

COWLITZ RIVER BASIN

14241500 SOUTH FORK TOUTLE RIVER AT TOUTLE, WA

LOCATION.--Lat 46°19'26", long 122°42'28", in SE 1/4 NW 1/4 sec.29, T.10 N., R.1 E., Cowlitz County, Hydrologic Unit 17080005, on right bank at upstream side of bridge on South Toutle Road, 3.1 mi downstream from Johnson Creek, 0.8 mi upstream from Studebaker Creek, approximately 1.0 mi upstream from mouth, and 1.3 mi southeast of Toutle.

DRAINAGE AREA.--120 mi².

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1939 to December 1957, February 1996 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 460 ft above NGVD of 1929, from topographic map. Prior to Feb. 9, 1996, water-stage recorder at site 0.6 mi upstream, at datum at NGVD of 1929 (river-profile survey).

REMARKS.--Records fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--24 years (water years 1940-57, 1997-2002), 636 ft³/s, 72.02 in/yr, 460,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined Feb. 8, 1996, gage height, 28.81 ft, from high-water mark; maximum daily discharge, 17,400 ft³/s Feb. 8, 1996; minimum discharge, 62 ft³/s Nov. 29, 1952.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Jan. 9, 1990, produced discharge of 19,200 ft³/s as recorded at station 14241490, 2.2 mi upstream. A flood believed to be in excess of 100,000 ft³/s (from Ph.d. thesis by Fairchild, U. Wash., 1985) occurred at about 1000 hours on May 18, 1980, from a mudflow caused by the eruption of Mount St. Helens.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 4,200 ft³/s and maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)	Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov 14	0745	6,060	24.94	Jan 07	2215	10,400	*26.57
Nov 22	1800	4,910	24.55	Mar 11	2000	4,860	24.87
Dec 13	2300	7,410	25.34	Apr 14	0545	4,910	24.89
Dec 17	0000	*11,200	26.43				

Minimum discharge, 66 ft³/s Sept. 26-29.

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	81	821	3110	392	650	668	602	654	602	298	108	80
2	79	648	2640	623	558	579	609	700	544	261	106	80
3	77	499	1730	623	628	509	589	632	499	239	102	81
4	77	402	1430	529	571	466	607	548	471	231	107	79
5	73	397	1230	502	556	464	689	565	456	219	117	78
6	72	328	1300	952	699	512	783	526	431	203	117	78
7	76	289	1220	6880	1220	422	834	481	396	200	108	77
8	89	261	1090	5970	1280	378	766	457	400	210	106	79
9	91	239	1040	2640	1080	367	951	420	339	193	106	79
10	113	221	932	1640	920	588	1780	391	319	180	110	77
11	161	205	894	1230	819	2560	1970	380	312	169	109	76
12	120	210	849	1300	679	2870	2020	403	315	163	102	76
13	170	351	2810	1180	580	1900	2280	542	325	160	98	74
14	152	4450	4520	1030	496	1480	3890	604	333	156	96	73
15	137	2120	2300	875	445	1190	2190	555	320	150	97	73
16	123	1440	5420	788	449	1010	1590	524	300	147	94	75
17	127	976	6010	714	418	840	1300	552	285	143	96	81
18	112	738	2810	644	445	725	1120	551	376	140	e93	77
19	108	707	1870	757	896	990	986	550	318	137	e92	74
20	109	1000	1400	885	905	1250	883	615	270	136	e93	74
21	113	1360	1120	1090	1830	1040	795	643	251	130	e91	72
22	168	3210	944	867	2230	900	733	628	240	127	92	70
23	540	2950	759	698	2450	815	668	595	232	122	90	69
24	422	1600	637	1160	2140	804	614	535	223	121	87	69
25	327	1110	526	2880	1510	778	593	533	214	120	87	68
26	279	934	454	1720	1160	739	596	557	208	122	89	67
27	299	794	412	1240	950	707	601	581	206	122	90	67
28	289	1070	412	1010	791	684	552	826	249	119	87	68
29	245	1780	359	797	---	652	546	1310	636	120	85	80
30	420	1600	326	667	---	618	586	905	368	115	84	120
31	982	---	347	686	---	597	---	714	---	112	83	---
TOTAL	6231	32710	50901	42969	27355	28102	32723	18477	10438	5065	3022	2291
MEAN	201	1090	1642	1386	977	907	1091	596	348	163	97.5	76.4
MAX	982	4450	6010	6880	2450	2870	3890	1310	636	298	117	120
MIN	72	205	326	392	418	367	546	380	206	112	83	67
AC-FT	12360	64880	101000	85230	54260	55740	64910	36650	20700	10050	5990	4540
CFSM	1.68	9.09	13.7	11.6	8.14	7.55	9.09	4.97	2.90	1.36	0.81	0.64
IN.	1.93	10.14	15.78	13.32	8.48	8.71	10.14	5.73	3.24	1.57	0.94	0.71

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1940 - 2002, BY WATER YEAR (WY)

	MEAN	MAX	(WY)	MIN	(WY)	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
MEAN	384	915	1198	1031	1094	825	754	659	416	197	118	135																																																								
MAX	1222	1655	2031	2488	2451	1647	1142	1097	772	414	172	409																																																								
(WY)	1998	1956	1997	1953	1996	1950	1996	1948	1955	1955	1954	1941																																																								
MIN	75.3	106	389	318	381	297	257	211	132	97.2	78.8	76.4																																																								
(WY)	1953	1953	1945	2001	1941	1941	1941	1947	1940	1940	1940	2002																																																								

SUMMARY STATISTICS FOR 2001 CALENDAR YEAR FOR 2002 WATER YEAR WATER YEARS 1940 - 2002

	FOR 2001 CALENDAR YEAR	FOR 2002 WATER YEAR	WATER YEARS 1940 - 2002
ANNUAL TOTAL	177425	260284	
ANNUAL MEAN	486	713	636
HIGHEST ANNUAL MEAN			928
LOWEST ANNUAL MEAN			317
HIGHEST DAILY MEAN	6010	Dec 17	6880
LOWEST DAILY MEAN	72	Oct 6	67
ANNUAL SEVEN-DAY MINIMUM	76	Oct 1	68
ANNUAL RUNOFF (AC-FT)	351900	516300	460800
ANNUAL RUNOFF (CFSM)	4.05	5.94	5.30
ANNUAL RUNOFF (INCHES)	55.00	80.69	72.02
10 PERCENT EXCEEDS	989	1590	1350
50 PERCENT EXCEEDS	289	502	430
90 PERCENT EXCEEDS	90	82	100

e Estimated