12175500 THUNDER CREEK NEAR NEWHALEM, WA

Puget Sound Basin
Upper Skagit Subbasin

LOCATION.--Lat 48°40′22″, long 121°04′18″ referenced to North American Datum of 1927, in SE ¼ sec.23, T.37 N., R.13 E., Whatcom County, WA, Hydrologic Unit 17110005, (unsurveyed) Ross Lake National Recreation Area, on right bank 0.4 mi upstream from high-water line of Diablo Reservoir, 9.0 mi east of Newhalem, and at mile 3.4.

DRAINAGE AREA.--105 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1930 to current year. Published as "above Colonial Creek, near Marblemount" 1930-31.

REVISED RECORDS.--WSP 1012: 1943. WSP 1286: 1931(M), 1932, 1933(M), 1935(M), 1938-39(M), 1941-42(M), 1944-46(M), 1950(M), 1952 (annual runoff in acre-ft). WSP 1932: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 1,220 ft above NGVD of 1929, from river-profile map.

REMARKS.--Records fair, except for discharges above 3,000 ft^3/s and estimated discharges, which are poor. No regulation or diversion upstream from station. Large diurnal fluctuations caused by snowmelt during summer months. U.S. Geological Survey satellite telemeter at station.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--76 years (water years 1931-2006), 618 ft^3/s, 80.03 in/yr, 448,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft^3/s, Oct. 20, 2003, gage height, 15.90 ft, from rating curve extended above 3,500 ft^3/s and slope-area measurement at gage height of 15.90 ft; minimum discharge not determined, probably less than 50 ft^3/s during period of ice effect or no gage-height record in February 1936.

EXTREMES OUTSIDE PERIOD OF RECORD.--Records for floods, prior to establishment of station, are given in WSP 1527.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 2,400 ft^3/s and (or) maximum (*):

Date	Time	Discharge (ft^3/s)	Gage height (ft)
Dec 24	1945	2,650	8.59
May 18	0015	*3,280	8.93

Minimum discharge, 128 ft^3/s, Mar 20-22, gage height, 4.34 ft.

12175500 THUNDER CREEK NEAR NEWHALEM, WA—Continued

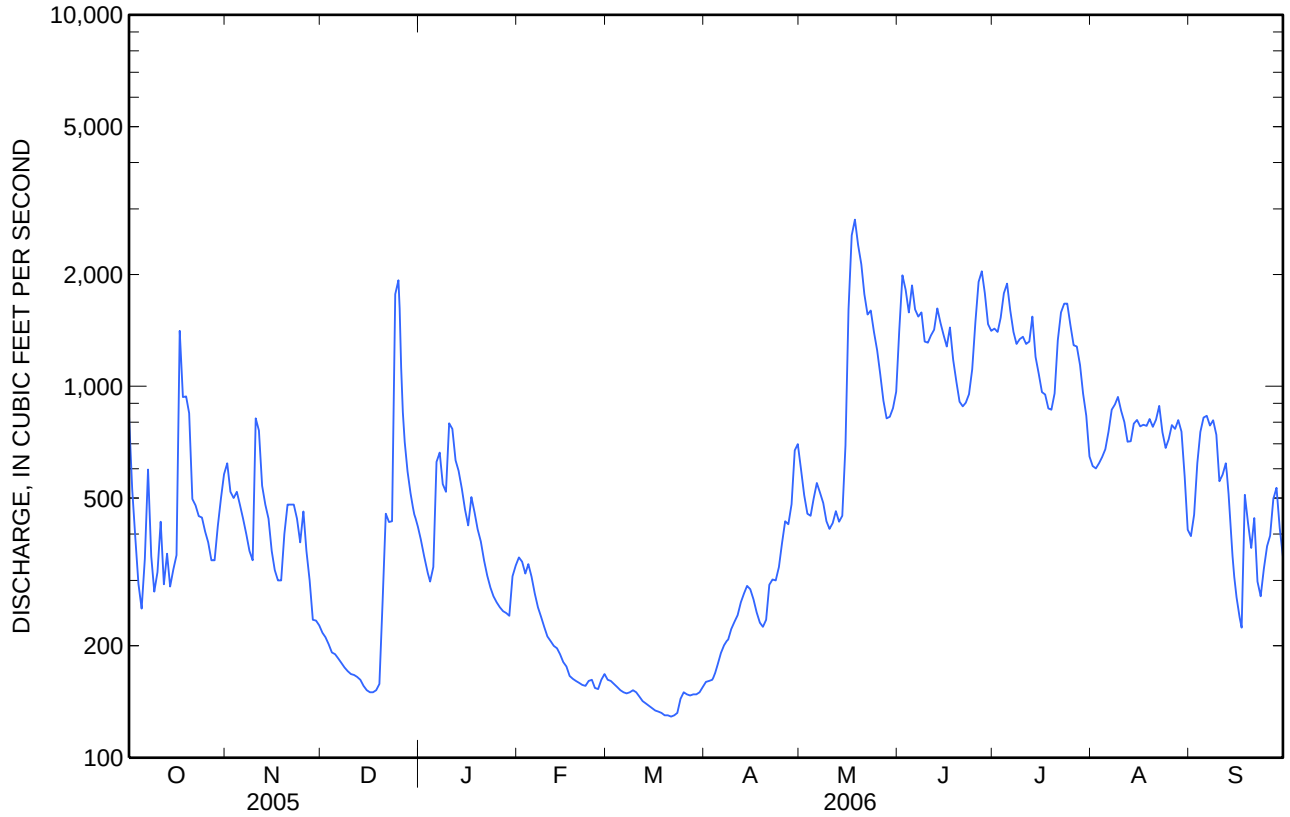
DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2005 TO SEPTEMBER 2006
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	836	e620	217	388	346	162	160	598	1,410	1,430	610	395
2	528	e520	211	353	337	161	161	509	1,990	1,400	601	451
3	388	e500	202	322	313	158	162	454	1,820	1,530	621	621
4	294	e520	192	298	332	155	170	448	1,580	1,780	645	753
5	252	e480	190	326	307	152	182	498	1,870	1,890	677	824
6	343	e440	185	626	277	150	194	549	1,610	e1,600	755	833
7	597	e400	180	663	254	149	203	517	1,540	e1,400	865	784
8	349	e360	175	545	239	150	208	485	1,580	e1,300	894	810
9	280	e340	171	520	225	152	222	433	1,320	e1,340	936	740
10	316	e820	168	795	212	150	232	413	1,310	e1,360	859	555
11	432	e760	167	768	206	146	242	428	1,370	e1,300	801	578
12	293	e540	165	632	200	142	262	461	1,420	e1,320	709	620
13	354	e480	162	592	197	140	277	432	1,620	e1,540	711	488
14	289	e440	156	531	190	138	290	448	1,480	e1,200	793	366
15	321	e360	152	466	181	136	284	693	1,370	1,080	812	287
16	351	e320	150	422	176	134	267	1,610	1,280	964	780	250
17	1,410	e300	150	503	166	133	246	2,550	1,440	950	788	224
18	935	e300	e152	457	163	132	231	2,810	1,180	872	782	510
19	939	e400	e158	412	161	130	225	2,400	1,030	865	816	428
20	846	e480	263	382	159	130	235	2,130	909	957	778	367
21	497	e480	454	340	157	129	292	1,770	883	1,330	813	442
22	478	e480	431	309	156	130	302	1,560	903	1,580	886	298
23	447	e440	433	287	161	132	300	1,600	952	1,670	752	272
24	443	e380	1,770	272	162	144	326	1,400	1,110	1,670	682	323
25	406	e460	1,930	262	154	150	377	1,250	1,490	1,460	720	371
26	e380	e360	1,010	254	153	148	433	1,080	1,910	1,290	786	396
27	e340	e300	717	248	162	147	425	915	2,040	1,280	768	497
28	e340	e235	575	245	168	148	481	820	1,780	1,140	811	533
29	e420	234	504	241	---	148	672	828	1,470	956	755	415
30	e500	227	452	308	---	150	699	873	1,410	833	571	348
31	e580	---	423	329	---	155	---	967	---	647	411	---
Total	15,184	12,976	12,265	13,096	5,914	4,481	8,760	31,929	43,077	39,934	23,188	14,779
Mean	490	433	396	422	211	145	292	1,030	1,436	1,288	748	493
Max	1,410	820	1,930	795	346	162	699	2,810	2,040	1,890	936	833
Min	252	227	150	241	153	129	160	413	883	647	411	224
Ac-ft	30,120	25,740	24,330	25,980	11,730	8,890	17,380	63,330	85,440	79,210	45,990	29,310
Cfsm	4.66	4.12	3.77	4.02	2.01	1.38	2.78	9.81	13.7	12.3	7.12	4.69
In.	5.38	4.60	4.35	4.64	2.10	1.59	3.10	11.31	15.26	14.15	8.22	5.24

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1931 - 2006, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	452	403	315	268	233	218	382	883	1,314	1,319	989	619
Max	1,564	1,652	1,023	842	683	663	1,057	1,601	2,072	1,935	1,502	906
(WY)	(2004)	(1996)	(1981)	(1984)	(1991)	(1972)	(1934)	(1993)	(1948)	(1975)	(1999)	(1997)
Min	192	110	95.2	78.4	57.3	91.1	172	432	706	784	704	367
(WY)	(2003)	(1936)	(1931)	(1979)	(1936)	(1956)	(1975)	(1977)	(2005)	(1993)	(1993)	(1985)

12175500 THUNDER CREEK NEAR NEWHALEM, WA—Continued

SUMMARY STATISTICS

	Calendar Year 2005		Water Year 2006		Water Years 1931 - 2006	
Annual total	208,002		225,583			
Annual mean	570		618		618	
Highest annual mean					863	1934
Lowest annual mean					452	1944
Highest daily mean	3,640	Jan 18	2,810	May 18	9,030	Oct 21, 2003
Lowest daily mean	147	Jan 15	129	Mar 21	50	Feb 7, 1936
Annual seven-day minimum	154	Dec 13	131	Mar 17	52	Feb 15, 1936
Annual runoff (ac-ft)	412,600		447,400		448,100	
Annual runoff (cfsm)	5.43		5.89		5.89	
Annual runoff (inches)	73.69		79.92		80.03	
10 percent exceeds	1,050		1,410		1,360	
50 percent exceeds	440		442		421	
90 percent exceeds	189		157		136