Water-Data Report 2008

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 and crest-stage gage. 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 good except flows above 10,000 ft^3/s, which are poor. 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	2.3	January	57.2	April	4.5	July	157
November	57.5	February	40.3	May	144	August	80.1
December	97.6	March	30.6	June	211	September	84.4

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--79 years (water years 1930-2008), 1,594 ft^3/s, 1,155,000 acre-ft/yr, unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 42,100 ft^3/s, Nov. 6, 2006, gage height, 14.59 ft; 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 3	1800	*15,200	*7.76
May 18	0115	13,000	7.03
Jun 30	0345	11,600	6.69

Minimum discharge, 302 ft^3/s, Sept. 29.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	486	586	544	911	443	1,450	551	1,480	4,340	8,140	1,470	632
2	756	546	564	894	418	1,430	529	1,390	3,740	7,040	1,380	582
3	1,310	519	7,400	912	392	1,310	513	1,380	3,740	8,500	1,130	579
4	737	517	10,400	1,020	377	1,170	522	1,480	4,230	6,380	1,110	585
5	568	518	5,790	1,090	385	1,020	502	1,890	3,340	4,840	1,130	595
6	501	501	3,730	1,020	381	927	501	2,520	3,420	4,460	1,150	598
7	721	483	2,840	948	416	868	517	2,540	3,690	3,730	1,080	621
8	939	479	2,290	920	492	844	522	2,350	3,190	3,730	1,130	589
9	683	480	1,930	861	624	850	508	2,090	3,060	3,980	1,080	574
10	666	1,070	1,680	908	797	893	512	2,000	3,530	3,860	930	551
11	632	788	1,490	1,140	902	1,230	516	2,200	3,390	3,010	792	537
12	572	1,110	1,360	1,270	868	1,330	633	2,150	3,060	2,640	843	555
13	521	1,540	1,230	1,300	870	1,340	1,200	2,130	3,280	2,900	912	537
14	479	1,100	1,140	1,250	803	1,350	1,720	3,950	3,730	2,930	975	517
15	468	1,320	1,110	1,190	737	1,310	1,620	5,510	3,850	2,750	1,020	516
16	500	3,630	1,020	1,070	704	1,200	1,400	7,610	4,300	2,530	1,030	522
17	473	3,350	975	976	676	1,100	1,270	10,000	4,570	2,310	1,020	539
18	499	2,900	974	879	656	1,080	1,200	10,500	3,780	2,110	974	555
19	1,280	2,050	1,090	818	676	1,080	1,100	8,270	3,580	1,950	888	520
20	1,260	1,560	1,130	738	711	1,030	996	8,430	3,880	1,920	1,740	582
21	1,120	1,260	1,010	654	741	958	916	6,380	5,140	1,940	1,590	549
22	1,470	1,040	979	603	742	867	841	4,330	5,040	1,890	1,000	467
23	1,960	915	1,290	584	739	882	802	3,080	4,210	1,650	829	399
24	2,070	824	2,170	556	751	903	747	2,850	3,670	1,520	787	370
25	1,650	729	1,820	520	791	847	703	4,610	3,800	1,530	830	374
26	1,240	681	1,590	518	814	820	684	5,650	4,060	1,510	698	393
27	1,020	672	1,390	506	835	750	775	6,620	4,330	1,480	1,190	360
28	876	626	1,300	475	893	708	1,160	6,380	6,640	1,360	1,000	366
29	784	615	1,180	476	1,080	673	1,710	5,690	8,190	1,340	1,010	374
30	691	571	1,100	460	---	623	1,670	4,930	9,420	1,410	903	394
31	640	---	993	457	---	585	---	4,580	---	1,160	726	---
Total	27,572	32,980	63,509	25,924	19,714	31,428	26,840	134,970	128,200	96,500	32,347	15,332
Mean	889	1,099	2,049	836	680	1,014	895	4,354	4,273	3,113	1,043	511
Max	2,070	3,630	10,400	1,300	1,080	1,450	1,720	10,500	9,420	8,500	1,740	632
Min	468	479	544	457	377	585	501	1,380	3,060	1,160	698	360
Ac-ft	54,690	65,420	126,000	51,420	39,100	62,340	53,240	267,700	254,300	191,400	64,160	30,410

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1930 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	805	1,635	1,764	1,556	1,397	1,241	1,706	2,827	3,041	1,764	815	576
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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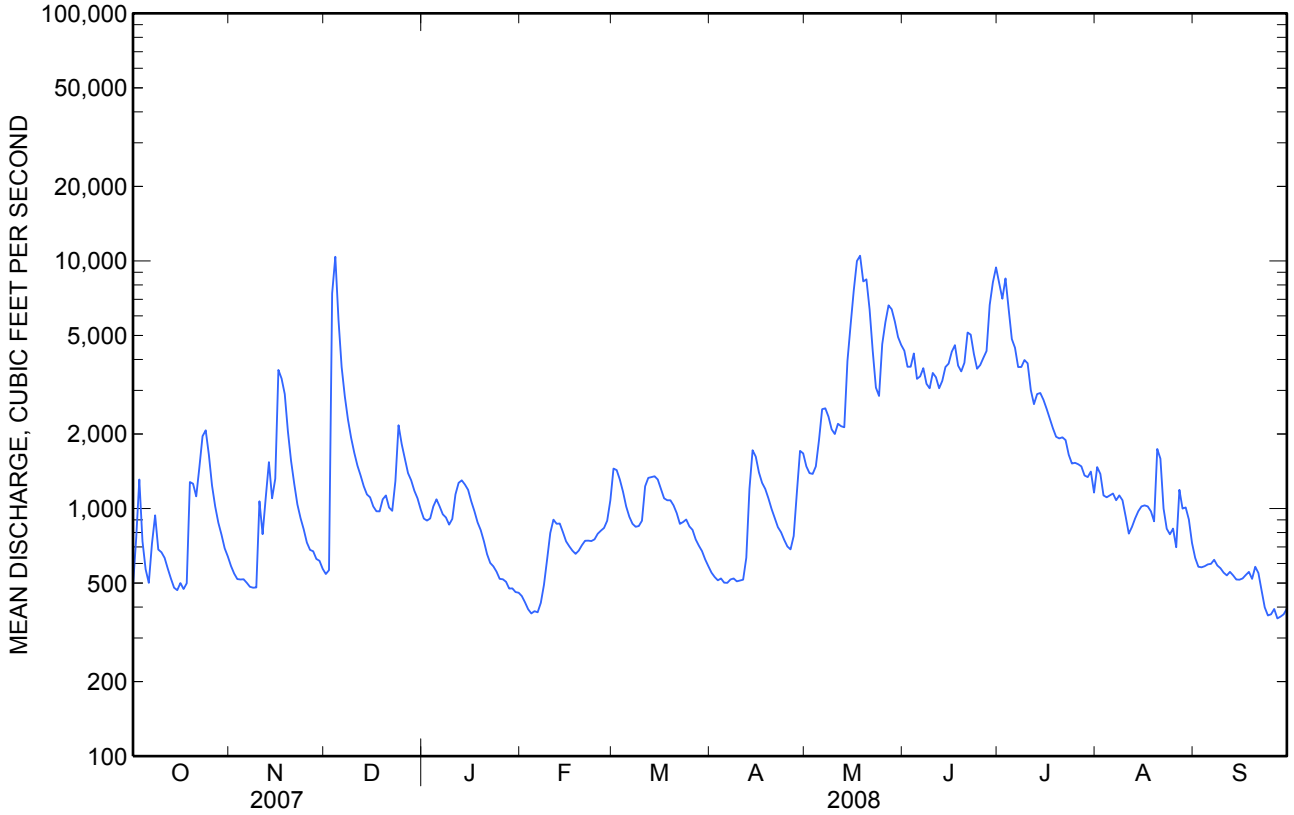
SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1930 - 2008	
Annual total	570,115		635,316			
Annual mean	1,562		1,736		1,594	
Highest annual mean					2,411	1956
Lowest annual mean					923	1941
Highest daily mean	10,400	Dec 4	10,500	May 18	30,000	Nov 6, 2006
Lowest daily mean	240	Sep 24	360	Sep 27	144	Nov 29, 1952
Annual seven-day minimum	262	Sep 23	376	Sep 24	156	Nov 26, 1952
Annual runoff (ac-ft)	1,131,000		1,260,000		1,155,000	
10 percent exceeds	2,970		4,000		3,360	
50 percent exceeds	1,260		1,020		1,100	
90 percent exceeds	460		511		449