750
1,870.5	735	1,873.0	3,300
1,871.0	1,210		

May 4 to Sept. 30

1,869.4	164	1,872.5	2,990
1,870.0	441	1,873.0	3,660
1,870.5	800	1,873.5	4,380
1,871.0	1,270	1,874.0	5,130
1,871.5	1,800	1,875.0	6,700
1,872.0	2,370		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	218	360	298	1,210	437	298	1,480	2,760	3,460	3,060	908	313
2	215	360	307	2,060	420	298	1,680	2,750	3,030	2,770	809	337
3	215	403	321	2,110	408	293	1,790	2,920	2,860	2,530	776	332
4	222	414	325	1,870	397	289	1,800	3,080	2,650	2,440	760	332
5	222	403	443	1,620	391	285	1,700	2,950	2,470	2,300	727	332
6	206	370	588	1,370	386	285	1,590	2,630	2,350	2,120	680	323
7	194	344	610	1,200	381	273	1,500	2,390	2,310	1,980	620	299
8	188	334	980	1,070	360	261	1,490	2,270	2,300	1,910	570	281
9	183	330	1,310	940	344	261	1,530	2,310	2,260	1,920	550	272
10	183	311	1,320	865	321	257	1,520	2,380	2,330	2,100	550	264
11	225	293	1,150	803	339	265	1,500	2,500	2,540	2,190	563	251
12	307	273	950	760	381	265	1,460	2,730	2,760	2,180	550	238
13	506	269	803	711	397	269	1,400	3,150	3,020	1,960	523	226
14	474	257	703	679	414	269	1,370	3,880	3,060	1,900	484	210
15	397	265	648	671	449	269	1,350	4,920	3,000	1,790	441	198
16	339	339	588	632	414	269	1,360	5,930	2,820	1,690	430	222
17	298	432	539	640	386	265	1,390	5,720	2,440	1,460	401	234
18	269	432	493	663	370	269	1,500	4,920	2,190	1,290	395	230
19	246	437	480	719	360	281	1,740	4,010	2,170	1,180	390	226
20	232	493	462	719	344	302	1,930	3,260	2,240	1,120	379	222
21	228	474	443	679	339	334	2,140	2,820	2,330	1,090	374	230
22	225	432	420	640	334	420	2,350	2,720	2,530	1,120	374	238
23	222	391	403	610	325	566	2,480	2,600	2,600	1,220	379	242
24	215	370	408	602	321	820	2,440	2,540	2,450	1,330	368	242
25	215	349	449	595	321	1,160	2,320	2,670	2,170	1,380	363	234
26	222	325	432	553	311	1,350	2,150	2,950	1,980	1,410	363	226
27	232	307	426	532	311	1,350	2,040	3,110	1,900	1,390	358	214
28	246	293	426	519	307	1,290	2,110	3,220	2,120	1,370	342	202
29	265	289	432	506	-	1,260	2,490	5,010	2,710	1,290	332	187
30	302	293	449	487	-	1,250	2,780	5,370	3,290	1,160	323	175
31	344	-	610	462	-	1,310	-	4,350	-	1,030	304	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	8,055	506	183	260	0.939	1.08	15,980
November	10,642	493	257	355	1.28	1.43	21,110
December	18,216	1,320	298	588	2.12	2.44	36,130
Calendar year 1938	434,185	6,560	183	1,190	4.30	58.23	861,200
January	27,497	2,110	462	887	3.20	3.69	54,540
February	10,268	449	307	367	1.32	1.38	20,370
March	16,633	1,350	257	537	1.94	2.24	32,990
April	54,380	2,780	1,350	1,813	6.55	7.31	107,900
May	104,820	5,930	2,270	3,381	12.2	14.07	207,900
June	76,340	3,460	1,900	2,545	9.19	10.25	151,400
July	53,680	3,060	1,030	1,732	6.25	7.21	106,500
August	15,386	908	304	496	1.79	2.06	30,520
September	7,532	337	175	251	.906	1.01	14,940
Water year 1938-39	403,449	5,930	175	1,105	3.99	54.17	800,300

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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.

Drainage area.- 591 square miles.

Records available.- November 1910 to September 1929 and August 1931 to September 1939 in reports of Geological Survey; August 1904 to September 1933 (monthly discharge) in State Water-Supply Bulletin 5.

Average discharge.- 35 years (1904-39), 2,212 second-feet.

Extremes.- Maximum discharge during year, 9,060 second-feet May 16 (gage height, 7.85 feet); minimum, 318 second-feet Oct. 10 (gage height, 1.65 feet).

1910-29, 1931-39: Maximum discharge observed, 20,800 second-feet Dec. 13, 1921 (gage height, 11.8 feet, former site and datum); minimum discharge, 191 second-feet Dec. 1, 1936 (gage height, 1.34 feet).

Remarks.- Records excellent except those for period of missing gage heights, May 8-11, which were computed on basis of records for Wenatchee Lake, near Plain, and are good. Discharge for Sept. 12, 13 interpolated. Wenatchee Park Land & Irrigation Co. diverts a maximum of about 12 second-feet from Chiwawa River during irrigation seasons. Natural regulation in Wenatchee Lake. Gage-height record collected in cooperation with Wenatchee Reclamation District.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

1.6	297	3.5	1,700	6.0	5,310
2.0	489	4.0	2,270	7.0	7,200
2.5	820	4.5	2,920	8.0	9,420
3.0	1,220	5.0	3,650		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	376	635	547	2,100	768	535	2,530	4,700	5,210	4,770	1,440	547
2	367	609	553	3,340	745	535	2,840	4,780	4,660	4,310	1,300	616
3	390	710	572	3,170	738	530	2,980	5,070	4,490	3,990	1,250	578
4	415	790	584	2,720	724	524	2,930	5,450	4,160	3,810	1,220	566
5	385	710	895	2,330	724	501	2,740	5,540	3,920	3,470	1,200	572
6	362	649	1,050	2,010	717	512	2,550	5,360	3,750	3,130	1,120	566
7	344	615	1,090	1,770	689	512	2,400	5,170	3,700	2,960	1,020	506
8	331	609	1,740	1,610	662	501	2,400	4,800	3,700	2,860	951	484
9	326	597	2,150	1,470	622	489	2,520	4,700	3,640	2,890	927	473
10	326	566	2,000	1,360	590	489	2,480	4,800	3,780	3,160	935	462
11	415	512	1,690	1,310	578	506	2,420	4,900	4,110	3,280	951	457
12	578	489	1,420	1,240	662	506	2,370	5,170	4,440	3,230	927	419
13	919	484	1,240	1,190	745	501	2,260	5,850	4,850	2,930	880	382
14	805	473	1,120	1,130	760	495	2,250	6,490	4,780	2,860	842	344
15	675	495	1,050	1,120	775	495	2,250	7,680	4,800	2,720	775	339
16	578	696	959	1,070	745	495	2,260	8,810	4,530	2,570	731	362
17	512	850	880	1,070	696	506	2,330	8,450	3,950	2,230	717	376
18	473	782	865	1,110	675	530	2,560	7,330	3,620	2,040	682	362
19	446	790	842	1,220	642	559	3,030	6,090	3,620	1,940	668	353
20	430	911	812	1,200	609	603	3,340	5,040	3,790	1,830	642	348
21	415	820	782	1,130	597	696	3,710	4,510	3,890	1,790	629	353
22	410	731	760	1,060	597	858	4,160	4,430	4,270	1,840	629	371
23	400	662	782	1,020	584	1,120	4,270	4,190	4,360	1,980	622	371
24	395	635	820	1,010	584	1,560	4,180	4,100	4,080	2,130	616	371
25	395	584	865	991	578	2,100	3,940	4,340	3,670	2,210	616	367
26	405	541	798	943	559	2,250	3,620	4,750	3,380	2,190	603	353
27	410	518	790	935	553	2,160	3,480	4,970	3,300	2,140	597	357
28	451	524	798	903	547	2,050	3,650	5,210	3,640	2,100	572	367
29	462	530	812	880	-	1,990	4,440	7,830	4,510	1,990	547	353
30	530	535	888	842	-	2,020	4,750	7,790	5,280	1,800	530	348
31	609	-	1,190	805	-	2,200	-	6,300	-	1,640	506	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
October	14,335	919	326	462	0.782	0.90	28,430
November	19,053	911	473	635	1.07	1.19	37,790
December	31,344	2,150	547	1,011	1.71	1.97	62,170
Calendar year 1938	770,647	11,600	325	2,111	3.57	48.53	1,528,000
January	44,059	3,340	805	1,421	2.40	2.77	87,390
February	18,465	775	547	659	1.12	1.17	36,620
March	29,328	2,250	489	946	1.60	1.84	58,170
April	91,640	4,750	2,250	3,055	5.17	5.77	181,800
May	174,600	8,810	4,100	5,632	9.53	10.99	346,300
June	123,880	5,280	3,300	4,129	6.99	7.80	245,700
July	82,790	4,770	1,640	2,671	4.52	5.21	164,200
August	25,645	1,440	506	827	1.40	1.61	50,870
September	12,723	616	339	424	.717	.80	25,240
Water year 1938-39	667,862	8,810	326	1,830	3.10	42.02	1,325,000

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.

Drainage area.- 1,000 square miles.

Records available.- February 1929 to September 1939, in reports of Geological Survey. October 1928 to February 1929, in Washington State Water-Supply Bulletin 5.

Average discharge.- 11 years (1928-39), 2,870 second-feet.

Extremes.- Maximum discharge during year, 12,700 second-feet May 16 (gage height, 9.08 feet); minimum, 330 second-feet Oct. 25 (gage height, 1.63 feet).

1929-39: Maximum discharge, 20,400 second-feet June 16, 1933 (gage height, 11.82 feet); minimum, 230 second-feet Oct. 12, 1937 (gage height, 1.40 feet).

Remarks.- Records excellent except those for periods of missing gage heights, Apr. 26-30, May 10-12, Aug. 18-20, Aug. 26 to Sept. 1, which were computed on basis of records for station at Plain and are fair. Several diversions for irrigation above station. Slight artificial regulation at mill pond at Leavenworth and at power plant in Tumwater Canyon, and natural regulation in Wenatchee Lake.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

1.4	230	3.5	1,780	8.0	9,850
1.7	365	4.0	2,400	9.0	12,400
2.0	525	4.5	3,070	10.0	15,200
2.5	840	5.0	3,780		
3.0	1,250	6.0	5,420		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	525	862	731	2,540	1,020	750	3,630	6,230	7,080	6,230	1,900	690
2	530	819	750	4,080	998	744	4,080	6,440	6,230	5,620	1,670	698
3	542	930	750	3,930	975	744	4,230	6,860	6,020	5,230	1,560	692
4	569	1,120	757	3,490	952	738	4,080	6,860	5,620	4,860	1,500	634
5	558	998	1,000	3,000	952	705	3,780	6,230	5,230	4,530	1,500	646
6	525	892	1,450	2,600	952	718	3,560	5,620	5,040	4,080	1,400	653
7	498	833	1,400	2,340	930	712	3,420	5,420	4,860	3,930	1,260	616
8	476	826	2,270	2,140	885	705	3,350	5,420	4,860	3,780	1,150	569
9	459	805	2,720	1,960	885	692	3,490	5,620	4,860	3,780	1,090	536
10	454	777	2,600	1,780	833	686	3,420	6,000	5,040	4,080	1,080	514
11	514	705	2,200	1,720	855	698	3,350	6,500	5,420	4,230	1,100	498
12	718	660	1,780	1,670	908	718	3,280	7,100	6,020	4,230	1,090	476
13	1,180	686	1,620	1,560	1,050	698	3,140	7,520	6,650	3,780	1,030	459
14	1,070	660	1,450	1,500	1,020	698	3,070	9,130	6,440	3,700	998	437
15	908	666	1,350	1,450	1,040	698	3,140	10,800	6,440	3,560	922	415
16	784	848	1,220	1,400	1,010	712	3,140	12,400	6,020	3,420	848	432
17	692	1,120	1,150	1,350	968	718	3,280	11,600	5,230	3,000	833	442
18	640	1,010	1,120	1,450	922	757	3,560	10,100	4,860	2,720	810	437
19	598	1,010	1,120	1,620	885	798	4,230	8,200	4,860	2,600	770	415
20	569	1,160	1,090	1,620	840	885	4,690	6,860	5,040	2,460	740	410
21	558	1,050	1,050	1,500	833	1,010	5,230	6,020	5,230	2,400	705	410
22	547	922	1,030	1,400	833	1,280	5,620	5,820	5,620	2,400	698	415
23	542	819	1,050	1,350	798	1,720	5,820	5,420	5,820	2,530	686	420
24	536	840	1,100	1,310	805	2,400	5,820	5,420	5,420	2,720	679	426
25	529	770	1,190	1,300	784	3,140	5,420	5,820	4,860	2,790	679	420
26	514	712	1,070	1,230	777	3,350	5,100	6,440	4,380	2,790	670	415
27	530	686	1,030	1,230	770	3,140	4,900	6,860	4,380	2,720	650	405
28	580	705	1,060	1,200	757	3,000	5,200	7,300	4,860	2,720	630	432
29	610	718	1,040	1,160	-	2,860	5,800	11,400	6,020	2,530	600	420
30	686	731	1,120	1,120	-	2,930	6,200	10,800	7,080	2,340	580	415
31	826	-	1,350	1,060	-	3,140	-	8,660	-	2,140	580	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	19,267	1,180	454	622	38,220
November	25,340	1,160	660	845	50,260
December	40,618	2,720	731	1,310	80,560
Calendar year 1938	1,085,211	16,900	454	2,973	2,152,000
January	57,060	4,080	1,060	1,841	113,200
February	25,237	1,050	757	901	50,060
March	42,544	3,350	686	1,372	84,380
April	127,030	6,200	3,070	4,234	252,000
May	230,870	12,400	5,420	7,447	457,900
June	165,490	7,080	4,380	5,516	328,200
July	107,900	6,230	2,140	3,481	214,000
August	30,408	1,900	580	981	60,310
September	14,847	698	405	495	29,450
Water year 1938-39	886,611	12,400	405	2,429	1,759,000

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.

Drainage area.- 169 square miles.

Records available.- August 1936 to September 1939. May 1911 to October 1914 at site 4 miles downstream, published as Chiwawa Creek near Leavenworth; records equivalent.

Extremes.- Maximum discharge during year, 2,170 second-feet May 16 (gage height, 6.83 feet); minimum (not determined) occurred during period of ice effect.

1911-14, 1936-39: 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); may have been less during periods of ice effect.

Remarks.- Records excellent except those for periods of ice effect, Nov. 22 to Dec. 3, Dec. 12-31, Jan. 21 to Feb. 23 (computed on basis of gage heights, weather records, and records for Wenatchee River below Wenatchee Lake and at Plain), and those for period of missing gage heights, Oct. 1 to Nov. 14 (computed on basis of records for Wenatchee River below Wenatchee Lake and at Plain), all of which are poor. No diversion or regulation.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

3.5	34	5.0	595	6.5	1,800
4.0	128	5.5	930	7.0	2,370
4.5	320	6.0	1,330		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	100	130	110	288	100	86	420	1,050	1,100	1,050	350	143
2	100	140	120	320	100	86	481	1,090	1,040	930	316	168
3	110	150	120	280	100	88	475	1,200	1,020	874	311	140
4	130	150	128	241	100	90	453	1,270	937	825	302	134
5	110	140	128	212	100	90	420	1,150	895	751	302	137
6	100	140	134	189	100	90	400	1,080	853	699	280	134
7	100	140	137	175	90	88	390	1,000	867	686	249	123
8	90	140	204	165	90	88	405	1,020	853	873	232	118
9	90	130	241	152	80	88	426	1,070	811	680	224	115
10	90	130	208	146	70	88	420	1,090	839	738	228	115
11	110	110	185	140	70	90	420	1,140	916	732	232	110
12	140	110	160	134	90	90	410	1,210	986	699	224	107
13	160	110	140	128	120	88	400	1,350	1,220	634	212	102
14	150	110	120	125	130	86	415	1,590	1,180	634	212	100
15	140	118	110	128	120	86	436	1,880	1,170	595	192	100
16	130	152	100	123	120	86	453	2,100	1,060	553	192	105
17	120	143	100	128	120	88	481	1,910	923	487	189	105
18	120	131	110	131	120	95	535	1,580	888	464	182	100
19	110	137	100	152	110	97	647	1,300	874	470	175	97
20	110	140	100	140	100	105	699	1,080	916	448	172	95
21	110	123	100	130	100	118	790	1,020	965	448	165	95
22	110	120	90	120	100	149	895	1,020	1,040	464	165	95
23	110	110	100	120	90	192	930	937	986	517	161	95
24	110	110	110	110	90	266	916	930	930	559	158	95
25	110	100	120	110	88	316	846	993	839	571	155	95
26	110	100	120	110	88	311	777	1,070	818	547	155	93
27	110	100	110	110	88	280	764	1,100	797	535	146	90
28	110	100	110	100	88	266	846	1,230	895	529	143	90
29	110	100	130	100	-	275	1,070	2,010	1,130	481	137	88
30	120	100	160	100	-	288	1,070	1,670	1,230	431	125	86
31	120	-	220	100	-	350	-	1,280	-	410	125	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	3,540	160	90	114	0.675	0.78	7,020
November	3,714	152	100	124	.734	.82	7,370
December	4,125	241	90	133	.787	.91	8,180
Calendar year 1938	189,922	3,170	90	520	3.08	41.77	376,700
January	4,707	320	100	152	.899	1.04	9,340
February	2,762	130	70	98.6	.583	.61	5,480
March	4,604	350	86	149	.882	1.02	9,130
April	18,090	1,070	390	603	3.57	3.98	35,880
May	39,420	2,100	930	1,272	7.53	8.68	78,190
June	28,978	1,230	797	966	5.72	6.38	57,480
July	19,114	1,050	410	617	3.65	4.21	37,910
August	6,411	350	125	207	1.22	1.41	12,720
September	3,270	168	86	109	.645	.72	6,490
Water year 1938-39	138,735	2,100	70	380	2.25	30.56	275,200

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 1939.

Extremes.- Maximum discharge during year, 3,630 second-feet May 29 (gage height, 9.5 feet); minimum, 100 second-feet Oct. 24 (gage height, 2.23 feet).

1936-39: 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 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, Nov. 23-26, Dec. 12-28, Jan. 8-16, Jan. 23 to Feb. 15, which were computed on basis of one discharge measurement, gage heights, and weather records and are poor. No diversion. Some regulation in headwater lakes for irrigation.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

2.0	90	4.0	321	7.0	1,500
2.5	115	4.5	455	8.0	2,180
3.0	160	5.0	612	9.0	3,100
3.5	230	6.0	1,000	10.0	4,200

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	116	154	127	633	150	136	830	1,380	1,350	1,300	310	166
2	114	142	126	770	140	136	910	1,450	1,320	1,180	281	147
3	120	227	126	579	140	136	910	1,550	1,350	1,100	272	136
4	119	238	134	470	130	136	830	1,580	1,200	1,020	263	130
5	115	187	332	396	130	130	750	1,380	1,120	890	254	136
6	113	154	300	344	130	136	698	1,250	1,080	810	246	135
7	110	147	363	321	120	132	680	1,180	1,080	790	222	126
8	109	147	579	300	120	132	680	1,220	1,080	770	215	122
9	108	142	531	280	120	130	698	1,300	1,050	790	208	119
10	108	130	410	270	110	126	662	1,350	1,220	890	208	116
11	129	110	300	260	110	131	662	1,480	1,300	910	201	114
12	147	126	230	250	120	131	645	1,640	1,480	850	194	114
13	282	129	200	240	140	126	612	1,940	1,550	770	187	113
14	160	123	190	240	170	126	612	2,540	1,420	770	180	110
15	129	128	180	230	180	127	628	2,900	1,420	732	173	110
16	119	196	170	230	180	127	645	3,000	1,250	698	166	113
17	113	215	160	238	173	135	680	2,540	1,080	579	160	110
18	109	173	160	263	173	147	810	1,980	1,020	531	154	108
19	107	180	150	290	160	154	1,000	1,520	1,150	547	147	107
20	105	201	150	272	154	180	1,080	1,300	1,300	515	142	114
21	104	147	150	246	154	222	1,280	1,250	1,280	484	136	114
22	103	125	150	230	154	300	1,380	1,220	1,350	484	136	114
23	102	120	160	210	147	455	1,320	1,150	1,300	515	135	111
24	101	110	160	200	147	662	1,250	1,180	1,120	547	134	111
25	103	110	160	190	147	810	1,100	1,420	975	531	135	110
26	103	120	160	190	142	750	975	1,580	930	515	136	108
27	116	126	170	180	142	662	1,000	1,550	1,000	515	131	108
28	118	127	170	170	142	612	1,250	2,280	1,280	484	128	108
29	125	129	187	170	-	595	1,580	3,200	1,610	440	132	106
30	136	127	201	160	-	612	1,420	2,180	1,580	382	126	106
31	187	-	272	150	-	680	-	1,550	-	344	126	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	3,830	282	101	124	0.642	0.74	7,600
November	4,490	238	110	150	.777	.87	8,910
December	6,858	579	126	221	1.15	1.33	13,600
Calendar year 1938	215,883	3,740	101	591	3.06	41.60	428,200
January	8,972	770	150	289	1.50	1.73	17,800
February	4,025	180	110	144	.746	.78	7,980
March	9,074	810	126	293	1.52	1.75	18,000
April	27,577	1,580	612	919	4.76	5.31	54,700
May	53,040	3,200	1,150	1,711	8.87	10.23	105,200
June	37,245	1,610	930	1,242	6.44	7.18	73,870
July	21,683	1,300	344	699	3.62	4.17	43,010
August	5,638	310	126	182	.943	1.09	11,180
September	3,542	166	106	118	.611	.68	7,030
Water year 1938-39	185,974	3,200	101	510	2.64	35.86	368,900

Peak discharge.- May 16 (1:20 a.m.) 3,410 sec.-ft.; May 29 (1:30 a.m.) 3,630 sec.-ft.; June 29 (11 p.m.) 1,900 sec.-ft.

Yakima River near Martin, Wash.

Location.- Water-stage recorder, lat. 47°19'10", long. 121°20'10", downstream from dam at outlet of Keechelus Lake, 3½ miles northwest of Martin, Kittitas County, and 12 miles upstream from Easton.
Drainage area.- 55 square miles.
Records available.- October 1903 to September 1939.
Average discharge.- 35 years (1904-39), 329 second-feet, adjusted for storage since January 1906.
Extremes.- Maximum discharge during year, 1,390 second-feet (regulated)July 9-14 (gage height, 8.7 feet); minimum, about 1 second-foot (regulated) Oct. 6-27.
1903-39: Maximum discharge, 7,370 second-feet Mar. 26, 1915, when temporary crib dam was washed out; practically no flow when gates in Keechelus Lake Reservoir Dam are closed.
Remarks.- Records excellent except those for extremely low flow, which are poor. Flow over spillway of Keechelus Lake Reservoir May 23 to Apr. 14, May 16 to June 5, June 22-26. Records include water diverted over reservoir spillway. Flow partly controlled by storage in Keechelus Lake Reservoir. Records of daily discharge not adjusted for change in contents of Keechelus Lake. Records furnished by Bureau of Reclamation.

Rating tables, water year 1938-39 except periods when spillway was discharging (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Nov. 10 to Apr. 6)

Oct. 1 to Apr. 6						Apr. 7 to Sept. 30			
1.4	1	3.0	90	5.0	363	4.5	230	7.0	820
1.6	5	3.5	139	5.5	462	5.0	316	8.0	1,150
2.0	21	4.0	201	6.0	584	5.5	419	9.0	1,500
2.5	50	4.5	277	7.0	859	6.0	537		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	261	7	8	10	9	9	442	614	599	1,150	356	656
2	224	7	8	10	9	8	513	614	522	1,260	356	588
3	68	7	8	10	9	8	536	628	527	1,320	356	537
4	2	7	8	10	9	8	525	628	571	1,360	356	501
5	2	7	6	10	9	8	464	614	565	1,360	356	489
6	1	7	6	10	9	8	408	614	601	1,360	356	489
7	1	7	8	10	9	8	375	614	714	1,360	356	469
8	1	7	9	10	9	8	364	614	588	1,360	356	489
9	1	7	9	10	9	8	397	614	408	1,360	356	489
10	1	6	9	10	9	8	397	614	406	1,390	356	513
11	1	6	9	10	9	8	386	614	408	1,390	356	537
12	1	6	6	10	9	8	387	477	408	1,390	356	560
13	1	6	8	10	9	8	713	397	406	1,390	356	550
14	1	6	6	10	9	8	964	397	408	725	356	550
15	1	6	6	10	9	8	951	397	408	279	356	550
16	1	6	6	10	9	8	951	454	406	279	356	550
17	1	8	8	10	9	8	951	732	408	279	669	550
18	1	7	8	10	9	8	951	775	408	279	852	550
19	1	7	8	10	9	8	951	530	386	279	852	537
20	1	7	8	10	9	8	789	566	316	279	852	537
21	1	8	8	10	9	8	700	591	297	279	852	537
22	1	8	8	10	6	8	537	536	300	279	852	537
23	1	8	8	10	8	16	442	501	337	279	852	537
24	1	8	8	10	8	228	442	481	387	279	852	537
25	1	8	8	10	8	513	513	494	387	288	852	550
26	1	8	9	10	9	613	601	522	403	336	852	550
27	2	8	9	10	9	549	614	565	525	356	820	550
28	6	8	8	10	9	453	614	682	686	356	789	562
29	7	8	8	9	-	375	614	1,020	852	356	700	550
30	7	8	9	9	-	364	614	975	1,050	356	700	550
31	7	-	9	9	-	364	-	742	-	356	700	-

Month	Observed				Change in contents in Lake Keechelus (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	For square mile	
October	261	1	19.6	1,200	+2,790	3,990	64.9	1.18	1.36
November	8	6	7.13	424	+15,980	16,400	276	5.02	5.60
December	9	8	8.26	508	+26,170	26,680	434	7.89	9.10
Calendar year 1938	1,140	1	289	209,400	-14,770	194,600	269	4.89	66.37
January	10	9	9.90	609	+26,100	26,710	434	7.89	9.10
February	9	8	8.86	492	+8,410	8,900	160	2.91	3.03
March	613	8	118	7,240	+6,930	14,170	230	4.18	4.82
April	964	364	604	35,920	-6,680	29,240	491	8.93	9.96
May	1,020	397	601	36,920	+6,660	43,580	709	12.9	14.87
June	1,050	297	490	29,140	-3,940	25,200	424	7.71	8.60
July	1,390	279	754	46,350	-36,850	9,500	155	2.82	3.25
August	852	356	572	35,190	-31,890	3,300	53.7	.976	1.13
September	656	489	539	32,050	-28,770	3,280	55.1	1.00	1.12
Water year 1938-39	1,390	1	312	226,000	-15,090	211,000	291	5.29	71.94

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 1939.

Average discharge.- 33 years, 1,974 second-feet, adjusted for storage since October 1906 and for diversions since 1930.

Extremes.- Maximum discharge during year, 5,200 second-feet (regulated) May 17 (gage height, 7.48 feet); minimum, 89 second-feet (regulated) Oct. 28 (gage height, 3.26 feet).

1906-39: Maximum discharge, about 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 upstream from gage for irrigation. Flow partly controlled by storage in Keechelus Lake, Kachess Lake, and Cle Elum Lake Reservoirs. Records of daily discharge not adjusted for amount of diversion or for change in contents of lakes. Records furnished by Bureau of Reclamation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

3.2	72	4.5	780	6.0	2,440
3.5	171	5.0	1,240	7.0	4,150
4.0	430	5.5	1,810	7.5	5,200

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	950	193	211	995	400	253	1,690	1,350	3,570	2,180	2,880	1,930
2	905	263	215	1,350	400	268	1,240	1,240	3,210	2,180	2,730	1,930
3	905	370	234	1,460	370	234	2,050	1,240	3,040	2,310	2,730	1,930
4	665	430	263	1,350	370	400	2,310	1,780	3,040	2,310	2,730	1,810
5	400	495	400	1,140	370	370	2,310	3,040	2,730	2,310	2,730	1,810
6	332	215	462	950	364	310	1,930	2,880	2,310	2,310	2,730	1,810
7	239	137	528	780	348	258	1,930	2,180	2,180	2,310	2,730	1,810
8	215	126	950	665	332	305	1,930	1,930	2,180	2,440	2,730	1,810
9	202	359	1,090	630	320	273	2,180	1,930	1,930	2,440	2,730	1,810
10	189	495	1,090	630	370	268	2,180	2,180	1,810	2,580	2,730	1,810
11	215	495	820	630	370	273	2,180	2,580	1,690	2,440	2,730	1,810
12	220	315	665	665	370	284	1,930	3,040	1,350	2,440	2,730	1,810
13	273	180	560	630	370	273	1,930	3,040	1,350	2,580	2,730	1,810
14	244	160	495	630	400	268	2,180	3,390	1,350	2,580	2,730	1,810
15	229	163	462	595	400	279	2,180	4,150	1,240	2,730	2,730	1,810
16	141	342	430	560	400	289	2,180	4,980	1,240	2,580	2,730	1,810
17	107	665	400	560	370	337	2,050	4,980	1,240	2,580	2,730	1,810
18	97	560	370	630	370	560	1,930	4,150	1,350	2,580	2,730	1,690
19	100	430	348	740	370	700	1,930	3,210	1,460	2,580	2,730	1,690
20	103	528	348	700	359	820	1,810	2,310	1,350	2,730	2,730	1,690
21	103	495	320	665	348	950	1,570	2,310	1,240	2,730	2,580	1,690
22	103	430	320	595	348	1,190	1,460	2,310	1,240	2,730	2,580	1,690
23	107	370	320	560	332	1,460	1,240	2,310	1,350	2,730	2,580	1,690
24	107	337	370	560	310	1,810	1,090	2,180	1,460	2,730	2,440	1,690
25	107	305	462	560	299	2,180	1,090	2,180	1,570	2,730	2,440	1,690
26	100	315	430	528	364	2,440	1,240	2,180	1,570	2,880	2,440	1,690
27	94	263	400	495	332	2,180	1,240	2,310	1,690	2,880	2,440	1,690
28	92	244	430	462	315	1,930	1,240	2,310	1,690	2,880	2,440	1,690
29	92	225	462	462	-	1,810	1,460	3,210	1,930	2,880	2,180	1,690
30	92	206	595	430	-	1,810	1,460	4,560	2,050	2,880	2,050	1,460
31	94	-	780	430	-	1,810	-	4,150	-	2,880	2,050	-

Month	Observed				Change in contents* (acre-feet)	Diverted by Kittitas canal (acre-feet)	Adjusted			
	Discharge in second-feet			Run-off in acre-feet			Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean					Mean	Per square mile	
October	950	92	252	15,510	-5,060	11,420	21,870	356	0.712	0.82
November	665	126	337	20,050	+46,880	0	66,930	1,125	2.25	2.51
December	1,090	211	491	30,210	+80,360	0	110,600	1,799	3.60	4.15
Calendar year 1938	6,400	92	1,509	1,092,000	-64,430	245,600	1,274,000	1,759	3.52	47.79
January	1,460	430	711	43,710	+91,640	0	135,400	2,202	4.40	5.07
February	400	299	360	19,980	+33,700	0	53,680	967	1.93	2.01
March	2,440	234	858	52,740	+41,810	0	94,550	1,538	3.08	3.55
April	2,310	1,090	1,771	105,400	+84,740	16,480	206,600	3,472	6.94	7.74
May	4,980	1,240	2,761	169,800	+62,800	48,370	281,000	4,570	9.14	10.54
June	3,570	1,240	1,847	109,900	-7,170	48,570	151,300	2,543	5.09	5.68
July	2,880	2,180	2,585	158,900	-149,200	65,790	75,490	1,228	2.46	2.84
August	2,880	2,050	2,612	160,600	-196,000	58,610	23,210	377	.754	.87
September	1,930	1,460	1,762	104,900	-119,200	36,970	21,670	364	.728	.81
Water year 1938-39	4,980	92	1,370	991,700	-34,700	285,200	1,242,000	1,716	3.43	46.59

*Change in contents in Keechelus Lake, Kachess Lake, and Cle Elum Lake.

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. Zero of gage is 1,300 feet above mean sea level.

Drainage area.- 1,620 square miles.

Records available.- August 1906 to September 1921 (fragmentary) and October 1935 to September 1939, in reports of Geological Survey. September 1906 to October 1928 (fragmentary), in State Water-Supply Bulletin 5.

Extremes.- Maximum discharge during year, 5,900 second-feet (regulated) May 17 (gage height, 33.56 feet); minimum, 326 second-feet (regulated) Oct. 29 (gage height, 30.05 feet).

1906-21, 1935-39: Maximum discharge, about 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, former datum).

Remarks.- Records excellent except those for period of ice effect, Dec. 13-18 (computed on basis of gage heights and weather records), and those for periods of missing gage heights, Mar. 26 to Apr. 4, Apr. 7-11, Aug. 4-9 (computed on basis of records for station at Cle Elum), all of which are fair. Flow partly regulated by storage in Lake Keechelus, Lake Kachess, and Lake Cle Elum Reservoirs. Water diverted upstream from station for irrigation of about 91,000 acres. Records furnished by Bureau of Reclamation.

Rating table, water year 1938-39 except period of ice effect (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Oct. 1-25)

30.0	294	31.0	1,140	32.0	2,500	33.0	4,510	34.0	7,220
30.5	657	31.5	1,740	32.5	3,410	33.5	5,760		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,320	405	513	1,440	727	649	4,060	2,330	4,280	2,100	2,930	2,330
2	1,270	476	536	2,170	719	591	3,840	2,100	3,620	2,170	2,840	2,250
3	1,310	536	574	2,330	710	624	3,520	2,170	3,520	2,330	2,840	2,170
4	1,260	675	574	2,170	692	607	4,060	2,250	3,410	2,420	2,840	2,170
5	1,160	745	624	2,020	692	719	3,950	3,520	3,310	2,420	2,760	2,020
6	956	745	854	1,700	683	701	3,410	3,730	2,760	2,500	2,760	2,020
7	827	544	892	1,400	657	649	3,210	3,410	2,500	2,420	2,930	2,020
8	734	469	1,440	1,270	657	616	3,020	2,760	2,420	2,500	2,930	2,020
9	674	469	1,880	1,180	640	624	3,120	2,670	2,420	2,580	2,840	1,950
10	650	675	1,800	1,180	574	599	3,310	2,670	2,170	2,580	2,840	1,880
11	601	719	1,560	1,210	591	607	3,310	3,210	2,100	2,670	2,840	1,880
12	603	683	1,240	1,190	574	616	3,120	3,730	1,740	2,670	2,840	1,950
13	629	574	980	1,170	701	624	2,840	3,950	1,590	2,670	2,840	1,950
14	656	476	892	1,150	736	599	3,020	4,170	1,590	2,670	2,840	1,950
15	649	440	826	1,110	873	599	3,120	4,860	1,600	2,760	2,760	2,020
16	617	455	763	1,060	835	657	3,020	5,620	1,630	2,840	2,760	2,020
17	539	930	710	1,040	790	617	3,020	5,760	1,630	2,840	2,840	2,020
18	441	1,030	701	1,070	754	990	2,930	5,620	1,700	2,760	2,840	1,950
19	427	864	719	1,160	745	1,400	3,020	4,510	1,800	2,840	2,840	1,950
20	428	808	675	1,240	727	1,800	3,020	3,520	1,800	2,840	2,840	1,950
21	422	882	657	1,180	736	2,250	2,760	3,210	1,680	2,760	2,840	1,880
22	410	772	640	1,110	719	2,930	2,670	3,310	1,580	2,670	2,760	1,880
23	417	692	624	1,040	710	3,730	2,500	3,120	1,540	2,760	2,760	1,800
24	418	657	640	1,010	710	3,840	2,170	2,930	1,580	2,760	2,670	1,800
25	411	616	710	1,000	727	4,170	1,950	2,930	1,710	2,760	2,670	1,800
26	398	599	727	940	710	4,740	1,880	2,930	1,800	2,840	2,670	1,800
27	392	559	692	911	745	4,860	1,880	3,020	1,800	2,840	2,760	1,800
28	378	544	701	873	701	4,510	1,950	3,020	1,740	2,840	2,760	1,800
29	371	521	692	835	-	4,280	2,250	3,520	1,800	2,840	2,670	1,800
30	378	521	781	799	-	4,060	2,500	4,860	1,950	2,840	2,250	1,660
31	371	-	1,030	763	-	4,060	-	4,740	-	2,930	2,250	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	20,117	1,320	371	649	39,900
November	19,081	1,030	405	636	37,850
December	26,647	1,880	513	860	52,850
Calendar year 1938	841,347	11,200	371	2,305	1,669,000
January	38,721	2,330	763	1,249	76,800
February	19,835	873	574	708	39,340
March	58,518	4,860	591	1,888	116,100
April	88,430	4,060	1,880	2,948	175,400
May	110,150	5,760	2,100	3,553	218,500
June	64,770	4,280	1,540	2,159	128,500
July	82,420	2,930	2,100	2,659	163,500
August	85,810	2,930	2,250	2,768	170,200
September	58,490	2,330	1,660	1,950	116,000
Water year 1938-39	672,989	5,760	371	1,844	1,335,000

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 1939.

Extremes.- Maximum discharge during year, 6,300 second-feet (regulated) Mar. 25, 26, May 17; minimum, 22 second-feet (regulated)Sept. 10 (gage height, 0.77 foot).

1908-21, 1931-39: 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 below 50 second-feet, which are poor. Discharge Dec. 13, 14 interpolated. Water diverted upstream from gage for irrigation of large area. Flow partly regulated by diversions and by storage in Keechelus Lake, Kachess Lake, Cle Elum Lake, Bumping Lake, and Tieton Reservoirs. Record of daily discharge not adjusted for diversions or for change in contents of reservoirs. Records for river station furnished by Bureau of Reclamation. Records of monthly discharge of canals furnished by Office of Indian Affairs and by Bureau of Reclamation or computed from base data furnished by them.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)
(Shifting-control method used Jan. 7 to Feb. 23, Apr. 22 to June 12)

Oct. 1 to Apr. 12

1.0	47	3.0	810	5.5	4,160
1.5	100	3.5	1,260	6.0	5,190
2.0	215	4.0	1,800	6.5	6,300
2.5	450	5.0	3,250	7.0	7,500

Apr. 13 to Sept. 30

0.7	18	2.5	480
1.0	38	3.0	820
1.5	105	3.5	1,260
2.0	230		

Note.- Same as preceding table above 3.5 feet.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	193	1,040	1,040	1,920	1,230	1,210	3,250	948	4,360	366	310	378
2	270	1,100	1,080	2,680	1,170	1,150	3,420	677	3,160	218	306	274
3	412	1,180	1,110	3,420	1,200	1,120	3,160	607	2,680	350	215	212
4	504	1,360	1,090	3,250	1,180	1.110	3,510	600	2,460	510	179	206
5	722	1,570	1,150	2,920	1,170	1,120	3,160	1,070	2,250	366	39	69
6	538	1,460	1,410	2,460	1,220	1,180	2,390	1,740	1,570	191	105	24
7	374	1,260	1,520	2,180	1,170	1,160	1,740	1,460	1,090	105	270	45
8	343	1,160	1,920	1,980	1,120	1,190	1,310	836	932	82	1,100	65
9	124	1,100	3,000	1,860	1,080	1,130	1,360	564	998	126	1,070	31
10	53	1,170	2,840	1,800	1,060	1,110	1,570	635	828	234	162	27
11	80	1,360	2,610	1,860	1,070	1,100	1,360	998	712	306	185	30
12	144	1,310	2,050	1,800	1,120	1,120	1,260	1,620	656	200	60	111
13	209	1,210	1,870	1,800	1,260	1,140	948	2,050	516	130	188	185
14	279	1,160	1,700	1,740	1,410	1,120	900	2,460	540	170	262	188
15	348	1,120	1,520	1,680	1,620	1,080	1,120	3,600	420	170	182	230
16	230	1,070	1,520	1,680	1,570	1,060	1,120	5,410	552	290	160	114
17	202	1,410	1,360	1,620	1,460	924	1,080	6,300	516	298	200	150
18	160	1,920	1,360	1,620	1,410	1,080	1,030	5,850	408	165	270	148
19	73	1,740	1,360	1,680	1,360	1,460	1,260	4,660	462	128	152	150
20	282	1,570	1,410	1,800	1,310	1,920	1,520	3,000	504	155	203	137
21	980	1,620	1,360	1,800	1,260	2,460	1,460	2,050	306	168	227	98
22	1,160	1,570	1,240	1,620	1,310	3,160	1,520	2,050	141	84	197	105
23	1,050	1,460	1,250	1,570	1,250	4,260	1,410	1,800	139	143	197	27
24	998	1,360	1,230	1,570	1,200	5,190	884	1,660	56	176	96	122
25	962	1,360	1,260	1,520	1,190	6,070	438	1,680	105	143	215	107
26	980	1,310	1,310	1,460	1,210	6,300	540	2,050	176	179	155	105
27	962	1,180	1,260	1,410	1,200	5,410	814	2,390	182	234	203	91
28	971	1,070	1,310	1,410	1,190	4,360	621	2,540	96	294	200	155
29	1,020	1,060	1,310	1,380	-	3,690	705	3,780	120	91	212	185
30	980	1,060	1,310	1,360	-	3,250	1,110	5,850	282	134	152	286
31	989	-	1,460	1,310	-	3,000	-	5,630	-	221	137	-

	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	Run-off in acre-feet
October....	535	10	372	6.75	494	1,418	-239	1,179	72,490
November...	1,310	-	-	7.07	-	1,317	+837	2,154	128,200
December...	1,523	-	-	7.57	-	1,531	+1,554	3,085	189,700
Calendar year 1938	2,631	-	-	380	-	4,162	-153	4,009	2,902,000
January....	1,875	-	-	7.47	-	1,882	+1,761	3,643	224,000
February...	1,250	-	-	3.37	-	1,253	+756	2,009	111,600
March.....	2,279	10	157	23.6	212	2,682	+983	3,665	225,400
April.....	1,526	40	1,758	129	1,156	4,609	+2,067	6,676	397,200
May.....	2,470	40	1,940	115	1,298	5,863	+1,750	7,613	468,100
June.....	907	45	1,672	69.6	1,277	3,971	-320	3,651	217,200
July.....	207	40	1,790	84.0	1,286	3,407	-2,955	452	27,790
August.....	245	45	1,683	45.5	1,265	3,284	-3,991	‡-707	†-43,470
September..	135	35	1,330	10.2	1,061	2,571	-2,751	‡-180	†-10,710
Water year 1938-39	1,191	-	-	426	-	2,825	-52.3	2,773	2,008,000

*Change in contents in Keechelus Lake, Kachess Lake, Cle Elum Lake, Bumping Lake, and Tieton Reservoirs.

†Totals are equivalent with monthly results previously determined for Yakima River at Union Gap, near Yakima, Wash.

‡Negative results due to unrecorded diversions.

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 1939.

Average discharge.- 24 years (1896-1914, 1933-39), 4,382 second-feet.

Extremes.- Maximum discharge during year, 7,140 second-feet (regulated) Mar. 27 (gage height, 7.4 feet); minimum, 1,100 second-feet (regulated) Aug. 13 (gage height, 3.30 feet).

1896-1915, 1933-39: 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. Water diverted upstream from gage for irrigation of large acreage. Flow partly regulated by diversions and by storage in Keechelus Lake, Kachess Lake, Cle Elum Lake, Bumping Lake, and Tieton Reservoirs. Records furnished by Bureau of Reclamation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

3.0	900	4.0	1,800	5.0	3,120	6.0	4,680	7.0	6,420
3.5	1,270	4.5	2,430	5.5	3,880	6.5	5,530	8.0	8,280

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,570	2,040	1,860	2,170	1,860	1,800	4,200	1,860	6,780	1,220	1,270	1,360
2	1,570	2,040	1,860	2,500	1,800	1,800	4,360	1,860	5,700	1,320	1,320	1,460
3	1,620	2,100	1,860	3,270	1,800	1,680	4,520	1,620	4,680	1,360	1,360	1,570
4	1,740	2,100	1,920	3,800	1,740	1,680	4,200	1,520	4,360	1,360	1,360	1,520
5	1,980	2,240	1,920	3,800	1,800	1,660	4,520	1,460	4,040	1,570	1,270	1,570
6	2,170	2,430	1,920	3,500	1,740	1,680	4,200	1,800	3,720	1,570	1,180	1,460
7	2,100	2,360	2,100	3,200	1,800	1,680	3,500	2,560	3,200	1,410	1,140	1,460
8	1,920	2,300	2,300	2,910	1,740	1,740	2,840	2,500	2,700	1,320	1,220	1,410
9	1,860	2,100	2,560	2,700	1,680	1,740	2,430	2,040	2,560	1,320	1,680	1,460
10	1,740	2,040	3,500	2,560	1,620	1,680	2,360	1,620	2,430	1,410	2,170	1,410
11	1,680	2,040	3,500	2,430	1,520	1,680	2,500	1,620	2,300	1,520	1,360	1,410
12	1,680	2,170	3,270	2,430	1,570	1,620	2,240	1,860	2,100	1,620	1,220	1,410
13	1,680	2,170	2,840	2,430	1,620	1,570	2,100	2,500	2,040	1,570	1,180	1,410
14	1,680	2,100	2,430	2,430	1,740	1,660	1,800	2,980	1,800	1,460	1,180	1,520
15	1,800	1,980	2,300	2,360	1,980	1,620	1,620	3,420	1,800	1,270	1,220	1,570
16	1,860	2,040	2,300	2,360	2,300	1,620	1,800	4,520	1,620	1,180	1,270	1,620
17	1,900	1,800	2,300	2,300	2,300	1,570	1,860	4,200	1,620	1,220	1,220	1,620
18	1,740	2,040	2,170	2,240	2,170	1,520	1,800	5,020	1,680	1,320	1,220	1,570
19	1,740	2,560	2,100	2,240	2,040	1,620	1,740	5,020	1,620	1,270	1,270	1,570
20	1,620	2,500	2,100	2,300	1,980	2,170	1,920	4,040	1,620	1,220	1,410	1,520
21	1,620	2,300	2,100	2,360	1,920	2,630	2,240	4,360	1,620	1,270	1,520	1,460
22	2,240	2,360	2,040	2,360	1,860	3,200	2,170	3,570	1,520	1,360	1,520	1,460
23	2,430	2,300	1,980	2,240	1,860	3,960	2,240	3,570	1,410	1,360	1,520	1,460
24	2,300	2,170	1,920	2,170	1,860	5,020	2,240	3,270	1,320	1,320	1,520	1,410
25	2,170	2,100	1,920	2,170	1,800	5,880	1,800	3,120	1,220	1,270	1,460	1,360
26	2,100	2,100	1,920	2,100	1,800	6,780	1,410	3,050	1,220	1,270	1,320	1,410
27	2,100	2,040	1,980	2,040	1,800	7,140	1,320	3,420	1,320	1,270	1,360	1,460
28	2,040	1,980	1,920	2,040	1,800	6,420	1,360	3,960	1,270	1,270	1,360	1,410
29	2,040	1,920	1,980	1,980	-	5,530	1,460	4,200	1,270	1,360	1,320	1,460
30	2,100	1,860	1,920	1,920	-	4,850	1,410	5,190	1,180	1,320	1,320	1,460
31	2,040	-	1,920	1,920	-	4,360	-	6,780	-	1,220	1,320	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	58,730	2,430	1,570	1,895	116,500
November	64,280	2,560	1,860	2,143	127,500
December	68,710	3,500	1,860	2,216	136,300
Calendar year 1938	1,480,320	14,900	1,270	4,056	2,936,000
January	77,230	3,800	1,920	2,491	153,200
February	51,500	2,300	1,520	1,839	102,100
March	89,600	7,140	1,520	2,890	177,700
April	74,160	4,520	1,320	2,472	147,100
May	98,510	6,780	1,460	3,178	195,400
June	71,660	6,780	1,180	2,389	142,100
July	41,800	1,620	1,180	1,348	82,910
August	42,060	2,170	1,140	1,357	83,420
September	44,250	1,620	1,360	1,475	87,770
Water year 1938-39	782,490	7,140	1,140	2,144	1,552,000

Reservoirs in Yakima River Basin, Wash.

(Location given is that of controlling dam or outlet work)

Keechelus Lake Reservoir, on Yakima River, 3½ 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 Reservoir, 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 Reservoir, 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 Reservoir, on Bumping Lake, 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.

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 record.

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.

Gage height, and contents, water year October 1938 to September 1939

Date	Keechelus Lake Reservoir			Kachess Lake Reservoir			Cle Elum Lake Reservoir		
	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	74.28	67,600	-	34.50	124,920	-	82.63	198,420	-
Oct. 31	75.96	70,390	+2,790	30.44	110,110	-14,810	84.55	203,380	+6,960
Nov. 30	84.97	86,370	+15,980	33.45	121,040	+10,930	89.95	223,350	+19,970
Dec. 31	97.92	112,540	+26,170	38.58	140,280	+19,240	99.02	258,300	+34,950
Calendar year 1938	-	-	-14,770	-	-	-1,490	-	-	-48,220
Jan. 31	109.32	138,640	+26,100	44.34	162,920	+22,640	109.61	301,200	+42,900
Feb. 28	112.75	147,050	+8,410	46.56	171,990	+9,070	113.49	317,420	+16,220
Mar. 31	115.51	153,980	+6,930	46.96	173,640	+1,650	121.22	350,650	+33,230
Apr. 30	112.85	147,300	-6,680	51.63	193,300	+19,660	136.96	422,410	+71,760
May 31	115.50	153,960	+6,660	60.67	232,970	+39,670	140.40	433,880	+16,470
June 30	113.94	150,020	-3,940	61.70	237,620	+4,650	138.76	431,000	-7,880
July 31	98.21	113,170	-36,850	49.88	185,860	-51,760	125.67	370,360	-60,640
Aug. 31	82.21	81,280	-31,890	33.67	121,850	-64,010	102.03	270,290	-100,070
Sept. 30	64.54	52,510	-28,770	28.12	101,860	-19,990	83.59	199,890	-70,400
Water year 1938-39	-	-	-15,090	-	-	-23,060	-	-	+3,470

Date	Bumping Lake Reservoir			Tieton Reservoir		
Sept. 30	94.23	3,340	-	77.73	96,740	-
Oct. 31	96.24	4,680	+1,340	71.15	85,740	-11,000
Nov. 30	94.83	3,740	-940	73.50	89,590	+3,850
Dec. 31	97.61	5,620	+1,880	81.26	102,910	+13,320
Calendar year 1938	-	-	-12,640	-	-	-33,730
Jan. 31	102.20	8,950	+3,330	88.54	116,260	+13,350
Feb. 28	98.96	6,570	-2,380	94.06	126,920	+10,660
Mar. 31	100.60	7,750	+1,180	102.65	144,400	+17,480
Apr. 30	112.96	18,530	+10,780	115.16	171,870	+27,470
May 31	127.39	35,540	+17,010	126.65	199,640	+27,770
June 30	126.35	34,160	-1,380	122.43	189,120	-10,520
July 31	117.32	23,200	-10,960	113.32	167,660	-21,460
Aug. 31	105.32	11,440	-11,760	95.61	129,990	-37,670
Sept. 30	93.35	2,770	-8,670	76.21	94,140	-35,850
Water year 1938-39	-	-	-570	-	-	-2,600

*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 1939.

Average discharge.- 36 years, 287 second-feet, adjusted for storage since October 1905.

Extremes.- Maximum discharge during year, 1,570 second-feet (regulated) July 30 (gage height, 5.85 feet); no flow Nov. 9-15, Dec. 2, 3.
1903-39: Maximum discharge, 2,240 second-feet (computed from gate opening) Aug. 27, 1920; no flow when gates in dam are closed.

Remarks.- Records excellent except those for extremely low flow, which are poor. No diversion. Flow regulated by storage in Kachess Lake Reservoir. Record of daily discharge not adjusted for change in contents of Kachess Lake. Records furnished by Bureau of Reclamation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to Mar. 16						Mar. 17 to Sept. 30					
0.3	0	2.0	45	3.5	435	0.5	0	2.5	108	5.0	1,120
.8	3	2.5	110	4.0	640	1.0	4.7	3.0	238	5.9	1,600
1.5	19	3.0	253	5.0	1,090	1.5	17	3.5	451		
						2.0	46	4.0	666		

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	752	5	1	10	2	2	408	3	6	316	1,540	602
2	730	4	0	10	2	2	408	3	7	316	1,540	602
3	708	5	0	9	2	2	408	3	7	316	1,490	602
4	662	4	1	7	2	2	408	3	7	316	1,430	602
5	618	4	2	5	2	2	408	3	6	320	1,380	602
6	514	4	2	4	2	2	408	3	7	320	1,380	558
7	474	4	3	4	2	1	408	3	8	320	1,380	537
8	451	3	4	3	2	1	408	3	95	320	1,320	460
9	435	0	4	3	2	1	408	3	299	320	1,270	408
10	435	0	3	3	2	1	408	3	307	320	1,270	408
11	435	0	2	3	1	1	408	3	307	320	1,270	408
12	435	0	1	3	2	1	408	3	307	320	1,270	408
13	412	0	1	3	2	1	289	2	333	320	1,270	408
14	375	0	1	2	2	1	8	2	346	733	1,270	408
15	193	0	1	2	3	1	7	3	351	1,430	1,270	382
16	59	7	1	2	3	2	5	3	360	1,430	1,240	338
17	63	4	1	2	3	245	5	3	386	1,430	1,090	295
18	63	3	1	3	3	472	4	3	412	1,430	730	278
19	64	1	18	4	3	537	4	3	430	1,430	730	242
20	63	2	4	4	2	537	4	3	404	1,430	730	220
21	63	1	49	3	2	537	4	3	386	1,430	730	210
22	63	3	2	3	2	537	4	3	386	1,430	730	194
23	63	4	2	3	2	537	3	4	386	1,490	730	188
24	57	3	2	2	2	460	3	4	386	1,490	730	197
25	53	3	3	3	2	408	3	4	386	1,490	730	214
26	53	3	2	3	2	408	3	4	377	1,540	730	220
27	53	3	2	3	2	408	3	4	346	1,540	730	231
28	53	3	3	2	2	408	3	4	316	1,540	730	238
29	53	3	4	2	-	408	3	4	316	1,540	623	238
30	53	1	7	2	-	408	3	4	316	1,540	602	238
31	39	-	7	2	-	408	-	5	-	1,540	602	-

Month	Observed				Change in contents in Lake Kachess (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	752	39	276	16,950	-14,810	2,140	34.8	0.544	0.53
November	7	0	2.6	153	+10,930	11,080	186	2.91	3.25
December	49	0	4.3	266	+19,240	19,510	317	4.95	5.71
Calendar year 1938	1,380	0	240	173,700	-1,490	172,200	238	3.72	50.47
January	10	2	3.7	226	+22,640	22,870	372	5.81	6.70
February	3	1	2.1	119	+9,070	9,190	165	2.58	2.69
March	537	1	217	13,370	+1,650	15,020	244	3.81	4.39
April	408	3	175	10,420	+19,660	30,080	506	7.91	8.82
May	5	2	3.3	200	+39,670	39,870	648	10.1	11.64
June	430	6	266	15,840	+4,650	20,490	344	5.38	6.00
July	1,540	316	969	59,560	-51,760	7,800	127	1.98	2.28
August	1,540	602	1,050	64,540	-64,010	530	8.6	.135	.16
September	602	188	365	21,690	-19,990	1,700	28.6	.447	.50
Water year 1938-39	1,540	0	281	203,300	-23,060	180,300	249	3.89	52.77

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 1939.

Average discharge.- 36 years, 910 second-feet, adjusted for storage since January 1906.

Extremes.- Maximum discharge during year, 4,220 second-feet (regulated) May 16 (gage height, 10.10 feet); discharge estimated at 2 second-feet Nov. 6-9, when gates in Lake Cle Elum Reservoir were closed.

1903-39: Maximum discharge, 15,700 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 upstream from station. Flow partly controlled by storage in lake Cle Elum Reservoir. Record of daily discharge not adjusted for change in contents of Lake Cle Elum Reservoir. Records furnished by Bureau of Reclamation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

4.1	6	5.5	399	7.0	1,220	9.0	2,960
4.5	56	6.0	630	7.5	1,580	10.0	4,100
5.0	206	6.5	900	8.0	1,980	11.0	5,300

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	294	11	18	37	39	41	41	548	2,850	1,460	1,980	1,390
2	279	11	34	37	39	41	41	543	2,750	1,460	1,940	1,280
3	279	11	34	37	39	41	75	525	2,750	1,500	1,900	1,250
4	122	11	34	37	39	41	379	1,340	2,650	1,460	1,860	1,220
5	12	11	34	37	39	41	381	2,350	2,250	1,460	1,900	1,220
6	12	5	34	37	39	41	249	2,300	1,980	1,460	1,940	1,250
7	11	2	34	37	39	41	268	1,560	1,900	1,500	1,940	1,250
8	11	2	34	37	39	41	479	1,280	1,780	1,580	1,940	1,250
9	11	6	34	37	39	41	630	1,280	1,620	1,620	1,940	1,280
10	11	11	34	37	39	41	625	1,620	1,500	1,660	1,940	1,280
11	11	11	34	37	39	41	517	2,070	1,180	1,660	1,940	1,320
12	11	11	34	37	39	41	268	2,500	1,020	1,660	1,980	1,280
13	11	11	34	37	39	41	478	2,550	1,020	1,700	1,980	1,280
14	11	11	34	37	39	41	630	3,070	1,020	1,740	1,940	1,280
15	11	11	34	37	41	41	630	3,520	1,020	1,740	1,900	1,280
16	11	12	36	37	41	41	630	4,100	1,020	1,740	1,900	1,280
17	11	12	36	37	41	41	620	4,100	1,020	1,740	1,900	1,280
18	11	12	36	37	41	41	511	3,180	1,080	1,780	1,900	1,280
19	11	12	36	37	41	41	448	2,350	1,120	1,820	1,900	1,280
20	11	12	36	37	41	41	245	1,860	1,020	1,860	1,900	1,280
21	11	12	36	37	41	41	125	1,860	960	1,860	1,860	1,280
22	11	12	36	37	41	41	119	1,820	990	1,900	1,860	1,280
23	11	12	36	37	41	41	119	1,820	1,020	1,900	1,820	1,280
24	11	12	36	37	41	41	116	1,820	1,150	1,940	1,780	1,280
25	11	12	36	37	41	41	352	1,820	1,250	1,980	1,780	1,280
26	11	12	36	39	41	41	525	1,820	1,320	2,030	1,780	1,280
27	11	12	36	39	41	41	562	1,820	1,350	2,030	1,780	1,320
28	11	12	36	39	41	41	548	1,820	1,390	2,030	1,740	1,280
29	11	12	37	39	-	41	562	2,650	1,460	2,030	1,500	1,150
30	11	6	37	39	-	41	572	3,400	1,460	2,070	1,420	1,020
31	11	-	37	39	-	41	-	3,290	-	2,030	1,420	-

Month	Observed				Change in contents in Lake Cle Elum (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	294	11	41.1	2,520	+6,960	9,480	154	0.762	0.88
November	12	2	10.3	615	+19,970	20,580	346	1.71	1.91
December	37	18	34.6	2,130	+34,950	37,080	603	2.99	3.45
Calendar year 1938	3,850	2	892	646,000	-48,220	597,800	826	4.09	55.44
January	39	37	37.4	2,300	+42,900	45,200	735	3.64	4.20
February	41	39	40.0	2,220	+16,220	18,440	332	1.64	1.71
March	41	41	41.0	2,520	+33,230	35,750	581	2.88	3.32
April	630	41	392	23,300	+71,760	95,060	1,598	7.91	8.82
May	4,100	525	2,148	132,100	+16,470	148,600	2,417	12.0	13.83
June	2,850	960	1,497	89,060	-7,880	81,180	1,364	6.75	7.53
July	2,070	1,460	1,755	107,900	-60,640	47,260	769	3.81	4.39
August	1,980	1,420	1,847	113,600	-100,070	13,530	220	1.09	1.26
September	1,390	1,020	1,265	75,290	-70,400	4,890	82.2	.407	.45
Water year 1938-39	4,100	2	765	553,600	+3,470	557,000	769	3.81	51.75

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 5½ miles northwest of Naches. Zero of gage is 1,550 feet above mean sea level.

Drainage area.- 943 square miles.

Records available.- August to October 1905, March 1909 to October 1912, May 1915 to September 1928 and October 1935 to September 1939, 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.- 20 years (1908-12, 1916-28, 1935-39), 1,686 second-feet, adjusted for diversions by Selah Valley and Tieton canals since 1909, by 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, 3,900 second-feet (regulated) May 29 (gage height, 13.70 feet); minimum, 5 second-feet (regulated) Nov. 12 (gage height, 9.39 feet).

1905, 1908-12, 1915-28, 1935-39: Maximum discharge, 18,800 second-feet Nov. 24, 1909 (gage height, 8.9 feet, original site and datum); minimum, 2 second-feet (regulated) Jan. 7, 1937 (gage height, 9.40 feet).

Bureau of Reclamation reports a flow of 32,200 second-feet Dec. 23, 1933 (gage height, 14.33 feet, original site and datum).

Remarks.- Records good except those below 50 second-feet, which are fair. Discharge June 15, 16 interpolated. Flow regulated by Bumping Lake and Tieton Reservoirs, and by diversion at Oak Flat for supply of city of Yakima, and by diversions of Selah Valley, Tieton, and Wapatox canals. Station is maintained by Bureau of Reclamation in cooperation with Pacific Power & Light Co. Records furnished for publication by 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 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	93	15	7	190	34	10	905	1,750	1,930	1,150	245	190
2	133	16	9	418	10	10	1,110	1,680	1,590	993	196	142
3	157	26	7	385	10	10	1,230	1,630	1,490	993	113	85
4	155	272	6	314	10	10	1,080	1,560	1,390	949	98	50
5	165	29	51	174	10	11	855	1,370	1,260	760	169	67
6	90	21	56	111	10	10	734	1,170	1,170	593	256	134
7	58	15	72	95	13	10	652	1,000	1,080	524	171	171
8	42	10	429	43	10	10	644	1,030	1,030	538	149	166
9	26	10	396	12	9	11	716	1,120	1,020	518	144	168
10	33	8	215	12	9	10	692	1,190	1,060	629	136	220
11	64	6	122	12	12	10	716	1,290	1,180	636	134	252
12	112	5	43	12	95	10	938	1,370	1,270	551	168	292
13	138	7	18	12	68	10	885	1,480	1,430	524	216	272
14	162	9	32	12	17	10	927	1,730	1,480	538	213	276
15	99	7	29	12	40	10	1,110	2,400	1,490	531	234	211
16	73	10	29	11	22	9	1,130	3,220	1,500	538	288	142
17	60	58	32	10	13	10	1,170	3,020	1,500	688	292	132
18	44	23	35	10	12	12	1,330	2,570	1,380	422	288	122
19	32	17	36	11	12	18	1,720	2,070	1,390	406	292	129
20	33	18	38	11	12	139	1,850	1,580	1,430	438	296	89
21	30	36	38	10	11	292	2,050	1,440	1,330	433	305	98
22	26	15	30	12	11	492	2,230	1,380	1,290	438	310	89
23	15	11	14	11	11	787	1,930	1,370	1,300	492	296	139
24	14	12	35	11	11	1,210	1,620	1,410	1,190	416	314	166
25	13	17	67	13	11	1,390	1,590	1,630	1,240	406	323	118
26	12	12	64	11	10	1,270	1,790	1,900	1,200	400	284	166
27	12	15	90	10	11	1,020	1,970	2,070	1,190	389	245	174
28	12	7	86	10	10	716	1,850	2,070	1,180	319	203	177
29	12	7	79	10	-	636	1,940	3,400	1,250	227	183	171
30	12	7	88	10	-	578	1,900	3,500	1,260	260	139	96
31	13	-	106	12	-	652	-	2,570	-	245	168	-

Month	Observed				Change in contents* (acre-feet)	Diversions* (acre-feet)	Adjusted			
	Discharge in second-feet			Run-off in acre-feet			Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean					Mean	Per square mile	
October	165	12	62.6	3,850	-9,660	33,700	27,890	454	0.481	0.55
November	272	5	24.0	1,430	+2,910	25,330	29,670	499	.529	.59
December	429	6	76.1	4,680	+15,200	26,710	46,620	758	.804	.93
Calendar year 1938	7,800	5	1,171	847,700	-46,370	504,200	1,304,000	1,801	1.91	25.93
January	418	10	64.1	3,940	+16,680	24,100	44,720	727	.771	.89
February	95	9	18.4	1,020	+8,280	19,160	28,460	512	.543	.57
March	1,390	9	303	18,610	+18,660	29,630	66,950	1,089	1.15	1.33
April	2,230	644	1,309	77,880	+38,250	46,760	162,900	2,738	2.90	3.24
May	3,500	1,000	1,835	112,800	+44,780	59,930	217,500	3,537	3.75	4.32
June	1,930	1,020	1,317	78,350	-11,900	58,830	125,300	2,106	2.23	2.49
July	1,150	227	547	33,610	-32,420	59,890	61,080	993	1.05	1.21
August	323	96	222	13,620	-49,430	62,020	26,210	426	.452	.52
September	292	50	157	9,330	-44,520	55,390	20,200	339	.359	.40
Water year 1938-39	3,500	5	496	359,100	-3,170	501,600	857,500	1,184	1.26	17.04

*Change in contents in Bumping Lake and Tieton Reservoirs. Diversions by Tieton, Selah Valley, and Wapatox canals and by city of Yakima.

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 1939.

Average discharge.- 30 years (1909-39), 294 second-feet, adjusted for storage since November 1910.

Extremes (regulated).- Maximum discharge during year, 1,390 second-feet May 29 (gage height, 4.37 feet); minimum, 4 second-feet Oct. 18 to Nov. 2, Nov. 5, 6.
1906, 1909-39: 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 50 second-feet, which are fair. No diversion. Flow partly regulated by storage in Bumping Lake Reservoir (usable capacity 33,800 acre-feet at spillway crest). Record of daily discharge not adjusted for change in contents of lake. Records furnished by Bureau of Reclamation.

Rating tables, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

Oct. 1 to July 12						July 13 to Sept. 30			
0.8	3	2.0	106	4.0	1,080	1.5	30	2.5	237
1.0	5	2.5	241	4.5	1,470	2.0	105	3.0	453
1.2	11	3.0	453						
1.5	35	3.5	739						

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	48	4	83	125	72	151	16	404	771	505	273	273
2	48	4	83	127	72	149	16	296	676	505	273	273
3	48	5	83	127	72	151	18	147	646	532	273	273
4	48	5	85	97	74	151	18	24	587	505	273	273
5	50	4	86	72	74	151	18	23	559	505	273	273
6	50	4	90	72	74	151	18	23	505	505	273	273
7	48	140	95	72	74	151	18	23	479	505	273	273
8	48	196	106	74	74	154	18	21	479	505	273	273
9	48	193	112	74	74	151	19	20	479	505	273	273
10	48	190	119	75	151	154	19	20	532	505	273	273
11	87	184	119	75	151	151	184	23	559	453	273	273
12	99	187	119	75	151	154	316	23	616	404	273	273
13	123	184	119	75	151	151	316	25	646	404	273	273
14	119	127	116	77	151	151	381	82	646	404	273	255
15	104	95	116	77	151	151	453	771	646	404	273	221
16	90	97	116	77	151	151	453	1,230	587	404	273	205
17	43	95	116	77	151	146	453	1,230	505	404	273	205
18	4	95	116	77	151	146	453	1,080	479	404	273	205
19	4	95	116	78	151	137	453	870	505	404	273	205
20	4	95	116	72	149	123	453	676	532	404	273	205
21	4	93	116	72	151	8	453	616	559	404	273	190
22	4	92	116	72	154	8	321	587	559	404	273	190
23	4	90	119	72	151	10	99	559	559	357	273	143
24	4	90	119	72	151	12	26	559	505	273	273	105
25	4	88	119	72	151	14	25	616	505	273	273	105
26	4	86	119	72	151	16	268	739	505	273	273	103
27	4	86	119	72	151	18	453	771	532	273	273	90
28	4	85	119	72	151	16	453	870	532	273	273	71
29	4	85	121	72	-	16	453	1,310	532	273	273	57
30	4	83	121	72	-	16	453	1,230	532	273	273	60
31	4	-	119	72	-	16	-	938	-	273	273	-

Month	Observed				Change in contents in Bumping Lake (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	123	4	38.9	2,390	+1,340	3,730	60.7	0.893	1.03
November	196	4	95.9	5,710	-940	4,770	80.2	1.18	1.32
December	121	83	110	6,780	+1,880	8,660	141	2.07	2.39
Calendar year 1938	1,800	4	303	219,400	-12,640	206,800	286	4.21	57.04
January	127	72	79.6	4,890	+3,330	8,220	134	1.97	2.27
February	154	72	126	7,000	-2,380	4,620	83.2	1.22	1.27
March	154	8	101	6,200	+1,180	7,380	120	1.76	2.03
April	453	16	237	14,080	+10,780	24,860	418	6.15	6.86
May	1,310	20	510	31,350	+17,010	48,360	787	11.6	13.37
June	771	479	558	33,230	-1,380	31,850	535	7.87	8.78
July	532	273	404	24,820	-10,960	13,860	225	3.31	3.82
August	273	273	273	16,790	-11,760	5,030	81.8	1.20	1.38
September	273	57	205	12,230	-8,670	3,560	59.8	.879	.98
Water year 1938-39	1,310	4	229	165,500	-570	164,900	228	3.35	45.50

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 1918, and April 1925 to September 1939, 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.- 20 years (1908-12, 1918-20, 1925-39), 474 second-feet, adjusted for storage since October 1925.

Extremes.- Maximum discharge during year, 1,610 second-feet (regulated) May 29 (gage height, 5.27 feet); minimum, 5 second-feet (regulated) Nov. 8-13.
1908-14, 1918-20, 1925-39: Maximum discharge, 8,450 second-feet (regulated) Dec. 22, 1933 (gage height, 9.24 feet); no flow Apr. 4-6, 10, 1930, as result of regulation.

Remarks.- Records good except those for very low flow, which are poor. Shifting-control method used Oct. 3-23, Apr. 7-19, 25-28, May 22-29. No diversion. Flow regulated by storage in Tieton Reservoir. Record of daily discharge not adjusted for change in contents of reservoir. Records furnished by Bureau of Reclamation.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	755	205	111	65	7	7	7	257	852	950	845	739
2	755	205	108	65	7	7	7	260	764	915	764	715
3	709	193	107	65	7	7	7	257	752	880	721	685
4	682	181	105	7	7	7	7	260	709	817	715	598
5	555	181	105	7	7	7	22	260	673	697	838	637
6	451	181	107	7	7	7	29	260	625	625	866	752
7	435	151	108	7	7	7	45	263	592	643	790	778
8	332	5	100	7	7	7	56	263	576	697	778	778
9	274	5	42	7	7	7	57	260	576	752	778	810
10	330	5	7	7	7	14	57	260	614	784	790	845
11	364	5	7	7	7	35	58	260	655	784	771	880
12	363	5	7	7	7	37	78	260	697	778	817	915
13	354	37	42	7	7	35	67	260	771	810	859	866
14	344	90	65	7	7	36	10	260	764	831	866	845
15	321	90	65	7	7	35	29	257	859	845	873	733
16	320	102	65	7	7	35	87	260	1,090	845	915	778
17	319	105	65	7	7	37	88	260	1,090	778	915	758
18	318	108	65	7	7	37	108	260	1,060	745	915	764
19	316	110	65	7	7	35	129	267	1,060	745	915	739
20	315	128	65	7	7	35	139	293	950	745	915	715
21	314	183	65	7	7	35	139	304	845	745	915	721
22	253	188	65	7	7	19	149	358	817	797	915	715
23	206	188	65	7	7	9	172	511	859	845	915	824
24	205	188	65	7	7	9	194	586	915	845	985	810
25	205	188	65	7	7	9	612	698	1,020	866	950	810
25	205	188	65	7	7	9	881	864	1,020	873	915	880
27	205	136	65	7	7	8	764	889	1,020	866	866	880
28	205	108	65	7	7	7	446	932	1,020	758	852	880
29	205	107	65	7	-	7	263	1,480	1,020	804	804	866
30	205	107	65	7	-	7	251	1,410	985	845	778	415
31	205	-	65	7	-	8	-	1,060	-	838	778	-

Month	Observed				Change in contents in Tieton Reservoir (acre-feet)	Adjusted for change in reservoir contents			
	Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean				Mean	Per square mile	
October	755	205	356	21,870	-11,000	10,870	177	0.947	1.09
November	205	5	122	7,290	+3,850	11,140	187	1.00	1.12
December	111	7	68.6	4,220	+13,320	17,540	285	1.52	1.75
Calendar year 1938	2,290	5	561	406,100	-33,730	372,300	514	2.75	37.33
January	65	7	12.6	776	+13,350	14,130	230	1.23	1.42
February	7	7	7.0	389	+10,660	11,050	199	1.06	1.10
March	37	7	18.1	1,110	+17,480	19,590	302	1.61	1.86
April	881	7	165	9,830	+27,470	37,300	627	3.35	3.74
May	1,480	257	462	28,420	+27,770	56,190	914	4.89	5.64
June	1,090	576	842	50,080	-10,520	39,560	665	3.56	3.97
July	950	625	798	49,090	-21,460	27,630	449	2.40	2.77
August	985	715	849	52,200	-37,670	14,530	236	1.26	1.45
September	915	415	771	45,880	-35,850	10,030	169	.904	1.01
Water year 1938-39	1,480	5	375	271,200	-2,600	268,600	371	1.98	26.92

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), 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 1939.

Average discharge.- 30 years (1907-16, 1918-39), 550 second-feet, adjusted for diversions since 1910 and for storage since October 1924.

Extremes (regulated).- Maximum discharge during year, 1,260 second-feet May 29 (gage height, 4.05 feet); minimum, 4 second-feet Apr. 15 (gage height, 1.25 feet).
1907-39: 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 below 50 second-feet, which are poor. Diversions for irrigation by Tieton canal. Flow regulated by Tieton Reservoir, 7 miles upstream from gage. Record of daily discharge not adjusted for canal diversion or for change in contents of Tieton Reservoir. Records furnished by Bureau of Reclamation.

Rating table, water year 1938-39 (gage height, in feet, and discharge, in second-feet)

1.1	1	1.5	15	2.1	100	3.0	464	4.0	1,220
1.2	3	1.8	47	2.5	230	3.5	790	4.5	1,710

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	550	238	128	90	37	21	50	62	562	580	481	438
2	574	234	128	98	48	21	35	66	475	538	411	391
3	574	247	128	94	23	21	35	69	481	562	382	353
4	568	222	134	64	21	18	22	67	422	544	377	307
5	486	210	169	34	21	21	15	60	377	372	470	316
6	416	206	146	34	21	19	21	53	330	285	520	411
7	406	202	183	27	21	19	21	52	290	294	443	464
8	362	27	172	24	21	19	35	53	276	362	443	464
9	307	19	98	23	21	17	39	52	276	427	443	498
10	348	14	39	23	21	15	35	53	307	453	427	532
11	406	8	38	23	21	25	38	58	353	464	427	568
12	411	10	44	23	42	28	44	58	401	453	470	586
13	406	13	80	23	28	38	47	62	470	464	509	562
14	391	77	251	23	27	43	67	67	475	481	509	538
15	353	100	251	22	40	27	58	64	544	498	544	481
16	357	120	234	22	37	15	47	64	715	498	586	470
17	357	122	222	22	25	34	47	64	722	453	593	459
18	357	125	88	22	23	47	53	48	701	411	593	464
19	362	125	86	23	22	60	75	34	694	411	600	459
20	357	140	82	21	26	84	67	59	600	406	606	427
21	357	186	80	24	23	102	60	73	520	401	612	448
22	307	149	80	25	22	120	54	98	486	438	612	448
23	234	146	80	22	22	128	58	243	532	486	612	520
24	226	146	78	23	22	143	42	307	556	481	632	556
25	222	143	78	34	23	143	435	411	666	503	619	550
26	226	137	78	26	25	100	652	574	652	509	586	600
27	226	134	78	18	21	73	568	586	645	509	562	600
28	234	125	80	17	25	58	289	600	638	411	526	600
29	238	122	80	17	-	44	80	1,080	645	459	503	600
30	238	120	80	18	-	35	52	1,110	619	503	459	316
31	238	-	86	19	-	39	-	738	-	481	470	-

Month	Observed				Change in contents in Tieton Reservoir (acre-feet)	Diverted by Tieton canal (acre-feet)	Adjusted			
	Discharge in second-feet			Run-off in acre-feet			Run-off in acre-feet	Discharge in second-feet		Run-off in inches
	Maximum	Minimum	Mean					Mean	Per square mile	
October	574	222	358	22,000	-11,000	1,950	12,950	211	0.879	1.01
November	247	8	129	7,670	+3,850	912	12,430	209	.871	.97
December	251	38	115	7,100	+13,320	-	20,420	332	1.38	1.59
Calendar year 1938	2,300	8	501	362,900	-33,730	95,790	424,900	587	2.45	33.18
January	98	17	31.5	1,940	+13,350	-	15,290	249	1.04	1.20
February	48	21	26.0	1,450	+10,660	-	12,110	218	.908	.95
March	143	15	50.9	3,130	+17,480	1,550	22,160	360	1.50	1.73
April	652	15	105	6,230	+27,470	8,510	42,210	709	2.95	3.29
May	1,110	34	225	13,850	+27,770	19,280	60,900	990	4.12	4.75
June	722	276	514	30,600	-10,520	18,720	38,800	652	2.72	3.04
July	580	285	456	28,040	-21,460	19,340	25,920	422	1.76	2.03
August	632	377	517	31,790	-37,670	19,660	13,780	224	.933	1.08
September	600	307	481	28,610	-35,850	16,920	9,680	163	.679	.76
Water year 1938-39	1,110	8	252	182,400	-2,600	106,800	286,600	396	1.65	22.40

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 1939.

Extremes.- Maximum discharge during year, 158 second-feet May 16 (gage height, 1.35 feet); minimum discharge recorded, 7 second-feet Jan. 22 (gage height, 0.15 foot), or may have been less during periods of ice effect.

1907-24, 1931-39: Maximum discharge, 755 second-feet Dec. 22, 1933; maximum gage height, 4.6 feet June 18, 1916; minimum discharge, 5.9 second-feet Nov. 22, 1931, or may have been somewhat less during period of ice effect in February 1936.

Remarks.- Records good except those for period of missing gage heights, Oct. 6-23 (computed on basis of records for South Fork at Conrad ranch), and those for periods of ice effect or missing gage heights, Dec. 13-27, Feb. 8-12 (computed on basis of gage heights and weather records), which are poor. Discharge Aug. 25, 27, 28, Aug. 30 to Sept. 4, Sept. 6-11, 13-18, 20-24 interpolated. No diversion of importance. No regulation. Records collected in cooperation with Indian Service.

Rating table, water year 1938-39 except periods of ice effect (gage height, in feet, and discharge, in second-feet)

0.1	4.3	.5	36	1.0	95
.3	18	.7	57	1.5	188

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	17	21	20	24	11	17	80	101	89	36	15	13
2	17	20	20	24	11	17	80	108	85	34	15	13
3	18	31	20	21	14	17	81	115	82	34	15	13
4	20	26	22	20	14	17	75	115	79	34	14	13
5	38	21	33	18	17	15	69	105	76	33	14	13
6	25	19	25	18	17	16	65	100	73	32	14	13
7	22	20	28	20	15	16	64	101	71	31	14	13
8	20	19	38	18	12	15	65	106	70	29	14	13
9	19	19	32	18	10	15	65	111	68	25	14	13
10	19	16	27	18	8	15	64	115	65	25	14	13
11	25	13	14	18	10	15	67	118	65	24	14	13
12	20	19	10	18	13	15	64	120	67	22	14	13
13	20	22	9	18	15	14	63	125	68	21	14	13
14	19	20	10	18	18	14	65	137	65	20	14	13
15	19	19	11	16	31	15	70	146	64	20	13	13
16	19	23	12	16	22	18	70	152	61	20	13	12
17	20	22	13	16	19	26	73	137	58	20	12	12
18	20	19	14	16	18	32	81	129	57	19	12	12
19	19	19	15	15	18	40	94	109	55	18	13	12
20	18	18	16	15	18	50	98	97	54	18	13	12
21	18	14	16	13	18	61	108	100	52	18	13	12
22	18	9.5	16	12	17	71	113	92	52	18	13	12
23	18	12	17	14	17	85	109	87	48	17	13	12
24	18	17	17	16	17	92	105	87	47	16	13	12
25	18	16	17	11	17	97	95	89	44	15	13	12
26	18	16	18	13	17	85	89	92	42	15	13	10
27	18	16	18	15	17	74	91	92	40	15	13	9.5
28	18	16	18	14	17	67	100	103	38	15	13	10
29	20	18	18	13	-	64	108	127	38	14	13	10
30	22	21	18	12	-	63	101	111	38	15	13	10
31	24	-	20	14	-	71	-	98	-	15	13	-

Month	Second-foot-days	Maximum	Minimum	Mean	Per square mile	Run-off	
						Inches	Acre-feet
October	624	38	17	20.1	0.291	0.34	1,240
November	561.5	31	9.5	18.7	.271	.30	1,110
December	582	38	9	18.8	.272	.31	1,150
Calendar year 1938	30,682.5	401	9	84.1	1.22	16.56	60,840
January	512	24	11	16.5	.239	.28	1,020
February	448	31	8	16.0	.232	.24	889
March	1,229	97	14	39.6	.574	.66	2,440
April	2,472	113	63	82.4	1.19	1.33	4,900
May	3,425	152	87	110	1.59	1.83	6,790
June	1,811	89	38	60.4	.875	.98	3,590
July	688	36	14	22.2	.322	.37	1,360
August	418	15	12	13.5	.196	.23	829
September	364.5	13	9.5	12.2	.177	.20	723
Water year 1938-39	13,135.0	152	8	36.0	.522	7.07	26,040

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, 2¼ miles upstream from North Fork of creek, 2¾ miles southwest of Tampico, and 20 miles southwest of Yakima.

Drainage area.- 26 square miles.

Records available.- March 1915 to September 1924 (fragmentary), March 1931 to September 1939.

Extremes.- Maximum discharge observed during year, 29 second-feet Mar. 25, May 4, 5, 14-18, 23, 24, 26, 27; minimum observed, 3.2 second-feet Sept. 6-9, 11 (gage height, 0.54 foot).

1915-24, 1931-39: Maximum discharge observed, 424 second-feet Dec. 23, 1933 (gage height, 3.10 feet); minimum observed, 2.6 second-feet Aug. 23, 25, 1931 (gage height, 0.35 foot).

Remarks.- Records good except those for periods of ice effect, Nov. 22-27, Dec. 11-20, Jan. 4-7, 22-27, Jan. 31 to Feb. 13, which were computed on basis of gage heights, weather records, observer's notes, and records for North Fork of Ahtanum Creek near Tampico and are poor. Gage read twice daily. Shifting-control method used for long periods throughout year. A few diversions for irrigation above gage. Records collected in cooperation with Indian Service.

Discharge, in second-feet, water year October 1938 to September 1939

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.1	6.8	5.3	5.6	6	6.8	16	24	22	6.8	4.4	4.7
2	6.1	6.5	5.3	6.5	6	6.5	19	25	21	7.1	4.2	4.0
3	6.1	9.6	5.3	6.2	5	6.8	21	28	21	7.4	4.2	3.8
4	6.6	7.1	7.7	7	5	6.8	20	29	19	6.8	4.4	3.8
5	8.4	6.5	7.7	7	4	6.8	18	28	18	7.1	4.4	3.6
6	6.8	6.5	6.5	7	4	6.8	16	26	15	6.8	4.4	3.2
7	6.5	6.8	7.1	6	4	11	14	25	15	6.8	4.4	3.4
8	6.2	6.8	7.1	6.2	4	6.8	14	27	14	7.1	4.4	3.2
9	5.6	6.2	6.5	6.2	4	7.1	14	27	14	7.1	4.4	3.2
10	5.6	5.6	6.5	5.9	4	7.4	14	26	13	6.5	4.7	3.4
11	7.1	5.3	6	6.8	4	6.8	13	26	12	6.5	4.7	3.4
12	6.2	5.9	6	6.5	5	6.8	13	27	11	6.2	4.7	3.4
13	6.2	6.2	6	6.2	6	6.8	13	28	11	5.9	4.7	3.6
14	5.6	6.2	6	6.2	7.7	6.8	13	29	11	5.9	4.4	3.6
15	5.6	6.2	5	6.2	9.6	6.8	13	29	10	5.9	4.7	3.4
16	5.6	6.5	5	6.2	9.6	6.8	14	29	10	5.9	5.0	3.4
17	5.9	6.8	5	6.2	6.8	7.4	14	29	10	5.9	5.0	3.6
18	5.9	6.5	5	6.2	7.1	10	14	28	10	5.6	4.7	3.6
19	5.6	6.2	5	6.5	7.1	12	14	27	9.6	5.3	4.4	3.6
20	5.3	6.2	6	6.5	7.1	14	16	25	9.6	5.3	4.4	3.6
21	5.3	6.2	6.2	6.5	7.1	16	20	26	9.6	5.9	4.4	3.6
22	5.3	6	6.2	6	6.8	20	21	23	9.6	5.3	4.4	3.6
23	5.3	6	5.6	6	7.1	25	21	26	8.8	4.7	4.7	3.4
24	5.3	7	4.7	6	7.1	27	23	29	8.8	4.7	4.7	3.4
25	5.3	7	5.3	6	6.8	29	22	28	8.8	5.0	4.7	3.4
26	5.6	6	5.0	6	6.8	27	22	28	8.0	4.7	4.7	3.4
27	5.6	6	5.0	6	6.5	24	21	28	8.0	4.7	4.4	3.4
28	5.6	6.2	5.3	6.5	7.1	21	22	22	7.4	4.7	4.4	3.4
29	5.9	6.2	5.0	6.2	-	19	24	22	7.4	4.7	4.2	3.4
30	6.8	6.2	5.3	6.5	-	16	24	22	7.4	4.4	4.2	3.6
31	6.8	-	5.3	6	-	14	-	22	-	4.4	4.2	-

Month	Second-foot-days	Maximum	Minimum	Mean	Run-off in acre-feet
October	185.8	8.4	5.3	5.99	369
November	193.2	9.6	5.3	6.44	383
December	178.9	7.7	4.7	5.77	355
Calendar year 1938	8,769.5	124	4.7	24.0	17,400
January	194.8	7	5.6	6.28	386
February	171.3	9.6	4	6.12	340
March	395.0	29	6.5	12.7	783
April	523	24	13	17.4	1,040
May	818	29	22	26.4	1,620
June	360.0	22	7.4	12.0	714
July	181.1	7.4	4.4	5.84	359
August	139.6	5.0	4.2	4.50	277
September	106.1	4.7	3.2	3.54	210
Water year 1938-39	3,446.8	29	3.2	9.44	6,840

In addition to the records of stream flow obtained at gaging stations and reported in the preceding pages, measurements of flow were made at other points in Pacific slope basins in Washington and in upper Columbia River Basin, as shown in the following table:

Miscellaneous discharge measurements in Pacific slope basins in Washington and upper Columbia River Basin during the water year October 1938 to September 1939

Chambers Creek Basin, Wash.

Date	Stream	Tributary to or diverting from-	Locality	Discharge
				Sec.-ft.
Mar. 6	Clover Creek....	Steilacoom Lake..	NW¼NW¼ sec. 25, T. 19 N., R. 3 E., near Fort Lewis, Wash.	9.4
6	....do.....	....do.....	SW¼SE¼ sec. 14, T. 19 N., R. 3 E., near Fort Lewis, Wash.	23.9
6	....do.....	....do.....	SE¼ sec. 11, T. 19 N., R. 2 E., near Fort Lewis, Wash.	65.8
6	....do.....	....do.....	SW¼SW¼ sec. 2, T. 19 N., R. 2 E., near Fort Lewis, Wash.	60.6
Apr. 6	....do.....	....do.....	....do.....	36.9
May 5	....do.....	....do.....	....do.....	16.8
Apr. 6	....do.....	....do.....	SE¼SE¼ sec. 3, T. 19 N., R. 2 E., near Steilacoom, Wash.	35.9
Nov. 8	Ponce de Leon Springs Creek.	....do.....	NE¼SE¼ sec. 3, T. 19 N., R. 2 E., near Steilacoom, Wash.	6.5
Dec. 3	....do.....	....do.....	....do.....	8.7
Jan. 6	....do.....	....do.....	....do.....	13.6
Mar. 7	....do.....	....do.....	....do.....	27.1
Apr. 6	....do.....	....do.....	....do.....	22.0
May 5	....do.....	....do.....	....do.....	16.0
June 12	....do.....	....do.....	....do.....	12.7
July 11	....do.....	....do.....	....do.....	11.8
Aug. 23	....do.....	....do.....	....do.....	8.2
Sept.21	....do.....	....do.....	....do.....	6.6
Dec. 3	Fish Hatchery Springs Creek.	Chambers Creek...	NE¼SE¼ sec. 27, T. 20 N., R. 2 E., near Steilacoom, Wash.	6.3
Jan. 6	....do.....	....do.....	....do.....	6.6
May 26	....do.....	....do.....	....do.....	5.9
June 13	....do.....	....do.....	....do.....	5.4
July 11	....do.....	....do.....	....do.....	5.3
Aug. 25	....do.....	....do.....	....do.....	6.3
Sept.22	....do.....	....do.....	....do.....	6.1
Oct. 29	Flett Creek.....	....do.....	SE¼SW¼ sec. 26, T. 20 N., R. 2 E., near Steilacoom, Wash.	12.0
Dec. 3	....do.....	....do.....	....do.....	16.2
Jan. 6	....do.....	....do.....	....do.....	13.6
Apr. 6	....do.....	....do.....	....do.....	19.6
May 5	....do.....	....do.....	....do.....	14.4
June 12	....do.....	....do.....	....do.....	10.0
July 10	....do.....	....do.....	....do.....	10.4
Aug. 25	....do.....	....do.....	....do.....	6.5
Sept.21	....do.....	....do.....	....do.....	6.1
Oct. 29	Leach Creek.....	....do.....	NW¼NW¼ sec. 26, T. 20 N., R. 2 E., near Steilacoom, Wash.	17.4
Dec. 3	....do.....	....do.....	....do.....	18.0
Jan. 6	....do.....	....do.....	....do.....	14.1
Apr. 6	....do.....	....do.....	....do.....	13.0
May 5	....do.....	....do.....	....do.....	11.1
June 12	....do.....	....do.....	....do.....	11.3
July 10	....do.....	....do.....	....do.....	11.4
Aug. 25	....do.....	....do.....	....do.....	11.1
Sept.21	....do.....	....do.....	....do.....	10.9

Puyallup River Basin, Wash.

Oct. 27	Maplewood Springs	Clark Creek.....	Below forks at pumping plant at Puyallup, Wash.	39.2
Dec. 2	....do.....	....do.....	....do.....	34.7
Jan. 5	....do.....	....do.....	....do.....	32.2
Mar. 6	....do.....	....do.....	....do.....	28.6
Apr. 5	....do.....	....do.....	....do.....	27.6
May 5	....do.....	....do.....	....do.....	26.8
26	....do.....	....do.....	....do.....	27.0
June 12	....do.....	....do.....	....do.....	26.4
July 10	....do.....	....do.....	....do.....	29.4
Aug. 24	....do.....	....do.....	....do.....	26.9
Sept.22	....do.....	....do.....	....do.....	27.3

Lake Washington Basin, Wash.

Oct. 10	Rock Creek.....	Cedar River.....	Landsberg-Issaquah road culvert near Landsberg.	8.1
Feb. 8	....do.....	....do.....	....do.....	27.6
June 28	....do.....	....do.....	....do.....	27.2
Sept.14	....do.....	....do.....	....do.....	4.1
Nov. 1	Bear Creek.....	Sammamish River..	Mouth, at Redmond.....	36.4
28	....do.....	....do.....	....do.....	31.4
Jan. 30	....do.....	....do.....	....do.....	112
Feb. 16	....do.....	....do.....	....do.....	277
Mar. 15	....do.....	....do.....	....do.....	157
July 7	....do.....	....do.....	....do.....	25.6
Aug. 14	....do.....	....do.....	....do.....	17.3

Miscellaneous discharge measurements in Pacific slope basins in Washington and upper Columbia River Basin during the water year October 1938 to September 1939--Continued

Stillaguamish River Basin, Wash.

Date	Stream	Tributary to or diverting from-	Locality	Discharge
				Sec.-ft.
Oct. 14	Stillaguamish River.	Skagit Bay and Port Susan	1½ miles above crossing of Highway 99, near Arlington.	3,910
Nov. 19	....do.....	....do.....	....do.....	8,850
Oct. 14	....do.....	....do.....	Below Cook Slough, 1/3 mile below Highway 99, near Silvana.	1,980
21	....do.....	....do.....	....do.....	549
Nov. 18	....do.....	....do.....	....do.....	3,600
19	....do.....	....do.....	....do.....	6,460
Jan. 25	....do.....	....do.....	....do.....	1,910
Mar. 16	....do.....	....do.....	....do.....	1,080
May 16	....do.....	....do.....	....do.....	2,530
Oct. 21	Cook Slough.....	Stillaguamish River.	County road crossing near Silvana.....	289

Kootenai River Basin

May 10	Kootenai River...	Columbia River..	Just above Grohman Narrows, 2 miles below Nelson, British Columbia; measurements referred to gage No. 10 at Nelson. (station 8 N. J. 9 of Dominion Water and Power Bureau, Department of Mines and Resources, Canada).	52,700
11	....do.....	....do.....	....do.....	52,500
June 1	....do.....	....do.....	....do.....	69,850
14	....do.....	....do.....	....do.....	55,950
July 27	....do.....	....do.....	....do.....	37,430
Sept.15	....do.....	....do.....	....do.....	10,660
Nov. 15	....do.....	....do.....	Glade, British Columbia (station 8 N. J. 1 of Dominion Water and Power Bureau, Department of Mines and Resources, Canada).	9,720
Jan. 10	....do.....	....do.....	....do.....	10,400
Mar. 28	....do.....	....do.....	....do.....	11,440
May 9	....do.....	....do.....	....do.....	60,000
June 1	....do.....	....do.....	....do.....	81,140
14	....do.....	....do.....	....do.....	63,620
July 27	....do.....	....do.....	....do.....	41,750
Sept.15	....do.....	....do.....	....do.....	11,570
Nov. 15	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, Canada).	964
Jan. 10	....do.....	....do.....	....do.....	849
Mar. 28	....do.....	....do.....	....do.....	1,160
May 9	....do.....	....do.....	....do.....	6,970
June 2	....do.....	....do.....	....do.....	8,970
15	....do.....	....do.....	....do.....	7,450
July 28	....do.....	....do.....	....do.....	3,520
Sept.16	....do.....	....do.....	....do.....	1,120

Kettle River Basin, Wash.

May 2	Deep Creek.....	Kettle River....	¼ mile above mouth, near Laurier.....	38.0

Okanogan River Basin, Wash.

Apr. 27	Okanogan River...	Columbia River..	100 feet above Cherry Street Bridge in Oroville.	628
Jan. 13	Palmer Creek.....	Similkameen River.	Bridge 1½ miles above mouth, near Nighthawk.	*41.6
Apr. 24	....do.....	....do.....	....do.....	†369
May 23	....do.....	....do.....	....do.....	*428
July 8	....do.....	....do.....	....do.....	*217
Aug. 16	....do.....	....do.....	....do.....	*31.7

*Flow out of Palmer Lake.
†Flow into Palmer Lake.

Methow River Basin, Wash.

Aug. 15	Methow Valley Irrigation District canal.	Left side of Methow River.	600 feet above Methow River gage at Twisp.	77.1
15	....do.....	Right side of Twisp River.	Road crossing 2 miles above Twisp.....	37.6
Nov. 20	Risley ditch.....	....do.....	Above culvert, in Twisp.....	2.1
Aug. 15	....do.....	....do.....	50 feet below head gate near Twisp.....	14.6

Yakima River Basin, Wash.

Oct. 25	Union Gap canal..	Left side of Yakima River.	At entrance to Union Gap, 1 mile southeast of town of Union Gap.	5.4
May 3	....do.....	....do.....	....do.....	41.0
June 5	....do.....	....do.....	....do.....	43.0
Aug. 26	....do.....	....do.....	....do.....	39.6

PART 12. PACIFIC SLOPE BASINS IN WASHINGTON AND UPPER COLUMBIA RIVER BASIN

The following tables summarize in convenient form for general reference and for use in preliminary investigations the figures of yearly discharge and run-off for certain gaging stations in the Pacific Slope Basins in Washington and Upper Columbia River Basin, previously published in the annual series of water-supply papers. All gaging stations, both active and discontinued, at which 10 or more complete years of record have been collected and published are represented, also some special stations, as noted below. The summaries present figures of maximum and minimum daily discharge and yearly mean discharge and run-off, for both the water years ending September 30 and the calendar years. The figures for the water years prior to 1911 and figures for the calendar years 1911 to 1933 have not been previously published in the annual water-supply papers but are included in these summaries.

The number of the water-supply paper in which the figures of daily and monthly discharge as well as yearly discharge are published is shown in the column headed W.S.P. (no. and page). The descriptions contained in the water-supply papers indicated give detailed information relative to the gaging stations, including location, diversions, regulation by storage, effect of irrigation, and other pertinent information. Records for stations which were operated prior to 1901 are generally contained in the annual reports of the Geological Survey. Reference is made to these reports if records have not also been published in water-supply papers.

Figures of drainage area are given for each station when known. These figures have been revised from time to time as more accurate maps have become available. The discharge per square mile and run-off in inches in the following tables, in general, have been revised according to the latest figure for the drainage area.

Summaries for incomplete years are given for those stations in irrigated regions for which seasonal records were collected in order to show the flow available for irrigation. They have been compiled from the records of daily and monthly discharge contained in the water-supply paper indicated. For summaries after 1911 if the period extends beyond Sept. 30, records of daily and monthly discharge after that day are contained in the water-supply paper indicated for the following year. An incomplete year is included for other stations if the maximum daily discharge or minimum daily discharge for all the years of record occurred in that year.

Former names under which records for some of the stations have been published in the annual water-supply papers are indicated in these yearly summaries as follows:

1. If the name of the stream or town or other feature to which the station is referred has been changed, the former name is given in parentheses, indicating that records for some of the earlier years are published under the obsolete name.

2. If the entire name of a station has been changed, the superseded name and years when it was used are given in parentheses beneath the present name.

Summary of yearly discharge, in second-feet, at stations in NASELLE RIVER BASIN

Naselle River near Naselle, Wash.
(Drainage area, 66 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1930	707-11	1,910	22	264	4.00	54.19	191,000	1,850	25	284	4.30	58.39	206,000
1931	722-12	2,790	26	353	5.35	72.76	256,000	2,990	26	494	7.48	101.70	357,000
1932	737-12	4,490	36	556	8.42	114.54	403,000	5,280	29	574	8.70	118.21	416,000
1933	752-12	5,280	29	573	8.68	117.95	415,000	5,280	34	649	9.82	133.37	470,000
1934	767-11	5,280	41	543	8.23	111.72	393,200	4,920	41	462	7.00	95.09	334,500
1935	792-15	10,400	36	515	7.80	105.91	372,600	10,400	36	368	5.58	75.62	266,100
1936	812-14	5,580	36	371	5.62	76.47	269,100	5,580	34	362	5.48	74.65	262,800
1937	832-9	3,070	34	355	5.38	72.83	256,700	4,910	37	526	7.97	108.06	380,800
1938	862-10	4,910	24	457	6.92	93.88	330,600	2,370	24	345	5.23	70.91	249,800
1939	882-11	3,790	27	377	5.71	77.48	272,700	-	-	-	-	-	-

NORTH RIVER BASIN

North River near Raymond, Wash.

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1928	672-11	8,170	28	1,070	780,000	5,260	28	821	596,000
1929	692-13	4,880	46	648	469,000	4,880	46	547	396,000
1930	707-12	4,210	28	594	429,000	3,800	28	621	450,000
1931	722-13	6,280	51	789	571,000	7,660	59	1,140	823,000
1932	737-13	9,800	42	1,310	955,000	9,800	42	1,330	966,000
1933	752-13	6,650	54	1,230	893,000	25,500	54	1,750	1,270,000
1934	792-16	25,500	54	1,610	1,166,000	10,500	54	1,094	792,000
1935	832-10	22,000	41	1,202	870,400	22,000	41	819	593,000
1936	832-10	7,890	58	760	552,000	7,890	58	780	566,600
1937	832-10	6,360	58	759	549,500	20,000	68	1,214	878,600
1938	862-11	20,000	25	1,105	800,200	3,840	25	756	547,200
1939	882-12	6,850	32	811	587,000	-	-	-	-

Summary of yearly discharge, in second-feet, at stations in
CHEHALIS RIVER BASIN

Chehalis River near Grand Mound, Wash.
(Drainage area, 928 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1929	692-15	13,500	170	1,730	1.86	25.25	1,250,000	13,500	170	1,650	1.78	24.15	1,200,000
1930	707-14	12,000	147	1,600	1.72	23.40	1,160,000	12,000	147	1,540	1.66	22.49	1,110,000
1931	722-15	19,400	212	2,050	2.21	29.96	1,480,000	19,400	212	2,750	2.96	40.31	1,990,000
1932	737-14	21,800	209	3,170	3.42	46.48	2,300,000	22,600	209	3,670	3.95	53.82	2,660,000
1933	752-14	22,600	212	3,620	3.90	52.95	2,620,000	45,000	212	4,200	4.53	61.42	3,040,000
1934	767-13	45,000	131	3,558	3.83	52.12	2,576,000	31,100	131	3,138	3.38	45.96	2,272,000
1935	792-18	36,300	131	3,482	3.75	50.95	2,520,000	36,300	131	2,139	2.30	31.32	1,549,000
1936	812-16	32,600	178	2,561	2.76	37.57	1,859,000	32,600	193	2,662	2.87	39.04	1,933,000
1937	832-13	22,700	193	2,460	2.65	36.00	1,781,000	46,300	243	3,574	3.85	52.30	2,587,000
1938	862-12	46,300	111	3,172	3.42	46.42	2,296,000	17,600	111	2,208	2.38	32.31	1,599,000
1939	882-13	22,700	133	2,238	2.41	32.73	1,620,000	-	-	-	-	-	-

Satsop River near Satsop, Wash.
(Drainage area, 315 square miles)

1930	707-17	9,870	203	1,250	3.97	53.90	905,000	9,870	203	1,310	4.16	56.72	952,000
1931	722-19	16,600	255	1,770	5.62	76.43	1,280,000	20,600	270	2,390	7.59	102.84	1,730,000
1932	737-15	27,000	242	2,560	8.13	110.48	1,850,000	27,000	242	2,350	7.46	101.41	1,700,000
1933	752-15	13,900	242	2,130	6.76	91.68	1,540,000	21,200	242	2,610	8.29	112.31	1,890,000
1934	767-14	21,200	248	2,432	7.72	104.84	1,760,000	16,500	248	2,094	6.65	90.25	1,516,000
1935	792-19	45,900	205	2,415	7.67	104.07	1,748,000	45,900	205	1,903	6.04	82.09	1,378,000
1936	812-17	16,600	255	1,687	5.36	72.88	1,225,000	16,600	222	1,698	5.39	73.31	1,233,000
1937	832-14	13,300	206	1,653	5.25	71.19	1,197,000	30,100	206	2,421	7.69	104.32	1,753,000
1938	862-13	30,100	184	2,320	7.37	100.03	1,680,000	10,600	182	1,670	5.30	71.99	1,209,000
1939	882-14	19,000	182	1,580	5.02	68.14	1,144,000	-	-	-	-	-	-

Wynoochee River at Oxbow, near Aberdeen, Wash.
(Drainage area, about 65 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1926	632-10	5,680	85	628	454,000	4,990	113	695	503,000
1927	652-12	4,990	132	846	612,000	4,210	132	802	580,000
1928	672-12	6,940	114	794	576,000	6,940	114	745	540,000
1929	692-19	-	87	542	392,000	3,980	87	438	317,000
1930	707-18	4,720	78	512	371,000	4,720	78	532	385,000
1931	722-20	7,060	104	732	530,000	8,290	104	911	659,000
1932	737-16	10,600	123	923	671,000	10,600	113	892	648,000
1933	752-16	5,350	113	887	642,100	6,600	139	1,061	768,300
1934	767-15	10,200	107	987	714,400	8,290	100	896	648,900
1935	792-20	16,000	97	1,051	760,800	16,000	97	846	612,600
1936	812-18	5,160	119	680	493,700	5,980	96	661	479,800
1937	832-15	5,980	96	655	474,000	11,000	103	923	667,900
1938	862-14	11,000	88	822	595,400	3,780	88	644	466,400
1939	882-15	9,960	88	675	488,900	-	-	-	-

QUINAULT RIVER BASIN

Quinault River at Quinault Lake, Wash.
(Drainage area, 264 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1912	332-12	18,200	-	2,260	8.56	116.31	1,640,000	13,400	668	2,490	9.43	128.35	1,810,000
1913	362-14	12,000	704	2,840	10.8	145.85	2,050,000	17,900	814	2,860	10.8	147.46	2,070,000
1914	392-15	30,700	538	3,130	11.9	161.27	2,270,000	30,700	538	3,100	11.7	159.53	2,250,000
1915	412-15	15,500	400	2,460	9.32	126.38	1,780,000	17,700	400	2,530	9.58	129.93	1,830,000
1916	442-14	17,700	410	3,230	12.2	166.46	2,340,000	10,500	446	2,700	10.2	139.45	1,960,000
1917	462-13	6,550	446	2,030	7.69	104.48	1,470,000	27,800	558	2,640	10.0	135.65	1,910,000
1918	482-6	27,800	428	2,940	11.1	151.12	2,130,000	21,400	425	2,910	11.0	149.38	2,100,000
1919	512-6	21,400	425	3,210	12.2	165.15	2,320,000	19,600	432	2,940	11.1	151.38	2,130,000
1920	512-6	19,600	432	2,470	9.36	127.31	1,790,000	14,600	499	2,830	10.7	145.72	2,050,000
1921	532-10	17,000	779	3,450	13.1	177.22	2,500,000	32,300	779	3,910	14.8	200.90	2,830,000
1922	552-10	32,300	565	2,940	11.1	151.34	2,130,000	-	565	2,120	7.99	108.76	1,530,000
*1923	552-10	-	-	2,500	9.47	128.26	1,810,000	-	-	2,350	8.90	120.63	1,700,000
*1924	592-12	-	-	2,310	8.75	119.14	1,680,000	-	-	2,900	11.0	149.63	2,110,000
*1925	592-12	-	-	3,170	12.0	162.74	2,290,000	-	-	2,710	10.3	139.43	1,960,000
1926	632-13	14,000	290	2,060	7.80	105.64	1,490,000	13,300	369	2,290	8.67	117.69	1,660,000
1927	652-14	13,400	601	2,960	11.2	152.25	2,150,000	13,400	601	2,920	11.1	150.05	2,110,000
1928	672-14	15,100	318	2,750	10.4	141.76	2,000,000	15,100	318	2,470	9.36	127.25	1,790,000
1929	692-21	9,600	309	1,950	7.39	100.11	1,410,000	9,600	301	1,630	6.17	83.73	1,180,000
1930	707-20	11,100	301	1,780	6.74	91.73	1,290,000	11,100	301	1,960	7.42	100.55	1,420,000
1931	722-21	19,700	-	2,560	9.70	131.78	1,860,000	19,700	-	2,850	10.8	146.28	2,060,000
1932	737-17	27,200	541	2,930	11.1	151.02	2,130,000	27,200	414	2,960	11.2	152.95	2,150,000
*1933	752-18	-	414	2,820	10.7	144.92	2,040,000	33,000	-	3,700	14.0	190.52	2,680,000
1934	767-17	33,000	504	3,647	13.8	187.47	2,640,000	23,500	456	3,057	11.6	156.95	2,213,000
1935	792-22	32,900	456	3,390	12.8	174.25	2,454,000	32,900	490	2,760	10.5	141.95	1,998,000
1936	812-19	10,500	462	2,403	9.10	123.74	1,744,000	13,500	370	2,346	8.89	120.93	1,703,000
1937	832-16	13,500	370	2,262	8.57	116.38	1,638,000	22,800	480	3,092	11.7	159.01	2,239,000
1938	862-15	22,800	328	2,811	10.6	144.56	2,035,000	11,800	328	2,317	8.78	119.19	1,677,000
1939	882-16	24,500	388	2,497	9.46	128.40	1,808,000	-	-	-	-	-	-

*Daily discharge for incomplete year published in water-supply paper; monthly discharge for periods of missing record estimated and monthly and yearly figures published in Washington State Water-Supply Bulletin No. 5 and Water-Supply Paper 870, p. 37.

Summary of yearly discharge, in second-feet, at stations in
HOH RIVER BASIN

Hoh River near Spruce, Wash.
(Drainage area, 193 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1927	652-15	11,000	802	2,190	11.3	153.70	1,580,000	8,780	802	2,230	11.6	157.03	1,620,000
1928	672-15	12,800	514	2,140	11.1	150.57	1,550,000	12,800	514	1,850	9.59	130.59	1,340,000
1929	692-22	7,310	434	1,510	7.82	106.41	1,100,000	6,830	250	1,340	6.94	94.08	969,000
1930	707-21	8,960	250	1,530	7.93	107.90	1,110,000	8,960	492	1,620	8.39	114.03	1,170,000
1931	722-23	13,000	505	1,870	9.69	131.48	1,350,000	13,000	592	2,060	10.7	143.25	1,490,000
1932	737-21	19,900	592	2,080	10.8	146.43	1,510,000	19,900	560	2,230	11.6	157.36	1,620,000
1933	752-20	12,000	560	2,220	11.5	156.06	1,610,000	12,500	686	2,390	12.4	163.08	1,730,000
1934	767-19	12,500	516	2,348	12.2	165.25	1,700,000	25,000	516	2,274	11.8	159.93	1,646,000
1935	792-24	25,000	530	2,455	12.7	172.76	1,777,000	22,500	463	1,972	10.2	133.72	1,428,000
1936	812-21	8,340	463	1,850	9.59	130.44	1,343,000	11,200	333	1,869	9.68	131.94	1,357,000
1937	832-18	11,200	333	1,595	8.26	112.37	1,155,000	15,500	534	2,020	10.5	142.10	1,462,000
1938	862-19	15,500	647	1,889	9.79	132.81	1,367,000	9,050	519	1,686	8.74	118.60	1,220,000
1939	882-19	16,200	519	1,888	9.78	132.86	1,367,000	-	-	-	-	-	-

QUILLAYUTE RIVER BASIN

Soleduck River near Fairholm, Wash.
(Drainage area, 79 square miles)

1918	482-8	11,500	59	703	8.90	120.89	509,000	8,910	58	695	8.80	119.49	503,000
1919	512-9	8,910	58	764	9.67	131.41	553,000	6,960	75	657	8.32	113.09	476,000
1920	512-9	6,960	75	490	6.20	84.46	355,000	4,830	84	574	7.27	98.92	416,000
1921	532-12	8,700	142	774	9.80	132.92	560,000	-	-	-	-	-	-
1934	767-20	12,800	75	757	9.58	130.12	548,200	12,500	72	671	8.49	115.42	486,100
1935	792-25	14,200	71	821	10.4	141.12	594,500	14,200	71	661	8.37	113.60	478,500
1936	812-22	3,500	84	499	6.32	86.05	362,200	5,590	60	513	6.49	88.32	372,000
1937	832-19	5,590	60	465	5.89	79.97	336,900	9,750	72	637	8.06	109.52	461,200
1938	862-20	9,750	66	604	7.65	103.75	436,900	4,430	62	509	6.44	87.41	368,400
1939	882-20	8,680	62	564	7.14	96.84	408,200	-	-	-	-	-	-

LYRE RIVER BASIN

Lyre River at Piedmont, Wash.
(Drainage area, 49.5 square miles)

1918	482-10	1,020	32	235	4.75	64.59	170,000	1,020	32	265	5.35	72.83	192,000
1919	512-13	692	39	277	5.60	75.96	200,000	598	28	228	4.61	62.50	165,000
1920	512-13	320	21	137	2.77	37.56	99,200	364	21	174	3.52	47.85	126,000
1921	532-14	696	49	264	5.33	72.53	191,000	974	49	310	6.26	84.83	224,000
1922	552-13	974	33	257	5.19	70.39	186,000	874	33	182	3.68	49.84	132,000
1923	592-17	1,180	39	225	4.55	61.65	163,000	1,180	39	232	4.69	63.57	168,000
1924	592-17	860	20	179	3.62	49.09	130,000	860	20	217	4.38	59.66	157,000
1925	612-15	804	30	245	4.95	67.32	178,000	804	26	191	3.86	52.47	139,000
1926	632-18	376	26	134	2.71	36.85	97,200	376	26	156	3.15	42.68	113,000
1927	652-18	560	39	222	4.48	60.89	161,000	-	-	-	-	-	-

ELWHA RIVER BASIN

Elwha River at McDonald Bridge, near Port Angeles, Wash.
(Drainage area, 262 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Glines Canyon Reservoir (acre-feet)	Adjusted for change in reservoir contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1898	492-31	7,080	170	1,530	1,110,000	-	1,110,000	1,530	5.84	79.41
1899	492-31	3,320	330	1,210	873,000	-	873,000	1,210	4.62	62.51
1900	492-31	14,200	475	1,850	1,340,000	-	1,340,000	1,850	7.06	96.07
1901	492-31	12,200	495	1,820	1,310,000	-	1,310,000	1,820	6.95	94.04
1919	512-15	11,000	440	1,810	1,310,000	-	1,310,000	1,810	6.91	93.76
1920	512-15	6,500	250	1,100	798,000	-	798,000	1,100	4.20	57.09
1921	532-16	7,580	646	2,000	1,450,000	-	1,450,000	2,000	7.63	103.45
1922	552-15	13,300	458	1,630	1,180,000	-	1,180,000	1,630	6.22	84.39
1923	572-10	7,330	374	1,350	980,000	-	980,000	1,350	5.15	70.16
1924	592-19	12,000	310	1,320	960,000	-	960,000	1,320	5.04	68.76
1925	612-17	6,810	350	1,710	1,240,000	-	1,240,000	1,710	6.53	88.78
1926	632-19	4,700	254	943	683,000	-	683,000	943	3.60	48.91
1927	652-19	5,890	203	1,490	1,080,000	+36,600	1,110,000	1,540	5.88	79.65
1928	672-17	7,100	38	1,470	1,060,000	-5,460	1,060,000	1,460	5.57	75.82
1929	692-23	4,010	33	1,010	732,000	+3,170	735,000	1,020	3.89	52.69
1930	707-22	4,980	29	1,010	728,000	+2,300	730,000	1,010	3.85	52.22
1931	722-24	7,080	-	1,220	886,000	+630	886,000	1,220	4.66	63.38
1932	737-22	9,590	11	1,530	1,110,000	-1,680	1,110,000	1,530	5.84	79.28
1933	752-21	5,820	27	1,660	1,200,000	+3,210	1,210,000	1,660	6.34	86.19
1934	767-21	16,000	75	1,910	1,383,000	-3,630	1,379,000	1,905	7.27	98.72
1935	792-26	16,000	180	1,803	1,305,000	+820	1,306,000	1,804	6.89	93.33
1936	812-23	4,240	36	1,232	894,600	-4,130	890,500	1,227	4.68	63.69
1937	832-20	5,480	40	1,135	821,600	+3,690	825,300	1,140	4.35	59.03
1938	862-21	11,700	14	1,584	1,146,000	-2,100	1,144,000	1,581	6.03	81.91
1939	882-21	11,600	10	1,237	895,500	+1,360	896,900	1,239	4.73	64.17

Summary of yearly discharge, in second-feet, at stations in Elwha River Basin--Continued

Elwha River at McDonald Bridge, near Port Angeles, Wash.--Continued
Calendar year

Year	W.S.P. (no. and page)	Observed				Change in contents in Glines Canyon Reservoir (acre-feet)	Adjusted for change in reservoir contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1898	492-31	3,310	330	1,440	1,040,000	-	1,040,000	1,440	5.50	74.60
1899	492-31	8,320	475	1,490	1,080,000	-	1,080,000	1,490	5.69	77.11
1900	492-31	14,200	495	1,900	1,380,000	-	1,380,000	1,900	7.25	98.86
1901	492-31	23,800	460	1,800	1,300,000	-	1,300,000	1,800	6.87	93.09
1919	512-15	6,500	250	1,520	1,100,000	-	1,100,000	1,520	5.80	78.86
1920	512-15	6,550	548	1,400	1,010,000	-	1,010,000	1,400	5.34	72.65
1921	532-16	13,300	646	2,190	1,590,000	-	1,590,000	2,190	8.36	113.53
1922	552-15	7,330	374	1,140	823,000	-	823,000	1,140	4.34	58.82
1923	572-10	6,710	344	1,400	1,010,000	-	1,010,000	1,400	5.34	72.45
1924	592-19	12,000	310	1,590	1,150,000	-	1,150,000	1,590	6.07	82.65
1925	612-17	6,070	254	1,370	992,000	-	992,000	1,370	5.23	70.97
1926	632-19	5,890	258	1,100	794,000	-	794,000	1,100	4.20	56.87
1927	652-19	4,990	203	1,510	1,090,000	+36,300	1,130,000	1,560	5.95	80.87
1928	672-17	7,100	36	1,320	955,000	+1,340	957,000	1,320	5.04	68.46
1929	692-23	3,040	31	890	644,000	+631	644,000	890	3.40	46.20
1930	707-22	4,980	29	1,060	769,000	-420	768,000	1,060	4.05	54.98
1931	722-24	7,080	68	1,350	978,000	-130	977,000	1,350	5.15	69.91
1932	737-22	9,590	11	1,650	1,200,000	+1,160	1,200,000	1,650	6.30	85.73
1933	752-21	16,000	54	1,900	1,370,000	-390	1,370,000	1,900	7.25	98.20
1934	767-21	16,000	75	1,713	1,240,000	+490	1,240,000	1,713	6.54	88.77
1935	792-26	14,200	36	1,512	1,094,000	+130	1,095,000	1,512	5.77	78.24
1936	812-23	5,480	40	1,205	875,000	-920	874,100	1,204	4.60	62.51
1937	832-20	11,700	101	1,505	1,089,000	-2,590	1,087,000	1,501	5.73	77.74
1938	862-21	4,270	10	1,335	966,400	+2,850	969,300	1,339	5.11	69.37

PUGET SOUND BASINS

SKOKOMISH RIVER BASIN

North Fork of Skokomish River below Staircase Rapids, near Hoodsport, Wash.
(Drainage area, 60 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1925	612-23	3,800	49	573	9.55	129.74	415,000	3,800	35	482	8.03	109.10	349,000
1926	632-24	2,520	28	356	5.93	80.54	258,000	3,310	28	445	7.42	100.52	322,000
1927	652-25	3,310	93	550	9.17	124.33	398,000	2,680	93	473	7.88	106.98	343,000
1928	672-21	3,100	38	457	7.62	103.57	331,000	3,100	38	422	7.03	95.67	306,000
1929	692-28	1,960	47	310	5.17	70.11	224,000	2,220	31	256	4.27	57.83	185,000
1930	707-27	2,220	17	256	4.27	57.80	185,000	1,870	17	266	4.43	60.15	193,000
1931	722-27	4,270	31	391	6.52	88.50	283,000	4,270	46	444	7.40	100.49	321,000
1932	737-25	4,310	54	492	8.20	111.56	357,000	4,310	42	519	8.65	117.68	377,000
1933	752-24	2,230	42	524	8.73	118.29	379,000	6,100	112	619	10.3	140.10	448,000
1934	767-23	6,100	58	552	9.20	124.95	400,000	15,000	53	624	10.4	141.15	451,800
1935	792-28	15,000	53	687	11.4	155.46	497,300	6,830	75	467	7.78	105.67	337,900
1936	812-25	2,410	54	421	7.02	95.46	305,700	4,740	33	397	6.62	89.94	288,200
1937	832-23	4,740	33	399	6.65	90.25	288,900	3,960	49	560	9.33	126.67	405,300
1938	862-24	3,960	50	526	8.77	119.00	380,900	2,310	43	433	7.22	97.93	313,300
1939	882-26	5,360	40	384	6.40	86.85	277,800	-	-	-	-	-	-

North Fork of Skokomish River near Hoodsport, Wash.
(Drainage area, 92 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Cushman Reservoir (acre-feet)	Adjusted for change in reservoir contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1912	870-65	-	-	628	456,000	-	456,000	628	6.90	93.92
1913	442-16	-	-	793	574,000	-	574,000	793	8.71	118.24
1914	442-16	12,000	136	948	686,000	-	686,000	948	10.4	141.47
1915	442-16	5,190	100	771	559,000	-	559,000	771	8.47	115.23
1916	442-16	6,200	105	934	678,000	-	678,000	934	10.3	139.57
1917	462-15	2,010	124	596	431,000	-	431,000	596	6.55	88.81
1918	482-12	7,770	89	744	539,000	-	539,000	744	8.18	110.92
1919	512-18	6,150	92	864	626,000	-	626,000	864	9.49	129.05
1920	512-18	5,500	111	587	426,000	-	426,000	587	6.45	87.69
1921	532-18	4,440	176	984	713,000	-	713,000	984	10.8	146.95
1922	552-17	9,450	126	813	588,000	-	588,000	813	8.93	121.19
1923	572-12	6,610	105	651	471,000	-	471,000	651	7.15	97.02
1924	592-26	10,300	79	623	453,000	-	453,000	623	6.77	92.31
1925	612-25	5,020	121	870	629,000	-	629,000	870	9.46	128.36
1926	632-26	1,510	0	137	99,000	+293,000	392,000	541	5.88	79.91
1927	652-26	-	47	716	518,000	+130,000	649,000	896	9.74	132.13
1928	672-22	2,800	2	768	558,000	-39,900	518,000	713	7.75	105.62
1929	692-29	1,880	3	681	493,000	-118,000	375,000	518	5.63	76.51
1930	707-28	1,270	2	288	208,000	+109,000	317,000	438	4.76	64.60

Summary of yearly discharge, in second-feet, at stations in Skokomish River Basin--Continued

North Fork of Skokomish River near Hoodsport, Wash--Continued
Water year ending Sept. 30--Continued

Year	W.S.P. (no. and page)	Observed				Change in contents in Cushman Reservoir (acre-feet)	Adjusted for change in reservoir contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1931	870-65	-	-	568	411,000	+47,800	459,000	634	6.89	93.49
1932	870-65	-	-	752	546,000	+12,100	558,000	769	8.36	113.61
1933	870-65	-	-	803	582,000	+630	582,000	804	8.74	118.77
1934	(†)	-	-	832	602,600	-16,070	586,500	810	8.80	119.50
1935	(†)	-	-	934	675,900	+5,840	681,700	942	10.2	138.85
1936	(†)	-	-	645	468,300	-27,660	440,700	607	6.60	89.78
1937	(†)	-	-	620	448,600	-9,310	439,300	607	6.60	89.49
1938	(†)	-	-	839	607,100	-4,630	602,400	832	9.04	122.71
1939	(†)	-	-	673	487,100	-55,150	431,900	597	6.49	88.05
Calendar year										
1912	870-65	-	-	674	489,000	-	489,000	674	7.41	100.86
1913	442-16	6,840	217	816	591,000	-	591,000	816	8.97	121.76
1914	442-16	12,000	136	971	703,000	-	703,000	971	10.7	145.09
1915	442-16	6,200	100	738	535,000	-	535,000	738	8.11	110.13
1916	442-16	3,110	124	806	585,000	-	585,000	806	8.86	120.60
1917	462-15	7,770	130	727	526,000	-	526,000	727	7.99	108.46
1918	482-12	6,150	89	744	538,000	-	538,000	744	8.18	110.93
1919	512-18	5,500	111	804	582,000	-	582,000	804	8.84	119.97
1920	512-18	4,440	124	752	546,000	-	546,000	752	8.26	112.42
1921	532-18	9,450	176	1,070	774,000	-	774,000	1,070	11.8	159.41
1922	552-17	6,610	128	557	404,000	-	404,000	557	6.12	83.24
1923	572-12	4,290	105	626	453,000	-	453,000	626	6.88	93.22
1924	592-26	10,300	79	798	580,000	-	580,000	798	8.67	118.04
1925	612-25	5,020	0	543	393,000	+127,000	520,000	718	7.80	105.98
1926	632-26	-	-	506	366,000	+126,000	492,000	680	7.39	100.38
1927	652-26	2,800	47	625	453,000	+118,000	571,000	789	8.58	116.31
1928	672-22	1,640	2	702	510,000	-19,000	491,000	676	7.35	100.09
1929	692-29	1,880	3	626	453,000	-145,000	309,000	426	4.63	62.92
1930	707-28	1,190	2	331	240,000	+89,900	330,000	455	4.95	67.15
1931	870-65	-	-	580	420,000	+132,000	551,000	761	8.27	112.35
1932	870-65	-	-	782	568,000	-14,100	554,000	763	8.29	112.66
1933	870-65	-	-	877	635,000	+36,800	672,000	928	10.1	137.13
1934	(†)	-	-	867	627,700	-39,360	588,300	813	8.84	119.82
1935	(†)	-	-	724	523,900	+9,600	533,500	737	8.01	108.64
1936	(†)	-	-	658	477,400	-73,260	404,200	557	6.05	82.32
1937	(†)	-	-	745	539,600	+98,330	637,800	881	9.58	129.95
1938	(†)	-	-	726	525,500	-54,700	470,800	650	7.07	95.92

†Not previously published.
Note.- Records for period 1912-23 at site 1 mile upstream (drainage area, 91 square miles).
Storage in Cushman Reservoir began October 1925.

NISQUALLY RIVER BASIN

Nisqually River near La Grande, Wash.
(Drainage area, 287 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1907	292-599	-	380	1,730	6.03	81.59	1,250,000	7,020	380	1,310	4.56	61.88	949,000
1908	292-599	7,020	380	1,440	5.02	68.35	1,050,000	7,020	350	1,380	4.81	65.64	1,000,000
1910	292-599	10,600	305	1,570	5.47	74.24	1,140,000	10,600	380	1,580	5.51	74.89	1,150,000
1920	512-21	-	-	1,180	4.11	56.13	860,000	10,900	418	1,390	4.84	66.07	1,010,000
1921	532-20	10,900	-	1,810	6.31	85.53	1,310,000	16,700	-	1,780	6.20	84.23	1,290,000
1922	552-19	16,700	-	1,220	4.25	57.78	885,000	7,750	-	977	3.40	46.19	708,000
1923	572-14	13,900	-	1,260	4.39	59.54	912,000	13,900	-	1,270	4.43	60.24	922,000
1924	592-30	10,300	-	1,050	3.66	49.78	762,000	10,300	-	1,210	4.22	57.32	877,000
1925	612-29	8,550	-	1,430	4.98	67.46	1,030,000	8,550	-	1,260	4.39	59.38	910,000
1926	632-30	5,490	184	920	3.21	43.52	666,000	4,800	307	1,050	3.66	49.61	760,000
1927	652-29	8,100	403	1,420	4.95	67.31	1,030,000	11,300	-	1,590	5.54	75.09	1,150,000
1928	672-25	11,300	322	1,470	5.12	69.93	1,070,000	6,350	322	1,150	4.01	54.69	837,000
1929	692-31	3,500	186	1,010	3.52	47.69	729,000	5,000	115	951	3.31	45.00	688,000
1930	707-31	5,000	115	893	3.11	42.25	646,000	3,880	187	864	3.01	40.92	626,000
1931	722-29	7,210	249	1,070	3.73	50.72	777,000	-	-	-	-	-	-

Note.- Records after 1919 include flow diverted through Tacoma Power Conduit, completed in 1912.

Summary of yearly discharge, in second-feet, at stations in Nisqually River Basin--Continued

Little Nisqually River near Alder, Wash.
(Drainage area, 27.2 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1921	532-23	1,920	8.2	164	6.03	82.11	119,000	1,870	8.2	159	5.85	79.39	115,000
1922	552-23	1,520	9	120	4.41	59.96	87,000	1,220	9	93.0	3.42	46.39	67,400
1923	572-16	1,800	8	114	4.19	56.98	82,700	1,800	8	115	4.23	57.50	83,300
1924	592-32	1,200	5.2	83.2	3.06	41.68	60,400	1,200	5.2	107	3.93	53.26	77,300
1925	612-31	1,140	3.5	138	5.07	69.03	100,000	1,090	3.5	110	4.04	55.11	79,800
1926	632-32	810	3.4	71.8	2.64	35.82	51,900	854	3.4	92.4	3.40	46.15	66,900
1927	652-30	1,460	9.2	151	5.55	75.33	109,000	1,460	9.2	158	5.81	78.82	115,000
1928	672-27	1,210	5	135	4.96	67.48	97,900	1,110	5	110	4.04	55.16	80,000
1929	692-32	901	6.2	96.7	3.56	48.29	70,000	998	3.1	86.7	3.19	43.25	62,700
1930	707-33	998	3.1	77.7	2.86	38.81	56,300	628	5.9	69.1	2.54	34.50	50,000
1931	722-30	1,180	5.0	91.6	3.37	45.77	66,400	1,270	5	124	4.56	61.61	89,400
1932	737-28	1,950	6.2	144	5.29	72.20	105,000	1,950	5.7	155	5.70	77.65	113,000
1933	752-29	1,100	5.7	158	5.81	78.83	114,000	1,950	8.4	198	7.28	98.90	143,000
1934	767-26	1,950	3.3	172	6.32	85.82	124,500	1,320	3.3	143	5.26	71.58	103,700
1935	792-31	1,650	4.4	144	5.29	71.75	104,100	1,650	4.4	98.6	3.62	49.17	71,350
1936	812-28	1,140	7.0	118	4.34	59.05	85,750	1,140	4.1	118	4.34	58.75	85,360
1937	832-26	1,350	4.1	110	4.04	55.05	79,770	1,570	5.0	154	5.66	77.02	111,500
1938	862-27	1,570	4.8	130	4.78	64.84	93,980	828	4.8	94.1	3.46	46.92	68,110
1939	882-29	1,080	6.5	93.5	3.44	46.64	67,740	-	-	-	-	-	-

PUYALLUP RIVER BASIN

Puyallup River near Electron, Wash.
(Drainage area, 91 square miles)

1909	312-643	1,410	165	372	4.09	55.53	269,000	2,490	136	425	4.67	63.48	308,000
1910	312-643	2,490	120	453	4.98	67.66	328,000	3,200	120	486	5.34	72.45	352,000
1911	312-643	3,200	130	484	5.32	72.18	350,000	2,960	130	426	4.68	63.55	308,000
1912	332-18	2,960	147	538	5.91	80.47	391,000	1,990	147	552	6.07	82.45	400,000
1913	362-17	2,330	125	526	5.78	78.38	380,000	2,330	125	503	5.53	74.99	364,000
1914	392-18	2,530	174	474	5.21	70.70	343,000	2,530	112	488	5.36	72.87	354,000
1915	412-17	1,660	112	409	4.49	61.01	296,000	1,700	161	441	4.85	65.85	320,000
1916	442-20	2,410	173	601	6.60	89.88	436,000	2,410	167	539	5.92	80.60	391,000
1917	462-17	1,780	157	541	5.95	80.74	392,000	3,990	157	628	6.90	93.60	454,000
1918	482-14	3,990	158	608	6.68	90.81	440,000	2,370	158	555	6.10	82.75	402,000
1919	512-28	2,520	164	485	5.33	72.34	351,000	2,520	136	477	5.24	71.14	345,000
1920	512-28	1,300	136	460	5.05	68.84	334,000	2,050	147	479	5.26	71.72	348,000
1921	532-27	2,050	180	547	6.01	81.60	396,000	4,020	180	569	6.25	84.89	412,000
1922	552-26	4,020	120	478	5.25	71.33	346,000	2,130	120	415	4.56	61.98	301,000
1923	572-19	3,650	-	492	5.41	73.47	356,000	3,650	-	501	5.51	74.76	363,000
1924	592-35	2,100	158	445	4.89	66.58	323,000	2,560	158	495	5.44	73.95	359,000
1925	612-34	2,560	176	558	6.13	83.17	404,000	2,110	169	537	5.90	80.06	389,000
1926	632-35	2,110	169	474	5.21	70.68	343,000	-	-	-	-	-	-

Puyallup River at Alderton, Wash.
(Drainage area, 438 square miles)

1915	412-19	-	390	1,190	2.72	37.02	865,000	11,400	390	1,330	3.04	41.09	961,000
1916	442-22	11,400	390	1,960	4.47	60.95	1,430,000	9,050	436	1,700	3.88	52.69	1,230,000
1917	462-19	6,630	436	1,700	3.88	52.61	1,230,000	15,900	430	2,040	4.66	63.19	1,480,000
1918	482-16	15,900	430	1,920	4.38	59.39	1,390,000	12,400	528	1,660	3.79	51.52	1,200,000
1919	512-31	12,200	407	1,500	3.42	46.62	1,090,000	12,200	342	1,460	3.33	45.29	1,060,000
1920	512-31	8,360	342	1,430	3.26	44.35	1,040,000	11,000	442	1,590	3.63	49.53	1,160,000
1921	532-29	11,000	460	1,830	4.18	56.73	1,330,000	18,400	460	1,860	4.25	57.75	1,350,000
1922	552-29	18,400	495	1,430	3.26	44.28	1,030,000	9,160	362	1,190	2.72	36.96	864,000
1923	572-21	15,000	362	1,650	3.77	51.16	1,200,000	15,000	343	1,690	3.86	52.25	1,220,000
1924	592-37	10,200	228	1,270	2.90	39.51	923,000	10,200	228	1,430	3.26	44.43	1,040,000
1925	612-36	8,380	415	1,510	3.45	46.65	1,090,000	6,730	270	1,360	3.11	42.22	986,000
1926	632-37	6,730	270	1,210	2.76	37.50	876,000	5,770	478	1,260	2.88	39.13	914,000

Puyallup River at Puyallup, Wash.
(Drainage area, 948 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Lake Tapps (acre-feet)	Adjusted for change in reservoir contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1915	412-21	8,800	1,190	2,320	1,680,000	-	1,680,000	2,320	2.45	33.26
1916	442-24	17,800	1,190	4,080	2,960,000	-	2,960,000	4,080	4.30	58.53
1917	462-21	12,200	1,120	3,630	2,630,000	-	2,630,000	3,630	3.83	51.99
1918	482-18	35,600	870	3,830	2,770,000	-	2,770,000	3,830	4.04	54.84
1919	512-33	32,600	1,100	3,350	2,420,000	-	2,420,000	3,350	3.53	47.92
1920	512-33	16,500	-	2,960	2,150,000	-	2,150,000	2,960	3.12	42.47
1921	532-30	20,200	1,470	4,180	3,030,000	-	3,030,000	4,180	4.41	59.86
1922	552-30	32,400	1,280	3,200	2,320,000	-	2,320,000	3,200	3.38	45.88
1923	572-23	24,900	-	3,270	2,370,000	-	2,370,000	3,270	3.45	46.83
1924	592-39	14,800	1,320	2,720	1,970,000	-	1,970,000	2,720	2.87	39.06
1925	612-38	14,700	1,250	3,110	2,250,000	-	2,250,000	3,110	3.28	44.52
1926	632-39	12,800	1,040	2,420	1,750,000	-	1,750,000	2,420	2.55	34.62
1927	652-34	9,080	1,460	3,110	2,250,000	-	2,250,000	3,110	3.28	44.52
1928	672-30	22,100	1,460	3,870	2,810,000	-	2,810,000	3,870	4.08	55.53
1929	692-34	8,170	1,240	2,560	1,850,000	-	1,850,000	2,560	2.70	36.65
1930	707-35	7,730	410	2,180	1,580,000	-	1,580,000	2,180	2.30	31.22
1931	722-32	16,700	-	2,350	1,700,000	-	1,700,000	2,350	2.48	33.66
1932	737-31	24,500	704	3,630	2,640,000	-	2,640,000	3,630	3.83	52.13

Summary of yearly discharge, in second-feet, at stations in Puyallup River Basin--Continued

Puyallup River at Puyallup, Wash.--Continued
Water year ending Sept. 30--Continued

Year	W.S.P. (no. and page)	Observed: Discharge in second-feet: Maximum	Observed: Discharge in second-feet: Minimum	Observed: Discharge in second-feet: Mean	Observed: Run-off in acre-feet	Change in contents in Lake Tapps (acre-feet)	Adjusted for change in reservoir contents: Run-off in acre-feet	Adjusted: Discharge in second-feet: Mean	Adjusted: Discharge in second-feet: Per square mile	Adjusted: Run-off in inches
1933	752-31	28,000	1,280	4,060	2,940,000	-	2,940,000	4,060	4.28	58.10
1934	767-28	53,400	700	4,927	3,567,000	-	3,567,000	4,927	5.20	70.59
1935	792-33	31,800	800	3,676	2,662,000	-16,250	2,645,000	3,654	3.85	52.32
1936	812-30	12,900	500	3,249	2,358,000	-9,780	2,349,000	3,235	3.41	46.45
1937	832-28	14,700	640	2,812	2,036,000	+5,230	2,041,000	2,819	2.97	40.32
1938	862-29	27,900	784	3,516	2,546,000	+4,450	2,550,000	3,523	3.72	50.45
1939	882-34	10,800	1,140	2,963	2,145,000	+3,310	2,148,000	2,967	3.13	42.49
Calendar year										
1915	412-21	17,800	1,190	2,530	1,830,000	-	1,830,000	2,530	2.67	36.24
1916	442-24	16,500	1,120	3,710	2,700,000	-	2,700,000	3,710	3.91	53.22
1917	462-21	35,600	870	4,290	3,100,000	-	3,100,000	4,290	4.53	61.49
1918	482-18	20,000	1,100	3,420	2,480,000	-	2,480,000	3,420	3.61	49.00
1919	512-33	32,600	1,290	3,190	2,310,000	-	2,310,000	3,190	3.36	45.61
1920	512-33	20,200	1,570	3,260	2,360,000	-	2,360,000	3,260	3.44	46.82
1921	532-30	32,400	1,470	4,320	3,130,000	-	3,130,000	4,320	4.56	61.90
1922	552-30	13,500	-	2,690	1,950,000	-	1,950,000	2,690	2.84	38.55
1923	572-23	24,900	1,320	3,320	2,400,000	-	2,400,000	3,320	3.50	47.51
1924	592-39	14,800	1,250	2,860	2,080,000	-	2,080,000	2,860	3.02	41.11
1925	612-38	12,800	1,040	2,940	2,130,000	-	2,130,000	2,940	3.10	42.08
1926	632-39	10,800	1,460	2,540	1,840,000	-	1,840,000	2,540	2.68	36.38
1927	652-34	22,100	-	3,700	2,680,000	-	2,680,000	3,700	3.90	52.94
1928	672-30	18,800	1,240	3,030	2,200,000	-	2,200,000	3,030	3.20	43.56
1929	692-34	8,170	410	2,430	1,760,000	-	1,760,000	2,430	2.56	34.75
1930	707-35	7,730	-	2,190	1,590,000	-	1,590,000	2,190	2.31	31.36
1931	722-32	16,700	645	2,670	1,930,000	-	1,930,000	2,670	2.82	38.28
1932	737-31	28,000	1,160	4,240	3,080,000	-	3,080,000	4,240	4.47	60.84
1933	752-31	53,400	1,330	4,910	3,550,000	-	3,550,000	4,910	5.18	70.32
1934	767-28	31,800	700	4,014	2,906,000	-	2,906,000	4,014	4.23	57.42
1935	792-33	22,100	500	2,831	2,050,000	-27,680	2,022,000	2,793	2.95	39.98
1936	812-30	12,900	640	3,365	2,443,000	+2,620	2,446,000	3,360	3.55	48.38
1937	832-28	16,700	784	3,446	2,495,000	+13,900	2,509,000	3,465	3.66	49.63
1938	862-29	27,900	1,140	3,050	2,208,000	+1,480	2,210,000	3,052	3.22	43.72

Note.- Storage in Lake Tapps Reservoir not determined prior to October 1934.

Carbon River near Fairfax, Wash.
(published as Carbon River at Fairfax, 1911, drainage area, 79 square miles)
(Drainage area, 81 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30: Maximum day	Water year: Minimum day	Water year: Mean	Water year: Per square mile	Water year: Run-off: Inches	Water year: Run-off: Acre-feet	Calendar year: Maximum day	Calendar year: Minimum day	Calendar year: Mean	Calendar year: Per square mile	Calendar year: Run-off: Inches	Calendar year: Run-off: Acre-feet
1911	312-646	-	-	-	-	-	-	2,840	74	339	4.29	58.30	246,000
1930	707-37	1,260	40	304	3.75	50.96	220,000	1,260	40	299	3.69	50.17	217,000
1931	722-34	1,620	92	304	3.75	50.90	220,000	2,300	96	351	4.33	58.82	254,000
1932	737-33	3,290	94	433	5.35	72.74	314,000	3,400	91	508	6.27	85.40	369,000
1933	752-32	3,400	91	506	6.25	84.80	366,000	4,810	111	584	7.21	97.77	423,000
1934	767-29	4,810	106	578	7.14	96.75	418,200	3,650	103	468	5.78	78.41	338,800
1935	792-34	3,650	103	427	5.27	71.52	308,900	2,040	83	338	4.17	56.65	244,600
1936	812-31	2,110	83	389	4.80	65.34	282,400	2,110	68	401	4.95	67.31	290,900
1937	832-29	1,460	68	370	4.57	62.07	268,100	2,380	76	472	5.83	79.15	341,800
1938	862-30	3,660	79	435	5.37	72.93	315,900	3,660	120	376	4.64	62.92	271,900
1939	882-35	1,900	117	412	5.09	69.11	298,500	-	-	-	-	-	-

White River at Greenwater, Wash.
(Drainage area, 216 square miles)

1930	707-38	-	-	575	2.66	36.14	416,000	-	-	580	2.69	36.42	420,000
1931	722-35	2,100	201	619	2.87	38.88	448,000	2,100	213	669	3.10	42.04	484,000
1932	737-34	4,990	216	861	3.99	54.25	625,000	5,190	279	995	4.61	62.71	722,000
1933	752-33	5,190	262	1,040	4.81	65.39	754,000	9,220	262	1,230	5.69	77.06	889,000
1934	767-30	9,220	229	1,186	5.49	74.60	858,700	4,250	176	994	4.60	62.52	720,000
1935	792-35	4,000	176	922	4.27	57.96	667,700	4,000	160	743	3.44	46.66	537,600
1936	812-32	2,400	160	713	3.30	44.92	517,200	2,400	154	722	3.34	45.53	524,100
1937	832-30	3,800	140	717	3.32	45.04	518,900	3,800	140	857	3.97	53.82	620,300
1938	862-31	4,640	252	916	4.24	57.53	662,800	4,640	242	812	3.76	51.02	587,700
1939	882-36	2,290	242	707	3.27	44.43	511,800	-	-	-	-	-	-

White River at Buckley, Wash.
(Drainage area, 424 square miles)

1900	492-47	14,200	650	2,100	4.95	67.34	1,520,000	13,100	620	1,850	4.36	59.26	1,340,000
1901	492-47	11,200	490	1,680	3.96	53.82	1,220,000	14,600	490	1,590	3.75	50.86	1,150,000
1911	312-648	8,700	425	1,460	3.44	46.71	1,060,000	-	-	-	-	-	-
1914	392-20	5,250	405	1,280	3.02	40.95	927,000	5,250	405	1,320	3.11	42.28	957,000
1915	412-24	3,570	429	1,000	2.36	32.08	725,000	6,080	428	1,120	2.64	35.79	810,000
1916	442-26	8,010	418	1,940	4.58	62.18	1,400,000	8,010	393	1,770	4.17	56.77	1,280,000
1917	462-23	6,520	393	1,630	3.84	52.09	1,180,000	18,100	349	1,930	4.55	61.76	1,400,000
1918	482-20	18,100	349	1,770	4.17	56.49	1,280,000	10,500	-	1,610	3.80	51.69	1,170,000
1919	512-36	17,400	417	1,620	3.82	51.95	1,180,000	17,400	-	1,530	3.61	48.85	1,110,000
1920	512-36	-	-	1,330	3.14	42.57	962,000	12,100	-	1,420	3.35	45.56	1,030,000
1921	532-33	12,100	456	1,870	4.41	59.80	1,350,000	11,500	456	1,910	4.50	61.08	1,380,000

Summary of yearly discharge, in second-feet, at stations in Puyallup River Basin--Continued

White River at Buckley, Wash.--Continued
(Drainage area, 424 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1922	552-33	11,500	410	1,400	3.30	44.70	1,010,000	6,330	378	1,210	2.85	38.79	878,000
1923	572-25	10,900	-	1,460	3.44	46.62	1,050,000	10,900	375	1,520	3.58	48.60	1,100,000
1924	592-41	6,530	375	1,290	3.04	41.40	936,000	6,530	358	1,350	3.18	43.38	980,000
1925	612-40	6,060	358	1,430	3.37	45.66	1,030,000	5,430	342	1,340	3.16	42.79	968,000
1926	632-41	5,430	342	1,030	2.43	33.01	747,000	-	-	-	-	-	-

Note.- Records since January 1913 include diversion through White River flume at Buckley.

Greenwater River at Greenwater, Wash.
(Drainage area, 74 square miles)

1930	707-40	687	-	126	1.70	23.13	91,300	687	-	128	1.73	23.41	92,400
1931	722-37	709	27	121	1.64	22.18	87,600	709	29	136	1.84	24.88	98,100
1932	737-36	1,260	29	222	3.00	40.91	162,000	1,840	30	270	3.65	49.58	196,000
1933	752-36	1,840	30	279	3.77	51.14	202,000	3,720	53	337	4.55	61.90	244,000
1934	767-31	3,720	26	311	4.20	57.13	225,400	1,780	24	239	3.23	43.75	172,700
1935	792-36	1,230	24	234	3.16	42.89	169,300	1,230	31	186	2.51	34.15	134,800
1936	812-33	812	31	186	2.51	34.17	134,900	812	24	188	2.54	34.59	136,600
1937	832-31	720	24	165	2.23	30.25	119,400	720	35	211	2.85	38.75	152,900
1938	862-32	1,260	32	220	2.97	40.33	159,100	1,260	30	188	2.54	34.49	136,000
1939	882-38	900	30	197	2.66	36.01	142,300	-	-	-	-	-	-

LAKE WASHINGTON BASIN

Cedar River at Cedar Falls, Wash.
(Drainage area, 86 square miles)

1915	412-28	797	10	164	1.91	25.93	118,000	1,560	10	209	2.43	32.99	152,000
1916	442-29	1,770	154	493	5.73	77.99	358,000	1,770	42	446	5.19	70.64	324,000
1917	462-27	1,840	42	498	5.79	78.60	361,000	5,900	43	653	7.59	103.03	473,000
1918	482-24	5,900	43	567	6.59	89.46	411,000	4,340	60	451	5.24	71.13	327,000
1919	512-43	960	59	319	3.71	50.36	231,000	846	59	295	3.43	46.56	214,000
1920	512-43	736	70	293	3.41	46.41	213,000	736	90	305	3.55	48.32	221,000
1921	532-37	688	58	346	4.02	54.57	251,000	3,910	58	375	4.35	59.18	272,000
1922	552-37	3,910	2	302	3.51	47.65	219,000	748	2	247	2.87	38.96	179,000
1923	572-29	2,590	30	312	3.63	49.28	226,000	2,590	30	311	3.62	49.14	225,000
1924	592-44	686	7	269	3.13	42.60	195,000	686	7	269	3.13	42.60	195,000
1925	612-42	1,510	5	241	2.80	38.01	174,000	1,510	5	237	2.75	37.46	172,000
1926	632-43	596	4	158	1.84	24.98	114,000	596	4	173	2.01	27.28	125,000
1927	652-36	910	28	240	2.79	37.87	174,000	1,810	28	287	3.34	45.34	208,000
1928	672-32	3,100	14	299	3.48	47.37	217,000	3,100	14	213	2.48	33.76	154,000
1929	692-40	460	28	165	1.92	26.06	120,000	460	22	158	1.84	24.98	114,000
1930	722-38	705	22	147	1.71	23.21	106,000	705	27	175	2.03	27.56	127,000
1931	722-38	466	28	184	2.14	29.05	134,000	466	59	189	2.20	29.86	137,000
1932	737-37	1,430	70	352	4.09	55.67	255,000	2,880	85	432	5.02	68.33	314,000
1933	752-39	2,880	86	395	4.59	62.31	286,000	5,370	100	508	5.91	80.22	368,000
1934	767-33	5,370	-	496	5.77	78.32	359,200	3,090	-	312	3.63	49.28	225,900
1935	792-38	2,970	42	284	3.30	44.80	205,900	2,970	42	242	2.81	38.14	175,300
1936	812-35	1,400	56	261	3.03	41.24	189,100	1,400	30	262	3.05	41.52	190,200
1937	832-34	1,030	30	215	2.50	33.94	155,400	1,340	60	264	3.07	41.67	191,100
1938	862-35	1,340	52	232	2.70	36.65	168,200	898	37	186	2.16	29.32	134,800
1939	882-41	839	37	217	2.52	34.21	157,000	-	-	-	-	-	-

Cedar River near Landsberg, Wash.
(published as Cedar River at Clifford Bridge, near Ravensdale, 1896-98, drainage area, 144 square miles, and Cedar River near Ravensdale, 1899-1912, drainage area, 144 square miles)
(Drainage area, 138 square miles)

1896	313-101	2,900	96	762	5.29	72.00	553,000	5,310	137	972	6.75	91.88	706,000
1897	313-101	5,310	137	1,060	7.36	99.91	771,000	4,330	266	999	6.94	94.21	724,000
1898	313-101	4,330	83	700	4.86	65.97	506,000	3,560	83	612	4.25	57.69	443,000
1899	492-56	-	-	935	6.49	88.10	677,000	-	-	1,110	7.71	104.66	804,000
1900	492-56	-	-	969	6.73	91.61	703,000	-	-	838	5.82	79.22	608,000
1901	492-56	-	-	746	5.18	70.32	540,000	2,600	-	726	5.04	68.42	526,000
1902	313-101	2,600	110	695	4.83	65.56	504,000	2,720	110	682	4.74	64.34	494,000
1903	313-101	6,020	130	739	5.13	69.64	535,000	6,020	130	765	5.31	72.08	554,000
1904	313-101	1,910	143	730	5.07	69.01	530,000	1,910	126	632	4.39	59.75	459,000
1905	313-101	2,020	126	523	3.63	49.28	378,000	2,020	185	578	4.01	54.43	418,000
1906	313-101	1,910	185	601	4.17	56.60	435,000	11,400	210	741	5.15	69.91	537,000
1907	313-101	11,400	216	778	5.40	73.30	563,000	3,920	210	615	4.27	57.96	445,000
1908	313-101	4,500	210	691	4.80	65.34	501,000	4,500	238	670	4.65	63.29	486,000
1909	313-101	1,800	238	608	4.22	57.28	440,000	6,360	265	775	5.38	73.03	561,000
1910	313-101	6,360	200	798	5.54	75.20	577,000	3,380	200	719	4.99	67.74	520,000
1911	313-101	3,380	215	609	4.23	57.42	441,000	13,600	215	632	4.39	59.59	458,000
*1912	313-101	13,600	-	-	-	-	-	-	-	-	-	-	-
1915	412-30	1,240	186	422	3.06	41.54	305,000	2,240	233	507	3.67	49.82	367,000
1916	442-31	2,480	366	927	6.72	91.47	673,000	2,480	239	851	6.17	83.98	618,000
1917	462-29	2,100	239	837	6.07	82.40	606,000	-	223	999	7.24	98.28	723,000
1918	482-26	-	223	912	6.61	89.73	661,000	5,020	230	805	5.83	79.14	582,000
1919	512-46	2,480	230	742	5.38	73.03	537,000	2,480	233	705	5.11	69.36	510,000
1920	512-46	1,760	238	654	4.74	64.52	475,000	1,760	273	684	4.96	67.51	497,000
1921	532-39	1,770	264	784	5.68	77.10	567,000	5,410	264	822	5.95	80.90	595,000
1922	552-40	5,410	-	626	4.54	61.63	453,000	1,610	-	530	3.84	52.12	384,000
1923	572-30	3,960	197	650	4.71	63.94	471,000	3,960	187	640	4.64	62.98	464,000

*Year incomplete.

Summary of yearly discharge, in second-feet, at stations in Lake Washington Basin--Continued

Cedar River near Landsberg, Wash.--Continued
(Drainage area, 138 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1924	592-46	2,410	185	556	4.03	54.85	404,000	2,410	185	585	4.24	57.71	425,000
1925	612-44	2,430	225	619	4.49	60.95	448,000	2,430	167	599	4.34	58.91	433,000
1926	632-45	1,350	167	470	3.41	46.29	340,000	1,300	187	499	3.62	49.14	361,000
1927	652-37	1,610	257	651	4.72	64.07	472,000	3,010	314	775	5.62	76.29	561,000
1928	672-33	4,560	238	775	5.62	76.50	563,000	4,560	234	597	4.33	58.94	434,000
1929	692-41	996	234	504	3.65	49.55	365,000	996	190	487	3.53	47.92	353,000
1930	707-42	1,060	190	449	3.25	44.12	325,000	1,060	223	477	3.46	46.97	346,000
1931	772-40	1,030	223	483	3.50	47.51	349,000	1,030	286	509	3.69	50.09	368,000
†1932	737-38	3,120	-	771	5.59	76.09	560,000	-	-	905	6.56	89.29	657,000
†1933	752-40	-	-	874	6.33	85.93	633,000	-	-	1,043	7.56	102.62	755,200
†1934	767-34	-	-	996	7.22	98.01	721,000	-	-	750	5.43	73.71	542,700
†1935	792-39	-	-	711	5.15	69.91	515,000	-	-	604	4.38	59.46	437,600
†1936	812-36	-	-	628	4.55	61.93	455,800	-	-	641	4.64	63.16	465,000
†1937	832-35	-	-	581	4.21	57.15	420,400	-	-	678	4.91	66.65	490,800
†1938	862-36	-	-	642	4.65	63.12	464,600	-	-	539	3.91	53.08	390,600
†1939	882-42	-	-	573	4.15	56.33	414,800	-	-	-	-	-	-

†Records adjusted for flow of Rock Creek, which is diverted around station and returned to Cedar River below water-supply intake for city of Seattle

Note.- Figures of run-off, in acre-feet, for Rock Creek diversion are given in the following table.

Year	Water year ending Sept. 30	Calendar year	Year	Water year ending Sept. 30	Calendar year	Year	Water year ending Sept. 30	Calendar year
1932	0	9,450	1935	20,770	13,310	1938	6,870	4,820
1933	31,800	39,650	1936	17,580	18,500	1939	15,350	-
1934	37,530	29,780	1937	18,320	18,210	-	-	-

SNOHOMISH RIVER BASIN

South Fork of Skykomish River near Index, Wash.
(Drainage area, 355 square miles)

1903	512-48	26,000	457	2,400	6.76	91.77	1,740,000	26,000	618	2,590	7.30	99.09	1,870,000
1904	512-48	10,200	403	2,290	6.45	87.79	1,660,000	9,470	356	2,130	6.00	81.67	1,540,000
1905	512-48	9,470	356	1,790	5.04	68.41	1,300,000	-	-	-	-	-	-
1912	512-48	24,800	313	2,350	6.62	90.11	1,700,000	7,880	313	2,200	6.20	84.39	1,600,000
1913	512-48	-	-	2,650	7.46	101.27	1,920,000	-	-	2,740	7.72	104.79	1,980,000
1914	512-48	24,800	-	2,330	6.56	89.05	1,690,000	24,800	-	2,350	6.62	89.86	1,700,000
1915	412-32	11,400	264	1,470	4.14	56.19	1,060,000	13,500	264	1,460	4.11	55.79	1,060,000
1916	442-33	13,500	374	2,840	8.00	108.90	2,060,000	12,100	332	2,550	7.18	97.73	1,850,000
1917	462-31	12,800	332	2,490	7.01	95.16	1,800,000	40,300	432	3,290	9.27	125.83	2,380,000
1918	482-28	40,300	346	3,000	8.45	114.70	2,170,000	23,300	346	2,710	7.63	103.57	1,960,000
1919	512-48	23,300	359	2,710	7.63	103.58	1,960,000	26,400	333	2,580	7.27	98.68	1,860,000
1920	512-48	26,400	333	2,220	6.25	85.09	1,610,000	16,500	417	2,250	6.34	86.11	1,630,000
1921	532-41	17,900	483	3,010	8.48	115.30	2,180,000	45,000	483	3,140	8.85	120.12	2,270,000
1922	552-42	45,000	417	2,120	5.97	81.14	1,540,000	19,200	346	1,770	4.99	67.54	1,280,000
1923	572-32	19,200	346	2,230	6.28	85.29	1,620,000	19,000	346	2,250	6.34	86.06	1,630,000
1924	592-48	31,000	320	2,120	5.97	81.17	1,540,000	31,000	320	2,380	6.70	91.22	1,730,000
1925	612-46	19,200	271	2,590	7.30	98.81	1,870,000	18,200	214	2,440	6.87	93.10	1,760,000
1926	632-46	18,200	214	1,650	4.65	63.05	1,190,000	17,700	308	1,610	4.54	61.66	1,170,000
1927	652-38	17,700	530	2,330	6.56	89.32	1,690,000	19,200	530	2,770	7.80	106.03	2,010,000
1928	672-34	28,200	304	2,720	7.66	104.24	1,970,000	28,200	304	2,080	5.86	79.67	1,510,000
1929	692-43	9,490	271	1,720	4.85	65.59	1,240,000	8,350	271	1,590	4.48	60.79	1,150,000
1930	707-45	9,690	271	1,600	4.51	61.15	1,160,000	9,690	282	1,680	4.73	64.18	1,210,000
1931	722-43	9,470	304	1,790	5.04	68.23	1,290,000	10,900	350	1,920	5.41	73.53	1,390,000
1932	737-39	42,400	400	2,640	7.44	101.08	1,910,000	42,400	327	3,280	9.24	125.82	2,380,000
1933	752-41	35,900	327	3,352	9.44	128.17	2,427,000	27,200	-	3,757	10.6	143.71	2,720,000
1934	792-40	27,200	415	3,383	9.53	129.49	2,449,000	23,100	415	2,705	7.62	103.46	1,958,000
1935	792-40	26,200	402	2,651	7.47	101.30	1,919,000	26,200	362	2,068	5.83	79.06	1,497,000
1936	812-37	10,400	362	2,141	6.03	82.03	1,554,000	10,400	320	2,254	6.35	86.37	1,637,000
1937	832-36	9,070	320	1,973	5.56	75.56	1,429,000	15,000	292	2,405	6.77	92.03	1,741,000
1938	862-37	20,500	272	2,237	6.30	85.47	1,620,000	20,500	244	2,000	5.63	76.42	1,448,000
1939	882-45	12,900	244	2,399	6.76	91.72	1,736,000	-	-	-	-	-	-

Skykomish River near Gold Bar, Wash.
(Drainage area, 535 square miles)

1929	692-44	15,900	447	2,860	5.35	72.52	2,070,000	12,900	398	2,580	4.82	65.49	1,870,000
1930	707-46	13,400	398	2,620	4.90	66.49	1,900,000	13,400	428	2,770	5.18	70.30	2,010,000
1931	722-44	24,900	517	3,020	5.64	76.56	2,190,000	24,900	555	3,220	6.02	81.78	2,330,000
1932	737-40	55,600	725	4,280	8.00	108.81	3,110,000	55,600	705	5,240	9.79	133.21	3,800,000
1933	752-42	51,600	705	5,358	10.0	135.99	3,879,000	49,400	835	5,975	11.2	151.59	4,326,000
1934	767-36	49,400	640	5,385	10.1	136.61	3,898,000	37,600	636	4,396	8.22	111.56	3,183,000
1935	792-42	45,900	634	4,278	8.00	108.49	3,097,000	45,900	538	3,376	6.31	85.65	2,444,000
1936	812-38	16,900	538	3,412	6.38	86.80	2,477,000	16,900	425	3,541	6.62	90.08	2,571,000
1937	832-37	13,900	425	3,084	5.76	78.22	2,233,000	26,200	443	3,762	7.03	95.40	2,723,000
1938	862-38	35,700	443	3,543	6.62	89.90	2,565,000	35,700	388	3,221	6.02	81.76	2,332,000
1939	882-46	22,000	388	3,840	7.18	97.47	2,780,000	-	-	-	-	-	-

Summary of yearly discharge, in second-feet, at stations in Snohomish River Basin--Continued

Miller Creek at Miller River, Wash.
(published as Miller Creek near Berlin, 1911-16 and Miller Creek near Miller River, 1916-19)
(Drainage area, 44.2 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
*1911	332-31	-	-	-	-	-	-	4,740	-	-	-	-	-
1912	332-31	4,740	37	378	8.55	116.16	274,000	1,620	37	313	7.08	96.38	227,000
1913	362-24	-	70	395	8.94	121.40	286,000	-	64	414	9.37	127.18	300,000
1914	392-25	3,030	-	332	7.51	102.02	240,000	2,750	-	333	7.53	102.34	241,000
1915	412-34	1,590	24	214	4.84	65.57	155,000	4,220	24	221	5.00	67.97	160,000
1916	442-35	4,220	44	430	9.73	132.53	312,000	1,700	33	378	8.55	116.43	274,000
1917	462-33	-	33	356	8.05	109.41	258,000	-	-	465	10.5	142.96	337,000
1918	492-66	-	-	405	9.16	124.29	293,000	4,160	-	408	9.23	125.20	295,000
1919	512-56	4,160	-	408	9.23	125.43	296,000	-	-	-	-	-	-
1929	692-45	-	-	285	6.45	87.82	207,000	1,710	23	273	6.18	83.77	198,000
1930	707-48	1,900	18	244	5.52	74.89	177,000	1,900	18	252	5.70	77.41	182,000
1931	722-46	2,600	22	278	6.29	85.37	201,000	-	-	-	-	-	-

*Calendar year incomplete.

North Fork of Skykomish River at Index, Wash.
(Drainage area, 149 square miles)

1911	312-660	9,160	110	1,060	7.11	96.52	769,000	9,720	110	974	6.54	88.78	705,000
1912	412-36	9,720	144	1,070	7.18	97.74	776,000	3,780	156	1,020	6.85	93.23	724,000
1913	412-36	-	-	1,240	8.32	112.94	900,000	8,200	-	1,260	8.46	114.84	914,000
1914	412-36	9,820	144	1,140	7.65	103.84	827,000	9,820	144	1,160	7.79	105.74	838,000
1915	412-36	6,400	97	720	4.83	65.56	522,000	6,400	97	697	4.68	63.53	505,000
1916	442-37	6,400	198	1,290	8.66	117.88	936,000	7,660	130	1,180	7.92	107.80	856,000
1917	462-35	7,660	130	1,170	7.85	106.56	844,000	16,600	187	1,480	9.93	134.79	1,070,000
1918	482-31	16,600	143	1,370	9.19	124.74	993,000	8,770	143	1,260	8.46	114.84	914,000
1919	512-58	8,770	115	1,330	8.93	121.22	965,000	15,000	115	1,310	8.79	119.32	946,000
1920	512-58	15,000	-	1,130	7.58	103.64	824,000	9,470	176	1,150	7.72	104.72	831,000
1921	532-42	9,470	226	1,550	10.4	140.84	1,120,000	-	226	1,680	11.3	153.17	1,220,000
1922	552-44	-	80	1,060	7.11	96.85	768,000	-	-	-	-	-	-
1930	707-49	5,160	78	811	5.44	73.89	588,000	5,160	78	866	5.81	78.81	627,000
1931	722-47	8,300	145	998	6.70	90.80	722,000	8,300	174	1,050	7.05	95.52	759,000
1932	737-42	18,600	224	1,470	9.87	133.86	1,060,000	18,600	188	1,760	11.8	160.70	1,280,000
1933	752-44	14,100	-	1,704	11.4	155.22	1,234,000	16,200	-	1,933	13.0	175.93	1,399,000
1934	792-43	16,200	132	1,723	11.6	156.89	1,247,000	11,000	120	1,400	9.40	127.55	1,013,000
1935	792-43	16,200	120	1,406	9.44	128.16	1,018,000	16,200	142	1,117	7.50	101.82	808,700
1936	812-39	4,750	100	1,052	7.06	96.17	764,100	4,750	84	1,074	7.21	98.19	780,100
1937	832-38	4,570	84	944	6.34	86.02	683,500	7,710	110	1,136	7.62	103.42	822,500
1938	862-39	8,380	110	1,055	7.08	96.11	764,200	-	-	-	-	-	-

Troublesome Creek near Index, Wash.
(Drainage area, 10.4 square miles)

1930	707-50	504	11	77.7	7.47	101.37	56,200	504	11	83.6	8.04	109.08	60,500
1931	722-48	724	21	96.3	9.26	125.64	69,800	724	18	100	9.62	130.37	72,400
1932	752-45	1,700	14	109	10.5	142.06	78,800	1,700	14	132	12.7	172.64	95,800
1933	752-45	1,140	18	147	14.1	191.68	106,000	1,270	22	169	16.2	220.14	122,200
1934	792-45	1,270	24	166	16.0	216.56	120,200	800	18	154	14.8	201.45	111,800
1935	792-45	1,140	18	146	14.0	190.69	105,800	1,140	16	104	10.0	135.54	75,190
1936	812-40	439	12	95.4	9.17	124.82	69,230	670	10	108	10.4	141.66	78,560
1937	832-39	670	10	131	12.6	171.20	95,020	700	11	159	15.3	207.03	114,900
1938	862-40	730	14	125	12.0	163.27	90,470	730	14	102	9.81	132.98	73,720
1939	882-47	640	14	114	11.0	148.49	82,450	-	-	-	-	-	-

Sultan River near Sultan, Wash.
(Drainage area, 88 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1912	442-38	-	-	706	514,000	-	-	701	509,000
1913	442-38	-	-	850	616,000	-	-	821	594,000
1914	442-38	6,650	83	753	545,000	6,650	83	768	556,000
1915	442-38	6,650	71	558	404,000	6,650	71	594	430,000
1916	442-38	4,650	124	901	655,000	5,640	90	780	566,000
1917	462-37	5,640	90	827	598,000	15,600	109	1,130	822,000
1918	482-33	15,600	79	1,020	740,000	8,450	79	879	637,000
1919	512-61	8,450	79	881	639,000	13,100	57	875	634,000
1920	512-61	13,100	54	866	629,000	11,500	54	833	605,000
1921	532-44	10,800	112	1,000	728,000	14,800	112	1,100	797,000
1922	552-46	14,800	92	776	562,000	8,980	92	632	458,000
1923	572-36	10,000	52	718	520,000	10,000	52	701	508,000
1924	592-52	11,900	69	695	505,000	11,900	69	841	611,000
1925	612-49	6,180	45	899	651,000	6,980	32	802	581,000
1926	632-49	6,980	32	625	453,000	-	-	-	-
1930	707-55	4,420	41	559	404,000	4,420	41	592	429,000
*1931	722-52	6,130	2.9	627	454,000	-	2.9	-	-

*Calendar year incomplete.

Summary of yearly discharge, in second-feet, at stations in Snohomish River Basin--Continued

Middle Fork of Snoqualmie River near North Bend, Wash.
(Drainage area, 173 square miles)

Year	W.S.P. (no. and page	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1908	412-40	-	154	1,010	5.84	79.49	737,000	-	154	1,050	6.07	82.63	765,000
1909	412-40	5,590	176	966	5.58	75.75	699,000	-	176	1,210	6.99	94.88	874,000
1910	412-40	-	174	1,310	7.57	102.76	947,000	-	174	1,280	7.40	100.45	927,000
1911	412-40	-	372	1,040	6.01	81.58	751,000	-	276	998	5.77	78.32	723,000
1912	412-40	-	200	1,220	7.05	95.96	885,000	8,130	200	1,100	6.36	86.57	795,000
1913	412-40	-	300	1,290	7.46	101.27	933,000	-	270	1,350	7.80	105.88	974,000
1914	412-40	8,170	169	1,140	6.59	89.45	823,000	8,100	169	1,090	6.30	85.52	790,000
1915	412-40	7,680	150	762	4.40	59.73	552,000	6,790	150	850	4.91	66.65	615,000
1916	442-43	7,230	268	1,510	8.73	118.83	1,100,000	7,230	177	1,310	7.57	103.04	954,000
1917	462-39	5,220	177	1,270	7.34	99.63	921,000	15,400	202	1,610	9.31	126.38	1,170,000
1918	482-35	15,400	184	1,550	8.96	121.63	1,120,000	9,790	184	1,450	8.38	113.75	1,050,000
1919	512-63	9,790	194	1,310	7.57	102.76	950,000	7,400	188	1,240	7.17	97.33	898,000
1920	512-63	7,400	188	1,180	6.82	92.70	854,000	8,640	196	1,190	6.88	93.33	861,000
1921	532-46	9,440	275	1,470	8.50	115.15	1,060,000	14,600	275	1,560	9.02	122.84	1,130,000
1922	552-48	14,600	226	1,190	6.88	93.45	862,000	10,200	194	1,010	5.84	79.63	734,000
1923	572-38	10,200	165	1,200	6.94	93.95	865,000	9,260	165	1,200	6.94	94.60	872,000
1924	592-54	12,800	182	1,130	6.53	89.19	824,000	12,800	189	1,270	7.34	99.98	924,000
1925	612-51	9,210	135	1,250	7.23	97.55	901,000	6,700	102	1,150	6.65	90.28	833,000
1926	632-51	6,700	102	914	5.28	71.77	662,000	-	-	-	-	-	-
1930	707-56	5,490	132	887	5.13	69.58	642,000	5,490	137	941	5.44	73.77	681,000
1931	722-53	6,710	147	1,020	5.90	80.20	740,000	7,430	156	1,120	6.47	87.75	810,000
*1932	737-44	16,200	236	1,400	8.09	109.95	1,010,000	16,200	-	-	-	-	-

*Calendar year incomplete.

Snoqualmie River near Snoqualmie, Wash.
(Drainage area, 375 square miles)

1899	412-48	20,100	-	3,430	9.15	124.20	2,480,000	-	-	-	-	-	-
1903	412-48	24,400	388	2,670	7.12	96.65	1,930,000	24,400	388	2,790	7.44	100.99	2,020,000
1904	412-48	13,600	-	2,470	6.59	89.70	1,790,000	13,600	-	-	-	-	-
1908	492-77	-	-	2,140	5.71	77.72	1,560,000	-	-	2,180	5.81	79.08	1,580,000
1909	492-77	-	-	2,000	5.33	72.35	1,450,000	-	-	2,500	6.67	90.54	1,810,000
1910	492-77	-	-	2,630	7.01	95.16	1,900,000	-	-	2,540	6.77	91.90	1,840,000
1911	492-77	-	-	2,070	5.52	74.93	1,500,000	-	-	1,970	5.25	71.26	1,430,000
1912	492-77	-	-	2,360	6.29	85.62	1,710,000	-	-	2,140	5.71	77.72	1,550,000
1913	492-77	-	-	2,460	6.56	89.05	1,780,000	-	-	2,530	6.75	91.63	1,830,000
1914	492-77	-	-	2,300	6.13	83.21	1,660,000	-	-	2,260	6.03	81.85	1,630,000
1915	492-77	-	-	1,620	4.32	58.64	1,170,000	-	-	1,770	4.72	64.07	1,280,000
1916	492-77	-	-	3,000	8.00	108.90	2,180,000	-	-	2,640	7.04	95.82	1,920,000
1917	492-77	-	-	2,550	6.80	92.31	1,840,000	-	-	3,180	8.48	115.11	2,300,000
1918	492-77	-	-	3,000	8.00	108.60	2,170,000	-	-	2,810	7.49	101.67	2,030,000
1919	492-77	-	-	2,620	6.99	94.88	1,900,000	-	-	2,480	6.61	89.73	1,790,000
1920	870-139	-	-	2,330	6.21	84.56	1,690,000	-	-	2,360	6.29	85.46	1,710,000
1921	870-139	-	-	3,000	8.00	108.44	2,170,000	-	-	3,190	8.51	115.36	2,310,000
1922	870-139	-	-	2,370	6.32	85.54	1,710,000	-	-	2,010	5.36	72.62	1,450,000
1923	870-139	-	-	2,400	6.40	86.76	1,730,000	-	-	2,390	6.37	86.60	1,730,000
1924	870-139	-	-	2,210	5.89	80.15	1,600,000	-	-	2,530	6.75	91.83	1,840,000
1925	870-139	-	-	2,600	6.93	93.94	1,880,000	-	-	2,410	6.43	87.47	1,750,000
1926	632-53	-	-	1,920	5.12	69.68	1,390,000	-	-	1,930	5.15	69.73	1,390,000
1927	652-39	10,000	504	2,760	7.36	100.02	2,000,000	-	-	3,240	8.64	117.23	2,340,000
1928	870-139	-	-	3,020	8.05	109.69	2,190,000	-	-	2,280	6.08	82.69	1,650,000
1929	870-139	-	-	1,910	5.09	69.26	1,380,000	-	-	1,800	4.80	65.25	1,300,000
1930	870-139	-	-	1,700	4.53	61.52	1,230,000	-	-	1,800	4.80	64.98	1,300,000
1931	870-139	-	-	2,000	5.33	72.60	1,450,000	-	-	2,200	5.87	79.60	1,590,000
1932	870-139	-	-	2,980	7.95	108.09	2,160,000	-	-	-	-	-	-

Snoqualmie River near Tolt, Wash.
(Drainage area, 605 square miles)

*1929	692-52	-	-	2,810	4.64	62.95	2,030,000	12,600	430	2,550	4.21	57.10	1,840,000
1930	707-57	13,000	415	2,480	4.10	55.71	1,800,000	13,000	415	2,600	4.30	58.25	1,880,000
1931	722-54	25,500	415	2,990	4.94	67.01	2,160,000	25,500	415	3,310	5.47	74.30	2,400,000
1932	737-45	36,500	620	4,590	7.59	103.32	3,340,000	36,500	560	5,570	9.21	125.29	4,040,000
1933	752-52	36,000	560	5,190	8.58	116.45	3,760,000	38,800	595	5,580	9.22	125.28	4,040,000
1934	767-42	38,800	618	4,823	7.97	108.21	3,492,000	35,600	618	3,901	6.45	87.47	2,824,000
1935	792-48	35,600	542	3,827	6.33	85.78	2,770,000	35,300	441	3,050	5.04	68.42	2,208,000
1936	812-42	14,300	441	3,445	5.69	77.54	2,501,000	14,300	546	3,480	5.75	78.34	2,527,000
1937	832-41	14,700	535	3,144	5.20	70.49	2,276,000	26,200	475	3,933	6.50	88.16	2,847,000
1938	862-42	32,800	396	3,509	5.80	78.71	2,540,000	32,800	396	3,052	5.04	68.50	2,210,000
1939	882-49	20,800	450	3,624	5.99	81.30	2,624,000	-	-	-	-	-	-

*Daily discharges for incomplete year published in water-supply paper; monthly discharge for periods of missing record estimated and monthly and yearly figures published in Washington State Water-Supply Bulletin No. 5 and Water-Supply Paper 870, p. 143.

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Summary of yearly discharge, in second-feet, at stations in Snohomish River Basin--Continued

North Fork of Snoqualmie River near Snoqualmie Falls, Wash.
(Drainage area, 65 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1930	707-58	2,640	34	335	5.15	70.03	243,000	2,640	34	359	5.52	74.95	260,000
1931	722-55	2,890	42	403	6.20	84.15	292,000	2,890	42	434	6.68	90.65	314,000
1932	737-46	5,900	82	598	9.20	125.29	434,000	5,900	82	696	10.7	145.92	505,000
1933	752-53	-	-	673	10.4	140.62	487,000	4,750	-	742	11.4	154.96	537,000
1934	767-43	4,590	50	609	9.37	127.30	441,100	6,000	50	510	7.85	106.37	368,900
1935	792-49	6,000	52	526	8.09	109.73	380,500	4,880	51	421	6.48	88.01	305,000
1936	812-43	2,560	51	453	7.43	101.09	350,400	2,560	54	492	7.57	103.04	357,200
1937	832-42	2,400	56	424	6.52	88.45	306,600	2,710	56	520	8.00	108.61	376,800
1938	862-43	4,840	33	451	6.94	94.18	326,600	4,840	33	411	6.32	85.83	297,400
1939	882-50	3,570	38	514	7.91	107.46	372,300	-	-	-	-	-	-

North Fork of Snoqualmie River near North Bend, Wash.
(Drainage area, 105 square miles)

1908	412-56	-	131	639	6.09	82.89	464,000	-	131	636	6.06	82.49	462,000
1909	412-56	5,170	131	619	5.90	80.09	449,000	5,170	131	790	7.52	102.08	572,000
1910	412-56	-	56	836	7.96	108.06	606,000	6,580	56	789	7.51	101.94	571,000
1911	412-56	6,580	83	605	5.76	78.19	438,000	11,100	83	577	5.50	74.66	418,000
1912	412-56	11,100	134	667	6.35	86.44	484,000	-	167	608	5.79	78.82	441,000
1913	412-56	-	144	698	6.65	90.27	505,000	4,700	88	698	6.65	90.27	505,000
1914	412-56	4,700	59	683	6.50	88.23	495,000	3,300	59	686	6.53	88.64	497,000
1915	412-56	3,660	71	520	4.95	67.19	377,000	3,660	71	557	5.30	71.94	403,000
1916	442-45	5,080	78	837	7.97	108.49	607,000	5,080	81	739	7.04	95.82	536,000
1917	462-41	2,770	81	728	6.93	94.07	528,000	7,170	88	893	8.50	115.38	646,000
1918	482-37	7,170	79	797	7.59	103.03	577,000	3,590	79	741	7.06	95.84	536,000
1919	512-66	-	76	682	6.50	88.23	494,000	4,140	76	659	6.28	85.25	477,000
1920	512-66	-	71	650	6.19	84.15	472,000	4,500	71	653	6.22	84.64	474,000
1921	532-48	4,500	117	812	7.73	104.88	587,000	7,530	117	854	8.13	110.31	618,000
1922	552-50	7,530	89	658	6.27	85.00	476,000	5,750	89	573	5.46	74.07	415,000
1923	572-40	5,750	64	649	6.18	83.83	470,000	5,000	64	632	6.02	81.62	457,000
1924	592-56	7,170	56	600	5.71	77.74	435,000	7,170	56	712	6.78	92.36	517,000
1925	612-53	4,290	65	753	6.89	93.39	523,000	6,050	56	685	6.52	88.55	496,000
1926	632-55	6,060	56	578	5.50	74.74	419,000	-	-	-	-	-	-
1930	707-59	2,740	54	450	4.29	58.16	326,000	2,640	54	479	4.56	61.94	347,000
1931	722-56	3,580	65	552	5.26	71.32	399,000	3,580	65	605	5.76	78.18	438,000
1932	737-47	7,840	112	880	8.38	114.11	639,000	7,840	-	1,060	10.1	137.61	771,000
1933	752-54	6,880	-	963	9.17	124.63	698,000	6,090	119	1,020	9.71	131.44	736,000
1934	767-44	6,370	54	857	8.16	110.65	620,200	7,000	54	725	6.90	93.81	525,100
1935	792-50	7,000	90	778	7.41	100.58	563,100	5,940	85	636	6.06	82.19	460,600
1936	812-44	3,020	85	699	6.66	90.59	507,100	3,020	86	697	6.64	90.34	505,900
1937	832-43	2,880	100	634	6.04	81.95	458,900	4,290	101	794	7.56	102.74	575,000
1938	862-44	5,820	58	686	6.53	88.69	496,800	-	-	-	-	-	-

South Fork of Snoqualmie River at North Bend, Wash.
(Drainage area, 84 square miles)

1908	412-70	-	77	490	5.83	79.37	356,000	-	68	492	5.86	79.70	357,000
1909	412-70	1,960	68	419	4.99	67.78	304,000	1,960	77	496	5.90	80.20	359,000
1910	412-70	-	71	477	5.68	77.11	346,000	4,440	71	467	5.56	75.49	338,000
1911	412-70	4,440	89	428	5.10	69.23	310,000	4,740	89	393	4.68	63.61	285,000
1912	412-70	4,740	107	473	5.63	76.61	343,000	-	107	437	5.20	70.86	317,000
1913	412-70	-	117	473	5.63	76.39	342,000	-	117	492	5.86	79.51	356,000
1914	412-70	2,450	88	480	5.71	77.59	348,000	2,450	88	480	5.71	77.56	347,000
1915	412-70	2,050	81	334	3.98	53.89	241,000	2,080	81	368	4.38	59.47	266,000
1916	442-47	2,630	115	659	7.85	106.70	478,000	2,630	115	590	7.02	95.47	428,000
1917	462-43	2,010	105	549	6.54	88.68	397,000	5,100	91	673	8.01	108.75	487,000
1918	482-39	5,100	90	648	7.71	104.78	469,000	4,180	90	621	7.39	100.40	450,000
1919	512-69	4,500	90	627	7.46	101.36	454,000	4,500	92	579	6.89	93.61	419,000
1920	512-69	2,770	92	502	5.98	81.45	365,000	3,730	95	515	6.13	83.55	374,000
1921	532-50	3,940	130	719	8.56	116.08	520,000	6,460	130	769	9.15	124.34	557,000
1922	552-52	6,460	110	518	6.17	83.81	375,000	3,700	98	423	5.04	68.34	306,000
1923	572-42	4,080	98	551	6.56	89.17	399,000	4,080	84	555	6.61	89.84	402,000
1924	592-58	5,040	80	476	5.67	77.02	345,000	5,040	80	547	6.51	88.62	397,000
1925	612-55	3,720	73	626	7.45	101.12	454,000	2,600	65	578	6.88	93.32	419,000
1926	632-57	2,360	65	433	5.15	69.98	314,000	-	-	-	-	-	-
1930	707-60	1,730	73	363	4.32	58.75	263,000	1,730	68	376	4.48	60.78	272,000
1931	722-57	2,350	68	431	5.13	69.71	312,000	2,350	83	475	5.65	76.77	344,000
1932	737-48	5,360	105	698	8.31	113.04	507,000	5,980	107	840	10.0	136.12	610,000
1933	752-55	5,980	107	761	9.06	122.98	551,000	5,990	155	854	10.2	138.04	618,000
1934	767-45	5,990	-	807	9.61	130.46	584,600	6,300	-	660	7.86	106.79	478,000
1935	792-51	6,300	75	615	7.32	99.43	445,200	4,080	88	476	5.67	76.95	344,600
1936	812-45	2,000	88	497	5.92	80.63	361,100	2,000	87	516	6.14	83.59	374,500
1937	832-44	1,900	87	473	5.63	76.49	342,400	3,420	96	590	7.02	95.34	427,100
1938	862-45	4,330	-	560	6.67	90.49	405,400	-	-	-	-	-	-

Summary of yearly discharge, in second-feet, at stations in
STILLAGUAMISH RIVER BASIN

South Fork of Stillaguamish River near Granite Falls, Wash.
(Drainage area, 119 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1929	692-59	7,400	77	721	6.06	82.44	523,000	5,650	72	640	5.38	73.02	463,000
1930	707-64	5,680	68	702	5.90	80.06	509,000	5,680	68	756	6.35	86.17	547,000
1931	722-61	9,160	86	964	8.10	109.92	698,000	9,160	86	1,070	8.99	122.40	778,000
1932	737-51	20,200	175	1,290	10.8	147.38	936,000	20,200	131	1,490	12.5	170,01	1,080,000
1933	752-56	11,800	131	1,410	11.8	160.69	1,020,000	10,100	166	1,490	12.5	169.51	1,080,000
1934	767-46	10,100	89	1,325	11.1	151.05	959,200	10,400	89	1,156	9.71	131.93	837,000
1935	792-52	18,400	109	1,142	9.60	130.28	826,400	18,400	109	896	7.53	102.25	648,800
1936	812-46	4,960	114	929	7.81	106.18	674,400	8,110	109	979	8.23	111.90	710,500
1937	832-45	8,110	92	862	7.24	98.35	624,100	11,400	92	1,081	9.08	123.19	782,300
1938	862-47	11,400	56	952	8.00	108.57	689,200	10,800	56	868	7.29	98.99	628,400
1939	882-52	8,340	76	1,087	9.13	123.89	786,700	-	-	-	-	-	-

North Fork of Stillaguamish River near Arlington, Wash.
(Drainage area, 269 square miles)

1929	692-63	10,000	193	1,230	4.57	61.88	889,000	7,460	191	1,050	3.90	52.85	759,000
1930	707-67	8,410	163	1,120	4.16	56.74	813,000	8,410	163	1,240	4.61	62.49	895,000
1931	722-64	16,200	167	1,650	6.13	83.30	1,200,000	16,200	167	1,850	6.88	93.19	1,340,000
1932	737-54	23,400	232	2,140	7.96	108.44	1,560,000	23,400	185	2,430	9.03	122.88	1,760,000
1933	752-58	19,500	185	2,270	8.44	114.47	1,640,000	14,300	301	2,350	8.74	118.78	1,700,000
1934	767-48	14,300	250	2,088	7.76	105.37	1,512,000	13,900	250	1,822	6.77	91.99	1,319,000
1935	792-54	21,300	225	1,824	6.78	92.06	1,320,000	21,300	225	1,466	5.45	73.97	1,061,000
1936	812-49	7,300	220	1,505	5.59	76.27	1,093,000	9,050	160	1,543	5.74	78.19	1,120,000
1937	832-47	9,050	160	1,368	5.09	69.07	990,500	16,900	234	1,831	6.81	92.39	1,326,000
1938	862-50	16,900	95	1,735	6.45	87.50	1,256,000	14,900	95	1,523	5.66	76.75	1,102,000
1939	882-55	12,200	116	1,730	6.43	87.33	1,253,000	-	-	-	-	-	-

Deer Creek at Oso, Wash.
(Drainage area, 71 square miles)

1918	482-41	-	31	579	8.15	110.75	419,000	5,530	31	551	7.76	105.40	399,000
1919	512-72	5,530	27	526	7.41	100.73	381,000	6,180	27	479	6.75	91.55	347,000
1920	512-72	6,180	29	520	7.32	99.69	378,000	5,430	29	550	7.75	105.37	399,000
1921	532-52	-	41	582	8.20	111.30	421,000	-	41	638	8.99	122.08	462,000
1922	552-54	-	45	544	7.66	104.09	394,000	4,950	45	450	6.34	85.99	326,000
1923	572-44	4,950	28	462	6.51	88.26	334,000	4,260	28	440	6.20	84.16	319,000
1924	592-60	6,420	35	417	5.87	80.01	303,000	6,420	35	523	7.37	100.39	380,000
1925	612-56	4,820	25	609	8.58	116.43	441,000	3,860	22	541	7.62	103.41	392,000
1926	632-59	3,740	19	419	5.90	80.26	304,000	3,690	19	444	6.25	84.93	322,000
1927	652-41	3,690	32	544	7.66	104.04	394,000	2,850	32	551	7.76	105.31	399,000
1928	672-35	5,080	22	510	7.18	97.69	370,000	5,080	22	442	6.23	84.84	321,000
1929	692-65	3,550	23	372	5.24	71.18	270,000	3,450	23	307	4.32	58.73	222,000
*1930	707-68	3,450	18	331	4.66	63.27	239,000	-	18	-	-	-	-

*Calendar year incomplete.

SKAGIT RIVER BASIN

Skagit River below Ruby Creek, near Marblemount, Wash.
(Drainage area, 978 square miles)

1920	512-75	11,800	570	2,910	2.98	40.47	2,110,000	11,800	982	3,100	3.17	43.15	2,250,000
1921	532-54	24,700	945	4,110	4.20	57.03	2,980,000	29,200	945	4,430	4.53	61.45	3,210,000
1922	552-56	29,200	627	3,540	3.62	49.16	2,560,000	24,700	-	2,950	3.02	41.03	2,130,000
1923	572-45	17,700	-	3,360	3.44	46.76	2,430,000	17,700	604	3,280	3.35	45.56	2,370,000
1924	592-62	21,200	604	2,930	3.00	40.62	2,120,000	21,200	751	3,370	3.45	46.94	2,450,000
1925	612-58	22,200	680	3,960	4.05	54.94	2,860,000	22,200	450	3,520	3.60	48.84	2,550,000
1926	632-60	6,940	450	1,820	1.86	25.29	1,320,000	7,280	615	1,950	1.99	27.08	1,410,000
1927	652-42	20,200	664	3,100	3.17	43.03	2,240,000	20,200	740	3,460	3.54	48.03	2,500,000
1928	672-36	21,200	803	3,500	3.58	48.56	2,540,000	21,200	754	3,080	3.15	42.80	2,240,000
1929	692-67	13,200	-	2,360	2.41	32.76	1,710,000	13,200	-	2,170	2.22	30.05	1,570,000
1930	707-70	10,100	-	2,630	2.69	36.59	1,910,000	-	-	-	-	-	-

Summary of yearly discharge, in second-feet, at stations in Skagit River Basin--Continued

Skagit River at Newhalem, Wash.
(Published as Skagit River near Marblemount, Wash., 1909-14 and Skagit River at Power Camp, near Marblemount, Wash.
(Drainage area, 1,160 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Diablo Reservoir (acre-feet)	Adjusted for change in reservoir contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1909	512-80	-	-	4,270	3,090,000	0	3,090,000	4,270	3.68	49.95
1910	512-80	40,500	1,240	5,870	4,250,000	0	4,250,000	5,870	5.06	68.69
1911	512-80	24,400	870	5,030	3,640,000	0	3,640,000	5,030	4.34	58.91
1912	512-80	17,800	880	3,650	2,650,000	0	2,650,000	3,650	3.15	42.88
1913	512-80	25,800	820	4,650	3,370,000	0	3,3 ,000	4,650	4.01	54.43
1921	572-47	29,800	1,270	5,760	4,170,000	0	4,170,000	5,760	4.97	67.45
1922	572-47	42,400	740	4,840	3,500,000	0	3,500,000	4,840	4.17	56.68
1923	572-47	20,100	-	4,420	3,190,000	0	3,190,000	4,420	3.81	51.63
1924	592-64	26,700	810	3,900	2,830,000	0	2,830,000	3,900	3.36	45.74
1925	612-60	24,400	940	5,040	3,650,000	0	3,650,000	5,040	4.34	58.94
1926	632-62	8,660	656	2,650	1,920,000	0	1,920,000	2,650	2.28	31.03
1927	652-43	24,200	934	4,190	3,030,000	0	3,030,000	4,190	3.61	48.96
1928	672-37	24,800	1,190	4,610	3,350,000	0	3,350,000	4,610	3.97	54.11
1929	692-68	-	-	3,100	2,240,000	0	2,240,000	3,100	2.67	36.25
1930	707-71	12,500	136	3,320	2,410,000	+59,600	2,470,000	3,400	2.93	39.84
1931	722-68	14,800	534	3,450	2,500,000	+23,800	2,520,000	3,480	3.00	40.78
1932	737-56	32,100	1,040	4,530	3,280,000	-11,900	3,270,000	4,510	3.89	52.98
1933	752-60	26,500	969	5,300	3,840,000	+18,500	3,860,000	5,330	4.59	62.31
1934	767-50	22,600	1,450	6,304	4,564,000	-18,040	4,546,000	6,278	5.41	73.51
1935	792-57	24,800	1,310	4,906	3,552,000	+10,820	3,562,000	4,921	4.24	57.58
1936	812-52	20,600	463	3,658	2,655,000	-1,850	2,654,000	3,655	3.15	42.81
1937	832-50	20,000	458	3,611	2,614,000	-2,860	2,611,000	3,607	3.11	42.19
1938	862-53	19,700	644	4,480	3,244,000	+13,140	3,257,000	4,498	3.68	52.62
1939	882-58	18,900	801	3,837	2,778,000	-2,070	2,776,000	3,834	3.31	44.86
Calendar year										
1909	512-80	40,500	1,290	4,920	3,560,000	0	3,560,000	4,920	4.24	57.56
1910	512-80	25,100	1,240	5,980	4,330,000	0	4,330,000	5,980	5.16	70.04
1911	512-80	24,400	870	4,130	2,990,000	0	2,990,000	4,130	3.56	48.32
1912	512-80	17,800	920	3,670	2,660,000	0	2,660,000	3,670	3.16	43.02
1913	512-80	25,800	820	4,890	3,540,000	0	3,540,000	4,890	4.22	57.28
1921	572-47	42,400	1,270	6,260	4,530,000	0	4,530,000	6,260	5.40	73.17
1922	572-47	28,000	740	3,960	2,870,000	0	2,870,000	3,960	3.41	46.43
1923	572-47	20,100	810	4,290	3,110,000	0	3,110,000	4,290	3.70	50.25
1924	592-64	26,700	1,010	4,440	3,220,000	0	3,220,000	4,440	3.83	52.16
1925	612-60	24,400	656	4,510	3,260,000	0	3,260,000	4,510	3.89	52.70
1926	632-62	13,200	862	2,870	2,070,000	0	2,070,000	2,870	2.47	33.57
1927	652-43	24,200	934	4,600	3,330,000	0	3,330,000	4,600	3.97	53.80
1928	672-37	24,800	956	4,060	2,950,000	0	2,950,000	4,060	3.50	47.64
1929	692-68	13,500	230	2,820	2,040,000	+6,020	2,050,000	2,830	2.44	33.10
1930	707-71	12,500	136	3,440	2,490,000	+47,800	2,540,000	3,510	3.03	41.04
1931	722-68	14,800	534	3,590	2,600,000	+24,000	2,620,000	3,620	3.12	42.42
1932	737-56	32,100	1,200	5,070	3,680,000	+8,850	3,690,000	5,090	4.39	59.75
1933	752-60	26,500	969	5,760	4,170,000	+2,470	4,170,000	5,760	4.97	67.37
1934	767-50	22,600	1,380	5,740	4,156,000	+1,960	4,158,000	5,743	4.95	67.24
1935	792-57	24,800	604	4,364	3,159,000	-53,060	3,106,000	4,290	3.70	50.21
1936	812-52	20,600	458	3,563	2,586,000	+53,100	2,640,000	3,636	3.13	42.56
1937	832-50	20,000	522	4,125	2,986,000	-640	2,986,000	4,124	3.56	48.26
1938	862-53	19,700	1,030	4,118	2,981,000	+1,060	2,982,000	4,119	3.55	48.18

Note.- Storage above Diablo Dam began in August 1929.

Skagit River near Concrete, Wash.
(Drainage area, 2,700 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Diablo and Lake Shannen Reservoirs (acre-feet)	Adjusted for change in reservoir contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1925	612-62	85,400	3,400	17,200	12,500,000	-	12,500,000	17,200	6.37	86.51
1926	632-63	42,100	-	9,760	7,060,000	+48,600	7,110,000	9,820	3.64	49.42
1927	652-44	56,700	5,200	14,600	10,600,000	+106,000	10,700,000	14,800	5.48	74.26
1928	672-38	81,200	-	15,800	11,400,000	-57,800	11,400,000	15,700	5.81	79.06
1929	692-69	62,200	-	11,100	8,070,000	-15,200	8,050,000	11,100	4.11	55.87
1930	707-73	30,800	-	10,900	7,880,000	+89,000	7,970,000	11,000	4.07	55.36
1931	722-70	51,300	3,490	12,600	9,110,000	+530	9,120,000	12,600	4.67	63.28
1932	737-57	129,000	4,680	15,800	11,400,000	+22,400	11,500,000	15,800	5.85	79.66
1933	752-61	97,800	5,200	18,100	13,100,000	+66,200	13,200,000	18,200	6.74	91.68
1934	767-51	85,000	5,510	19,740	14,290,000	-34,780	14,250,000	19,690	7.29	98.96
1935	792-58	120,000	5,360	15,960	11,550,000	-9,740	11,540,000	15,950	5.91	80.15
1936	812-53	52,400	4,640	13,380	9,712,000	-67,400	9,645,000	13,290	4.92	67.02
1937	832-51	62,600	2,610	12,190	8,827,000	+54,140	8,882,000	12,270	4.54	61.66
1938	862-54	63,500	3,150	14,830	10,730,000	+3,820	10,740,000	14,830	5.49	74.53
1939	882-59	68,400	4.100	14,080	10,190,000	+21,310	10,220,000	14,110	5.23	70.89

Summary of yearly discharge, in second-feet, at stations in Skagit River Basin--Continued

Skagit River near Concrete, Wash.--Continued
Calendar year

Year	W.S.P. (no. and page)	Observed: Discharge in second-feet: Maximum	Observed: Discharge in second-feet: Minimum	Observed: Discharge in second-feet: Mean	Observed: Run-off in acre-feet	Change in contents in Diablo and Lake Shannon Reservoirs (acre-feet)	Adjusted for change in reservoir contents: Run-off in acre-feet	Adjusted: Discharge in second-feet: Mean	Adjusted: Discharge in second-feet: Per square mile	Adjusted: Run-off in inches
1925	612-62	61,300	-	15,400	11,100,000	+76,000	11,200,000	15,500	5.74	77.65
1926	632-63	56,700	3,650	10,700	7,750,000	+15,200	7,760,000	10,700	3.96	53.88
1927	652-44	-	5,440	15,700	11,400,000	+46,000	11,400,000	15,700	5.81	79.17
1928	672-38	81,200	-	13,900	10,100,000	-31,600	10,100,000	13,900	5.15	69.85
1929	692-69	44,400	-	9,920	7,190,000	+9,050	7,200,000	9,940	3.68	49.94
1930	707-73	30,800	-	11,300	8,190,000	+23,800	8,210,000	11,300	4.19	57.06
1931	722-70	51,300	3,490	13,400	9,660,000	+93,100	9,760,000	13,500	5.00	67.73
1932	737-57	129,000	5,530	18,000	13,100,000	+23,700	13,100,000	18,000	6.67	90.97
1933	752-61	85,000	5,200	19,400	14,080,000	+1,170	14,100,000	19,400	7.19	97.79
1934	767-51	80,500	5,360	17,700	12,810,000	-910	12,810,000	17,700	6.56	88.96
1935	792-58	120,000	4,940	13,670	9,899,000	-129,600	9,769,000	13,490	5.00	67.83
1936	812-53	52,400	2,610	13,210	9,589,000	+74,250	9,665,000	13,310	4.93	67.14
1937	832-51	63,500	2,860	14,530	10,520,000	+57,860	10,580,000	14,610	5.41	73.45
1938	862-54	59,700	4,100	13,360	9,673,000	-9,610	9,664,000	13,350	4.94	67.07

Skagit River near Sedro Woolley, Wash.
(Drainage area, 2,970 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30: Maximum day	Water year: Minimum days	Water year: Mean	Water year: Per square mile	Water year: Run-off: Inches	Water year: Run-off: Acre-feet	Calendar year: Maximum day	Calendar year: Minimum day	Calendar year: Mean	Calendar year: Per square mile	Calendar year: Run-off: Inches	Calendar year: Run-off: Acre-feet
1909	552-61	92.6	3.54	11.9	4.01	54.48	8,620	198.0	5.16	14.5	4.88	66.44	10,500
1910	552-61	198.0	4.89	18.7	6.30	85.55	13,600	89.1	4.89	19.3	6.50	88.37	14,000
1911	552-61	89.1	4.30	17.6	5.93	80.57	12,700	65.1	3.04	14.5	4.88	66.31	10,500
1912	552-61	65.1	3.04	14.4	4.85	65.85	10,400	50.6	3.78	14.2	4.78	65.40	10,300
1913	552-61	69.2	3.78	16.9	5.69	77.17	12,200	69.2	4.90	17.5	5.89	79.83	12,700
1914	552-61	104.0	5.77	16.2	5.45	74.03	11,700	104.0	5.29	16.0	5.39	73.17	11,600
1915	552-61	66.5	2.83	10.7	3.60	48.94	7,750	66.5	2.83	10.6	3.57	48.61	7,700
1916	552-61	75.0	2.83	18.1	6.09	82.94	13,100	75.0	3.27	17.1	5.76	78.37	12,400
1917	552-61	57.6	4.50	15.8	5.32	72.19	11,400	155.0	5.33	18.4	6.20	84.20	13,300
1918	552-61	155.0	5.69	19.6	6.60	89.29	14,200	119.0	5.90	19.0	6.40	86.52	13,700
1919	552-61	67.6	5.90	17.5	5.89	80.15	12,700	76.6	5.00	17.0	5.72	77.58	12,300
†1920	552-61	-	-	15.6	5.25	71.28	11,300	-	-	16.0	5.39	73.20	11,600
†1921	552-61	-	-	19.1	6.43	87.42	13,900	188.0	5.39	21.1	7.10	96.24	15,300
1922	552-61	188.0	4.68	17.0	5.72	77.78	12,300	74.6	-	13.9	4.68	63.51	10,100
1923	572-50	60.3	-	15.3	5.15	70.01	11,100	59.4	3.61	14.9	5.02	67.86	10,800
†1924	572-50	-	-	14.9	5.02	68.04	10,800	-	-	-	-	-	-

Note.- Figures of maximum, minimum, and mean discharge and run-off in acre-feet in the above table expressed in thousands.

†Daily discharge for incomplete year published in water-supply paper; monthly discharge for periods of missing record estimated and monthly and yearly figures published in Washington State Water-Supply Bulletin No. 5 and Water-Supply Paper 870, p. 181.

Thunder Creek near Marblemount, Wash.
(Drainage area, 111 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30: Maximum day	Water year: Minimum day	Water year: Mean	Water year: Per square mile	Water year: Run-off: Inches	Water year: Run-off: Acre-feet	Calendar year: Maximum day	Calendar year: Minimum day	Calendar year: Mean	Calendar year: Per square mile	Calendar year: Run-off: Inches	Calendar year: Run-off: Acre-feet
1920	532-58	2,500	92	639	5.76	78.39	463,000	2,800	143	655	5.90	80.43	475,000
1921	532-58	3,800	168	750	6.76	91.83	543,000	6,330	168	836	7.53	102.25	605,000
1922	552-73	6,330	-	728	6.56	89.17	528,000	2,510	71	623	5.61	76.21	451,000
1923	572-53	2,430	-	684	6.16	83.62	495,000	2,430	116	666	6.00	81.51	482,000
1924	592-66	3,930	116	614	5.53	75.41	446,000	3,930	124	657	5.92	80.66	477,000
1925	612-64	3,060	-	708	6.38	86.60	512,000	2,660	119	664	5.98	81.30	481,000
1926	632-66	2,120	119	556	5.01	68.05	403,000	4,380	152	608	5.48	74.37	440,000
1927	652-45	4,380	124	671	6.05	82.06	485,000	2,600	124	702	6.32	85.93	508,000
1928	672-40	2,680	155	739	6.66	90.46	536,000	4,290	91	676	6.09	82.82	490,000
1929	692-71	4,290	-	531	4.78	65.05	385,000	2,050	-	481	4.33	58.87	348,000
1930	707-75	1,950	-	519	4.68	63.53	376,000	-	-	-	-	-	-

Cascade River at Marblemount, Wash.
(Drainage area, 180 square miles)

1929	737-61	8,310	-	734	4.08	55.39	532,000	3,220	-	656	3.64	49.44	475,000
1930	737-61	2,320	-	769	4.27	58.00	557,000	2,320	-	824	4.58	62.13	596,000
1931	737-61	3,370	244	867	4.82	65.38	628,000	3,370	282	902	5.01	67.96	653,000
1932	737-61	9,250	279	1,060	5.89	80.41	772,000	9,250	214	1,210	6.72	91.43	878,000
1933	752-65	6,650	214	1,270	7.06	95.48	917,000	5,160	-	1,380	7.67	103.69	997,000
1934	767-55	5,160	287	1,331	7.39	100.35	963,400	6,720	259	1,169	6.49	88.16	846,200
1935	792-62	8,550	259	1,085	6.03	81.79	785,200	8,550	220	914	5.08	68.90	661,500
1936	812-57	4,200	187	906	5.03	68.49	657,700	4,200	166	916	5.09	69.21	664,700
1937	832-55	3,850	158	817	4.54	61.56	591,700	5,760	158	942	5.23	70.95	681,700
1938	862-58	5,760	237	960	5.33	72.37	694,800	3,960	281	898	4.99	67.69	650,000
1939	882-64	4,880	251	969	5.38	73.03	701,400	-	-	-	-	-	-

Summary of yearly discharge, in second-feet, at stations in Skagit River Basin--Continued

Sauk River above Whitechuck River, near Darrington, Wash.
(Drainage area, 152 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
*1917	482-49	-	-	-	-	-	-	17,400	-	-	-	-	-
1918	482-49	17,400	-	1,320	8.68	117.77	955,000	7,380	-	1,250	8.22	111.68	906,000
1919	512-91	6,380	210	1,230	8.09	109.49	887,000	5,130	178	1,160	7.63	103.33	837,000
1920	512-91	6,880	178	1,050	6.91	94.24	763,000	7,480	275	1,090	7.17	97.88	793,000
1921	532-62	7,480	275	1,410	9.28	125.67	1,020,000	16,700	275	1,590	10.5	141.69	1,150,000
1922	552-75	16,700	220	1,160	7.63	103.85	842,000	-	-	-	-	-	-
1923	692-73	5,340	-	790	5.20	70.43	571,000	3,620	-	712	4.68	63.56	516,000
1930	707-77	4,020	-	763	5.02	68.02	552,000	4,020	-	788	5.18	70.36	570,000
1931	722-75	5,600	168	931	6.12	83.14	674,000	5,600	-	1,010	6.64	89.73	728,000
1932	752-66	14,600	204	1,210	7.96	108.22	876,000	14,600	152	1,390	9.14	124.60	1,010,000
1933	752-66	10,100	152	1,440	9.47	128.69	1,040,000	9,720	196	1,590	10.5	141.64	1,150,000
1934	767-56	9,720	224	1,461	9.61	130.34	1,057,000	8,030	188	1,278	8.41	114.15	925,400
1935	792-63	12,700	188	1,229	8.09	109.97	889,900	12,700	181	983	6.47	87.97	711,900
1936	812-58	3,970	130	923	6.07	82.59	670,200	3,970	115	951	6.26	85.07	690,200
1937	832-57	3,800	115	862	5.67	76.98	623,900	4,520	128	1,046	6.88	93.40	757,100
1938	862-59	6,030	149	1,020	6.71	91.07	738,400	6,030	153	906	5.96	80.85	655,600
1939	882-65	5,140	153	1,070	7.04	95.61	774,900	-	-	-	-	-	-

*Calendar year incomplete.

Sauk River at Darrington, Wash.
(Drainage area, 293 square miles)

1915	412-95	20,600	340	1,410	4.81	65.37	1,020,000	20,600	340	1,380	4.71	63.67	996,000
1916	442-55	12,500	370	2,350	8.02	109.23	1,710,000	9,860	370	2,120	7.24	98.65	1,540,000
1917	462-51	7,390	370	1,930	6.59	89.46	1,400,000	-	400	2,460	8.40	113.83	1,780,000
1918	482-51	-	400	2,510	8.57	116.22	1,820,000	12,300	489	2,390	8.16	110.69	1,730,000
1919	512-94	12,800	489	2,550	8.70	118.15	1,850,000	16,900	471	2,410	8.23	111.82	1,750,000
1920	512-94	16,900	471	1,960	6.69	91.18	1,430,000	13,300	588	2,020	6.89	93.62	1,460,000
1921	532-64	13,300	555	2,470	8.43	114.46	1,790,000	27,000	555	2,720	9.28	126.15	1,970,000
1922	552-77	27,000	315	2,030	6.93	93.95	1,470,000	11,800	315	1,590	5.43	73.63	1,150,000
1923	572-55	11,800	469	1,880	6.42	87.09	1,360,000	10,300	432	1,910	6.52	88.74	1,390,000
1924	592-68	19,000	432	1,830	6.25	85.35	1,330,000	19,000	-	2,090	7.13	97.20	1,520,000
1925	612-66	10,800	398	2,390	8.16	110.72	1,730,000	10,800	286	2,110	7.20	97.77	1,530,000
1926	632-67	10,000	286	1,460	4.98	67.88	1,060,000	-	-	-	-	-	-
1929	692-74	10,000	300	1,480	5.05	68.55	1,070,000	6,630	300	1,330	4.54	61.67	962,000
1930	707-78	7,280	-	1,530	5.22	70.94	1,110,000	7,280	-	1,590	5.43	73.48	1,150,000
1931	722-76	10,500	315	1,780	6.08	82.35	1,290,000	10,500	450	1,940	6.62	89.84	1,400,000
1932	737-66	25,000	450	2,240	7.65	103.99	1,620,000	-	-	-	-	-	-

Sauk River near Sauk, Wash.
(Drainage area, 714 square miles)

1929	692-76	17,500	676	3,050	4.27	57.99	2,210,000	11,800	578	2,770	3.88	52.58	2,010,000
1930	707-79	13,000	-	3,050	4.27	58.01	2,210,000	13,000	-	3,180	4.45	60.43	2,300,000
1931	722-77	19,200	896	3,600	5.04	68.49	2,610,000	19,200	1,040	3,880	5.43	73.71	2,810,000
1932	737-67	51,400	1,040	4,620	6.47	88.15	3,360,000	51,400	964	5,350	7.49	101.89	3,880,000
1933	752-68	34,200	964	5,450	7.63	103.53	3,950,000	35,900	1,270	5,970	8.36	113.51	4,320,000
1934	767-57	35,900	1,120	5,919	8.29	112.46	4,285,000	28,100	952	5,150	7.21	97.86	3,729,000
1935	792-64	46,300	952	4,650	6.51	88.42	3,366,000	46,300	944	3,829	5.36	72.79	2,772,000
1936	812-59	15,200	944	3,824	5.36	72.98	2,776,000	15,200	628	3,914	5.48	74.71	2,842,000
1937	832-58	15,000	628	3,546	4.97	67.42	2,567,000	18,000	790	4,209	5.89	80.04	3,047,000
1938	862-60	23,000	791	4,154	5.82	78.95	3,008,000	23,000	847	3,756	5.26	71.38	2,719,000
1939	882-66	19,000	847	4,138	5.80	78.64	2,996,000	-	-	-	-	-	-

Baker River below Anderson Creek, near Concrete, Wash.
(Drainage area, 184 square miles)

1911	312-679	-	410	2,250	12.2	166.39	1,630,000	7,000	410	1,880	10.2	138.76	1,360,000
1912	332-46	6,280	524	1,940	10.5	143.28	1,410,000	6,280	572	1,940	10.5	143.68	1,410,000
1913	362-42	7,750	457	2,200	12.0	162.22	1,590,000	8,460	431	2,250	12.2	166.26	1,630,000
1914	392-38	22,700	431	1,970	10.7	145.77	1,430,000	22,700	554	2,000	10.9	147.72	1,450,000
1915	412-98	17,200	554	1,660	9.02	122.07	1,200,000	17,200	554	1,660	9.02	122.63	1,200,000
1916	442-57	12,600	525	2,190	11.9	161.69	1,590,000	12,600	508	1,960	10.7	144.72	1,420,000
1917	462-53	7,600	508	1,910	10.4	141.36	1,390,000	27,400	525	2,420	13.2	178.34	1,750,000
1918	482-55	27,400	505	2,600	14.1	191.74	1,880,000	20,200	505	2,390	13.0	176.54	1,730,000
1919	512-99	14,800	591	1,980	10.8	146.24	1,440,000	16,000	220	1,910	10.4	140.70	1,380,000
1920	512-99	16,000	220	2,000	10.9	147.85	1,450,000	17,800	575	2,100	11.4	155.13	1,520,000
1921	532-72	17,800	660	2,350	12.8	173.40	1,700,000	19,600	722	2,520	13.7	185.74	1,820,000
1922	552-79	19,600	398	2,030	11.0	149.84	1,470,000	9,510	398	1,700	9.24	125.75	1,230,000
1923	572-57	9,510	-	1,790	9.73	132.19	1,300,000	6,090	460	1,700	9.24	125.66	1,230,000
1924	592-70	16,700	460	1,830	9.95	134.98	1,330,000	16,700	610	2,150	11.7	159.09	1,560,000
1925	612-68	-	548	2,210	12.0	162.90	1,600,000	-	-	-	-	-	-
1929	692-79	15,000	-	1,540	8.37	113.68	1,120,000	5,740	-	1,360	7.39	100.54	987,000
1930	707-81	5,830	408	1,550	8.42	114.38	1,120,000	5,830	-	1,640	8.91	120.56	1,180,000
1931	722-79	14,900	575	1,880	10.2	139.12	1,370,000	-	-	-	-	-	-

Summary of yearly discharge, in second-feet, at stations in
UPPER COLUMBIA RIVER BASIN
COLUMBIA RIVER MAIN STEM

Columbia River at Birchbank (Trail), British Columbia
(International gaging station)
(Drainage area, 34,000 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
†1913	442-49	312	-	-	-	-	-	312	-	-	-	-	-
1914	442-49	222	15.5	74.9	2.20	29.82	54,200	222	15.5	76.8	2.26	30.62	55,600
1915	442-49	149	15.5	67.6	1.99	26.98	48,900	149	15.5	65.3	1.92	26.08	47,300
1916	442-49	306	12.0	81.3	2.39	32.54	59,000	306	12.0	80.7	2.37	32.28	58,500
1917	462-55	224	9.6	67.9	2.00	27.10	49,200	224	9.6	69.6	2.05	27.75	50,400
1918	462-57	274	16.2	75.9	2.23	30.29	54,900	274	16.2	76.2	2.24	30.42	55,100
1919	512-102	229	13.0	73.2	2.15	29.37	53,200	229	13.0	69.9	2.06	27.96	50,600
1920	512-102	263	11.0	66.9	1.97	26.91	48,900	263	11.0	73.0	2.15	29.21	53,000
1921	532-80	270	19.7	82.3	2.42	32.89	59,600	270	19.7	80.5	2.37	32.14	58,300
1922	552-81	244	14.2	71.3	2.10	28.54	51,700	244	14.2	69.5	2.04	27.81	50,300
1923	572-58	253	13.0	73.9	2.17	29.61	53,800	253	13.0	72.8	2.14	29.06	52,700
1924	592-72	199	13.0	61.0	1.80	24.50	44,400	199	13.0	63.3	1.86	25.36	46,000
1925	612-69	245	23.3	81.7	2.40	32.71	59,400	245	16.3	79.2	2.33	31.59	57,300
1926	632-69	138	12.4	52.3	1.54	20.90	37,800	138	12.4	56.3	1.66	22.47	40,800
1927	652-46	258	13.2	77.4	2.28	30.90	56,000	258	13.2	81.9	2.41	32.73	59,300
1928	672-41	306	18.1	85.4	2.51	34.16	62,000	306	16.4	77.7	2.29	31.11	56,400
1929	692-80	224	10.0	56.2	1.65	22.49	40,800	224	10.0	54.9	1.61	21.91	39,800
1930	707-82	189	11.6	62.0	1.82	24.75	44,900	189	11.6	62.1	1.83	24.78	44,900
1931	722-81	189	11.6	57.0	1.68	22.80	41,300	189	11.6	58.2	1.71	23.25	42,100
1932	737-68	270	13.4	76.3	2.24	30.49	55,400	270	13.4	77.5	2.28	31.00	56,200
1933	767-62	288	14.8	80.55	2.37	32.19	58,310	288	14.8	84.36	2.48	33.70	61,070
1934	767-62	274	23.3	86.73	2.55	34.63	62,780	274	22.8	83.39	2.45	33.32	60,370
1935	792-68	238	17.8	73.20	2.15	29.18	53,000	238	15.6	71.09	2.09	28.38	51,490
1936	812-64	271	10.2	65.00	1.91	26.03	47,200	271	10.2	64.00	1.88	25.64	46,500
1937	832-64	183	8.94	52.50	1.54	20.95	38,000	183	8.94	55.70	1.64	22.26	40,400
1938	862-66	259	15.7	71.50	2.10	28.59	51,800	259	15.7	70.00	2.06	27.98	50,700
1939	882-72	195	12.9	63.30	1.86	25.28	45,800	-	-	-	-	-	-

Columbia River at Kettle Falls, Wash.
(Drainage area, 64,500 square miles)

1914	572-60	-	-	105	1.63	22.03	75,900	-	-	107	1.66	22.51	77,500
1915	572-60	-	-	91.4	1.42	19.22	66,200	-	-	88.3	1.37	18.57	64,000
1916	572-60	458	-	124	1.92	26.07	89,700	458	-	124	1.92	26.06	89,700
1917	572-60	367	-	104	1.61	21.84	75,200	367	-	104	1.61	21.85	75,300
1918	572-60	396	-	109	1.69	22.84	78,600	396	-	109	1.69	23.01	79,300
1919	572-60	309	-	100	1.55	21.08	72,400	309	-	95.9	1.49	20.22	69,400
1920	572-60	332	-	92.5	1.43	19.54	67,200	332	-	100	1.55	21.17	72,800
1921	572-60	420	-	116	1.80	24.38	83,900	420	-	112	1.74	23.58	81,200
1922	572-60	373	20.9	95.9	1.49	20.18	69,500	373	-	93.8	1.45	19.72	67,900
1923	572-60	371	-	99.7	1.55	21.00	72,200	371	-	98.6	1.53	20.76	71,400
1924	592-73	287	-	79.8	1.24	16.84	57,900	287	-	81.7	1.27	17.25	59,300
1925	612-71	373	31.7	116	1.80	24.35	83,700	373	24.6	114	1.77	23.95	82,400
1926	632-71	168	21.0	68	1.05	14.33	49,200	168	21.0	73.2	1.13	15.42	53,000
1927	652-47	413	-	115	1.78	24.30	83,600	413	-	124	1.92	26.10	89,800
1928	672-42	466	33.3	128	1.98	26.99	92,800	466	24.4	115	1.78	24.27	83,400
1929	692-81	313	-	75.2	1.17	15.83	54,400	313	-	73	1.13	15.36	52,900
1930	707-83	246	-	79.5	1.23	16.72	57,500	246	-	80.5	1.25	16.94	58,300
1931	722-82	240	18.4	75.7	1.17	15.93	54,800	240	18.4	75.8	1.18	15.95	54,900
1932	737-69	351	-	104	1.61	21.91	75,400	351	-	107	1.66	22.52	77,400
1933	752-69	435	23.4	116	1.80	24.36	83,800	435	23.4	123	1.91	25.79	88,700
1934	767-64	369	49.9	127	1.97	26.72	91,940	369	37.6	121	1.88	25.48	87,620
1935	792-69	335	27.5	103.3	1.60	21.76	74,820	335	22.8	99.92	1.55	21.03	72,340
1936	812-65	374	14.8	89.98	1.40	19.00	65,320	374	14.8	88.78	1.38	18.75	64,450
1937	832-65	256	13.0	72.95	1.13	15.37	52,810	256	13.0	77.05	1.19	16.23	55,770
1938	862-67	344	26.9	102.7	1.59	21.63	74,360	344	26.1	101.20	1.57	21.30	73,230
1939	882-73	279	22.7	88.83	1.38	18.70	64,310	-	-	-	-	-	-

Columbia River at Grand Coulee, Wash.
(published as Columbia River at Grand Coulee, near Nespelem, Wash., 1913-34)
(Drainage area, 74,100 square miles)

†1913	572-68	492	-	-	-	-	-	492	-	-	-	-	-
1914	572-68	300	32.0	112	1.51	20.60	81,400	300	32.0	114	1.54	20.97	82,900
1915	572-68	215	28.0	96.8	1.31	17.71	70,100	215	28.0	93.7	1.26	17.15	67,800
1916	572-68	477	-	135	1.82	24.77	98,000	477	-	135	1.82	24.76	98,000
1917	572-68	400	-	114	1.54	20.95	82,800	400	-	115	1.55	21.02	83,000
1918	572-68	405	35.0	118	1.59	21.68	85,700	405	34.5	119	1.61	21.79	86,100
1919	572-68	325	23.0	109	1.47	19.95	78,800	325	23.0	105	1.42	19.17	75,700
1920	572-68	335	-	98.9	1.33	18.15	71,800	335	-	107	1.44	19.65	77,700
1921	572-68	440	37.0	127	1.71	23.21	91,700	440	37.0	123	1.66	22.50	88,900
1922	572-68	390	24.0	103	1.39	18.93	74,900	390	-	101	1.36	18.45	73,000
1923	572-68	395	-	109	1.47	20.00	79,000	395	-	108	1.46	19.83	78,300
1924	692-82	305	-	86.2	1.16	15.86	62,600	305	-	88.3	1.19	16.23	64,100
1925	692-82	395	35.0	126	1.70	23.04	91,000	395	28.0	124	1.67	22.65	89,400
1926	692-82	183	25.0	73.5	.992	13.47	53,200	183	25.0	79.7	1.08	14.60	57,700
1927	692-82	434	-	126	1.70	23.11	91,400	434	-	136	1.84	24.99	98,800
1928	692-82	490	40.0	141	1.90	25.96	103,000	490	28.6	126	1.70	23.22	91,800
1929	692-82	318	-	81.1	1.09	14.87	58,700	318	-	78.5	1.06	14.39	56,800
1930	707-84	251	-	84.9	1.15	15.52	61,400	251	-	85.7	1.16	15.68	62,000
1931	722-83	242	21.6	80.8	1.09	14.78	58,500	242	21.6	80.9	1.09	14.79	58,600
1932	737-70	360	-	114	1.54	20.95	82,800	360	-	118	1.59	21.60	85,400
1933	752-71	467	-	126	1.70	23.14	91,400	467	-	135	1.82	24.68	97,600
1934	767-65	378	54.0	140	1.89	25.65	101,400	378	41.6	132	1.78	24.19	95,570

†Year incomplete.

Note.- Figures of maximum, minimum, and mean discharge and run-off in acre-feet in the above table are expressed in thousands.

Summary of yearly discharge, in second-feet, at stations in Columbia River main stem--Continued

Columbia River at Grand Coulee, Wash.--Continued
(Drainage area, 74,100 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1935	792-70	352	31.4	112.5	1.52	20.61	81,440	352	24.9	108.7	1.47	19.93	78,720
1936	812-66	385	19.5	97.57	1.32	17.91	70,830	385	19.5	96.37	1.30	17.68	69,960
1937	832-66	270	15.3	79.4	1.07	14.54	57,500	270	15.3	83.84	1.13	15.35	60,710
1938	862-68	362	34.8	113.2	1.53	20.74	81,960	362	28.1	111.3	1.50	20.39	80,570
1939	882-74	290	26.4	95.7	1.29	17.53	69,280	-	-	-	-	-	-

Note.- Figures of maximum, minimum, and mean discharge, and run-off in acre-feet in the above table are expressed in thousands.

Columbia River at Trinidad, Wash.
(published as Columbia River at Wenatchee, Wash., 1913-17, drainage area, 88,500 square miles, and Columbia River at Vernita, Wash., 1917-30, drainage area, 95,500 square miles)
(Drainage area, 89,700 square miles)

*1913	462-57	528	-	-	-	-	-	528	-	-	-	-	-
1914	462-57	343	-	127	1.44	19.53	91,600	343	-	128	1.45	19.79	92,800
1915	462-57	232	-	106	1.20	16.30	76,900	232	-	103	1.16	15.77	74,400
1916	462-57	520	-	153	1.73	23.64	112,000	520	-	153	1.73	23.59	111,000
1917	462-57	430	24.6	127	1.34	18.20	91,900	430	24.6	128	1.34	18.24	92,800
1918	482-59	430	41.3	133	1.39	18.90	96,200	430	41.3	133	1.39	18.94	96,400
1919	512-104	368	-	123	1.29	17.45	88,800	368	23.9	118	1.24	16.77	85,300
1920	512-104	359	23.9	107	1.12	15.24	77,600	359	-	116	1.21	16.46	83,800
1921	532-81	484	41.9	142	1.49	20.20	103,000	484	41.9	138	1.45	19.71	100,000
1922	552-83	424	27.2	114	1.19	16.20	82,600	424	27.2	111	1.16	15.74	80,300
1923	572-72	429	-	120	1.26	17.13	87,200	429	-	119	1.25	16.98	86,400
1924	592-76	337	-	94.6	.991	13.46	68,600	337	-	96.7	1.01	13.76	70,200
1925	612-73	434	39.3	137	1.43	19.54	99,400	434	33.2	135	1.41	19.26	98,000
1926	632-73	195	29.0	80.2	.840	11.41	58,100	195	29.0	86.5	.906	12.30	62,600
1927	652-48	471	36.3	138	1.45	19.59	99,700	471	36.3	150	1.57	21.28	108,000
1928	672-43	523	48.8	156	1.63	22.21	113,000	523	33.2	139	1.46	19.82	101,000
1929	692-85	347	-	88.3	.925	12.58	64,000	347	-	85.7	.897	12.18	62,000
1930	707-86	270	-	91.9	.962	13.04	66,400	270	-	92.1	.980	13.18	66,700
1931	722-84	257	23.8	85.9	.958	13.01	62,200	257	23.8	86.0	.959	13.01	62,200
1932	737-71	385	22.9	121	1.35	18.34	87,800	385	22.9	125	1.39	18.98	90,900
1933	752-72	508	31.5	136	1.52	20.63	98,800	508	31.5	146	1.63	22.10	106,000
1934	767-66	401	58.8	153.1	1.71	23.18	110,800	401	45.3	143.9	1.60	21.78	104,200
1935	792-71	376	-	122.3	1.36	18.50	88,520	376	29.1	118.3	1.32	17.90	85,610
1936	812-67	411	22.0	102.8	1.15	15.61	74,620	411	22.0	101.4	1.13	15.39	73,620
1937	832-67	289	20.0	85.4	.952	12.92	61,820	289	20.0	90.06	1.00	13.64	65,200
1938	862-69	391	37.6	120.1	1.34	18.18	86,940	391	32.3	118.1	1.32	17.88	85,510
1939	882-75	297	27.0	100.1	1.12	15.15	72,450	-	-	-	-	-	-

*Year incomplete.
Note.- Figures of maximum, minimum, and mean discharge and run-off in acre-feet in the above table are expressed in thousands.

KOOTENAI RIVER BASIN

Kootenai River near Rexford, Mont.
(Drainage area, 8,420 square miles)

1930	707-87	46,400	1,750	8,900	1.06	14.35	6,450,000	46,400	1,590	8,940	1.06	14.42	6,480,000
1931	722-85	34,700	1,590	6,630	.787	10.72	4,810,000	34,700	1,560	6,570	.780	10.61	4,760,000
1932	737-72	61,400	1,280	10,900	1.29	17.61	7,920,000	61,400	1,280	11,200	1.33	18.12	8,150,000
1933	752-73	87,300	1,650	12,200	1.45	19.69	8,840,000	87,300	1,650	13,000	1.54	21.00	9,420,000
1934	767-71	64,000	2,720	13,240	1.57	21.34	9,584,000	64,000	2,720	12,320	1.46	19.88	8,924,000
1935	792-73	46,700	1,700	10,450	1.24	16.82	7,566,000	46,700	1,700	10,330	1.23	16.62	7,478,000
1936	812-69	48,400	1,100	8,009	.951	12.96	5,814,000	48,400	1,100	7,800	.926	12.61	5,662,000
1937	832-69	37,200	1,140	7,200	.855	11.62	5,213,000	37,200	-	7,683	.912	12.40	5,562,000
1938	862-71	69,900	1,700	11,450	1.36	18.47	8,292,000	69,900	1,840	11,210	1.33	18.07	8,114,000
1939	882-77	39,100	1,200	8,663	1.03	13.98	6,272,000	-	-	-	-	-	-

Kootenai River at Libby, Mont.
(Drainage area, 10,240 square miles)

1913	362-47	77,300	2,040	13,100	1.28	17.38	9,510,000	77,300	2,040	13,200	1.29	17.48	9,554,000
1914	392-44	56,900	1,690	12,600	1.23	16.67	9,100,000	56,900	1,690	12,900	1.26	17.13	9,358,000
1915	412-101	34,000	-	10,200	.996	13.48	7,380,000	34,000	-	9,740	.951	12.90	7,054,000
*1916	442-62	129,000	-	-	-	-	-	129,000	-	-	-	-	-
1918	482-60	75,600	1,960	11,600	1.13	15.34	8,360,000	75,600	2,250	11,700	1.14	15.55	8,480,000
1929	692-88	56,600	2,160	9,330	.911	12.42	6,770,000	56,600	-	9,010	.879	11.95	6,520,000
1930	707-88	50,700	-	9,960	.973	13.20	7,210,000	50,700	-	10,000	.977	13.31	7,266,000
1931	722-86	40,600	1,990	7,430	.726	9.86	5,380,000	40,600	1,760	7,340	.717	9.74	5,317,000
1932	737-73	61,400	1,520	11,900	1.16	15.87	8,660,000	61,400	1,370	12,300	1.21	16.41	8,960,000
1935	792-74	51,800	1,800	11,960	1.17	15.86	8,656,000	51,800	1,800	11,640	1.14	15.44	8,428,000
1936	812-70	48,800	-	8,927	.872	11.85	6,481,000	48,800	-	8,731	.853	11.59	6,338,000
1937	832-70	40,400	1,230	8,211	.802	10.88	5,944,000	40,400	1,230	8,690	.849	11.52	6,291,000
1938	862-72	78,800	1,800	12,440	1.21	16.51	9,009,000	78,800	1,230	12,220	1.19	16.21	8,850,000
1939	882-78	40,400	-	9,531	.931	12.62	6,900,000	-	-	-	-	-	-

*Year incomplete.

Summary of yearly discharge, in second-feet, at stations in Kootenai River Basin--Continued

Kootenai River at Leonia, Idaho
(Drainage area, 11,740 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1929	692-89	59,700	-	10,500	0.894	12.20	7,640,000	59,700	2,000	10,100	0.860	11.66	7,300,000
1930	707-89	55,700	2,000	11,100	.945	12.80	8,000,000	55,700	2,150	11,100	.945	12.87	8,050,000
1931	722-87	46,000	2,050	8,320	.708	9.60	6,020,000	46,000	1,950	8,220	.700	9.49	5,950,000
1932	737-74	70,400	1,900	14,200	1.21	16.42	10,300,000	70,400	1,900	14,700	1.25	17.04	10,700,000
1933	752-75	95,500	1,700	16,200	1.38	18.71	11,700,000	95,500	1,700	17,800	1.52	20.52	12,800,000
1934	767-73	74,400	4,730	18,380	1.57	21.25	13,310,000	74,400	2,200	16,900	1.44	19.53	12,240,000
1935	792-75	63,200	1,900	13,880	1.18	16.04	10,050,000	63,200	1,900	13,370	1.14	15.46	9,682,000
1936	812-71	53,700	1,320	10,340	.881	12.00	7,508,000	53,700	1,070	10,140	.864	11.77	7,358,000
1937	832-71	46,900	1,070	9,414	.802	10.90	6,816,000	46,900	1,290	9,985	.851	11.55	7,229,000
1938	862-73	82,800	2,570	14,640	1.25	16.91	10,600,000	82,800	1,550	14,320	1.22	16.55	10,370,000
1939	882-79	46,700	1,500	10,800	.920	12.48	7,815,000	-	-	-	-	-	-

Kootenai River at Bonners Ferry, Idaho
(Drainage area, 13,000 square miles)

1929	692-92	62,700	2,590	11,200	.862	11.67	8,090,000	62,700	2,090	10,600	.815	11.13	7,710,000
1930	707-92	59,200	2,090	11,700	.900	12.24	8,470,000	59,200	2,260	11,800	.908	12.32	8,520,000
1931	722-90	49,400	2,160	8,780	.675	9.18	6,360,000	49,400	2,100	8,700	.669	9.08	6,300,000
1932	737-77	74,700	2,080	15,300	1.18	15.97	11,100,000	74,700	2,080	15,900	1.22	16.59	11,500,000
1933	752-78	99,800	1,930	17,700	1.36	18.44	12,800,000	99,800	1,930	19,300	1.48	20.19	14,000,000
1934	767-75	87,800	4,620	19,940	1.53	20.83	14,440,000	87,800	2,650	18,330	1.41	19.13	13,270,000
1935	792-77	69,000	2,000	15,200	1.17	15.87	11,000,000	69,000	2,000	14,650	1.13	15.31	10,610,000
1936	812-73	55,700	1,300	11,130	.856	11.66	8,082,000	55,700	1,300	10,930	.841	11.44	7,934,000
1937	832-73	52,300	1,400	10,360	.797	10.81	7,499,000	52,300	1,400	11,000	.846	11.48	7,965,000
1938	862-75	89,800	2,800	16,010	1.23	16.71	11,590,000	89,800	1,650	15,620	1.20	16.30	11,310,000
1939	882-81	50,200	1,600	11,560	.889	12.07	8,367,000	-	-	-	-	-	-

Kootenai River near Copeland, Idaho
(Drainage area, 13,400 square miles)

1930	707-100	60,200	2,210	12,000	.896	12.12	8,660,000	60,200	2,300	12,000	.896	12.19	8,700,000
1931	722-94	50,000	2,200	9,020	.673	9.15	6,540,000	50,000	2,140	8,930	.666	9.05	6,470,000
1932	737-81	74,500	2,140	15,700	1.17	15.95	11,400,000	74,500	2,170	16,300	1.22	16.60	11,900,000
1933	752-82	90,500	1,990	18,100	1.35	18.34	13,100,000	90,500	1,990	19,800	1.48	20.04	14,300,000
1934	767-79	86,000	4,800	20,710	1.55	20.97	14,990,000	86,000	2,930	19,070	1.42	19.32	13,800,000
1935	792-81	67,100	2,160	15,500	1.16	15.72	11,220,000	67,100	2,160	14,940	1.11	15.14	10,810,000
1936	812-77	57,700	1,350	11,450	.854	11.64	8,312,000	57,700	1,350	11,250	.840	11.44	8,166,000
1937	832-77	52,300	1,410	10,700	.799	10.84	7,750,000	52,300	1,410	11,390	.850	11.53	8,244,000
1938	862-79	87,400	3,000	16,540	1.23	16.75	11,980,000	87,400	1,910	16,120	1.20	16.33	11,670,000
1939	882-85	49,200	1,670	11,910	.889	12.07	8,623,000	-	-	-	-	-	-

Kootenai River at Port Hill, Idaho
(Drainage area, 13,700 square miles)

1929	692-102	59,500	2,400	11,300	.825	11.25	8,220,000	59,500	2,290	10,900	.796	10.85	7,920,000
1930	707-104	61,200	2,290	12,200	.891	12.12	8,860,000	61,200	2,340	12,300	.898	12.20	8,910,000
1931	722-96	52,000	2,240	9,310	.680	9.23	6,740,000	52,000	2,210	9,210	.672	9.13	6,670,000
1932	737-84	77,200	2,210	16,200	1.18	16.13	11,800,000	77,200	2,220	16,900	1.23	16.78	12,300,000
1933	752-85	93,200	2,060	18,700	1.36	18.50	13,500,000	93,200	2,060	20,400	1.49	20.23	14,800,000
1934	767-81	89,300	4,840	21,270	1.55	21.09	15,400,000	89,300	3,050	19,600	1.43	19.41	14,190,000
1935	792-84	69,400	2,330	15,970	1.17	15.82	11,560,000	69,400	2,290	15,370	1.12	15.23	11,130,000
1936	812-79	59,800	1,380	11,760	.858	11.67	8,536,000	59,800	1,380	11,550	.843	11.47	8,387,000
1937	832-80	54,300	1,430	11,030	.805	10.91	7,982,000	54,300	1,430	11,750	.858	11.61	8,506,000
1938	862-82	91,100	3,100	17,100	1.25	16.92	12,380,000	91,100	1,990	16,650	1.22	16.50	12,060,000
1939	882-88	51,100	1,720	12,280	.896	12.18	8,892,000	-	-	-	-	-	-

Boulder Creek near Leonia, Idaho
(Drainage area, 53 square miles)

1930	707-106	568	4	66.0	1.25	16.90	47,900	568	5	65.1	1.23	16.67	47,300
1931	722-98	677	2	66.1	1.25	16.92	47,800	677	2	67.3	1.27	17.25	48,700
1932	737-87	1,100	-	127	2.40	32.67	92,400	1,100	-	142	2.68	36.56	103,000
1933	752-88	1,040	4	157	2.96	40.27	114,000	1,040	4	176	3.32	45.20	128,000
1934	767-83	-	4	174	3.28	44.52	125,800	1,280	4	160	3.02	40.97	115,800
1935	792-86	1,280	6	136	2.57	34.81	98,290	992	5	113	2.13	29.12	82,160
1936	812-81	866	4	81.1	1.53	20.84	58,860	866	4	81.6	1.54	20.97	59,260
1937	832-83	722	5	86.4	1.63	22.12	62,580	722	-	99.0	1.87	25.34	71,700
1938	862-85	1,570	7	135	2.55	34.50	97,480	1,570	7	123	2.32	31.51	88,970
1939	882-91	695	6	79.5	1.50	20.34	57,520	-	-	-	-	-	-

Moyie River at Eastport, Idaho
(Drainage area, 570 square miles)

1930	707-107	3,180	34	484	.849	11.53	350,000	3,180	34	488	.856	11.63	353,000
1931	722-99	2,800	-	312	.547	7.44	226,000	2,800	-	311	.546	7.42	226,000
1932	737-88	5,320	50	682	1.20	16.28	495,000	5,320	52	722	1.27	17.23	524,000
1933	752-89	4,920	52	836	1.47	19.90	605,000	4,920	101	919	1.61	21.88	666,000
1934	767-84	6,100	53	925	1.62	22.02	669,500	6,100	53	824	1.45	19.64	596,700
1935	792-87	4,210	55	641	1.12	15.27	463,800	4,210	64	620	1.09	14.76	448,500
1936	812-82	3,440	46	452	.793	10.80	328,400	3,440	35	444	.779	10.60	322,300
1937	832-84	3,220	-	483	.847	11.51	349,800	3,220	-	526	.923	12.54	381,000
1938	862-86	5,740	57	845	1.48	20.12	611,700	5,740	57	810	1.42	19.30	586,400
1939	882-92	3,600	47	531	.932	12.65	384,400	-	-	-	-	-	-

Summary of yearly discharge, in second-feet, at stations in Kootenai River Basin--Continued

Moyie River at Eileen, Idaho
(Drainage area, 755 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1926	652-51	3,200	88	353	0.468	6.33	256,000	3,200	88	473	0.626	8.47	352,000
1927	652-51	5,910	-	1,080	1.43	19.36	780,000	5,910	-	1,170	1.55	21.06	848,000
1928	672-58	5,910	127	1,080	1.43	19.53	786,000	5,910	-	885	1.17	15.98	643,000
1929	692-105	4,500	-	534	.707	9.61	386,000	4,500	63	513	.679	9.21	370,000
1930	707-109	3,540	60	584	.774	10.49	423,000	3,540	60	590	.781	10.60	427,000
1931	722-100	3,410	72	415	.550	7.46	300,000	3,410	72	414	.548	7.43	300,000
1932	737-89	6,610	77	892	1.18	16.04	648,000	6,610	87	950	1.26	17.09	690,000
1933	752-90	6,230	87	1,070	1.42	19.26	776,000	6,230	142	1,170	1.55	21.05	848,000
1934	767-85	8,380	88	1,211	1.60	21.78	876,500	8,380	88	1,083	1.43	19.48	783,700
1935	792-88	5,890	88	837	1.11	15.05	605,800	5,890	94	810	1.07	14.57	586,600
1936	812-83	4,610	81	587	.777	10.57	425,900	4,610	56	576	.763	10.38	418,300
1937	832-85	3,760	-	604	.800	10.86	437,400	3,760	-	663	.878	11.92	480,100
1938	862-87	6,770	101	1,062	1.41	19.09	768,700	6,770	86	1,014	1.34	18.24	734,300
1939	882-93	4,360	75	654	.866	11.76	473,800	-	-	-	-	-	-

Deep Creek at Moravia, Idaho
(Drainage area, 133 square miles)

1928	672-60	May 8 to Sept. 30						-	9	-	.977	5.30	37,600
1929	692-107	Mar. 17 to Aug. 31						390	8	-	.827	5.16	36,600
1930	707-111	Mar. 19 to Oct. 11						403	8	-	.720	5.55	39,400
1931	722-102	Mar. 10 to Sept. 30						360	7	-	.697	5.30	37,700
1932	737-91	Feb. 27 to Dec. 31						819	10	-	1.45	16.64	118,000
1933	752-92	975	13	177	1.33	18.08	128,000	1,300	13	194	1.46	19.78	140,000
1934	767-97	1,300	9	189	1.42	19.31	137,000	980	9	171	1.29	17.46	123,800
1935	792-89	825	14	157	1.18	16.00	113,500	825	14	144	1.08	14.65	104,000
1936	812-84	920	10	98.0	.737	10.05	71,180	920	10	97.4	.732	9.99	70,730
1937	832-86	830	13	104	.782	10.66	75,540	830	13	127	.955	12.93	91,700
1938	862-88	1,260	11	211	1.59	21.54	152,700	1,260	11	190	1.43	19.45	137,800
1939	882-94	450	10	86.7	.652	8.86	62,810	-	-	-	-	-	-

Note.- Figures for 1928-32 are for periods indicated in those years.

Long Canyon Creek near Port Hill, Idaho
(Drainage area, 29 square miles)

1928	672-70	May 18 to Sept. 6						448	8	-	3.27	13.60	21,000
1929	692-117	Apr. 1 to Sept. 30						580	-	-	2.42	16.46	25,500
1930	707-121	Mar. 20 to Nov. 15						328	5.9	-	2.08	18.64	28,800
1931	722-112	Feb. 26 to Nov. 20						347	6	-	1.65	16.44	25,400
1932	737-101	Mar. 2 to Dec. 8						436	6	-	2.88	30.14	46,700
1933	752-102	Mar. 16 to Dec. 31						950	11	-	3.72	40.20	62,200
1934	767-97	Mar. 1 to Dec. 31						695	7	-	3.02	34.33	53,080
1935	792-90	595	5	63.6	2.19	29.75	46,000	595	5	56.6	1.95	26.50	40,980
1936	812-85	420	-	38.1	1.31	17.89	27,670	420	-	37.9	1.31	17.77	27,500
1937	832-87	426	-	47.1	1.62	22.04	34,070	426	-	52.1	1.80	24.42	37,740
1938	862-89	782	6	76.6	2.64	35.86	55,460	782	6	72.9	2.51	34.12	52,750
1939	882-95	385	-	48.9	1.69	22.89	35,420	-	-	-	-	-	-

Note.- Figures for 1928-34 are for periods indicated in those years.

Smith Creek near Port Hill, Idaho
(Drainage area, 70 square miles)

1928	672-71	May 12 to Sept. 8						1,340	9.5	-	4.51	20.14	75,200
1929	692-118	Mar. 16 to Sept. 30						1,240	5.5	-	2.64	19.50	72,900
1930	707-122	Mar. 21 to Dec. 31						1,040	6.4	-	1.94	20.63	77,100
1931	722-113	1,340	6	114	1.63	22.16	82,600	1,340	6	116	1.66	22.59	84,200
1932	737-102	1,380	8	198	2.83	38.56	144,000	-	-	-	-	-	-
1933	752-103	Mar. 16 to Dec. 15						2,200	13	-	4.17	42.66	159,000
1934	767-98	Mar. 1 to Dec. 31						1,750	6	-	3.44	39.20	146,100
1935	792-91	1,370	8	188	2.69	36.57	136,400	1,370	8	166	2.37	32.19	120,000
1936	812-86	1,330	6	121	1.73	23.68	88,090	1,330	6	120	1.71	23.41	87,060
1937	832-88	1,160	-	126	1.80	24.36	90,940	1,160	-	147	2.10	28.49	106,400
1938	862-90	1,790	8	225	3.21	43.60	162,700	1,790	8	211	3.01	40.90	152,700
1939	882-96	1,190	9	148	2.11	28.68	107,200	-	-	-	-	-	-

Note.- Figures for 1928-30, 1933-34 are for periods indicated in those years.

Boundary Creek near Port Hill, Idaho
(Drainage area, 97 square miles)

1928	672-72	May 17 to Sept. 8						1,600	21	-	3.74	16.02	83,000
1929	692-119	Apr. 18 to Nov. 4						1,080	11	-	1.74	13.01	67,300
1930	707-123	Mar. 21 to Dec. 31						799	-	-	1.30	13.81	71,500
1931	722-114	1,120	13	103	1.06	14.39	74,400	1,120	13	105	1.08	14.71	76,000
1932	737-103	1,550	14	215	2.22	30.15	156,000	1,550	14	226	2.33	31.60	164,000
1933	752-104	2,080	14	237	2.44	33.09	171,000	2,080	-	251	2.59	35.04	181,000
1934	767-99	1,710	14	221	2.28	30.95	160,100	1,710	14	206	2.12	28.85	149,200
1935	792-92	1,400	17	186	1.92	26.07	134,800	1,400	16	176	1.81	24.65	127,500
1936	812-87	1,370	13	131	1.35	18.37	95,140	1,370	9	129	1.33	18.07	93,570
1937	832-89	1,100	9	126	1.30	17.69	91,320	1,100	-	137	1.41	19.20	99,220
1938	862-91	1,920	14	219	2.26	30.62	158,400	1,920	14	213	2.20	29.78	154,100
1939	882-97	1,160	-	152	1.57	21.30	110,200	-	-	-	-	-	-

Note.- Figures for 1928-30 are for periods indicated in those years.

Summary of yearly discharge, in second-feet, at stations in
PEND OREILLE RIVER BASIN

Clark Fork above Missoula, Mont.

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1930	707-124	8,390	224	2,270	1,640,000	8,390	224	2,310	1,675,000
1931	722-115	3,700	368	1,430	1,039,000	3,700	368	1,330	959,700
*1932	737-104	12,200	-	2,210	1,602,000	12,200	-	2.260	1,640,000
*1933	752-105	19,400	-	2,880	2,087,000	19,400	-	3.110	2,255,000
1934	767-100	14,100	697	3,550	2,425,000	14,100	697	3.155	2,284,000
1935	792-93	9,440	654	1,947	1,410,000	9,440	434	1,867	1,352,000
1936	812-88	12,300	474	2,234	1,622,000	12,300	474	2.254	1,636,000
1937	832-90	4,830	340	1,429	1,035,000	4,830	340	1,398	1,012,000
1938	862-92	19,100	350	2,770	2,006,000	19,100	350	2,871	2,078,000
1939	882-98	10,400	360	2,199	1,592,000	-	-	-	-

*Yearly figures not previously published; discharge for periods of missing record estimated.

Clark Fork below Missoula, Mont.

1930	707-125	17,500	1,010	4,220	3,050,000	17,500	1,010	4.280	3,100,000
1931	722-116	11,800	594	2,720	1,970,000	11,800	594	2,490	1,800,000
1932	737-105	24,000	910	4,250	3,080,000	24,000	610	4.340	3,150,000
*1933	752-106	36,300	580	5,170	3,740,000	36,300	580	5.590	4,050,000
*1934	767-101	24,100	1,110	5,875	4,253,000	25,100	1,110	5.594	4,050,000
1935	792-94	19,200	875	3,690	2,671,000	19,200	875	3.475	2,516,000
1936	812-89	26,700	800	4,277	3,105,000	26,700	800	4,291	3,115,000
1937	832-91	11,300	660	2,582	1,869,000	11,300	660	2,542	1,840,000
1938	862-93	35,700	810	4,999	3,619,000	35,700	810	5.195	3,761,000
1939	882-99	21,500	997	4,175	3,022,000	-	-	-	-

*Yearly figures not previously published; discharge for periods of missing record estimated.

Clark Fork at St. Regis, Mont.
(Drainage area, 10,500 square miles)

*1911	312-59	33,800	2,390	7,770	5,630,000	33,800	1,890	7,540	5,457,000
1912	332-59	41,400	1,710	9,030	6,550,000	41,400	1,710	9,190	6,675,000
1913	362-54	62,800	2,280	10,700	7,760,000	62,800	2,280	10,500	7,598,000
1914	392-49	34,000	-	7,220	5,230,000	34,000	-	7,360	5,331,000
1915	412-106	17,300	2,200	5,830	4,220,000	17,300	2,200	5.670	4,107,000
*1916	442-68	52,400	-	11,700	8,460,000	52,400	-	11,900	8,630,000
*1917	462-65	59,100	-	11,200	8,090,000	59,100	-	11,400	8,261,000
1918	482-62	48,400	3,160	10,800	7,840,000	48,400	1,990	10.500	7,564,000
*1919	512-111	29,300	1,680	5,420	3,930,000	29,300	1,680	5.090	3,684,000
*1920	512-111	32,100	-	7,090	5,140,000	32,100	1,330	7,540	5,474,000
1921	532-88	41,800	2,340	8,670	6,270,000	41,800	1,330	8.420	6,099,000
*1922	552-89	47,200	1,330	8,070	5,840,000	47,200	1,330	7,930	5,739,000
1923	572-78	33,100	1,680	7,260	5,260,000	33,100	-	-	-
1930	707-126	21,800	1,430	5,430	3,930,000	21,800	1,430	5.500	3,983,000
1931	722-117	15,600	1,280	3,580	2,590,000	15,600	1,280	3.350	2,426,000
1932	737-106	32,700	1,430	5,980	4,330,000	32,700	1,430	6,160	4,475,000
1933	752-107	50,000	1,200	7,460	5,400,000	50,000	1,200	8.620	6,242,000
1934	767-102	35,200	1,760	9,364	6,780,000	35,200	1,760	8.308	6,015,000
1935	792-95	27,000	1,510	5,494	3,988,000	27,000	1,410	5.186	3,754,000
1936	812-90	33,000	1,080	5,701	4,139,000	33,000	1,080	5,709	4,145,000
1937	832-92	16,700	1,180	3,656	2,647,000	16,700	1,180	3.642	2,636,000
1938	862-94	45,700	1,260	6,708	4,856,000	45,700	1,260	6,933	5,020,000
1939	882-100	26,100	1,280	5,368	3,886,000	-	-	-	-

*Yearly figures not previously published; discharge for periods of missing record estimated.

Clark Fork near Plains, Mont.
(Drainage area, 19,900 square miles)

1913	362-55	115,000	-	24,100	17,400,000	115,000	-	24.100	17,400,000
1914	392-50	67,000	5,970	17,300	12,500,000	67,000	5,970	17,900	13,000,000
1915	412-107	37,400	6,850	15,800	11,400,000	37,400	6,850	15.200	11,000,000
1918	482-63	99,500	5,850	24,100	17,400,000	99,500	6,190	23.800	17,200,000
*1919	512-114	73,800	5,200	15,100	10,900,000	-	-	-	-
1921	532-89	99,000	7,010	22,700	16,500,000	99,000	6,160	22.100	16,000,000
1922	552-91	113,000	4,890	19,500	14,100,000	113,000	4,890	19,300	14,000,000
1923	572-80	94,300	4,900	19,500	14,100,000	94,300	5,350	19,600	14,200,000
1924	592-80	79,200	-	16,000	11,600,000		-	-	-
1926	632-76	46,800	6,000	12,600	9,150,000	46,800	6,000	13,900	10,100,000
1927	652-53	117,000	7,740	26,700	19,300,000	117,000	7,740	28.100	20,400,000
*1928	672-73	126,000	-	29,400	21,300,000	126,000	6,640	26.900	19,600,000
1929	682-122	66,400	4,370	15,200	11,000,000	66,400	4,370	14.400	10,400,000
1930	707-127	47,300	3,860	14,000	10,100,000	47,300	3,860	14.400	10,400,000
1931	722-118	47,300	4,200	11,400	8,250,000	47,300	4,200	11.000	7,940,000
1932	737-107	83,600	4,050	18,800	13,700,000	83,600	4,050	19,500	14,200,000
1933	752-108	119,000	5,260	22,200	16,000,000	119,000	-	24.600	17,800,000
1934	767-103	76,800	5,450	25,460	18,430,000	76,800	5,450	23.090	16,720,000
1935	792-96	70,200	5,450	17,490	12,660,000	70,200	3,770	16.690	12,080,000
1936	812-91	80,800	3,200	16,080	11,670,000	80,800	3,200	16.010	11,630,000
1937	832-93	50,000	-	12,130	8,784,000	50,000	-	12.330	8,929,000
1938	862-95	86,900	4,500	16,920	12,250,000	86,900	4,500	17,260	12,500,000
1939	882-101	68,000	5,200	15,830	11,460,000	-	-	-	-

*Yearly figures not previously published; discharge for January estimated.

Summary of yearly discharge, in second-feet, at stations in Pend Oreille River Basin--Continued

Clark Fork near Heron, Mont.
(Drainage area, 21,800 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1929	692-123	72,100	-	16,600	12,000,000	72,100	3,640	16,000	11,600,000
1930	707-128	50,600	3,180	15,900	11,500,000	50,600	3,180	16,200	11,700,000
1931	722-119	51,000	4,060	13,000	9,430,000	51,000	4,060	12,600	9,110,000
1932	737-108	94,900	-	21,900	15,900,000	94,900	-	22,700	16,400,000
1933	752-109	137,000	-	25,500	18,400,000	137,000	-	28,700	20,700,000
1934	767-104	87,400	5,550	29,900	21,650,000	87,400	5,550	26,930	19,500,000
1935	792-97	77,600	5,710	20,040	14,510,000	77,600	1,110	19,050	13,790,000
1936	812-92	89,600	1,110	17,960	13,040,000	89,600	1,400	17,870	12,970,000
1937	832-94	54,900	2,970	13,530	9,797,000	54,900	2,970	13,770	9,968,000
1938	862-96	95,800	3,460	19,390	14,040,000	95,800	3,460	19,730	14,290,000
1939	882-102	73,400	5,090	18,020	13,050,000	-	-	-	-

Pend Oreille River at Priest River, Idaho
(published as Clark Fork at Newport, Wash., 1905-28 Clark Fork at Priest River, Idaho, 1928-37)
(Drainage area, 24,200 square miles)

Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Pend Oreille Lake (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1904	532-92	88,200	9,700	29,500	21,400,000	-80,900	21,300,000	29,400	1.21	16.52
1905	532-92	50,800	4,260	15,200	11,000,000	-24,600	11,000,000	15,200	.628	8.52
1906	532-92	43,800	6,870	16,900	12,300,000	+12,400	12,300,000	16,900	.698	9.51
1907	532-92	95,200	8,620	34,100	24,700,000	+119,000	24,800,000	34,200	1.41	19.19
1908	532-92	124,000	-	29,700	21,600,000	-38,800	21,500,000	29,600	1.22	16.65
1909	532-92	104,000	5,760	26,500	19,200,000	+32,800	19,200,000	26,600	1.10	14.88
1910	532-92	75,500	8,400	28,600	20,700,000	-45,600	20,600,000	28,500	1.18	16.03
1911	532-92	77,400	8,400	25,800	18,700,000	+41,800	18,700,000	25,800	1.07	14.48
1912	532-92	89,000	-	25,700	18,600,000	+59,100	18,700,000	25,800	1.07	14.48
1913	532-92	136,000	-	33,500	24,200,000	-46,800	24,200,000	33,400	1.38	18.75
1914	532-92	67,400	7,600	23,700	17,100,000	-59,000	17,100,000	23,600	.975	13.25
1915	532-92	42,500	8,570	20,700	15,000,000	+37,000	15,000,000	20,700	.855	11.62
1916	532-92	131,000	6,760	37,500	27,300,000	+145,000	27,400,000	37,800	1.56	21.26
1917	532-92	119,000	5,730	31,700	22,900,000	-156,000	22,800,000	31,500	1.30	17.67
1918	532-92	98,200	8,690	29,700	21,500,000	-8,000	21,500,000	29,700	1.23	16.66
1919	532-92	76,900	6,870	21,200	15,400,000	-21,000	15,300,000	21,200	.876	11.88
1920	532-92	81,800	2,200	21,100	15,300,000	+54,000	15,400,000	21,200	.876	11.93
1921	532-92	109,000	9,060	30,300	21,900,000	-38,000	21,900,000	30,200	1.25	16.93
1922	692-125	106,000	7,020	24,100	17,400,000	-8,000	17,400,000	24,100	.996	13.53
1923	692-125	90,700	3,460	24,500	17,700,000	-11,000	17,700,000	24,500	1.01	13.74
1924	692-125	80,300	3,820	19,600	14,300,000	-26,000	14,200,000	19,600	.810	11.02
1925	692-125	112,000	6,380	31,300	22,700,000	+69,000	22,700,000	31,400	1.30	17.61
1926	692-125	49,400	7,900	15,800	11,500,000	-29,000	11,400,000	15,800	.653	8.83
1927	692-125	131,000	9,470	34,100	24,700,000	+182,000	24,900,000	34,300	1.42	19.27
1928	692-125	135,000	10,800	37,400	27,200,000	-164,000	27,000,000	37,200	1.54	20.93
1929	692-125	72,400	-	18,600	13,400,000	-77,000	13,400,000	18,500	.764	10.35
1930	707-130	50,100	-	17,100	12,300,000	+9,000	12,400,000	17,100	.707	9.56
1931	722-121	50,800	6,150	15,000	10,800,000	-27,000	10,800,000	14,900	.616	8.38
1932	737-110	97,200	4,100	25,700	18,700,000	+51,000	18,700,000	25,800	1.07	14.53
1933	752-111	135,000	7,290	29,300	21,200,000	+57,000	21,300,000	29,400	1.21	16.49
1934	767-106	91,200	6,550	34,610	25,050,000	-89,670	24,970,000	34,480	1.42	19.33
1935	792-99	83,500	6,550	24,050	17,410,000	+19,980	17,430,000	24,080	.995	13.52
1936	812-94	85,800	3,530	20,670	15,010,000	-23,200	14,980,000	20,640	.853	11.61
1937	832-96	58,500	3,000	16,140	11,690,000	-2,380	11,680,000	16,140	.667	9.04
1938	862-98	93,000	6,630	23,980	17,360,000	+64,400	17,420,000	24,070	.995	13.50
1939	882-104	75,400	5,800	20,700	14,980,000	-19,210	14,960,000	20,670	.854	11.57

Calendar year

1904	532-92	88,200	7,940	27,700	20,100,000	-127,000	20,000,000	27,500	1.14	15.47
1905	532-92	50,800	4,260	15,400	11,200,000	-3,600	11,200,000	15,400	.636	8.65
1906	532-92	43,800	6,870	18,200	13,200,000	+177,000	13,400,000	18,400	.760	10.34
1907	532-92	95,200	-	33,800	24,500,000	-102,000	24,400,000	33,700	1.39	18.89
1908	532-92	124,000	-	29,200	21,200,000	-54,400	21,100,000	29,100	1.20	16.36
1909	532-92	104,000	5,760	27,800	20,100,000	+242,000	20,400,000	28,200	1.17	15.78
1910	532-92	75,500	8,400	28,200	20,400,000	-120,000	20,300,000	28,100	1.16	15.77
1911	532-92	77,400	6,700	24,500	17,700,000	-169,000	17,600,000	24,300	1.00	13.62
1912	532-92	89,000	-	27,000	19,600,000	+130,000	19,700,000	27,100	1.12	15.25
1913	532-92	136,000	-	32,800	23,700,000	-71,800	23,600,000	32,700	1.35	18.33
1914	532-92	67,400	7,600	24,600	17,800,000	+59,000	17,800,000	24,600	1.02	13.84
1915	532-92	42,500	8,570	19,600	14,200,000	-30,000	14,200,000	19,600	.810	10.98
1916	532-92	131,000	5,730	38,000	27,600,000	-42,000	27,500,000	37,900	1.57	21.37
1917	532-92	119,000	8,010	30,900	22,400,000	+214,000	22,600,000	31,200	1.29	17.53
1918	532-92	98,200	8,700	29,600	21,400,000	-225,000	21,200,000	29,300	1.21	16.44
1919	532-92	76,900	2,200	20,200	14,700,000	-30,000	14,600,000	20,200	.835	11.33
1920	532-92	81,800	4,780	23,000	16,700,000	+88,000	16,800,000	23,100	.955	13.00
1921	532-92	109,000	8,490	29,300	21,200,000	+17,000	21,300,000	29,400	1.21	16.45
1922	692-125	106,000	3,460	23,600	17,100,000	-56,000	17,000,000	23,500	.971	13.21
1923	692-125	90,700	4,710	24,600	17,800,000	-31,000	17,800,000	24,600	1.02	13.78
1924	692-125	80,300	3,820	19,700	14,300,000	+78,000	14,400,000	19,800	.818	11.13
1925	692-125	112,000	8,500	31,500	22,800,000	-52,000	22,800,000	31,500	1.30	17.65
1926	692-125	49,400	7,900	17,200	12,500,000	+141,000	12,600,000	17,400	.719	9.76
1927	692-125	131,000	10,800	36,900	26,700,000	+110,000	26,800,000	37,000	1.53	20.77

Summary of yearly discharge, in second-feet, at stations in
Pend Oreille River Basin--Continued
Pend Oreille River at Priest River, Idaho--Continued
(Drainage area, 24,200 square miles)
Calendar year

Year	W.S.P. (no. and page)	Observed				Change in contents in Pend Oreille Lake (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1928	692-125	135,000	8,080	33,400	24,200,000	-271,000	24,000,000	33,000	1.36	18.58
1929	692-125	72,400	-	17,700	12,800,000	-26,000	12,800,000	17,700	.731	9.90
1930	707-130	50,100	-	17,300	12,600,000	-17,000	12,500,000	17,300	.715	9.70
1931	722-121	50,800	5,710	14,600	10,600,000	+4,000	10,600,000	14,600	.603	8.22
1932	737-110	97,200	4,100	26,700	19,400,000	+133,000	19,500,000	26,900	1.11	15.15
1933	752-111	135,000	-	32,300	23,400,000	+643,000	24,100,000	33,200	1.37	18.66
1934	767-106	91,200	6,550	31,840	23,050,000	-652,400	22,400,000	30,940	1.28	17.34
1935	792-99	83,500	5,920	22,830	16,530,000	-139,300	16,390,000	22,640	.936	12.72
1936	812-94	85,800	3,530	20,570	14,930,000	+4,960	14,940,000	20,580	.850	11.57
1937	832-96	58,500	3,000	16,780	12,150,000	+113,500	12,260,000	16,930	.700	9.49
1938	862-98	93,000	7,350	23,970	17,360,000	-52,040	17,310,000	23,900	.988	13.41

Pend Oreille River below Z Canyon, near Metaline Falls, Wash.
(published as Clark Fork at Metaline Falls, Wash., 1913-28 and Clark Fork below Z Canyon, near Metaline Falls, Wash., 1928-37)
International gaging station
(Drainage area, 25,200 square miles)
Water year ending Sept. 30

1913	442-72	139,000	-	34,300	24,800,000	-46,800	24,800,000	34,200	1.36	18.44
1914	392-53	70,100	7,800	24,400	17,700,000	-59,000	17,600,000	24,300	.964	13.11
1915	412-110	44,000	8,760	21,200	15,300,000	+37,000	15,400,000	21,200	.841	11.44
1916	442-72	133,000	6,980	38,200	27,700,000	+145,000	27,900,000	38,400	1.52	20.76
1917	462-69	122,000	5,960	32,400	23,400,000	-156,000	23,300,000	32,100	1.27	17.30
1918	482-66	99,100	9,070	30,200	21,800,000	-8,000	21,800,000	30,100	1.19	16.23
1919	512-118	79,100	7,200	21,800	15,800,000	-21,000	15,800,000	21,800	.865	11.75
1920	512-118	82,600	2,500	21,500	15,600,000	+54,000	15,700,000	21,600	.857	11.66
1921	532-104	111,000	9,290	30,900	22,400,000	-38,000	22,400,000	30,900	1.23	16.65
1922	552-95	107,000	7,780	24,500	17,800,000	-8,000	17,800,000	24,600	.976	13.21
1923	572-83	91,900	3,800	25,000	18,100,000	-11,000	18,100,000	24,900	.988	13.45
1924	592-83	81,000	4,120	20,000	14,500,000	-26,000	14,500,000	19,900	.790	10.74
1925	612-79	114,000	6,600	31,900	23,100,000	+69,000	23,200,000	32,000	1.27	17.27
1926	632-79	50,400	8,090	16,200	11,700,000	-29,000	11,700,000	16,100	.639	8.71
1927	652-55	133,000	9,750	34,800	25,200,000	+182,000	25,300,000	35,000	1.39	18.85
1928	672-75	137,000	12,100	38,200	27,700,000	-164,000	27,600,000	38,100	1.51	20.55
1929	692-128	74,500	-	19,300	14,000,000	-77,000	13,900,000	19,200	.762	10.35
1930	707-132	50,900	4,350	17,400	12,600,000	+9,000	12,600,000	17,400	.690	9.39
1931	722-122	51,500	6,270	15,400	11,100,000	-27,000	11,100,000	15,300	.607	8.26
1932	737-111	98,000	5,000	26,800	19,500,000	+51,000	19,500,000	26,900	1.07	14.54
1933	752-112	137,000	7,840	30,800	22,300,000	+57,000	22,400,000	30,900	1.23	16.69
1934	767-107	94,400	6,710	36,270	26,260,000	-89,670	26,170,000	36,150	1.43	19.46
1935	792-100	85,500	6,710	25,210	18,250,000	+19,980	18,270,000	25,230	1.00	13.60
1936	812-95	87,200	3,800	21,460	15,580,000	-23,200	15,560,000	21,430	.850	11.58
1937	832-97	59,900	3,500	16,760	12,130,000	-2,380	12,130,000	16,750	.665	9.02
1938	862-99	96,500	6,970	25,350	18,350,000	+64,400	18,410,000	25,440	1.01	13.70
1939	882-105	76,400	5,000	21,090	15,270,000	-19,210	15,250,000	21,060	.836	11.35

Calendar year

1913	442-72	139,000	-	33,600	24,300,000	-71,800	24,200,000	33,500	1.33	18.03
1914	392-53	70,100	7,800	25,300	18,300,000	+59,000	18,400,000	25,400	1.01	13.70
1915	412-110	44,000	8,760	20,100	14,600,000	-30,000	14,500,000	20,100	.798	10.80
1916	442-72	133,000	5,960	38,700	28,100,000	-42,000	28,000,000	38,600	1.53	20.86
1917	462-69	122,000	8,240	31,600	22,900,000	+214,000	23,100,000	31,900	1.27	17.16
1918	482-66	99,100	8,900	30,100	21,800,000	-225,000	21,500,000	29,700	1.18	16.02
1919	512-118	79,100	2,500	20,900	15,100,000	-30,000	15,100,000	20,900	.829	11.24
1920	512-118	82,600	5,190	23,400	17,000,000	+88,000	17,100,000	23,500	.933	12.69
1921	532-104	111,000	8,740	30,200	21,700,000	+17,000	21,700,000	30,000	1.19	16.16
1922	552-95	107,000	3,800	24,100	17,400,000	-56,000	17,400,000	24,000	.952	12.93
1923	572-83	91,900	4,960	25,100	18,100,000	-31,000	18,100,000	25,000	.992	13.47
1924	592-83	81,000	4,120	20,000	14,500,000	+78,000	14,600,000	20,100	.798	10.86
1925	612-79	114,000	8,800	32,200	23,300,000	-52,000	23,300,000	32,100	1.27	17.32
1926	632-79	50,400	8,090	17,600	12,700,000	+141,000	12,900,000	17,800	.706	9.61
1927	652-55	133,000	11,200	37,600	27,200,000	+110,000	27,300,000	37,800	1.50	20.34
1928	672-75	137,000	8,350	34,100	24,700,000	-271,000	24,500,000	33,700	1.34	18.23
1929	692-128	74,500	-	18,400	13,300,000	-26,000	13,300,000	18,300	.726	9.89
1930	707-132	50,900	4,350	17,700	12,800,000	-17,000	12,800,000	17,700	.702	9.53
1931	722-122	51,500	5,200	15,000	10,900,000	+4,000	10,900,000	15,000	.595	8.09
1932	737-111	98,000	5,000	28,000	20,300,000	+133,000	20,500,000	28,200	1.12	15.24
1933	752-112	137,000	7,840	33,800	24,500,000	+643,000	25,100,000	34,700	1.38	18.71
1934	767-107	94,400	6,710	33,490	24,250,000	-652,400	23,590,000	32,590	1.29	17.55
1935	792-100	85,500	6,460	24,070	17,430,000	-139,300	17,290,000	23,880	.948	12.88
1936	812-95	87,200	3,800	21,240	15,420,000	+4,960	15,430,000	21,230	.843	11.48
1937	832-97	59,900	3,500	17,380	12,580,000	+113,500	12,690,000	17,530	.696	9.44
1938	862-99	96,500	7,700	25,330	18,340,000	-52,040	18,290,000	25,280	1.00	13.61

Summary of yearly discharge, in second-feet, at stations in Pend Oreille River Basin--Continued

Flathead River at Flathead, British Columbia
(Drainage area, 450 square miles)

Calendar year	W.S.P. (no. and page)	Maximum day	Minimum day	Per square mile	Run-off	
					Inches	Acre-feet
1929, Mar. 23 to Nov. 8.....	692-129	7,750	100	2.16	18.51	445,000
1930, Mar. 29 to Nov. 11.....	707-133	4,560	160	2.10	17.76	426,000
1931, Apr. 1 to Nov. 21.....	722-123	5,140	118	1.44	12.55	302,000
1932, Apr. 1 to Dec. 4,.....	737-112	8,030	188	2.96	27.23	654,000
1933, Apr. 1 to Dec. 10.....	752-113	10,100	168	3.40	32.20	772,000
1934, Apr. 1 to Dec. 18.....	767-109	6,860	170	3.04	29.71	713,200
1935, Apr. 1 to Dec. 31.....	792-103	7,750	125	2.36	23.99	576,200
1936, Apr. 1 to Dec. 4.....	812-98	6,270	110	1.98	18.26	437,700
1937, Apr. 1 to Nov. 30.....	832-102	5,240	80	2.08	18.92	453,500
1938, Apr. 1 to Nov. 23.....	862-108	8,950	150	3.38	29.72	713,200

Flathead River near Columbia Falls, Mont.
(Drainage area, 1,620 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1911	312-75	13,100	510	3,100	1.91	26.00	2,240,000	13,100	350	2,840	1.75	23.83	2,060,000
1912	332-76	10,700	-	2,330	1.44	19.60	1,690,000	10,700	-	2,410	1.49	20.21	1,750,000
1913	362-69	23,800	-	3,300	2.04	27.64	2,390,000	23,800	-	3,270	2.02	27.42	2,370,000
1914	392-62	13,300	350	2,550	1.57	21.40	1,850,000	13,300	350	2,830	1.75	23.70	2,050,000
1915	412-119	8,200	640	2,460	1.52	20.61	1,780,000	8,200	630	2,190	1.35	18.35	1,580,000
1916	442-78	29,500	-	4,220	2.60	35.48	3,060,000	29,500	510	4,180	2.58	35.17	3,040,000
1917	462-76	24,300	510	3,510	2.17	29.43	2,540,000	-	-	-	-	-	-
1936	812-99	18,200	-	2,475	1.53	20.79	1,797,000	18,200	-	2,438	1.50	20.49	1,770,000
1937	832-103	13,600	-	2,173	1.34	18.22	1,573,000	13,600	-	2,291	1.41	19.20	1,658,000
1938	862-109	23,500	384	3,337	2.06	27.97	2,416,000	23,500	384	3,283	2.03	27.52	2,377,000
1939	882-124	14,000	325	2,387	1.47	20.00	1,728,000	-	-	-	-	-	-

Flathead River at Columbia Falls, Mont.
(Drainage area, 4,440 square miles)

1929	692-131	67,800	1,410	7,560	1.70	23.10	5,480,000	67,800	864	7,180	1.62	21.93	5,200,000
1930	707-135	38,000	864	7,130	1.61	21.81	5,170,000	38,000	1,030	7,370	1.66	22.51	5,330,000
1931	722-125	58,600	1,320	6,420	1.45	19.66	4,650,000	58,600	1,320	6,350	1.43	19.42	4,600,000
1932	737-114	84,100	1,110	10,700	2.41	32.77	7,770,000	84,100	1,110	11,200	2.52	34.44	8,160,000
1933	752-115	88,600	1,510	12,200	2.75	37.25	8,820,000	88,600	1,510	13,500	3.04	41.27	9,780,000
1934	767-111	58,600	1,660	12,900	2.91	39.43	9,337,000	58,600	1,510	11,520	2.59	35.22	8,341,000
1935	792-105	67,800	1,510	9,662	2.18	29.53	6,994,000	67,800	941	9,026	2.03	27.59	6,534,000
1936	812-100	67,800	899	8,089	1.82	24.80	5,872,000	67,800	899	8,054	1.81	24.70	5,847,000
1937	832-104	45,300	850	6,920	1.56	21.14	5,009,000	45,300	850	7,219	1.63	22.05	5,226,000
1938	862-110	69,600	1,440	9,416	2.12	28.79	6,817,000	69,600	1,700	9,337	2.10	28.55	6,759,500
1939	882-125	60,700	1,000	8,710	1.96	26.61	6,306,000	-	-	-	-	-	-

Flathead River near Polson, Mont.
(Drainage area, 7,010 square miles)

1908	252-92	62,100	2,280	12,200	1.74	23.62	8,840,000	62,100	2,280	12,100	1.73	23.53	8,800,000
1909	272-79	58,800	2,530	11,200	1.60	21.73	8,110,000	58,800	2,530	11,800	1.68	22.93	8,560,000
1910	292-81	42,800	3,640	12,200	1.74	23.56	8,810,000	42,800	3,640	12,300	1.75	23.72	8,870,000
1911	312-80	44,200	2,690	11,700	1.67	22.74	8,490,000	44,200	2,690	11,000	1.57	21.42	8,000,000
1912	332-81	36,500	2,310	9,980	1.42	19.36	7,240,000	36,500	2,150	10,200	1.46	19.84	7,410,000
1913	362-72	75,400	2,150	13,700	1.95	26.53	9,910,000	75,400	2,790	13,500	1.93	26.06	9,740,000
1914	392-64	41,000	2,400	9,250	1.32	17.93	6,700,000	41,000	2,400	9,890	1.41	19.16	7,160,000
1915	412-121	21,000	2,310	8,560	1.22	16.68	6,200,000	21,000	2,310	8,120	1.16	15.72	5,880,000
1916	442-81	74,700	2,900	16,300	2.32	31.67	11,900,000	74,700	2,900	16,400	2.34	31.83	11,900,000
1917	462-78	59,100	2,000	12,600	1.80	24.48	9,150,000	59,100	2,000	12,100	1.73	23.38	8,740,000
1918	482-69	58,400	2,310	12,100	1.73	23.48	8,780,000	58,400	2,490	12,200	1.74	23.63	8,840,000
1919	512-125	48,200	2,070	8,720	1.24	16.89	6,310,000	48,200	1,360	8,470	1.21	16.40	6,130,000
1920	512-125	44,200	1,360	9,180	1.31	17.83	6,660,000	44,200	1,360	9,770	1.39	19.00	7,090,000
1921	532-115	62,000	3,010	13,900	1.98	26.82	10,000,000	62,000	3,010	13,600	1.94	26.43	9,880,000
1922	552-111	56,400	2,700	10,900	1.55	21.04	7,870,000	56,400	2,420	10,700	1.53	20.72	7,750,000
1923	572-98	55,900	2,330	11,700	1.67	22.73	8,480,000	55,900	2,330	11,700	1.67	22.68	8,470,000
1924	592-94	47,000	2,420	10,000	1.43	19.44	7,260,000	47,000	2,520	10,100	1.44	19.58	7,310,000
*1925	612-85	67,000	-	15,300	2.18	29.61	11,100,000	67,000	-	15,500	2.21	29.92	11,200,000
1926	652-59	29,300	-	7,510	1.07	14.54	5,440,000	29,300	-	8,600	1.23	16.68	6,230,000
1927	652-59	75,000	3,800	17,200	2.45	33.36	12,500,000	75,000	3,800	17,400	2.48	33.69	12,600,000
1928	672-83	82,100	-	17,100	2.44	33.13	12,400,000	82,100	3,290	15,900	2.27	30.94	11,600,000
1929	692-138	44,600	2,660	9,380	1.34	18.19	6,790,000	44,600	1,890	8,870	1.27	17.19	6,420,000
1930	707-142	30,300	1,540	8,290	1.18	16.06	6,000,000	30,300	1,540	8,510	1.21	16.51	6,160,000
1931	722-132	35,400	2,400	7,630	1.09	14.77	5,520,000	35,400	2,370	7,460	1.06	14.45	5,400,000
1932	752-122	51,200	2,140	11,900	1.69	23.20	8,670,000	51,200	2,140	12,400	1.77	24.14	9,020,000
1933	752-122	76,600	3,020	14,100	2.01	27.25	10,200,000	76,600	3,140	15,400	2.20	29.83	11,100,000
1934	767-118	51,500	2,760	15,860	2.23	30.31	11,340,000	51,500	2,420	14,300	2.04	27.67	10,350,000
1935	792-112	49,500	2,420	11,430	1.63	22.15	8,276,000	49,500	2,010	10,940	1.56	21.21	7,923,000
1936	812-106	50,200	1,840	9,617	1.37	18.68	6,981,000	50,200	1,430	9,487	1.35	18.42	6,887,000
1937	832-113	35,800	1,430	7,963	1.14	15.42	5,768,000	35,800	1,580	8,203	1.17	15.87	5,938,000
1938	862-131	48,500	32	9,637	1.37	18.64	6,977,000	48,500	32	9,750	-	-	7,059,000
1939	882-132	45,200	2,140	10,060	-	-	7,281,000	-	-	-	-	-	-

*Yearly figures not previously published; discharge for periods of missing record estimated.

Note.- Flow partly regulated since April 1938 by storage in Flathead Lake.

Summary of yearly discharge, in second-feet, at stations in Pend Oreille River Basin--Continued

South Fork of Flathead River near Columbia Falls, Mont.
(Drainage area, 1,640 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off Inches	Run-off Acre-fee	Maximum day	Minimum day	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
*1916	442-84	46,200	-	-	-	-	-	46,200	-	-	-	-	-
1929	692-140	23,800	375	2,600	1.58	21.50	1,880,000	23,800	-	2,520	1.53	20.83	1,822,000
1930	707-144	14,600	243	2,510	1.53	20.78	1,820,000	14,600	243	2,630	1.60	21.80	1,905,000
1931	722-134	21,400	409	2,410	1.47	19.92	1,740,000	21,400	409	2,370	1.45	19.60	1,716,000
1932	737-123	29,100	374	3,660	2.23	30.40	2,660,000	29,100	374	3,900	2.38	32.34	2,829,000
1934	767-119	21,700	500	4,623	2.82	38.30	3,347,000	21,700	461	4,069	2.48	33.71	2,946,000
1935	792-113	26,100	461	3,317	2.02	27.46	2,401,000	26,100	209	3,086	1.88	25.54	2,234,000
1936	812-107	30,000	209	3,081	1.88	25.51	2,237,000	30,000	-	3,085	1.88	25.54	2,240,000
1937	832-114	16,400	-	2,344	1.43	19.39	1,697,000	16,400	-	2,439	1.49	20.18	1,766,000
1938	862-118	22,800	471	3,059	1.87	25.33	2,215,000	22,800	471	3,024	1.84	25.03	2,190,000
1939	882-133	26,000	380	3,328	2.03	27.55	2,409,000	-	-	-	-	-	-

*Year incomplete.

Whitefish Creek near Kalispell, Mont.

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1930	707-146	827	7.2	106	78,700	827	7.2	108	77,900
1931	722-138	643	7.2	118	85,500	643	15	128	93,000
1932	737-126	1,230	27	245	178,000	1,230	26	245	178,000
1933	752-128	1,140	24	232	168,000	1,140	24	259	188,000
1934	767-122	982	7.5	280	202,400	982	5.0	258	186,500
1935	792-115	905	5.0	218	158,000	905	7.5	209	151,300
1936	812-110	856	7.5	167	121,400	856	13	163	118,600
1937	832-117	661	13	143	103,900	661	5.2	148	107,000
1938	862-121	758	5.2	168	121,700	758	-	175	126,400
1939	882-136	757	22	177	127,800	-	-	-	-

Swan River near Big Fork, Mont.
(Drainage area, 647 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off Inches	Run-off Acre-feet	Maximum day	Minimum day	Mean	Per square mile	Run-off Inches	Run-off Acre-feet
1923	572-103	4,680	268	973	1.50	20.39	705,000	4,680	268	976	1.51	20.45	707,000
1924	592-97	5,330	280	946	1.46	19.89	686,000	5,330	280	939	1.45	19.76	682,000
1929	692-143	5,300	273	1,050	1.62	22.12	762,000	5,300	257	990	1.53	20.83	717,000
1930	707-147	2,920	85	796	1.23	16.73	576,000	2,920	85	822	1.27	17.25	595,000
1931	722-140	4,950	306	858	1.33	18.01	622,000	4,950	306	842	1.30	17.65	609,000
1932	737-128	5,520	279	1,210	1.87	25.46	879,000	5,520	279	1,280	1.98	26.90	928,000
1933	752-130	8,280	310	1,330	2.06	27.93	964,000	8,280	310	1,490	2.30	31.28	1,080,000
1934	767-124	4,550	362	1,385	2.14	29.07	1,003,000	4,550	362	1,200	1.85	25.19	868,700
1935	792-117	4,550	356	1,038	1.60	21.80	751,800	4,550	302	983	1.52	20.64	712,000
1936	812-112	5,970	279	1,040	1.61	21.89	755,100	5,970	253	1,030	1.59	21.69	747,900
1937	832-119	3,300	252	734	1.13	15.40	531,100	3,300	252	752	1.16	15.78	544,500
1938	862-123	4,350	284	871	1.35	18.27	630,500	4,350	308	870	1.34	18.26	630,000
1939	882-138	4,250	281	929	1.44	19.49	671,600	-	-	-	-	-	-

Big Creek near Polson, Mont.

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
*1917	462-81	90	-	-	-	90	-	-	-
1918	482-73	33	1.8	8.94	6,470	38	1.8	8.63	6,240
1919	512-129	53	1.4	7.32	5,300	53	1.4	7.06	5,110
1920	512-129	29.4	1.7	4.38	3,180	29.4	1.7	4.43	3,210
1921	532-118	18.5	1.6	5.06	3,680	18.5	1.6	5.05	3,660
1922	552-117	40	2.7	6.38	4,620	40	2.8	6.57	4,760
1923	572-104	18.4	3.0	6.52	4,720	18.4	2.4	6.13	4,440
1924	612-90	22.6	2.4	5.33	3,870	22.6	2.2	5.24	3,810
1925	612-90	51.8	-	6.74	4,880	51.8	-	6.97	5,050
1926	632-89	28.6	2.7	5.36	3,880	28.6	2.7	5.40	3,910
1927	652-64	55	2.3	9.01	6,530	55	2.3	8.97	6,500
1928	672-88	37.4	2.9	10.2	7,420	37.4	2.9	10.3	7,460
1929	692-144	26.8	2.9	7.13	5,160	26.8	2.9	7.07	5,120
1930	707-148	12.7	3.3	5.03	3,640	12.7	3.3	5.52	4,000
1931	722-141	8.3	2.7	5.64	4,080	8.6	2.7	5.61	4,060
1932	737-129	9.0	1.7	6.37	4,630	-	-	-	-

*Year incomplete.

Summary of yearly discharge, in second-feet, at stations in *Pend Oreille River Basin*--Continued

Priest River at outlet of Priest Lake, near Coolin, Idaho
(Drainage area, 572 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-fee					Inches	Acre-feet
1914	392-97	5,030	280	1,380	2.41	32.65	996,000	5,030	280	1,440	2.52	34.23	1,040,000
1915	412-155	2,400	308	943	1.65	22.40	683,000	2,400	-	837	1.46	19.88	606,000
1916	442-117	5,640	-	1,440	2.52	34.32	1,050,000	5,640	-	1,420	2.48	33.77	1,030,000
1917	462-89	7,240	-	1,260	2.20	29.96	914,000	7,240	172	1,250	2.19	29.70	906,000
1918	512-135	-	172	1,110	1.94	26.25	801,000	-	-	-	-	-	-
1920	512-135	3,170	188	810	1.42	19.28	587,000	3,170	-	949	1.66	22.61	689,000
1921	532-120	6,440	259	1,580	2.76	37.58	1,150,000	6,440	236	1,480	2.59	35.05	1,070,000
1922	552-119	5,120	236	951	1.66	22.56	689,000	5,120	229	932	1.63	22.10	675,000
1923	572-106	4,080	229	1,060	1.85	25.17	768,000	4,080	216	1,050	1.84	24.88	759,000
1924	592-99	4,220	170	720	1.26	17.15	523,000	4,220	170	743	1.30	17.67	540,000
1925	612-92	5,570	173	1,240	2.17	29.31	894,000	5,570	143	1,200	2.10	28.45	868,000
1926	632-91	3,080	143	533	.932	12.63	386,000	3,080	207	690	1.21	16.36	499,000
1927	652-65	5,410	334	1,420	2.48	33.79	1,030,000	5,410	334	1,530	2.67	36.47	1,110,000
1928	672-90	5,250	237	1,360	2.38	32.32	986,000	5,250	201	1,110	1.94	26.34	804,000
1929	692-146	3,660	190	697	1.22	16.50	504,000	3,660	120	673	1.18	15.95	486,000
1930	707-150	3,630	120	633	1.11	15.04	458,000	3,630	159	638	1.12	15.15	462,000
1931	722-143	4,220	161	714	1.25	16.96	518,000	4,220	144	725	1.27	17.24	526,000
1932	737-131	6,890	144	1,390	2.43	33.13	1,010,000	6,890	176	1,470	2.57	34.95	1,070,000
1933	752-132	5,940	178	1,340	2.34	31.78	970,000	5,940	329	1,400	2.45	33.11	1,010,000
1934	767-126	5,780	140	1,391	2.43	33.01	1,007,000	5,780	136	1,305	2.28	30.97	944,900
1935	792-119	5,040	136	1,191	2.08	28.27	862,400	5,040	178	1,139	1.99	27.03	824,400
1936	812-114	4,540	162	769	1.38	18.80	573,100	4,540	120	772	1.35	18.40	560,700
1937	832-121	3,140	120	716	1.25	11.99	518,200	3,140	172	833	1.46	19.75	602,700
1938	862-125	5,780	209	1,373	2.40	32.57	993,700	5,780	207	1,282	2.24	30.42	928,000
1939	882-140	4,010	187	877	1.53	20.82	635,000	-	-	-	-	-	-

Priest River near (at) Priest River, Idaho

1904	572-108	6,300	530	1,920	2.12	28.88	1,390,000	6,300	485	1,800	1.99	27.07	1,300,000
1930	707-151	4,300	216	824	.912	12.38	596,000	-	-	-	-	-	-
1931	722-144	4,850	229	940	1.04	14.13	680,000	4,850	217	961	1.07	14.46	696,000
1932	737-132	8,890	217	1,940	2.15	29.23	1,410,000	8,890	310	2,040	2.26	30.81	1,480,000
1933	752-133	7,080	310	1,800	2.00	27.01	1,300,000	7,080	445	1,930	2.14	29.02	1,400,000
1934	767-127	6,900	255	1,964	2.18	29.56	1,422,000	6,900	242	1,805	2.00	27.16	1,307,000
1935	792-120	6,150	242	1,651	1.83	24.85	1,195,000	6,150	313	1,565	1.74	23.58	1,133,000
1936	812-115	5,570	265	1,061	1.18	16.01	770,300	5,570	212	1,036	1.15	15.62	752,200
1937	832-122	3,940	191	1,028	1.14	15.47	744,600	3,940	191	1,206	1.34	18.14	873,200
1938	862-126	6,960	340	1,988	2.20	29.91	1,439,000	6,960	330	1,847	2.05	27.80	1,337,000
1939	882-141	5,000	268	1,144	1.27	17.22	828,300	-	-	-	-	-	-

Sullivan Creek near Metaline Falls, Wash.
(Drainage area, 125 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1914	392-100	1,340	60	246	178,000	1,340	60	231	181,000
1915	412-158	635	64	169	123,000	635	64	166	120,000
1916	442-119	1,480	75	235	170,000	1,480	75	232	168,000
1917	462-92	1,400	69	216	156,000	1,400	69	219	159,000
1918	482-78	646	74	153	111,000	646	64	146	106,000
1919	512-140	1,580	46	212	154,000	1,580	46	219	158,000
1920	512-140	495	56	141	103,000	495	56	144	105,000
1921	532-123	1,540	77	232	168,000	1,540	75	223	161,000
1922	552-122	850	41	151	109,000	850	41	156	113,000
1923	572-112	682	56	155	113,000	682	56	149	108,000
1924	592-101	495	15	108	78,600	495	15	107	77,400

Note.- Flow slightly regulated by storage in Sullivan Lake for power development.

SHEEP CREEK BASIN

Sheep Creek near Northport, Wash.
(Drainage area, 225 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1930	707-154	507	-	81.4	0.362	4.92	58,900	507	-	83.3	0.370	5.04	60,300
1931	737-134	1,260	11	143	.636	8.60	103,000	1,260	-	144	.640	8.66	104,000
1932	737-134	2,060	-	286	1.27	17.29	207,000	2,060	-	291	1.29	17.61	211,000
1933	752-134	2,210	27	282	1.25	17.04	205,000	2,210	27	293	1.30	17.68	212,000
1934	767-128	1,780	23	246	1.09	14.64	178,100	1,780	23	236	1.05	14.22	170,500
1935	792-121	1,600	20	227	1.01	13.72	164,500	1,600	20	221	.982	13.35	160,100
1936	812-116	2,060	10	152	.676	9.17	110,100	2,060	10	151	.671	9.11	109,300
1937	832-125	940	-	141	.627	8.50	102,000	940	-	151	.671	9.08	109,100
1938	862-143	1,960	24	291	1.29	17.57	210,900	1,960	20	284	1.26	17.11	205,400
1939	882-143	1,280	20	170	.756	10.24	123,000	-	-	-	-	-	-

Summary of yearly discharge, in second-feet, at stations in
KETTLE RIVER BASIN

Kettle River near Ferry, Wash.
International gaging station
(Drainage area, 2,220 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1929	692-148	6,800	-	733	530,000	6,800	-	710	514,000
1930	707-156	5,490	-	659	476,000	5,490	-	661	479,000
1931	722-147	8,560	61	875	633,000	8,560	65	889	644,000
1932	737-136	10,100	-	1,590	1,150,000	10,100	-	1,640	1,190,000
1933	752-135	13,800	-	1,910	1,380,000	13,800	-	1,960	1,420,000
1934	767-129	11,100	81	1,449	1,049,000	11,100	81	1,427	1,033,000
1935	792-122	10,600	140	1,675	1,212,000	10,600	69	1,611	1,166,000
1936	812-117	11,100	50	1,360	987,600	11,100	50	1,341	973,200
1937	832-126	8,900	55	1,065	771,300	8,900	55	1,088	788,000
1938	862-129	11,500	90	1,433	1,038,000	11,500	70	1,421	1,029,000
1939	882-145	9,940	70	1,241	898,100	-	-	-	-

Kettle River near Laurier, Wash.
International gaging station
(Drainage area, 3,800 square miles)

1930	737-138	7,260	-	1,250	905,000	7,260	-	1,260	912,000
1931	737-138	14,000	-	1,800	1,300,000	14,000	-	1,830	1,330,000
1932	737-138	18,900	-	2,990	2,170,000	18,900	-	3,070	2,230,000
1933	752-137	22,900	300	3,490	2,530,000	22,900	381	3,610	2,610,000
1934	767-131	20,800	175	2,875	2,081,000	20,800	178	2,823	2,043,000
1935	792-123	18,400	250	3,101	2,245,000	18,400	210	2,956	2,140,000
1936	812-118	18,700	160	2,342	1,700,000	18,700	130	2,304	1,673,000
1937	862-130	14,200	110	1,925	1,394,000	14,200	110	1,975	1,430,000
1938	882-146	21,400	270	2,916	2,111,000	21,400	250	2,883	2,087,000
1939	882-146	16,000	240	2,352	1,703,000	-	-	-	-

COLVILLE RIVER BASIN

Colville River at Kettle Falls (Meyers Falls), Wash.

1923	572-116	916	-	243	176,000	916	-	245	177,000
1924	592-104	404	17	131	94,900	404	17	127	92,000
1925	612-94	1,270	31	268	194,000	1,270	31	270	195,000
1926	632-93	285	13	117	84,600	357	13	121	87,900
1927	652-66	1,230	-	323	234,000	1,230	62	383	278,000
1928	672-91	1,260	46	428	310,000	1,260	46	369	268,000
1929	692-149	356	23	127	92,000	356	23	112	80,900
1930	707-158	-	.5	70.5	51,000	-	.5	66.9	48,400
1931	722-152	237	10	77.3	56,000	237	10	74.5	53,900
1932	752-139	1,710	21	304	221,000	1,710	-	317	230,000
1933	752-139	1,540	-	278	201,000	1,540	41	302	219,000
1934	767-133	1,040	34	327	236,800	1,040	34	314	227,400
1935	792-125	1,380	51	310	224,600	1,380	51	301	218,000
1936	812-120	753	21	156	112,900	753	21	147	106,700
1937	832-129	703	39	159	115,300	703	39	177	128,000
1938	862-133	2,600	51	492	356,400	2,600	51	489	354,000
1939	882-149	620	19	170	122,900	-	-	-	-

HALL CREEK BASIN

Hall Creek at Inchelium, Wash.*

1913	362-124	-	-	-	-	442	24	83.0	60,100
1914	412-162	920	18	121	87,500	920	-	120	86,700
1915	412-162	519	-	90.5	65,500	519	-	86.9	62,900
1916	442-121	649	-	114	83,200	649	-	116	84,100
1917	462-95	604	-	78.3	56,700	604	-	76.9	55,700
1918	482-82	160	-	33.4	24,200	160	-	32.4	23,500
1919	512-145	706	-	103	74,600	706	-	104	75,100
1920	512-145	85	7.6	23.7	17,200	85	7.6	25.6	18,600
1921	532-126	548	13	103	74,300	548	-	102	74,200
1922	552-124	498	-	65.8	47,600	-	-	-	-
1923	572-118	Mar. 8 to Nov. 30				299	15	-	42,800
1924	592-106	Apr. 1 to Oct. 3				156	8.2	-	16,900
1925	612-95	Mar. 17 to Sept. 30				676	11	-	49,700
1926	632-94	Mar. 22 to Oct. 3				152	6.2	-	13,700
1927	652-67	Apr. 1 to Oct. 28				520	20	-	57,300
1928	672-92	Apr. 1 to Sept. 30				415	15	-	39,700
1929	692-150	Apr. 1 to Sept. 30				-	5.6	-	10,800

*At two sites in the vicinity of Inchelium, Wash.: Drainage areas; 160 square miles, May 1913 to July 1915 and 163 square miles, August 1915 to September 1929.

Note.- Figures for 1923-29 are for periods indicated in those years.

STRANGER CREEK BASIN

Stranger Creek at Meteor, Wash.
(Drainage area, 54 square miles)

1916	462-97	Aug. 29 to Dec. 31				9.9	-	-	1,490
1917	462-97	164	3.0	22.4	16,200	164	2.3	21.9	15,800
1918	482-84	24	.6	6.94	5,020	25	.6	6.69	4,840
1919	512-147	164	-	26.7	19,300	164	-	26.6	19,300
1920	512-147	13.3	-	3.92	2,850	13.3	-	4.33	3,140
1921	532-127	140	.9	24.6	17,800	140	-	24.5	17,700
1922	552-126	125	-	15.4	11,100	-	-	-	-
1923	572-119	Mar. 11 to Sept. 30				54	-	-	7,300
1924	592-108	Apr. 1 to Sept. 30				14	0	-	1,840
1925	612-97	Apr. 1 to Sept. 30				180	.2	-	10,800
1926	632-96	Mar. 22 to Sept. 30				11.8	0	-	1,430
1927	652-68	Apr. 1 to Sept. 30				147	1.6	-	11,200
1928	672-93	Apr. 1 to Sept. 30				60	.4	-	6,210
1929	692-151	Apr. 1 to Sept. 30				5.9	0	-	732

Note.- Figures for 1916, 1923-29 are for periods indicated in those years.

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Summary of yearly discharge, in second-feet, at stations in
SPOKANE RIVER BASIN

Coeur d'Alene River near Cataldo, Idaho
(Drainage area, 1,220 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1912	332-142	14,400	300	2,340	1.92	26.14	1,700,000	14,400	365	2,500	2.05	27.95	1,820,000
1921	532-147	22,000	355	3,450	2.83	38.47	2,500,000	22,000	315	3,410	2.80	37.92	2,470,000
1922	552-127	18,100	315	2,040	1.67	22.75	1,480,000	17,600	-	1,830	1.50	20.35	1,320,000
1923	572-121	17,000	-	2,520	2.07	27.99	1,820,000	17,000	215	2,550	2.09	28.39	1,850,000
1924	592-109	15,800	260	1,850	1.52	20.65	1,340,000	15,800	260	1,960	1.61	21.90	1,420,000
1925	612-98	23,700	280	3,140	2.57	34.97	2,280,000	23,700	280	3,010	2.47	33.50	2,180,000
1926	632-97	16,800	260	1,390	1.14	15.42	1,000,000	12,600	260	1,780	1.46	19.79	1,290,000
1927	652-69	25,800	454	3,210	2.63	35.67	2,320,000	25,800	454	3,700	3.03	41.15	2,680,000
1928	672-94	16,900	317	3,270	2.68	36.41	2,370,000	14,600	197	2,360	1.93	26.33	1,720,000
1929	692-152	10,700	197	1,400	1.15	15.56	1,010,000	10,700	141	1,370	1.12	15.28	993,000
1930	707-159	7,260	141	1,260	1.03	13.99	910,000	7,260	165	1,250	1.02	13.96	908,000
1931	722-153	12,900	206	1,560	1.28	17.29	1,130,000	12,900	201	1,560	1.28	17.31	1,130,000
1932	737-142	21,500	201	3,060	2.51	34.18	2,220,000	21,500	340	3,410	2.80	38.06	2,470,000
1933	752-141	21,200	340	3,090	2.53	34.34	2,240,000	50,000	384	4,020	3.30	44.69	2,910,000
1934	767-134	50,000	254	3,862	3.17	42.90	2,796,000	22,200	254	2,857	2.34	31.77	2,069,000
1935	792-126	13,900	273	2,780	2.28	30.93	2,013,000	13,900	245	2,494	2.04	27.76	1,805,000
1936	812-121	21,000	245	1,997	1.64	22.30	1,450,000	21,000	210	2,004	1.64	22.37	1,455,000
1937	832-130	16,600	210	1,799	1.47	20.01	1,303,000	16,600	182	2,076	1.70	23.08	1,503,000
1938	862-134	34,800	182	2,628	2.15	29.23	1,903,000	34,800	280	2,385	1.95	26.54	1,727,000
1939	882-150	12,500	270	1,767	1.45	19.66	1,279,000	-	-	-	-	-	-

Spokane River at Post Falls, Idaho
(Drainage area, 3,880 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Diversion by Spokane Valley Farms Co.'s canal (acre-feet)	Adjusted for diversion			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1914	392-109	20,600	884	5,517	3,994,000	48,170	4,042,000	5,584	1.44	19.54
1915	412-167	11,900	875	3,666	2,654,000	42,770	2,697,000	3,725	.960	13.03
1916	442-123	27,900	1,220	8,579	6,228,000	47,010	6,275,000	8,644	2.23	30.35
1917	462-101	39,800	1,380	7,801	5,647,000	42,650	5,690,000	7,860	2.03	27.55
1918	512-151	39,200	960	7,806	5,651,000	49,010	5,700,000	7,874	2.03	27.55
1919	512-151	25,800	1,020	6,341	4,591,000	50,440	4,641,000	6,411	1.65	22.39
1920	512-151	19,400	860	4,150	3,013,000	45,880	3,059,000	4,213	1.09	14.33
1921	532-130	25,400	940	7,918	5,733,000	49,040	5,782,000	7,966	2.06	27.95
1922	552-131	24,900	908	5,005	3,624,000	43,250	3,667,000	5,065	1.31	17.78
1923	572-124	21,000	878	5,785	4,188,000	47,220	4,235,000	5,850	1.51	20.49
1924	592-112	17,400	895	4,244	3,081,000	64,880	3,146,000	4,334	1.12	15.24
1925	612-101	30,600	840	7,535	5,455,000	65,740	5,521,000	7,626	1.97	26.73
1926	632-101	14,800	630	3,370	2,440,000	72,720	2,513,000	3,471	.895	12.15
1927	652-71	27,900	1,140	8,057	5,833,000	66,400	5,901,000	8,151	2.10	28.50
1929	672-96	26,300	813	9,053	6,572,000	67,090	6,639,000	9,146	2.36	32.12
1929	692-153	14,000	770	3,014	2,132,000	55,100	2,237,000	3,090	.796	10.80
1930	707-161	12,000	770	2,956	2,140,000	64,400	2,204,000	3,045	.785	10.65
1931	722-155	15,600	820	3,526	2,553,000	69,850	2,623,000	3,622	.934	12.67
1932	737-144	32,400	795	7,356	5,340,000	65,250	5,405,000	7,446	1.92	26.13
1933	752-143	28,900	770	7,234	5,237,000	68,730	5,306,000	7,329	1.89	25.65
1934	767-136	49,800	610	9,929	7,188,000	72,850	7,261,000	10,030	2.58	35.15
1935	792-128	25,500	626	6,691	4,844,000	76,300	4,920,000	6,796	1.75	23.75
1936	812-123	35,400	452	4,950	3,593,000	69,780	3,663,000	5,046	1.30	17.69
1937	832-132	23,100	584	4,331	3,135,000	63,720	3,199,000	4,419	1.14	15.47
1938	862-136	33,500	596	6,537	4,733,000	68,600	4,802,000	6,632	1.71	23.20
1939	882-152	23,200	832	4,472	3,238,000	77,610	3,316,000	4,580	1.18	16.01
Calendar year										
1913	362-131	31,500	1,300	7,903	5,721,000	42,010	5,763,000	7,961	2.05	27.82
1914	412-167	20,600	875	5,540	4,011,000	45,430	4,056,000	5,603	1.44	19.54
1915	442-126	11,900	970	3,391	2,455,000	43,270	2,498,000	3,450	.889	12.06
1916	462-101	27,900	1,380	8,568	6,220,000	47,000	6,267,000	8,632	2.22	30.21
1917	512-151	39,800	960	8,164	5,910,000	42,900	5,953,000	8,223	2.12	28.77
1918	512-151	39,200	1,090	7,581	5,489,000	49,010	5,538,000	7,649	1.97	26.73
1919	512-151	25,800	960	6,077	4,400,000	48,480	4,448,000	6,144	1.58	21.44
1920	532-130	19,400	860	4,740	3,441,000	46,720	3,488,000	4,804	1.24	16.88
1921	552-131	25,400	940	7,799	5,646,000	46,680	5,693,000	7,863	2.03	27.55
1922	572-124	24,900	908	4,569	3,308,000	41,980	3,350,000	4,627	1.19	16.15
1923	592-112	21,000	878	5,858	4,241,000	44,920	4,286,000	5,920	1.53	20.76
1924	612-101	17,400	845	4,502	3,269,000	64,010	3,333,000	4,591	1.18	16.06
1925	632-101	30,600	840	7,189	5,205,000	65,740	5,271,000	7,280	1.88	25.51
1926	652-71	16,200	630	4,463	3,231,000	72,720	3,304,000	4,564	1.18	16.01
1927	672-96	27,900	1,150	9,456	6,846,000	68,400	6,914,000	9,551	2.46	33.38
1928	692-153	26,300	795	6,539	4,747,000	67,090	4,814,000	6,632	1.71	23.27
1929	707-161	14,000	770	2,966	2,148,000	55,100	2,203,000	3,043	.784	10.64
1930	722-155	12,000	770	2,968	2,148,000	64,400	2,212,000	3,057	.788	10.69
1931	737-144	15,600	795	3,512	2,543,000	69,850	2,613,000	3,609	.930	12.62
1932	752-143	32,400	795	8,002	5,809,000	65,250	5,874,000	8,091	2.09	28.44
1933	767-136	49,800	770	9,127	6,607,000	68,730	6,676,000	9,222	2.38	32.30
1934	792-136	33,500	610	7,926	5,733,000	72,850	5,811,000	8,027	2.07	28.09
1935	812-123	25,500	452	6,123	4,433,000	76,300	4,509,000	6,229	1.61	21.85
1936	832-132	35,400	584	4,992	3,624,000	69,780	3,694,000	5,089	1.31	17.83
1937	862-136	23,100	596	4,799	3,474,000	63,720	3,538,000	4,887	1.26	17.10
1938	882-152	33,500	610	6,135	4,442,000	69,400	4,511,000	6,231	1.61	21.85

Summary of yearly discharge, in second-feet, at stations in Spokane River Basin--Continued

Spokane River at Spokane, Wash.
(Drainage area, 4,350 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Coeur d'Alene Lake (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1892	532-132	21,800	1,300	6,140	4,450,000	-1,000	4,450,000	6,130	1.41	19.18
1893	532-132	37,500	1,300	6,820	4,930,000	+700	4,940,000	6,820	1.57	21.27
1894	532-132	49,000	1,500	10,000	7,260,000	+18,000	7,270,000	10,000	2.30	31.41
1895	532-132	17,100	1,300	5,630	4,070,000	-18,400	4,060,000	5,600	1.29	17.47
1896	532-132	21,400	1,300	8,030	5,840,000	+8,200	5,850,000	8,060	1.85	25.19
1897	532-132	33,900	1,500	9,510	6,890,000	+10,300	6,890,000	9,520	2.19	29.70
1898	532-132	27,200	1,860	9,990	7,230,000	+2,600	7,240,000	10,000	2.30	31.22
1899	532-132	28,900	2,410	9,170	6,640,000	+6,100	6,640,000	9,170	2.11	28.63
1900	532-132	17,000	2,010	7,640	5,530,000	-5,200	5,530,000	7,610	1.75	23.84
1901	532-132	22,200	2,250	8,780	6,360,000	+200	6,360,000	8,790	2.02	25.23
1902	532-132	24,800	2,090	7,500	5,430,000	-900	5,430,000	7,500	1.72	23.38
1903	532-132	23,900	1,930	8,200	5,930,000	-7,500	5,930,000	8,190	1.88	25.54
1904	532-132	27,900	1,420	7,970	5,780,000	-12,900	5,780,000	7,960	1.83	24.84
1905	178-25	9,510	1,240	3,770	2,730,000	+4,050	2,730,000	3,770	.867	11.79
1906	214-31	18,400	1,390	5,410	3,920,000	-4,400	3,910,000	5,400	1.24	16.89
1907	252-117	25,800	1,360	8,300	6,010,000	+78,400	6,090,000	8,410	1.93	26.25
1908	252-117	26,300	1,680	6,120	4,440,000	+27,200	4,470,000	6,160	1.42	19.24
1909	272-120	19,400	1,680	5,580	4,040,000	-9,500	4,030,000	5,570	1.28	17.38
1910	292-123	28,100	1,800	8,340	6,040,000	-60,400	5,980,000	8,250	1.90	25.75
1911	312-131	17,200	1,650	5,690	4,120,000	-184,000	3,940,000	5,440	1.25	16.98
1912	332-149	21,200	1,650	6,300	4,580,000	+5,290	4,580,000	6,310	1.45	19.74
1913	362-136	33,200	1,700	8,490	6,160,000	+73,400	6,220,000	8,590	1.97	26.84
1914	392-110	19,600	1,500	5,700	4,130,000	-30,700	4,100,000	5,660	1.30	17.65
1915	412-169	11,500	1,400	3,860	2,790,000	-41,400	2,750,000	3,800	.874	11.86
1916	442-128	28,200	1,840	8,800	6,390,000	+63,100	6,460,000	8,900	2.05	27.82
1917	462-103	41,500	2,000	8,290	6,000,000	-55,100	5,950,000	8,210	1.89	25.65
1918	482-87	39,600	1,570	8,070	5,840,000	+27,000	5,870,000	8,110	1.86	25.30
1919	512-154	24,600	1,620	6,550	4,750,000	-40,400	4,710,000	6,500	1.49	20.27
1920	512-154	18,200	1,490	4,520	3,280,000	+82,900	3,370,000	4,640	1.07	14.52
1921	532-132	26,200	1,470	8,480	6,130,000	-26,100	6,100,000	8,420	1.94	26.31
1922	552-133	25,700	1,440	5,640	4,080,000	-2,040	4,080,000	5,630	1.29	17.55
1923	572-126	21,500	1,450	6,360	4,600,000	+4,230	4,600,000	6,360	1.46	19.86
1924	592-114	17,800	1,250	4,720	3,420,000	-30,500	3,390,000	4,670	1.07	14.60
1925	612-103	31,100	1,360	8,030	5,830,000	-4,900	5,820,000	8,040	1.85	25.07
1926	632-103	14,700	1,140	3,820	2,770,000	+26,600	2,790,000	3,860	.887	12.06
1927	652-73	28,200	1,580	8,540	6,180,000	+35,100	6,220,000	8,590	1.97	26.81
1928	672-98	26,000	1,500	9,620	6,980,000	-43,900	6,940,000	9,550	2.20	29.87
1929	692-155	14,300	1,290	3,490	2,530,000	-22,900	2,510,000	3,460	.795	10.81
1930	707-163	12,300	1,160	3,340	2,420,000	+20,900	2,440,000	3,370	.775	10.50
1931	722-157	15,800	1,130	3,860	2,790,000	-11,400	2,780,000	3,840	.883	11.97
1932	737-146	32,900	1,120	7,820	5,680,000	+38,100	5,730,000	7,890	1.81	24.68
1933	752-145	28,000	1,350	7,720	5,590,000	+26,400	5,620,000	7,760	1.78	24.21
1934	767-137	47,100	1,260	10,360	7,498,000	-55,680	7,442,000	10,280	2.36	32.07
1935	792-129	24,900	1,260	7,090	5,132,000	-1,650	5,130,000	7,086	1.63	22.11
1936	812-124	33,700	1,040	5,478	3,977,000	-4,690	3,972,000	5,471	1.26	17.11
1937	832-133	22,100	1,160	4,702	3,404,000	+13,689	3,417,000	4,720	1.09	14.74
1938	862-137	32,200	1,070	6,990	5,060,000	+280	5,060,000	6,990	1.61	21.80
1939	882-153	22,800	1,340	4,846	3,508,000	-52,900	3,456,000	4,773	1.10	14.90
Calendar year										
1892	532-132	21,800	1,300	5,950	4,320,000	-17,100	4,310,000	5,930	1.36	18.55
1893	532-132	37,500	1,400	7,690	5,570,000	+57,300	5,630,000	7,770	1.79	24.27
1894	532-132	49,000	2,150	9,640	6,900,000	-43,900	6,930,000	9,570	2.20	29.91
1895	532-132	17,100	1,300	5,080	3,650,000	-21,200	3,650,000	5,050	1.16	15.74
1896	532-132	21,400	1,500	9,400	6,830,000	+136,000	6,970,000	9,600	2.21	29.99
1897	532-132	33,900	1,860	9,210	6,670,000	-6,100	6,660,000	9,200	2.11	28.70
1898	532-132	27,200	2,410	9,220	6,680,000	-108,000	6,570,000	9,080	2.09	28.34
1899	532-132	28,900	2,580	9,740	7,050,000	+84,800	7,140,000	9,860	2.27	30.77
1900	532-132	17,000	2,010	7,890	5,730,000	+54,200	5,780,000	7,970	1.83	22.78
1901	532-132	22,200	2,090	8,030	5,820,000	-111,000	5,710,000	7,890	1.81	24.57
1902	532-132	24,800	1,930	7,630	5,520,000	-900	5,530,000	7,640	1.76	23.81
1903	532-132	23,900	2,100	8,370	6,060,000	+5,900	6,070,000	8,380	1.93	26.13
1904	532-132	27,900	1,300	7,240	5,260,000	-56,000	5,210,000	7,170	1.65	22.39
1905	178-25	9,510	1,240	4,000	2,900,000	+5,250	2,900,000	4,010	.922	12.55
1906	214-31	18,400	1,360	5,670	4,100,000	+144,000	4,250,000	5,870	1.35	18.33
1907	252-117	25,800	2,000	8,000	5,790,000	-124,000	5,670,000	7,830	1.80	24.44
1908	252-117	26,300	1,680	6,100	4,430,000	+10,900	4,440,000	6,120	1.41	19.11
1909	272-120	19,400	1,680	6,560	4,750,000	+32,500	4,780,000	6,610	1.52	20.62
1910	292-123	28,100	1,810	7,760	5,620,000	-225,000	5,390,000	7,450	1.71	23.24
1911	312-131	17,200	1,650	5,340	3,860,000	-27,200	3,840,000	5,300	1.22	16.54
1912	332-149	21,200	1,650	6,610	4,800,000	-4,210	4,800,000	6,610	1.52	20.65
1913	362-136	33,200	1,700	8,340	6,040,000	+12,500	6,040,000	8,350	1.92	26.07
1914	392-110	19,600	1,400	5,700	4,120,000	+27,700	4,160,000	5,740	1.32	17.88
1915	412-169	11,500	1,700	3,650	2,640,000	+14,400	2,660,000	3,670	.844	11.47
1916	442-128	28,200	2,000	8,830	6,410,000	-3,920	6,410,000	8,830	2.03	27.52
1917	462-103	41,500	1,570	8,630	6,250,000	+411,000	6,660,000	9,200	2.11	28.75
1918	482-87	39,600	1,620	7,820	5,660,000	-430,000	5,230,000	7,220	1.66	22.53
1919	512-154	24,600	1,620	6,330	4,580,000	-34,300	4,550,000	6,280	1.44	19.58
1920	512-154	18,200	1,490	5,060	3,670,000	+96,500	3,770,000	5,190	1.19	16.24
1921	532-132	26,200	1,470	8,390	6,080,000	-54,100	6,010,000	8,310	1.91	25.94
1922	552-133	25,700	1,440	5,210	3,770,000	+5,340	3,780,000	5,220	1.20	16.25
1923	572-126	21,500	1,480	6,430	4,660,000	+7,680	4,660,000	6,430	1.48	20.11
1924	592-114	17,800	1,250	4,930	3,580,000	+14,900	3,590,000	4,950	1.14	15.46
1925	612-103	31,100	1,520	7,760	5,620,000	-3,870	5,610,000	7,750	1.78	24.19
1926	632-103	15,800	1,140	4,830	3,500,000	-14,600	3,480,000	4,810	1.11	15.02
1927	652-73	28,200	1,820	9,980	7,230,000	+23,100	7,240,000	10,000	2.30	31.27

Summary of yearly discharge, in second-feet, at stations in
Spokane River Basin--Continued
Spokane River at Spokane, Wash.--Continued
(Drainage area, 4,350 square miles)
Calendar y ar--Continued

Year	W.S.P. (no. and page)	Observed				Change in contents in Coeur d'Alene Lake (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1928	672-98	26,000	1,330	7,150	5,190,000	-44,100	5,150,000	7,100	1.63	22.16
1929	692-155	14,300	1,290	3,420	2,480,000	+9,160	2,480,000	3,430	.789	10.70
1930	707-163	12,300	1,160	3,320	2,400,000	+3,840	2,410,000	3,330	.766	10.37
1931	722-157	15,800	1,120	3,830	2,780,000	+20,200	2,800,000	3,860	.887	12.05
1932	737-146	32,900	1,360	8,550	6,200,000	+7,390	6,220,000	8,570	1.97	26.80
1933	752-145	47,100	1,350	9,480	6,860,000	+487,000	7,350,000	10,100	2.32	31.65
1934	767-137	34,300	1,260	8,429	6,103,000	-478,300	5,624,000	7,769	1.79	24.24
1935	792-129	24,900	1,040	6,584	4,766,000	-34,180	4,732,000	6,536	1.50	20.39
1936	812-124	33,700	1,160	5,508	3,998,000	-30,780	3,967,000	5,465	1.26	17.10
1937	832-133	22,100	1,070	5,115	3,703,000	+88,120	3,791,000	5,237	1.20	16.35
1938	862-137	32,200	1,280	6,621	4,793,000	-44,210	4,748,000	6,559	1.51	20.45

Spokane River below Little Falls, near Long Lake, Wash.
(Drainage area, 6,380 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Coeur d'Alene and Long Lake Reservoirs (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1913	362-138	31,700	2,420	9,850	7,130,000	+73,400	7,200,000	9,940	1.56	21.17
1914	392-112	21,300	1,910	7,000	5,070,000	-10,900	5,060,000	6,990	1.10	14.85
1915	412-171	14,800	2,000	4,540	3,310,000	+87,800	3,400,000	4.690	.735	9.98
1916	442-130	29,400	1,820	10,200	7,430,000	+62,600	7,490,000	10,300	1.61	22.04
1917	462-104	40,900	2,080	9,580	6,940,000	-49,800	6,890,000	9,520	1.49	20.26
1918	482-89	38,700	1,720	9,050	6,540,000	+18,600	6,560,000	9,070	1.42	19.28
1919	512-157	27,600	1,880	7,830	5,660,000	+16,200	5,680,000	7,840	1.23	16.70
1920	512-157	20,000	1,860	5,400	3,920,000	+92,000	4,010,000	5,520	.865	11.79
1921	532-142	28,200	1,870	9,840	7,120,000	-16,200	7,100,000	9,810	1.54	20.87
1922	552-135	27,900	1,860	6,690	4,840,000	-1,880	4,830,000	6,680	1.05	14.20
1923	572-128	24,200	1,600	7,450	5,390,000	+5,810	5,400,000	7,460	1.17	15.87
1924	592-116	19,100	1,750	5,580	4,050,000	-30,200	4,020,000	5,530	.867	11.83
1925	612-105	34,300	1,790	9,360	6,780,000	-5,000	6,770,000	9,350	1.47	19.87
1926	632-105	17,500	1,480	4,720	3,420,000	+25,200	3,440,000	4.750	.745	10.09
1927	652-74	31,500	1,910	10,000	7,240,000	+35,800	7,270,000	10.000	1.57	21.37
1928	672-99	28,800	1,970	11,500	8,340,000	-45,000	8,290,000	11,400	1.79	24.36
1929	692-156	15,800	1,270	4,400	3,180,000	-23,600	3,160,000	4.360	.683	9.26
1930	707-164	21,300	530	4,140	2,990,000	+22,200	3,010,000	4.160	.652	8.85
1931	722-158	17,900	1,070	4,710	3,410,000	-12,300	3,400,000	4.700	.737	9.99
1932	737-147	33,400	942	9,220	6,690,000	+20,500	6,710,000	9,250	1.45	19.73
1933	752-146	32,800	1,200	9,000	6,510,000	+29,000	6,540,000	9,040	1.42	19.23
1934	767-138	47,200	1,100	11,790	8,536,000	-55,980	8,479,000	11,710	1.84	24.91
1935	792-130	26,500	1,200	8,407	6,087,000	-2,400	6,084,000	8.404	1.32	17.89
1936	812-125	33,900	1,120	6,368	4,622,000	-6,440	4,616,000	6,359	.997	13.56
1937	832-134	23,700	442	5,670	4,105,000	+13,680	4,118,000	5,688	.892	12.07
1938	862-138	33,300	860	8,304	6,011,000	-1,270	6,010,000	8.301	1.30	17.68
1939	882-154	23,700	937	5,831	4,222,000	-59,050	4,162,000	5.750	.901	12.23

Calendar year

1913	362-138	31,700	2,420	9,640	6,980,000	+13,200	6,990,000	9,650	1.51	20.53
1914	392-112	21,300	1,910	6,820	4,940,000	+153,000	5,090,000	7,030	1.10	14.94
1915	412-171	14,800	1,820	4,550	3,290,000	+37,100	3,330,000	4.600	.721	9.78
1916	442-130	29,400	2,080	10,300	7,440,000	-3,080	7,440,000	10.200	1.60	21.88
1917	462-104	40,900	2,260	9,850	7,130,000	+413,000	7,550,000	10.400	1.63	22.19
1918	482-89	38,700	1,720	8,790	6,370,000	-428,000	5,940,000	8.210	1.29	17.46
1919	512-157	27,600	1,860	7,720	5,590,000	+16,600	5,600,000	7,740	1.21	16.48
1920	512-157	20,000	1,910	5,880	4,270,000	+101,000	4,360,000	6,010	.942	12.82
1921	532-142	28,200	1,870	9,740	7,050,000	-43,000	7,010,000	9,680	1.52	20.59
1922	552-135	27,900	1,600	6,250	4,520,000	+7,000	4,530,000	6,250	.980	13.30
1923	572-128	24,200	1,820	7,540	5,460,000	+8,730	5,470,000	7,550	1.18	16.08
1924	592-116	19,100	1,750	5,820	4,220,000	+14,100	4,240,000	5,840	.915	12.47
1925	612-105	34,300	1,820	9,050	6,560,000	-3,720	6,550,000	9,050	1.42	19.22
1926	632-105	17,500	1,480	5,760	4,170,000	-19,800	4,150,000	5,730	.898	12.17
1927	652-74	31,500	2,260	11,700	8,500,000	+18,800	8,510,000	11,800	1.85	25.02
1928	672-99	28,800	1,790	8,710	6,320,000	-35,100	6,290,000	8,660	1.36	18.49
1929	692-156	15,800	530	4,310	3,120,000	-6,440	3,110,000	4.290	.672	9.13
1930	707-164	21,300	1,120	4,100	2,970,000	+19,200	2,990,000	4.130	.647	8.76
1931	722-158	17,900	942	4,680	3,390,000	+18,600	3,410,000	4:710	.738	10.02
1932	737-147	33,400	1,200	9,950	7,230,000	-10,700	7,220,000	9,940	1.56	21.22
1933	752-146	47,200	1,560	10,900	7,890,000	+479,000	8,360,000	11,600	1.82	24.59
1934	767-138	36,100	1,100	9,766	7,071,000	-472,100	6,598,000	9,114	1.43	19.40
1935	792-130	26,500	1,120	7,846	5,680,000	-27,330	5,652,000	7,807	1.22	16.61
1936	812-125	33,900	927	6,373	4,626,000	-34,930	4,592,000	6,325	.991	13.49
1937	832-134	23,700	442	6,121	4,431,000	+91,020	4,522,000	6,246	.979	13.26
1938	862-138	33,300	860	7,926	5,738,000	-44,660	5,693,000	7,863	1.23	16.74

Note.- Storage in Long Lake Reservoir began in December 1914.

Summary of yearly discharge, in second-feet, at stations in Spokane River Basin--Continued

St. Joe River at Calder, Idaho
(Drainage area, 1,080 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-fee					Inches	Acre-feet
1912	332-134	15,400	380	2,340	2.17	29.47	1,700,000	-	-	-	-	-	-
1921	532-144	16,800	420	3,120	2.89	39.33	2,260,000	16,800	310	3,040	2.81	38.32	2,210,000
1922	552-137	16,600	-	2,120	1.96	26.66	1,540,000	16,600	-	1,970	1.82	24.74	1,420,000
1923	572-130	13,000	-	2,240	2.07	28.15	1,620,000	13,000	-	2,270	2.10	28.55	1,640,000
1924	592-118	12,500	-	1,730	1.60	21.83	1,260,000	12,500	-	1,850	1.71	23.33	1,340,000
1925	612-107	-	345	3,170	2.94	39.78	2,290,000	-	275	3,040	2.81	38.24	2,200,000
1926	632-106	10,800	275	1,410	1.31	17.72	1,020,000	10,800	321	1,790	1.66	22.49	1,300,000
1927	652-75	17,300	534	3,100	2.87	39.00	2,250,000	17,300	538	3,520	3.26	44.28	2,550,000
1928	672-101	16,300	333	3,420	3.17	43.09	2,480,000	16,300	147	2,580	2.39	32.51	1,870,000
1929	692-157	8,510	147	1,360	1.26	17.01	981,000	8,510	-	1,360	1.26	17.12	987,000
1930	707-165	8,240	175	1,450	1.34	18.20	1,050,000	8,240	200	1,460	1.35	18.38	1,060,000
1931	722-159	8,510	261	1,380	1.28	17.30	997,000	8,510	250	1,360	1.26	17.06	983,000
1932	737-148	16,600	250	2,600	2.41	32.71	1,880,000	16,600	-	2,790	2.58	35.12	2,020,000
1933	752-147	18,400	366	2,790	2.58	34.98	2,020,000	40,000	443	3,610	3.34	45.32	2,610,000
1934	767-139	40,000	287	3,733	3.46	46.93	2,703,000	18,600	287	2,883	2.67	36.22	2,087,000
1935	792-131	12,900	317	2,341	2.17	29.40	1,695,000	12,900	212	2,167	2.01	27.24	1,569,000
1936	812-126	17,500	212	2,056	1.90	25.92	1,493,000	17,500	198	2,050	1.90	25.84	1,488,000
1937	832-135	11,700	198	1,536	1.42	19.30	1,112,000	11,700	200	1,630	1.51	20.48	1,180,000
1938	862-139	39,400	310	2,449	2.27	30.78	1,773,000	39,400	310	2,403	2.22	30.20	1,740,000
1939	882-155	13,000	298	1,780	1.65	22.38	1,288,000	-	-	-	-	-	-

St. Maries River at Lotus, Idaho
(Drainage area, 420 square miles)

1921	532-145	7,710	60	638	1.52	20.61	462,000	7,710	60	660	1.57	21.33	478,000
1922	552-139	2,780	-	474	1.13	15.30	343,000	2,780	-	403	.960	13.01	291,000
1923	572-132	3,950	-	452	1.08	14.60	327,000	3,950	49	467	1.11	15.09	339,000
1924	592-120	-	36	324	.771	10.51	235,000	-	36	346	.824	11.21	251,000
1925	612-109	-	44	641	1.53	20.71	464,000	-	-	619	1.47	19.99	448,000
1926	632-109	2,800	-	305	.726	9.88	221,000	2,860	41	384	.914	12.43	278,000
1927	652-76	3,810	64	686	1.63	22.18	496,000	5,800	64	847	2.02	27.39	613,000
1928	672-102	5,800	44	848	2.02	27.48	616,000	4,840	23	594	1.41	19.27	432,000
1929	692-158	1,500	23	190	.452	6.13	138,000	1,500	16	189	.450	6.08	137,000
1930	707-166	2,270	16	214	.510	6.91	155,000	2,270	18	212	.505	6.86	154,000
1931	722-160	3,990	21	291	.693	9.38	211,000	3,990	21	290	.690	9.36	210,000
1932	737-149	4,410	-	647	1.54	20.97	469,000	4,410	-	688	1.64	22.28	499,000
1933	752-148	3,740	42	581	1.38	18.73	420,000	10,900	48	851	2.03	27.46	616,000
1934	767-140	10,900	34	846	2.01	27.32	612,700	6,620	34	576	1.37	18.60	417,000
1935	792-132	4,330	39	569	1.35	18.39	411,600	4,330	33	531	1.26	17.18	384,600
1936	812-127	3,670	32	411	.979	13.35	293,500	3,670	21	407	.969	13.21	295,600
1937	832-136	6,370	21	384	.914	12.41	278,000	6,370	30	447	1.06	14.45	323,900
1938	862-140	7,980	38	562	1.34	18.15	406,700	7,980	38	513	1.22	16.57	371,100
1939	882-156	3,460	32	348	.829	11.24	251,600	-	-	-	-	-	-

NESPELEM RIVER BASIN

Nespelem River at (near) Nespelem, Wash.
(Drainage area, 122 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1911	312-137	May 1 to Dec. 31				225	8	-	18,000
1912	332-156	162	9	31.4	22,800	162	9	33.6	24,400
1913	362-150	176	7	39.6	28,600	176	7	37.4	27,100
1914	392-118	449	7	66.1	47,800	449	9.2	66.8	48,400
1915	412-180	255	9.1	49.4	35,700	255	9.1	49.3	35,700
1916	442-138	379	7.5	72.1	52,400	379	7.5	72.0	52,300
1917	462-111	373	6.7	48.7	35,200	373	6.7	47.8	34,600
1918	482-91	51	8	15.8	11,400	51	8.0	15.8	11,400
1919	512-165	483	8	61.9	44,900	483	8.5	62.2	45,100
1920	512-165	31	6.7	11.7	8,470	43	6.7	13.9	10,100
1921	532-154	394	7.1	74.4	53,800	394	9.6	72.2	52,300
1922	552-144	196	7.8	33.5	24,300	-	-	-	-
1923	572-136	Apr. 1 to Sept. 30				104	9.0	-	15,500
1924	592-125	Apr. 1 to Sept. 30				68.7	7.1	-	8,590
1925	612-113	Apr. 1 to Dec. 31				339	8.7	-	28,100
1926	632-113	40	5.7	12.8	9,260	-	-	-	-
1927	652-79	Apr. 18 to Dec. 31				322	10.0	-	33,700
1928	672-105	109	8.2	27.1	19,700	109	7.7	25.6	18,600
1929	692-161	40	5.3	12.8	9,290	-	-	-	-

Note.- Figures for 1911, 1923-25, 1927, are for periods indicated in those years.

Summary of yearly discharge, in second-feet, at stations in OKANOGAN RIVER BASIN

Okanogan River near Tonasket, Wash.
(published as Okanogan River at Okanogan prior to October 1925; drainage area, 7,740 square miles)
International gaging station
(Drainage area, 7,250 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1912	362-152	12,900	820	2,600	1,890,000	12,900	820	2,650	1,920,000
1913	362-152	17,600	-	3,060	2,210,000	17,600	-	3,130	2,270,000
1914	392-119	13,700	-	3,070	2,230,000	13,700	-	3,020	2,180,000
1915	412-182	7,220	-	2,170	1,570,000	7,220	-	2,150	1,550,000
1916	442-140	22,200	-	4,070	2,960,000	22,200	-	4,020	2,920,000
1917	462-113	16,100	660	2,860	2,070,000	16,100	520	2,870	2,080,000
1918	482-93	16,200	520	3,080	2,230,000	16,200	660	3,070	2,220,000
1919	512-168	18,000	610	3,180	2,300,000	18,000	610	3,170	2,300,000
1920	512-168	10,800	615	2,330	1,690,000	10,800	700	2,410	1,750,000
1921	532-157	20,800	570	3,380	2,450,000	20,800	570	3,460	2,510,000
1922	552-147	20,400	720	2,830	2,050,000	20,400	-	2,680	1,940,000
1923	572-139	16,200	385	3,160	2,280,000	16,200	385	3,180	2,300,000
1924	592-128	17,800	412	2,240	1,630,000	17,800	412	2,200	1,590,000
1925	612-116	19,200	450	2,640	1,910,000	-	-	-	-
1930	707-171	7,930	262	1,620	1,170,000	7,930	288	1,640	1,190,000
1931	722-166	8,290	132	1,140	826,000	8,290	132	1,150	831,000
1932	737-155	10,600	-	2,260	1,650,000	10,600	-	2,520	1,830,000
1933	752-153	19,900	660	3,280	2,380,000	19,900	840	3,550	2,570,000
1934	767-145	25,400	514	4,168	3,018,000	25,400	514	3,927	2,843,000
1935	792-137	14,700	430	3,409	2,468,000	14,700	430	3,323	2,406,000
1936	812-132	11,600	450	2,330	1,691,000	11,600	450	2,221	1,612,000
1937	862-145	14,900	450	2,424	1,755,000	14,900	450	2,542	1,840,000
1938	862-145	20,400	493	3,100	2,244,000	20,400	493	2,964	2,146,000
1939	882-161	11,000	476	2,015	1,459,000	-	-	-	-

Similkameen River near Nighthawk, Wash.
(published as Similkameen River near Oroville, Wash., 1912-28; drainage area, 3,450 square miles)
(Drainage area, 3,420 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Diverted by Oroville-Tonasket Irrigation District canal (acre-feet)	Adjusted for diversion			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1912	362-156	12,600	388	1,820	1,320,000	-	1,320,000	1,820	0.528	7.19
1913	362-156	17,900	304	2,190	1,590,000	-	1,590,000	2,190	.635	8.62
1914	392-121	12,800	404	2,140	1,550,000	-	1,550,000	2,140	.620	8.42
1915	412-184	5,810	-	1,320	952,000	-	952,000	1,320	.383	5.20
1916	442-142	20,400	-	3,160	2,290,000	30,000	2,320,000	3,190	.925	12.57
1917	462-115	15,900	-	2,200	1,590,000	30,000	1,620,000	2,230	.646	8.81
1918	482-95	16,700	348	2,540	1,820,000	30,000	1,850,000	2,580	.748	10.08
1919	512-170	19,100	-	2,540	1,840,000	30,000	1,870,000	2,580	.748	10.15
1920	512-170	9,700	-	1,860	1,350,000	40,000	1,390,000	1,900	.551	7.51
1921	532-159	20,800	279	2,630	1,910,000	30,000	1,940,000	2,680	.777	10.56
1922	552-149	21,500	405	2,130	1,550,000	35,300	1,580,000	2,180	.632	8.57
1923	572-141	16,100	260	2,450	1,770,000	35,700	1,810,000	2,500	.725	9.81
1924	592-130	18,300	123	1,740	1,260,000	46,500	1,310,000	1,810	.525	7.13
1925	612-118	18,200	334	2,290	1,660,000	47,600	1,700,000	2,350	.681	9.27
1926	632-116	5,700	224	864	625,000	44,300	670,000	925	.268	3.64
1927	652-81	17,200	100	1,770	1,280,000	41,000	1,320,000	1,830	.530	7.17
1928	672-108	20,600	343	2,600	1,890,000	44,600	1,930,000	2,660	.771	10.49
1929	692-166	8,100	-	1,150	834,000	-	834,000	1,150	.336	4.59
1930	707-172	8,300	-	1,590	1,150,000	-	1,150,000	1,590	.465	6.29
1931	722-167	8,960	238	1,170	848,000	-	848,000	1,170	.342	4.65
1932	737-156	10,200	-	1,900	1,370,000	-	1,370,000	1,900	.556	7.55
1933	752-154	20,500	318	2,640	1,910,000	-	1,910,000	2,640	.772	10.49
1934	767-146	26,400	388	3,588	2,598,000	-	2,598,000	3,588	1.05	14.25
1935	792-138	14,600	280	2,654	1,922,000	-	1,922,000	2,654	.776	10.53
1936	812-133	11,200	230	1,703	1,236,000	-	1,236,000	1,703	.498	6.79
1937	832-142	15,500	200	1,971	1,427,000	-	1,427,000	1,971	.576	7.83
1938	862-147	21,600	369	2,481	1,796,000	-	1,796,000	2,481	.725	9.84
1939	882-162	10,000	285	1,717	1,243,000	-	1,243,000	1,717	.502	6.83

Calendar year

1912	362-156	12,600	388	1,820	1,320,000	-	1,320,000	1,820	.528	7.19
1913	362-156	17,900	304	2,240	1,620,000	-	1,620,000	2,240	.649	8.81
1914	392-121	12,800	420	2,120	1,530,000	-	1,530,000	2,120	.614	8.33
1915	412-184	5,810	-	1,310	946,000	-	946,000	1,310	.380	5.16
1916	442-142	20,400	-	3,130	2,270,000	30,000	2,300,000	3,170	.919	12.49
1917	462-115	15,900	-	2,230	1,610,000	30,000	1,640,000	2,260	.655	8.90
1918	482-95	16,700	348	2,510	1,820,000	30,000	1,850,000	2,550	.739	10.05
1919	512-170	19,100	-	2,550	1,840,000	30,000	1,870,000	2,590	.751	10.17
1920	512-170	9,700	378	1,960	1,420,000	40,000	1,460,000	2,010	.583	7.91
1921	532-159	20,800	279	2,650	1,920,000	30,000	1,950,000	2,700	.783	10.62
1922	552-149	21,500	330	2,000	1,450,000	35,300	1,480,000	2,040	.591	8.03
1923	572-141	16,100	132	2,430	1,760,000	35,700	1,790,000	2,470	.716	9.72
1924	592-130	18,300	123	1,810	1,320,000	46,500	1,370,000	1,880	.545	7.42

Summary of yearly discharge, in second-feet, at stations in Okanogan River Basin--Continued

Similkameen River near Nighthawk, Wash.--Continued
(published as Similkameen River near Oroville, Wash., 1912-28; drainage area, 3,450 square miles)
(Drainage area, 3,420 square miles)
Calendar year--Continued

Year	W.S.P. (no. and page)	Observed				Diverted by Oroville-Tonasket Irrigation District canal (acre-feet)	Adjusted for diversion			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1925	612-118	18,200	282	2,200	1,600,000	47,600	1,640,000	2,270	0.658	8.94
1926	632-116	5,700	220	870	630,000	44,300	675,000	933	.270	3.66
1927	652-81	17,200	100	2,100	1,520,000	41,000	1,570,000	2,160	.626	8.50
1928	672-108	20,600	279	2,280	1,650,000	44,600	1,700,000	2,340	.680	9.23
1929	692-166	8,100	-	1,100	796,000	-	796,000	1,100	.322	4.39
1930	707-172	8,300	-	1,610	1,170,000	-	1,170,000	1,610	.471	6.40
1931	722-167	8,960	252	1,180	852,000	-	852,000	1,180	.345	4.66
1932	737-156	10,200	-	2,040	1,480,000	-	1,480,000	2,040	.596	8.14
1933	752-154	20,500	-	2,880	2,080,000	-	2,080,000	2,880	.842	11.42
1934	767-146	26,400	388	3,317	2,401,000	-	2,401,000	3,317	.970	13.16
1935	792-138	14,600	280	2,558	1,852,000	-	1,852,000	2,558	.748	10.16
1936	812-133	11,200	230	1,660	1,205,000	-	1,205,000	1,660	.485	6.61
1937	832-142	15,500	200	2,088	1,512,000	-	1,512,000	2,088	.611	8.29
1938	862-147	21,600	330	2,405	1,741,000	-	1,741,000	2,405	.703	9.55

Note.- Diversion by Oroville-Tonasket Irrigation District canal began April 1916. Station moved above point of diversion for this canal October 1928.

Salmon Creek near Conconully, (Okanogan), Wash.
(Drainage area, 121 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Salmon Lake and Conconully Reservoirs (acre-feet)	Adjusted for change in reservoir contents	
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Mean in second-feet
		Maximum	Minimum	Mean				
1911	312-139	107	0.0	20.6	15,000	-	15,000	20.6
1912	412-186	126	.8	24.6	17,800	+1,850	19,700	27.1
1913	412-186	120	1.5	28.0	20,300	+994	21,200	29.3
1914	412-186	246	1.7	42.4	30,700	+1,650	32,300	44.6
1915	412-186	292	1.7	45.0	32,700	-161	32,500	44.9
1916	442-144	410	2.5	66.6	48,200	+2,160	50,400	69.4
1917	462-116	244	1.3	44.0	31,900	-6,400	25,500	35.2
*1918	482-97	143	1.3	15.2	11,000	-2,170	8,860	12.2
*1919	512-175	132	.8	21.6	15,600	-	-	-
*1920	512-175	68	.0	10.4	7,560	-	-	-
*1921	532-165	104	.8	30.4	22,000	-	-	-
*1922	552-154	100	1.2	26.1	18,900	-	-	-

Calendar year

1911	312-139	107	.4	21.0	15,200	+1,050	16,200	22.4
1912	412-186	126	.8	24.6	17,800	+2,050	19,900	27.4
1913	412-186	120	1.5	27.9	20,200	+719	20,900	28.8
1914	412-186	246	1.7	42.3	30,600	+3,150	33,700	46.6
1915	412-186	292	1.9	45.9	33,200	-1,750	31,500	43.5
1916	442-144	410	2.8	67.2	48,800	+2,060	50,800	70.0
1917	462-116	244	1.3	42.8	31,000	-5,860	25,200	34.8
1918	482-97	143	.8	15.5	11,200	-3,490	7,720	10.7
*1919	512-175	132	[illegible]	20.8	15,000	-	-	-
*1920	512-175	68	.8	11.0	8,000	-	-	-
*1921	532-165	104	1.0	30.1	21,800	-	-	-
*1922	552-154	-	-	-	-	-	-	-

*Figures of monthly change in contents for Salmon Lake and Conconully Reservoirs not available. Records not adjusted.

Salmon Creek near Okanogan (Malott), Wash.
(Drainage area, 152 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1904	135-63	577	11	78.9	57,300	577	11	78.0	56,600
1905	178-32	410	10	58.6	42,400	410	7	57.6	41,700
1906	252-122	380	5.8	40.5	29,300	380	5.8	40.2	29,100
1907	252-122	363	6.2	47.9	34,700	363	7.8	47.4	34,300
1908	252-122	214	6.2	34.4	25,000	214	3	34.0	24,700
1909	272-132	166	2.9	33.3	24,100	166	2.9	33.9	24,600
1910	292-126	81	2.9	29.4	21,300	81	0	26.6	19,200

Summary of yearly discharge, in second-feet, at stations in METHOW RIVER BASIN

Methow River at Twisp, Wash.
(Drainage area, 1,330 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1920	512-178	4,320	-	731	531,000	4,320	165	817	593,000
1921	532-167	12,700	233	1,740	1,260,000	12,700	233	1,730	1,250,000
1922	552-157	12,300	249	1,260	914,000	12,300	203	1,200	871,000
1923	572-148	8,420	203	1,360	982,000	8,420	203	1,350	978,000
1924	592-136	10,800	-	897	651,000	10,800	-	900	653,000
1925	612-124	11,400	204	1,260	911,000	11,400	204	1,240	898,000
1926	632-122	3,050	134	467	339,000	3,050	134	491	356,000
1927	652-85	12,400	195	1,060	768,000	12,400	195	1,170	848,000
1928	672-112	10,200	195	1,300	946,000	10,200	195	1,180	854,000
1929	692-168	5,010	134	609	441,000	-	-	-	-
1934	767-147	-	-	2,084	1,509,000	14,900	171	1,934	1,400,000
1935	792-139	9,840	204	1,645	1,191,000	9,840	218	1,582	1,145,000
1936	812-134	9,880	170	883	640,800	9,880	162	869	630,900
1937	832-143	10,900	140	1,148	831,100	10,900	140	1,209	875,200
1938	862-148	12,800	192	1,583	1,146,000	12,800	192	1,541	1,115,000
1939	882-163	4,800	181	779	563,900	-	-	-	-

Methow River at Pateros, Wash.
(Drainage area, 1,810 square miles)

1904	482-99	11,800	435	2,270	1,650,000	11,800	345	2,160	1,570,000
1905	482-99	11,900	-	1,880	1,360,000	11,900	-	1,910	1,380,000
1906	482-99	12,200	330	1,510	1,100,000	12,200	330	1,510	1,090,000
1907	482-99	12,900	-	1,900	1,380,000	12,900	-	1,880	1,360,000
1908	482-99	11,600	315	1,670	1,210,000	11,600	315	1,660	1,200,000
1909	482-99	12,200	-	1,530	1,110,000	12,200	-	1,550	1,120,000
1910	482-99	14,900	-	2,370	1,720,000	14,900	-	2,420	1,750,000
1911	482-99	13,200	-	1,620	1,170,000	13,200	-	1,550	1,120,000
1912	482-99	10,100	-	1,300	946,000	10,100	-	1,310	948,000
1913	482-99	11,000	-	1,560	1,130,000	11,000	-	1,560	1,130,000
1914	482-99	9,860	252	1,680	1,220,000	9,860	252	1,750	1,270,000
1915	412-189	4,900	-	1,200	870,000	4,900	-	1,140	828,000
1916	442-146	14,200	-	2,380	1,730,000	14,200	-	2,400	1,740,000
1917	462-118	9,780	-	1,460	1,050,000	9,780	-	1,440	1,040,000
1918	482-99	9,420	-	1,360	987,000	9,420	-	1,360	986,000
1919	512-180	9,510	-	1,580	1,140,000	9,510	-	1,580	1,140,000
1920	512-180	4,550	-	873	633,000	-	-	-	-

CHELAN RIVER BASIN

Stehekin River at Stehekin, Wash.
(Drainage area, 372 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1911	312-145	11,400	150	1,830	4.92	66.78	1,330,000	11,400	150	1,600	4.30	58.37	1,160,000
1912	332-167	6,860	175	1,220	3.28	44.65	886,000	6,860	189	1,210	3.25	44.24	882,000
1913	362-168	6,420	209	1,420	3.82	51.85	1,030,000	6,420	209	1,460	3.92	53.21	1,060,000
1914	412-190	6,230	189	1,340	3.60	48.87	973,000	6,230	189	1,400	3.76	51.04	1,010,000
1915	412-190	3,320	-	971	2.61	35.43	702,000	-	-	-	-	-	-
1928	672-113	9,830	340	1,570	4.22	57.37	1,140,000	9,830	186	1,410	3.79	51.39	1,020,000
1929	692-169	5,660	118	970	2.61	35.42	702,000	5,660	82	903	2.43	32.96	654,000
1930	707-174	4,440	58	1,000	2.69	36.65	728,000	4,440	58	1,040	2.80	37.89	753,000
1931	722-168	7,250	125	1,110	2.98	40.67	806,000	7,250	125	1,120	3.01	41.05	814,000
1932	737-157	9,120	178	1,410	3.79	51.42	1,020,000	9,120	178	1,550	4.17	56.78	1,130,000
1933	752-155	10,300	236	1,620	4.35	58.99	1,170,000	10,300	236	1,770	4.76	64.42	1,280,000
1934	767-148	9,590	320	2,007	5.40	73.24	1,453,000	9,590	256	1,809	4.86	66.02	1,310,000
1935	792-140	6,780	-	1,596	4.29	58.25	1,156,000	6,780	141	1,479	3.98	53.96	1,071,000
1936	812-135	9,150	87	1,188	3.19	43.50	862,700	9,150	87	1,175	3.16	43.02	853,200
1937	832-144	7,460	94	1,145	3.08	41.81	828,700	7,460	94	1,221	3.28	44.58	883,700
1938	862-149	8,090	239	1,458	3.92	53.21	1,055,000	8,090	236	1,421	3.82	51.85	1,028,000
1939	882-164	7,050	207	1,187	3.19	43.28	859,000	-	-	-	-	-	-

Chelan River at Chelan, Wash.
(Drainage area, 950 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Lake Chelan (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1904	482-110	8,280	555	-	-	0	2,060,000	2,840	2.99	40.74
1905	482-110	8,280	705	2,330	1,680,000	0	1,680,000	2,330	2.45	33.24
1906	482-110	5,100	765	2,050	1,480,000	0	1,480,000	2,050	2.16	29.24
1907	482-110	8,460	600	2,480	1,790,000	0	1,790,000	2,480	2.61	35.38
1908	482-110	8,820	364	2,250	1,630,000	0	1,630,000	2,250	2.37	32.24
1909	482-110	7,600	418	1,920	1,390,000	0	1,390,000	1,920	2.02	27.48
1910	482-110	8,460	480	2,680	1,940,000	0	1,940,000	2,680	2.82	38.22

Summary of yearly discharge, in second-feet, at stations in
Chelan River Basin--Continued
Chelan River at Chelan, Wash.--Continued
(Drainage area, 950 square miles)
Water year ending Sept. 30--Continued

Year	W.S.P. (no. and page	Observed				Change in contents in Lake Chelan (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1911	482-110	7,260	317	2,190	1,580,000	+500	1,580,000	2,190	2.31	31.29
1912	482-110	7,260	340	1,870	1,350,000	-16,800	1,340,000	1,840	1.94	26.41
1913	482-110	9,070	390	2,100	1,520,000	+15,500	1,530,000	2,120	2.23	30.27
1914	392-128	6,820	424	2,050	1,490,000	0	1,490,000	2,050	2.16	29.32
1915	412-194	3,900	403	1,490	1,080,000	-17,600	1,060,000	1,470	1.55	20.96
1916	442-148	9,780	303	2,680	1,940,000	+6,100	1,950,000	2,680	2.82	38.47
1917	462-121	7,440	-	1,940	1,400,000	+13,000	1,410,000	1,950	2.05	27.91
1918	482-110	8,140	330	2,300	1,660,000	+5,000	1,670,000	2,300	2.42	32.93
1919	512-186	7,600	547	2,350	1,700,000	-21,500	1,680,000	2,320	2.44	33.08
1920	512-186	5,580	211	1,590	1,150,000	+26,200	1,180,000	1,620	1.71	23.29
1921	532-172	11,600	586	2,690	1,950,000	-14,300	1,930,000	2,670	2.81	38.12
1922	552-160	8,420	512	2,060	1,490,000	-24,600	1,470,000	2,030	2.14	28.94
1923	572-151	7,520	289	2,030	1,470,000	+17,600	1,490,000	2,050	2.16	29.35
1924	612-127	7,950	320	1,700	1,230,000	-9,600	1,220,000	1,680	1.77	24.12
1925	612-127	8,670	528	2,260	1,640,000	-19,400	1,620,000	2,230	2.35	31.87
1926	632-124	3,800	275	1,200	867,000	+12,500	879,000	1,210	1.27	17.33
1927	652-88	7,730	-	1,650	1,200,000	+147,000	1,340,000	1,860	1.96	26.52
1928	672-115	9,700	0	1,530	1,110,000	+435,000	1,540,000	2,120	2.23	30.49
1929	692-171	3,790	131	1,390	1,010,000	-72,200	933,000	1,290	1.36	18.41
1930	707-176	5,650	28	1,300	937,000	+43,700	980,000	1,350	1.42	19.35
1931	722-170	7,880	156	1,510	1,090,000	-49,600	1,040,000	1,440	1.52	20.61
1932	737-159	10,200	42	1,790	1,300,000	+114,000	1,410,000	1,950	2.05	27.89
1933	752-157	8,710	46	2,250	1,630,000	+37,500	1,660,000	2,290	2.41	32.85
1934	767-150	12,300	6	3,139	2,273,000	-96,240	2,176,000	3,006	3.16	42.94
1935	792-142	7,920	555	2,344	1,697,000	+5,800	1,703,000	2,352	2.48	33.59
1936	812-137	12,800	14	1,727	1,254,000	-68,130	1,186,000	1,633	1.72	23.39
1937	832-146	10,000	1	1,647	1,193,000	+21,840	1,214,000	1,677	1.77	23.97
1938	862-151	11,900	404	2,188	1,584,000	+3,290	1,588,000	2,193	2.31	31.34
1939	882-166	6,500	130	1,566	1,134,000	-4,300	1,130,000	1,560	1.64	22.30

Calendar year

1904	482-110	8,280	555	2,700	1,960,000	-5,000	1,960,000	2,700	2.84	38.62
1905	482-110	8,280	705	2,430	1,760,000	-21,500	1,740,000	2,400	2.53	34.31
1906	482-110	5,100	765	2,130	1,540,000	+6,500	1,550,000	2,140	2.25	30.58
1907	482-110	8,460	364	2,240	1,620,000	+45,700	1,670,000	2,310	2.43	32.93
1908	482-110	8,820	418	2,260	1,640,000	-20,200	1,620,000	2,230	2.35	31.93
1909	482-110	7,600	418	2,040	1,480,000	+22,400	1,500,000	2,070	2.18	29.57
1910	482-110	8,460	364	2,860	2,070,000	-37,200	2,040,000	2,810	2.96	40.16
1911	482-110	7,260	317	1,840	1,330,000	+37,200	1,370,000	1,890	1.99	27.04
1912	482-110	7,260	390	1,860	1,350,000	-9,500	1,340,000	1,840	1.94	26.40
1913	482-110	9,070	390	2,150	1,550,000	+6,300	1,560,000	2,150	2.26	30.77
1914	392-128	6,820	454	2,140	1,550,000	+13,700	1,560,000	2,160	2.27	30.79
1915	412-194	3,900	349	1,380	997,000	-8,400	988,000	1,370	1.44	19.50
1916	442-148	9,780	303	2,650	1,920,000	-11,000	1,910,000	2,630	2.77	37.75
1917	462-121	7,440	-	2,000	1,450,000	+57,000	1,510,000	2,080	2.19	29.77
1918	482-110	8,140	330	2,350	1,700,000	-36,900	1,670,000	2,300	2.42	32.92
1919	512-186	7,600	381	2,250	1,630,000	-5,100	1,620,000	2,240	2.36	32.04
1920	512-186	5,580	211	1,760	1,280,000	-1,550	1,270,000	1,760	1.85	25.16
1921	532-172	11,600	586	2,740	1,980,000	+21,400	2,010,000	2,770	2.92	39.59
1922	552-160	8,420	360	1,830	1,330,000	-61,850	1,270,000	1,750	1.84	25.00
1923	572-151	7,520	289	2,020	1,460,000	+31,350	1,490,000	2,060	2.17	29.41
1924	612-127	7,950	320	1,760	1,280,000	+35,400	1,320,000	1,810	1.91	25.97
1925	612-127	8,670	310	2,190	1,580,000	-77,500	1,500,000	2,080	2.19	29.69
1926	632-124	3,800	275	1,260	911,000	+70,550	982,000	1,360	1.43	19.36
1927	652-88	7,730	-	1,760	1,270,000	+157,000	1,430,000	1,980	2.08	28.24
1928	672-115	9,700	0	1,630	1,180,000	+216,000	1,400,000	1,920	2.02	27.50
1929	692-171	3,790	131	1,550	1,120,000	-230,000	894,000	1,240	1.31	17.64
1930	707-176	5,550	28	1,190	859,000	+129,000	988,000	1,360	1.43	19.49
1931	722-170	7,880	156	1,470	1,060,000	-5,220	1,060,000	1,460	1.54	20.86
1932	737-159	10,200	42	1,800	1,310,000	+246,000	1,550,000	2,140	2.25	30.68
1933	752-157	8,710	46	2,560	1,850,000	-1,250	1,850,000	2,550	2.68	36.49
1934	767-150	12,300	6	2,729	1,976,000	-680	1,975,000	2,728	2.87	38.97
1935	792-142	7,920	816	2,567	1,858,000	-308,000	1,550,000	2,141	2.25	30.58
1936	812-137	12,800	14	1,707	1,239,000	-67,980	1,171,000	1,614	1.70	23.11
1937	832-146	10,000	1	1,612	1,167,000	+151,700	1,319,000	1,822	1.92	26.02
1938	862-151	11,900	404	2,257	1,634,000	-108,000	1,526,000	2,107	2.22	30.13

Railroad Creek at Lucerne, Wash.
(Drainage area, 64 square miles)

Year	W.S.P. (no. and page	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-fee					Inches	Acre-feet
1911	312-149	-	-	-	-	-	-	900	36	191	2.98	40.44	138,000
1912	332-172	900	22	174	2.72	36.98	126,000	900	22	170	2.66	36.10	123,000
1928	672-116	1,680	-	235	3.67	49.95	171,000	1,680	-	211	3.30	44.89	153,000
1929	692-172	933	14	140	2.19	29.76	102,000	933	10	134	2.09	28.35	96,900
1930	707-177	604	-	141	2.20	29.89	102,000	604	-	144	2.25	30.58	104,000
1931	722-171	792	-	147	2.30	31.27	107,000	792	-	148	2.31	31.32	107,000
1932	737-160	911	-	196	3.06	41.77	142,000	911	-	216	3.38	45.91	157,000
1933	752-158	1,310	-	234	3.66	49.56	169,000	1,310	-	243	3.80	51.46	176,000

Summary of yearly discharge, in second-feet, at stations in Chelan River Basin--Continued

Railroad Creek at Lucerne, Wash.--Continued
(Drainage area, 64 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1934	767-151	1,530	47	279	4.36	59.25	202,100	1,530	43	270	4.22	57.34	195,700
1935	792-143	1,120	35	238	3.72	50.50	172,300	1,120	22	220	3.44	46.70	159,300
1936	812-138	1,320	12	169	2.64	36.04	122,900	1,320	12	166	2.59	35.38	120,700
1937	832-147	1,190	18	174	2.72	36.88	125,700	1,190	18	183	2.86	38.95	132,800
1938	862-152	1,380	32	212	3.31	44.96	153,400	1,380	26	206	3.22	43.76	149,200
1939	882-167	1,060	26	161	2.52	34.14	116,600	-	-	-	-	-	-

ENTIAT RIVER BASIN

Entiat River at Entiat, Wash.
(Drainage area, 419 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Estimated irrigation diversion and depletion* (acre-feet)	Adjusted for diversion and depletion			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1911	312-152	3,060	-	471	341,000	4,000	345,000	478	1.14	15.47
1912	332-174	3,060	70	457	332,000	4,000	336,000	463	1.11	15.07
1913	362-174	3,800	-	569	412,000	5,000	417,000	576	1.37	18.66
1914	392-129	2,870	65	514	372,000	4,000	376,000	520	1.24	16.84
1915	412-196	1,510	83	338	245,000	4,000	249,000	344	.821	11.15
1916	442-150	5,150	73	804	585,000	4,000	589,000	811	1.94	26.35
1917	462-123	3,120	62	506	366,000	5,000	371,000	511	1.22	16.56
1918	482-120	3,120	-	488	353,000	5,000	358,000	494	1.18	16.02
1919	512-188	2,950	64	517	374,000	5,000	379,000	524	1.25	16.93
1920	512-188	1,030	-	275	199,000	5,000	204,000	281	.671	9.12
1921	532-173	4,360	-	675	488,000	4,000	492,000	680	1.52	22.03
1922	552-162	3,640	-	432	313,000	4,000	317,000	438	1.05	14.21
1923	572-153	3,120	-	476	344,000	5,000	349,000	482	1.15	15.61
1924	592-141	3,460	-	352	255,000	6,000	261,000	359	.857	11.63
1925	612-129	3,670	-	496	359,000	5,000	364,000	502	1.20	16.28
Calendar year										
1911	312-152	3,060	80	440	319,000	4,000	323,000	446	1.06	14.46
1912	332-174	3,060	70	456	332,000	4,000	336,000	463	1.11	15.04
1913	362-174	3,800	-	576	417,000	5,000	422,000	583	1.39	18.90
1914	392-129	2,870	65	523	379,000	4,000	383,000	529	1.26	17.14
1915	412-196	1,510	73	316	229,000	5,000	234,000	323	.771	10.45
1916	442-150	5,150	62	813	590,000	4,000	594,000	818	1.95	26.56
1917	462-123	3,120	-	513	371,000	5,000	376,000	519	1.24	16.81
1918	482-120	3,120	64	485	351,000	5,000	356,000	492	1.17	15.91
1919	512-188	2,950	-	509	368,000	6,000	374,000	516	1.23	16.70
1920	512-188	1,030	79	300	218,000	4,000	222,000	306	.730	9.95
1921	532-173	4,360	-	688	498,000	3,000	501,000	693	1.65	22.45
1922	552-162	3,640	-	388	281,000	4,000	285,000	394	.940	12.78
1923	572-153	3,120	-	479	347,000	5,000	352,000	486	1.16	15.74
1924	592-141	3,460	59	356	259,000	5,000	264,000	363	.866	11.79

*Diversion around station by Entiat Irrigation Co's high-line canal (capacity, about 15 second-feet) and depletion by irrigation above station.

WENATCHEE RIVER BASIN

Wenatchee River at Plain (near Leavenworth), Wash.
(Drainage area, 591 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1911	482-122	10,400	468	2,170	3.67	49.91	1,570,000	10,400	335	1,870	3.16	42.92	1,350,000
1912	482-122	11,500	335	2,070	3.50	47.60	1,500,000	11,500	402	2,010	3.40	46.28	1,460,000
1913	482-122	14,300	402	2,500	4.23	57.37	1,810,000	14,300	-	2,620	4.43	60.15	1,900,000
1914	482-122	8,560	482	2,090	3.54	48.05	1,520,000	8,560	482	2,150	3.64	49.40	1,560,000
1915	412-198	6,020	316	1,360	2.30	31.31	987,000	6,020	316	1,200	2.03	27.63	871,000
1916	442-152	16,400	316	2,810	4.75	64.83	2,040,000	16,400	-	2,760	4.67	63.50	2,000,000
1917	462-125	11,000	-	2,160	3.65	49.52	1,560,000	18,700	-	2,440	4.13	56.10	1,770,000
1918	482-122	18,700	405	2,500	4.23	57.43	1,810,000	15,400	505	2,420	4.09	55.61	1,750,000
1919	512-191	11,500	540	2,480	4.20	56.92	1,800,000	11,500	405	2,400	4.06	54.95	1,730,000
1920	512-191	6,470	405	1,780	3.01	41.04	1,290,000	6,470	580	1,930	3.27	44.45	1,400,000
1921	532-175	13,800	505	3,030	5.13	69.62	2,190,000	20,800	505	3,200	5.41	73.57	2,320,000
1922	552-164	20,800	505	2,190	3.71	50.26	1,580,000	13,200	-	1,770	2.99	40.71	1,280,000
1923	572-155	10,100	-	2,240	3.79	51.34	1,620,000	10,100	-	2,260	3.82	51.85	1,640,000
1924	592-143	13,000	-	1,990	3.37	45.78	1,440,000	13,000	-	2,120	3.59	48.88	1,540,000
1925	612-131	12,600	-	2,420	4.09	55.53	1,750,000	12,600	250	2,300	3.89	52.94	1,670,000
1926	632-126	6,200	250	1,450	2.45	33.29	1,050,000	6,200	344	1,540	2.61	35.43	1,120,000
1927	652-91	14,300	425	2,180	3.69	50.06	1,580,000	14,300	425	2,420	4.09	55.49	1,750,000
1928	672-117	14,000	398	2,550	4.31	58.57	1,850,000	14,000	-	2,180	3.69	50.13	1,580,000
1929	692-173	8,460	-	1,360	2.30	31.32	986,000	8,460	-	1,280	2.17	29.45	927,000

Summary of yearly discharge, in second-feet, at stations in Wenatchee River Basin--Continued

Wenatchee River at Plain (near Leavenworth), Wash.--Continued
(Drainage area, 591 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1930	870-320	-	-	1,350	2.28	30.98	977,000	-	-	1,390	2.35	31.80	1,000,000
1931	737-161	-	-	1,490	2.52	34.37	1,080,000	-	-	1,540	2.61	35.49	1,120,000
1932	737-161	10,600	-	2,240	3.79	51.64	1,630,000	10,600	373	2,570	4.35	59.09	1,860,000
1933	752-161	13,800	373	2,670	4.52	61.27	1,930,000	13,800	594	2,970	5.03	68.17	2,150,000
1934	767-153	13,200	399	3,344	5.66	76.74	2,421,000	13,200	370	2,959	5.01	67.91	2,142,000
1935	792-149	10,100	370	2,604	4.41	59.91	1,885,000	10,100	338	2,312	3.91	53.21	1,674,000
1936	812-141	10,600	338	1,855	3.14	42.75	1,347,000	10,600	204	1,846	3.12	42.54	1,340,000
1937	832-150	10,200	204	1,768	2.99	40.67	1,280,000	10,200	298	1,933	3.27	44.45	1,399,000
1938	862-155	11,600	298	2,196	3.72	50.48	1,589,000	11,600	326	2,111	3.57	48.53	1,528,000
1939	882-170	8,810	326	1,830	3.10	42.02	1,325,000	-	-	-	-	-	-

Wenatchee River at Peshastin, Wash.
(Drainage area, 1,000 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
*1929	692-174	-	-	1,890	1,370,000	11,600	-	1,790	1,290,000
1930	707-178	8,070	270	1,860	1,350,000	8,070	-	1,910	1,380,000
1931	722-172	12,000	-	2,050	1,490,000	12,000	-	2,100	1,520,000
1932	737-163	14,800	390	3,030	2,200,000	14,800	470	3,500	2,540,000
1933	752-162	20,000	479	3,740	2,710,000	20,000	-	4,230	3,070,000
1934	767-154	18,400	531	4,706	3,407,000	18,400	479	4,116	2,980,000
1935	792-150	15,100	479	3,644	2,638,000	15,100	390	3,209	2,323,000
1936	812-142	16,000	390	2,671	1,939,000	16,000	270	2,663	1,933,000
1937	832-151	14,500	270	2,463	1,783,000	14,500	426	2,684	1,943,000
1938	862-156	16,900	426	3,091	2,238,000	16,900	454	2,973	2,152,000
1939	882-171	12,400	405	2,429	1,759,000	-	-	-	-

*Yearly figures not previously published, monthly discharge for period October 1928 to February 1929 estimated and published in Water-Supply Paper 870.

Wenatchee River at Dryden, Wash.
(published as Wenatchee River at Cashmere, Wash., 1905-9; drainage area, 1,280 square miles revised)
(Drainage area, 1,200 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1905	272-140	14,900	650	3,240	2.53	34.39	2,350,000	14,900	650	3,420	2.67	36.24	2,470,000
1906	272-140	11,600	780	2,870	2.24	30.38	2,080,000	-	780	3,390	2.65	35.97	2,460,000
1907	272-140	-	830	4,300	3.36	45.53	3,110,000	19,000	890	3,670	2.87	38.89	2,650,000
1908	272-140	-	-	3,870	3.02	41.21	2,810,000	-	-	3,760	2.94	40.01	2,730,000
1909	272-140	21,400	-	3,180	2.48	33.77	2,310,000	21,400	-	3,820	3.03	41.07	2,760,000
1910	312-155	20,900	670	4,470	3.72	50.51	3,230,000	18,900	670	4,350	3.62	49.23	3,150,000
1911	312-155	15,500	670	3,180	2.65	35.99	2,300,000	15,500	580	2,730	2.28	30.93	1,980,000
1912	332-178	18,000	580	2,990	2.49	33.96	2,170,000	18,000	654	2,920	2.43	33.13	2,120,000
1913	462-127	20,700	654	3,760	3.13	42.63	2,730,000	20,700	760	3,910	3.26	44.30	2,830,000
1914	462-127	13,300	776	3,190	2.66	36.07	2,310,000	13,300	776	3,270	2.72	36.97	2,370,000
1915	462-127	9,200	-	2,030	1.69	22.95	1,470,000	9,200	-	1,830	1.52	20.74	1,330,000
1916	442-154	24,500	-	4,520	3.77	51.25	3,280,000	24,500	-	4,450	3.71	50.43	3,230,000
1917	462-127	16,200	-	3,230	2.69	36.60	2,340,000	-	-	-	-	-	-

Note.- Figures adjusted for diversion by Wenatchee Reclamation District canal and depletion due to other diversions. Maximum and minimum discharges prior to October 1911 refer to flow at river gaging station; thereafter to combined flow of river and canal.

Summary of yearly discharge, in second-feet, at stations in
YAKIMA RIVER BASIN

Yakima River near Martin, Wash.
(Drainage area, 55 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Lake Keechelus (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1905	178-43	1,000	51	277	200,000	-	200,000	277	5.04	68.34
1906	252-139	1,000	52	291	211,000	-571	210,000	290	5.28	71.72
1907	252-137	6,150	0	397	288,000	+8,860	296,000	410	7.46	101.06
1908	252-137	1,860	0	362	263,000	-7,640	255,000	351	6.38	86.76
1909	272-155	1,940	0	285	206,000	+1,580	208,000	287	5.22	70.72
1910	292-152	4,370	0	400	290,000	+430	290,000	400	7.27	98.83
1911	312-172	2,200	0	298	215,000	+6,950	222,000	307	5.58	75.70
1912	332-197	4,860	3	332	241,000	-5,600	235,000	324	5.89	80.10
1913	362-190	1,720	5	321	232,000	+10,100	242,000	335	6.09	82.55
1914	392-142	1,560	16	342	248,000	-18,000	230,000	318	5.78	78.28
1915	412-204	4,240	1	241	175,000	-19,500	155,000	214	3.89	52.89
1916	442-158	1,650	0	452	328,000	+10,700	339,000	467	8.49	115.72
1917	462-135	1,830	1	318	230,000	+23,400	253,000	349	6.35	86.18
1918	482-128	1,840	0	474	343,000	-45,800	298,000	411	7.47	101.62
1919	512-195	1,400	.2	325	235,000	+25,300	261,000	360	6.55	88.94
1920	512-195	2,340	0	369	268,000	-20,900	247,000	340	6.18	84.02
1921	532-178	1,790	0	364	263,000	+17,400	281,000	388	7.05	95.56
1922	552-167	1,840	3	337	244,000	-24,100	220,000	304	5.53	75.08
1923	572-158	2,260	0	321	232,000	+3,520	235,000	325	5.91	80.18
1924	592-146	1,720	10	290	211,000	-3,420	208,000	286	5.20	70.77
1925	612-133	1,630	12	312	226,000	+16,000	242,000	335	6.09	82.54
1926	632-129	1,210	1	255	185,000	-16,400	168,000	232	4.22	57.22
1927	652-93	1,380	15	264	191,000	+41,400	232,000	321	5.84	79.22
1928	672-119	1,880	2	405	294,000	-37,300	257,000	354	6.44	87.69
1929	692-176	1,970	3	235	170,000	+850	171,000	236	4.29	58.27
1930	707-180	1,590	1	217	157,000	-3,020	154,000	213	3.87	52.67
1931	722-174	1,150	1	245	178,000	-2,000	176,000	242	4.40	59.85
1932	737-164	1,610	1	379	275,000	+1,210	276,000	381	6.93	94.13
1933	752-163	1,890	1	357	258,000	+62,400	321,000	443	8.05	109.07
1934	767-155	1,500	1	513	371,600	-35,810	335,800	464	8.44	114.44
1935	792-151	1,230	1	346	250,800	+16,100	266,900	369	6.71	90.92
1936	812-143	1,590	1	320	232,400	-11,170	221,300	305	5.55	75.40
1937	832-154	1,320	1	237	171,400	+26,460	197,800	273	4.96	67.37
1938	862-160	1,140	1	297	214,800	+3,430	218,200	301	5.47	74.40
1939	882-174	1,390	1	312	226,000	-15,090	211,000	291	5.29	71.94

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1905	178-43	1,000	66	289	209,000	-	209,000	289	5.25	71.63
1906	252-139	6,150	0	350	254,000	+7,750	262,000	361	6.56	89.25
1907	252-137	1,400	0	325	236,000	+1,370	237,000	327	5.95	80.73
1908	252-137	1,860	0	328	238,000	+6,570	245,000	337	6.13	83.40
1909	272-155	4,370	0	392	283,000	-115	283,000	391	7.11	96.47
1910	292-152	2,200	0	372	269,000	-3,820	265,000	366	6.65	90.37
1911	312-172	4,860	3	275	199,000	+3,870	203,000	280	5.09	69.12
1912	332-197	1,610	3	293	212,000	-2,150	210,000	290	5.27	71.57
1913	362-190	1,720	8	347	251,000	-2,930	248,000	343	6.24	84.52
1914	392-142	1,560	15	363	263,000	-24,100	239,000	330	6.00	81.41
1915	412-204	4,240	0	242	175,000	-17,500	157,000	217	3.95	53.65
1916	442-158	1,650	3	429	311,000	-2,660	309,000	425	7.73	105.26
1917	462-135	1,830	0	385	279,000	+56,300	335,000	463	8.42	114.14
1918	482-128	1,840	.2	450	326,000	-54,900	271,000	375	6.82	92.50
1919	512-195	1,400	3	277	201,000	+35,100	236,000	326	5.93	80.43
1920	512-195	2,340	0	332	241,000	+8,190	250,000	344	6.25	85.03
1921	532-178	1,790	2	361	262,000	+45,700	307,000	425	7.73	104.71
1922	552-167	1,840	0	320	232,000	-61,200	171,000	236	4.29	58.25
1923	572-158	2,260	0	325	235,000	+10,600	245,000	339	6.16	83.59
1924	592-146	1,720	10	294	213,000	+13,800	227,000	312	5.67	77.31
1925	612-133	1,630	1	316	228,000	+1,500	230,000	318	5.78	78.32
1926	632-129	1,210	2	252	182,000	-10,200	172,000	238	4.33	58.62
1927	652-93	1,380	2	342	248,000	+20,300	268,000	370	6.73	91.45
1928	672-119	1,880	14	323	234,000	-35,600	199,000	274	4.98	67.79
1929	692-176	1,970	1	243	176,000	-24,200	151,000	209	3.80	51.61
1930	707-180	1,590	1	210	152,000	+13,700	166,000	229	4.16	56.64
1931	722-174	1,150	1	243	176,000	+11,400	188,000	259	4.71	63.98
1932	737-164	1,610	1	379	275,000	+65,500	341,000	469	8.53	116.00
1933	752-163	1,890	1	490	354,000	+13,900	368,000	509	9.25	125.49
1934	767-155	1,500	1	393	284,600	-22,260	262,400	362	6.58	89.36
1935	792-151	1,230	2	353	255,400	-45,230	210,200	290	5.27	71.59
1936	812-143	1,590	1	308	223,700	+7,180	230,900	318	5.78	78.66
1937	832-154	1,320	1	237	171,300	+68,960	240,200	332	6.04	81.84
1938	862-160	1,140	1	289	209,400	-14,770	194,600	269	4.89	66.37

Summary of yearly discharge, in second-feet, at stations in Yakima River Basin--Continued

Yakima River at Cle Elum, Wash.
(Drainage area, 500 square miles)
Water year ending Sept. 30)

Year	W.S.P. (no. and page)	Observed				Change in contents* (acre-feet)	Diverted by Kittitas canal (acre-feet)				
		Discharge in second-feet			Run-off in acre-feet			Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean					Mean	Per square mile	
1907	252-140	25,600	394	2,280	1,650,000	+17,100	-	1,670,000	2,310	4.62	62.60
1908	252-140	9,480	332	2,020	1,470,000	-4,280	-	1,460,000	2,020	4.04	54.84
1909	272-158	9,720	280	1,550	1,120,000	-4,950	-	1,120,000	1,550	3.10	42.01
1910	492-208	17,300	330	2,520	1,820,000	-4,950	-	1,820,000	2,510	5.02	68.25
1911	492-208	10,000	196	1,800	1,310,000	+4,900	-	1,310,000	1,810	3.62	49.17
1912	332-201	9,410	242	1,980	1,440,000	-34,300	-	1,410,000	1,940	3.88	52.68
1913	362-195	11,300	366	2,160	1,560,000	+34,700	-	1,600,000	2,210	4.42	59.95
1914	392-146	6,800	428	1,920	1,390,000	-77,200	-	1,310,000	1,810	3.62	49.30
1915	412-209	6,360	199	1,190	861,000	-37,300	-	825,000	1,140	2.28	30.94
1916	442-161	10,800	202	2,460	1,790,000	+156,000	-	1,950,000	2,690	5.38	73.00
1917	462-137	9,820	327	2,070	1,500,000	-10,000	-	1,490,000	2,060	4.12	55.85
1918	482-130	17,700	286	2,480	1,790,000	-56,800	-	1,740,000	2,400	4.80	65.14
1919	512-197	8,430	516	2,090	1,510,000	+28,800	-	1,530,000	2,120	4.24	57.50
1920	512-197	4,580	511	1,610	1,170,000	-22,200	-	1,150,000	1,580	3.16	43.07
1921	532-180	8,690	320	2,430	1,760,000	+32,300	-	1,790,000	2,480	4.96	67.21
1922	552-169	17,100	178	1,920	1,390,000	-109,000	-	1,280,000	1,770	3.54	48.03
1923	572-160	6,850	200	1,820	1,320,000	+32,900	-	1,350,000	1,860	3.72	50.59
1924	592-148	8,350	144	1,810	1,310,000	-44,100	-	1,270,000	1,750	3.50	47.59
1925	612-135	8,350	298	1,930	1,400,000	+78,500	-	1,470,000	2,040	4.08	55.36
1926	632-130	3,700	186	1,460	1,060,000	-82,700	-	974,000	1,350	2.70	36.53
1927	652-95	7,150	278	1,790	1,290,000	+139,000	-	1,430,000	1,980	3.96	53.76
1928	672-121	10,000	506	2,350	1,710,000	-40,800	-	1,670,000	2,300	4.60	62.51
1929	692-177	5,330	151	1,350	976,000	+36,700	-	1,010,000	1,400	2.80	37.97
1930	707-181	4,490	66	1,340	972,000	-115,000	77,800	934,000	1,290	2.58	35.02
1931	722-175	6,820	138	1,250	905,000	-26,100	92,100	972,000	1,340	2.68	36.44
1932	737-165	8,730	193	1,950	1,420,000	+98,800	119,000	1,650,000	2,270	4.54	61.71
1933	752-164	5,680	266	2,250	1,630,000	+141,000	132,000	1,900,000	2,620	5.24	71.35
1934	767-156	12,300	432	2,800	2,026,000	-58,800	212,000	2,179,000	3,010	6.02	81.78
1935	792-152	7,000	136	1,868	1,352,000	+140,600	197,100	1,690,000	2,335	4.67	63.42
1936	832-155	8,380	119	1,747	1,268,000	-60,740	209,600	1,417,000	1,952	3.90	53.13
1937	832-155	6,920	70	1,231	891,400	+78,630	211,700	1,182,000	1,632	3.26	44.32
1938	862-161	6,400	112	1,545	1,119,000	+17,920	234,200	1,371,000	1,893	3.79	51.43
1939	882-175	4,980	92	1,370	991,700	-34,700	285,200	1,242,000	1,716	3.43	46.59

Calendar year

†1906	252-140	25,600	-	-	-	-	-	-	-	-	-
1907	252-140	8,860	332	1,770	1,280,000	+4,630	-	1,290,000	1,780	3.56	48.20
1908	252-140	9,480	280	1,990	1,440,000	+21,600	-	1,470,000	2,020	4.04	54.95
1909	272-158	17,300	425	2,090	1,510,000	-5,190	-	1,510,000	2,090	4.18	56.67
1910	492-208	11,600	330	2,340	1,700,000	-17,100	-	1,680,000	2,320	4.64	63.12
1911	492-208	9,410	196	1,660	1,120,000	+12,300	-	1,210,000	1,670	3.34	45.42
1912	332-201	8,650	366	1,840	1,330,000	-55,200	-	1,280,000	1,760	3.52	47.81
1913	362-195	11,300	428	2,280	1,650,000	-12,400	-	1,640,000	2,260	4.52	61.46
1914	392-146	6,800	361	1,910	1,380,000	-32,100	-	1,350,000	1,870	3.74	50.68
1915	412-209	6,360	199	1,070	772,000	+5,540	-	778,000	1,070	2.14	29.16
1916	442-161	10,800	350	2,450	1,780,000	+78,300	-	1,860,000	2,560	5.12	69.59
1917	462-137	17,700	286	2,450	1,770,000	+114,000	-	1,890,000	2,610	5.22	70.71
1918	482-130	13,000	516	2,280	1,650,000	-83,500	-	1,570,000	2,170	4.34	58.85
1919	512-197	8,430	511	1,980	1,430,000	+7,230	-	1,440,000	1,990	3.98	53.89
1920	512-197	4,580	320	1,630	1,180,000	+25,300	-	1,210,000	1,660	3.32	45.20
1921	532-180	17,100	445	2,570	1,860,000	+74,800	-	1,930,000	2,670	5.34	72.45
1922	552-169	9,050	178	1,610	1,170,000	-182,000	-	987,000	1,360	2.72	36.97
1923	572-160	6,850	144	1,859	1,340,000	+63,000	-	1,400,000	1,930	3.86	52.51
1924	592-148	8,350	298	1,900	1,380,000	-15,100	-	1,370,000	1,880	3.76	51.23
1925	612-135	8,350	186	1,870	1,350,000	+55,300	-	1,410,000	1,940	3.88	52.76
1926	632-130	3,700	274	1,540	1,110,000	-71,200	-	1,040,000	1,440	2.88	39.08
1927	652-95	7,150	360	2,150	1,560,000	+106,000	-	1,660,000	2,290	4.58	62.26
1928	672-121	10,000	151	1,860	1,350,000	-51,700	-	1,300,000	1,780	3.56	48.56
1929	692-177	5,330	66	1,310	944,000	-13,800	-	930,000	1,290	2.58	34.92
1930	707-181	4,490	138	1,350	979,000	-80,200	81,100	980,000	1,350	2.70	36.77
1931	722-175	6,820	166	1,320	966,000	+1,800	88,800	1,060,000	1,460	2.92	39.60
1932	737-165	8,730	266	2,150	1,560,000	+256,000	129,000	1,940,000	2,680	5.36	72.87
1933	752-164	12,300	432	2,640	1,910,000	+191,000	133,000	2,240,000	3,090	6.18	83.88
1934	767-156	7,410	136	2,245	1,625,000	-83,550	212,000	1,753,000	2,422	4.84	65.78
1935	792-152	7,000	119	1,811	1,311,000	-138,100	202,800	1,376,000	1,901	3.80	51.64
1936	832-155	8,380	70	1,723	1,251,000	-18,330	209,200	1,441,000	1,986	3.97	54.04
1937	832-155	6,920	106	1,271	920,300	+260,700	196,000	1,377,000	1,902	3.80	51.65
1938	862-161	6,400	92	1,509	1,092,000	-64,430	245,600	1,274,000	1,759	3.52	47.79

*Change in contents in Keechelus, Kachess, and Cle Elum Lakes.
†Calendar year incomplete.
Note.- Diversion by Kittitas canal began in 1930.

Summary of yearly discharge, in second-feet, at stations in Yakima River Basin--Continued

Yakima River at Umtanum, Wash.
(Drainage area, 1,620 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1906	252-143	Aug. 25 to Dec. 31				41,000	290	3,140	803,000
1907	252-143	41,000	398	3,280	2,380,000	-	-	2,450	1,770,000
1908	252-143	9,660	478	2,410	1,750,000	9,660	390	2,360	1,720,000
1909	272-160	10,300	390	1,820	1,310,000	24,500	410	2,570	1,860,000
1910	292-159	24,500	358	3,450	2,490,000	16,700	358	3,080	2,230,000
1911	312-178	10,200	359	2,000	1,450,000	11,600	359	1,860	1,350,000
1912	332-203	11,600	413	2,440	1,770,000	10,700	450	2,280	1,660,000
1913	362-196	13,100	450	2,660	1,930,000	13,100	498	2,750	1,990,000
*1914	392-148	7,500	690	2,250	1,630,000	7,500	487	2,300	2,670,000
1915	412-211	Apr. 1 to Nov. 15				9,310	139	-	824,000
1916	442-163	Apr. 1 to Oct. 31				13,700	714	-	1,980,000
1917	462-139	Apr. 1 to Nov. 13				12,900	501	-	1,620,000
1918	482-132	Apr. 1 to Nov. 23				7,580	601	-	1,240,000
1919	512-200	Apr. 1 to Oct. 4				9,620	781	-	1,140,000
1920	512-200	Mar. 1 to Oct. 31				4,380	820	-	992,000
1921	532-182	Apr. 1 to Oct. 31				11,700	636	-	1,540,000
1922	870-335	Mar. 31 to Oct. 31				10,500	405	-	1,210,000
1923	870-335	Apr. 1 to Oct. 31				9,330	465	-	1,350,000
1924	870-335	Apr. 1 to Oct. 31				9,630	394	-	1,040,000
1925	870-335	Apr. 1 to Oct. 31				9,630	226	-	1,230,000
1926	870-335	Mar. 30 to Oct. 31				4,960	226	-	777,000
1927	870-335	Mar. 28 to Nov. 6				8,640	704	-	1,360,000
1928	870-335	Apr. 1 to Oct. 31				7,830	418	-	1,090,000
1929	870-335	Apr. 1 to Oct. 31				6,120	201	-	862,000
1930	870-335	Apr. 1 to Oct. 31				4,960	314	-	850,000
1931	870-335	Mar. 4 to Dec. 31				6,760	406	-	967,000
1932	870-335	12,000	406	2,530	1,840,000	12,000	478	2,810	2,040,000
1933	870-335	8,120	548	2,920	2,120,000	29,600	898	3,550	2,570,000
1934	870-335	29,600	898	3,930	2,850,000	11,000	342	3,170	2,290,000
1935	870-335	13,400	342	2,660	1,920,000	13,400	275	2,512	1,819,000
1936	812-145	10,200	275	2,476	1,797,000	10,200	311	2,457	1,784,000
1937	832-157	9,850	311	1,849	1,339,000	9,850	382	1,951	1,413,000
1938	862-162	11,200	400	2,381	1,723,000	11,200	371	2,305	1,669,000
1939	882-176	5,760	371	1,844	1,335,000	-	-	-	-

*Yearly figures contain revised figures for September 1914, published in Water-Supply Paper 412, p. 211.

Note.- Figures for 1906, 1915-35, are for periods indicated in those years.

Yakima River at Union Gap, near Yakima, Wash.
(Drainage area, 3,550 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page	Observed run-off in acre-feet	Change in contents* (acre-feet)	Estimated diversion (acre-feet)	Estimated seepage return (acre-feet)	Adjusted†			
						Run-off in acre-feet	Discharge in second-feet		Run-off in inches
							Mean	Per square mile	
1897	492-215	3,880,000	-	232,000	69,400	4,040,000	5,580	1.57	21.32
1898	492-215	3,560,000	-	242,000	72,400	3,730,000	5,150	1.45	19.69
1899	492-215	3,580,000	-	251,000	75,400	3,760,000	5,190	1.46	19.82
1900	492-215	3,390,000	-	260,000	77,800	3,570,000	4,930	1.39	18.87
1901	492-215	3,740,000	-	270,000	80,600	3,930,000	5,420	1.53	20.73
1902	492-215	3,350,000	-	280,000	83,800	3,550,000	4,900	1.38	18.74
1903	492-215	3,980,000	-	292,000	87,300	4,180,000	5,780	1.63	22.11
1904	492-215	4,260,000	-	306,000	91,600	4,480,000	6,160	1.74	23.65
1905	492-215	2,390,000	-	320,000	95,600	2,610,000	3,610	1.02	13.77
1906	492-215	2,500,000	-3,800	334,000	99,800	2,720,000	3,750	1.06	14.37
1907	492-215	4,050,000	+17,100	357,000	104,000	4,320,000	5,960	1.68	22.80
1908	492-215	2,990,000	-4,280	364,000	109,000	3,240,000	4,460	1.26	17.10
1909	492-215	2,280,000	-4,950	380,000	114,000	2,540,000	3,510	.989	13.41
1910	492-215	4,300,000	-4,950	396,000	118,000	4,580,000	6,320	1.78	24.17
1911	492-215	2,650,000	+5,450	412,000	123,000	2,950,000	4,070	1.15	15.56
1912	492-215	2,910,000	-25,400	431,000	129,000	3,190,000	4,390	1.24	16.84
1913	492-215	3,380,000	+29,200	448,000	134,000	3,730,000	5,150	1.45	19.68
1914	492-215	2,940,000	-78,100	464,000	139,000	3,180,000	4,390	1.24	16.82
1915	492-215	1,780,000	-36,900	441,000	133,000	2,050,000	2,830	.797	10.83
1916	492-215	4,720,000	+165,000	471,000	141,000	5,210,000	7,180	1.97	27.53
1917	492-215	2,990,000	-18,400	484,000	145,000	3,310,000	4,570	1.27	17.48
1918	492-215	3,730,000	-57,200	491,000	147,000	4,020,000	5,550	1.56	21.22
1919	492-215	2,990,000	+29,200	492,000	148,000	3,360,000	4,640	1.31	17.75

*Change in contents in Keechelus, Kachess, and Cle Elum Lakes since January 1906 and Bumping Lake since November 1910.

†Adjusted for change in contents, diversion, and seepage.

Summary of yearly discharge, in second-feet, at stations in Yakima River Basin--Continued

Yakima River at Union Gap, near Yakima, Wash.--Continued
(Drainage area, 3,550 square miles)
Calendar year

Year	W.S.P. (no. and page)	Observed run-off in acre-feet	Change in contents* (acre-feet)	Estimated diversion (acre-feet)	Estimated seepage return (acre-feet)	Adjusted†			
						Run-off in acre-feet	Discharge in second-feet		Run-off in inches
							Mean	Per square mile	
1897	492-215	3,660,000	-	232,000	69,600	3,820,000	5,280	1.49	20.17
1898	492-215	3,270,000	-	242,000	72,700	3,440,000	4,750	1.34	18.18
1899	492-215	4,110,000	-	252,000	75,600	4,280,000	5,920	1.67	22.60
1900	492-215	3,320,000	-	260,000	78,000	3,500,000	4,820	1.36	18.52
1901	492-215	3,540,000	-	270,000	80,900	3,730,000	5,150	1.45	19.68
1902	492-215	3,140,000	-	280,000	84,000	3,340,000	4,610	1.30	17.66
1903	492-215	4,370,000	-	292,000	87,600	4,580,000	6,320	1.78	24.18
1904	492-215	3,850,000	-	306,000	91,900	4,070,000	5,600	1.58	21.47
1905	492-215	2,440,000	-	320,000	96,000	2,670,000	3,680	1.04	14.07
1906	492-215	3,200,000	+10,800	334,000	100,000	3,440,000	4,760	1.34	18.20
1907	492-215	3,190,000	+4,630	348,000	104,000	3,440,000	4,750	1.34	18.16
1908	492-215	3,020,000	+21,600	364,000	109,000	3,300,000	4,550	1.28	17.42
1909	492-215	2,980,000	-5,190	380,000	114,000	3,240,000	4,480	1.26	17.10
1910	492-215	4,030,000	-17,900	396,000	119,000	4,290,000	5,930	1.67	22.68
1911	492-215	2,390,000	+16,000	412,000	124,000	2,690,000	3,720	1.05	14.22
1912	492-215	2,780,000	-55,400	432,000	130,000	3,020,000	4,170	1.17	15.99
1913	492-215	3,460,000	-11,900	448,000	134,000	3,770,000	5,200	1.46	19.88
1914	492-215	3,030,000	-32,700	464,000	139,000	3,320,000	4,590	1.29	17.55
1915	492-215	1,570,000	+8,400	440,000	132,000	1,890,000	2,610	.735	9.96
1916	492-215	4,690,000	+80,200	472,000	142,000	5,100,000	7,020	1.98	26.95
1917	492-215	3,610,000	+145,000	484,000	145,000	4,090,000	5,660	1.59	21.63
1918	492-215	3,330,000	-102,000	492,000	148,000	3,580,000	4,940	1.39	18.89
1919	492-215	-	-	-	-	-	-	-	-

*Change in contents in Keechelus, Kachess, and Cle Elum Lakes since January 1906 and Bumping Lake since November 1910.
†Adjusted for change in contents, diversion, and seepage.

Yakima River near Parker, Wash.
(Drainage area, 3,560 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed		Change in contents* (acre-feet)	Diversions† (acre-feet)	Adjusted‡	
		Mean in second-feet	Run-off in acre-feet			Run-off in acre-feet	Mean in second-feet
1920	512-202	1,450	1,050,000	-18,200	825,000	1,860,000	2,560
1921	532-183	4,400	3,180,000	+33,900	892,000	4,110,000	5,680
1922	870-338	2,570	1,860,000	-118,000	891,000	2,630,000	3,640
1923	870-338	2,700	1,950,000	+39,000	945,000	2,940,000	4,050
1924	870-338	2,080	1,510,000	-50,200	964,000	2,420,000	3,340
1925	870-338	2,580	1,870,000	+101,000	969,000	2,940,000	4,060
1926	870-338	1,090	788,000	-105,000	945,000	1,630,000	2,250
1927	870-338	2,540	1,840,000	+274,000	952,000	3,070,000	4,240
1928	870-338	3,430	2,490,000	-76,000	961,000	3,370,000	4,650
1929	870-338	925	670,000	-37,100	1,050,000	1,680,000	2,320
1930	870-338	857	621,000	-127,000	1,080,000	1,570,000	2,170
1931	870-338	734	531,000	-40,700	1,080,000	1,570,000	2,170
1932	737-166	2,420	1,750,000	+231,000	1,080,000	3,060,000	4,220
1933	752-165	3,380	2,450,000	+135,000	1,110,000	3,700,000	5,110
1934	767-157	4,890	3,540,000	-116,900	1,130,000	4,554,000	6,290
1935	792-153	2,858	2,069,000	+179,800	1,188,000	3,437,000	4,748
1936	812-146	2,312	1,679,000	-86,430	1,099,000	2,692,000	3,708
1937	832-158	1,520	1,100,000	+93,940	1,114,000	2,308,000	3,189
1938	862-163	2,786	2,017,000	+18,340	1,106,000	3,142,000	4,339
1939	882-177	1,191	861,900	-37,890	1,183,000	2,008,000	2,773

*Change in contents in Keechelus, Kachess, Cle Elum, and Bumping Lakes, and Tieton Reservoir.
†Diversions by Union Gap, New Reservation, Old Reservation, and Sunnyside canals.
‡Adjusted for change in contents and diversion.

Summary of yearly discharge, in second-feet, at stations in Yakima River Basin--Continued

Yakima River near Parker, Wash.--Continued
(Drainage area, 3,560 square miles)
Calendar year

Year	W.S.P. (no. and page)	Observed		Change in contents* (acre-feet)	Diversions † (acre-feet)	Adjusted‡	
		Mean in second-feet	Run-off in acre-feet			Run-off in acre-feet	Mean in second-feet
1920	512-202	1,670	1,220,000	+18,300	814,000	2,050,000	2,820
1921	532-183	4,640	3,360,000	+87,500	895,000	4,340,000	6,000
1922	870-338	1,950	1,410,000	-196,000	886,000	2,100,000	2,900
1923	870-338	2,820	2,050,000	+65,600	928,000	3,040,000	4,200
1924	870-338	2,190	1,590,000	+23,400	984,000	2,600,000	3,580
1925	870-338	2,410	1,740,000	+54,600	965,000	2,760,000	3,820
1926	870-338	1,250	906,000	-50,000	923,000	1,780,000	2,460
1927	870-338	3,250	2,350,000	+195,000	966,000	3,520,000	4,860
1928	870-338	2,500	1,810,000	-122,000	982,000	2,670,000	3,680
1929	870-338	807	584,000	-80,600	1,060,000	1,560,000	2,160
1930	870-338	900	652,000	-93,000	1,060,000	1,620,000	2,240
1931	870-338	830	601,000	+13,500	1,080,000	1,700,000	2,350
1932	737-166	2,890	2,100,000	+399,000	1,090,000	3,590,000	4,940
1933	752-165	4,370	3,160,000	+230,000	1,110,000	4,500,000	6,220
1934	767-157	3,808	2,757,000	-140,400	1,122,000	3,739,000	5,164
1935	792-153	2,475	1,792,000	-203,400	1,202,000	2,791,000	3,855
1936	812-146	2,248	1,632,000	-25,410	1,117,000	2,724,000	3,752
1937	832-158	3,338	1,284,000	+338,300	1,088,000	2,711,000	3,744
1938	862-163	2,631	1,905,000	-110,800	1,109,000	2,902,000	4,009

*Change in contents in Keechelus, Kachess, Cle Elum, and Bumping Lakes, and Tieton Reservoir.
†Diversion by Union Gap, New Reservation, Old Reservation, and Sunnyside canals.
‡Adjusted for change in contents and diversion.

Yakima River near Prosser, Wash.
(Drainage area, 5,340 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1904	135-85	Apr. 1 to Oct. 10				-	250	-	2,907,000
1906	214-47	Feb. 1 to Oct. 12				11,700	40	-	1,710,000
1913	362-203	Aug. 4 to Dec. 31				3,170	413	-	526,000
1914	392-154	11,300	332	3,660	2,650,000	11,300	332	3,770	2,730,000
1915	412-215	Jan. 1 to Oct. 31				13,800	301	-	1,120,000
1916	442-167	Apr. 1 to Oct. 31				23,800	969	-	3,370,000
1917	462-143	Apr. 1 to Oct. 31				18,200	563	-	2,090,000
1918	482-136	Apr. 1 to Oct. 31				10,000	699	-	1,230,000
1919	512-205	Apr. 1 to Dec. 31				12,800	795	-	1,730,000
1920	512-205	6,140	701	2,000	1,450,000	6,140	701	2,190	1,590,000
1921	532-185	18,000	1,180	5,070	3,670,000	30,400	1,180	5,300	3,840,000
1922	552-171	30,400	920	3,210	2,330,000	15,500	920	2,650	1,920,000
1923	870-342	12,600	992	3,530	2,550,000	12,600	1,140	3,650	2,640,000
1924	870-342	15,500	810	2,800	2,030,000	15,500	810	2,930	2,120,000
1925	870-342	15,500	810	3,580	2,590,000	15,500	1,030	3,410	2,470,000
1926	870-342	6,250	730	1,880	1,360,000	6,250	661	2,030	1,470,000
1927	652-96	15,800	661	3,590	2,590,000	15,800	1,220	4,280	3,100,000
1928	672-122	17,900	1,070	4,300	3,120,000	17,900	1,070	3,410	2,470,000
1929	692-178	6,660	742	1,780	1,290,000	6,660	742	1,680	1,210,000
1930	707-183	7,520	1,030	1,770	1,280,000	7,520	1,030	1,810	1,310,000
1931	722-176	8,480	763	1,550	1,120,000	8,480	756	1,570	1,140,000
1932	737-167	18,100	302	3,190	2,320,000	18,100	180	3,640	2,640,000

Yakima River at Kiona, Wash.
(Drainage area, 5,520 square miles)

1897	492-227	30,000	680	5,810	4,200,000	25,300	643	5,360	3,880,000
1898	492-227	21,800	612	5,330	3,860,000	21,800	612	4,800	3,480,000
1899	492-227	16,400	813	5,040	3,650,000	16,400	1,090	5,810	4,200,000
1900	492-227	18,800	450	4,410	3,200,000	18,800	450	4,490	3,260,000
1901	75-203	24,000	465	6,260	4,530,000	24,000	465	5,700	4,130,000
1902	85-186	16,900	224	4,650	3,370,000	16,900	224	4,460	3,230,000
1903	100-373	23,500	320	5,450	3,950,000	23,500	320	5,890	4,260,000
1904	135-87	27,100	205	5,490	3,990,000	27,100	205	5,050	3,660,000
1905	178-49	13,400	142	3,120	2,260,000	13,400	142	3,150	2,280,000
1906	214-49	11,800	105	3,000	2,170,000	63,500	105	4,030	2,920,000
1907	252-152	63,500	228	5,750	4,160,000	18,200	245	4,560	3,300,000
1908	252-152	16,600	245	4,050	2,940,000	16,600	298	4,040	2,930,000
1909	272-166	17,200	123	3,130	2,260,000	26,800	123	4,300	3,110,000
1910	292-166	29,200	110	5,970	4,320,000	29,200	110	5,390	3,900,000
1911	312-198	13,000	189	3,380	2,450,000	13,000	189	3,120	2,260,000
1912	332-218	15,600	510	3,850	2,800,000	15,600	510	3,670	2,660,000
1913	362-204	20,900	285	4,260	3,090,000	20,900	285	4,360	3,160,000
1914	392-156	11,300	325	3,560	2,570,000	11,300	325	3,680	2,660,000
1934	767-158	59,400	732	6,085	4,405,000	19,900	732	4,889	3,540,000
1935	792-154	17,900	1,140	4,000	2,896,000	17,900	1,140	3,620	2,621,000
1936	812-147	13,900	1,100	3,514	2,551,000	13,900	1,100	3,426	2,487,000
1937	832-159	16,800	1,100	2,684	1,943,000	16,800	1,100	2,983	2,160,000
1938	862-164	14,900	1,270	4,231	3,064,000	14,900	1,270	4,056	2,936,000
1939	882-178	7,140	1,140	2,144	1,552,000	-	-	-	-

Summary of yearly discharge, in second-feet, at stations in Yakima River Basin--Continued

Kachess River near Easton, Wash.*
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Lake Kachess (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1904	492-232	1,020	0	330	240,000	-	240,000	330	5.24	71.25
1905	178-78	932	17	247	179,000	-	179,000	247	3.92	53.18
1906	492-232	735	62	237	171,000	+1,230	173,000	238	3.78	51.36
1907	492-232	1,760	29	318	230,000	+5,000	235,000	325	5.16	69.95
1908	492-232	1,230	12	290	211,000	-4,020	207,000	285	4.52	61.45
1909	272-173	1,020	39	220	159,000	-572	158,000	219	3.48	47.20
1910	292-172	-	4	367	266,000	-910	265,000	366	5.81	78.80
1911	312-205	1,120	0	292	212,000	-18,800	193,000	267	4.24	57.38
1912	332-220	1,040	0	347	252,000	-12,200	240,000	330	5.24	71.35
1913	362-208	992	0	280	202,000	+22,900	225,000	311	4.94	66.98
1914	392-159	1,030	2	342	248,000	-62,200	185,000	256	4.06	55.19
1915	412-220	978	0	186	134,000	-14,000	120,000	166	2.63	35.84
1916	442-170	1,020	0	193	140,000	+143,000	283,000	390	6.18	84.14
1917	462-146	1,410	0	344	249,000	-37,200	212,000	293	4.58	61.91
1918	482-138	1,290	0	372	270,000	-6,320	264,000	365	5.70	77.34
1919	512-209	1,630	0	307	222,000	+1,210	223,000	308	4.81	65.43
1920	512-209	1,920	0	242	176,000	-15,700	160,000	221	3.45	46.93
1921	532-188	2,020	0	337	244,000	+8,900	253,000	349	5.45	74.03
1922	552-174	1,610	1	358	259,000	-65,300	194,000	268	4.19	56.93
1923	572-163	1,860	1	242	175,000	+28,500	204,000	281	4.39	59.60
1924	592-151	1,680	1	322	233,000	-41,700	191,000	263	4.11	56.02
1925	612-138	1,640	0	209	151,000	+60,500	212,000	293	4.58	62.09
1926	632-133	1,560	0	297	215,000	-68,200	147,000	203	3.17	43.12
1927	652-97	947	1	162	117,000	+98,800	216,000	299	4.67	63.32
1928	672-123	1,290	0	338	245,000	-3,960	241,000	332	5.19	70.60
1929	692-179	1,120	0	144	104,000	+40,200	145,000	200	3.13	42.39
1930	707-184	1,930	1	335	243,000	-111,000	131,000	181	2.83	38.46
1931	722-177	1,380	0	240	174,000	-23,600	150,000	208	3.25	44.10
1932	737-168	1,380	0	202	147,000	+93,000	239,000	330	5.16	70.09
1933	752-169	1,540	1	411	298,000	-15,300	282,000	390	6.09	82.70
1934	767-159	1,590	1	444	321,700	-5,030	316,700	437	6.83	92.79
1935	792-155	1,480	0	344	249,200	-2,540	246,600	341	5.33	72.28
1936	812-48	1,090	0	292	211,600	-3,600	208,000	287	4.48	60.88
1937	832-160	1,330	0	222	160,700	+12,720	173,400	240	3.75	50.81
1938	862-165	1,380	1	232	168,000	+24,360	192,300	266	4.16	56.38
1939	882-180	1,540	0	281	203,300	-23,060	180,300	249	3.89	52.77
Calendar year										
1904	492-232	1,020	0	307	223,000	-	223,000	307	4.87	66.26
1905	178-78	932	17	242	176,000	+3,870	180,000	248	3.94	53.49
1906	492-232	1,760	62	285	207,000	+2,300	209,000	289	4.59	62.15
1907	492-232	980	29	256	185,000	-360	185,000	255	4.05	54.99
1908	492-232	1,230	12	280	203,000	-2,830	200,000	276	4.38	59.57
1909	272-173	1,580	64	307	223,000	+1,950	225,000	310	4.92	66.79
1910	292-172	1,120	4	330	239,000	-1,080	238,000	329	5.22	70.87
1911	312-205	950	0	283	205,000	-9,880	195,000	269	4.27	58.05
1912	332-220	1,040	0	355	257,000	-53,000	204,000	281	4.46	60.76
1913	362-208	1,030	13	306	222,000	+9,160	231,000	319	5.06	68.65
1914	392-159	927	0	287	208,000	-20,600	188,000	259	4.11	55.82
1915	412-220	994	0	140	101,000	+18,900	120,000	166	2.63	35.66
1916	442-170	1,020	0	241	175,000	+89,900	264,000	364	5.78	78.62
1917	462-146	1,410	0	338	245,000	+37,600	282,000	390	6.09	82.75
1918	482-138	1,290	0	349	253,000	-18,500	234,000	324	5.06	68.67
1919	512-209	1,630	0	319	231,000	-29,700	201,000	278	4.34	59.03
1920	512-209	1,920	0	216	157,000	+15,800	172,000	238	3.72	50.53
1921	532-188	2,020	0	336	243,000	+31,100	274,000	379	5.92	80.36
1922	552-174	1,610	1	371	269,000	-122,000	146,000	202	3.16	42.88
1923	572-163	1,860	1	225	163,000	+53,000	216,000	298	4.66	63.18
1924	592-151	1,680	0	323	233,000	-28,800	205,000	282	4.41	59.97
1925	612-138	1,640	0	208	150,000	+52,800	203,000	281	4.39	59.51
1926	632-133	1,560	1	297	215,000	-59,900	155,000	214	3.34	45.47
1927	652-97	981	0	232	168,000	+85,400	253,000	350	5.47	74.14
1928	672-123	1,290	0	268	194,000	-13,300	181,000	249	3.89	53.03
1929	692-179	1,120	0	169	122,000	+8,360	131,000	180	2.81	38.26
1930	707-184	1,930	1	322	233,000	-93,300	140,000	193	3.02	40.89
1931	722-177	1,380	0	232	168,000	-8,620	159,000	220	3.44	46.71
1932	737-168	1,380	0	228	165,000	+130,000	295,000	407	6.36	86.45
1933	752-169	1,590	1	467	338,000	-6,110	332,000	458	7.16	97.20
1934	767-159	1,470	0	379	274,200	-25,280	248,900	344	5.38	72.91
1935	792-155	1,480	0	333	241,100	-46,560	194,500	269	4.20	57.01
1936	812-48	1,090	0	311	225,700	-11,690	214,000	295	4.61	62.60
1937	832-160	1,330	0	212	153,100	+55,910	209,000	289	4.52	61.27
1938	862-165	1,380	0	240	173,700	-1,490	172,200	238	3.72	50.47

*At two sites in the vicinity of Easton, Wash.: Drainage areas, 63 square miles, October 1904 to Aug. 15, 1916 and 64 square miles, Aug. 15, 1916 to Sept. 30, 1939.

Note.- No records of change in contents in Lake Kachess prior to Sept. 20, 1905.

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Summary of yearly discharge, in second-feet, at stations in Yakima River Basin--Continued

Cle Elum River near Roslyn, Wash.
(Drainage area, 202 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Lake Cle Elum (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1904	135-92	4,520	190	1,090	793,000	-	793,000	1,090	5.40	73.61
1905	178-80	2,990	140	717	519,000	-	519,000	717	3.55	48.17
1906	252-164	3,320	130	796	576,000	-570	576,000	796	3.94	53.47
1907	252-164	17,700	236	1,100	798,000	+3,100	801,000	1,110	5.50	74.37
1908	252-164	5,380	106	936	680,000	+7,380	686,000	945	4.68	63.75
1909	272-178	5,380	84	771	558,000	-9,160	549,000	758	3.75	50.86
1910	292-176	9,940	158	1,140	822,000	+20,900	844,000	1,170	5.79	78.34
1911	312-208	4,540	70	836	605,000	+16,900	622,000	857	4.24	57.76
1912	332-223	4,950	152	863	641,000	-16,500	625,000	860	4.26	57.95
1913	362-212	6,200	68	972	704,000	+1,800	706,000	973	4.82	65.47
1914	392-161	3,920	26	839	607,000	+3,060	610,000	844	4.18	56.73
1915	412-223	4,030	61	585	423,000	-4,020	419,000	579	2.87	38.86
1916	442-173	6,510	117	1,230	894,000	+3,660	897,000	1,240	6.14	83.40
1917	462-149	5,530	52	962	696,000	+3,810	701,000	969	4.80	64.99
1918	482-142	11,900	12	1,140	826,000	-4,660	821,000	1,130	5.59	76.29
1919	512-213	5,090	124	976	706,000	-920	706,000	975	4.83	65.47
1920	512-213	2,580	33	697	506,000	+13,900	520,000	716	3.54	48.28
1921	532-191	5,060	50	1,130	816,000	+5,670	822,000	1,140	5.64	76.27
1922	552-177	11,000	39	817	591,000	-19,700	571,000	789	3.91	52.96
1923	572-166	4,880	28	879	637,000	+290	637,000	880	4.36	59.09
1924	592-154	6,280	47	774	562,000	+1,160	563,000	775	3.84	52.24
1925	612-140	5,230	9	970	702,000	+1,520	703,000	971	4.81	65.30
1926	632-135	2,780	26	605	438,000	+2,330	440,000	608	3.01	40.87
1927	652-98	5,930	60	941	681,000	-1,720	680,000	939	4.65	63.12
1928	672-124	5,650	117	1,060	769,000	+346	768,000	1,060	5.25	71.39
1929	692-180	4,140	15	648	468,000	-3,940	464,000	641	3.17	43.14
1930	707-185	2,930	12	573	415,000	-455	414,000	572	2.83	38.46
1931	722-178	4,400	28	632	458,000	-500	458,000	632	3.13	42.51
1932	737-169	6,210	136	1,100	797,000	+4,800	802,000	1,100	5.45	74.46
1933	752-170	3,230	0	1,080	785,000	+94,500	880,000	1,220	6.04	81.62
1934	767-160	3,600	0	1,380	1,000,000	-17,980	982,100	1,356	6.71	91.17
1935	792-156	3,730	0	896	648,700	+127,000	775,700	1,071	5.30	72.07
1936	812-49	4,970	0	931	676,100	-46,110	629,900	868	4.30	58.45
1937	832-161	4,170	0	705	510,600	+39,490	550,200	760	3.76	50.99
1938	862-166	3,850	1	906	656,000	-9,920	646,200	893	4.42	59.92
1939	882-181	4,100	2	765	553,600	+3,470	557,000	769	3.81	51.75
					Calendar year					
1904	135-92	4,520	165	1,000	726,000	-	726,000	1,000	4.95	67.47
1905	178-80	2,990	140	760	552,000	-	552,000	760	3.76	51.23
1906	252-164	17,700	130	990	715,000	+760	716,000	989	4.90	66.49
1907	252-164	4,400	106	843	611,000	+3,410	614,000	848	4.20	56.96
1908	252-164	5,380	84	937	681,000	+18,200	699,000	963	4.77	64.94
1909	272-178	9,940	175	998	723,000	+14,900	738,000	1,020	5.05	68.45
1910	292-176	5,650	70	1,070	776,000	-12,100	764,000	1,060	5.25	70.98
1911	312-208	3,870	77	724	524,000	-11,000	543,000	750	3.71	50.37
1912	332-223	4,950	68	810	588,000	-20	588,000	810	4.01	54.53
1913	362-212	6,200	61	1,030	747,000	-18,500	728,000	1,010	5.00	67.56
1914	392-161	3,920	26	869	628,000	+12,700	642,000	886	4.39	59.64
1915	412-223	4,030	94	519	375,000	+4,820	280,000	525	2.60	35.24
1916	442-173	6,510	114	1,190	865,000	-8,680	856,000	1,180	5.84	79.53
1917	462-149	11,900	12	1,180	855,000	+20,300	876,000	1,210	5.99	81.24
1918	482-142	8,140	126	1,040	756,000	-10,100	746,000	1,030	5.10	69.20
1919	512-213	5,090	33	918	664,000	+1,600	667,000	921	4.56	61.86
1920	512-213	2,580	50	767	557,000	+800	558,000	768	3.80	51.80

Summary of yearly discharge, in second-feet, at stations in Yakima River Basin--Continued

Cle Elum River near Roslyn, Wash.--Continued
(Drainage area, 202 square miles)
Calendar year

Year	W.S.P. (no. and page)	Observed				Change in contents in Lake Cle Elum (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1921	532-191	11,000	50	1,180	857,000	-2,410	854,000	1,180	5.84	79.24
1922	552-177	5,580	28	635	460,000	+1,190	461,000	636	3.15	42.76
1923	572-166	4,880	47	896	649,000	-1,250	648,000	895	4.43	60.10
1924	592-154	6,280	112	848	616,000	+140	616,000	848	4.20	57.15
1925	612-140	5,230	9	920	665,000	+490	666,000	920	4.55	61.86
1926	632-135	2,780	26	663	480,000	-710	479,000	662	3.28	44.48
1927	652-98	5,930	117	1,050	762,000	-338	763,000	1,050	5.20	70.79
1928	672-124	5,650	40	863	626,000	-2,950	623,000	858	4.25	57.89
1929	692-180	4,140	12	588	425,000	+2,550	427,000	590	2.92	39.68
1930	707-185	2,930	28	599	434,000	-195	433,000	598	2.96	40.24
1931	722-178	4,400	104	701	508,000	-1,040	507,000	700	3.47	47.06
1932	737-169	6,210	0	1,170	848,000	+60,540	909,000	1,250	6.19	84.36
1933	752-170	3,190	0	1,150	832,000	+183,600	1,020,000	1,410	6.98	94.33
1934	767-160	3,600	5	1,165	843,100	-36,060	807,800	1,116	5.52	75.02
1935	792-156	3,730	0	951	688,200	-46,300	641,900	887	4.39	59.64
1936	812-49	4,970	0	899	652,600	-13,960	638,600	880	4.36	59.25
1937	832-161	4,170	0	685	496,300	+135,900	632,200	873	4.32	58.61
1938	862-166	3,850	2	892	646,000	-48,220	597,800	826	4.09	55.44

Note.- No records of change in contents in Lake Cle Elum prior to Jan. 1, 1903.

Naches River at Oak Flat, near Nile, Wash.
(published as Naches River near Nile, Wash., 1905 to April 1909)
(Drainage area, 640 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Bumping Lake (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1905	492-247	4,310	-	930	673,000	0	673,000	930	1.45	19.74
1906	214-56	4,740	235	1,080	783,000	0	783,000	1,080	1.69	22.95
1907	252-167	21,100	235	1,540	1,110,000	0	1,110,000	1,540	2.41	32.72
1908	252-167	6,340	185	1,280	930,000	0	930,000	1,280	2.00	27.27
1909	272-192	5,640	195	998	723,000	0	723,000	998	1.56	21.19
1910	292-191	10,100	198	1,730	1,250,000	0	1,250,000	1,730	2.70	36.71
1911	312-222	5,090	190	1,100	794,000	+1,080	795,000	1,100	1.72	23.42
1912	332-236	5,870	154	1,090	789,000	+4,610	794,000	1,090	1.72	23.28
1913	362-221	6,660	163	1,250	904,000	-5,530	898,000	1,240	1.94	26.31
1914	392-168	3,910	241	1,090	790,000	-844	790,000	1,090	1.70	23.13
1915	412-225	4,340	141	732	530,000	+458	531,000	733	1.15	15.55
				Calendar year						
1905	492-247	4,310	208	945	684,000	0	684,000	945	1.48	20.06
1906	214-56	21,100	235	1,370	984,000	0	984,000	1,370	2.14	28.85
1907	252-167	5,440	185	1,220	882,000	0	882,000	1,220	1.91	25.88
1908	252-167	6,340	224	1,300	941,000	0	941,000	1,300	2.03	27.59
1909	272-192	10,100	195	1,260	913,000	0	913,000	1,260	1.97	26.77
1910	292-191	8,100	244	1,580	1,140,000	-800	1,140,000	1,580	2.47	33.47
1911	312-222	5,090	154	983	712,000	+54	712,000	983	1.54	21.00
1912	332-236	5,870	163	1,080	784,000	-200	784,000	1,080	1.69	22.97
1913	362-221	6,660	260	1,250	906,000	+550	906,000	1,250	1.95	26.55
1914	392-168	3,910	157	1,170	844,000	-494	844,000	1,170	1.83	24.72

Note.- Flow regulated since November 1910 by storage in Bumping Lake.

Summary of yearly discharge, in second-feet, at stations in Yakima River Basin--Continued

Naches River below Tieton River, near Naches, Wash.
(Drainage area, 943 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents* (acre-feet)	Diversion† (acre-feet)	Adjusted‡			
		Discharge in second-feet			Run-off in acre-feet			Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean					Mean	Per square mile	
1909	272-194	-	-	1,630	1,180,000	0	31,000	1,210,000	1,680	1.78	24.15
1910	292-193	18,800	360	2,550	1,850,000	0	47,500	1,900,000	2,620	2.78	37.80
1911	312-224	7,500	410	1,580	1,140,000	+1,080	69,300	1,220,000	1,680	1.78	24.18
1912	332-238	7,960	320	1,530	1,110,000	+4,610	86,000	1,200,000	1,650	1.75	23.85
1917	462-153	8,260	-	1,560	1,130,000	-8,360	123,000	1,250,000	1,720	1.83	24.78
1918	482-143	15,600	202	1,780	1,290,000	-450	134,000	1,420,000	1,960	2.08	28.23
1919	512-215	10,300	322	1,500	1,080,000	+3,090	139,000	1,220,000	1,690	1.79	24.38
1920	512-215	2,760	225	877	637,000	+4,510	139,000	780,000	1,070	1.14	15.52
1921	532-192	9,660	467	2,220	1,610,000	+1,900	133,000	1,740,000	2,410	2.56	34.66
1922	552-178	12,200	225	1,460	1,060,000	-9,320	134,000	1,180,000	1,630	1.73	23.52
1923	572-168	7,260	194	1,560	1,130,000	+6,660	138,000	1,270,000	1,760	1.87	25.32
1924	592-156	6,800	57	1,210	875,000	-6,170	144,000	1,010,000	1,390	1.48	20.14
1925	612-142	7,800	259	1,530	1,110,000	+22,700	145,000	1,280,000	1,760	1.87	25.40
1926	632-137	3,160	121	780	564,000	-22,800	143,000	684,000	945	1.00	13.61
1927	652-99	9,010	136	1,470	1,060,000	+136,000	131,000	1,330,000	1,840	1.95	26.46
1928	672-125	7,220	522	1,690	1,230,000	-35,300	137,000	1,330,000	1,830	1.94	26.50
1929	870-355	3,420	135	900	652,000	-74,300	164,000	741,000	1,020	1.08	14.73
1930	870-355	3,220	153	825	597,000	-11,900	167,000	752,000	1,040	1.10	14.97
1931	870-355	4,680	124	803	581,000	-14,600	143,000	710,000	981	1.04	14.13
1932	870-355	4,410	149	1,210	876,000	+132,000	152,000	1,160,000	1,600	1.70	23.09
1933	870-355	10,500	321	1,860	1,350,000	-6,240	145,000	1,490,000	2,050	2.18	29.59
1934	870-355	26,400	417	2,530	1,831,000	-58,060	163,400	1,937,000	2,675	2.84	38.57
1935	870-355	6,160	410	1,730	1,251,000	+39,190	160,200	1,451,000	2,004	2.13	28.86
1936	812-150	6,600	266	1,379	1,001,000	-25,690	154,400	1,130,000	1,557	1.65	22.48
1937	832-162	6,340	5	754	546,100	+15,280	451,800	1,013,000	1,400	1.48	20.14
1938	862-167	7,800	12	1,236	894,600	+ +420	504,900	1,400,000	1,934	2.05	27.84
1939	882-182	3,500	5	496	359,100	-3,170	501,600	857,500	1,184	1.26	17.04
Calendar year											
1909	272-194	18,800	360	2,080	1,500,000	0	35,000	1,540,000	2,120	2.25	30.62
1910	292-193	10,200	360	2,310	1,670,000	-800	47,600	1,720,000	2,380	2.53	34.31
1911	312-224	7,500	320	1,360	982,000	+54	70,300	1,050,000	1,460	1.55	20.94
1917	462-153	15,600	205	1,840	1,340,000	+31,400	125,000	1,490,000	2,060	2.19	29.67
1918	482-143	14,100	202	1,550	1,120,000	-17,900	133,000	1,230,000	1,700	1.80	24.56
1919	512-215	10,300	225	1,470	1,060,000	-150	140,000	1,200,000	1,660	1.76	23.93
1920	512-215	2,820	326	1,030	747,000	-6,490	135,000	875,000	1,210	1.28	17.40
1921	532-192	12,200	360	2,260	1,640,000	+13,100	137,000	1,790,000	2,470	2.62	35.60
1922	552-178	8,680	194	1,240	897,000	-13,900	134,000	1,020,000	1,410	1.50	20.26
1923	572-168	7,260	273	1,600	1,160,000	+3,210	135,000	1,300,000	1,790	1.90	25.86
1924	592-156	6,800	57	1,250	906,000	+38,500	144,000	1,090,000	1,500	1.59	21.64
1925	612-142	7,800	204	1,420	1,030,000	-260	144,000	1,170,000	1,620	1.72	23.37
1926	632-137	3,160	121	838	606,500	+20,800	143,000	770,000	1,060	1.13	15.32
1927	652-99	9,010	463	1,470	1,230,000	+89,700	133,000	1,450,000	2,000	2.12	28.83
1928	672-125	7,220	285	1,430	1,040,000	-70,800	151,000	1,120,000	1,550	1.65	22.32
1929	870-355	3,420	135	845	612,000	-67,400	158,000	702,000	970	1.03	13.96
1930	870-355	3,220	163	830	601,000	-13,200	162,000	749,000	1,040	1.10	14.92
1931	870-355	4,680	124	801	580,000	+11,700	144,000	736,000	1,020	1.08	14.65
1932	870-355	4,410	226	1,410	1,030,000	+143,000	151,000	1,320,000	1,820	1.93	26.26
1933	870-355	26,400	505	2,340	1,690,000	+39,100	145,000	1,880,000	2,590	2.75	37.31
1934	870-355	9,590	410	2,076	1,503,000	-57,070	164,500	1,610,000	2,225	2.36	32.07
1935	870-355	6,160	266	1,544	1,118,000	-65,020	164,700	1,217,000	1,681	1.78	24.22
1936	812-150	6,600	5	1,274	924,700	-7,030	204,400	1,122,000	1,546	1.64	22.33
1937	832-162	6,340	5	830	601,100	+77,590	477,300	1,156,000	1,597	1.69	22.98
1938	862-167	7,800	5	1,171	847,700	-46,370	504,200	1,304,000	1,801	1.91	25.93

*Change in contents of Bumping Lake since November 1910 and in Tieton Reservoir since September 1924.

†Diversion by Selah Valley canal (May 1915 to June 1920 estimated), Tieton canal (since 1910), Wapatox canal (since October 1936), and at Oak Flat (since 1929) by city of Yakima.

‡Adjusted for change in contents and diversion.

Naches River near North Yakima, Wash.
(Drainage area, 1,120 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1898	492-254	-	-	-	-	7,480	225	1,830	1,330,000
1899	492-254	7,070	225	1,970	1,420,000	7,470	445	2,340	1,700,000
1900	492-254	9,710	250	1,830	1,330,000	9,710	250	1,710	1,240,000
1901	492-254	9,070	300	2,150	1,560,000	9,070	250	2,010	1,460,000
1902	492-254	8,750	200	1,810	1,310,000	8,750	200	1,750	1,270,000
1903	100-379	11,300	200	2,260	1,640,000	11,300	200	2,570	1,860,000
1904	492-254	11,700	160	2,280	1,660,000	11,700	160	1,950	1,420,000
1905	178-86	3,370	100	961	696,000	3,370	100	925	671,000
1906	252-171	4,890	30	1,030	748,000	21,900	30	1,500	1,080,000
1907	252-171	21,900	45	2,210	1,600,000	8,620	90	1,730	1,250,000
1908	252-171	9,770	90	1,830	1,330,000	9,770	120	1,850	1,340,000
1909	272-197	9,760	93	1,270	922,000	19,500	93	1,780	1,290,000
1910	292-196	19,500	72	2,300	1,660,000	11,100	72	1,960	1,420,000
1911	312-227	6,620	145	1,280	929,000	6,620	115	1,130	818,000
1912	332-241	7,430	81	1,310	950,000	-	-	-	-

Note.- Flow partly regulated since November 1910 by storage in Bumping Lake.

Summary of yearly discharge, in second-feet, at stations in Yakima River Basin--Continued

Bumping River near Nile, Wash.
(Drainage area, 68 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Bumping Lake (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1910	292-199	3,100	0	392	284,000	-	284,000	392	5.76	78.28
1911	312-235	908	0	290	210,000	+1,080	211,000	292	4.29	58.26
1912	332-248	1,290	0	281	204,000	+4,610	209,000	287	4.22	57.59
1913	362-224	1,190	0	329	238,000	-5,530	233,000	322	4.74	64.07
1914	392-170	1,010	0	295	214,000	-844	213,000	294	4.32	58.64
1915	412-228	890	2	207	150,000	+458	150,000	207	3.04	41.51
1916	442-178	1,800	6.4	429	312,000	+9,510	321,000	442	6.50	88.54
1917	462-157	1,570	.9	303	219,000	-8,360	211,000	291	4.28	58.16
1918	482-146	4,520	1.6	336	243,000	-450	243,000	335	4.93	66.90
1919	512-220	1,200	2	303	219,000	+3,090	222,000	307	4.51	61.26
1920	512-220	731	2	204	148,000	+4,510	152,000	210	3.09	42.01
1921	532-196	1,870	17	421	305,000	+1,900	307,000	424	6.24	84.58
1922	552-182	1,230	23	282	204,000	-9,320	195,000	269	3.96	53.64
1923	572-171	1,480	12	284	206,000	+6,660	212,000	293	4.31	58.55
1924	592-159	1,130	5	239	174,000	-6,170	168,000	231	3.40	46.24
1925	612-145	1,720	5	305	221,000	+5,160	226,000	312	4.59	62.23
1926	632-140	820	6	167	121,000	-5,210	116,000	160	2.35	31.93
1927	652-101	1,960	1	324	234,000	+1,510	236,000	326	4.79	65.07
1928	672-127	1,710	2	320	232,000	+4,830	237,000	326	4.79	65.31
1929	692-181	954	3	183	133,000	-5,190	127,000	176	2.59	35.12
1930	707-186	771	2	179	130,000	-1,200	128,000	177	2.60	35.40
1931	722-179	1,160	3	185	134,000	-100	134,000	185	2.72	36.86
1932	737-170	1,480	0	306	222,000	+2,140	224,000	308	4.53	61.71
1933	752-171	2,070	1	366	265,000	+8,600	274,000	378	5.56	75.38
1934	767-161	3,500	2	454	328,500	-8,870	319,700	442	6.50	88.21
1935	792-157	1,550	2	353	255,600	+6,340	261,900	362	5.32	72.31
1936	812-151	1,670	5	268	194,800	-1,010	193,800	267	3.93	53.44
1937	832-163	1,570	9	249	180,200	-7,290	172,900	239	3.51	47.70
1938	862-168	1,800	5	325	235,600	+862	236,500	327	4.81	65.24
1939	882-183	1,310	4	229	165,500	-570	164,900	228	3.35	45.50
Calendar year										
1910	292-199	2,170	0	371	269,000	-800	268,000	370	5.44	73.82
1911	312-235	830	0	250	181,000	+54	181,000	250	3.68	49.97
1912	332-248	1,290	0	291	212,000	-200	211,000	291	4.28	58.36
1913	362-224	1,190	118	326	236,000	+550	237,000	327	4.81	65.20
1914	392-170	1,010	0	318	231,000	-494	231,000	319	4.69	63.53
1915	412-228	890	4	172	124,000	+2,740	127,000	175	2.57	34.99
1916	442-178	1,800	1.5	425	309,000	+1,960	311,000	428	6.29	85.70
1917	462-157	4,520	.9	318	230,000	+31,400	261,000	361	5.31	72.19
1918	482-146	1,920	2	308	223,000	-17,900	205,000	284	4.18	56.60
1919	512-220	1,200	2	308	223,000	-150	223,000	308	4.53	61.45
1920	512-220	731	7	252	183,000	-6,490	176,000	242	3.56	48.52
1921	532-196	1,870	26	411	297,000	+13,100	311,000	429	6.31	85.60
1922	552-182	1,230	13	238	172,000	-13,900	158,000	218	3.21	43.58
1923	572-171	1,480	5	289	209,000	+3,210	213,000	294	4.32	58.61
1924	592-159	1,130	5	249	180,000	+2,390	183,000	252	3.71	50.46
1925	612-145	1,720	20	286	207,000	+750	208,000	287	4.22	57.35
1926	632-140	820	6	180	130,000	+6,590	137,000	189	2.78	37.70
1927	652-101	1,960	1	362	262,000	-11,200	251,000	346	5.09	69.14
1928	672-127	1,710	4	288	209,000	-10,200	199,000	274	4.03	54.81
1929	692-181	954	2	160	116,000	+2,860	119,000	165	2.43	32.86
1930	707-186	771	7	183	133,000	-3,240	129,000	179	2.63	35.69
1931	722-179	1,160	0	192	139,000	+3,110	142,000	196	2.88	39.19
1932	737-170	1,480	1	327	238,000	+18,400	256,000	352	5.18	70.51
1933	752-171	3,500	6	443	321,000	+10,300	331,000	457	6.72	91.19
1934	767-161	1,380	2	394	285,000	-6,120	278,900	385	5.66	76.97
1935	792-157	1,550	14	321	232,200	-25,560	206,500	285	4.19	57.00
1936	812-151	1,670	5	264	191,300	+2,950	194,200	268	3.94	53.58
1937	832-163	1,570	5	272	196,800	+12,600	209,400	289	4.25	57.78
1938	862-168	1,800	4	303	219,400	-12,640	206,800	286	4.21	57.04

Note.- Flow regulated since November 1910 by storage in Bumping Lake.

Summary of yearly discharge, in second-feet, at stations in
Yakima River Basin--Continued

Tieton River at Tieton Dam, near Naches, Wash.
(published as Tieton River at McAllister Meadows, near Naches, Wash., 1909-12)
(Drainage area, 187 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents storage in Tieton Reservoir (acre-feet)	Adjusted for change in contents			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1909	492-262	-	-	433	313,000	0	313,000	433	2.32	31.43
1910	492-262	4,200	127	668	484,000	0	484,000	668	3.57	48.51
1911	312-238	2,410	-	456	330,000	0	330,000	456	2.44	33.10
1912	332-251	1,770	157	481	350,000	0	350,000	481	2.57	35.04
1926	632-143	1,780	2	364	264,000	-17,400	246,000	340	1.82	24.68
1927	652-102	2,160	2	333	241,000	+134,000	375,000	518	2.77	37.60
1928	672-128	1,860	4	613	445,000	-40,000	405,000	558	2.98	40.60
1929	692-182	2,450	9	449	325,000	-69,100	256,000	354	1.89	25.70
1930	707-187	2,010	0	374	270,000	-10,700	260,000	359	1.92	26.05
1931	722-180	1,390	4	347	251,000	-14,400	237,000	327	1.75	23.74
1932	737-171	1,410	1	286	207,000	+130,000	338,000	465	2.49	33.89
1933	752-172	3,180	5	608	441,000	-14,800	426,000	588	3.14	42.65
1934	767-162	6,650	4	842	609,400	-49,190	560,200	774	4.14	56.15
1935	792-158	1,760	6	498	360,500	+32,850	393,300	543	2.90	39.42
1936	812-152	1,850	8	470	341,200	-24,670	316,500	436	2.33	31.73
1937	832-164	2,070	9	385	278,400	+22,580	301,000	416	2.22	30.17
1938	862-169	2,290	6	545	394,600	-440	394,200	544	2.91	39.53
1939	882-184	1,480	5	375	271,200	-2,600	268,600	371	1.98	26.92
Calendar year										
1909	492-262	4,200	-	533	386,000	0	386,000	533	2.85	38.68
1910	492-262	2,410	127	608	440,000	0	440,000	608	3.25	44.10
1911	312-238	2,210	-	412	298,000	0	298,000	412	2.20	29.90
1912	332-251	1,770	172	474	344,000	0	344,000	474	2.53	34.52
1926	632-143	1,780	2	343	248,000	+14,300	263,000	363	1.94	26.34
1927	652-102	2,160	3	424	307,000	+101,000	408,000	564	3.02	40.92
1928	672-128	1,860	6	564	410,000	-60,500	349,000	481	2.57	35.04
1929	692-182	2,450	9	431	312,000	-70,200	242,000	334	1.79	24.25
1930	707-187	2,010	0	372	269,000	-9,990	259,000	358	1.91	26.01
1931	722-180	1,390	3	325	235,000	+8,650	244,000	337	1.80	24.47
1932	737-171	1,410	1	365	265,000	+125,000	390,000	537	2.87	39.11
1933	752-172	6,650	4	704	510,000	+28,800	538,000	744	3.98	53.95
1934	767-162	2,790	6	702	508,400	-50,950	457,300	632	3.38	45.86
1935	792-158	1,760	8	501	362,700	-39,350	323,300	447	2.39	32.40
1936	812-152	1,850	8	449	326,200	-9,980	316,200	436	2.33	31.70
1937	832-164	2,070	6	383	277,000	+65,000	342,000	472	2.52	34.28
1938	862-169	2,290	5	561	406,100	-33,730	372,300	514	2.75	37.33

Note.- Flow regulated since September 1924 by storage in Tieton Reservoir.

Tieton River at headworks of Tieton canal, near Naches, Wash.
(Drainage area, 240 square miles)
Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Change in contents in Tieton Reservoir (acre-feet)	Diverted by Tieton canal (acre-feet)	Adjusted*			
		Discharge in second-feet			Run-off in acre-feet			Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean					Mean	Per square mile	
1908	252-177	3,170	146	636	462,000	0	0	462,000	636	2.65	36.05
1909	272-207	2,450	150	506	366,000	0	0	366,000	506	2.11	28.63
1910	292-206	4,970	152	741	536,000	0	7,900	544,000	752	3.13	42.52
1911	312-240	2,160	130	469	340,000	0	27,100	367,000	507	2.11	28.68
1912	332-253	1,760	109	474	344,000	0	49,600	394,000	542	2.26	30.78
1913	362-229	2,670	74	533	386,000	0	59,800	446,000	616	2.57	34.79
1914	392-176	1,700	25	435	315,000	0	70,000	385,000	532	2.22	30.08
1915	412-232	1,440	25	287	207,000	0	68,500	276,000	382	1.59	21.57
1916	442-180	3,430	69	700	508,000	0	79,700	588,000	810	3.38	45.82
1919	870-367	-	-	-	-	0	87,500	386,000	534	2.22	30.17
1920	512-224	785	11	240	174,000	0	100,000	274,000	378	1.58	21.44
1921	532-197	2,480	18	623	451,000	0	96,100	547,000	756	3.15	42.72
1922	552-184	3,790	26	430	312,000	0	95,000	407,000	562	2.34	31.75
1923	572-173	1,840	20	466	337,000	0	96,600	434,000	600	2.50	33.93
†1924	592-161	1,670	2	338	245,000	0	98,800	344,000	474	1.98	26.89
†1925	612-150	2,480	15	440	319,000	+17,500	97,700	433,000	599	2.50	33.85
1926	870-367	1,620	0	256	185,000	-17,400	98,700	267,000	368	1.53	20.88
1927	870-367	2,200	0	-	-	+134,000	87,900	412,000	569	2.37	32.23
1928	672-129	2,020	12	562	409,000	-40,000	91,200	460,000	634	2.64	35.95
1929	692-183	2,280	1	344	249,000	-69,100	109,000	289,000	400	1.67	22.64
1930	707-189	1,770	1	252	183,000	-10,700	107,000	279,000	385	1.60	21.78
1931	722-181	1,330	0	270	196,000	-14,400	83,000	264,000	365	1.52	20.66
1932	737-172	1,230	0	194	141,000	+130,000	93,300	364,000	502	2.09	28.50
1933	752-173	2,960	8	555	402,000	-14,800	87,800	475,000	656	2.73	37.11
1934	767-163	7,310	1	796	576,500	-49,190	105,500	632,800	874	3.64	49.45
1935	792-159	1,910	0	445	321,900	+32,850	100,400	455,200	629	2.62	35.55
1936	812-153	1,760	14	393	285,300	-24,670	94,670	355,300	489	2.04	27.75
1937	832-165	2,080	12	289	209,300	+22,580	91,080	323,000	446	1.86	25.24
1938	862-170	2,300	8	484	350,200	-440	94,020	443,800	613	2.55	34.66
1939	882-185	1,110	8	252	182,400	-2,600	106,800	286,600	396	1.65	22.40

†No records of change in contents of Tieton Reservoir prior to April, 1925. An accumulation of 84,100 acre-feet up to Apr. 30 has been divided equally over the period October 1924 to April 1925.

Summary of yearly discharge, in second-feet, at stations in
Yakima River Basin--Continued

Tieton River at headworks of Tieton canal, near Naches, Wash.--Continued
(Drainage area, 240 square miles)
Calendar year

Year	W.S.P. (no. and page)	Observed				Change in contents in Tieton Reservoir (acre-feet)	Diverted by Tieton canal (acre-feet)	Adjusted*			
		Discharge in second-feet			Run-off in acre-feet			Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean					Mean	Per square mile	
1908	252-177	3,170	150	641	466,000	0	0	466,000	641	2.67	36.40
1909	272-207	4,970	152	616	446,000	0	0	446,000	616	2.57	34.82
1910	292-206	2,710	200	668	484,000	0	7,900	492,000	677	2.83	38.40
1911	312-240	2,160	130	424	307,000	0	29,100	336,000	464	1.93	26.27
1912	332-253	1,760	109	465	337,000	0	47,600	385,000	530	2.21	30.08
1913	362-229	2,670	74	537	389,000	0	62,100	451,000	623	2.60	35.20
1914	392-176	1,700	25	461	334,000	0	69,700	404,000	557	2.32	31.54
1915	412-232	1,440	25	257	186,000	0	68,900	254,000	351	1.46	20.07
1919	870-367	-	-	-	-	0	100,000	379,000	524	2.18	29.62
1920	512-224	995	11	279	203,000	0	99,400	302,000	416	1.73	23.60
1921	532-197	3,790	18	656	475,000	0	98,000	573,000	792	3.30	44.74
1922	552-184	2,240	20	356	258,000	0	94,500	352,000	487	2.03	27.51
1923	572-173	1,840	26	479	347,000	0	96,200	443,000	612	2.55	34.63
†1924	592-161	2,480	2	348	252,000	+36,000	97,300	386,000	531	2.21	30.11
†1925	612-150	2,180	17	401	290,000	-920	97,700	387,000	535	2.23	30.24
1926	870-367	1,620	0	-	-	+14,300	98,600	285,000	393	1.64	22.29
1927	870-367	2,200	7	-	-	+101,000	88,000	456,000	629	2.62	35.63
1928	672-129	2,020	16	491	356,000	-60,500	101,000	397,000	547	2.28	31.00
1929	692-183	2,280	1	323	234,000	-70,200	104,000	268,000	370	1.54	20.98
1930	707-189	1,770	1	259	187,000	-9,990	102,000	279,000	385	1.60	21.82
1931	722-181	1,330	0	247	179,000	+8,650	83,200	271,000	374	1.56	21.18
1932	737-172	1,230	0	278	202,000	+125,000	93,000	419,000	578	2.41	32.80
1933	752-173	7,310	8	669	485,000	+28,800	87,800	601,000	831	3.46	47.03
1934	767-163	2,770	0	643	465,200	-50,950	106,000	520,100	719	2.99	40.64
1935	792-159	1,910	24	437	316,400	-39,350	102,900	379,900	525	2.19	29.67
1936	812-153	1,760	14	373	270,400	-9,980	92,020	352,500	486	2.02	27.53
1937	832-165	2,080	8	291	210,800	+65,000	90,820	366,700	506	2.11	28.65
1938	862-170	2,300	8	501	362,900	-33,730	95,790	424,900	587	2.45	33.18

*Adjusted for change in contents and diversion.
†No records of change in contents of Tieton Reservoir prior to April 1925. An accumulation of 84,100 acre-feet up to Apr. 30 has been divided equally over the period October 1924 to April 1925.
Note.- Tieton canal has diverted above gaging station since 1910. Flow regulated by storage in Tieton Reservoir since September 1924.

Tieton River at Cobb's ranch, near Naches, Wash.
(published as Tieton River near Naches, March 1906 to September 1907, drainage area, 264 square miles)
(Drainage area, 297 square miles)

Water year ending Sept. 30

Year	W.S.P. (no. and page)	Observed				Diverted by Tieton canal (acre-feet)	Adjusted for diversion			
		Discharge in second-feet			Run-off in acre-feet		Run-off in acre-feet	Discharge in second-feet		Run-off in inches
		Maximum	Minimum	Mean				Mean	Per square mile	
1903	369-81	4,850	238	718	520,000	0	520,000	718	2.42	32.84
1904	369-81	3,140	258	739	536,000	0	536,000	739	2.49	33.90
1905	369-81	1,670	208	471	341,000	0	341,000	471	1.59	21.53
1906	369-81	1,370	168	461	334,000	0	334,000	461	1.70	23.02
1907	369-81	14,100	-	835	605,000	0	605,000	835	3.16	42.98
1909	369-81	-	-	540	391,000	0	391,000	540	1.82	24.65
1910	369-81	7,290	156	817	592,000	7,900	600,000	828	2.79	37.85
1911	369-81	-	-	472	341,000	27,100	368,000	509	1.71	23.24
1912	369-81	2,150	120	502	364,000	49,600	414,000	570	1.92	26.08
1913	369-81	3,080	56	532	386,000	59,800	445,000	615	2.07	28.12

Calendar year

1903	369-81	4,850	281	761	551,000	0	551,000	761	2.56	34.81
1904	369-81	3,140	220	703	510,000	0	510,000	703	2.37	32.21
1905	369-81	1,670	196	452	327,000	0	327,000	452	1.52	20.66
1906	369-81	14,100	168	677	490,000	0	490,000	677	2.55	34.54
1907	369-81	-	-	-	-	0	-	-	-	-
1909	369-81	-	-	667	483,000	0	483,000	667	2.25	30.47
1910	369-81	-	-	728	527,000	7,900	535,000	739	2.49	33.75
1911	369-81	-	-	422	305,000	29,100	334,000	462	1.56	21.12
1912	369-81	2,150	120	494	359,000	47,600	406,000	560	1.89	25.62
†1913	369-81	-	56	-	-	-	-	-	-	-

†Calendar year incomplete.
Note.- Tieton canal has diverted water above the gaging station since 1910.

Summary of yearly discharge, in second-feet, at stations in Yakima River Basin--Continued

North Fork of Ahtanum Creek near Tampico, Wash.
(Drainage area, 69 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30						Calendar year					
		Maximum day	Minimum day	Mean	Per square mile	Run-off		Maximum day	Minimum day	Mean	Per square mile	Run-off	
						Inches	Acre-feet					Inches	Acre-feet
1908	252-184	Apr. 6 to Nov. 24						407	20	-	1.55	13.50	49,700
1909	272-213	May 25 to Dec. 31						361	14	-	1.08	8.86	32,600
1910	292-210	684	17	114	1.65	22.48	82,600	684	17	105	1.52	20.76	76,200
1911	312-245	411	-	66.8	.968	13.16	48,400	411	-	65.1	.943	12.81	47,100
1912	492-270	629	15	90.3	1.31	17.80	65,600	629	15	90.2	1.31	17.78	65,500
1913	362-236	427	16	73.8	1.07	14.52	53,500	427	14	74.7	1.08	14.69	54,100
1914	392-179	321	14	83.8	1.21	16.51	60,700	321	-	85.6	1.24	16.85	62,000
1915	412-236	244	14	56.3	.816	11.05	40,700	244	-	58.9	.854	9.64	35,500
1916	442-183	May 1 to Dec. 31						-	-	-	2.00	18.22	67,100
1917	462-162	Mar. 5 to Sept. 30						382	18.8	-	1.49	11.77	42,800
1918	482-152	Apr. 14 to Oct. 10						263	17.5	-	1.08	7.79	28,600
1919	512-229	Apr. 6 to Nov. 30						331	14.5	-	1.08	9.79	36,000
1920	512-229	Mar. 28 to Nov. 9						173	11.0	-	.651	5.49	20,200
1921	532-201	Apr. 1 to Nov. 26						480	7.6	-	1.74	15.58	57,300
1922	552-188	Apr. 17 to Sept. 30						411	-	-	1.41	8.73	32,100
1923	572-176	June 29 to Oct. 13						176	16	-	.626	2.50	9,170
1924	592-165	Apr. 21 to Sept. 30						286	12	-	.842	5.09	18,800
1931	737-173	Mar. 1 to Dec. 31						214	6.0	-	.439	4.83	18,400
1932	737-173	240	6.0	55.0	.797	10.85	39,900	240	9.4	57.9	.839	11.43	42,100
1933	752-174	403	9.4	70.1	1.02	13.79	50,800	665	9.4	83.0	1.20	16.34	60,100
1934	767-164	665	11	89.2	1.29	17.57	64,540	420	11	82.7	1.20	16.30	59,900
1935	792-160	266	14	77.9	1.13	15.33	56,390	266	7.3	69.1	1.00	13.59	50,000
1936	812-154	285	6	48.5	.703	9.57	35,200	285	6	48.4	.701	9.54	35,150
1937	832-166	243	9.1	51.9	.752	10.22	37,580	243	10	54.6	.791	10.75	39,520
1938	862-171	401	16	85.6	1.24	16.86	61,950	401	9	84.1	1.22	16.56	60,840
1939	882-186	152	8	36.0	.522	7.07	26,040	-	-	-	-	-	-

South Fork of Ahtanum Creek at Conrad ranch, near Tampico, Wash.
(published as South Fork of Ahtanum Creek near Tampico prior to March 1915; drainage area, 28 square miles)
(Drainage area, 26 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year:			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1908	252-189	May 1 to Dec. 31				120	4	-	12,300
1909	272-217	150	4.2	17.8	12,900	211	4.2	20.9	15,100
1910	312-250	362	4	38.3	27,800	362	1.6	34.8	25,200
1911	312-250	113	.3	14.8	10,700	113	.3	14.9	10,800
1912	332-262	74	4.2	16.9	12,200	74	5	17.4	12,600
1913	362-240	153	5	23.2	16,800	153	4.1	22.8	16,500
1914	392-180	154	4.1	31.3	22,700	-	-	-	-
1915	412-237	Mar. 15 to Oct. 31				62	4.3	-	8,380
1916	442-184	May 15 to Nov. 30				203	-	-	15,400
1917	462-163	Apr. 1 to Oct. 31				94	6.8	-	10,300
1918	482-154	Apr. 13 to Oct. 31				50	5.6	-	7,510
1919	512-231	Apr. 1 to Nov. 1				84	5.6	-	9,010
1920	512-231	Mar. 28 to Oct. 31				33	4.5	-	4,850
1921	532-202	Apr. 1 to Oct. 31				151	7.3	-	15,700
1922	552-189	Apr. 1 to Oct. 14				144	5.4	-	10,800
1923	572-178	Apr. 1 to Sept. 30				90	7.3	-	12,000
1924	592-166	Apr. 21 to Sept. 30				60	3.9	-	4,780
1931	722-182	Mar. 1 to Dec. 31				36	-	-	4,560
1932	737-175	90	-	15.3	11,100	90	-	16.0	11,600
1933	752-175	110	-	18.6	13,400	403	-	24.2	17,600
1934	767-165	403	4.2	29.1	21,060	275	4.2	25.6	18,550
1935	792-161	121	4.8	24.3	17,590	121	4.5	21.9	15,850
1936	812-155	76	4.1	13.9	10,100	76	4	13.6	9,900
1937	832-167	101	4	15.6	11,260	101	4	16.2	11,730
1938	862-172	124	5.3	24.4	17,690	124	4.7	24.0	17,400
1939	882-187	29	3.2	9.44	6,840	-	-	-	-

Toppenish Creek near Fort Simcoe, Wash.
(Drainage area, 124 square miles)

1910	292-218	1,190	13	175	127,000	1,190	13	151	109,000
1911	312-252	450	13	81.5	59,100	450	13	76.4	55,300
1912	362-248	378	11	67.8	49,300	378	11	72.7	52,800
1913	362-248	530	12.4	96.2	69,700	530	14	92.6	67,000
1914	392-187	1,000	10.8	141	102,000	1,000	10.8	143	104,000
1915	412-245	336	3.5	56.4	40,800	804	3.5	60.6	43,900
1916	442-191	1,570	10	214	155,000	1,570	17.4	208	151,000
1917	462-170	561	13.7	72.9	52,700	703	13.7	82.1	59,400
1918	482-163	703	11	76.5	55,300	289	11	65.2	47,200
1919	512-241	1,310	12.1	76.2	55,100	1,310	-	76.4	55,300
1920	512-241	-	-	42.7	31,000	-	-	48.4	35,200
1921	532-209	-	-	132	95,700	-	-	133	96,500
1922	552-191	487	13	72.4	52,400	487	13	67	48,500
1923	572-179	1,030	-	83	60,100	1,030	14	84.2	60,900
1924	592-168	343	-	48.6	35,300	-	-	-	-

Note.- Diversions through Toppenish feeder canal and Nicol and Abe Lincoln ditches added to flow at station after March 1920. Prior to that time amount diverted around station was only a small percent of the flow.

Summary of yearly discharge, in second-feet, at stations in
Yakima River Basin--Continued
Simcoe Creek below Spring Creek, near Fort Simcoe, Wash.
(published as Simcoe Creek near Fort Simcoe prior to November 1915)
(Drainage area, 77 square miles)

Year	W.S.P. (no. and page)	Water year ending Sept. 30				Calendar year			
		Maximum day	Minimum day	Mean	Run-off in acre-feet	Maximum day	Minimum day	Mean	Run-off in acre-feet
1910	292-224	1,340	0	67.1	48,600	1,340	0.2	63.9	46,300
1911	312-258	86	.2	14.9	10,800	86	1	13.7	9,930
1912	332-268	142	1	25.0	18,200	142	1	25.4	18,400
1913	362-251	156	.3	25.4	18,400	156	.3	26.1	18,900
1914	392-188	462	.1	43.4	31,500	462	.1	43.1	31,200
1915	412-247	192	.4	22.2	16,100	293	.3	23.9	17,300
1916	442-193	598	.5	61.4	44,600	598	1.7	59.8	43,400
1917	462-172	121	.3	12.2	8,820	286	.2	18.0	13,000
1918	482-165	286	.2	27.8	20,100	232	.2	21.4	15,500
1919	512-245	319	.2	20.5	14,800	319	-	20.4	14,800
1920	512-245	26	.1	6.70	4,870	132	.1	7.35	5,340
1921	532-211	266	-	37.9	27,400	266	.4	40.2	29,100
1922	552-193	162	.1	20.0	14,500	120	.1	17.0	12,300
1923	572-182	-	.1	23.6	17,100	-	-	-	-

Note.- Since April 1920 Simcoe Creek flume diverted from 0.1 second-foot to 6 second-feet around gage. Other diversions for irrigation above gage.

Satus Creek below Dry Creek, near Toppenish, Wash.
(Drainage area, 427 square miles)

1914	392-192	882	8	131	95,100	882	8	131	95,200
1915	412-250	748	7.2	77.7	56,300	3,230	7.2	106	76,500
1916	442-197	3,230	10	275	199,000	1,890	21	249	181,000
1917	462-176	552	12	101	73,200	1,130	12	124	89,900
1918	482-167	1,130	-	132	95,500	-	-	108	78,400
1919	512-250	1,800	11	138	100,000	1,800	11	140	102,000
1920	512-250	421	8.2	61.3	44,500	1,240	8.2	64.7	47,000
1921	532-214	1,830	9.6	146	106,000	1,830	13	155	112,000
1922	552-197	1,000	9	109	78,800	728	9	97.1	70,300
1923	572-186	1,440	12	142	102,000	1,440	-	141	102,000
*1924	592-170	-	2	66	48,000	-	2	-	-

*Calendar year incomplete.
Note.- Entire flow of Satus Creek above Lazy Creek is diverted for irrigation during July and August.

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