Water-Data Report 2006

14226500 COWLITZ RIVER AT PACKWOOD, WA

Lower Columbia Basin
Upper Cowlitz Subbasin

LOCATION.--Lat 46°36′47″, long 121°40′41″ referenced to North American Datum of 1927, in SE ¼ SE ¼ sec.16, T.13 N., R.9 E., Lewis County, WA, 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 mi^2.

SURFACE-WATER RECORDS

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.--No estimated daily discharges. Records fair. 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	1.0	January	114	April	43.4	July	109
November	74.7	February	78.1	May	129	August	2.1
December	72.0	March	47.7	June	200	September	76.7

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--77 years (water years 1930-2006), 1,589 ft^3/s, 1,151,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 36,600 ft^3/s, Dec. 21, 1933, gage height, 13.0 ft; maximum gage height, 13.73 ft, Dec. 2, 1977; minimum discharge, 130 ft^3/s, Nov. 29, 1952.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 7,500 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 24	0430	*11,900	*8.05
Jan 10	1145	9,610	6.96
May 18	0045	9,040	6.72

Minimum discharge, 252 ft^3/s, Sep 17.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1,660	2,770	1,120	3,780	3,050	1,100	815	2,760	3,810	2,510	597	437
2	873	2,320	1,080	2,940	2,780	1,070	820	2,110	5,550	2,410	588	465
3	611	1,980	959	2,300	2,730	1,010	832	1,840	5,040	2,460	610	516
4	460	1,910	854	1,870	3,170	964	909	1,830	5,240	2,600	611	569
5	374	1,870	801	1,680	2,830	923	955	2,000	5,270	2,440	611	616
6	341	2,050	749	3,230	2,280	895	1,030	2,220	4,570	1,940	629	590
7	609	1,780	690	4,220	1,910	878	1,030	2,120	4,330	1,490	656	558
8	501	1,560	629	3,530	1,700	883	1,190	2,100	3,830	1,400	676	551
9	420	1,370	602	3,470	1,540	856	1,410	1,740	3,010	1,530	660	496
10	370	1,490	612	8,300	1,410	812	1,370	1,630	2,880	1,600	601	453
11	370	1,820	645	7,680	1,320	785	1,290	1,990	2,920	1,340	539	490
12	319	1,680	692	5,120	1,220	752	1,270	2,210	4,620	1,300	497	510
13	543	2,050	685	4,610	1,160	724	1,340	1,940	5,300	1,350	500	484
14	444	2,570	646	3,850	1,100	707	1,660	2,070	4,210	1,230	567	402
15	436	2,170	623	2,970	1,020	686	1,770	3,270	3,810	1,190	755	353
16	428	1,900	599	2,500	958	671	1,530	5,670	3,860	1,080	692	316
17	677	1,770	552	3,790	864	659	1,350	7,590	3,740	1,040	684	287
18	590	1,740	482	3,230	828	647	1,210	7,840	2,990	988	688	447
19	766	2,130	550	2,670	824	625	1,140	7,180	2,680	939	682	512
20	1,250	2,540	917	2,380	807	615	1,190	6,360	2,420	910	695	414
21	952	2,660	2,000	2,020	795	606	1,520	5,000	2,450	1,020	660	570
22	789	2,520	4,160	1,750	783	599	1,530	4,860	2,410	1,160	704	395
23	662	2,280	5,090	1,580	822	599	1,470	4,700	2,410	1,130	658	354
24	587	2,060	9,760	1,510	781	634	1,530	4,530	2,680	1,120	615	387
25	547	2,360	6,760	1,540	745	654	1,590	4,010	3,300	1,020	601	380
26	571	2,070	4,760	1,490	726	648	1,760	3,210	3,720	947	629	382
27	500	1,700	3,960	1,420	856	630	1,820	2,800	3,890	925	629	390
28	501	1,460	4,230	1,460	1,130	644	2,600	3,190	3,190	878	654	423
29	519	1,390	3,910	1,490	---	675	4,010	3,010	2,470	788	625	422
30	521	1,250	3,740	3,760	---	685	3,800	2,710	2,320	691	496	410
31	2,290	---	4,460	3,600	---	720	---	2,890	---	627	434	---
Total	20,481	59,220	67,317	95,740	40,139	23,356	45,741	107,380	108,920	42,053	19,243	13,579
Mean	661	1,974	2,172	3,088	1,434	753	1,525	3,464	3,631	1,357	621	453
Max	2,290	2,770	9,760	8,300	3,170	1,100	4,010	7,840	5,550	2,600	755	616
Min	319	1,250	482	1,420	726	599	815	1,630	2,320	627	434	287
Ac-ft	40,620	117,500	133,500	189,900	79,620	46,330	90,730	213,000	216,000	83,410	38,170	26,930

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2006, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	810	1,602	1,756	1,568	1,403	1,224	1,716	2,810	3,032	1,753	816	580
Max	2,683	5,023	6,025	4,104	4,690	3,478	2,833	5,209	6,085	4,265	1,824	1,527
(WY)	(1956)	(1996)	(1934)	(1974)	(1996)	(1972)	(1991)	(1949)	(1974)	(1933)	(1999)	(1959)
Min	237	196	319	364	396	495	668	1,548	842	527	445	344
(WY)	(1988)	(1953)	(1953)	(1937)	(1933)	(1955)	(1975)	(1977)	(1992)	(1992)	(1987)	(1987)

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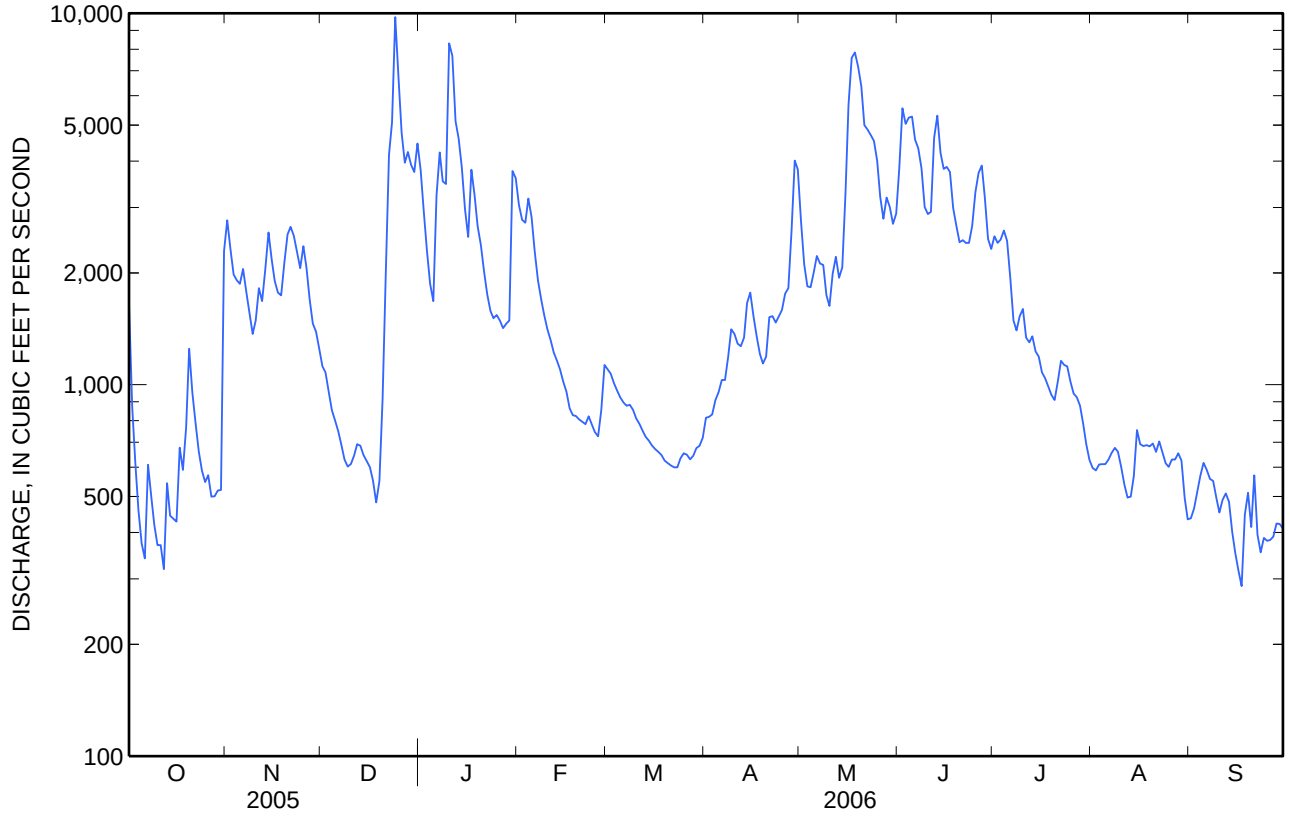
SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1930 - 2006	
Annual total	441,827		643,169			
Annual mean	1,210		1,762		1,589	
Highest annual mean					2,411	1956
Lowest annual mean					923	1941
Highest daily mean	13,800	Jan 18	9,760	Dec 24	27,700	Dec 2, 1977
Lowest daily mean	217	Sep 23	287	Sep 17	144	Nov 29, 1952
Annual seven-day minimum	238	Sep 20	387	Sep 22	156	Nov 26, 1952
Annual runoff (ac-ft)	876,400		1,276,000		1,151,000	
10 percent exceeds	2,330		3,850		3,350	
50 percent exceeds	744		1,190		1,090	
90 percent exceeds	390		500		450