

COWLITZ RIVER BASIN

14226500 COWLITZ RIVER AT PACKWOOD, WA

LOCATION.--Lat 46°36'47", long 121°40'41", in SE 1/4 SE 1/4 sec.16, T.13 N., R.9 E., Lewis County, Hydrologic Unit 17080004, on right bank on upstream side of Forest Service bridge, 0.6 mi northwest of Packwood, 0.8 mi upstream from Skate Creek, and at mile 126.5.

DRAINAGE AREA.--287 mi².

PERIOD OF RECORD.--July 1911 to December 1919, September 1929 to current year. Published as "at Lewis" 1911-19.

REVISED RECORDS.--WSP 884: 1938. WSP 1348: 1916-18(M), 1934. WSP 1638: 1947(P).

GAGE.--Water-stage recorder. Datum of gage is 1,048.0 ft above NGVD of 1929 (Bureau of Public Roads benchmark). July 1, 1911, to Dec. 31, 1919, nonrecording gages at site about 1 mi upstream at different datums. Sept. 30, 1929, to Jan. 1, 1930, nonrecording gage at present site and datum.

REMARKS.--Records good. Minor regulation by Packwood Lake beginning June 1964. Small diversions for domestic use. Water temperatures November 1970 to April 1971. U.S. Geological Survey satellite telemeter at station. Water is diverted from Packwood Lake for power generation and is discharged into Cowlitz River about 1 mi downstream from station. Monthly mean diversion in cubic feet per second for the current water year, as furnished by Energy Northwest is as follows:

October.....	0.3	January.....	82.4	April.....	74.1	July.....	148
November.....	3.8	February.....	48.7	May.....	125	August.....	45.9
December.....	93.3	March.....	51.8	June.....	180	September.....	78.0

AVERAGE DISCHARGE.--73 years (water years 1930-2002), 1,591 ft³/s, 1,153,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,600 ft³/s Dec. 21, 1933, gage height, 13.0 ft; maximum gage height, 13.73 ft Dec. 2, 1977; minimum discharge, 130 ft³/s Nov. 29, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,500 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov. 11	0830	13,800	8.80	May 29	0630	7,640	6.75
Jan. 8	0015	*17,400	*9.79	Jun. 29	0645	9,280	7.28
Apr. 14	0600	11,800	8.05				

Minimum discharge, 224 ft³/s Oct. 10.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	302	2000	1230	656	741	1130	878	1670	4470	3120	946	577
2	311	2000	1380	717	671	1020	908	2110	4410	2790	904	562
3	309	1640	1250	718	658	938	930	1900	4230	2630	825	613
4	320	1340	1150	684	632	895	1050	1530	4140	2380	805	493
5	298	1360	1060	692	633	869	1350	1300	5130	2070	733	442
6	289	1100	1050	1210	653	859	1530	1110	5110	2200	693	417
7	253	935	1000	11000	749	798	1730	946	3510	2720	652	400
8	256	837	916	11500	786	759	1650	821	2580	3470	665	369
9	238	762	877	5670	758	723	1680	762	2080	2500	719	375
10	304	705	836	3690	724	722	2240	720	2530	2780	780	411
11	509	678	780	2670	705	1350	2510	766	3700	3190	777	450
12	573	763	751	2450	665	2080	3140	992	4790	3050	753	480
13	743	1270	2100	2200	663	1650	4630	1600	5860	2990	790	490
14	972	10200	3530	1860	630	1390	8980	1770	6290	2600	847	479
15	585	5580	2330	1590	589	1200	4860	1680	6240	2150	846	472
16	443	3650	3120	1390	582	1070	2960	1660	5560	1990	794	460
17	378	2550	4710	1230	580	951	2020	1850	4410	1960	738	419
18	324	1920	2970	1120	583	881	1530	2120	4470	1890	681	368
19	333	1970	2170	1060	656	869	1280	2150	3670	1750	650	391
20	360	2500	1700	1020	713	896	1160	2940	3560	1540	631	435
21	351	2500	1420	999	1650	842	1140	3070	4110	1450	597	393
22	601	2800	1240	965	3890	807	1060	2680	4700	1490	632	380
23	1150	3260	1110	941	3320	791	967	2300	4590	1500	641	395
24	760	2470	995	1040	2820	785	889	2300	3930	1480	663	410
25	714	1920	913	1230	2160	803	877	2630	4120	1460	668	393
26	782	1570	845	1120	1740	848	932	3250	4960	1360	636	372
27	850	1330	787	976	1470	853	931	3920	4930	1200	657	337
28	760	1240	768	899	1280	854	882	5350	4800	1110	702	325
29	660	1240	720	839	---	857	931	7120	7370	1180	719	340
30	1160	1150	685	794	---	849	1140	6150	4380	1210	656	297
31	2530	---	673	782	---	868	---	5110	---	1030	591	---
TOTAL	18418	63240	45066	63712	31701	30207	56765	74277	134630	64240	22391	12745
MEAN	594	2108	1454	2055	1132	974	1892	2396	4488	2072	722	425
MAX	2530	10200	4710	11500	3890	2080	8980	7120	7370	3470	946	613
MIN	238	678	673	656	580	722	877	720	2080	1030	591	297
AC-FT	36530	125400	89390	126400	62880	59920	112600	147300	267000	127400	44410	25280

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2002, BY WATER YEAR (WY)

	811	1609	1760	1515	1411	1215	1709	2817	3058	1790	824	577
MEAN	811	1609	1760	1515	1411	1215	1709	2817	3058	1790	824	577
MAX	2683	5023	6025	4104	4690	3478	2833	5209	6085	4265	1824	1527
(WY)	1956	1996	1934	1974	1996	1972	1991	1949	1974	1933	1999	1959
MIN	237	196	319	364	396	495	668	1548	842	527	445	344
(WY)	1988	1953	1953	1937	1933	1955	1975	1977	1992	1992	1987	1987

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1930 - 2002

ANNUAL TOTAL		417460		617392								
ANNUAL MEAN		1144		1691						1591		
HIGHEST ANNUAL MEAN										2411		1956
LOWEST ANNUAL MEAN										923		1941
HIGHEST DAILY MEAN			10200		Nov 14		11500		Jan 8	27700		Dec 2 1977
LOWEST DAILY MEAN			238		Oct 9		238		Oct 9	144		Nov 29 1952
ANNUAL SEVEN-DAY MINIMUM			280		Oct 4		280		Oct 4	156		Nov 26 1952
ANNUAL RUNOFF (AC-FT)			828000				1225000			1153000		
10 PERCENT EXCEEDS			2150				3920			3360		
50 PERCENT EXCEEDS			787				1020			1090		
90 PERCENT EXCEEDS			423				447			450		