12147500 NORTH FORK TOLT RIVER NEAR CARNATION, WA

Puget Sound Basin
Snoqualmie Subbasin

LOCATION.--Lat 47°42′45″, long 121°47′15″ referenced to North American Datum of 1927, in SW ¼ NE ¼ sec.28, T.26 N., R.8 E., King County, WA, Hydrologic Unit 17110010, on right bank 2.9 mi upstream from confluence with South Fork, 7.4 mi northeast of Carnation, and at mile 11.7.

DRAINAGE AREA.--39.9 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1952 to December 1963, November 1967 to current year.

REVISED RECORDS.--WSP 1566: 1957. WSP 1932: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 600 ft above NGVD of 1929, from river-profile map.

REMARKS.--Records good. No regulation or diversion upstream from station. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--51 years (water years 1953-63, 1969-2008), 353 ft^3/s, 120.13 in/yr, 255,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,560 ft^3/s, Dec. 15, 1959, gage height, 13.15 ft, from rating curve extended above 2,800 ft^3/s; minimum discharge, 31 ft^3/s, Sept. 22, 23, 1986.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,000 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 3	1215	*4,740	*10.08
No other peak greater than base discharge			

Minimum discharge, 66 ft^3/s, Sept. 19, 20, gage height, 3.26 ft.

12147500 NORTH FORK TOLT RIVER NEAR CARNATION, WA—Continued

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	579	167	146	227	172	680	199	389	581	633	269	164
2	900	158	166	243	165	451	196	349	509	555	198	144
3	709	153	2,780	319	158	382	194	356	652	596	160	130
4	409	158	1,650	393	153	388	207	388	1,170	456	148	120
5	281	158	760	368	165	337	225	523	716	415	145	112
6	214	146	492	304	170	306	244	571	953	491	139	107
7	836	140	380	267	188	292	281	506	884	353	133	102
8	612	139	318	250	242	413	276	456	748	345	129	97
9	309	149	280	243	658	402	242	386	682	352	126	92
10	249	373	256	384	825	392	238	383	944	324	139	88
11	228	255	236	711	696	655	259	580	914	273	119	85
12	191	282	222	519	590	477	331	459	720	269	111	82
13	170	362	216	508	601	385	521	415	638	276	109	79
14	155	248	224	479	421	394	507	1,070	593	267	105	76
15	144	536	265	500	352	396	397	1,090	546	248	106	74
16	139	844	266	374	363	349	330	1,260	583	237	103	71
17	149	475	247	320	327	328	314	1,520	586	222	101	69
18	193	444	281	288	300	331	331	1,360	485	208	99	67
19	495	313	463	275	307	302	292	1,140	467	188	99	67
20	586	265	450	257	314	287	261	1,550	545	189	388	69
21	759	231	313	234	307	268	245	1,280	657	189	421	121
22	655	209	329	222	298	248	232	927	612	184	254	167
23	429	192	747	214	298	325	248	710	506	166	165	115
24	405	179	805	206	292	391	320	739	468	156	138	89
25	398	169	448	196	285	295	295	902	467	164	151	198
26	290	163	370	191	279	268	269	874	471	158	138	342
27	246	172	315	187	288	247	316	860	457	165	390	167
28	219	167	298	181	461	231	593	825	628	161	276	123
29	201	160	281	177	514	226	769	745	718	153	289	104
30	188	151	261	171	---	215	500	598	714	209	233	92
31	176	---	242	176	---	206	---	565	---	158	180	---
Total	11,514	7,558	14,507	9,384	10,189	10,867	9,632	23,776	19,614	8,760	5,561	3,413
Mean	371	252	468	303	351	351	321	767	654	283	179	114
Max	900	844	2,780	711	825	680	769	1,550	1,170	633	421	342
Min	139	139	146	171	153	206	194	349	457	153	99	67
Ac-ft	22,840	14,990	28,770	18,610	20,210	21,550	19,110	47,160	38,900	17,380	11,030	6,770
Cfsm	9.31	6.31	11.7	7.59	8.81	8.79	8.05	19.2	16.4	7.08	4.50	2.85
In.	10.73	7.05	13.53	8.75	9.50	10.13	8.98	22.17	18.29	8.17	5.18	3.18

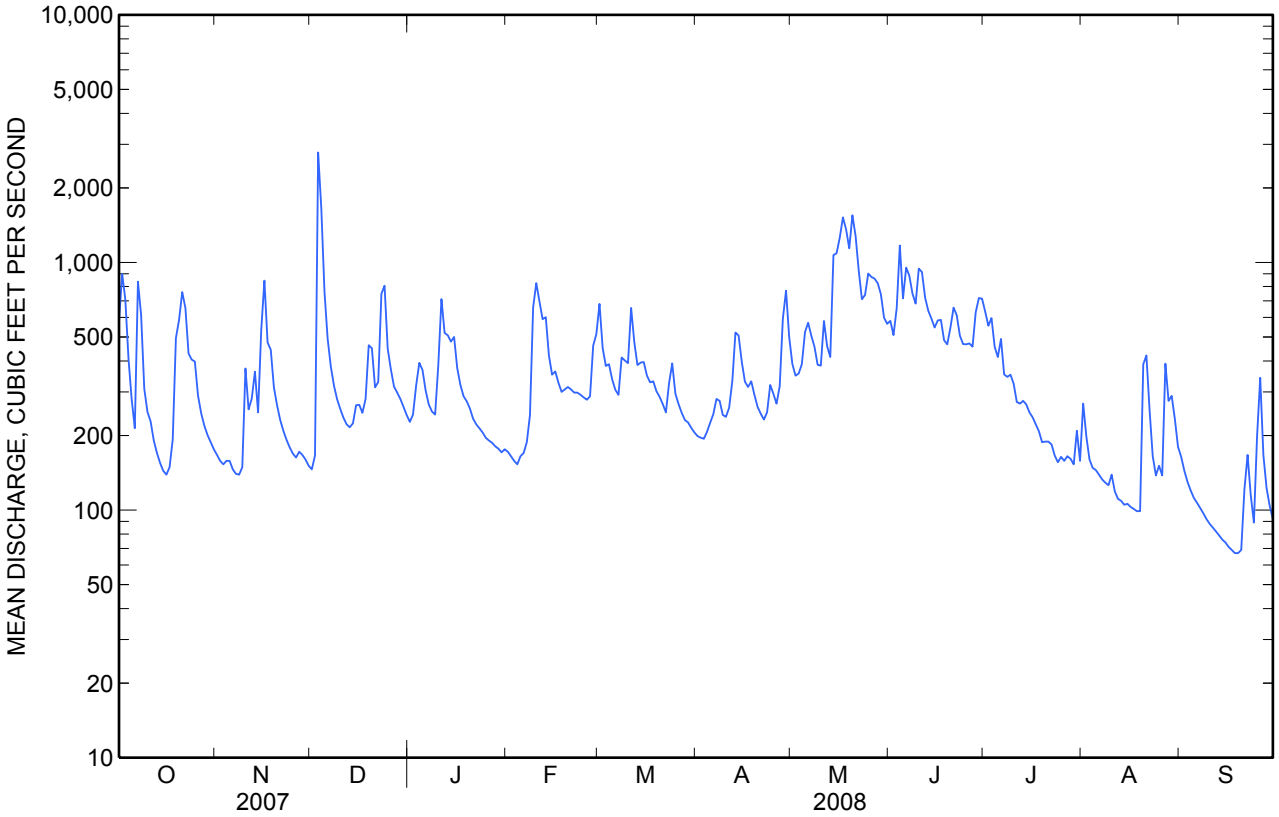
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1953 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	259	489	522	527	438	378	422	418	343	192	113	150
Max	536	1,145	1,065	1,160	1,008	898	709	767	731	496	222	563
(WY)	(1960)	(1991)	(1976)	(1953)	(1982)	(1972)	(1959)	(2008)	(1955)	(1955)	(1955)	(1959)
Min	38.5	69.0	192	222	166	172	249	214	136	67.8	43.3	49.6
(WY)	(1988)	(1953)	(1986)	(1957)	(1969)	(1992)	(1992)	(1992)	(1992)	(2003)	(2003)	(1998)

12147500 NORTH FORK TOLT RIVER NEAR CARNATION, WA—Continued

SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1953 - 2008	
Annual total	123,044		134,775			
Annual mean	337		368		353	
Highest annual mean					526	1959
Lowest annual mean					247	2001
Highest daily mean	3,720	Mar 24	2,780	Dec 3	5,560	Dec 15, 1959
Lowest daily mean	40	Sep 14	67	Sep 18	31	Sep 22, 1986
Annual seven-day minimum	41	Sep 10	70	Sep 14	34	Sep 16, 1986
Annual runoff (ac-ft)	244,100		267,300		255,600	
Annual runoff (cfsm)	8.45		9.23		8.84	
Annual runoff (inches)	114.72		125.65		120.13	
10 percent exceeds	613		712		653	
50 percent exceeds	261		286		276	
90 percent exceeds	65		136		84	



12147500 NORTH FORK TOLT RIVER NEAR CARNATION, WA—Continued

WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: February 1995 to current year.

INSTRUMENTATION.--Temperature recorder with 15-min. logging interval since February 1995.

REMARKS.--Temperature records are excellent, except Oct. 1, which is good.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: Maximum, 16.0°C (rounded), July 18, 19, 1995, July 26-28, 1998; minimum, 2.0°C (rounded), Dec. 29, 1996.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 14.2°C, Aug. 16; minimum, 2.3°C, Feb. 9.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		October			November			December			January	
1	9.5	9.0	9.2	7.2	6.3	6.8	5.0	4.2	4.8	5.3	4.6	4.9
2	9.2	8.8	9.1	6.9	5.3	6.0	5.0	3.8	4.3	5.4	5.0	5.2
3	8.9	8.2	8.5	7.6	6.6	7.0	5.6	3.3	4.5	5.3	4.8	5.2
4	9.0	7.9	8.3	8.2	7.3	7.7	6.3	5.6	6.0	5.4	4.7	5.0
5	8.5	7.3	7.9	7.3	6.2	6.7	6.1	5.3	5.9	5.1	4.7	5.0
6	8.5	7.9	8.2	7.7	6.1	6.8	5.8	5.1	5.5	4.8	4.5	4.7
7	8.9	8.2	8.5	8.0	7.4	7.7	5.7	5.2	5.5	5.0	4.3	4.6
8	9.1	7.8	8.4	8.5	7.8	8.1	5.2	4.4	4.7	5.0	4.4	4.8
9	9.9	8.6	9.2	8.3	7.7	8.0	5.0	4.3	4.7	5.0	4.4	4.8
10	9.4	9.0	9.2	8.0	6.6	7.5	5.2	4.5	4.9	5.2	4.1	4.9
11	9.5	8.3	8.9	7.2	6.6	6.9	5.2	4.5	4.9	4.5	4.0	4.3
12	9.6	8.5	9.0	7.3	6.6	6.9	5.4	5.0	5.2	5.2	4.5	4.9
13	9.4	7.7	8.5	6.8	5.8	6.4	5.4	4.9	5.2	4.9	4.4	4.7
14	9.5	7.8	8.5	6.6	5.3	6.0	5.7	4.9	5.3	5.1	3.1	4.4
15	9.2	8.6	8.9	6.9	6.6	6.8	5.5	5.3	5.3	4.2	2.9	3.7
16	9.0	8.3	8.6	7.2	6.9	7.0	5.5	5.0	5.3	4.6	4.0	4.3
17	8.3	7.7	7.9	7.3	6.8	7.1	5.4	4.9	5.2	4.8	4.3	4.5
18	8.3	7.6	7.9	6.8	6.1	6.4	5.6	4.9	5.3	4.7	4.4	4.6
19	8.3	7.5	8.0	6.4	5.9	6.2	5.2	4.6	4.9	4.8	3.2	4.2
20	7.5	7.1	7.3	6.3	5.5	5.9	4.9	3.9	4.2	5.1	4.0	4.5
21	7.7	7.2	7.4	5.8	5.0	5.3	4.8	4.2	4.5	4.1	3.3	3.6
22	8.3	7.5	7.8	5.2	4.4	4.8	5.1	4.8	4.9	4.1	3.2	3.6
23	9.2	7.8	8.4	5.2	4.3	4.7	5.3	3.7	4.7	4.2	3.2	3.7
24	8.6	7.6	8.3	5.6	4.6	5.1	4.8	3.9	4.5	4.6	3.5	4.0
25	7.8	6.7	7.4	5.5	4.7	5.1	4.9	4.0	4.7	4.0	3.1	3.5
26	7.3	5.9	6.5	5.3	4.5	4.9	4.4	3.5	4.0	4.5	3.5	3.9
27	7.5	5.8	6.5	5.6	5.1	5.3	4.8	4.3	4.6	4.9	4.4	4.6
28	7.9	6.1	6.9	5.6	5.1	5.3	4.9	4.5	4.7	4.4	2.9	3.9
29	7.6	6.8	7.2	5.6	5.0	5.2	5.0	3.9	4.6	4.6	3.7	4.2
30	7.2	6.0	6.5	5.5	4.9	5.1	4.9	4.2	4.6	4.7	3.6	4.3
31	7.2	5.5	6.3	---	---	---	5.0	4.2	4.7	4.8	4.4	4.6
Month	9.9	5.5	8.0	8.5	4.3	6.3	6.3	3.3	4.9	5.4	2.9	4.4

12147500 NORTH FORK TOLT RIVER NEAR CARNATION, WA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		February			March			April			May	
1	4.5	3.5	4.1	5.0	4.1	4.4	6.9	4.2	5.1	7.1	4.8	5.7
2	5.2	4.3	4.6	5.6	4.2	4.8	7.1	4.2	5.4	7.3	4.7	6.0
3	5.0	4.4	4.7	4.9	4.2	4.7	7.3	4.4	5.6	6.4	5.3	5.8
4	5.0	4.2	4.6	5.4	3.6	4.4	5.8	5.0	5.4	9.2	5.5	6.9
5	5.0	4.5	4.7	5.9	3.9	4.7	6.3	4.6	5.4	7.8	5.3	6.4
6	4.8	4.4	4.6	6.3	4.2	5.1	6.2	5.3	5.6	5.9	5.3	5.5
7	4.9	4.5	4.7	6.1	5.2	5.6	5.8	4.9	5.2	5.6	5.3	5.4
8	4.6	3.0	4.0	5.7	4.6	5.3	5.9	4.8	5.3	6.2	4.9	5.5
9	3.7	2.3	3.1	6.3	4.4	5.2	6.7	4.6	5.5	8.4	5.1	6.3
10	3.5	3.2	3.3	6.3	5.4	5.6	7.1	5.4	6.0	6.6	5.7	6.1
11	4.2	3.3	3.8	5.4	4.6	4.8	7.8	5.2	6.3	6.1	5.0	5.4
12	4.8	3.8	4.3	5.8	4.1	4.8	8.7	5.2	6.5	6.3	4.8	5.5
13	4.3	3.8	4.0	5.2	4.6	4.9	6.8	4.7	5.6	6.1	5.4	5.7
14	5.1	3.8	4.3	5.4	4.6	4.9	5.4	4.4	4.9	5.5	4.7	5.1
15	5.3	4.3	4.8	5.5	4.6	4.9	5.3	4.0	4.6	8.3	4.4	5.8
16	5.6	4.5	5.0	5.5	4.4	5.1	6.6	4.8	5.5	8.1	4.7	5.9
17	5.4	4.1	4.6	5.4	4.3	4.8	7.0	5.3	6.0	8.2	4.9	6.0
18	5.7	4.1	4.7	6.0	5.0	5.3	5.8	4.0	4.9	8.4	4.9	6.2
19	5.6	4.2	4.7	6.6	4.8	5.5	5.5	3.8	4.6	7.3	5.2	6.1
20	5.9	4.8	5.2	6.1	5.1	5.5	6.1	4.3	4.9	5.8	5.0	5.4
21	5.8	4.2	4.9	5.9	4.9	5.3	6.6	4.1	5.2	5.9	5.0	5.2
22	6.1	4.8	5.3	6.9	4.5	5.5	7.6	4.5	5.8	5.7	5.0	5.4
23	6.0	4.9	5.2	5.9	4.3	5.5	6.9	5.4	6.1	6.6	5.5	6.0
24	6.4	4.8	5.4	6.0	4.1	4.8	6.1	5.4	5.7	9.1	5.7	7.0
25	6.2	5.1	5.5	5.6	4.1	4.8	7.2	5.1	5.9	8.3	5.8	6.7
26	6.4	4.6	5.4	6.0	4.5	5.1	8.8	4.6	6.3	8.3	5.7	6.8
27	6.1	4.9	5.4	5.7	4.2	4.8	7.9	5.8	6.7	8.4	5.8	6.7
28	5.8	4.6	5.2	4.9	4.2	4.5	6.4	4.7	5.7	7.8	5.9	6.6
29	6.0	4.6	5.1	5.2	3.2	4.1	6.2	4.2	4.9	7.2	5.9	6.4
30	---	---	---	5.6	3.4	4.5	5.9	3.4	4.7	8.5	5.8	6.8
31	---	---	---	5.9	4.2	4.9	---	---	---	8.5	5.7	7.0
Month	6.4	2.3	4.7	6.9	3.2	5.0	8.8	3.4	5.5	9.2	4.4	6.0

12147500 NORTH FORK TOLT RIVER NEAR CARNATION, WA—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
		June			July			August			September	
1	7.0	6.2	6.4	11.9	8.2	9.8	11.0	9.5	10.1	10.8	8.6	9.6
2	7.2	6.0	6.5	11.7	8.1	9.7	10.2	9.4	9.8	11.4	8.4	9.7
3	6.8	5.6	6.4	9.9	9.0	9.4	12.0	9.0	10.2	10.9	8.8	9.8
4	6.4	5.0	5.6	10.0	8.5	9.1	13.3	9.1	10.9	11.6	8.9	10.0
5	6.2	5.6	5.9	9.2	8.4	8.8	13.8	9.6	11.4	11.1	9.0	10
6	6.0	5.5	5.7	9.1	8.2	8.7	13.0	9.9	11.4	11.6	9.7	10.4
7	6.1	5.5	5.8	12.1	7.8	9.6	13.3	10.0	11.5	11.9	9.2	10.3
8	7.2	5.7	6.4	12.6	8.2	10.1	12.1	10.2	11.1	11.8	9.2	10.4
9	6.7	5.8	6.2	12.9	8.6	10.4	11.3	9.9	10.5	11.6	9.2	10.3
10	6.0	4.7	5.4	11.6	9.0	10.1	11.1	9.8	10.3	11.3	8.8	10.0
11	6.0	5.6	5.8	12.5	8.0	9.9	12.7	9.4	10.8	11.6	9.0	10.2
12	7.7	5.7	6.4	13.0	8.6	10.4	12.6	9.6	10.9	11.5	9.2	10.3
13	7.1	6.3	6.7	13.1	8.9	10.7	13.3	10.1	11.4	11.3	8.9	10.1
14	8.6	6.2	7.1	12.9	9.0	10.7	13.8	10.0	11.7	11.5	9.1	10.2
15	9.7	6.4	7.6	13.3	9.0	10.8	13.7	10.5	12.0	11.5	9.1	10.3
16	10.2	6.1	7.9	13.3	9.1	10.9	14.2	10.7	12.3	11.5	9.3	10.4
17	7.6	6.5	6.9	13.2	9.2	10.8	13.4	11.5	12.4	11.3	9.5	10.4
18	8.6	6.5	7.2	11.0	9.5	10.1	12.8	10.9	11.5	11.1	9.8	10.1
19	9.3	6.3	7.6	12.4	9.3	10.5	11.9	10.3	11.0	10.0	9.6	9.8
20	10.7	6.5	8.2	13.4	9.0	10.9	12.6	10.8	11.7	9.9	9.3	9.5
21	8.1	6.8	7.5	13.6	9.3	11.2	11.6	10.8	11.1	10.0	9.2	9.5
22	8.0	6.7	7.2	11.5	9.5	10.0	12.7	9.9	11.0	9.9	9.2	9.5
23	8.8	6.3	7.4	9.8	9.0	9.4	13.2	9.9	11.3	10.0	8.1	9.0
24	10.3	6.6	8.1	13.0	8.7	10.4	11.9	10.4	11.1	9.9	8.8	9.3
25	10.4	6.6	8.3	12.3	9.3	10.7	11.3	10.3	10.7	9.9	9.4	9.6
26	9.9	7.1	8.1	12.0	9.2	10.5	11.9	9.7	10.5	10.7	9.3	9.9
27	11.3	6.9	8.8	10.9	9.8	10.2	10.9	10.1	10.5	11.0	9.5	10.1
28	11.8	7.3	9.2	13.0	9.4	10.8	10.5	10.0	10.2	10.5	8.4	9.4
29	11.8	7.6	9.3	11.2	9.4	10.0	11.6	10.3	10.8	10.7	8.5	9.5
30	11.7	8.1	9.7	10.9	9.5	10.0	10.9	9.7	10.2	10.5	9.0	9.7
31	---	---	---	11.1	8.4	9.7	10.1	9.0	9.4	---	---	---
Month	11.8	4.7	7.2	13.6	7.8	10.1	14.2	9.0	11.0	11.9	8.1	9.9

	Max	Min	Mean
Year	14.2	2.3	6.9