



Figure 26. Location of surface-water stations in the Nooksack River Basin.

## 12205000 NORTH FORK NOOKSACK RIVER BELOW CASCADE CREEK, NEAR GLACIER, WA

LOCATION.--Lat 48°54'22", long 121°50'35", in SE $\frac{1}{4}$ SW $\frac{1}{4}$ , sec.36, T.40 N., R.7 E., Whatcom County, Hydrologic Unit 17110004, Mt. Baker National Forest, on right bank 0.2 mi downstream from Cascade Creek, 0.3 mi downstream from Deadhorse Creek, 4.8 mi east of Glacier, 5.5 mi upstream from Glacier Creek, and at mile 63.1.

DRAINAGE AREA.--105 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1937 to current year. Published as "Nooksack River above Cascade Creek, near Glacier" 1937-58 and as "Nooksack River below Cascade Creek, near Glacier" 1958-66.

REVISED RECORDS.--WSP 1092: 1946.

GAGE.--Water-stage recorder. Elevation of gage is 1,245 ft above NGVD of 1929, from river-profile map. Supplementary gage on left bank, at datum 1.19 ft lower, used as principal gage prior to Oct. 1, 1953, and Oct. 8, 1958, to Sept. 30, 1959.

REMARKS.--Records fair, except estimated daily discharges, which are poor. No diversion upstream from station. Some regulation at low flow by powerplant at Excelsior. Summer flows augmented by glacier melt. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--67 years (water years 1938-2004), 783 ft<sup>3</sup>/s, 101.38 in/yr, 567,500 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft<sup>3</sup>/s, Oct. 16, 2003, from slope-area measurement, gage height, 11.97 ft, from floodmark; minimum discharge, 60 ft<sup>3</sup>/s, Mar. 12, 1969; minimum daily, 98 ft<sup>3</sup>/s, Jan. 8, 1979, result of freezeup.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,600 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)
Oct 16	2200	*15,200	*11.97	Nov 19	0330	5,050	6.18
Oct 20	2230	12,600	10.43	Sep 11	0330	4,510	6.53
Oct 23	0030	4,070	5.35				

Minimum discharge, 189 ft<sup>3</sup>/s, Mar. 1.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	561	678	691	391	609	e199	515	1,170	1,020	1,270	758	1,010
2	543	625	740	377	519	e239	466	1,320	989	1,240	736	972
3	530	567	1,140	358	468	241	462	1,190	e1,140	1,150	716	785
4	535	521	796	e281	439	242	518	1,230	1,440	1,060	676	694
5	544	490	1,110	e310	396	234	540	1,150	1,650	1,080	645	660
6	557	468	1,450	375	406	226	551	938	1,630	1,180	672	582
7	964	454	975	375	389	296	605	827	1,230	1,090	726	556
8	955	445	773	e515	358	433	580	942	1,170	840	588	555
9	820	430	667	e564	337	686	572	961	1,420	748	666	836
10	666	448	602	e864	320	628	607	874	1,490	733	731	745
11	595	527	556	e520	308	510	739	811	1,260	756	718	2,970
12	1,320	468	552	e454	300	467	945	796	1,020	752	795	1,190
13	e1,270	438	525	e674	294	421	1,030	788	1,270	902	852	960
14	722	422	505	e1,500	294	407	909	786	1,230	1,000	884	1,360
15	e621	442	474	e2,050	303	384	759	853	1,020	1,090	912	1,400
16	e6,310	511	552	e1,440	322	362	665	872	1,020	1,040	897	1,420
17	e10,800	677	586	1,210	349	353	586	865	1,200	1,030	868	2,070
18	e2,610	2,040	507	955	395	438	534	1,120	1,300	1,080	789	1,310
19	e3,500	3,400	499	814	377	409	499	1,260	1,230	1,110	789	1,040
20	e8,100	1,770	560	682	329	364	491	1,300	1,280	982	773	867
21	5,220	1,240	565	568	297	366	459	1,310	1,460	837	850	758
22	2,690	966	511	488	275	431	443	1,390	1,600	872	1,690	761
23	2,430	833	487	453	246	535	496	1,170	1,740	956	725	799
24	1,590	740	554	449	249	618	507	1,040	1,880	1,020	978	688
25	1,210	650	582	405	244	581	481	1,020	1,810	996	2,310	653
26	1,070	571	507	384	232	579	664	1,320	1,590	851	1,340	610
27	887	513	474	377	225	558	991	1,370	1,320	803	952	594
28	1,780	1,140	455	394	210	510	831	1,340	1,230	810	930	559
29	1,270	1,260	426	497	e211	499	727	1,080	1,250	e882	1,100	514
30	895	834	407	1,250	---	621	847	1,180	1,300	891	937	477
31	746	---	403	792	---	607	---	1,170	---	822	865	---
TOTAL	62,311	24,568	19,631	20,766	9,701	13,444	19,019	33,443	40,189	29,873	27,868	28,395
MEAN	2,010	819	633	670	335	434	634	1,079	1,340	964	899	946
MAX	10,800	3,400	1,450	2,050	609	686	1,030	1,390	1,880	1,270	2,310	2,970
MIN	530	422	403	281	210	199	443	786	989	733	588	477
AC-FT	123,600	48,730	38,940	41,190	19,240	26,670	37,720	66,330	79,710	59,250	55,280	56,320
CFSM	19.1	7.80	6.03	6.38	3.19	4.13	6.04	10.3	12.8	9.18	8.56	9.01
IN.	22.08	8.70	6.95	7.36	3.44	4.76	6.74	11.85	14.24	10.58	9.87	10.06

12205000 NORTH FORK NOOKSACK RIVER BELOW CASCADE CREEK, NEAR GLACIER, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND—CONTINUED  
 WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1938 - 2004, BY WATER YEAR (WY)												
MEAN	676	753	639	518	472	415	567	1,116	1,531	1,305	805	586
MAX	2,010	2,143	1,354	1,161	1,401	1,061	930	1,794	2,459	2,112	1,582	1,122
(WY)	(2004)	(1991)	(1940)	(1997)	(1991)	(1972)	(1990)	(1997)	(1948)	(1974)	(1999)	(1978)
MIN	210	216	232	147	165	191	253	686	893	725	473	353
(WY)	(1988)	(1953)	(1979)	(1979)	(1956)	(1948)	(1975)	(1962)	(1941)	(1940)	(1941)	(1989)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1938 - 2004	
ANNUAL TOTAL	332,857		329,208			
ANNUAL MEAN	912		899		783	
HIGHEST ANNUAL MEAN					1,090	
LOWEST ANNUAL MEAN					540	
HIGHEST DAILY MEAN	10,800	Oct 17	10,800	Oct 17	10,800	Oct 17, 2003
LOWEST DAILY MEAN	257	Mar 8	199	Mar 1	98	Jan 8, 1979
ANNUAL SEVEN-DAY MINIMUM	272	Mar 2	222	Feb 26	108	Jan 4, 1979
ANNUAL RUNOFF (AC-FT)	660,200		653,000		567,600	
ANNUAL RUNOFF (CFSM)	8.69		8.57		7.46	
ANNUAL RUNOFF (INCHES)	117.93		116.63		101.38	
10 PERCENT EXCEEDS	1,600		1,360		1,550	
50 PERCENT EXCEEDS	629		740		599	
90 PERCENT EXCEEDS	410		376		260	

e Estimated

## 12206900 RACEHORSE CREEK AT NORTH FORK ROAD, NEAR KENDALL, WA

LOCATION.--Lat 48°53'07", long 122°07'56", in SW $\frac{1}{4}$ NW $\frac{1}{4}$ , sec.11, T.39 N., R.5 E., Whatcom County, Hydrologic Unit 17110004, on right bank on the downstream side of North Fork Road bridge, 2.2 mi south of Kendall, and at mile 0.7.

DRAINAGE AREA.--10.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 410 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good, except those below 4 ft<sup>3</sup>/s and those above 300 ft<sup>3</sup>/s, which are fair, and estimated discharges, which are poor. No known diversions or regulation upstream of station.

AVERAGE DISCHARGE.--6 years (water year 1999-2004), 59.4 ft<sup>3</sup>/s, 76.86 in/yr, 43,030 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,670 ft<sup>3</sup>/s, Oct. 20, 2003, gage height, 7.45 ft from rating curve extended above 189 ft<sup>3</sup>/s; minimum discharge, 1.3 ft<sup>3</sup>/s, Oct. 1, 1998.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,670 ft<sup>3</sup>/s, Oct. 20, gage height, 7.45 ft; minimum daily discharge, 1.7 ft<sup>3</sup>/s, Oct. 6.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	e1.9	59	73	23	e86	22	61	75	58	11	3.1	39
2	e1.8	51	85	21	e70	e22	51	73	50	11	3.0	e50
3	e1.8	45	128	e20	e60	e23	48	59	50	10	3.1	e31
4	e1.7	40	75	e19	e65	e24	54	87	53	9.4	3.3	e25
5	e1.7	35	96	e18	e51	e23	51	65	57	8.8	3.2	e22
6	2.8	29	147	e17	52	e22	49	46	93	11	4.4	e19
7	24	27	80	e35	51	e150	55	43	64	11	5.8	16
8	16	27	58	e60	42	e270	52	72	53	9.0	4.0	15
9	49	26	46	99	37	e380	51	57	50	8.2	3.4	38
10	47	93	40	205	33	e180	55	50	47	8.2	3.1	26
11	31	122	35	104	32	e110	69	48	36	8.1	2.9	267
12	246	63	38	100	33	e75	82	45	30	7.2	2.9	80
13	146	49	41	145	31	e60	74	40	96	6.5	2.9	56
14	45	42	45	264	36	e65	59	40	91	6.3	2.8	79
15	30	42	36	335	43	e60	48	41	57	6.0	2.7	143
16	350	84	60	149	51	e50	41	40	45	5.5	2.6	152
17	1,000	255	59	85	57	e65	39	39	42	5.1	2.6	215
18	219	784	41	69	57	e80	37	51	39	4.9	2.4	104
19	315	560	41	64	56	65	34	53	34	4.7	2.4	71
20	668	144	102	54	44	52	36	44	30	7.5	2.3	52
21	618	87	82	45	37	55	34	45	27	6.6	13	41
22	234	65	56	40	33	65	35	65	25	5.1	87	36
23	210	65	46	46	30	71	44	47	23	4.5	23	40
24	120	69	53	53	29	107	42	39	21	4.2	136	32
25	89	54	64	43	27	93	37	40	19	3.9	323	28
26	71	46	47	53	25	85	59	58	17	3.7	122	25
27	58	40	39	72	25	91	71	61	15	3.6	53	22
28	148	477	35	118	24	80	48	105	14	3.5	56	20
29	96	312	29	229	23	73	42	60	13	3.4	63	19
30	85	107	26	392	---	108	55	136	12	3.3	36	18
31	66	---	25	120	---	85	---	82	---	3.2	27	---
TOTAL	4,992.7	3,899	1,828	3,097	1,240	2,711	1,513	1,806	1,261	204.4	1,001.9	1,781
MEAN	161	130	59.0	99.9	42.8	87.5	50.4	58.3	42.0	6.59	32.3	59.4
MAX	1,000	784	147	392	86	380	82	136	96	11	323	267
MIN	1.7	26	25	17	23	22	34	39	12	3.2	2.3	15
AC-FT	9,900	7,730	3,630	6,140	2,460	5,380	3,000	3,580	2,500	405	1,990	3,530
CFSM	15.3	12.4	5.62	9.51	4.07	8.33	4.80	5.55	4.00	0.63	3.08	5.65
IN.	17.69	13.81	6.48	10.97	4.39	9.60	5.36	6.40	4.47	0.72	3.55	6.31

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2004, BY WATER YEAR (WY)

MEAN	61.8	97.3	79.5	81.9	52.3	64.5	73.1	77.9	69.8	21.2	14.4	19.1
MAX	161	130	121	115	106	106	108	93.2	107	54.5	32.3	59.4
(WY)	(2004)	(1999)	(1999)	(2002)	(2002)	(2003)	(2002)	(2000)	(2000)	(1999)	(2004)	(2004)
MIN	6.10	27.1	45.8	36.7	25.0	36.8	50.4	53.0	23.3	6.59	2.26	2.27
(WY)	(2003)	(2001)	(2001)	(2000)	(2001)	(2002)	(2004)	(2003)	(2003)	(2004)	(2003)	(2003)

## 12206900 RACEHORSE CREEK AT NORTH FORK ROAD, NEAR KENDALL, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1999 - 2004	
ANNUAL TOTAL	23,720.8		25,335.0			
ANNUAL MEAN	65.0		69.2		59.4	
HIGHEST ANNUAL MEAN					71.1	
LOWEST ANNUAL MEAN					40.3	
HIGHEST DAILY MEAN	1,000	Oct 17	1,000	Oct 17	1,000	Oct 17, 2003
LOWEST DAILY MEAN	1.5	Aug 24	1.7	Oct 4	1.4	Oct 1, 1998
ANNUAL SEVEN-DAY MINIMUM	1.6	Aug 23	2.5	Aug 14	1.6	Aug 23, 2003
MAXIMUM PEAK FLOW					1,500	
MAXIMUM PEAK STAGE					7.05	
INSTANTANEOUS LOW FLOW					1.3	
ANNUAL RUNOFF (AC-FT)	47,050		50,250		43,030	
ANNUAL RUNOFF (CFSM)	6.19		6.59		5.66	
ANNUAL RUNOFF (INCHES)	84.04		89.76		76.86	
10 PERCENT EXCEEDS	136		130		115	
50 PERCENT EXCEEDS	41		46		40	
90 PERCENT EXCEEDS	2.1		5.0		6.2	

e Estimated

## NOOKSACK RIVER BASIN

12207750 WARM CREEK NEAR WELCOME, WA

LOCATION.--Lat 48°46'03", long 121°57'48", in NE $\frac{1}{4}$ SE $\frac{1}{4}$ , sec.24, T.38 N., R.6 E., Whatcom County, Hydrologic Unit 17110004, on right bank, 10 mi southeast of Welcome, and at mile 1.2.

DRAINAGE AREA.--4.13 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,700 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good, except for estimated daily discharges and discharges above 104 ft<sup>3</sup>/s, which are fair. No diversions or regulation upstream of station. Records for water years 1991-1998 available in the files of Devine Tarbell & Associates, Inc., Bellingham, Washington.

AVERAGE DISCHARGE.--6 years (water year 1999-2004), 28.5 ft<sup>3</sup>/s, 93.63 in/yr, 20,620 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 506 ft<sup>3</sup>/s, Oct. 17, 2003, gage height, 4.09 ft; minimum daily discharge, 3.3 ft<sup>3</sup>/s, Oct. 1, 1998, and Oct. 4, 5, 6, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 506 ft<sup>3</sup>/s, Oct. 17, gage height, 4.09 ft; minimum daily discharge, 3.3 ft<sup>3</sup>/s, Oct. 4, 5, 6.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	32	23	11	29	10	25	46	49	32	9.4	28
2	3.5	28	25	10	24	9.8	23	52	43	31	9.0	30
3	3.4	25	29	9.8	21	9.7	23	47	45	29	9.2	25
4	3.3	22	24	9.4	20	9.5	26	48	57	25	8.5	21
5	e3.3	21	35	9.1	17	9.0	25	43	63	25	8.1	19
6	e3.3	19	52	8.8	18	8.6	25	35	65	32	8.9	17
7	e14	18	32	12	17	15	27	32	48	28	8.2	16
8	e16	18	25	18	15	26	26	33	47	21	7.1	15
9	e18	17	21	18	14	47	27	32	52	19	7.2	25
10	e21	19	19	27	13	36	30	30	53	18	7.3	20
11	e17	38	17	22	13	28	37	28	44	17	7.1	67
12	e90	25	18	22	13	24	46	27	35	18	7.1	39
13	e80	21	16	28	13	21	44	25	47	21	7.0	38
14	e23	20	15	52	14	21	39	25	47	22	6.8	54
15	e19	21	14	87	16	20	33	26	39	22	6.7	68
16	e190	25	18	58	16	18	30	27	37	20	6.5	67
17	e500	46	16	39	16	19	27	27	42	20	6.3	78
18	e130	145	14	33	18	23	24	34	45	19	6.0	60
19	e150	169	15	30	17	20	23	38	44	19	5.8	47
20	e220	61	20	26	15	18	23	39	45	18	5.6	37
21	e200	39	20	23	14	18	21	42	47	14	11	31
22	e75	30	17	21	13	24	20	47	51	14	32	29
23	e70	27	16	21	13	29	23	42	55	15	11	29
24	e50	23	19	21	13	31	22	37	56	15	32	24
25	e45	21	19	19	12	28	22	36	51	14	69	21
26	e40	19	16	17	12	28	30	98	44	13	47	20
27	e35	17	15	17	12	27	39	82	34	12	28	18
28	113	44	14	19	11	25	32	75	31	12	49	17
29	58	43	13	32	11	27	29	56	32	11	57	15
30	42	27	12	76	---	35	34	77	33	11	33	14
31	36	---	12	39	---	30	---	63	---	10	25	---
TOTAL	2,272.3	1,080	621	835.1	450	694.6	855	1,349	1,381	597	541.8	989
MEAN	73.3	36.0	20.0	26.9	15.5	22.4	28.5	43.5	46.0	19.3	17.5	33.0
MAX	500	169	52	87	29	47	46	98	65	32	69	78
MIN	3.3	17	12	8.8	11	8.6	20	25	31	10	5.6	14
AC-FT	4,510	2,140	1,230	1,660	893	1,380	1,700	2,680	2,740	1,180	1,070	1,960
CFSM	17.7	8.72	4.85	6.52	3.76	5.43	6.90	10.5	11.1	4.66	4.23	7.98
IN.	20.47	9.73	5.59	7.52	4.05	6.26	7.70	12.15	12.44	5.38	4.88	8.91

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2004, BY WATER YEAR (WY)

MEAN	25.9	36.7	26.7	27.3	13.7	18.7	27.8	42.4	58.6	33.5	16.4	13.3
MAX	73.3	61.9	48.6	40.5	19.4	39.3	36.7	51.2	87.5	65.5	35.3	33.0
(WY)	(2004)	(2000)	(1999)	(2002)	(2002)	(2003)	(2000)	(2002)	(2002)	(1999)	(1999)	(2004)
MIN	5.94	12.2	11.1	11.9	7.46	10.4	18.8	33.8	37.1	17.1	5.35	4.66
(WY)	(2003)	(2001)	(2001)	(2000)	(2001)	(2000)	(2001)	(2003)	(2001)	(2003)	(2003)	(2003)

12207750 WARM CREEK NEAR WELCOME, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1999 - 2004	
ANNUAL TOTAL	10,822.9		11,665.8		28.5	
ANNUAL MEAN	29.7		31.9		34.1 2002	
HIGHEST ANNUAL MEAN					18.5 2001	
LOWEST ANNUAL MEAN					500 Oct 17, 2003	
HIGHEST DAILY MEAN	500	Oct 17	500	Oct 17	3.3 Oct 1, 1998	
LOWEST DAILY MEAN	3.3	Oct 4	3.3	Oct 4	3.4 Sep 30, 2003	
ANNUAL SEVEN-DAY MINIMUM	3.4	Sep 30	4.9	Oct 1	506 Oct 17, 2003	
MAXIMUM PEAK FLOW					4.09 Oct 17, 2003	
MAXIMUM PEAK STAGE					3.3 Oct 1, 1998	
INSTANTANEOUS LOW FLOW					20,620	
ANNUAL RUNOFF (AC-FT)	21,470		23,140		6.89	
ANNUAL RUNOFF (CFSM)	7.18		7.72		93.63	
ANNUAL RUNOFF (INCHES)	97.48		105.08		61	
10 PERCENT EXCEEDS	55		54		20	
50 PERCENT EXCEEDS	21		24		7.1	
90 PERCENT EXCEEDS	4.5		10			

e Estimated

## 12207850 CLEARWATER CREEK NEAR WELCOME, WA

LOCATION.--Lat 48°47'19", long 122°01'18", in NW<sup>1</sup>/<sub>4</sub>NW<sup>1</sup>/<sub>4</sub>, sec.15, T.38 N., R.6 E., Whatcom County, Hydrologic Unit 17110004, on left bank, 7 mi southeast of Welcome, and at mile 1.8.

DRAINAGE AREA.--18.5 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 1,650 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good, except estimated daily discharges and those above 400 ft<sup>3</sup>/s, which are fair. No diversions or regulation upstream of station. Records for water years 1992-98 are available in the files of Devine Tarbell & Associates, Bellingham, Washington.

AVERAGE DISCHARGE.--6 years (water years 1999-2004) 125 ft<sup>3</sup>/s, 91.67 in/yr, 90,570 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,090 ft<sup>3</sup>/s, Dec. 29, 1998, gage height, 6.14 ft; minimum discharge, 6.4 ft<sup>3</sup>/s, Sept. 6, 2003.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,010 ft<sup>3</sup>/s, Oct. 17, gage height, 6.07 ft, from rating curve extended above 315 ft<sup>3</sup>/s; minimum discharge, 8.6 ft<sup>3</sup>/s, Oct. 4, 5, 6.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.7	80	108	48	121	49	115	248	190	52	14	99
2	9.3	71	136	45	99	46	102	244	168	49	14	123
3	9.2	62	194	e44	87	47	112	202	178	47	15	82
4	8.8	54	122	e42	90	50	133	245	201	42	15	61
5	8.6	50	167	e41	77	48	121	208	199	40	14	54
6	8.9	48	240	e40	78	45	124	152	247	53	18	46
7	45	46	137	69	78	207	145	145	175	54	18	40
8	54	45	106	100	69	306	130	176	159	40	14	37
9	66	42	89	113	64	402	133	156	160	36	13	145
10	88	68	79	200	59	216	159	138	157	35	12	78
11	54	185	72	134	59	138	208	137	124	34	12	600
12	421	89	72	133	60	115	235	131	101	31	12	184
13	322	70	73	199	61	98	209	123	249	31	11	178
14	90	66	71	415	68	107	165	121	210	30	11	286
15	62	75	66	630	75	100	134	123	145	29	11	517
16	565	105	79	270	78	88	120	131	127	28	10	349
17	1,300	389	84	161	79	105	114	130	131	26	10	364
18	282	1,080	68	143	85	165	105	174	124	25	10	213
19	372	761	73	145	88	118	100	178	113	24	10	146
20	851	222	111	116	75	94	109	163	109	24	9.8	112
21	781	139	112	97	68	100	101	166	109	22	32	92
22	285	110	85	88	63	145	102	231	109	21	209	84
23	256	98	77	92	60	171	133	169	108	20	41	97
24	157	90	96	102	58	174	120	138	101	19	228	74
25	115	81	95	84	56	143	115	146	90	18	621	62
26	94	74	76	77	53	134	193	322	78	17	263	54
27	81	68	67	80	53	147	219	250	64	17	105	50
28	488	314	62	111	53	132	149	312	59	16	182	45
29	191	343	56	274	52	145	139	204	58	16	204	42
30	116	146	56	451	---	208	190	494	56	15	94	40
31	90	---	53	181	---	161	---	268	---	15	64	---
TOTAL	7,280.5	5,071	2,982	4,725	2,066	4,204	4,234	6,025	4,099	926	2,296.8	4,354
MEAN	235	169	96.2	152	71.2	136	141	194	137	29.9	74.1	145
MAX	1,300	1,080	240	630	121	402	235	494	249	54	621	600
MIN	8.6	42	53	40	52	45	100	121	56	15	9.8	37
AC-FT	14,440	10,060	5,910	9,370	4,100	8,340	8,400	11,950	8,130	1,840	4,560	8,640
CFSM	12.7	9.12	5.19	8.23	3.84	7.32	7.62	10.5	7.37	1.61	4.00	7.83
IN.	14.62	10.18	5.99	9.49	4.15	8.44	8.50	12.10	8.23	1.86	4.61	8.74

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2004, BY WATER YEAR (WY)

MEAN	119	169	138	139	80.6	105	157	209	216	76.4	37.5	53.1
MAX	235	227	234	205	156	192	220	260	351	190	74.1	145
(WY)	(2004)	(2000)	(1999)	(2003)	(2002)	(2003)	(2000)	(2002)	(2002)	(1999)	(2004)	(2004)
MIN	28.5	50.1	63.4	51.5	36.8	65.4	113	158	95.9	25.6	9.78	21.9
(WY)	(2003)	(2001)	(2001)	(2000)	(2001)	(2002)	(1999)	(2003)	(2003)	(2003)	(2003)	(2003)



12207850 CLEARWATER CREEK NEAR WELCOME, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1999 - 2004	
ANNUAL TOTAL	43,960.9		48,263.3			
ANNUAL MEAN	120		132		125	
HIGHEST ANNUAL MEAN					158 2002	
LOWEST ANNUAL MEAN					82.2 2001	
HIGHEST DAILY MEAN	1,300	Oct 17	1,300	Oct 17	1,520	Feb 22, 2002
LOWEST DAILY MEAN	6.7	Sep 6	8.6	Oct 5	6.7	Sep 6, 2003
ANNUAL SEVEN-DAY MINIMUM	7.1	Aug 31	10	Aug 14	7.1	Aug 31, 2003
MAXIMUM PEAK FLOW					2,090	Dec 29, 1998
MAXIMUM PEAK STAGE					6.14	Dec 29, 1998
INSTANTANEOUS LOW FLOW					6.4	Sep 6, 2003
ANNUAL RUNOFF (AC-FT)	87,200		95,730		90,570	
ANNUAL RUNOFF (CFSM)	6.50		7.12		6.75	
ANNUAL RUNOFF (INCHES)	88.25		96.89		91.67	
10 PERCENT EXCEEDS	243		248		278	
50 PERCENT EXCEEDS	80		98		79	
90 PERCENT EXCEEDS	11		22		19	

e Estimated

12208000 MIDDLE FORK NOOKSACK RIVER NEAR DEMING, WA

LOCATION.--Lat 48°46'46", long 122°06'19", in lot 7 or 8, in SW¼, sec.13, T.38 N., R.5 E., Whatcom County, Hydrologic Unit 17110004, on left bank 0.5 mi upstream from Heislars Creek, 6.0 mi southeast of Deming, and at mile 5.6.

DRAINAGE AREA.--73.3 mi<sup>2</sup>. Area at site 1910-11, 1920-21, 1954, 75.4 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1910 to March 1911 (fragmentary gage heights and discharge measurements only), August 1920 to September 1921, February 1934 to September 1935, June to October 1954, October 1964 to November 1968, July 1969 to July 1970, January 1992 to current year.

REVISED RECORDS.--WSP 1932: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 580 ft above NGVD of 1929, from river-profile map. Oct. 11, 1910, to Mar. 14, 1911, Aug. 28, 1920, to Sept. 30, 1921, June 3 to Oct. 31, 1954, nonrecording gages at site 0.8 mi downstream at different datums. Feb. 18 to Apr. 6, 1934, Nov. 16, 1934, to Sept. 30, 1935, nonrecording gage at present site and datum. Prior to January 1992 at same site, different datum.

REMARKS.--Records good, except for discharges above 4,000 ft<sup>3</sup>/s, which are poor. Since February 1962, the City of Bellingham sometimes diverts up to about 100 ft<sup>3</sup>/s for municipal use at dam 1.8 mi upstream. Some regulation. U.S. Geological Survey satellite telemeter at station.

COOPERATION.--Records for the 1992-97 water years were provided by the City of Bellingham and were reviewed by the U.S. Geological Survey.

AVERAGE DISCHARGE.--18 years (water years 1921, 1935, 1965-68, 1993-2004), 507 ft<sup>3</sup>/s, 93.99 in/yr, 367,300 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, not determined, probably occurred Nov. 5, 1934, gage height, 15.0 ft, from floodmarks, present site at different datum; minimum discharge, 30 ft<sup>3</sup>/s, Oct. 3, 1965.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 3,800 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)
Oct 17	0345	*11,800	*7.89	Jan 30	0415	4,490	5.44
Oct 19	1130	4,740	5.56	Aug 22	0330	4,810	5.53
Oct 20	2115	9,200	7.17	Aug 24	2245	6,040	6.06
Oct 28	1330	4,140	5.28	Sep 11	0345	5,530	5.85
Nov 19	0115	9,370	7.22				

Minimum discharge, 170 ft<sup>3</sup>/s, Jan. 2, 3, 4, gage height, 1.73 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	225	397	525	191	661	206	346	736	629	449	300	738
2	218	353	644	177	508	188	347	764	566	475	305	693
3	212	331	1,050	171	431	193	366	611	690	433	293	477
4	214	322	610	172	464	259	416	720	800	382	276	391
5	213	322	1,080	174	389	243	327	604	858	393	261	383
6	205	320	1,630	174	404	210	321	402	1,150	546	271	330
7	437	317	767	212	405	956	375	408	673	513	217	307
8	466	317	544	753	332	1,160	335	522	603	358	234	296
9	353	317	429	771	291	1,460	342	489	699	308	290	768
10	342	425	366	1,240	266	794	405	432	780	292	284	501
11	291	786	322	734	255	440	569	417	555	282	278	2,940
12	1,440	378	378	684	255	335	699	405	480	299	326	1,080
13	1,120	289	366	998	255	305	619	376	1,020	389	344	972
14	361	258	373	1,900	288	374	478	385	803	448	331	1,240
15	284	294	324	2,510	371	346	429	396	542	487	365	2,050
16	2,780	602	498	1,270	429	306	414	441	561	441	374	1,670
17	8,250	1,590	411	711	422	337	372	430	642	463	363	2,040
18	2,550	4,690	304	590	486	553	335	591	595	453	311	1,090
19	2,770	3,970	359	575	451	373	314	583	553	445	308	787
20	5,120	1,210	590	458	357	330	351	533	598	400	298	568
21	4,360	713	506	345	299	339	311	555	645	338	520	438
22	2,080	520	359	290	268	441	298	724	727	381	1,890	461
23	1,590	477	352	360	248	489	399	534	790	440	515	578
24	936	479	537	489	247	639	372	445	788	474	1,370	444
25	712	399	603	390	243	531	334	492	739	446	2,990	395
26	598	362	397	361	222	538	532	1,260	598	367	1,570	351
27	476	318	320	377	228	591	641	1,050	504	363	701	340
28	2,080	1,890	284	604	228	449	420	1,360	499	363	1,040	309
29	992	1,690	238	1,400	225	446	408	749	513	383	1,290	279
30	615	740	218	2,650	---	679	550	1,450	493	373	743	257
31	468	---	210	1,010	---	496	---	942	---	340	540	---
TOTAL	42,758	25,076	15,594	22,741	9,928	15,006	12,425	19,806	20,093	12,524	19,198	23,173
MEAN	1,379	836	503	734	342	484	414	639	670	404	619	772
MAX	8,250	4,690	1,630	2,650	661	1,460	699	1,450	1,150	546	2,990	2,940
MIN	205	258	210	171	222	188	298	376	480	282	217	257
AC-FT	84,810	49,740	30,930	45,110	19,690	29,760	24,640	39,290	39,850	24,840	38,080	45,960
CFSM	18.8	11.4	6.86	10.0	4.67	6.60	5.65	8.72	9.14	5.51	8.45	10.5
IN.	21.70	12.73	7.91	11.54	5.04	7.62	6.31	10.05	10.20	6.36	9.74	11.76

12208000 MIDDLE FORK NOOKSACK RIVER NEAR DEMING, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND—CONTINUED  
 WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
 DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2004, BY WATER YEAR (WY)												
MEAN	532	600	567	582	458	397	439	615	679	481	329	352
MAX (WY)	1,379 (2004)	1,154 (1996)	940 (1999)	965 (1997)	855 (1921)	734 (2003)	739 (1966)	1,039 (1997)	1,202 (1921)	839 (1954)	619 (2004)	796 (1920)
MIN (WY)	156 (2003)	215 (1994)	237 (1993)	271 (1993)	175 (2001)	237 (1992)	127 (1967)	385 (1992)	327 (1996)	311 (1970)	174 (1994)	120 (1965)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1920 - 2004	
ANNUAL TOTAL	216,625		238,322			
ANNUAL MEAN	593		651		507	
HIGHEST ANNUAL MEAN					665 1921	
LOWEST ANNUAL MEAN					362 1994	
HIGHEST DAILY MEAN	8,250	Oct 17	8,250	Oct 17	8,250	Oct 17, 2003
LOWEST DAILY MEAN	177	Mar 8	171	Jan 3	32	Sep 29, 1965
ANNUAL SEVEN-DAY MINIMUM	193	Feb 27	181	Dec 31	36	Sep 27, 1965
ANNUAL RUNOFF (AC-FT)	429,700		472,700		367,300	
ANNUAL RUNOFF (CFSM)	8.10		8.88		6.92	
ANNUAL RUNOFF (INCHES)	109.94		120.95		93.99	
10 PERCENT EXCEEDS	1,010		1,220		962	
50 PERCENT EXCEEDS	403		440		376	
90 PERCENT EXCEEDS	224		260		172	

## 12209000 SOUTH FORK NOOKSACK RIVER NEAR WICKERSHAM, WA

LOCATION.--Lat 48°39'52", long 122°07'56", in lot 2, SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>, sec.26, T.37 N., R.5 E., Whatcom County, 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<sup>2</sup>.

## WATER-DISCHARGE 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.--52 years (water years 1935-77, 1996-2004), 748 ft<sup>3</sup>/s, 98.62 in/yr, 541,600 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 22,400 ft<sup>3</sup>/s, Nov. 23, 1990, gage height, 13.20 ft, from rating curve extended above 11,000 ft<sup>3</sup>/s; minimum discharge, 59 ft<sup>3</sup>/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<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)
Oct 12	2245	6,790	7.42	Nov 19	0230	9,850	8.86
Oct 17	0445	*18,500	*12.81	Aug 24	2245	6,630	7.34
Oct 19	1330	5,470	6.74	Sep 11	0515	5,980	7.01
Oct 20	1215	11,300	9.61				

Minimum discharge, 74 ft<sup>3</sup>/s, Oct. 5, 6, gage height, 1.03 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	80	484	855	364	1,030	381	713	942	762	284	105	427
2	78	425	803	335	843	348	614	939	659	276	101	611
3	77	372	1,270	311	728	362	617	786	687	252	101	449
4	76	330	813	263	768	523	703	859	773	237	102	359
5	75	298	970	284	640	540	665	877	806	222	98	374
6	75	278	1,540	369	613	465	624	636	1,490	261	106	322
7	174	261	984	576	629	1,050	700	599	914	287	122	282
8	151	245	764	1,050	539	1,520	660	637	726	221	107	257
9	367	231	635	1,140	478	1,670	652	625	746	194	98	507
10	265	470	555	1,860	440	1,130	728	573	846	185	93	436
11	296	1,240	499	1,210	417	806	874	538	758	197	90	3,430
12	2,700	595	554	1,030	408	700	977	550	545	183	89	1,260
13	1,950	445	600	1,340	404	596	907	518	983	179	88	1,030
14	619	385	785	2,620	441	638	824	532	888	180	87	1,320
15	411	404	693	3,410	521	613	752	547	661	185	87	1,710
16	4,480	912	636	1,860	571	540	692	560	586	177	86	1,830
17	10,800	2,690	817	1,180	574	616	630	547	594	163	84	3,020
18	2,070	5,870	661	1,030	731	931	559	693	586	162	83	1,750
19	2,710	4,920	597	1,020	757	772	523	763	517	157	82	1,360
20	6,590	1,670	716	876	615	603	583	642	495	152	80	968
21	4,670	1,130	977	722	524	576	536	671	491	143	115	736
22	2,040	855	821	628	470	714	514	908	490	135	1,010	613
23	1,780	769	657	652	431	846	603	720	488	133	269	653
24	1,130	813	668	742	419	1,070	598	609	466	132	1,010	538
25	818	735	1,030	597	416	957	516	600	430	130	2,940	458
26	642	704	916	598	387	932	734	1,370	384	124	1,490	404
27	530	626	716	725	411	974	905	1,280	341	119	701	366
28	2,090	2,140	640	1,170	421	830	645	2,010	313	115	721	338
29	1,160	2,370	558	1,900	420	787	602	1,050	308	112	1,060	310
30	723	1,160	485	2,820	---	1,160	737	1,410	305	111	516	289
31	565	---	442	1,410	---	953	---	1,040	---	109	383	---
TOTAL	50,192	33,827	23,657	34,092	16,046	24,603	20,387	25,031	19,038	5,517	12,104	26,407
MEAN	1,619	1,128	763	1,100	553	794	680	807	635	178	390	880
MAX	10,800	5,870	1,540	3,410	1,030	1,670	977	2,010	1,490	287	2,940	3,430
MIN	75	231	442	263	387	348	514	518	305	109	80	257
AC-FT	99,560	67,100	46,920	67,620	31,830	48,800	40,440	49,650	37,760	10,940	24,010	52,380
CFSM	15.7	10.9	7.41	10.7	5.37	7.71	6.60	7.84	6.16	1.73	3.79	8.55
IN.	18.13	12.22	8.54	12.31	5.80	8.89	7.36	9.04	6.88	1.99	4.37	9.54

12209000 SOUTH FORK NOOKSACK RIVER NEAR WICKERSHAM, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND—CONTINUED  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1934 - 2004, BY WATER YEAR (WY)												
MEAN	637	1,015	1,046	950	786	705	838	1,059	870	443	210	277
MAX	1,806	3,341	2,164	2,092	1,847	1,745	1,456	1,666	1,740	1,075	501	880
(WY)	(1968)	(1991)	(1976)	(1953)	(1951)	(1972)	(1959)	(1936)	(1937)	(1999)	(1954)	(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)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1934 - 2004	
ANNUAL TOTAL	275,159		290,901			
ANNUAL MEAN	754		795		748	
HIGHEST ANNUAL MEAN					1,001 1997	
LOWEST ANNUAL MEAN					488 1944	
HIGHEST DAILY MEAN	10,800	Oct 17	10,800	Oct 17	14,000	Nov 9, 1990
LOWEST DAILY MEAN	75	Oct 5	75	Oct 5	59	Oct 21, 1987
ANNUAL SEVEN-DAY MINIMUM	77	Sep 30	84	Aug 14	60	Oct 19, 1987
ANNUAL RUNOFF (AC-FT)	545,800		577,000		541,600	
ANNUAL RUNOFF (CFSM)	7.32		7.72		7.26	
ANNUAL RUNOFF (INCHES)	99.38		105.06		98.62	
10 PERCENT EXCEEDS	1,540		1,410		1,480	
50 PERCENT EXCEEDS	551		613		562	
90 PERCENT EXCEEDS	99		134		149	

## WATER-QUALITY RECORDS

## PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: July 2001 to current year.

INSTRUMENTATION.--Water-temperature sensor interfaced with a data collection platform for satellite telemetry.

REMARKS.--Records good Oct. 1 to Jan. 2 and Jan. 8 to Sept. 30.

## EXTREMES FOR PERIOD OF RECORD.--

WATER TEMPERATURE: Maximum, 23.7°C, July 24, 2004; minimum, 0.0°C, Jan. 3, 7, 2004.

## EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 23.7°C, July 24; minimum, 0.0°C, Jan. 3, 7.

TEMPERATURE, WATER, DEGREES CELSIUS  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004

DAY	OCTOBER			NOVEMBER			DECEMBER			JANUARY		
	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN	MAX	MIN	MEAN
1	15.2	12.1	13.7	4.7	3.3	4.0	4.8	3.3	4.0	2.6	2.1	2.3
2	14.5	11.8	13.3	4.8	3.7	4.1	6.0	4.8	5.4	2.4	1.5	1.9
3	14.6	12.7	13.6	3.9	2.6	3.2	5.4	3.3	4.1	---	---	---
4	13.5	11.3	12.5	3.1	1.6	2.3	4.7	3.0	3.8	---	---	---
5	13.4	11.9	12.7	2.6	1.0	1.7	5.1	4.7	4.9	---	---	---
6	14.0	12.3	13.1	2.4	0.7	1.4	5.2	4.1	4.7	---	---	---
7	13.6	12.1	12.7	2.7	0.7	1.7	4.6	3.9	4.2	---	---	---
8	12.1	10.4	11.4	4.8	2.7	3.7	4.6	3.7	4.3	2.4	0.3	1.5
9	10.6	9.4	9.9	5.1	3.0	4.0	3.7	2.7	3.2	3.8	2.4	3.3
10	10.6	9.3	9.8	5.4	4.8	5.0	4.1	3.4	3.8	3.8	3.3	3.6
11	9.4	8.8	9.1	5.7	5.1	5.4	4.7	4.0	4.4	4.3	3.2	3.7
12	9.1	8.6	8.8	5.8	4.6	5.1	4.7	4.0	4.5	4.7	3.7	4.2
13	9.7	8.6	9.1	4.6	3.5	4.2	4.5	3.9	4.2	4.8	4.3	4.6
14	9.3	8.3	8.8	5.8	4.0	5.0	4.3	3.8	4.0	4.9	4.1	4.6
15	8.6	7.6	8.0	6.1	5.8	5.9	4.1	3.4	3.9	4.8	4.1	4.4
16	9.6	7.9	8.5	5.9	5.4	5.6	4.7	4.1	4.4	4.5	3.6	4.1
17	10.4	9.6	10.1	5.9	5.5	5.7	4.3	3.7	4.0	5.0	3.9	4.5
18	10.2	9.7	10.0	6.3	5.2	5.7	4.1	3.2	3.6	5.3	4.8	5.1
19	10.2	9.9	10.0	6.2	4.5	5.0	5.4	3.5	4.3	5.5	4.7	5.1
20	11.3	9.7	10.5	4.8	4.4	4.6	5.4	5.1	5.2	4.7	3.3	3.8
21	11.1	10.6	10.8	4.4	2.8	3.6	5.1	4.4	4.8	3.9	2.9	3.5
22	11.1	10.4	10.7	3.3	2.6	2.9	4.4	3.4	3.9	4.8	3.9	4.4
23	10.4	8.3	9.2	4.1	3.3	3.7	5.2	4.0	4.6	4.8	4.4	4.6
24	8.4	7.2	7.9	4.2	3.6	3.9	5.3	4.8	5.2	4.7	3.1	4.0
25	8.3	6.9	7.7	3.8	3.4	3.6	4.8	3.4	3.8	3.4	2.8	3.1
26	9.0	7.2	8.1	4.3	3.7	4.0	3.5	3.0	3.3	3.3	2.9	3.1
27	9.8	8.4	9.1	4.8	3.8	4.3	3.0	2.5	2.7	4.2	3.0	3.5
28	9.5	8.1	9.2	5.0	4.6	4.8	2.5	1.5	1.8	4.7	3.8	4.2
29	8.1	6.4	7.5	5.3	4.6	4.9	1.6	0.2	0.8	4.9	4.0	4.3
30	6.4	4.5	5.5	4.7	3.4	3.8	1.5	0.1	0.8	4.9	2.9	3.5
31	4.5	3.4	3.9	---	---	---	2.5	1.1	1.9	3.9	3.2	3.4
MONTH	15.2	3.4	9.8	6.3	0.7	4.1	6.0	0.1	3.8	---	---	---



## 12209490 SKOOKUM CREEK ABOVE DIVERSION, NEAR WICKERSHAM, WA

LOCATION.--Lat 48°40'18", long 122°08'18", in NE $\frac{1}{4}$ NE $\frac{1}{4}$ , sec.27, T.37 N., R.5 E., Whatcom County, Hydrologic Unit 17110004, on right bank, 200 ft upstream of hatchery diversion, 3.6 mi northeast of Wickersham, and at mile 0.25.

DRAINAGE AREA.--23.0 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 410 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good, except estimated daily discharges, which are fair. No regulation or diversion upstream from station. Records for water years 1992-1998 are available in the files of Devine Tarbell & Associates, Bellingham, Washington.

AVERAGE DISCHARGE.--6 years (water years 1999-2004) 145 ft<sup>3</sup>/s, 85.43 in/yr, 104,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,850 ft<sup>3</sup>/s, Oct. 16, 2003, gage height, 8.55 ft; minimum discharge, 14 ft<sup>3</sup>/s, Oct. 1, 1998.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,850 ft<sup>3</sup>/s, Oct. 16, gage height, 8.55 ft; minimum discharge, 17 ft<sup>3</sup>/s, Oct. 3-6.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	97	147	64	158	58	117	138	127	61	33	100
2	18	87	190	59	136	53	102	134	113	60	32	104
3	18	77	224	53	121	54	111	115	117	57	32	72
4	17	70	146	e45	127	74	126	130	125	54	32	59
5	17	66	245	e50	106	71	113	120	149	51	31	57
6	18	63	472	e70	119	61	108	93	282	69	35	49
7	52	62	179	127	114	189	122	89	152	66	33	44
8	67	61	143	268	94	262	112	94	130	53	30	41
9	57	59	123	282	82	308	111	87	128	48	29	108
10	50	133	108	459	75	165	124	82	159	48	29	72
11	57	195	100	202	71	128	146	81	134	46	28	547
12	598	96	123	211	70	113	155	77	107	43	28	161
13	250	78	116	315	69	100	141	69	167	44	28	140
14	88	71	117	628	78	113	126	69	145	47	28	163
15	71	86	98	674	102	102	111	72	114	47	28	220
16	1,640	196	131	278	111	89	103	71	102	46	28	254
17	2,390	396	129	169	108	98	99	73	105	44	27	470
18	426	1,470	101	152	138	159	87	96	103	44	27	213
19	666	1,080	115	150	122	118	84	95	94	43	26	169
20	1,420	288	181	131	98	97	99	85	93	44	26	132
21	930	177	159	110	83	104	87	86	92	41	50	108
22	418	136	119	98	74	136	85	124	95	39	274	95
23	341	139	107	110	69	146	105	106	101	40	54	113
24	210	138	160	124	70	188	93	91	102	41	429	88
25	150	122	169	98	67	152	85	92	100	40	542	73
26	126	112	126	97	62	155	126	231	86	38	262	65
27	110	104	105	127	70	154	129	201	71	37	130	59
28	369	804	94	173	67	135	95	383	66	36	152	54
29	161	448	80	456	64	154	93	168	64	35	143	51
30	113	186	73	727	---	217	118	237	63	35	92	48
31	100	---	69	231	---	151	---	158	---	34	68	---
TOTAL	10,967	7,097	4,449	6,738	2,725	4,104	3,313	3,747	3,486	1,431	2,786	3,929
MEAN	354	237	144	217	94.0	132	110	121	116	46.2	89.9	131
MAX	2,390	1,470	472	727	158	308	155	383	282	69	542	547
MIN	17	59	69	45	62	53	84	69	63	34	26	41
AC-FT	21,750	14,080	8,820	13,360	5,410	8,140	6,570	7,430	6,910	2,840	5,530	7,790
CFSM	15.4	10.3	6.24	9.45	4.09	5.76	4.80	5.26	5.05	2.01	3.91	5.69
IN.	17.74	11.48	7.20	10.90	4.41	6.64	5.36	6.06	5.64	2.31	4.51	6.35

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2004, BY WATER YEAR (WY)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
MEAN	133	209	182	202	117	136	180	189	171	91.8	69.3	53.7
MAX	354	338	296	375	197	261	333	309	288	201	130	131
(WY)	(2004)	(2000)	(2000)	(2003)	(2002)	(2003)	(2000)	(1999)	(1999)	(1999)	(1999)	(2004)
MIN	31.2	63.9	89.8	83.4	53.4	84.0	97.7	117	92.8	46.2	23.7	27.2
(WY)	(2003)	(2001)	(2001)	(2000)	(2001)	(2001)	(2001)	(2003)	(2003)	(2004)	(2003)	(2003)



## 12209490 SKOOKUM CREEK ABOVE DIVERSION, NEAR WICKERSHAM, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1999 - 2004	
ANNUAL TOTAL	62,102		54,772			
ANNUAL MEAN	170		150		145	
HIGHEST ANNUAL MEAN					175	
LOWEST ANNUAL MEAN					84.9	
HIGHEST DAILY MEAN	2,390	Oct 17	2,390	Oct 17	2,390	Oct 17, 2003
LOWEST DAILY MEAN	17	Sep 3	17	Oct 4	14	Oct 1, 1998
ANNUAL SEVEN-DAY MINIMUM	18	Aug 31	23	Oct 1	18	Aug 31, 2003
MAXIMUM PEAK FLOW					4,190	Mar 13, 2003
MAXIMUM PEAK STAGE					7.62	Mar 13, 2003
INSTANTANEOUS LOW FLOW					14	Oct 1, 1998
ANNUAL RUNOFF (AC-FT)	123,200		108,600		104,800	
ANNUAL RUNOFF (CFSM)	7.40		6.51		6.29	
ANNUAL RUNOFF (INCHES)	100.44		88.59		85.43	
10 PERCENT EXCEEDS	396		256		280	
50 PERCENT EXCEEDS	100		102		99	
90 PERCENT EXCEEDS	23		41		31	

e Estimated

## 12210500 NOOKSACK RIVER AT DEMING, WA

LOCATION.--Lat 48°48'38", long 122°12'13", in lot 12, NE<sup>1</sup>/<sub>4</sub>SE<sup>1</sup>/<sub>4</sub>, sec.6, T.38 N., R.5 E., Whatcom County, Hydrologic Unit 17110004, on left bank 800 ft downstream from South Fork, 1.1 mi southeast of Deming, and at mile 36.6.

DRAINAGE AREA.--584 mi<sup>2</sup>, includes 5 mi<sup>2</sup> in Canada.

PERIOD OF RECORD.--September 1910 to March 1911 (gage heights only), July 1935 to September 1957, October 1957 to September 1964 (discharges above 3,500 ft<sup>3</sup>/s only), October 1964 to current year. Published as "near Deming" 1910-11.

REVISED RECORDS.--WSP 1286: 1951. WSP 1736: 1937(M). WSP 1932: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 204.2 ft above NGVD of 1929. Prior to Dec. 5, 1910, nonrecording gage at site 1.1 mi downstream at different datum. Dec. 5, 1910, to Mar. 31, 1911, nonrecording gage at site 5 mi downstream at different datum. July 20 to Sept. 19, 1935, nonrecording gage at same site and datum.

REMARKS.--Records fair, except estimated daily discharges, which are poor. Slight regulation by powerplant at Excelsior. Since February 1962, City of Bellingham diverts at times up to about 100 ft<sup>3</sup>/s from the Middle Fork for municipal use. Summer flows augmented by glacier melt at source. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--62 years (water years 1936-57, 1965-2004), 3,345 ft<sup>3</sup>/s, 77.82 in/yr, 2,423,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,800 ft<sup>3</sup>/s, Oct. 17, 2003, gage height, 15.05 ft; maximum gage height, 15.89 ft, Dec. 3, 1975; minimum daily discharge, 430 ft<sup>3</sup>/s, Oct. 29, Nov. 9, 1987.

EXTREMES OUTSIDE PERIOD OF RECORD.--Peak of Mar. 15, 1908, reportedly reached a stage of 20 ft, datum then in use. Peak of Feb. 27, 1932, reached a stage of 16.8 ft, from floodmarks, discharge, 49,300 ft<sup>3</sup>/s. Peak of November 1909 reached a stage about equal to that of the 1932 peak.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 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)
Oct 17	0615	*50,800	*15.05	Nov 18	1030	21,200	10.28
Oct 21	0015	42,100	13.84	Nov 19	0515	31,800	12.23

Minimum discharge, 1,290 ft<sup>3</sup>/s, Oct. 3, 6, gage height, 2.93 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,430	3,590	4,180	2,550	4,730	2,030	3,020	3,590	3,920	2,850	1,600	e2,700
2	1,380	3,320	3,770	2,440	4,340	1,950	2,810	3,950	3,590	2,840	1,570	2,900
3	1,350	3,130	4,920	2,320	4,060	1,950	2,730	3,620	3,650	2,700	1,570	2,800
4	1,340	3,020	3,930	2,170	3,910	2,280	2,880	3,670	4,040	2,530	1,510	2,480
5	1,360	2,930	4,120	1,990	3,810	2,330	2,800	3,750	4,380	2,470	1,470	2,340
6	1,350	2,700	5,590	1,950	3,530	2,230	2,720	3,120	5,270	2,690	1,460	2,240
7	2,040	2,580	4,320	1,920	3,420	3,660	2,860	2,920	4,300	2,700	1,560	2,100
8	1,890	2,540	3,900	2,620	3,340	4,980	2,790	3,120	3,730	2,260	1,400	2,000
9	2,320	2,510	3,450	3,220	3,240	5,210	2,730	3,140	3,960	2,030	1,470	2,030
10	1,900	2,580	3,220	4,530	3,070	4,340	2,830	2,980	4,150	1,920	1,510	2,220
11	1,750	4,120	3,050	4,100	2,830	3,470	3,130	2,890	3,870	1,930	1,510	6,350
12	4,480	3,200	2,980	3,670	2,720	3,090	3,570	2,840	3,310	1,880	1,580	6,000
13	7,430	2,920	2,910	3,690	2,570	2,840	3,580	2,760	4,140	2,040	1,660	4,210
14	3,250	2,620	3,000	5,970	2,460	2,820	3,280	2,740	4,240	2,170	1,790	4,730
15	2,470	2,560	2,950	10,800	2,510	2,770	3,050	2,810	3,500	2,300	1,760	5,100
16	9,090	2,790	2,870	8,390	2,620	2,600	2,890	2,900	3,270	2,250	1,750	5,900
17	40,400	6,540	3,070	e5,700	2,720	2,610	2,740	2,820	3,410	2,190	1,720	7,790
18	14,700	14,900	2,980	e4,900	2,860	3,190	2,590	3,240	3,550	2,230	1,600	6,650
19	12,300	20,800	2,840	e4,600	3,010	3,090	2,460	3,610	3,350	2,260	1,590	5,180
20	20,700	8,320	2,880	e4,200	2,720	2,720	2,500	3,510	3,340	2,130	1,580	4,370
21	25,400	5,770	3,120	e3,700	2,520	2,630	2,420	3,590	3,460	1,910	1,650	3,990
22	11,400	4,590	3,100	e3,300	2,380	2,830	2,340	4,010	3,650	1,910	4,300	3,560
23	9,480	4,050	2,960	e3,200	2,290	3,110	2,490	3,650	3,820	2,030	2,230	3,420
24	6,850	4,040	2,860	e3,600	2,240	3,630	2,570	3,240	3,900	2,110	2,340	3,270
25	5,550	3,710	3,090	e3,500	2,220	3,640	2,380	3,160	3,810	2,090	e11,000	3,040
26	4,910	3,500	3,190	e3,200	2,140	3,500	2,700	4,390	3,560	1,890	e7,000	2,740
27	4,440	3,290	3,060	e4,000	2,140	3,530	3,440	4,810	3,110	1,800	e3,700	2,470
28	6,730	6,530	2,970	e4,700	2,120	3,320	2,980	5,860	2,910	1,780	e2,900	2,420
29	5,630	9,190	2,850	6,570	2,110	3,120	2,730	4,360	2,880	1,820	e4,700	2,380
30	4,470	5,270	2,750	10,400	---	3,690	2,940	4,910	2,930	1,810	e3,000	2,310
31	4,040	---	2,640	6,600	---	3,570	---	4,720	---	1,720	e2,500	---
TOTAL	221,830	147,610	103,520	134,500	84,630	96,730	84,950	110,680	111,000	67,240	76,980	109,690
MEAN	7,156	4,920	3,339	4,339	2,918	3,120	2,832	3,570	3,700	2,169	2,483	3,656
MAX	40,400	20,800	5,590	10,800	4,730	5,210	3,580	5,860	5,270	2,850	11,000	7,790
MIN	1,340	2,510	2,640	1,920	2,110	1,950	2,340	2,740	2,880	1,720	1,400	2,000
AC-FT	440,000	292,800	205,300	266,800	167,900	191,900	168,500	219,500	220,200	133,400	152,700	217,600
CFSM	12.3	8.43	5.72	7.43	5.00	5.34	4.85	6.11	6.34	3.71	4.25	6.26
IN.	14.13	9.40	6.59	8.57	5.39	6.16	5.41	7.05	7.07	4.28	4.90	6.99

12210500 NOOKSACK RIVER AT DEMING, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND—CONTINUED  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1935 - 2004, BY WATER YEAR (WY)												
MEAN	2,699	4,021	4,212	3,694	3,328	2,965	3,318	4,399	4,606	3,296	1,987	1,750
MAX	7,237	10,030	9,668	7,767	7,208	7,347	5,323	6,750	7,815	6,180	3,609	3,888
(WY)	(1968)	(1991)	(1976)	(1997)	(1961)	(1972)	(1988)	(1936)	(1937)	(1974)	(1999)	(1978)
MIN	595	672	1,265	957	1,349	1,585	1,584	2,669	2,368	1,652	1,159	941
(WY)	(1988)	(1937)	(1986)	(1937)	(1936)	(1985)	(1975)	(1978)	(1940)	(1940)	(1994)	(1989)

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1935 - 2004	
ANNUAL TOTAL	1,289,040		1,349,360			
ANNUAL MEAN	3,532		3,687		3,345	
HIGHEST ANNUAL MEAN					4,964	
LOWEST ANNUAL MEAN					2,227	
HIGHEST DAILY MEAN	40,400		40,400		41,500	
LOWEST DAILY MEAN	1,320		1,340		430	
ANNUAL SEVEN-DAY MINIMUM	1,390		1,460		441	
ANNUAL RUNOFF (AC-FT)	2,557,000		2,676,000		2,423,000	
ANNUAL RUNOFF (CFSM)	6.05		6.31		5.73	
ANNUAL RUNOFF (INCHES)	82.11		85.95		77.82	
10 PERCENT EXCEEDS	5,570		5,350		5,980	
50 PERCENT EXCEEDS	2,850		3,000		2,710	
90 PERCENT EXCEEDS	1,560		1,900		1,280	

e Estimated

## 12210700 NOOKSACK RIVER AT NORTH CEDARVILLE, WA

LOCATION.--Lat 48°50'31", long 122°17'35", in SW<sup>1</sup>/<sub>4</sub>NE<sup>1</sup>/<sub>4</sub>, sec.28, T.39 N., R.4 E., Whatcom County, Hydrologic Unit 17110004, on left bank at Highway 542 bridge at Nugents Corner, and at mile 30.9.

DRAINAGE AREA.--589 mi<sup>2</sup>, includes 5 mi<sup>2</sup> in Canada.

PERIOD OF RECORD.--September 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is NGVD of 1929.

REMARKS.--Records good, except Jan. 3-14, which are fair. U.S. Geological Survey satellite telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum elevation, 149.61 ft, Oct. 17, 2003; minimum elevation, 138.22 ft, Jan. 6, 2004.

EXTREMES FOR CURRENT YEAR.--Maximum elevation, 149.61 ft, Oct. 17; minimum elevation, 138.22 ft, Jan. 6.

ELEVATION ABOVE NGVD 1929, FEET  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	139.09	140.03	140.66	---	140.95	139.49	140.33	140.61	140.58	140.11	139.51	140.11
2	139.04	139.93	140.42	---	140.61	139.44	140.16	140.86	140.38	140.11	139.48	140.24
3	139.02	139.80	141.06	139.49	140.39	139.44	140.07	140.68	140.43	140.03	139.48	139.97
4	139.00	139.70	140.54	139.30	140.41	139.66	140.19	140.67	140.68	139.93	139.44	139.77
5	139.02	139.62	140.72	139.08	140.24	139.73	140.14	140.72	140.91	139.89	139.41	139.70
6	139.01	139.56	141.43	138.89	140.15	139.67	140.08	140.32	141.41	140.03	139.39	139.59
7	139.53	139.52	140.83	139.53	140.17	140.46	140.17	140.15	140.90	140.09	139.50	139.50
8	139.39	139.49	140.47	140.24	140.02	141.35	140.14	140.27	140.54	139.79	139.35	139.46
9	139.79	139.45	140.24	140.45	139.92	141.48	140.08	140.29	140.68	139.64	139.40	139.92
10	139.47	139.57	140.07	141.05	139.82	141.07	140.15	140.18	140.79	139.58	139.44	139.87
11	139.37	140.57	139.96	140.86	139.75	140.54	140.34	140.12	140.67	139.59	139.45	142.57
12	140.73	140.02	139.99	140.53	139.71	140.29	140.64	140.07	140.32	139.56	139.50	141.26
13	142.12	139.78	139.97	140.89	139.67	140.12	140.67	140.01	140.79	139.67	139.57	140.54
14	140.12	139.66	140.12	141.57	139.71	140.09	140.50	140.00	140.93	139.78	139.60	141.20
15	139.68	139.63	139.97	142.66	139.83	140.07	140.34	140.03	140.48	139.90	139.64	141.43
16	141.86	139.91	139.97	141.79	139.92	139.97	140.20	140.09	140.31	139.87	139.64	141.64
17	147.98	141.64	140.23	140.98	140.01	139.97	140.10	140.02	140.39	139.83	139.62	142.64
18	143.14	143.99	139.95	140.66	140.03	140.34	139.99	140.29	140.50	139.87	139.53	141.58
19	142.59	145.15	139.89	140.55	140.15	140.34	139.91	140.53	140.39	139.89	139.51	141.06
20	144.34	142.12	140.19	140.36	139.97	140.09	139.93	140.48	140.37	139.82	139.51	140.66
21	145.82	141.24	140.33	140.14	139.83	140.01	139.88	140.52	140.45	139.67	139.53	140.35
22	142.72	140.75	140.05	140.00	139.72	140.14	139.80	140.75	140.59	139.65	141.17	140.23
23	142.31	140.49	139.92	140.01	139.65	140.34	139.91	140.58	140.70	139.74	140.04	140.38
24	141.37	140.56	139.99	140.23	139.60	140.65	139.98	140.31	140.77	139.82	139.88	140.17
25	140.87	140.37	140.41	140.06	139.60	140.74	139.84	140.22	140.73	139.83	143.09	140.03
26	140.58	140.25	140.16	140.05	139.55	140.64	140.03	140.90	140.59	139.69	141.60	139.94
27	140.33	140.11	139.97	140.37	139.55	140.64	140.54	141.13	140.29	139.61	140.48	139.86
28	141.41	141.39	139.92	140.79	139.54	140.52	140.29	141.67	140.15	139.61	140.18	139.79
29	141.15	142.61	139.78	141.47	139.54	140.37	140.09	140.86	140.13	139.64	140.84	139.70
30	140.49	141.18	139.67	142.75	---	140.70	140.20	141.11	140.16	139.65	140.26	139.62
31	140.20	---	---	141.55	---	140.70	---	141.06	---	139.59	140.02	---
MEAN	141.02	140.60	140.23	140.56	139.93	140.29	140.16	140.50	140.57	139.79	139.91	140.43
MAX	147.98	145.15	141.43	142.75	140.95	141.48	140.67	141.67	141.41	140.11	143.09	142.64
MIN	139.00	139.45	139.67	138.89	139.54	139.44	139.80	140.00	140.13	139.56	139.35	139.46
WTR YR	2004	MEAN	140.33	MAX	147.98	MIN	138.89					

12210900 ANDERSON CREEK AT SMITH ROAD, NEAR GOSHEN, WA

LOCATION.--Lat 48°49'58", long 122°20'16", in SW¼SE¼, sec.30, T.39 N., R.4 E., Whatcom County, Hydrologic Unit 17110004, on left bank on the downstream side of Smith Road bridge, 1.5 mi south of Goshen, and at mile 3.0.

DRAINAGE AREA.--8.96 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 200 ft above NGVD of 1929, from topographic map.

REMARKS.--Records good except for Oct. 1 to Dec. 21 and Jan. 13 to May 17, which are fair, Dec. 22 to Jan. 12, July 14-28, and Aug. 10 to Sept. 30, which are poor. No known diversions or regulation upstream of station.

AVERAGE DISCHARGE.--6 years (water years 1999-2004) 20.0 ft<sup>3</sup>/s, 30.37 in/yr, 14,510 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 807 ft<sup>3</sup>/s, Nov. 19, 2003, gage height, 11.37 ft; minimum discharge, no flow many days in August and September 2002 and 2003.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 807 ft<sup>3</sup>/s, Nov. 19, gage height, 11.37 ft; minimum discharge, 0.02 ft<sup>3</sup>/s, Oct. 1, Aug. 20.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	0.05	11	42	e22	79	4.4	17	1.4	7.3	0.73	0.06	e1.3
2	0.07	7.9	35	e20	64	4.1	14	1.2	5.6	0.71	0.06	e1.1
3	0.07	7.5	59	e15	44	6.6	13	1.2	4.4	0.76	0.05	0.89
4	0.10	6.5	43	e14	54	12	11	1.8	3.6	0.65	0.05	e0.80
5	0.14	7.0	44	e14	40	17	9.4	1.7	3.9	0.57	0.06	e0.80
6	0.21	5.3	68	e15	34	12	8.5	1.3	8.2	0.85	0.14	e0.60
7	1.1	5.4	41	e16	30	147	7.6	1.2	6.0	0.77	0.53	e0.60
8	1.1	6.8	31	e20	25	120	6.5	1.5	4.9	0.62	0.21	e0.50
9	1.9	5.5	22	e38	23	68	5.7	1.3	4.7	0.62	0.14	e0.70
10	0.62	16	19	e75	19	41	5.1	2.3	4.3	0.60	0.10	0.56
11	0.32	23	16	e70	16	27	4.7	2.3	3.9	0.49	0.08	e2.0
12	3.9	12	21	e66	13	20	4.3	1.5	3.4	0.46	e0.07	e1.3
13	11	9.6	20	65	15	19	4.1	1.3	12	0.41	e0.06	e1.1
14	2.5	7.7	23	59	25	15	3.9	1.2	8.2	e0.37	e0.06	1.4
15	1.5	7.1	19	67	39	12	3.7	1.1	6.0	e0.31	e0.05	e7.0
16	46	51	23	49	41	11	4.3	1.0	4.8	e0.26	e0.04	e10
17	296	86	25	35	39	11	4.0	1.0	3.9	e0.22	e0.04	e30
18	65	404	19	29	42	26	3.4	0.94	3.2	e0.20	e0.04	e21
19	36	499	16	26	40	23	3.2	0.84	2.7	e0.20	0.03	e8.0
20	169	120	27	20	30	17	3.5	0.89	2.3	e0.21	0.02	e6.0
21	291	69	27	17	23	15	2.9	0.90	2.0	e0.20	e1.4	e5.2
22	94	47	e24	16	13	13	2.7	3.2	1.7	e0.18	e4.6	e4.5
23	76	45	e22	45	8.7	11	2.7	2.9	1.6	e0.21	e0.80	e4.0
24	29	58	e22	73	7.6	39	2.4	1.8	1.6	e0.14	e6.0	e3.0
25	17	47	e20	51	7.1	39	2.3	2.1	1.6	e0.11	e30	e2.2
26	12	26	e28	85	7.6	59	2.0	3.1	1.6	e0.09	e7.0	e1.7
27	8.7	22	e26	111	6.4	46	1.9	7.4	1.2	e0.10	e3.0	e1.6
28	31	183	e32	131	5.3	33	1.8	32	1.0	e0.08	e2.4	e1.4
29	18	176	e30	196	4.7	25	1.6	13	0.92	0.08	e2.2	e1.2
30	12	70	e25	239	---	25	1.5	12	0.81	0.07	e1.5	e1.1
31	12	---	e23	89	---	21	---	9.7	---	0.07	1.2	---
TOTAL	1,237.28	2,041.3	892	1,788	795.4	939.1	158.7	115.07	117.33	11.34	61.99	121.55
MEAN	39.9	68.0	28.8	57.7	27.4	30.3	5.29	3.71	3.91	0.37	2.00	4.05
MAX	296	499	68	239	79	147	17	32	12	0.85	30	30
MIN	0.05	5.3	16	14	4.7	4.1	1.5	0.84	0.81	0.07	0.02	0.50
AC-FT	2,450	4,050	1,770	3,550	1,580	1,860	315	228	233	22	123	241
CFSM	4.45	7.59	3.21	6.44	3.06	3.38	0.59	0.41	0.44	0.04	0.22	0.45
IN.	5.14	8.48	3.70	7.42	3.30	3.90	0.66	0.48	0.49	0.05	0.26	0.50

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2004, BY WATER YEAR (WY)

MEAN	10.7	33.6	42.1	45.5	32.3	33.8	19.8	11.8	7.32	1.51	0.83	1.32
MAX	39.9	68.0	70.6	64.1	62.1	53.7	31.0	28.0	16.7	5.03	2.00	4.05
(WY)	(2004)	(2004)	(2002)	(2002)	(1999)	(1999)	(2002)	(2000)	(2000)	(1999)	(2004)	(2004)
MIN	0.72	5.56	19.9	27.4	13.4	19.3	5.29	3.71	1.50	0.37	0.10	0.08
(WY)	(2003)	(2003)	(2003)	(2001)	(2003)	(2003)	(2004)	(2004)	(2003)	(2004)	(2002)	(2003)

## NOOKSACK RIVER BASIN

12210900 ANDERSON CREEK AT SMITH ROAD, NEAR GOSHEN, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1999 - 2004	
ANNUAL TOTAL	7,275.46		8,279.06			
ANNUAL MEAN	19.9		22.6		20.0	
HIGHEST ANNUAL MEAN					25.1	2000
LOWEST ANNUAL MEAN					10.7	2003
HIGHEST DAILY MEAN	499	Nov 19	499	Nov 19	499	Nov 19, 2003
LOWEST DAILY MEAN	0.00	Aug 27	0.02	Aug 20	0.00	Aug 15, 2002
ANNUAL SEVEN-DAY MINIMUM	0.00	Aug 27	0.04	Aug 14	0.00	Aug 15, 2002
MAXIMUM PEAK FLOW					790	Nov 19, 2003
MAXIMUM PEAK STAGE					11.30	Nov 19, 2003
INSTANTANEOUS LOW FLOW					0.00	Aug 27, 2003
ANNUAL RUNOFF (AC-FT)	14,430		16,420		14,510	
ANNUAL RUNOFF (CFSM)	2.22		2.52		2.24	
ANNUAL RUNOFF (INCHES)	30.21		34.37		30.37	
10 PERCENT EXCEEDS	47		55		54	
50 PERCENT EXCEEDS	6.5		6.6		6.7	
90 PERCENT EXCEEDS	0.08		0.21		0.41	

e Estimated

12212050 FISHPTRAP CREEK AT FRONT STREET, AT LYNDEN, WA

LOCATION.--Lat 48°56'20", long 122°28'40", in SW<sup>1</sup>/<sub>4</sub>SW<sup>1</sup>/<sub>4</sub>, sec.19, T.40 N., R.3 E., Whatcom County, Hydrologic Unit 17110004, on right bank on downstream side of Front Street bridge, and at mile 2.9.

DRAINAGE AREA.--37.8 mi<sup>2</sup>.

PERIOD OF RECORD.--October 1998 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 54 ft above NGVD of 1929, from topographic map.

REMARKS.--Records fair, except estimated daily discharges, which are poor. Small diversions for irrigation upstream from station.

AVERAGE DISCHARGE.--6 years (water years 1999-2004) 64.1 ft<sup>3</sup>/s, 23.05 in/yr, 46,450 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 701 ft<sup>3</sup>/s, Dec. 14, 2001, gage height, 7.71 ft, from rating extended above 510 ft<sup>3</sup>/s; minimum daily discharge, 1.6 ft<sup>3</sup>/s, Aug. 20, 2004.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 512 ft<sup>3</sup>/s, Nov. 29, gage height, 6.85 ft; minimum daily discharge, 1.6 ft<sup>3</sup>/s, Aug. 20.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.4	59	170	56	169	58	63	28	31	12	4.5	11
2	3.4	54	e125	53	128	55	57	26	28	12	4.3	9.6
3	3.6	48	e190	41	112	68	53	24	26	12	3.8	8.7
4	3.5	45	e140	40	130	90	50	25	25	12	3.8	7.5
5	3.1	44	e155	40	113	87	47	27	32	13	3.7	6.8
6	5.3	41	e215	41	106	79	48	25	37	15	5.1	6.7
7	6.0	40	e120	43	110	194	46	24	30	15	3.8	6.9
8	7.4	39	e95	52	94	211	42	24	28	13	4.0	7.7
9	6.1	38	e80	102	85	145	39	23	26	13	3.5	6.8
10	5.7	40	72	200	79	115	42	24	26	12	3.1	11
11	6.0	46	67	172	74	95	41	23	26	11	2.8	17
12	11	41	69	141	71	82	40	22	24	10	2.4	22
13	16	39	77	159	68	73	38	22	28	9.6	2.1	17
14	15	38	86	153	74	72	38	21	28	9.5	2.1	14
15	e12	38	76	149	97	73	38	18	25	9.1	2.1	20
16	e100	43	76	121	128	70	38	18	24	8.3	2.0	23
17	e400	52	75	101	147	71	37	17	22	7.9	1.8	36
18	e280	167	67	106	123	102	34	18	21	7.6	1.8	43
19	e215	443	62	110	112	93	32	18	20	7.6	1.7	39
20	250	328	60	99	93	80	31	18	18	7.7	1.6	32
21	457	167	63	88	83	72	31	18	17	7.6	8.0	26
22	378	111	59	84	77	64	30	30	17	7.5	7.3	23
23	320	99	57	102	72	57	36	32	16	7.7	10	21
24	176	157	57	124	70	62	32	25	16	6.6	10	20
25	120	127	56	125	67	69	31	25	16	5.8	13	18
26	95	100	68	125	66	88	29	28	16	5.6	18	17
27	80	82	64	150	67	77	28	36	15	5.7	16	16
28	121	173	76	166	62	67	28	58	14	5.4	12	16
29	105	465	72	235	60	60	27	44	14	5.1	10	15
30	80	332	62	441	---	64	27	39	13	4.9	8.8	14
31	66	---	59	262	---	67	---	37	---	4.6	7.7	---
TOTAL	3,350.5	3,496	2,770	3,881	2,737	2,660	1,153	817	679	283.8	180.8	531.7
MEAN	108	117	89.4	125	94.4	85.8	38.4	26.4	22.6	9.15	5.83	17.7
MAX	457	465	215	441	169	211	63	58	37	15	18	43
MIN	3.1	38	56	40	60	55	27	17	13	4.6	1.6	6.7
AC-FT	6,650	6,930	5,490	7,700	5,430	5,280	2,290	1,620	1,350	563	359	1,050
CFSM	2.86	3.08	2.36	3.31	2.50	2.27	1.02	0.70	0.60	0.24	0.15	0.47
IN.	3.30	3.44	2.73	3.82	2.69	2.62	1.13	0.80	0.67	0.28	0.18	0.52

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1999 - 2004, BY WATER YEAR (WY)

MEAN	36.3	89.2	130	125	102	94.1	69.6	48.4	36.4	16.8	11.0	12.1
MAX	108	117	186	187	179	133	90.6	77.6	76.8	26.9	17.3	21.5
(WY)	(2004)	(2004)	(2000)	(1999)	(1999)	(1999)	(2003)	(2000)	(2000)	(1999)	(2001)	(2000)
MIN	5.78	40.4	67.8	70.0	50.1	64.4	38.4	26.4	22.6	9.15	5.28	3.76
(WY)	(2003)	(2001)	(2001)	(2001)	(2001)	(2001)	(2004)	(2004)	(2003)	(2004)	(2003)	(2003)

## NOOKSACK RIVER BASIN

12212050 FISHTRAP CREEK AT FRONT STREET, AT LYNDEN, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1999 - 2004	
ANNUAL TOTAL	23,266.3		22,539.8			
ANNUAL MEAN	63.7		61.6		64.1	
HIGHEST ANNUAL MEAN					86.4	
LOWEST ANNUAL MEAN					41.5	
HIGHEST DAILY MEAN	465	Nov 29	465	Nov 29	669	Dec 14, 2001
LOWEST DAILY MEAN	2.5	Sep 9	1.6	Aug 20	1.6	Aug 20, 2004
ANNUAL SEVEN-DAY MINIMUM	2.7	Sep 3	1.9	Aug 14	1.9	Aug 14, 2004
MAXIMUM PEAK FLOW					701	
MAXIMUM PEAK STAGE					7.71	
INSTANTANEOUS LOW FLOW					1.3	
ANNUAL RUNOFF (AC-FT)	46,150		44,710		46,450	
ANNUAL RUNOFF (CFSM)	1.69		1.63		1.70	
ANNUAL RUNOFF (INCHES)	22.90		22.18		23.05	
10 PERCENT EXCEEDS	139		140		136	
50 PERCENT EXCEEDS	45		38		44	
90 PERCENT EXCEEDS	4.0		6.1		7.8	

e Estimated



12213100 NOOKSACK RIVER AT FERNDAL, WA

LOCATION.--Lat 48°50'42", long 122°35'17", in NE¼NW¼, sec.29, T.39 N., R.2 E., Whatcom County, Hydrologic Unit 17110004, on right bank 300 ft downstream from Main Street bridge at Ferndale, and at mile 5.8.

DRAINAGE AREA.--786 mi<sup>2</sup>, of which 48.9 mi<sup>2</sup> is in Canada.

PERIOD OF RECORD.--Annual maximum stage only, water years 1918, 1922, 1932, 1935. Annual maximum, water years 1946, 1950-66. October 1966 to current year.

REVISED RECORDS.--WDR WA-83-1: 1971(M), 1976(M), WDR WA-94-1: 1976(M), 1980(M), 1984(M), 1990(M), 1991, 1991(M).

GAGE.--Water-stage recorder. Datum of gage is 4.61 ft above NGVD of 1929. Prior to July 18, 1968, at site 220 ft upstream at datum 4.21 ft higher.

REMARKS.--Records good. City of Bellingham diverts up to about 100 ft<sup>3</sup>/s at times from Middle Fork Nooksack River for municipal use. Cities of Ferndale and Lynden divert about 10 ft<sup>3</sup>/s for municipal use. Numerous small diversions located upstream for irrigation. Chemical analyses October 1961 to September 1970. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE.--38 years (water years 1967-2004), 3,812 ft<sup>3</sup>/s, 65.90 in/yr, 2,762,000 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded discharge, 57,000 ft<sup>3</sup>/s, Nov. 10, 1990, gage height, 23.56 ft; minimum discharge, 463 ft<sup>3</sup>/s, Oct. 26, Nov. 9, 10, 1987.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 16,000 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)
Oct 18	0745	38,500	20.54	Nov 19	2100	29,600	18.78
Oct 21	1930	*39,900	*20.79	Nov 29	0745	16,200	13.92

Minimum discharge, 932 ft<sup>3</sup>/s, Oct. 4, 5, gage height, 3.22 ft.

DISCHARGE, CUBIC FEET PER SECOND  
WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004  
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1,180	3,460	6,410	2,810	6,920	2,340	4,010	3,950	4,270	2,970	1,840	3,130
2	1,110	3,160	5,410	2,680	5,640	2,240	3,590	4,640	3,690	2,920	1,760	3,620
3	1,030	2,880	6,420	2,570	4,880	2,230	3,380	4,470	3,630	2,790	1,740	3,130
4	970	2,630	5,500	e2,450	4,720	2,630	3,480	4,180	4,030	2,600	1,700	2,580
5	997	2,430	5,370	e2,300	4,420	2,870	3,450	4,650	4,570	2,440	1,650	2,330
6	986	2,290	7,260	e2,250	4,040	2,890	3,300	3,840	5,730	2,590	1,570	2,170
7	1,420	2,180	6,200	e2,200	4,040	3,720	3,380	3,350	5,120	2,910	1,790	1,930
8	1,560	2,100	5,160	e2,800	3,700	7,140	3,410	3,440	4,000	2,440	1,600	e1,830
9	2,110	2,040	4,520	e3,600	3,410	6,900	3,270	3,630	4,130	2,070	1,580	e2,400
10	1,660	2,020	4,100	e4,700	3,190	6,540	3,320	3,410	4,330	1,920	1,670	2,900
11	1,530	3,860	3,790	e5,400	3,010	4,910	3,600	3,290	4,400	1,910	1,700	7,720
12	2,280	3,290	3,740	e5,100	2,890	4,220	4,200	3,160	3,540	1,860	1,710	7,510
13	8,200	2,630	3,700	5,570	2,800	3,780	4,380	3,040	3,910	1,950	1,870	4,500
14	3,230	2,360	4,070	6,650	2,810	3,560	4,110	2,980	5,010	2,180	1,930	5,630
15	2,090	2,250	3,790	11,200	3,030	3,570	3,790	3,000	3,970	2,380	2,030	5,920
16	3,550	2,480	3,600	9,770	3,380	3,270	3,500	3,110	3,460	2,430	2,050	7,610
17	22,100	6,810	4,220	6,520	3,710	3,180	3,300	3,040	3,480	2,310	2,030	9,560
18	31,200	13,300	3,670	5,420	3,530	3,690	3,080	3,380	3,730	2,390	1,890	7,810
19	13,500	25,400	3,430	5,100	3,970	4,230	2,890	3,950	3,570	2,420	1,820	6,100
20	15,900	17,500	3,790	4,690	3,520	3,550	2,850	3,950	3,470	2,370	1,810	4,970
21	32,300	9,320	4,350	4,150	3,170	3,290	2,810	3,990	3,570	2,130	1,780	4,040
22	24,900	6,770	3,880	3,760	2,920	3,390	2,660	4,330	3,830	1,980	4,710	3,580
23	13,800	5,600	3,520	3,650	2,750	3,740	2,710	4,490	4,090	2,120	3,520	3,730
24	9,190	5,640	3,480	4,240	2,650	4,130	2,970	3,720	4,290	2,280	2,260	3,390
25	6,600	5,110	4,300	4,060	2,590	4,980	2,730	3,450	4,290	2,360	9,910	3,010
26	5,350	4,710	4,190	3,840	2,500	4,650	2,870	4,190	4,030	2,180	8,650	2,750
27	4,510	4,320	3,650	4,580	2,480	4,580	3,830	5,750	3,470	1,960	5,050	2,520
28	5,910	5,730	3,560	5,390	2,450	4,520	3,710	6,950	3,110	1,960	3,670	2,380
29	7,550	13,900	3,340	7,070	2,410	4,030	3,220	5,320	2,980	1,980	5,160	2,190
30	4,770	8,690	3,060	11,700	---	4,360	3,250	4,880	3,010	2,020	4,050	2,030
31	3,910	---	2,940	9,380	---	4,910	---	5,710	---	1,980	3,320	---
TOTAL	235,393	174,860	134,420	155,600	101,530	124,040	101,050	125,240	118,710	70,800	87,820	122,970
MEAN	7,593	5,829	4,336	5,019	3,501	4,001	3,368	4,040	3,957	2,284	2,833	4,099
MAX	32,300	25,400	7,260	11,700	6,920	7,140	4,380	6,950	5,730	2,970	9,910	9,560
MIN	970	2,020	2,940	2,200	2,410	2,230	2,660	2,980	2,980	1,860	1,570	1,830
AC-FT	466,900	346,800	266,600	308,600	201,400	246,000	200,400	248,400	235,500	140,400	174,200	243,900
CFSM	9.66	7.42	5.52	6.39	4.45	5.09	4.29	5.14	5.03	2.91	3.60	5.22
IN.	11.14	8.28	6.36	7.36	4.81	5.87	4.78	5.93	5.62	3.35	4.16	5.82

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1967 - 2004, BY WATER YEAR (WY)

MEAN	2,727	4,938	5,126	4,793	4,272	3,754	3,700	4,522	4,844	3,469	2,110	1,873
MAX	7,593	13,980	9,992	8,720	8,197	9,339	5,723	6,526	8,285	6,218	4,006	4,099
(WY)	(2004)	(1991)	(1976)	(1984)	(1982)	(1972)	(1988)	(1969)	(1974)	(1999)	(1999)	(2004)
MIN	629	1,276	1,539	1,149	1,719	1,864	1,746	2,998	2,411	1,988	1,338	917
(WY)	(1988)	(1988)	(1986)	(1979)	(2001)	(1985)	(1975)	(1978)	(1992)	(1977)	(1987)	(1989)

## NOOKSACK RIVER BASIN

12213100 NOOKSACK RIVER AT FERNDALE, WA—Continued

SUMMARY STATISTICS	FOR 2003 CALENDAR YEAR		FOR 2004 WATER YEAR		WATER YEARS 1967 - 2004	
ANNUAL TOTAL	1,444,308		1,552,433			
ANNUAL MEAN	3,957		4,242		3,812	
HIGHEST ANNUAL MEAN					5,152	
LOWEST ANNUAL MEAN					2,536	
HIGHEST DAILY MEAN	32,300	Oct 21	32,300	Oct 21	48,200	Nov 11, 1990
LOWEST DAILY MEAN	970	Oct 4	970	Oct 4	466	Nov 9, 1987
ANNUAL SEVEN-DAY MINIMUM	1,020	Sep 22	1,100	Oct 1	483	Oct 23, 1987
ANNUAL RUNOFF (AC-FT)	2,865,000		3,079,000		2,762,000	
ANNUAL RUNOFF (CFSM)	5.03		5.40		4.85	
ANNUAL RUNOFF (INCHES)	68.36		73.47		65.90	
10 PERCENT EXCEEDS	6,690		6,620		6,730	
50 PERCENT EXCEEDS	3,090		3,540		3,100	
90 PERCENT EXCEEDS	1,290		1,970		1,370	

e Estimated