

## 14243000 COWLITZ RIVER AT CASTLE ROCK, WA

Lower Columbia Basin  
Lower Cowlitz Subbasin

LOCATION.--Lat 46°16'30", long 122°54'48" referenced to North American Datum of 1927, in SW ¼ SE ¼ sec.10, T.9 N., R.2 W., Cowlitz County, WA, Hydrologic Unit 17080005, on left bank 40 ft downstream from Arkansas Valley Road bridge in Castle Rock, 2.7 mi downstream from Toutle River, and at mile 17.3.

DRAINAGE AREA.--2,238 mi<sup>2</sup>. A large debris avalanche generated by the eruption of Mount St. Helens on May 18, 1980 blocked tributaries in the upper North Fork Toutle River valley. As a result, from May 19, 1980 to July 7, 1981, approximately 40 mi<sup>2</sup> was noncontributing. From July 7, 1981 to October 1981, the Coldwater Lake release, approximately 21 mi<sup>2</sup>, was noncontributing. From October 1981 to November 1982, the Castle Lake release, approximately 19.7 mi<sup>2</sup>, was noncontributing. Since November 1982, all areas, including the Spirit Lake release, are effectively contributing.

### SURFACE-WATER RECORDS

PERIOD OF RECORD.--December 1926 to current year; October 1985 to April 2000 (seasonal records).

REVISED RECORDS.--WSP 1218: Drainage area. WSP 1638: 1947(P), 1951.

GAGE.--Water-stage recorder. Datum of gage is NAVD of 1988. Prior to Dec. 18, 1933, nonrecording gage at site 2 mi upstream at datum 38.58 ft higher. Dec. 18, 1933, to June 13, 1934, nonrecording gage, and June 14 to Sept. 30, 1934, water-stage recorder, at present site at datum 28.65 ft higher. Oct. 1, 1934, to May 21, 1980, water-stage recorder, on right bank at datum 23.65 ft higher. May 23, 1980, to July 29, 1997, water-stage recorder at present site at datum 23.65 ft higher.

REMARKS.--No estimated daily discharges. Records good. Flow regulated by Riffe Lake (station 14234800) at mile 65.5, and Mayfield Reservoir (station 14237800) at mile 52.0. Minor diversions for domestic and farm use upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--69 years (water years 1928-85, 2001-11), 9,166 ft<sup>3</sup>/s, 55.62 in/yr, 6,641,000 acre-ft/yr, adjusted for storage in Mayfield Reservoir since April 1962, and Riffe Lake since April 1968.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 139,000 ft<sup>3</sup>/s Dec. 23, 1933, gage height, 55.25 ft present datum, from rating curve extended above 80,000 ft<sup>3</sup>/s; maximum gage height, 55.76 ft Feb. 8, 1996; minimum discharge, 998 ft<sup>3</sup>/s Nov. 7, 8, 1935.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 45,300 ft<sup>3</sup>/s, Jan. 16, gage height, 43.51 ft; minimum discharge, 4,090 ft<sup>3</sup>/s, Sept. 12, gage height, 32.21 ft.

## 14243000 COWLITZ RIVER AT CASTLE ROCK, WA—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5,420	12,400	14,300	11,100	18,000	17,300	19,100	15,000	12,300	9,950	6,010	5,030
2	5,410	18,100	13,100	10,900	17,500	16,600	19,300	14,800	12,200	7,700	5,960	4,970
3	5,430	14,900	12,200	11,400	17,300	15,500	17,400	15,600	10,900	6,070	5,850	4,950
4	5,440	12,800	12,100	12,800	17,300	13,000	17,700	15,800	9,760	5,510	5,790	4,930
5	5,420	11,800	11,700	13,100	17,700	12,500	21,000	15,700	9,220	6,400	5,780	4,810
6	5,400	11,400	11,500	10,900	16,200	11,700	21,900	15,700	10,400	8,530	5,720	4,910
7	5,420	12,400	12,000	10,900	16,600	10,900	20,700	14,600	12,000	8,740	5,620	5,090
8	5,410	12,400	13,000	11,000	15,500	11,000	17,700	14,300	11,700	8,080	5,580	4,940
9	5,500	12,400	17,500	10,400	13,800	12,100	16,300	14,900	11,400	6,670	5,580	4,850
10	6,160	12,700	21,200	11,400	13,100	20,000	15,700	14,700	11,300	5,340	5,550	4,510
11	6,310	12,200	19,600	13,000	12,800	17,800	16,300	15,100	8,840	6,060	5,500	4,180
12	5,880	11,700	28,700	15,300	12,300	15,000	16,200	16,200	8,210	7,860	5,470	4,330
13	5,720	11,100	29,000	25,000	13,300	13,900	15,300	15,400	9,310	8,020	5,470	4,790
14	5,650	11,800	27,600	25,500	13,700	17,200	15,200	14,600	10,600	7,960	5,470	4,820
15	5,640	12,500	24,400	23,900	15,200	17,100	16,100	16,500	10,600	7,450	5,470	4,950
16	5,610	14,100	20,800	37,000	15,300	17,200	16,800	17,900	10,600	6,800	5,440	4,980
17	5,600	15,900	17,000	37,600	14,500	15,000	16,200	16,300	10,200	5,900	5,410	5,000
18	5,600	20,600	15,300	29,100	13,900	12,400	15,800	15,400	9,070	5,930	5,400	5,140
19	5,580	17,900	14,400	26,300	12,200	11,400	15,600	14,000	8,580	5,890	5,390	5,310
20	5,540	15,600	13,700	25,400	11,400	10,200	15,200	13,300	9,140	6,100	5,390	5,410
21	5,520	14,200	13,300	26,900	11,500	9,710	14,900	13,500	10,500	6,260	5,380	5,440
22	5,680	14,000	13,000	27,400	11,800	9,720	14,700	13,600	11,000	7,170	5,360	5,450
23	7,090	14,300	13,100	24,700	11,800	9,340	13,400	13,300	11,100	7,560	5,420	5,240
24	7,730	13,400	11,300	22,200	12,200	8,930	12,800	12,600	11,100	7,540	5,610	5,220
25	9,910	11,800	9,620	21,500	13,100	8,970	14,100	12,500	10,400	7,540	5,590	5,250
26	11,800	11,300	10,000	20,800	12,800	8,920	16,200	12,600	10,100	7,080	5,440	5,350
27	13,300	11,700	11,300	20,300	12,900	9,100	16,100	12,200	10,100	6,410	4,510	5,400
28	13,200	11,100	15,900	20,100	17,900	9,610	17,100	11,800	10,300	6,060	4,320	5,380
29	11,100	11,500	15,900	20,600	---	10,800	16,800	11,300	10,600	6,310	4,750	5,300
30	10,300	13,400	14,600	20,500	---	14,000	15,700	9,910	10,500	6,140	5,480	5,250
31	11,100	---	12,700	20,500	---	17,900	---	11,300	---	6,020	5,430	---
<b>Total</b>	218,870	401,400	489,820	617,500	401,600	404,800	497,300	440,410	312,030	215,050	169,140	151,180
<b>Mean</b>	7,060	13,380	15,800	19,920	14,340	13,060	16,580	14,210	10,400	6,937	5,456	5,039
<b>Max</b>	13,300	20,600	29,000	37,600	18,000	20,000	21,900	17,900	12,300	9,950	6,010	5,450
<b>Min</b>	5,400	11,100	9,620	10,400	11,400	8,920	12,800	9,910	8,210	5,340	4,320	4,180
<b>Ac-ft</b>	434,100	796,200	971,600	1,225,000	796,600	802,900	986,400	873,600	618,900	426,600	335,500	299,900
<b>Mean adjusted for change in contents in Riffe Lake and Mayfield Reservoir</b>	4,218	12,260	16,890	22,160	11,260	15,050	16,090	14,880	14,040	8,533	3,971	2,646
<b>CFSM adjusted for change in contents in Riffe Lake and Mayfield Reservoir</b>	1.88	5.48	7.55	9.90	5.03	6.72	7.19	6.65	6.27	3.81	1.77	1.18
<b>In. adjusted for change in contents in Riffe Lake and Mayfield Reservoir</b>	2.17	6.11	8.70	11.42	5.24	7.76	8.02	7.67	7.00	4.40	2.05	1.32
<b>Ac-ft adjusted for change in contents in Riffe Lake and Mayfield Reservoir</b>	259,400	729,100	1,039,000	1,363,000	625,100	925,800	956,900	915,200	835,400	524,800	244,200	157,400

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	Calendar Year 2010	Water Year 2011
<b>Total</b>	3,434,810	4,319,100
<b>Mean</b>	9,410	11,830
<b>Max</b>	29,000	37,600
<b>Min</b>	4,000	4,180
<b>Ac-ft</b>	6,813,000	8,567,000
<b>Mean adjusted for change in contents in Riffe Lake and Mayfield Reservoir</b>	9,522	11,840
<b>CFSM adjusted for change in contents in Riffe Lake and Mayfield Reservoir</b>	4.27	5.29
<b>In. adjusted for change in contents in Riffe Lake and Mayfield Reservoir</b>	57.95	71.84
<b>Ac-ft adjusted for change in contents in Riffe Lake and Mayfield Reservoir</b>	6,917,000	8,575,000

