

COWLITZ RIVER BASIN

14240446 CASTLE LAKE NEAR MOUNT ST. HELENS, WA

LOCATION.--Lat 46°15'36", long 122°16'27", in SE 1/4 SW 1/4 sec.14, T.9 N., R.4 E., Skamania County, Hydrologic Unit 17080005, Mount St. Helens National Volcanic Monument, on right bank at outflow of Castle Lake, 5.0 mi north by northwest of the northwest edifice of Mount St. Helens (at Toutle Glacier).

DRAINAGE AREA.--1.3 mi², at spillway entrance. Prior to the volcanic eruption drainage area is unknown.

PERIOD OF RECORD.--October 1993 to current year (records of contents for water year 1994 published in WDR-WA-94-1 are unreliable and should not be used).

GAGE.--Water-stage recorder with radio telemetry. Datum of gage is 2,498.95 ft above NGVD of 1929, (U.S. Army Corps of Engineers benchmarks).

REMARKS.--As a result of the collapse of the north face of Mount St. Helens on May 18, 1980, a debris avalanche blocked the flow of South Fork Castle Creek forming Castle Lake. Castle Lake would have overtopped the blockage in late 1981 or early 1982. Overtopping most probably would have resulted in a quick release of lake waters as a result of rapid erosion of the blockage. Serious flooding probably would have resulted from the breakout of Castle Lake. As a result, the level of Castle Lake was stabilized with the construction of a spillway in 1981. Refer to report by Schuster, R. L., ed., 1986, Landslide Dams: Processes, Risk and Mitigation: Geotechnical Special Publication no. 3, American Society of Civil Engineers, 164 p., for history of Castle Lake as it was formed and impacted by the eruption and actions taken to reduce the resulting flood threat.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 2,582.76 ft Feb. 8, 1996; minimum elevation, 2,578.23 ft Sept. 17, 1998.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 2,581.79 ft Jan 8; minimum elevation, 2,578.27 ft Sept. 1-4, 21, 22, 26, 29.

ELEVATION (FEET NGVD), WATER YEAR OCTOBER 2001 TO SEPTEMBER 2002
DAILY OBSERVATION AT 2400 HOURS

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2578.48	2579.27	2579.76	2578.74	2578.82	2579.04	2578.95	2579.03	2579.20	2578.70	2578.37	2578.28
2	2578.48	2579.24	2579.60	2578.92	2578.78	2578.97	2578.96	2579.06	2579.14	2578.68	2578.37	2578.28
3	2578.48	2579.18	2579.47	2578.92	2578.81	2578.92	2578.97	2579.07	2579.10	2578.66	2578.36	2578.28
4	2578.40	2579.14	2579.36	2578.94	2578.77	2578.88	2578.99	2579.04	2579.07	2578.64	2578.37	2578.31
5	2578.44	2579.08	2579.24	2578.98	2578.79	2578.89	2579.06	2579.07	2579.05	2578.62	2578.38	2578.30
6	2578.43	2579.02	2579.21	2579.56	2578.93	2578.89	2579.13	2579.06	2579.02	2578.61	2578.37	2578.29
7	2578.44	2578.97	2579.09	2581.73	2579.02	2578.87	2579.20	2579.02	2579.01	2578.63	2578.37	2578.30
8	2578.47	2578.91	2579.05	2581.16	2579.00	2578.83	2579.20	2578.96	2578.96	2578.61	2578.36	2578.29
9	2578.46	2578.87	2579.00	2580.36	2578.89	2578.86	2579.32	2578.92	2578.90	2578.60	2578.36	2578.29
10	2578.52	2578.85	2579.00	2579.87	2578.85	2578.97	2579.58	2578.89	2578.88	2578.58	2578.36	2578.30
11	2578.55	2578.77	2578.96	2579.54	2578.83	2579.42	2579.74	2578.87	2578.86	2578.57	2578.36	2578.31
12	2578.60	2578.83	2578.89	2579.55	2578.78	2579.49	2579.81	2578.87	2578.86	2578.56	2578.35	2578.30
13	2578.60	2579.02	2579.37	2579.37	2578.76	2579.43	2580.14	2578.94	2578.84	2578.55	2578.36	2578.31
14	2578.63	2579.95	2579.61	2579.23	2578.73	2579.29	2580.30	2578.99	2578.84	2578.52	2578.35	2578.30
15	2578.62	2580.08	2579.54	2579.13	2578.72	2579.19	2580.00	2579.00	2578.83	2578.51	2578.35	2578.30
16	2578.65	2579.89	2580.30	2579.08	2578.71	2579.11	2579.74	2579.02	2578.81	2578.50	2578.34	2578.32
17	2578.64	2579.66	2580.34	2579.01	2578.71	2579.02	2579.51	2579.06	2578.82	2578.49	2578.34	2578.32
18	2578.63	2579.43	2580.01	2578.99	2578.79	2579.00	2579.34	2579.08	2578.85	2578.48	2578.33	2578.32
19	2578.63	2579.34	2579.68	2578.98	2578.95	2579.01	2579.23	2579.09	2578.80	2578.47	2578.32	2578.30
20	2578.62	2579.56	2579.46	2579.05	2578.95	2578.95	2579.15	2579.13	2578.77	2578.46	2578.31	2578.32
21	2578.66	2579.63	2579.29	2579.01	2579.45	2578.90	2579.10	2579.13	2578.75	2578.45	2578.30	2578.31
22	2578.79	2580.16	2579.14	2578.95	2579.75	2578.88	2579.07	2579.14	2578.72	2578.45	2578.30	2578.30
23	2578.92	2580.09	2579.03	2578.91	2579.93	2578.86	2579.01	2579.10	2578.70	2578.45	2578.30	2578.30
24	2578.98	2579.83	2578.96	2579.03	2579.79	2578.86	2578.98	2579.07	2578.69	2578.44	2578.30	2578.29
25	2578.95	2579.59	2578.93	2579.15	2579.55	2578.86	2578.97	2579.06	2578.67	2578.43	2578.30	2578.30
26	2578.93	2579.40	2578.85	2579.11	2579.38	2578.88	2578.98	2579.08	2578.65	2578.42	2578.30	2578.31
27	2578.97	2579.24	2578.86	2579.06	2579.23	2578.90	2578.98	2579.13	2578.65	2578.42	2578.30	2578.28
28	2578.96	2579.40	2578.85	2578.96	2579.12	2578.93	2578.96	2579.30	2578.78	2578.41	2578.29	2578.28
29	2578.95	2579.45	2578.81	2578.90	---	2578.92	2578.96	2579.44	2578.77	2578.40	2578.29	2578.34
30	2579.00	2579.39	2578.79	2578.89	---	2578.92	2578.97	2579.37	2578.74	2578.39	2578.29	2578.34
31	2579.22	---	2578.76	2578.88	---	2578.91	---	2579.28	---	2578.38	2578.28	---
MEAN	2578.68	2579.38	2579.26	2579.29	2579.03	2578.99	2579.28	2579.07	2578.86	2578.52	2578.33	2578.30
MAX	2579.22	2580.16	2580.34	2581.73	2579.93	2579.49	2580.30	2579.44	2579.20	2578.70	2578.38	2578.34
MIN	2578.40	2578.77	2578.76	2578.74	2578.71	2578.83	2578.95	2578.87	2578.65	2578.38	2578.28	2578.28

CAL YR 2001 MEAN 2578.84 MAX 2580.34 MIN 2578.40
WTR YR 2002 MEAN 2578.91 MAX 2581.73 MIN 2578.28