12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA

Puget Sound Basin
Upper Skagit Subbasin

LOCATION.--Lat 48°22′08″, long 121°03′32″ referenced to North American Datum of 1927, Skagit County, WA, Hydrologic Unit 17110005, on right bank of Middle Tarn outlet near the toe of the South Cascade Glacier.

DRAINAGE AREA.--1.72 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 1993 to September 2002 published in USGS WRIR 94-4139, 95-462,96-4174, 97-4143, 98-4090, 99-4049, 02-04165, and USGS SIR 2004-5089. October 2002 to current year (fragmentary).

GAGE.--Water-stage recorder. Elevation of the gage is 5345 ft. NGVD '29, from topo map.

REMARKS.--No regulation or diversion.

(WY 2003) Records fair.

(WY 2004) Records fair except those above 200 ft^3/s, which are poor.

(WY 2005) Records fair except those above 200 ft^3/s, which are poor.

(WY 2006) Records fair.

(WY 2007) Records fair.

(WY 2008) Records fair except for discharges that were likely ice affected, Nov. 20 to Jan. 24, Apr. 29 to May 14, which are poor.

(WY 2009) Records fair except for estimated daily discharge, Jan. 7 to Apr. 21, which are poor.

(WY 2010) Records fair.

(WY 2011) Records fair except for period of possible ice affect, Nov. 16 to May 14, which is poor.

(WY 2012) Records fair except for period of possible ice affect, Oct. 24 to May 24, which is poor.

EXTREMES FOR PERIOD OF RECORD.--(Beginning October 2002) Maximum discharge 550 ft^3/s, Oct. 20, 2003, from rating curve extended above 100 ft^3/s, gage height, 4.83 ft.

EXTREMES FOR CURRENT YEAR.--

(WY 2003) Maximum discharge, 100 ft^3/s, Sept. 11, gage height, 2.08 ft; minimum discharge recorded, 1.8 ft^3/s, Nov. 3, but may have been less during period of ice effect Dec. 5 to June 8.

(WY 2004) Maximum discharge, 550 ft^3/s, from rating curve extended above 100 ft^3/s, Oct. 20, gage height, 4.83 ft; minimum discharge, 1.1 ft^3/s, Nov. 16, but may have been less during period of ice effect Dec. 1 to June 2.

(WY 2005) Maximum discharge, 372 ft^3/s, Sept. 29, gage height, 4.00 ft; minimum discharge recorded, 5.2 ft^3/s, Sept. 23, 24, but may have been less during period of ice effect Dec. 1 to Apr. 30.

(WY 2006) Maximum discharge, 167 ft^3/s, Oct. 17, gage height, 2.70 ft; minimum discharge recorded, 1.7 ft^3/s, Nov. 3, but may have been less during period of ice effect Nov. 16 to Jun. 16.

(WY 2007) Maximum discharge, 75 ft^3/s, Aug. 21, gage height, 1.79 ft; minimum discharge recorded, 3.4 ft^3/s, Oct. 18, but may have been less during period of lost gage height record Oct. 21 to July 31.

(WY 2008) Maximum discharge, 142 ft^3/s, May 17, gage height, 2.48 ft; minimum discharge recorded, 2.7 ft^3/s, Nov. 19, but may have been less during period of ice effect Nov. 20 to May 14.

(WY 2009) Maximum discharge, 157 ft^3/s, Aug. 11, gage height, 2.61 ft; minimum discharge recorded, 3.4 ft^3/s, May 17, but may have been less during period of ice effect Nov. 21 to May 16.

(WY 2010) Maximum discharge, 160 ft^3/s, Sept. 28, gage height, 2.64 ft; minimum discharge recorded, 4.6 ft^3/s, Oct. 11, 12, but may have been less during period of ice effect Oct. 31 to Nov. 7, May 15-22, 27-31 or period of no gage-height record Nov. 8 to May 14, 23-26.

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

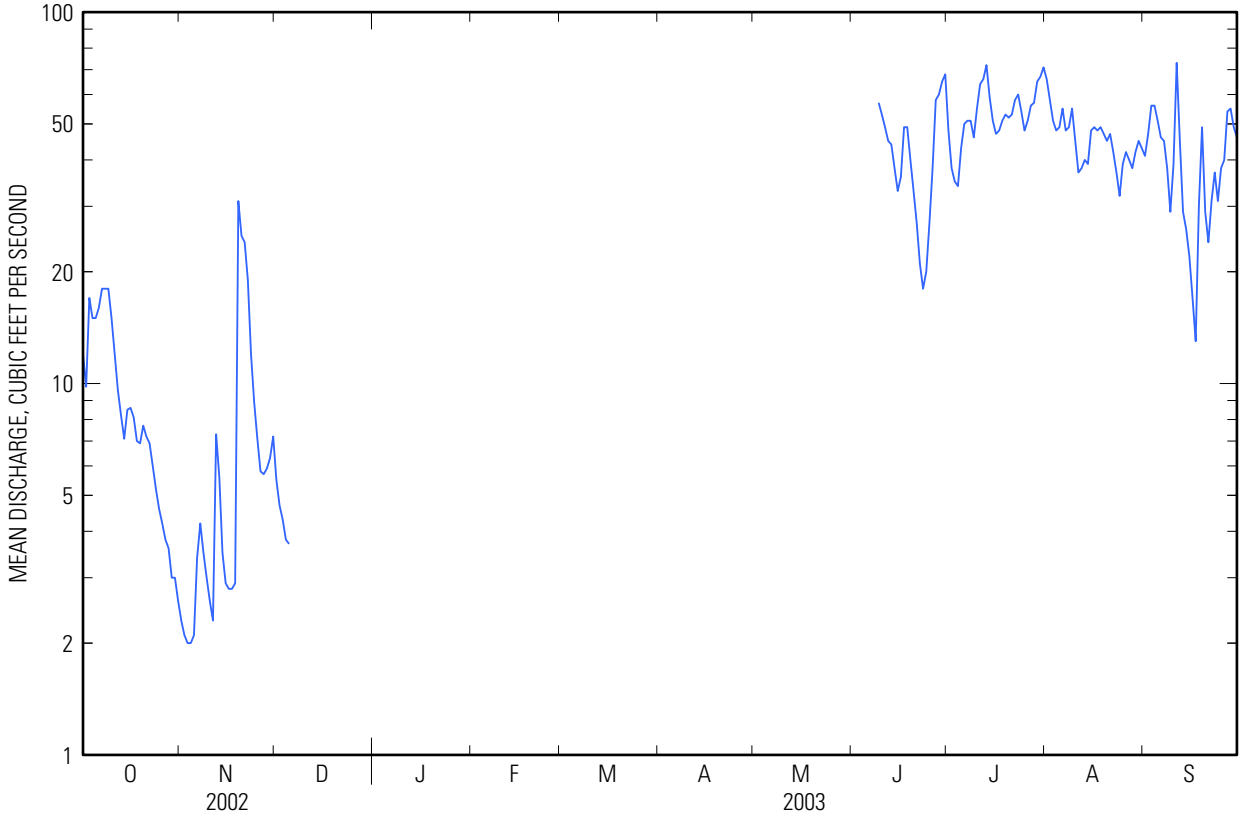
(WY 2011) Maximum discharge, 233 ft^3/s, Oct. 10, gage height, 3.18 ft; minimum discharge recorded, 5.8 ft^3/s, Oct. 17, but may have been less during period of ice effect Nov. 16 to May 14 or period of unreliable gage height record, Oct. 17-20, Oct. 23 to Nov. 1, Nov. 9-14.

(WY 2012) Maximum discharge, 128 ft^3/s, July 20, gage height 2.36 ft; minimum discharge recorded, 6.4 ft^3/s, Oct. 16-18, but may have been less during period of ice effect Oct. 24 to May 20.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	12	2.3	5.5	---	---	---	---	---	---	48	66	41
2	9.8	2.1	4.7	---	---	---	---	---	---	38	58	47
3	17	2.0	4.3	---	---	---	---	---	---	35	51	56
4	15	2.0	3.8	---	---	---	---	---	---	34	48	56
5	15	2.1	3.7	---	---	---	---	---	---	43	49	51
6	16	3.4	---	---	---	---	---	---	---	50	55	46
7	18	4.2	---	---	---	---	---	---	---	51	48	45
8	18	3.5	---	---	---	---	---	---	---	51	49	38
9	18	3.0	---	---	---	---	---	---	57	46	55	29
10	15	2.6	---	---	---	---	---	---	53	55	45	39
11	12	2.3	---	---	---	---	---	---	49	64	37	73
12	9.6	7.3	---	---	---	---	---	---	45	66	38	45
13	8.2	5.6	---	---	---	---	---	---	44	72	40	29
14	7.1	3.5	---	---	---	---	---	---	38	59	39	26
15	8.5	2.9	---	---	---	---	---	---	33	51	48	22
16	8.6	2.8	---	---	---	---	---	---	36	47	49	17
17	8.1	2.8	---	---	---	---	---	---	49	48	48	13
18	7.0	2.9	---	---	---	---	---	---	49	51	49	30
19	6.9	31	---	---	---	---	---	---	40	53	47	49
20	7.7	25	---	---	---	---	---	---	33	52	45	29
21	7.2	24	---	---	---	---	---	---	27	53	47	24
22	6.9	19	---	---	---	---	---	---	21	58	42	31
23	6.0	12	---	---	---	---	---	---	18	60	37	37
24	5.2	8.9	---	---	---	---	---	---	20	54	32	31
25	4.6	7.1	---	---	---	---	---	---	27	48	39	38
26	4.2	5.8	---	---	---	---	---	---	38	51	42	40
27	3.8	5.7	---	---	---	---	---	---	58	56	40	54
28	3.6	5.9	---	---	---	---	---	---	60	57	38	55
29	3.0	6.3	---	---	---	---	---	---	65	65	42	49
30	3.0	7.2	---	---	---	---	---	---	68	67	45	46
31	2.6	---	---	---	---	---	---	---	---	71	43	---
Total	287.6	215.2	---	---	---	---	---	---	---	1,654	1,411	1,186
Mean	9.28	7.17	---	---	---	---	---	---	---	53.4	45.5	39.5
Max	18	31	---	---	---	---	---	---	---	72	66	73
Min	2.6	2.0	---	---	---	---	---	---	---	34	32	13
Med	8.1	3.8	---	---	---	---	---	---	---	52	45	39
Ac-ft	570	427	---	---	---	---	---	---	---	3,280	2,800	2,350
Cfsm	5.39	4.17	---	---	---	---	---	---	---	31.0	26.5	23.0

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

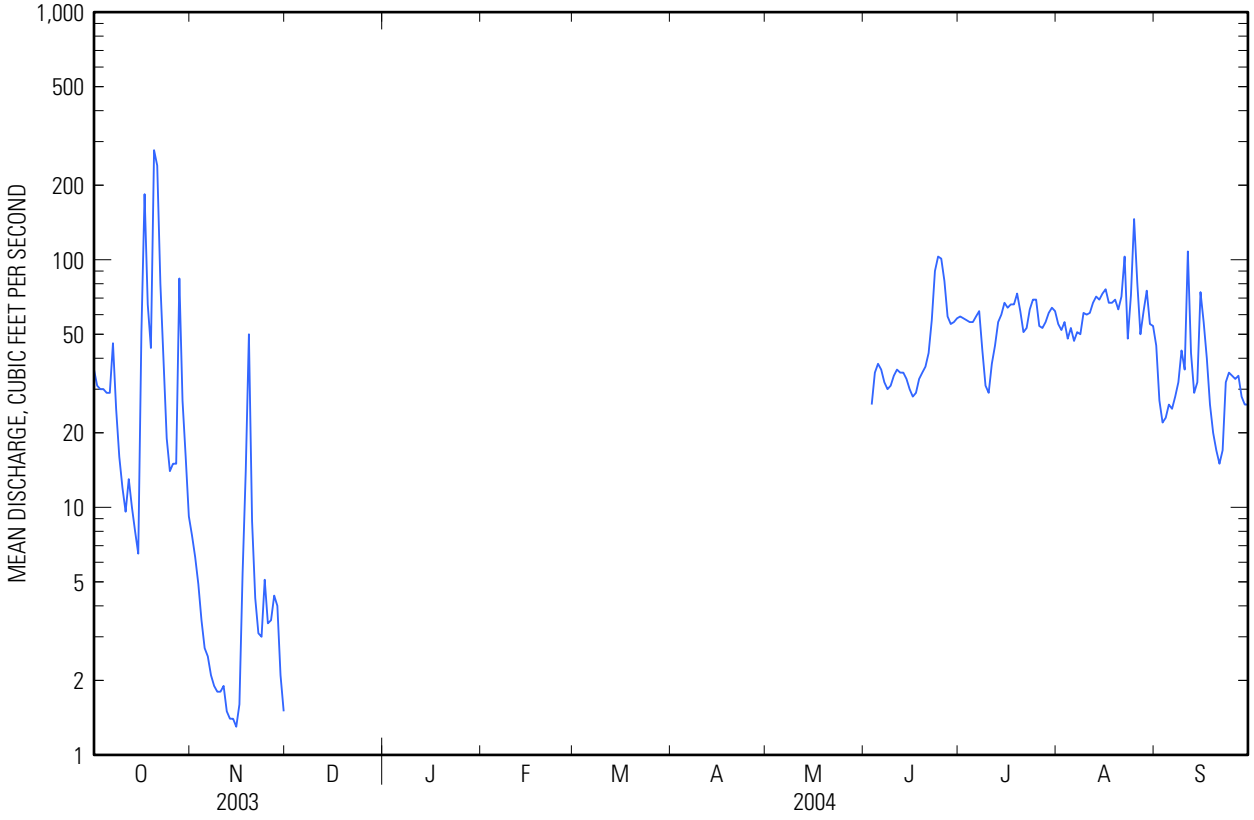


12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

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	36	7.7	---	---	---	---	---	---	---	59	55	45
2	31	6.3	---	---	---	---	---	---	---	58	52	27
3	30	4.9	---	---	---	---	---	---	26	57	56	22
4	30	3.5	---	---	---	---	---	---	35	56	48	23
5	29	2.7	---	---	---	---	---	---	38	56	53	26
6	29	2.5	---	---	---	---	---	---	36	59	47	25
7	46	2.1	---	---	---	---	---	---	32	62	51	28
8	25	1.9	---	---	---	---	---	---	30	43	50	32
9	16	1.8	---	---	---	---	---	---	31	31	61	43
10	12	1.8	---	---	---	---	---	---	34	29	60	36
11	9.6	1.9	---	---	---	---	---	---	36	38	61	108
12	13	1.5	---	---	---	---	---	---	35	45	67	42
13	10	1.4	---	---	---	---	---	---	35	56	71	29
14	8.0	1.4	---	---	---	---	---	---	33	60	69	32
15	6.5	1.3	---	---	---	---	---	---	30	67	73	74
16	51	1.6	---	---	---	---	---	---	28	64	76	56
17	184	5.4	---	---	---	---	---	---	29	66	67	40
18	66	14	---	---	---	---	---	---	33	66	67	26
19	44	50	---	---	---	---	---	---	35	73	69	20
20	277	8.8	---	---	---	---	---	---	37	62	63	17
21	240	4.3	---	---	---	---	---	---	42	51	71	15
22	80	3.1	---	---	---	---	---	---	57	53	103	17
23	39	3.0	---	---	---	---	---	---	90	63	48	32
24	19	5.1	---	---	---	---	---	---	103	69	72	35
25	14	3.4	---	---	---	---	---	---	101	69	146	34
26	15	3.5	---	---	---	---	---	---	82	54	81	33
27	15	4.4	---	---	---	---	---	---	59	53	50	34
28	84	4.0	---	---	---	---	---	---	55	56	62	28
29	27	2.1	---	---	---	---	---	---	56	61	75	26
30	16	1.5	---	---	---	---	---	---	58	64	55	26
31	9.2	---	---	---	---	---	---	---	---	62	54	---
Total	1,511.3	156.9	---	---	---	---	---	---	---	1,762	2,033	1,031
Mean	48.8	5.23	---	---	---	---	---	---	---	56.8	65.6	34.4
Max	277	50	---	---	---	---	---	---	---	73	146	108
Min	6.5	1.3	---	---	---	---	---	---	---	29	47	15
Med	29	3.0	---	---	---	---	---	---	---	59	62	30
Ac-ft	3,000	311	---	---	---	---	---	---	---	3,490	4,030	2,040
Cfsm	28.3	3.04	---	---	---	---	---	---	---	33.0	38.1	20.0

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

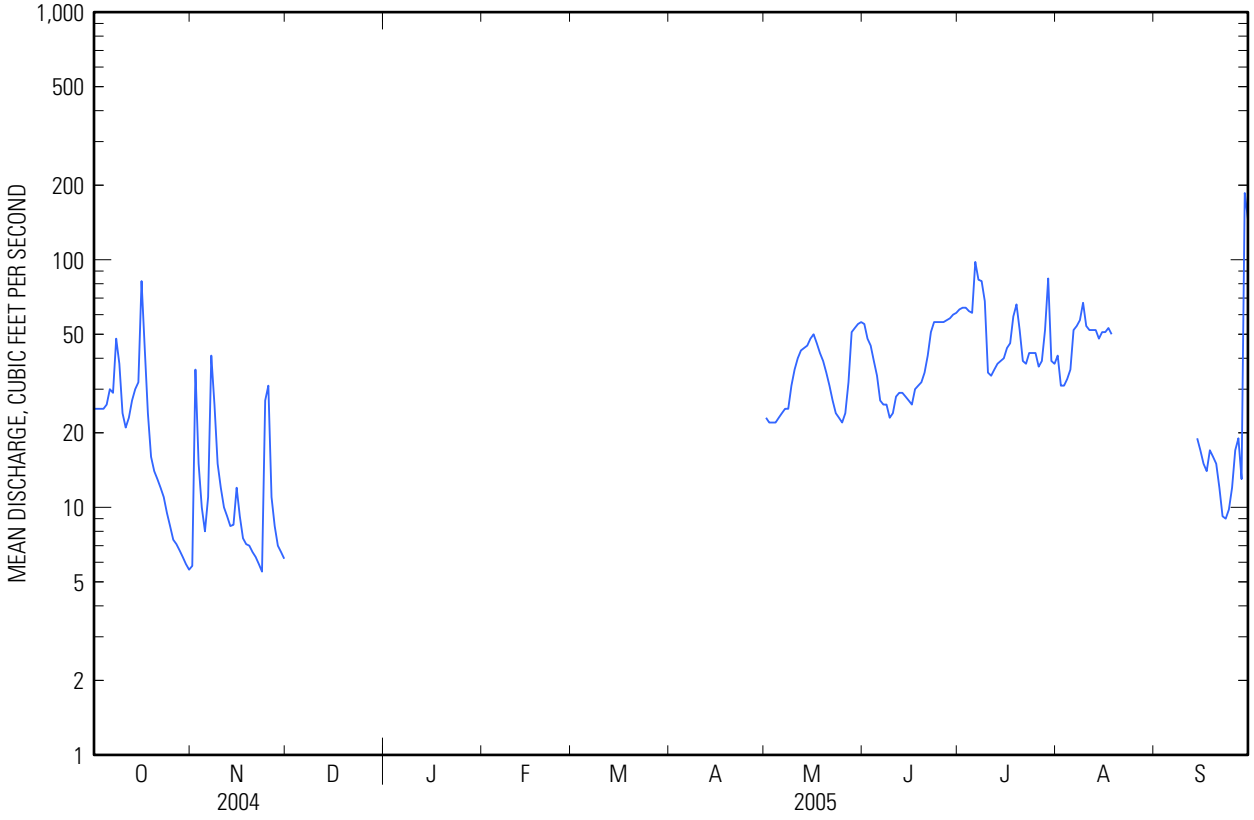


12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	25	5.8	---	---	---	---	---	23	55	63	41	---
2	25	36	---	---	---	---	---	22	48	64	31	---
3	25	15	---	---	---	---	---	22	45	64	31	---
4	25	10	---	---	---	---	---	22	39	62	33	---
5	26	8.0	---	---	---	---	---	23	34	61	36	---
6	30	11	---	---	---	---	---	24	27	98	52	---
7	29	41	---	---	---	---	---	25	26	83	54	---
8	48	26	---	---	---	---	---	25	26	82	57	---
9	38	15	---	---	---	---	---	31	23	68	67	---
10	24	12	---	---	---	---	---	36	24	35	54	---
11	21	10	---	---	---	---	---	40	28	34	52	---
12	23	9.2	---	---	---	---	---	43	29	36	52	---
13	27	8.4	---	---	---	---	---	44	29	38	52	---
14	30	8.5	---	---	---	---	---	45	28	39	48	19
15	32	12	---	---	---	---	---	48	27	40	51	17
16	82	9.2	---	---	---	---	---	50	26	44	51	15
17	44	7.5	---	---	---	---	---	46	30	46	53	14
18	24	7.1	---	---	---	---	---	42	31	59	50	17
19	16	7.0	---	---	---	---	---	39	32	66	---	16
20	14	6.6	---	---	---	---	---	35	35	52	---	15
21	13	6.3	---	---	---	---	---	31	41	39	---	12
22	12	5.9	---	---	---	---	---	27	51	38	---	9.2
23	11	5.5	---	---	---	---	---	24	56	42	---	9.0
24	9.5	27	---	---	---	---	---	23	56	42	---	9.8
25	8.4	31	---	---	---	---	---	22	56	42	---	12
26	7.4	11	---	---	---	---	---	24	56	37	---	17
27	7.1	8.4	---	---	---	---	---	32	57	39	---	19
28	6.7	7.0	---	---	---	---	---	51	58	52	---	13
29	6.3	6.6	---	---	---	---	---	53	60	84	---	186
30	5.9	6.2	---	---	---	---	---	55	61	39	---	146
31	5.6	---	---	---	---	---	---	56	---	38	---	---
Total	700.9	380.2	---	---	---	---	---	1,083	1,194	1,626	---	---
Mean	22.6	12.7	---	---	---	---	---	34.9	39.8	52.5	---	---
Max	82	41	---	---	---	---	---	56	61	98	---	---
Min	5.6	5.5	---	---	---	---	---	22	23	34	---	---
Med	24	8.9	---	---	---	---	---	32	34	44	---	---
Ac-ft	1,390	754	---	---	---	---	---	2,150	2,370	3,230	---	---
Cfsm	13.1	7.37	---	---	---	---	---	20.3	23.1	30.5	---	---

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

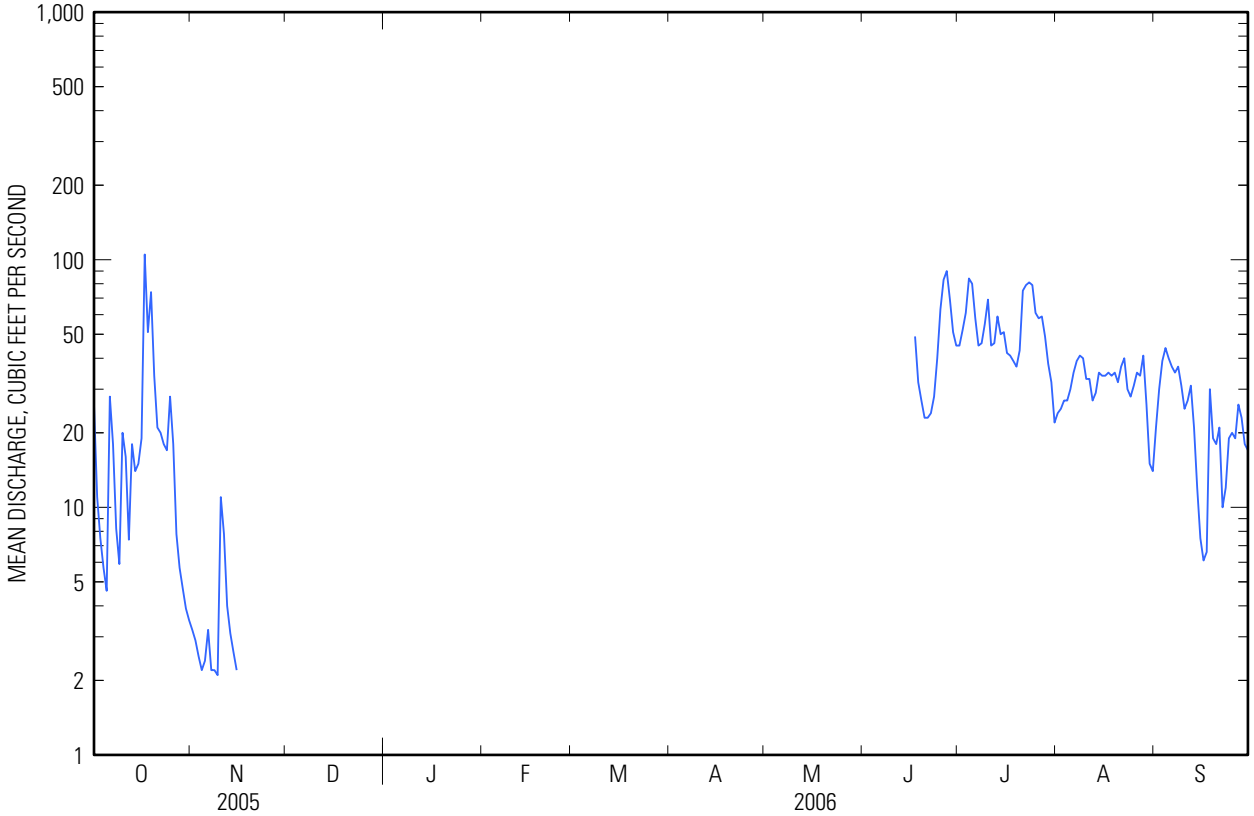


12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

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

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	26	3.2	---	---	---	---	---	---	---	45	24	21
2	11	2.9	---	---	---	---	---	---	---	52	25	30
3	7.5	2.5	---	---	---	---	---	---	---	61	27	39
4	5.7	2.2	---	---	---	---	---	---	---	84	27	44
5	4.6	2.4	---	---	---	---	---	---	---	80	30	40
6	28	3.2	---	---	---	---	---	---	---	58	35	37
7	18	2.2	---	---	---	---	---	---	---	45	39	35
8	8.2	2.2	---	---	---	---	---	---	---	46	41	37
9	5.9	2.1	---	---	---	---	---	---	---	55	40	31
10	20	11	---	---	---	---	---	---	---	69	33	25
11	16	7.8	---	---	---	---	---	---	---	45	33	27
12	7.4	4.0	---	---	---	---	---	---	---	46	27	31
13	18	3.1	---	---	---	---	---	---	---	59	29	21
14	14	2.6	---	---	---	---	---	---	---	50	35	12
15	15	2.2	---	---	---	---	---	---	---	51	34	7.5
16	19	---	---	---	---	---	---	---	---	42	34	6.1
17	105	---	---	---	---	---	---	---	49	41	35	6.6
18	51	---	---	---	---	---	---	---	32	39	34	30
19	74	---	---	---	---	---	---	---	27	37	35	19
20	34	---	---	---	---	---	---	---	23	43	32	18
21	21	---	---	---	---	---	---	---	23	75	37	21
22	20	---	---	---	---	---	---	---	24	79	40	10
23	18	---	---	---	---	---	---	---	28	81	30	12
24	17	---	---	---	---	---	---	---	40	79	28	19
25	28	---	---	---	---	---	---	---	63	61	31	20
26	18	---	---	---	---	---	---	---	83	58	35	19
27	7.8	---	---	---	---	---	---	---	90	59	34	26
28	5.7	---	---	---	---	---	---	---	69	49	41	23
29	4.7	---	---	---	---	---	---	---	51	38	26	18
30	3.9	---	---	---	---	---	---	---	45	32	15	17
31	3.5	---	---	---	---	---	---	---	---	22	14	---
Total	635.9	---	---	---	---	---	---	---	---	1,681	980	702.2
Mean	20.5	---	---	---	---	---	---	---	---	54.2	31.6	23.4
Max	105	---	---	---	---	---	---	---	---	84	41	44
Min	3.5	---	---	---	---	---	---	---	---	22	14	6.1
Med	17	---	---	---	---	---	---	---	---	51	33	21
Ac-ft	1,260	---	---	---	---	---	---	---	---	3,330	1,940	1,390
Cfsm	11.9	---	---	---	---	---	---	---	---	31.5	18.4	13.6

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

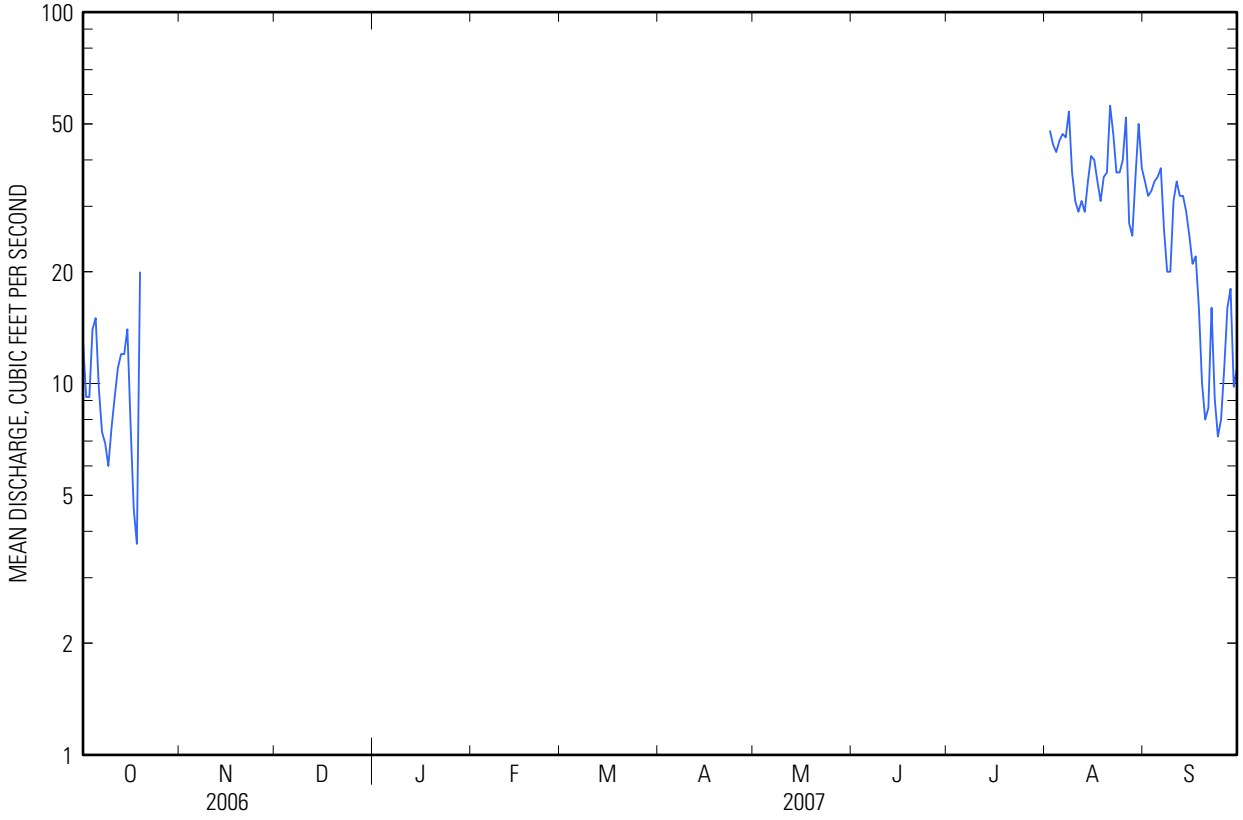


12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	13	---	---	---	---	---	---	---	---	---	---	35
2	9.2	---	---	---	---	---	---	---	---	---	48	32
3	9.2	---	---	---	---	---	---	---	---	---	44	33
4	14	---	---	---	---	---	---	---	---	---	42	35
5	15	---	---	---	---	---	---	---	---	---	45	36
6	9.7	---	---	---	---	---	---	---	---	---	47	38
7	7.4	---	---	---	---	---	---	---	---	---	46	26
8	6.9	---	---	---	---	---	---	---	---	---	54	20
9	6.0	---	---	---	---	---	---	---	---	---	37	20
10	7.6	---	---	---	---	---	---	---	---	---	31	31
11	9.2	---	---	---	---	---	---	---	---	---	29	35
12	11	---	---	---	---	---	---	---	---	---	31	32
13	12	---	---	---	---	---	---	---	---	---	29	32
14	12	---	---	---	---	---	---	---	---	---	35	29
15	14	---	---	---	---	---	---	---	---	---	41	25
16	7.8	---	---	---	---	---	---	---	---	---	40	21
17	4.6	---	---	---	---	---	---	---	---	---	35	22
18	3.7	---	---	---	---	---	---	---	---	---	31	16
19	20	---	---	---	---	---	---	---	---	---	36	10
20	---	---	---	---	---	---	---	---	---	---	37	8.0
21	---	---	---	---	---	---	---	---	---	---	56	8.6
22	---	---	---	---	---	---	---	---	---	---	47	16
23	---	---	---	---	---	---	---	---	---	---	37	9.1
24	---	---	---	---	---	---	---	---	---	---	37	7.2
25	---	---	---	---	---	---	---	---	---	---	40	8.0
26	---	---	---	---	---	---	---	---	---	---	52	11
27	---	---	---	---	---	---	---	---	---	---	27	16
28	---	---	---	---	---	---	---	---	---	---	25	18
29	---	---	---	---	---	---	---	---	---	---	36	9.8
30	---	---	---	---	---	---	---	---	---	---	50	11
31	---	---	---	---	---	---	---	---	---	---	38	---
Total	---	---	---	---	---	---	---	---	---	---	---	650.7
Mean	---	---	---	---	---	---	---	---	---	---	---	21.7
Max	---	---	---	---	---	---	---	---	---	---	---	38
Min	---	---	---	---	---	---	---	---	---	---	---	7.2
Med	---	---	---	---	---	---	---	---	---	---	---	21
Ac-ft	---	---	---	---	---	---	---	---	---	---	---	1,290
Cfsm	---	---	---	---	---	---	---	---	---	---	---	12.6

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

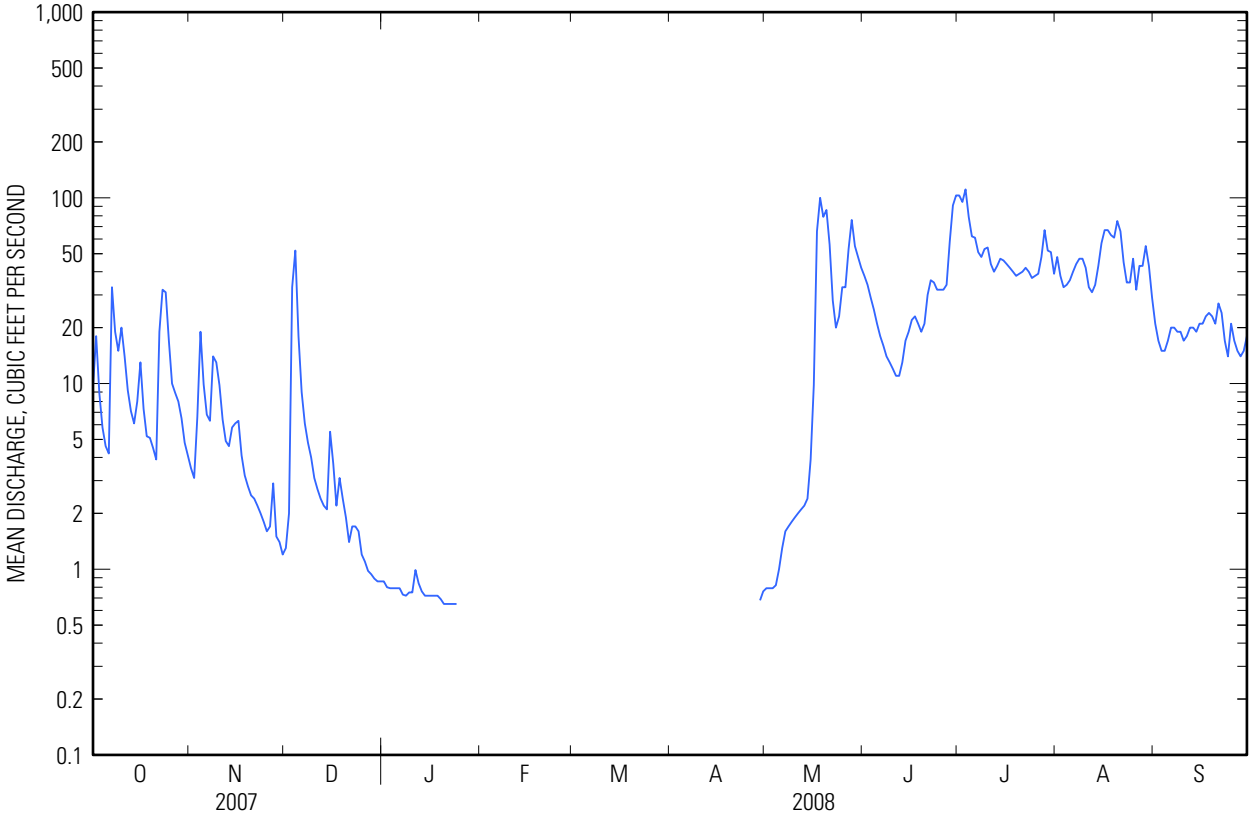


12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES
[&, affected value]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	9.6	3.5	&1.3	&0.86	---	---	---	&0.79	38	103	48	21
2	18	3.1	&2.0	&0.80	---	---	---	&0.79	34	95	38	17
3	8.9	6.6	&33	&0.79	---	---	---	&0.79	29	111	33	15
4	5.8	19	&52	&0.79	---	---	---	&0.82	25	79	34	15
5	4.6	9.9	&18	&0.79	---	---	---	&1.0	21	62	36	17
6	4.2	6.8	&9.0	&0.79	---	---	---	&1.3	18	61	40	20
7	33	6.3	&6.1	&0.73	---	---	---	&1.6	16	51	44	20
8	19	14	&4.8	&0.72	---	---	---	&1.7	14	48	47	19
9	15	13	&4.0	&0.75	---	---	---	&1.8	13	53	47	19
10	20	9.8	&3.1	&0.75	---	---	---	&1.9	12	54	42	17
11	14	6.4	&2.7	&0.99	---	---	---	&2.0	11	44	33	18
12	9.2	4.9	&2.4	&0.84	---	---	---	&2.1	11	40	31	20
13	7.1	4.6	&2.2	&0.76	---	---	---	&2.2	13	43	34	20
14	6.1	5.8	&2.1	&0.72	---	---	---	&2.4	17	47	43	19
15	8.0	6.1	&5.5	&0.72	---	---	---	3.9	19	46	57	21
16	13	6.3	&3.7	&0.72	---	---	---	9.8	22	44	67	21
17	7.3	4.1	&2.2	&0.72	---	---	---	66	23	42	67	23
18	5.2	3.2	&3.1	&0.72	---	---	---	100	21	40	63	24
19	5.1	2.8	&2.4	&0.69	---	---	---	79	19	38	61	23
20	4.5	&2.5	&1.9	&0.65	---	---	---	86	21	39	75	21
21	3.9	&2.4	&1.4	&0.65	---	---	---	56	30	40	66	27
22	19	&2.2	&1.7	&0.65	---	---	---	28	36	42	45	24
23	32	&2.0	&1.7	&0.65	---	---	---	20	35	40	35	17
24	31	&1.8	&1.6	&0.65	---	---	---	23	32	37	35	14
25	17	&1.6	&1.2	---	---	---	---	33	32	38	47	21
26	10	&1.7	&1.1	---	---	---	---	33	32	39	32	17
27	8.9	&2.9	&0.98	---	---	---	---	53	34	48	43	15
28	8.0	&1.5	&0.94	---	---	---	---	76	58	67	43	14
29	6.5	&1.4	&0.89	---	---	---	&0.68	55	91	52	55	15
30	4.8	&1.2	&0.86	---	---	---	&0.76	48	103	51	43	18
31	4.1	---	&0.86	---	---	---	---	42	---	39	29	---
Total	362.8	157.4	174.73	---	---	---	---	832.89	880	1,633	1,413	572
Mean	11.7	5.25	5.64	---	---	---	---	26.9	29.3	52.7	45.6	19.1
Max	33	19	52	---	---	---	---	100	103	111	75	27
Min	3.9	1.2	0.86	---	---	---	---	0.79	11	37	29	14
Med	8.9	3.8	2.2	---	---	---	---	9.8	22	46	43	19
Ac-ft	720	312	347	---	---	---	---	1,650	1,750	3,240	2,800	1,130
Cfsm	6.80	3.05	3.28	---	---	---	---	15.6	17.1	30.6	26.5	11.1

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

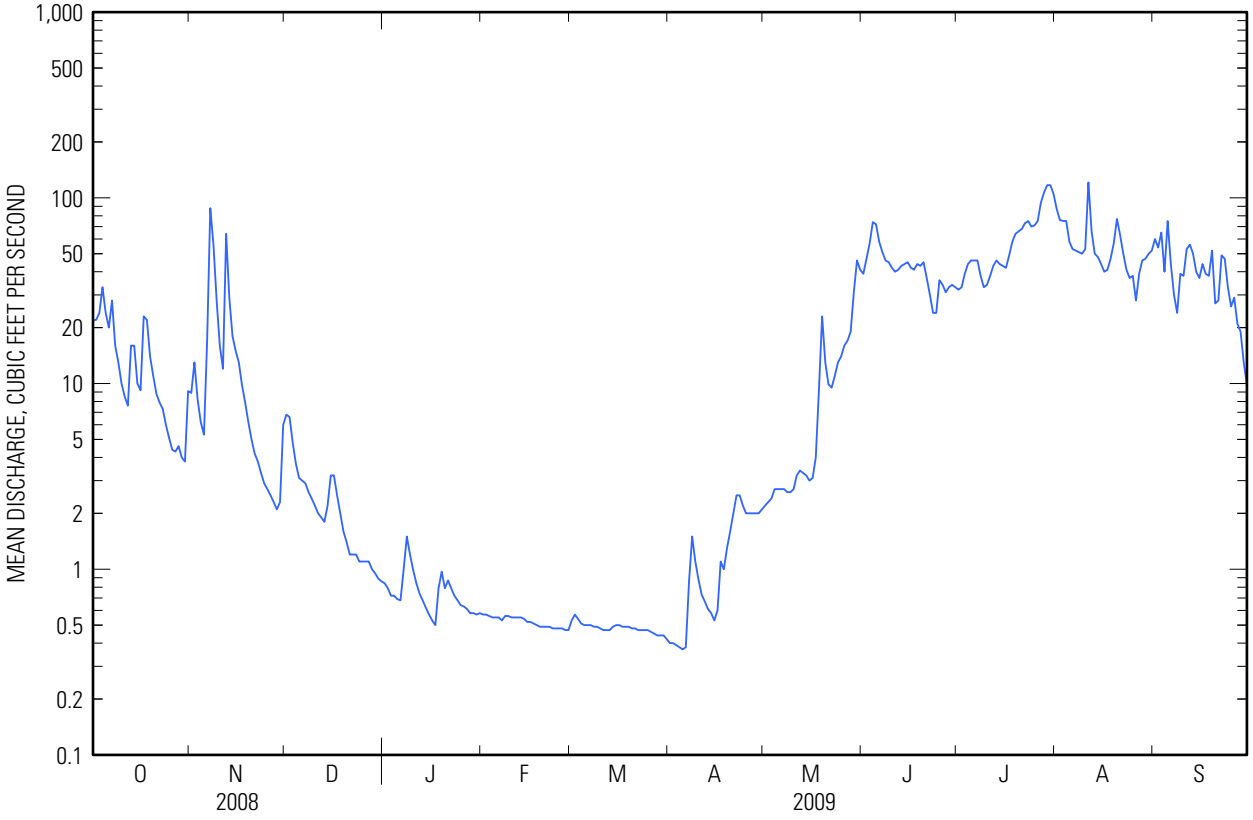


12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2008 TO SEPTEMBER 2009
DAILY MEAN VALUES
[e, estimated; &, affected value]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	22	8.9	6.8	0.84	e0.57	e0.53	e0.40	2.2	39	32	87	60
2	22	13	6.6	0.79	e0.57	e0.57	e0.40	2.3	47	33	76	54
3	24	8.2	4.8	0.72	e0.56	e0.54	e0.39	2.4	57	39	75	65
4	33	6.2	3.7	0.72	e0.55	e0.51	e0.38	2.7	74	44	75	40
5	24	5.3	3.1	0.69	e0.55	e0.50	e0.37	2.7	72	46	58	75
6	20	17	3.0	0.68	e0.55	e0.50	e0.38	2.7	58	46	53	44
7	28	88	2.9	e1.0	e0.53	e0.50	e0.85	2.7	51	46	52	30
8	16	56	2.6	e1.5	e0.56	e0.49	e1.5	2.6	46	38	51	24
9	13	28	2.4	e1.2	e0.56	e0.49	e1.1	2.6	45	33	50	39
10	10	16	2.2	e0.99	e0.55	e0.48	e0.88	2.7	42	34	53	38
11	8.5	12	2.0	e0.84	e0.55	e0.47	e0.73	3.2	40	38	121	53
12	7.6	64	1.9	e0.74	e0.55	e0.47	e0.67	3.4	41	43	66	56
13	16	29	1.8	e0.68	e0.55	e0.47	e0.61	3.3	43	46	50	50
14	16	18	2.2	e0.62	e0.54	e0.49	e0.58	3.2	44	44	48	40
15	10	15	3.2	e0.57	e0.52	e0.50	e0.53	3.0	45	43	44	37
16	9.2	13	3.2	e0.53	e0.52	e0.50	e0.60	3.1	42	42	40	44
17	23	9.8	2.5	e0.50	e0.51	e0.49	e1.1	4.0	41	49	41	39
18	22	7.9	2.0	e0.79	e0.50	e0.49	e1.00	9.3	44	58	47	38
19	14	6.2	1.6	e0.97	e0.49	e0.49	e1.3	23	43	64	57	52
20	11	5.0	1.4	e0.79	e0.49	e0.48	e1.6	13	45	66	77	27
21	8.8	4.2	1.2	e0.87	e0.49	e0.48	e2.0	9.9	37	68	63	28
22	7.9	3.8	1.2	e0.79	e0.49	e0.47	2.5	9.5	30	73	50	49
23	7.3	3.3	1.2	e0.72	e0.48	e0.47	2.5	11	24	75	41	47
24	6.0	2.9	1.1	e0.68	e0.48	e0.47	2.2	13	24	70	37	33
25	5.1	2.7	1.1	e0.64	e0.48	e0.47	2.0	14	36	71	38	26
26	4.4	2.5	1.1	e0.63	e0.48	e0.46	2.0	16	34	75	28	29
27	4.3	2.3	&1.1	e0.61	e0.47	e0.45	2.0	17	31	94	39	21
28	4.6	2.1	1.0	e0.58	e0.47	e0.44	2.0	19	33	107	46	19
29	4.0	2.3	0.95	e0.58	---	e0.44	2.0	31	34	117	47	13
30	3.8	6.0	0.89	e0.57	---	e0.44	2.1	46	33	117	50	9.8
31	9.1	---	0.86	e0.58	---	e0.42	---	41	---	105	52	---
Total	414.6	458.6	71.60	23.41	14.61	14.97	36.67	321.5	1,275	1,856	1,712	1,179.8
Mean	13.4	15.3	2.31	0.76	0.52	0.48	1.22	10.4	42.5	59.9	55.2	39.3
Max	33	88	6.8	1.5	0.57	0.57	2.5	46	74	117	121	75
Min	3.8	2.1	0.86	0.50	0.47	0.42	0.37	2.2	24	32	28	9.8
Med	10	8.0	2.0	0.72	0.53	0.48	1.1	3.4	42	46	50	39
Ac-ft	822	910	142	46	29	30	73	638	2,530	3,680	3,400	2,340
Cfsm	7.78	8.89	1.34	0.44	0.30	0.28	0.71	6.03	24.7	34.8	32.1	22.9

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

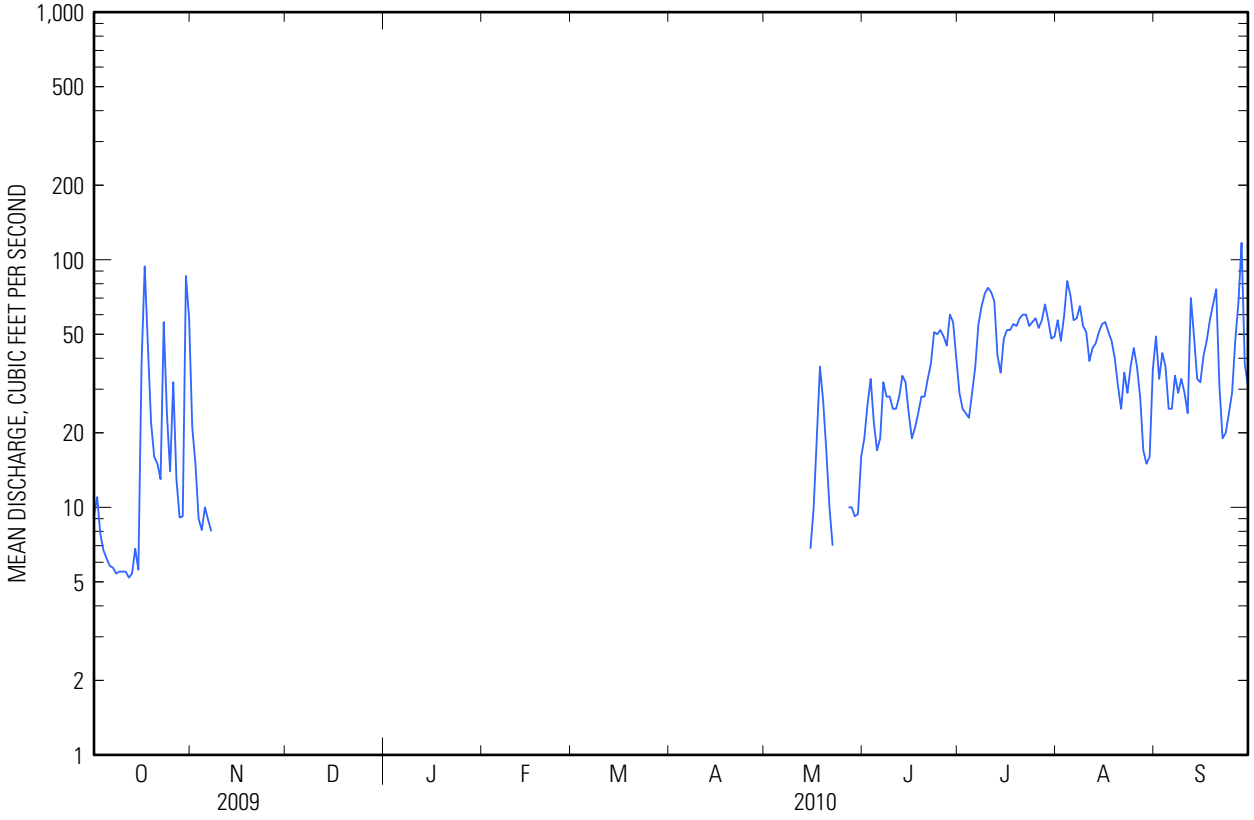


12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010
DAILY MEAN VALUES
[&, affected value]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	9.3	&21	---	---	---	---	---	---	19	29	57	49
2	11	&15	---	---	---	---	---	---	26	25	47	33
3	7.8	&9.0	---	---	---	---	---	---	33	24	59	42
4	6.7	&8.1	---	---	---	---	---	---	22	23	82	37
5	6.2	&10	---	---	---	---	---	---	17	29	72	25
6	5.8	&8.9	---	---	---	---	---	---	19	37	57	25
7	5.7	&8.0	---	---	---	---	---	---	32	55	58	34
8	5.4	---	---	---	---	---	---	---	28	65	65	29
9	5.5	---	---	---	---	---	---	---	28	73	54	33
10	5.5	---	---	---	---	---	---	---	25	77	51	29
11	5.5	---	---	---	---	---	---	---	25	74	39	24
12	5.2	---	---	---	---	---	---	---	28	68	44	70
13	5.4	---	---	---	---	---	---	---	34	41	46	49
14	6.8	---	---	---	---	---	---	---	32	35	51	33
15	5.6	---	---	---	---	---	---	&6.8	24	48	55	32
16	38	---	---	---	---	---	---	&9.9	19	52	56	41
17	94	---	---	---	---	---	---	&19	21	52	51	47
18	45	---	---	---	---	---	---	&37	24	55	47	57
19	22	---	---	---	---	---	---	&27	28	54	40	66
20	16	---	---	---	---	---	---	&17	28	58	31	76
21	15	---	---	---	---	---	---	&10	33	60	25	31
22	13	---	---	---	---	---	---	&7.0	38	60	35	19
23	56	---	---	---	---	---	---	---	51	54	29	20
24	24	---	---	---	---	---	---	---	50	56	37	24
25	14	---	---	---	---	---	---	---	52	58	44	29
26	32	---	---	---	---	---	---	---	49	53	37	47
27	13	---	---	---	---	---	---	&10	45	57	28	67
28	9.1	---	---	---	---	---	---	&10	60	66	17	117
29	9.2	---	---	---	---	---	---	&9.2	56	57	15	38
30	86	---	---	---	---	---	---	&9.4	40	48	16	31
31	&58	---	---	---	---	---	---	&16	---	49	36	---
Total	641.7	---	---	---	---	---	---	---	986	1,592	1,381	1,254
Mean	20.7	---	---	---	---	---	---	---	32.9	51.4	44.5	41.8
Max	94	---	---	---	---	---	---	---	60	77	82	117
Min	5.2	---	---	---	---	---	---	---	17	23	15	19
Med	9.3	---	---	---	---	---	---	---	28	54	46	33
Ac-ft	1,270	---	---	---	---	---	---	---	1,960	3,160	2,740	2,490
Cfsm	12.0	---	---	---	---	---	---	---	19.1	29.9	25.9	24.3

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

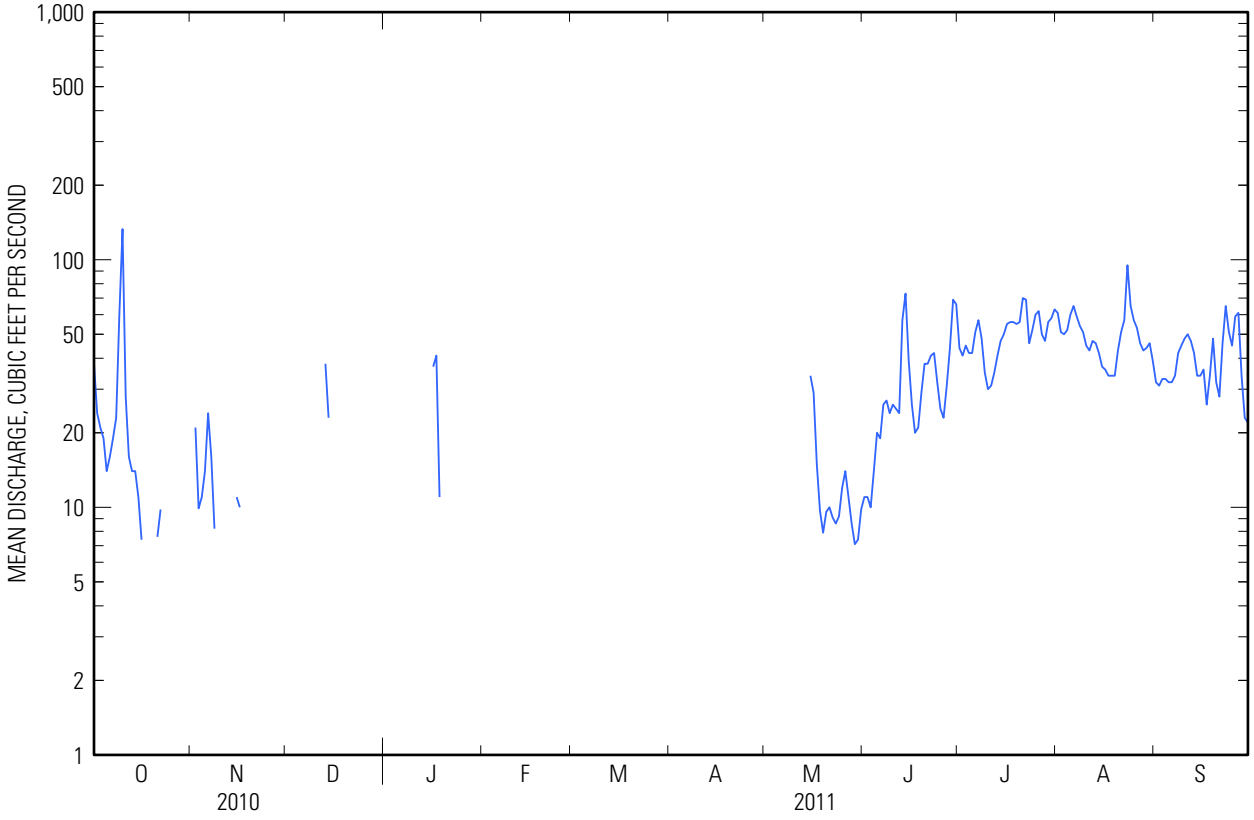


12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES
[&, affected value]

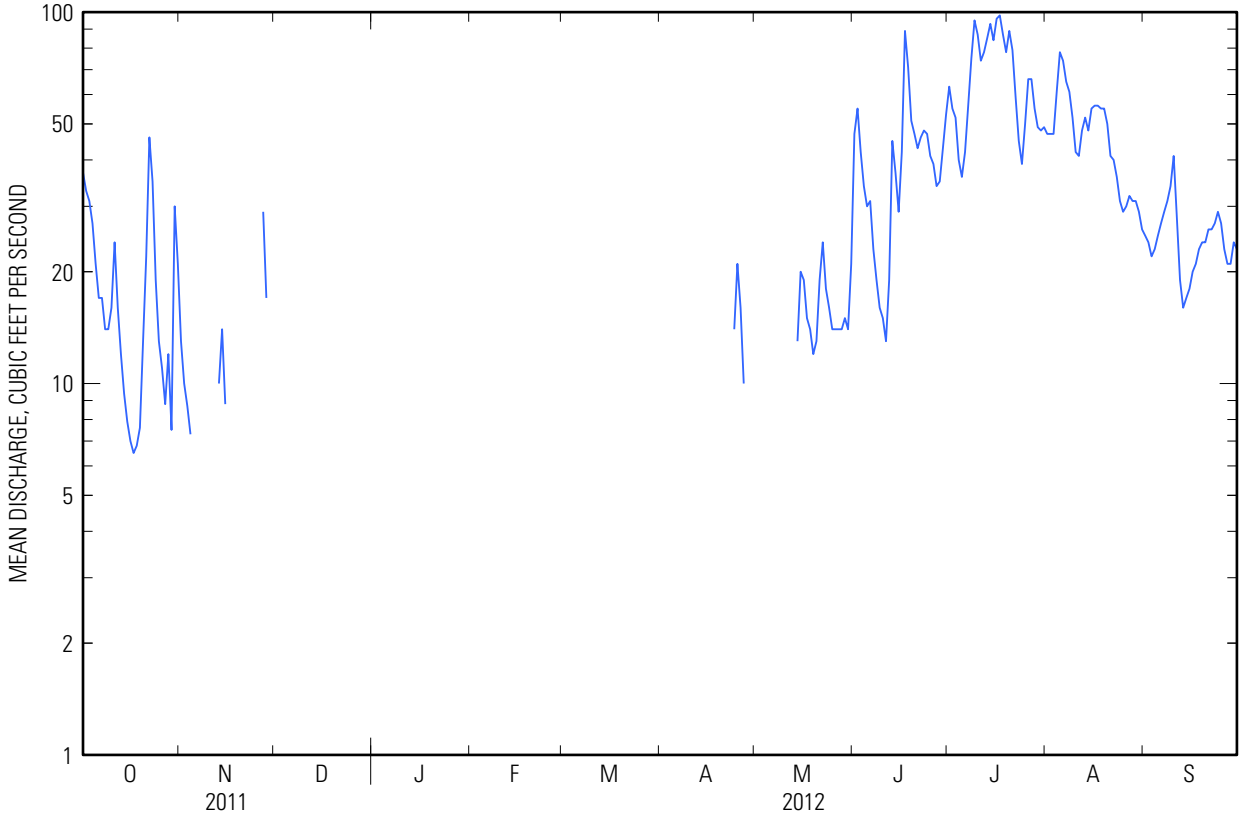
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	38	---	---	---	---	---	---	---	11	44	61	32
2	24	21	---	---	---	---	---	---	11	41	51	31
3	21	9.9	---	---	---	---	---	---	10	45	50	33
4	19	11	---	---	---	---	---	---	14	42	52	33
5	14	14	---	---	---	---	---	---	20	42	60	32
6	16	24	---	---	---	---	---	---	19	51	65	32
7	19	16	---	---	---	---	---	---	26	57	59	34
8	23	8.2	---	---	---	---	---	---	27	48	54	42
9	60	---	---	---	---	---	---	---	24	35	51	45
10	133	---	---	---	---	---	---	---	26	30	45	48
11	28	---	---	---	---	---	---	---	25	31	43	50
12	16	---	---	---	---	---	---	---	24	35	47	47
13	14	---	&38	---	---	---	---	---	57	41	46	42
14	14	---	&23	---	---	---	---	---	73	47	42	34
15	11	11	---	---	---	---	---	34	39	50	37	34
16	7.4	&10	---	&37	---	---	---	29	26	55	36	36
17	---	---	---	&41	---	---	---	15	20	56	34	26
18	---	---	---	&11	---	---	---	9.7	21	56	34	34
19	---	---	---	---	---	---	---	7.9	29	55	34	48
20	---	---	---	---	---	---	---	9.6	38	56	43	32
21	7.6	---	---	---	---	---	---	10	38	70	51	28
22	9.8	---	---	---	---	---	---	9.1	41	69	57	46
23	---	---	---	---	---	---	---	8.6	42	46	95	65
24	---	---	---	---	---	---	---	9.2	32	52	65	51
25	---	---	---	---	---	---	---	12	25	60	57	45
26	---	---	---	---	---	---	---	14	23	62	53	59
27	---	---	---	---	---	---	---	11	31	50	46	61
28	---	---	---	---	---	---	---	8.6	44	47	43	34
29	---	---	---	---	---	---	---	7.1	69	56	44	23
30	---	---	---	---	---	---	---	7.4	66	58	46	22
31	---	---	---	---	---	---	---	9.8	---	63	39	---
Total	---	---	---	---	---	---	---	---	951	1,550	1,540	1,179
Mean	---	---	---	---	---	---	---	---	31.7	50.0	49.7	39.3
Max	---	---	---	---	---	---	---	---	73	70	95	65
Min	---	---	---	---	---	---	---	---	10	30	34	22
Med	---	---	---	---	---	---	---	---	26	50	47	34
Ac-ft	---	---	---	---	---	---	---	---	1,890	3,070	3,050	2,340
Cfsm	---	---	---	---	---	---	---	---	18.4	29.1	28.9	22.8

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued



12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2011 TO SEPTEMBER 2012
DAILY MEAN VALUES
[&, affected value]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	37	&13	---	---	---	---	---	---	47	63	47	25
2	33	&10	---	---	---	---	---	---	55	55	47	24
3	31	&8.7	---	---	---	---	---	---	42	52	47	22
4	27	&7.3	---	---	---	---	---	---	34	40	61	23
5	21	---	---	---	---	---	---	---	30	36	78	25
6	17	---	---	---	---	---	---	---	31	42	74	27
7	17	---	---	---	---	---	---	---	23	56	65	29
8	14	---	---	---	---	---	---	---	19	75	61	31
9	14	---	---	---	---	---	---	---	16	95	52	34
10	16	---	---	---	---	---	---	---	15	87	42	41
11	24	---	---	---	---	---	---	---	13	74	41	28
12	16	---	---	---	---	---	---	---	19	78	48	19
13	12	&10	---	---	---	---	---	---	45	85	52	16
14	9.4	&14	---	---	---	---	---	&13	37	93	48	17
15	7.9	&8.8	---	---	---	---	---	&20	29	84	55	18
16	7.0	---	---	---	---	---	---	&19	42	96	56	20
17	6.5	---	---	---	---	---	---	&15	89	98	56	21
18	6.8	---	---	---	---	---	---	&14	71	87	55	23
19	7.6	---	---	---	---	---	---	&12	51	78	55	24
20	13	---	---	---	---	---	---	&13	47	89	50	24
21	22	---	---	---	---	---	---	19	43	79	41	26
22	46	---	---	---	---	---	---	24	46	59	40	26
23	35	---	---	---	---	---	---	18	48	45	36	27
24	&19	---	---	---	---	---	&14	16	47	39	31	29
25	&13	---	---	---	---	---	&21	14	41	50	29	27
26	&11	---	---	---	---	---	&16	14	39	66	30	23
27	&8.8	&29	---	---	---	---	&10	14	34	66	32	21
28	&12	&17	---	---	---	---	---	14	35	55	31	21
29	&7.5	---	---	---	---	---	---	15	43	49	31	24
30	&30	---	---	---	---	---	---	14	53	48	29	23
31	&21	---	---	---	---	---	---	21	---	49	26	---
Total	562.5	---	---	---	---	---	---	---	1,184	2,068	1,446	738
Mean	18.1	---	---	---	---	---	---	---	39.5	66.7	46.6	24.6
Max	46	---	---	---	---	---	---	---	89	98	78	41
Min	6.5	---	---	---	---	---	---	---	13	36	26	16
Med	16	---	---	---	---	---	---	---	41	66	47	24
Ac-ft	1,120	---	---	---	---	---	---	---	2,350	4,100	2,870	1,460
Cfsm	10.5	---	---	---	---	---	---	---	22.9	38.8	27.1	14.3

12181090 SOUTH CASCADE MIDDLE TARN NEAR MARBLEMOUNT, WA—Continued