12209000 SOUTH FORK NOOKSACK RIVER NEAR WICKERSHAM, WA

Puget Sound Basin
Nooksack Subbasin

LOCATION.--Lat 48°39′52″, long 122°07′56″ referenced to North American Datum of 1927, in SW ¼ SW ¼ sec.26, T.37 N., R.5 E., Whatcom County, WA, Hydrologic Unit 17110004, on left bank 0.5 mi upstream from Skookum Creek, 3.7 mi east of Wickersham, and at mile 14.8.

DRAINAGE AREA.--103 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1933 to October 1977, June to September 1978, October 1980 to September 1995 (seasonal records), October 1995 to current year. Monthly discharge only for October 1933 to April 1934, published in WSP 1316.

REVISED RECORDS.--WSP 832: 1935-36.

GAGE.--Water-stage recorder. Elevation of gage is 385 ft above NGVD of 1929, from river-profile map. Prior to July 9, 1934, nonrecording gage, at same site and datum.

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

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--56 years (water years 1935-77, 1996-2008), 749 ft^3/s, 98.75 in/yr, 542,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 ft^3/s, Nov. 23, 1990, gage height, 13.20 ft, from rating curve extended above 11,000 ft^3/s; minimum discharge, 59 ft^3/s, Oct. 20-25, 30, 31, 1987, gage height, 1.79 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 5,200 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Oct 2	1530	6,560	6.49
Oct 7	2000	*8,320	*7.22
Nov 16	0745	5,820	7.00
Dec 3	1545	5,840	7.01

Minimum discharge, 133 ft^3/s, Sept. 20, 30, gage height, 1.38 ft.

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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	3,180	344	286	347	254	1,360	320	756	1,620	1,790	424	475
2	3,660	318	300	415	247	859	303	645	1,330	1,590	371	382
3	2,130	489	3,720	481	225	699	299	720	1,310	1,680	296	331
4	2,170	943	4,270	717	215	665	316	925	1,650	1,290	251	295
5	1,140	537	2,210	859	258	545	321	1,220	1,430	999	240	271
6	734	397	1,310	620	283	479	351	1,320	2,310	972	234	258
7	2,720	379	944	475	484	478	450	1,320	1,620	768	231	238
8	1,990	445	731	418	841	758	464	1,080	1,360	793	221	219
9	1,010	610	608	450	678	727	395	911	1,370	838	235	205
10	794	1,190	528	637	1,100	992	369	944	1,660	745	500	192
11	831	731	468	1,250	971	1,720	364	1,200	1,290	571	276	182
12	631	841	428	955	775	1,160	436	994	1,220	572	216	173
13	517	903	412	1,050	747	853	951	924	1,510	603	198	165
14	446	651	435	896	579	749	921	1,890	1,440	562	188	158
15	401	1,040	708	834	479	679	725	2,260	1,240	492	188	151
16	460	4,100	685	619	455	607	587	2,720	1,370	459	184	145
17	670	1,920	656	509	403	577	543	3,550	1,370	447	178	140
18	752	1,420	620	435	376	554	601	3,450	1,110	409	178	137
19	2,450	993	990	404	381	493	512	3,090	1,060	364	194	136
20	1,350	776	906	363	413	511	442	4,040	1,180	360	685	138
21	1,180	635	608	322	430	486	390	2,850	1,520	361	2,440	192
22	2,590	541	614	296	420	433	360	2,110	1,480	354	843	265
23	1,600	477	833	284	463	557	368	1,740	1,230	311	428	238
24	1,290	430	978	272	456	623	453	1,930	1,130	269	483	175
25	1,050	385	650	254	423	486	480	2,520	1,110	285	809	232
26	767	371	537	252	436	474	418	2,530	1,130	297	435	280
27	629	389	468	250	476	438	554	2,370	1,080	282	1,000	197
28	532	340	491	230	557	389	1,090	2,340	1,560	261	943	168
29	468	323	456	236	742	367	1,430	2,140	1,940	244	1,070	150
30	417	299	451	233	---	348	997	1,570	1,970	437	1,040	138
31	372	---	391	242	---	342	---	1,490	---	265	610	---
Total	38,931	23,217	27,692	15,605	14,567	20,408	16,210	57,549	42,600	19,670	15,589	6,426
Mean	1,256	774	893	503	502	658	540	1,856	1,420	635	503	214
Max	3,660	4,100	4,270	1,250	1,100	1,720	1,430	4,040	2,310	1,790	2,440	475
Min	372	299	286	230	215	342	299	645	1,060	244	178	136
Ac-ft	77,220	46,050	54,930	30,950	28,890	40,480	32,150	114,100	84,500	39,020	30,920	12,750
Cfsm	12.2	7.51	8.67	4.89	4.88	6.39	5.25	18.0	13.8	6.16	4.88	2.08
In.	14.06	8.39	10.00	5.64	5.26	7.37	5.85	20.78	15.39	7.10	5.63	2.32

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	640	1,029	1,045	967	771	714	837	1,063	868	441	210	272
Max	1,806	3,341	2,164	2,092	1,847	1,781	1,456	1,856	1,740	1,075	503	880
(WY)	(1968)	(1991)	(1976)	(1953)	(1951)	(2007)	(1959)	(2008)	(1937)	(1999)	(2008)	(2004)
Min	68.6	126	500	194	288	324	401	540	263	123	81.5	79.7
(WY)	(1988)	(1937)	(1953)	(1937)	(1956)	(1955)	(1975)	(1994)	(1992)	(1940)	(1958)	(1998)

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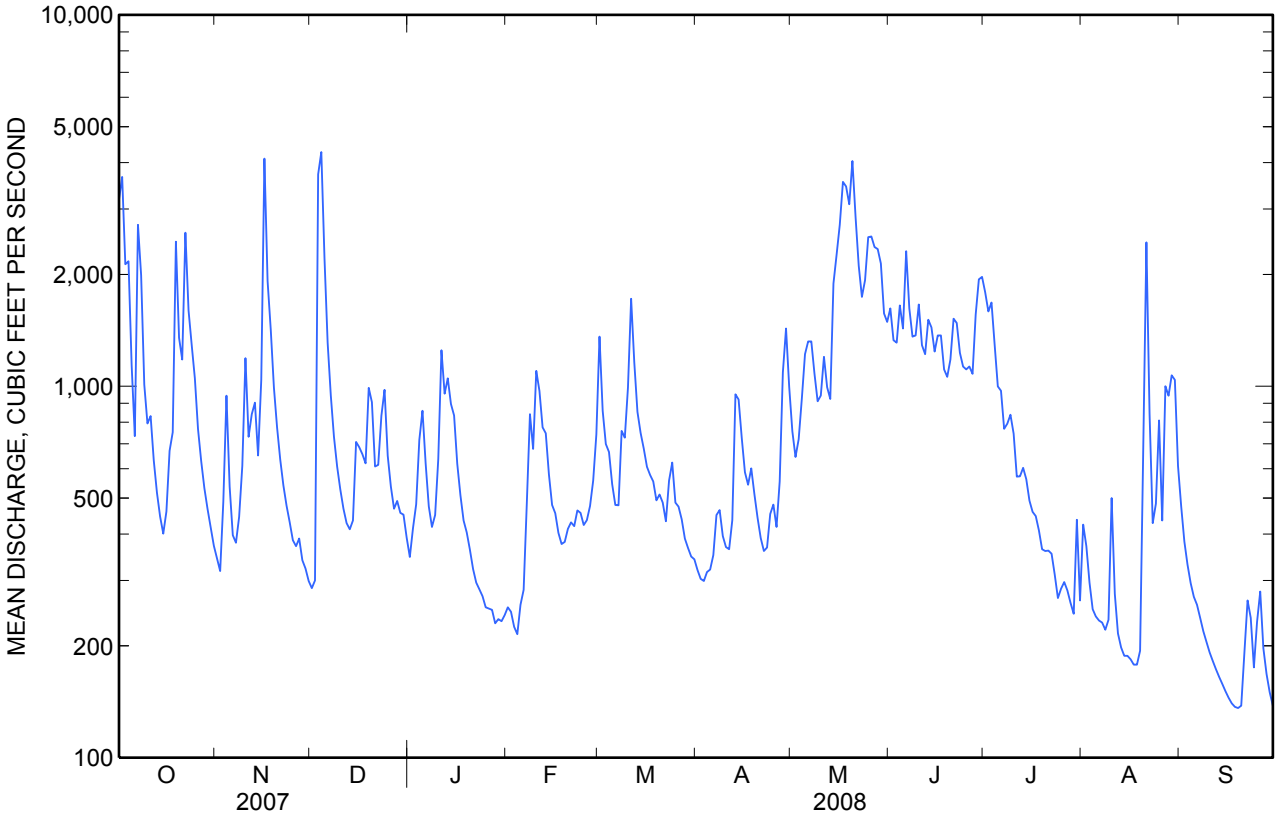
SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1934 - 2008	
Annual total	302,977		298,464			
Annual mean	830		815		749	
Highest annual mean					1,001	1997
Lowest annual mean					488	1944
Highest daily mean	7,150	Mar 12	4,270	Dec 4	14,000	Nov 9, 1990
Lowest daily mean	109	Sep 13	136	Sep 19	59	Oct 21, 1987
Annual seven-day minimum	110	Sep 10	144	Sep 14	60	Oct 19, 1987
Annual runoff (ac-ft)	601,000		592,000		542,300	
Annual runoff (cfsm)	8.06		7.92		7.27	
Annual runoff (inches)	109.42		107.79		98.75	
10 percent exceeds	1,520		1,670		1,480	
50 percent exceeds	620		554		558	
90 percent exceeds	148		236		147	



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WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--
WATER TEMPERATURE: July 2001 to current year.

INSTRUMENTATION.--Water-temperature sensor with a 15-minute logging interval, interfaced with a data collection platform for satellite telemetry.

REMARKS.--Temperature records are good.

EXTREMES FOR PERIOD OF RECORD.--
WATER TEMPERATURE: Maximum, 23.7°C, July 24, 2004; minimum, 0.0°C, on many days during winters.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURE: Maximum, 21.1°C Aug. 16, 2008; minimum, 0.0°C, Jan. 22-25 and Feb. 1.

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	9.2	8.4	8.7	6.8	5.3	6.1	2.6	1.8	2.2	2.9	2.0	2.4
2	8.9	8.4	8.8	5.5	4.0	4.9	2.9	1.6	2.1	3.5	2.9	3.3
3	8.8	7.6	8.3	6.4	5.5	6.0	5.2	2.9	3.8	4.1	3.4	3.8
4	7.9	6.8	7.3	7.2	6.1	6.6	5.5	5.1	5.4	4.3	3.7	4.0
5	8.4	6.6	7.4	6.4	4.9	5.4	5.4	4.7	5.2	4.1	2.8	3.7
6	8.0	7.2	7.7	6.4	4.8	5.6	4.7	3.6	3.9	3.3	2.6	2.9
7	8.5	7.7	8.1	7.5	6.4	7.0	3.8	2.9	3.4	3.1	2.6	2.8
8	8.3	7.2	7.8	8.0	7.2	7.6	2.9	1.7	2.2	3.0	2.6	2.8
9	10.0	7.9	8.9	8.5	7.9	8.2	2.5	1.6	2.0	3.2	2.8	2.9
10	9.8	9.3	9.5	8.0	6.4	7.3	2.6	1.6	2.3	3.7	2.8	3.3
11	9.5	8.5	9.0	6.5	6.1	6.3	3.0	1.6	2.4	4.0	3.5	3.7
12	9.7	8.3	8.9	6.5	5.8	6.2	3.5	3.0	3.2	4.3	3.7	4.0
13	9.2	7.2	8.2	5.8	4.9	5.5	3.4	3.0	3.2	4.2	3.6	3.9
14	9.6	7.3	8.3	5.5	4.0	4.7	4.0	2.9	3.4	4.5	3.1	4.0
15	9.2	8.6	8.9	6.8	5.5	6.4	4.0	3.8	3.9	3.1	2.0	2.4
16	9.1	7.9	8.7	6.8	6.1	6.5	4.3	3.8	4.1	2.8	2.3	2.6
17	7.9	7.2	7.5	6.7	6.1	6.5	4.2	3.1	3.9	2.9	2.6	2.7
18	7.6	7.1	7.3	6.1	4.8	5.5	4.0	3.1	3.6	3.4	2.6	2.9
19	7.5	7.2	7.3	5.0	4.3	4.7	4.3	3.8	4.0	3.1	2.6	2.9
20	7.5	6.8	7.1	5.2	4.1	4.7	4.2	3.4	3.8	3.2	1.9	2.7
21	7.6	7.1	7.3	4.1	3.1	3.6	3.4	2.8	3.1	1.9	0.2	0.9
22	8.0	7.0	7.5	3.2	2.4	2.7	4.0	3.3	3.6	1.0	0.0	0.4
23	9.2	7.6	8.4	3.1	2.0	2.5	4.2	3.6	3.9	1.0	0.0	0.5
24	9.2	8.1	8.8	3.6	2.5	3.0	4.3	3.7	4.0	1.2	0.0	0.5
25	8.1	6.4	7.3	3.8	2.6	3.2	3.8	3.4	3.7	0.9	0.0	0.4
26	6.4	4.9	5.6	3.4	2.6	2.9	3.0	2.2	2.7	1.3	0.2	0.7
27	6.5	4.7	5.6	3.8	3.0	3.4	2.9	2.5	2.6	1.9	1.1	1.4
28	7.6	6.4	6.9	3.6	2.8	3.2	2.6	2.0	2.4	1.3	0.6	1.0
29	7.6	6.8	7.1	3.7	2.8	3.3	3.1	2.4	2.7	0.9	0.3	0.6
30	7.0	5.2	5.8	3.0	2.5	2.7	2.6	1.7	2.0	2.0	0.3	1.2
31	6.0	4.5	5.3	---	---	---	2.5	1.9	2.1	2.2	1.2	1.7
Month	10.0	4.5	7.7	8.5	2.0	5.1	5.5	1.6	3.3	4.5	0.0	2.4

12209000 SOUTH FORK NOOKSACK RIVER NEAR WICKERSHAM, 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	1.8	0.0	0.9	4.5	3.0	3.6	6.1	2.3	4.2	7.4	4.1	5.5
2	2.4	1.1	1.7	4.6	3.3	3.9	6.9	2.5	4.5	7.3	4.0	5.7
3	2.4	0.7	1.5	3.9	3.3	3.6	7.0	3.0	4.9	6.8	5.3	6.0
4	2.0	0.6	1.4	5.0	3.0	3.8	6.0	4.3	5.1	9.3	5.1	7.0
5	2.5	1.9	2.1	5.0	2.5	3.7	7.0	4.2	5.4	8.0	4.8	6.5
6	2.5	1.9	2.2	5.3	2.6	4.0	7.0	4.6	5.5	8.3	4.3	6.2
7	2.6	2.0	2.3	5.5	4.3	5.0	6.5	4.6	5.4	6.8	4.7	5.6
8	2.6	1.8	2.2	5.4	4.0	4.7	6.0	4.4	5.1	6.1	4.4	5.2
9	3.4	2.6	3.0	5.2	3.4	4.2	6.9	3.9	5.3	8.6	3.7	6.1
10	3.2	2.2	2.8	5.5	4.5	4.9	7.0	4.8	5.8	7.4	5.2	5.9
11	3.4	2.2	2.8	4.5	3.4	3.8	7.4	4.6	5.8	6.2	4.8	5.5
12	3.9	3.0	3.3	5.0	3.0	3.9	9.4	4.6	6.9	6.8	4.2	5.6
13	4.0	2.7	3.3	4.8	3.6	4.2	7.8	4.9	5.7	6.1	5.0	5.6
14	4.0	2.3	3.1	5.4	4.0	4.6	5.8	4.0	4.8	6.2	4.8	5.5
15	3.8	2.9	3.4	5.4	4.1	4.7	4.9	3.7	4.1	9.2	4.3	6.3
16	4.7	3.2	3.7	4.7	3.8	4.3	6.1	3.6	4.7	8.8	4.0	5.9
17	3.8	2.0	2.8	5.1	3.7	4.3	6.9	5.0	5.9	8.1	4.2	5.7
18	3.8	1.7	2.6	5.3	3.9	4.5	5.9	3.6	4.7	8.0	4.3	5.8
19	4.1	1.9	2.9	6.2	3.7	4.8	5.1	3.0	3.9	6.6	4.8	5.6
20	5.0	3.4	3.9	5.4	4.0	4.7	5.7	2.7	4.0	5.3	4.4	4.8
21	4.2	2.4	3.3	4.7	3.1	4.0	6.8	3.1	4.7	6.2	4.3	5.1
22	5.4	3.0	4.0	5.8	2.8	4.3	7.9	3.0	5.5	6.4	4.7	5.5
23	5.3	3.6	4.3	5.1	3.7	4.6	7.4	5.4	6.4	7.2	4.8	5.9
24	4.4	2.5	3.5	5.4	2.9	3.9	6.2	4.8	5.6	---	---	---
25	5.6	3.4	4.4	4.7	2.7	3.7	6.9	3.7	5.3	---	---	---
26	5.4	3.4	4.4	4.8	3.3	3.9	9.2	3.7	6.4	---	---	---
27	5.3	3.8	4.5	3.8	2.0	3.0	7.7	6.1	7.0	---	---	---
28	6.1	4.1	4.9	3.1	2.1	2.5	7.2	5.4	6.2	---	---	---
29	5.3	3.9	4.6	4.3	2.3	3.2	5.9	3.4	4.7	---	---	---
30	---	---	---	6.2	3.1	4.3	6.5	3.3	4.8	---	---	---
31	---	---	---	5.4	2.6	4.1	---	---	---	---	---	---
Month	6.1	0.0	3.1	6.2	2.0	4.1	9.4	2.3	5.3	---	---	---

12209000 SOUTH FORK NOOKSACK RIVER NEAR WICKERSHAM, 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	---	---	---	13.1	7.6	10.1	13.3	10.8	11.8	12.0	9.2	10.6
2	---	---	---	13.0	7.6	10.2	13.7	11.3	12.2	12.0	9.3	10.7
3	---	---	---	11.1	8.5	9.1	15.7	10.8	13.2	13.4	9.6	11.4
4	---	---	---	10.4	8.0	9.3	17.8	12.5	15.0	13.9	10.4	12.1
5	---	---	---	9.9	8.3	9.0	---	---	---	12.2	11.1	11.5
6	---	---	---	10.4	8.1	9.2	---	---	---	13.8	10.9	12.1
7	---	---	---	13.1	7.7	10.4	---	---	---	14.9	11.2	12.9
8	---	---	---	13.9	9.0	11.7	---	---	---	14.9	11.1	12.9
9	---	---	---	14.3	9.4	12.2	---	---	---	14.8	11.4	13.0
10	---	---	---	13.5	9.2	10.9	---	---	---	14.3	10.4	12.3
11	---	---	---	13.8	8.6	11.4	---	---	---	14.8	10.6	12.5
12	---	---	---	14.9	10.2	12.8	---	---	---	15.0	11.3	13.0
13	---	---	---	14.9	10.5	13.0	---	---	---	14.6	10.9	12.7
14	---	---	---	14.6	10.4	12.8	20.1	14.9	17.3	14.9	10.8	12.6
15	---	---	---	14.9	10.3	12.8	20.6	16.1	18.2	15.4	11.2	13.1
16	10.8	5.4	8.3	15.4	11.0	13.4	21.1	16.2	18.5	15.4	11.4	13.2
17	9.3	5.8	7.0	15.4	11.3	13.6	20.0	17.0	18.5	14.6	11.7	13.1
18	9.7	6.2	7.7	15.2	11.5	13.5	18.2	15.6	16.8	13.2	11.8	12.5
19	8.7	5.7	7.3	16.1	11.7	14.0	17.2	14.8	15.8	13.0	12.0	12.4
20	10.5	6.4	8.4	16.4	12.0	14.3	15.6	12.8	14.0	12.5	11.8	12.2
21	9.0	6.3	7.3	16.7	12.6	14.7	12.8	11.1	11.6	12.4	11.3	11.7
22	10.0	6.2	7.8	15.3	13.1	14.0	13.8	10.2	11.9	11.8	10.0	11.1
23	9.5	5.4	7.6	13.5	12.1	12.7	15.5	12.2	13.8	11.4	8.3	9.8
24	10.6	6.5	8.7	16.5	10.9	13.4	14.4	12.9	13.7	11.2	9.9	10.5
25	10.7	6.1	8.6	17.2	13.2	15.1	14.4	12.0	13.0	11.1	10.3	10.6
26	9.9	6.6	8.1	15.7	13.2	14.5	13.8	11.5	12.6	12.2	9.9	10.9
27	12.1	6.4	9.3	14.4	12.5	13.4	12.4	10.8	11.4	13.0	10.8	11.7
28	12.9	6.9	9.8	16.2	11.0	13.5	11.6	10.7	11.1	12.5	9.4	10.8
29	12.8	7.0	9.6	14.6	12.5	13.6	12.8	11.1	11.8	12.6	9.0	10.6
30	13.2	7.5	9.9	12.5	10.8	11.8	12.4	10.4	11.3	12.7	9.7	11.1
31	---	---	---	12.0	10.3	11.3	12.2	9.2	10.6	---	---	---
Month	---	---	---	17.2	7.6	12.3	---	---	---	15.4	8.3	11.9