

## COWLITZ RIVER BASIN

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14242580 TOUTLE RIVER AT TOWER ROAD, NEAR SILVER LAKE, WA

LOCATION.--Lat 46°20'05", long 122°50'27", in NW 1/4 SW 1/4 sec.20, T.10 N., R.1 W., Cowlitz County, Hydrologic Unit 17080005, on right bank 10.7 mi downstream from confluence of North and South Forks, 2.9 mi northwest of Silver Lake, and at mile 6.5.

DRAINAGE AREA.--496 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 (Coldwater Lake, station 14240446, release) to October 1981, the noncontributing portion was approximately 21 mi<sup>2</sup>. From October 1981 (Coldwater Lake release) to November 1982, the noncontributing portion was approximately 19.7 mi<sup>2</sup>. Since November 1982 (Spirit Lake, station 14240304, release), effectively all areas are contributing.

## WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1981 to current year.

REVISED RECORDS.--WDR WA-86-1: 1982 (M)(P), 1983 (M)(P), 1984 (M)(P), 1985 (M).

GAGE.--Water-stage recorder. Elevation of gage is 160 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good. No regulation or diversion upstream from station. Some quality of water data available from Washington Office for this station.

AVERAGE DISCHARGE.--21 years (water years 1982-2002), 2,105 ft<sup>3</sup>/s, 57.65 in/yr, 1,525,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 61,800 ft<sup>3</sup>/s, Feb. 8, 1996, gage height, 24.91 ft; maximum gage height, 28.03 ft Dec. 3, 1982; minimum daily, 243 ft<sup>3</sup>/s Oct. 14, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods occurred on May 18, 1980, from mudflows caused by the eruption of Mount St. Helens. A flood about 1200 hours was due to mudflow from South Fork Toutle River and a larger flood about 2100 hours was due to mudflow from North Fork Toutle River.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 10,000 ft<sup>3</sup>/s and maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)	Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Nov. 22	2330	10,600	10.23	Jan. 25	1045	10,800	10.24
Dec. 14	0145	13,100	11.22	Mar. 11	2115	10,900	10.29
Dec. 17	0300	*23,300	*14.76	Apr. 14	0700	11,900	10.75
Jan. 08	0230	22,300	14.53				

Minimum discharge, 288 ft<sup>3</sup>/s Oct. 6, 7.

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	324	2330	7530	1690	2710	2440	2240	2100	2190	1200	512	367
2	316	1990	7230	2120	2470	2190	2230	2270	2060	1070	495	376
3	310	1630	5570	2130	2570	2020	2160	2220	2010	1020	484	383
4	310	1370	4940	1970	2440	1900	2150	2020	1940	979	488	379
5	299	1360	4470	1890	2360	1890	2280	2000	1940	935	526	366
6	295	1170	4330	2280	2520	2070	2480	1990	1940	885	531	363
7	301	1030	4050	11500	3760	1860	2650	1910	1780	895	485	361
8	330	931	3550	15800	4620	1740	2540	1810	1720	991	468	370
9	357	858	3480	8290	4050	1670	2730	1680	1520	e920	454	380
10	364	801	3120	5860	3520	1960	4590	1590	1430	e900	449	365
11	625	751	3180	4560	3280	5370	5230	1520	1460	858	452	357
12	484	750	2990	4310	2820	7520	5380	1540	1500	842	437	351
13	686	956	5340	3800	2530	5670	5770	1800	e1600	816	427	346
14	650	6750	10200	3280	2280	4780	9960	2040	e1800	790	420	340
15	644	5120	6460	2920	2120	4020	6930	1930	1680	756	414	339
16	547	4170	10100	2740	2140	3560	5590	1870	1550	727	411	351
17	554	3290	16500	2650	2040	3090	4640	1930	1430	712	406	381
18	485	2600	8640	2430	2040	2750	3890	1980	1580	699	395	358
19	454	2390	6340	2830	2710	3500	3340	1950	1510	685	396	343
20	457	2900	4940	3070	2760	4410	2980	2120	1340	673	401	343
21	453	3650	3880	3590	4260	3640	2710	2260	1300	643	406	334
22	563	6270	3220	3160	5700	3130	2560	2180	1300	629	407	327
23	1400	8170	2750	2830	6700	2880	2370	2090	1280	613	394	321
24	1410	5160	2440	3480	6370	2780	2190	1940	1220	603	385	318
25	1190	3820	2200	8630	4850	2730	2100	1920	1160	595	381	315
26	1080	3010	2030	6450	3860	2610	2090	2010	1170	597	394	311
27	1150	2450	1890	4870	3210	2550	2160	2090	1200	595	402	311
28	1210	3250	1900	3840	2780	2470	2010	2470	1230	571	390	309
29	992	5500	1740	3200	---	2460	1940	3430	1870	568	377	352
30	1160	5160	1630	2880	---	2370	1980	2920	1440	546	373	496
31	2340	---	1660	2850	---	2290	---	2480	---	530	373	---
TOTAL	21740	89587	148300	131900	93470	94320	101870	64060	47150	23843	13333	10613
MEAN	701	2986	4784	4255	3338	3043	3396	2066	1572	769	430	354
MAX	2340	8170	16500	15800	6700	7520	9960	3430	2190	1200	531	496
MIN	295	750	1630	1690	2040	1670	1940	1520	1160	530	373	309
AC-FT	43120	177700	294200	261600	185400	187100	202100	127100	93520	47290	26450	21050
CFSM	1.41	6.02	9.64	8.58	6.73	6.13	6.85	4.17	3.17	1.55	0.87	0.71
IN.	1.63	6.72	11.12	9.89	7.01	7.07	7.64	4.80	3.54	1.79	1.00	0.80

## COWLITZ RIVER BASIN

14242580 TOUTLE RIVER AT TOWER ROAD, NEAR SILVER LAKE, WA--Continued

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1981 - 2002, BY WATER YEAR (WY)

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
MEAN	960	2964	3516	3429	3445	2922	2675	2109	1574	820	484	452
MAX	2931	5290	6954	5939	7754	5500	4697	3192	2643	1653	771	925
(WY)	1998	1996	1997	1997	1996	1997	1991	1999	1990	1983	1999	1997
MIN	310	418	1350	1167	1185	1315	1707	1226	539	412	306	277
(WY)	1988	1994	2001	2001	1993	1992	1998	1992	1992	1992	1992	1989

SUMMARY STATISTICS	FOR 2001 CALENDAR YEAR		FOR 2002 WATER YEAR		WATER YEARS 1981 - 2002	
ANNUAL TOTAL	588200		840186			
ANNUAL MEAN	1612		2302		2105	
HIGHEST ANNUAL MEAN					3118	
LOWEST ANNUAL MEAN					1168	
HIGHEST DAILY MEAN	16500		Dec 17		16500	
LOWEST DAILY MEAN	268		Sep 24		295	
ANNUAL SEVEN-DAY MINIMUM	288		Sep 19		308	
ANNUAL RUNOFF (AC-FT)	1167000				1667000	
ANNUAL RUNOFF (CFSM)	3.25				4.64	
ANNUAL RUNOFF (INCHES)	44.11				63.01	
10 PERCENT EXCEEDS	3140				4940	
50 PERCENT EXCEEDS	1140				1940	
90 PERCENT EXCEEDS	376				375	
					4170	
					1640	
					401	

e Estimated