

Storm Lake

Storm Lake appears to be in healthy condition, with moderate water clarity, low to moderate phosphorus, and moderate algae. Water clarity has improved slightly in recent years. Controlling nutrient runoff from development around the lake shore and in the surrounding watershed is key to maintaining the health of the lake.

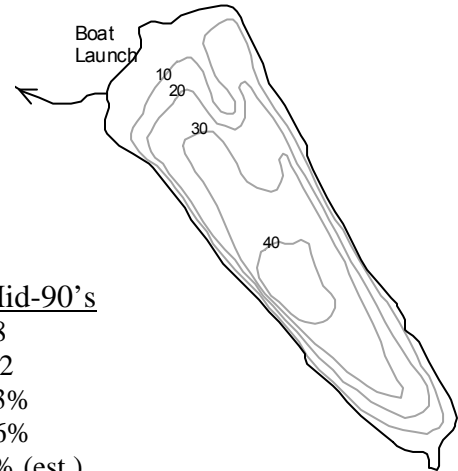


State of the Lakes Report
March 2003

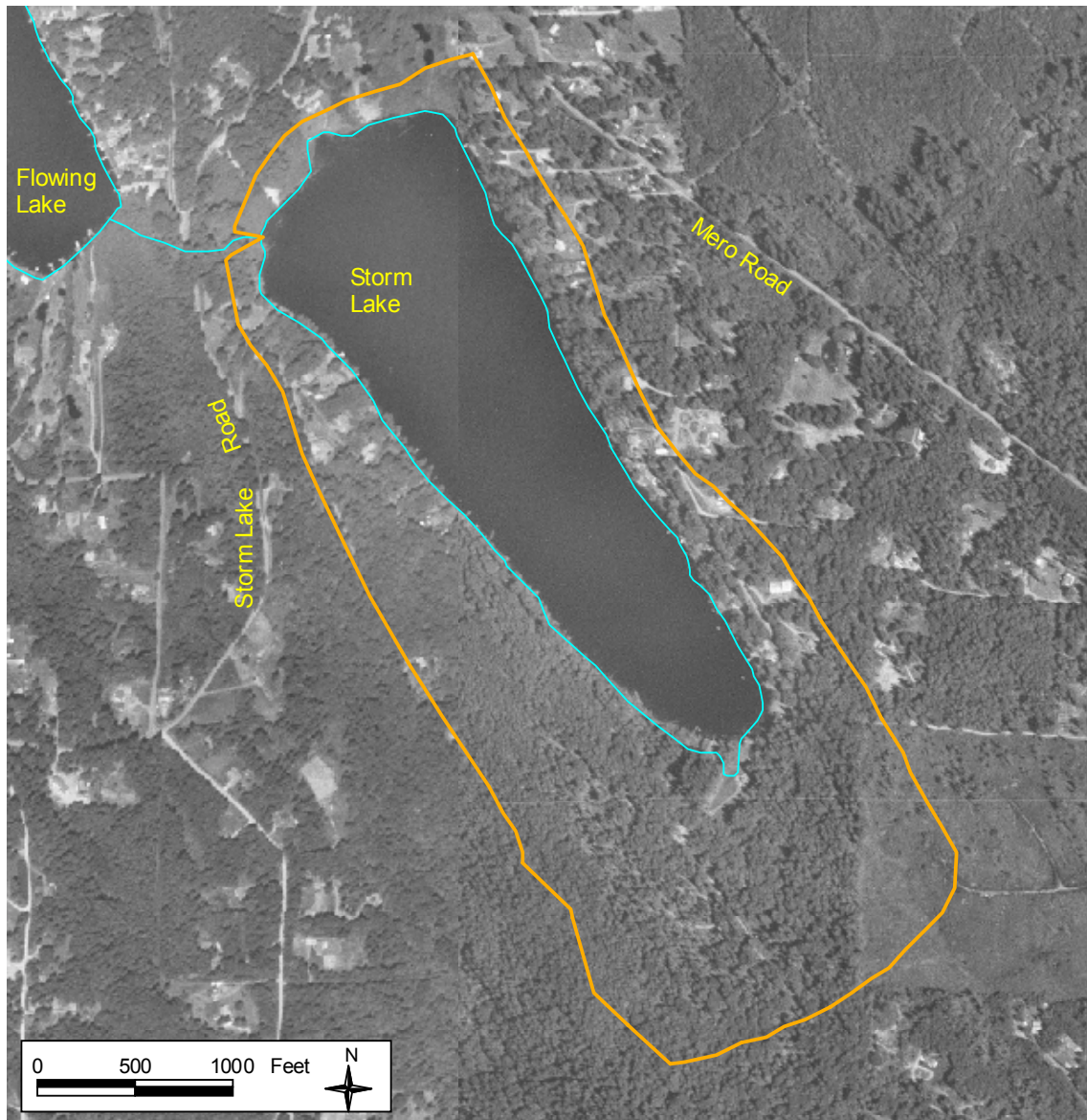
**Snohomish County Public Works
Surface Water Management**

LAKE AND WATERSHED DATA

Lake Area: 73 acres
 Watershed Area: 211 acres
 Watershed to Lake Area Ratio: 2.9
 Maximum Depth: 46 feet (14.0 meters)
 Average Depth: 22 feet (6.7 meters)
 Lake Volume: 1605 acre-feet
 Length of Shore: 1.7 miles



	<u>1973</u>	<u>Mid-90's</u>
# of nearshore homes	26	38
# of homes/1000' of shoreline	2.9	4.2
% of homes with bulkhead or fill		13%
% of homes with some native vegetation near shore		76%
% of watershed developed (residential or commercial)	6%	8% (est.)



LAKE ASSESSMENT

DESCRIPTION

■ Location/Access – Storm Lake is located six miles north of Monroe. It is the upper lake in the “Three Lakes” chain of lakes. Storm Lake empties into Flowing Lake, which drains to Panther Lake, Panther Creek, and the Pilchuck River. Ground water and precipitation are the main sources of water feeding Storm Lake. There is a public boat launch located at the northwest end of the lake. Gas-powered boats are not permitted.

■ Size/Shape – Storm Lake is 73 acres in size, with a maximum depth of 14 meters and an average depth of 6.7 meters. The lake volume contains 1,800 acre-feet of water. The lake is surrounded by steep, wooded hills, which contribute to its strong stratification during the summer months.

■ Watershed – The Storm Lake watershed is very small. Including the lake, the watershed covers only 211 acres. This is less than 3 times the size of the lake—the smallest watershed to lake ratio of any natural lake in Snohomish County. With such a small watershed, Storm Lake should have low potential for pollution impacts from the surrounding lands. In addition, the watershed is still relatively undeveloped. In 1973, 6% of the watershed was devoted to residential uses. Development increased to only 8% of the watershed by the mid-1990s. Disadvantages of a small watershed, however, are that less water flows into the lake to dilute pollution, water remains in the lake for a longer time, and there is less chance of pollution flushing out of the lake.

■ Shoreline – The shoreline of Storm Lake is 1.7 miles in length. Along the shoreline, there were 26 homes in 1973 and 38 by the mid-90s. The current density of shoreline development is below the average found at other lakes in the county. Much of the developed shoreline is also relatively undisturbed—only 13% of the homes have modified the shoreline with bulkheads or fill, and 76% of the homes have retained some native vegetation along the shore. A zone of undisturbed vegetation is important for filtering pollution.



LAKE CONDITIONS

■ Water Clarity – The water clarity in Storm Lake is moderate, and the summer averages have been fairly consistent, ranging between 2.4 and 3.0 meters from 1990 to 2002. The long-term average during this period was 2.7 meters. Analysis shows that there has been a very small, but statistically significant, increase in water clarity since 1990. The reasons for this apparent increase are unknown.

■ Color – The lake water is moderately colored by dissolved organic (humic) materials from nearby wetlands. The color is usually described as light to medium brown.

■ Nutrients – Summer average total phosphorus concentrations in the epilimnion ranged from 8 to 13 $\mu\text{g/l}$ between 1996 and 2002, which is relatively low for lakes in Snohomish County. Total phosphorus averages in the hypolimnion tended to be higher, ranging from 16 to 35 $\mu\text{g/l}$ between 1997 and 2002. This suggests that the bottom sediments release some phosphorus during times of oxygen depletion. Single samples in 1973 and composite samples taken in 1990 and 1996 by the Department of Ecology (which are not directly comparable to the discrete samples collected by SWM) resulted in similar low epilimnion and moderate hypolimnion total phosphorus values. Nitrogen samples collected in 1973, 1990, and 1996 indicated that

nitrogen was moderately abundant and that phosphorus was probably the nutrient limiting algal growth.

- Alkalinity– Data from 1994 and 1995 indicate that Storm Lake has a very low buffering capacity and is sensitive to nutrient pollution.

- Oxygen/Temperature– Vertical profiles of dissolved oxygen and temperature for the summers of 1995 through 2002 show strong thermal stratification between warm upper waters and cool bottom waters. Also, as the summer progresses, the action of decaying organic matter in the lake bottom depletes more and more dissolved oxygen. By late summer almost all the dissolved oxygen is depleted below about 6 to 8 meters depth.

- Algae– Limited chlorophyll *a* samples from the summers of 1994 through 1996 produced values ranging from 1.9 to 9.8 µg/l. Four samples in summer 2002 averaged 1.6 µg/l. These data suggest low to moderate productivity of algae in the lake. Analysis of three algae samples from 1994 and 1995 revealed relatively high biovolumes, with a mixed algal community dominated at times by blue-greens, greens, gold-brown/diatoms, or dinoflagellates. Observations by the citizen volunteer in 1994 and 1995 indicated moderate blue-green algal blooms (primarily *Microcystis*, *Gloeotrichia*, and *Anabaena*). Blue-greens are responsible for most algae problems in Snohomish County lakes.

- Aquatic Plants– Storm Lake supports aquatic plant growth only in the shallow areas at the northwest and southeast ends of the lake. The dominant plant in these areas is yellow water-lily. The steep sides of the lake, the color of the water, and the nutrient-poor sediments (which include large amounts of woody debris), severely limit or prevent aquatic plant growth in the rest of the lake.

SUMMARY

- Trophic State– Based on moderate water clarity, low to moderate phosphorus concentrations, and low to moderate levels of algae, Storm Lake may be classified as mesotrophic.

- Current Conditions/Trends– Storm Lake appears to be in healthy condition. Monitoring data show a small, but statistically significant, trend toward increasing water clarity from 1990 to 2002.

- Future Concerns/Targets– The primary concern with Storm Lake is the potential impacts to water quality if large amounts of new development occur around the lake or in the watershed. More clearing and runoff—especially from the steep slopes around the lake—could bring additional nutrients into the lake and create nuisance blue-green algal blooms. Maintaining current water clarity and phosphorus levels is the target for the lake.

- Recommendations– The lake should be monitored carefully to identify any changes to water clarity, nutrient levels, or algal production. All new development in the watershed should take precautions to control runoff and soil erosion and to reduce nutrient pollution. New and existing homes around the lake shore should be encouraged to maintain buffers of native vegetation to filter out pollution before it reaches the lake.

CITIZEN VOLUNTEERS

Thanks to Tom Piekarski for many years of intensive volunteer monitoring at Storm Lake.

DATA SUMMARY TABLE

Source	Date	Secchi Depth (meters)	Total Phosphorus (ug/l)		Color (Pt-Co scale)	Chlorophyll a (ug/l)
			Surface	Bottom	Epilimnion	Epilimnion
Bortleson, et al, 1976	7/23/73	2.1	13	37	15	-
DOE	Summer 1990	1.8 - 3.0 (2.4) n = 6	-	-	-	-
Volunteer	Summer 1993	1.7 - 3.1 (2.4) n = 8	-	-	-	-
SWM Staff or Volunteer	Summer 1994	2.2 - 4.5 (3.0) n = 14	-	-	25 - 40 (33) n = 2	1.9 - 9.8 (5.9) n = 2
SWM Staff or Volunteer	Summer 1995	2.0 - 3.9 (2.8) n = 13	-	-	30	6.7
Volunteer or DOE	Summer 1996	1.8 - 3.3 (2.4) n = 14	5 - 15 (10) n = 2	3 - 10 (7) n = 2	-	4.4 - 6.3 (5.4) n = 2
SWM Staff or Volunteer	Summer 1997	2.5 - 3.3 (2.8) n = 13	9 - 14 (12) n = 2	27 - 43 (35) n = 2	-	-
Volunteer	Summer 1998	2.3 - 3.9 (2.9) n = 13	7 - 20 (11) n = 4	20 - 28 (24) n = 4	-	-
Volunteer	Summer 1999	1.3 - 3.7 (2.6) n = 14	8 - 17 (12) n = 4	14 - 23 (19) n = 4	-	-
SWM Staff or Volunteer	Summer 2000	2.2 - 3.5 (2.9) n = 12	4 - 13 (8) n = 4	3 - 27 (18) n = 4	-	-
SWM Staff or Volunteer	Summer 2001	2.4 - 3.5 (2.9) n = 12	9 - 19 (13) n = 4	26 - 30 (29) n = 4	-	-
SWM Staff or Volunteer	Summer 2002	2.3 - 3.6 (3.0) n = 13	4 - 11 (8) n = 4	15 - 19 (16) n = 4	-	0.1 - 3.7 (1.6) n = 4

NOTES

- Table includes summer (May-Oct) data only.
- Each box shows the range on top, followed by summer average in () and number of samples (n).
- Total phosphorus data are from samples taken at discrete depths only.
- DOE = Washington Department of Ecology

SUMMARY OF OTHER DATA

■ **Total Phosphorus** – composite samples taken by the Department of Ecology in 1990 and 1996 ranged from 10 -- 14 µg/l in the epilimnion; two hypolimnion samples in 1996 showed 10 and 19 µg/l. These are not directly comparable to the discrete samples shown above, but confirm that Storm has moderate phosphorus levels.

■ **Total Nitrogen** – single samples in 1973 showed 0.43 mg/l in the epilimnion and 0.45 mg/l in the hypolimnion; 1990 and 1996 Ecology data averaged 0.42 in the epilimnion and 0.50 mg/l in the hypolimnion; these data suggest that nitrogen is moderately abundant and does not limit algal growth.

■ **Alkalinity** – data from 1994 and 1995 ranged from 8.9 -- 11 mg/l CaCO₃, which suggests that Storm has a very low buffering capacity and is sensitive to nutrient pollution.

■ **pH** – readings from 1994 through 2000 averaged 7.1 near the surface and 6.0 near the bottom, which is near neutral and typical for Snohomish County lakes. Readings from 2001-2002 were similar.

■ **Conductivity** – 1994-2000 data averaged 30 µmhos in the epilimnion and 40 µmhos near the lake bottom, indicating low levels of dissolved materials in the water. Readings from 2001-2002 were similar.

■ **Iron** – limited 1994-95 data showed high levels in the epilimnion (avg. 124 µg/l) and moderate levels in the hypolimnion (avg. 517 µg/l, high of 950 µg/l), which indicates release of iron and phosphorus from the bottom sediments under low oxygen conditions.

■ **Algae** – the following table shows the total biovolume and percent biovolume of the main types of algae from three samples collected in

1994-95. The data show that the total algal volumes were relatively high and that blue-greens and greens, gold-browns/diatoms, and dinoflagellates were each most prevalent at times. Cell counts of the same samples revealed that blue-greens (47% and 89%) and gold-browns/diatoms (59%) were most abundant. Analysis of algae samples by citizen volunteer Tom Piekarski during the same two summers showed a similar pattern of cell counts, with blue-greens (*Microcystis* sp. and *Gloeotrichia* sp.) most abundant in 1994. He found few blue-greens in mid summer of 1995, but *Anabaena* sp. was prevalent by late summer.

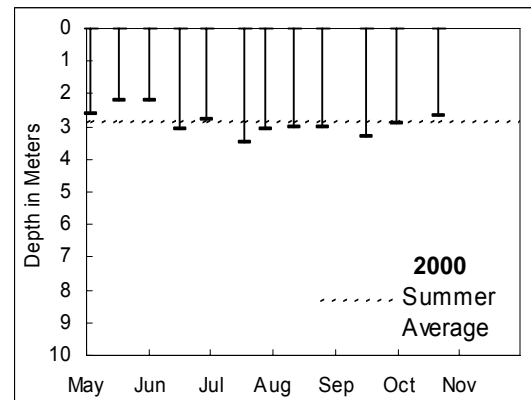
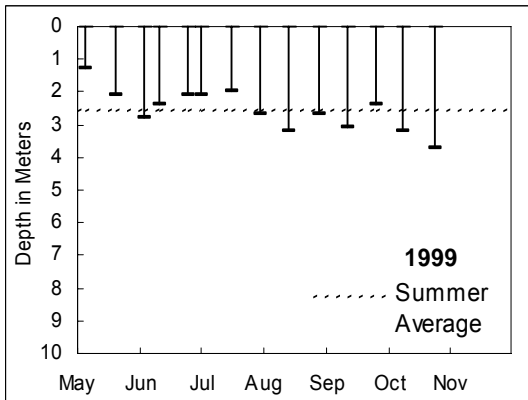
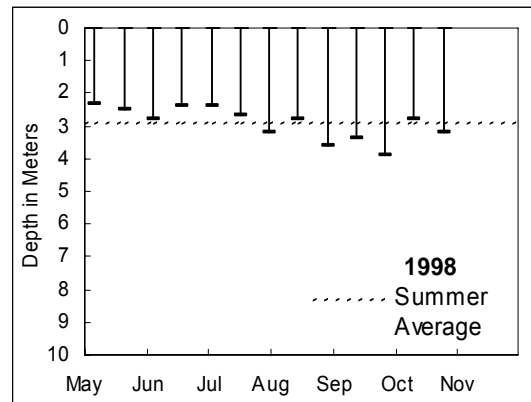
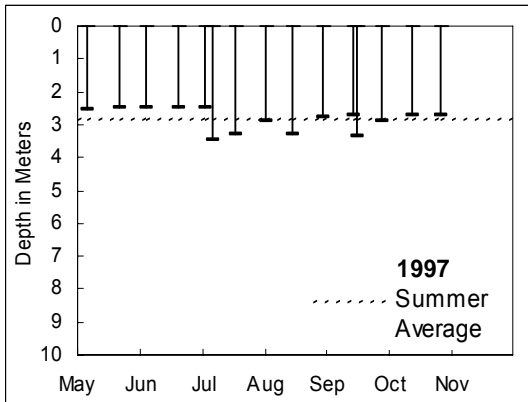
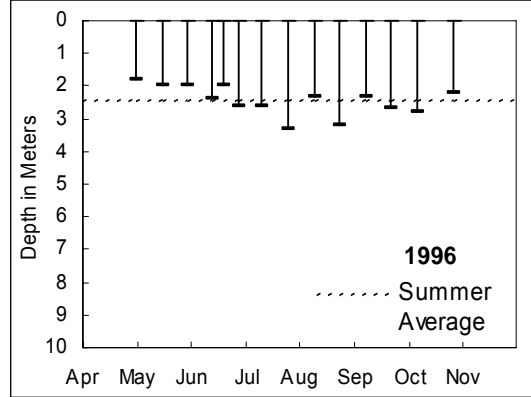
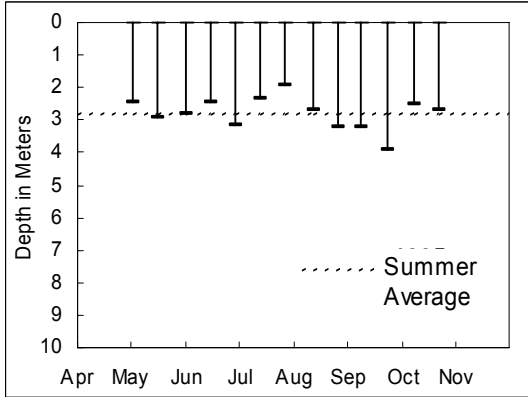
ALGAE TYPES	7/11/94	9/9/94	8/14/95
Cyanophyta (Blue-greens)	4%	3%	30%
Chlorophyta (Greens)	7%	1%	29%
Chrysophyta (Golden/diatoms)	34%	91%	7%
Cryptophyta (Cryptomonads)	6%	3%	21%
Euglenophyta (Euglenoids)	1%	0%	0%
Pyrrophyta (Dinoflagellates)	48%	2%	12%
TOTAL BIOVOLUME (mm ³ /l)	1.355	3.297	1.314

■ **Fish** – according to the Washington State Department of Fish and Wildlife (WDFW), fish species found in Storm Lake include rainbow trout and largemouth bass. WDFW usually stocks the lake each year with rainbow trout.

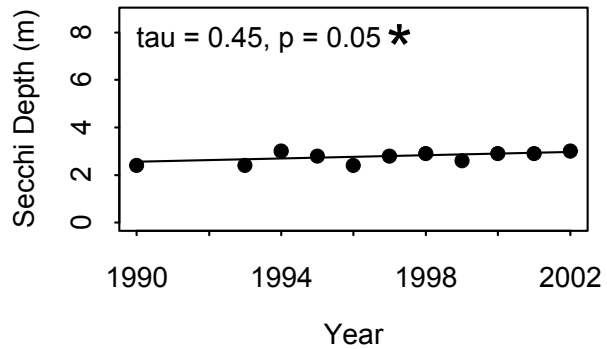
DATA SOURCES

In addition to data from Snohomish County SWM staff and citizen volunteers, data for Storm Lake are also available from: Bortleson, et. al., 1976 and unpublished Department of Ecology summaries. Please refer to the full list of references in the County-Wide Summary.

WATER CLARITY

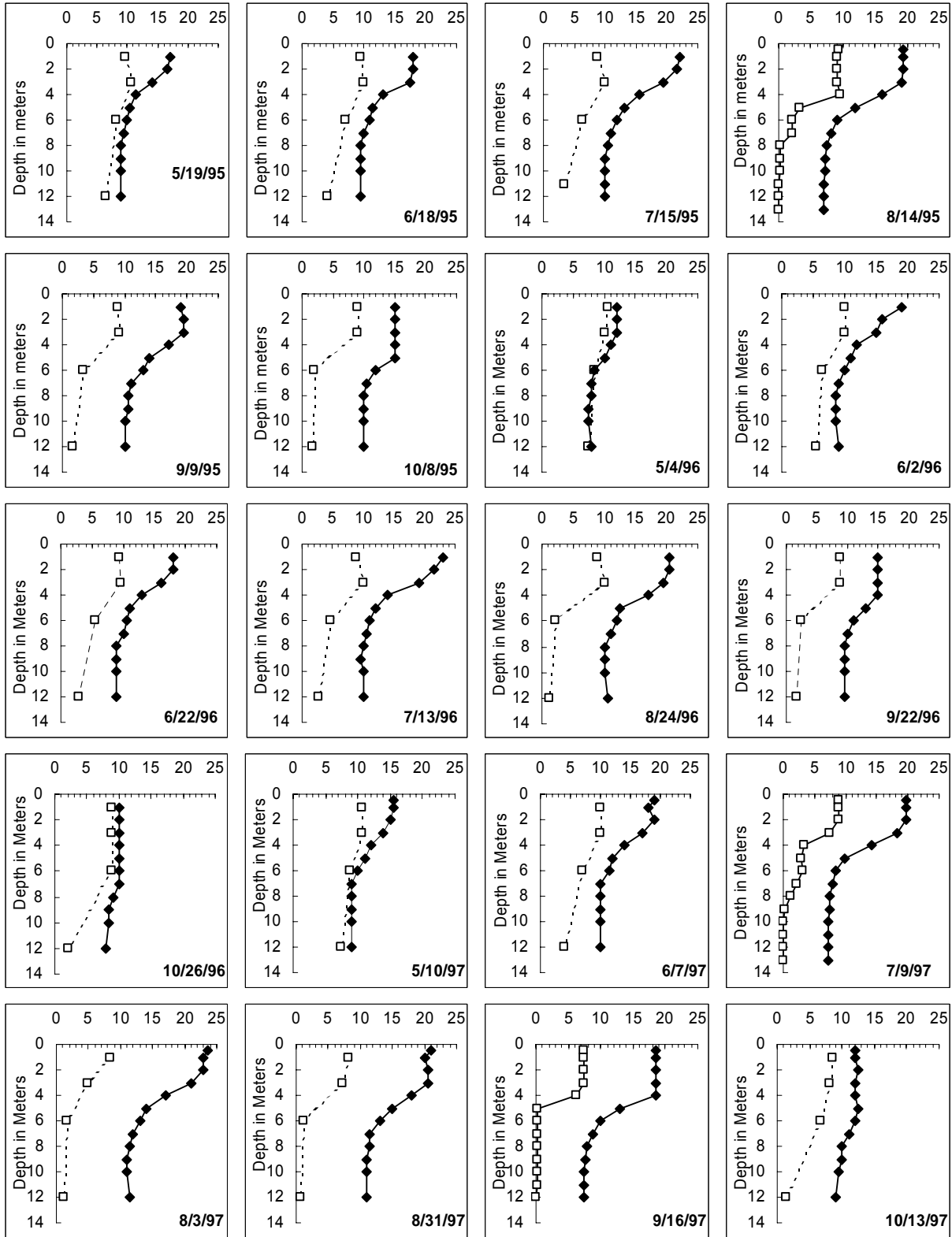


TREND ANALYSIS



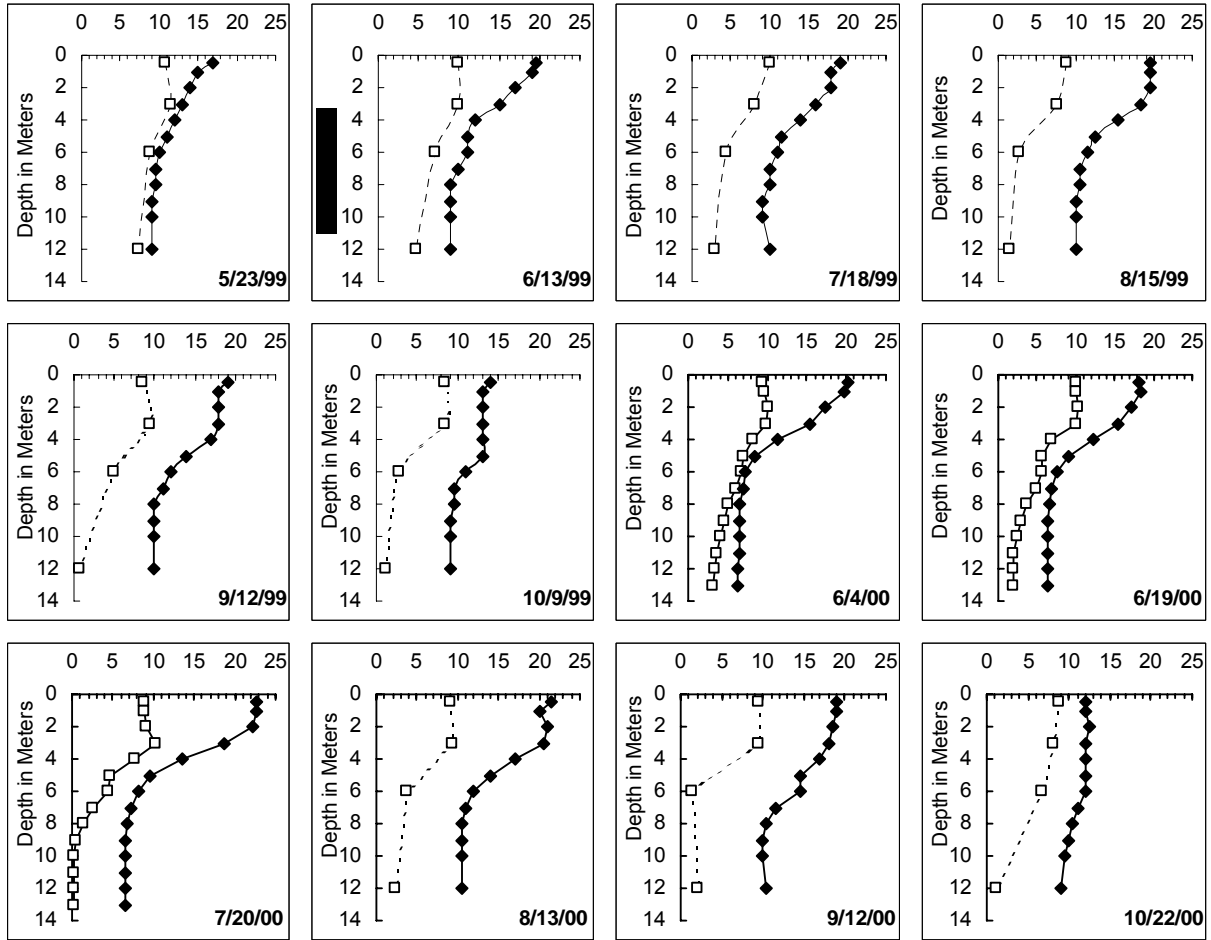
* Statistically significant trend ($p \leq 0.10$)

DISSOLVED OXYGEN AND TEMPERATURE PROFILES (SELECTED YEARS)



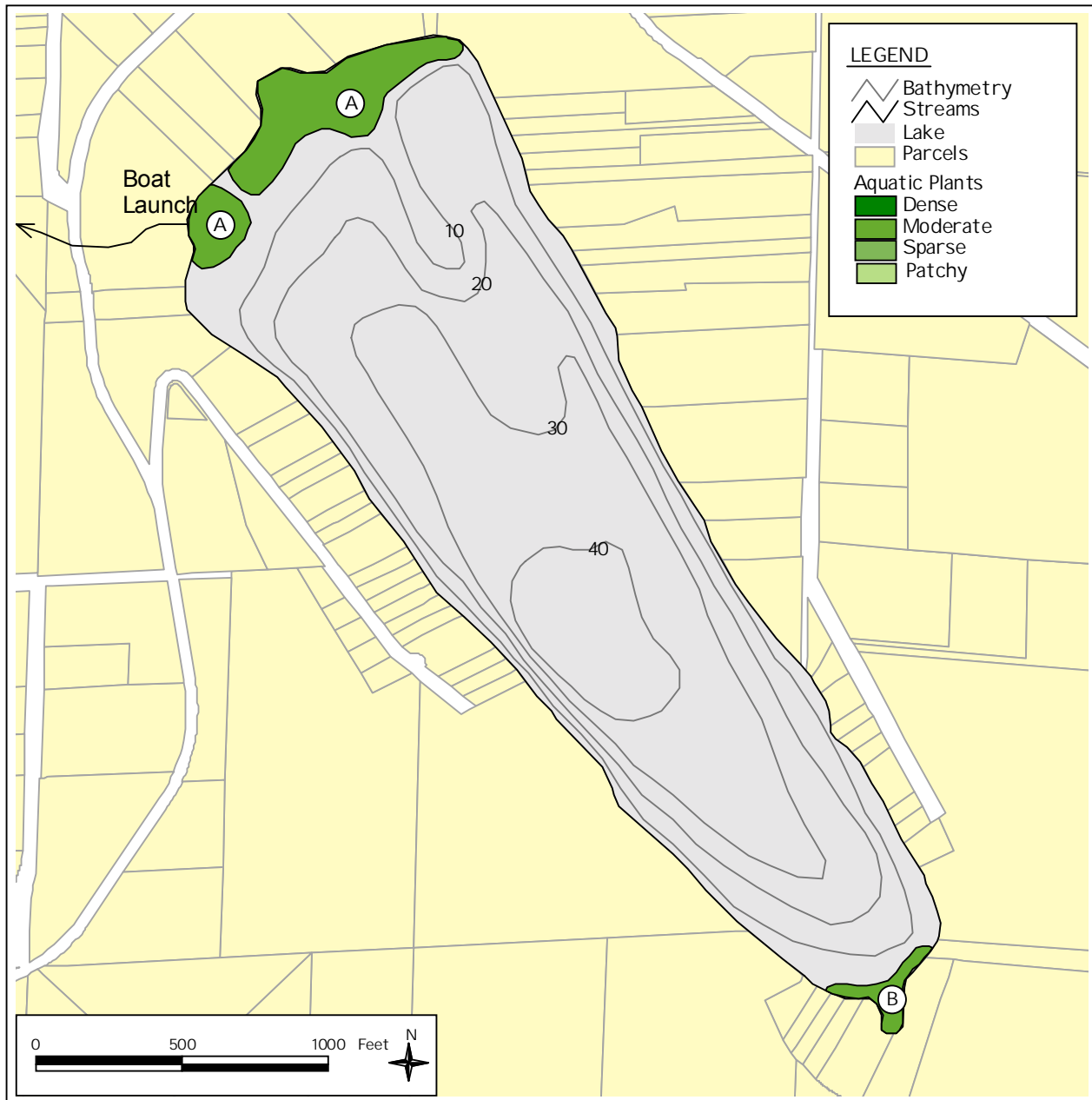
DO (mg/l)

 Temp (°C)



—□— DO (mg/l) —◆— Temp (°C)

AQUATIC PLANTS



Area	Density	Dominant Plants	Other Plants
A	Moderate	<i>Nuphar polysepalum</i> (Yellow water-lily)	
B	Moderate	<i>Nuphar polysepalum</i> (Yellow water-lily)	<i>Potamogeton sp.</i> (Thin-leaf pondweed) <i>Menyanthes trifoliata</i> (Bogbean)

BASIC MONITORING DATA

1995									
DATE	Secchi Depth (meters)	Air Temp (C)	Water Temp (C)	Lake Level (in)	Clouds (%)	Rain	Wind	Color	COMMENT
1/21/1995	3.1	3	4	20.5	0	none	calm	lt brown	11 bufflehead, 2 mallard, 1 cormorant. Otter at NW shore; and evidence of beaver activity. Parking lot regravelled since last monitoring.
2/20/1995	2.8	10.5	5.5	16	100	heavy	light	lt brown	17 bufflehead.
3/19/1995	2.7	7	8.5	14.8	75	light	light	lt brown	Water lilies beginning to sprout from sediment. 12 bufflehead, 4 mallard.
4/22/1995	3.0	12	11.5	15.3	0	trace	light	lt brown	Slight algae (Anabaena), aquatic plants. 6 bufflehead, 2 geese, 1 mallard, 7 cormorants.
5/6/1995	2.5	9.5	14.5	15.5	100	trace	calm	lt brown	Slight algae (Anabaena, Asterionella), aquatic plants. 1 goose. Lily pads reached the surface at north and south shores; bogbean flowering.
5/19/1995	2.9	13	17	18.5	0	none	breezy	lt brown	Aquatic plants slight. 1 mallard. Predominant algae were Asterionella, Dinobryon, & Anabaena.
6/4/1995	2.8	12	21.5	23	100	none	calm	lt brown	Slight algae, aquatic plants, fishy odor. 2 ducks. Predominant algae: Dinobryon, Asterionella.
6/18/1995	2.5	12	18		100	light	calm	lt brown	Aquatic plants slight. 7 ducks (4 adults, 3 ducklings).
7/1/1995	3.2	19	25	24.5	0	none	light	lt brown	Aquatic plants slight. 5 ducks. Scant Gloeotrichia.
7/15/1995	2.4	17	22	25.5	10	none	light	lt brown	Aquatic plants slight. 4 mallards. Small stand of reed canarygrass at SE shore. Virtually no algae.
7/29/1995	2.0	11.5	21	26.5	100	none	light	lt brown	Aquatic plants slight.
*08/14/95	2.7				100	light	light	lt brown	Plants at NW shore are same spp. as last year (Bogbean, & Nuphar), though less dense than last year. Shoreline appears unchanged.
8/27/1995	3.2	15.5	19.5	25	0	none	calm	lt brown	Slight algae (Microcystis, Anabaena), plants. 3 ducks. First appearance of pondweed at S. shore. A large mass 10' diameter 20' from shore in 4' of water in SE area.
9/9/1995	3.2		19	25.5	100	none	calm	lt brown	Moderate algae (Anabaena, Microcystis), plants. 7 ducks. Slight algae film/scum forming at S. shore.
9/24/1995	3.9	17	19	26.5	0	none	calm	lt brown	Moderate algae (Asterionella, Anabaena), scum, slight plants.
10/8/1995	2.5	13.5	15	21.3	100	heavy	light	lt brown	Slight algae (Anabaena), aquatic plants. 2 ducks.
10/22/1995	2.7	7.5	12	15	0	trace	light	lt brown	Slight algae, scum, plants. Algae scum blown to the north shore was Microcystis. However algae collected with plankton net from lake was Anabaena. 2 mallards.
11/5/1995	2.0	6.5	9	16.5	100	light	breezy	lt brown	Slight aquatic plants. Anabaena is the predominant algae species. 17 bufflehead, 1 mallard, & 1 other duck.
12/3/1995	1.8	4	8.5	11	100	light	light	lt brown	No algae, odor, plants. Previous week was the "Flood of 95". Anabaena is the predominant algae species. 10 bufflehead, 1 cormorant.

Non-summer data indicated by shading.

*Indicates data collected by Snohomish County staff.

1996

DATE	Secchi Depth (meters)	Air Temp (C)	Water Temp (C)	Lake Level (in)	Clouds (%)	Rain	Wind	Color	COMMENT
1/6/1996	2.2	7	4.5	16	100	light	light	lt brown	
2/8/1996	2.8	3.5	4	11.5	0	heavy	calm	lt brown	Ice 1/16" thick approximately 20' wide along the W. shore.
3/2/1996	2.8	4	5.5	14	0	none	light	lt brown	Slight woody debris & vegetation at south end of lake. Ice fringe at some locations along the N. shore
4/6/1996	2.4	12.5	11	14	100	light	light	lt brown	
5/4/1996	1.8	9	12.5	15.5	90	moderate	calm	lt brown	Minor flooding at SE and S shores. Approximately 3.5" of rain in preceding 2 weeks
5/19/1996	2.0	9.5	14	17	90	light	breezy	lt brown	Predominant algae was Anabaena. Nuphar emerging onto surface. 4 Canada geese, 2 goslings, 1 mallard, 2 ducklings, 2 domestic ducks, 1 osprey. No algae, scum, odor, slight plants.
6/2/1996	2.0	18	19	18	0	none	light	lt brown	Nuphar blooming. Fishing is reported to be poor.
6/15/1996	2.4	12	19	24	10	none	light	lt brown	No one fishing on the lake! This time of year there are usually 5-8 boats, at this time of day. No algae, scum, odor, slight plants. 3 Canada geese, 3 Mallard.
6/22/1996	2.0	11.5	19	25	100	none	light	lt brown	Total phosphorus sample taken.
6/30/1996	2.6	17	20	25	10	none	light	lt brown	No algae, scum, odor, slight plants. 1 mallard, 4 Canada geese.
7/13/1996	2.6	20.5	23.5	26.8	0	none	light	lt brown	
7/27/1996	3.3	24	26	28	10	none	calm	lt brown	No algae, scum, odor, slight plants. 7 mallards.
8/11/1996	2.4	15	23	28.8	90	none	strong	lt brown	
8/24/1996	3.2	19	22.5	30.5	0	none	light	lt brown	Slight algae (Microcystis), scum, plants; no odor. Pondweed found at SE and S shorelines.
9/8/1996	2.3	15	18	30.5	100	light	light	lt brown	A large mass (2+ gallons) of dead Daphnia blew onto the north shore. The mass may be shed carapaces, although I got very few in my plankton net.
9/22/1996	2.7	9.5	15	28.3	100	moderate	light	lt brown	Slight algae, scum, plants, strong H ₂ S odor 8-12 meters. Thin algae scum at boat ramp (N. shore). Species is Anabaena. Pondweed found at S. shore.
10/6/1996	2.8	11	15	27.5	75	trace	calm	lt brown	Anabaena - predominant algae.
10/26/1996	2.2	7.5	10	14.5	10	moderate	calm	lt brown	H ₂ S odor at 8 meters down to bottom. Predominant algae are Microcystis & Anabaena in the scum.
11/9/1996	2.4	11.5	9	13	10	none	light	lt brown	Algae scum, microcystis - N. shore.
12/14/1996	2.3	4.5	5	15.3	0	light	calm	lt brown	

1997

DATE	Secchi Depth (meters)	Air Temp (C)	Water Temp (C)	Lake Level (in)	Clouds (%)	Rain	Wind	Color	COMMENT
1/11/1997	2.3	6	4.5	12	100	trace	light	lt brown	Slight algae (microcystis) scum at south shore. 12 mallard, 6 bufflehead. Fog. Clearing of property at S. shore - est. 1+ acres.
2/8/1997	2.6	1.5	4	19.8	0	none	calm	lt brown	11 bufflehead, 4 mallard, 4 geese, 1 Great Blue Heron. 1 otter basking on log at N. shore. Ice floes extending width of north 1/3 of lake, ice at SW shoreline.
3/8/1997	2.3	5.5	6	19.5	75	moderate	breezy	lt brown	4 cormorant, 13 bufflehead, 1 kingfisher, 2 mallard. Beaver gnawed saplings on north shore east of launch site.
4/12/1997	2.7	10	12	20	75	none	calm	lt brown	6 buffleheads, 4 Canada geese, 3 mallards, 2 cormorants.
5/10/1997	2.6	14	15.5	16.5	0	none	light	lt brown	No algae, odor, slight plants. 2 Canada Geese, 2 Cormorants, 1 osprey. >15 boats
5/25/1997	2.5	10	18	16.8	100	light	calm	lt brown	Slight algae, plants, no scum, odor. 1 mallard, heard an osprey.
6/7/1997	2.5	12.5	19	14	100	light	calm	lt brown	No algae, scum, odor, slight aquatic plants. 0 ducks/geese.
6/22/1997	2.5	11.5	18	13	100	moderate	light	lt brown	Slight plants. 0 waterfowl.
7/5/1997	2.5	17.5	22.5	15	90	trace	light	lt brown	Slight algae, plants. 5 mallards.
*07/09/97	3.5							medbrown	
7/20/1997	3.3	19.5	23.5	17.5	0	none	calm	lt brown	Moderate algae, slight plants. 3 mallards. microcystis bloom.
8/3/1997	2.9	20	23.5	21	10	none	light	lt brown	Moderate microcystis bloom, slight aquatic plants. 4 mallards.
8/16/1997	3.3	19	24	23.5	0	none	calm	lt brown	Moderate algae, plants. 2 mallards. Observed a large bed of pondweed 50'-60' long, approx 30' off the NNE shore in 5' of water; first time observed at this location. Clumps of pw were also found at the S. shore just off the dock in about 4' water.
8/31/1997	2.8	17.5	21	24	0	none	light	lt brown	Moderate algae, slight plants. 7 mallards. Strong H ₂ S odor at 12m. Gloeotrichia bloom. Resident reported seeing beaver in vicinity of inlet stream at SE end of lake. Same resident was caught by the county - did not have a grading permit for fill.
9/14/1997	2.7	14.5	19	24	100	moderate	light	lt brown	No algae, scum, odor, slight plants. 4 Mallards.
*09/16/97	3.4				75	moderate	light	medbrown	House on south shore - bare dirt hillside all way to lake (small tan house w/ green/blue trim). Also new dock 3rd house from boat launch.
9/28/1997	2.9	14.5	17	22	100	light	light	lt brown	No algae, scum, odor, slight plants. 1 Grebe
10/13/1997	2.7	10	12	17.5	100	moderate	light	lt brown	Slight algae, scum, no plants, odor. Algae scum was microcystis - located near N shore, wind has been from the south. 5 Mallards, 14 Canada geese, 2 Western Grebes.
10/26/1997	2.7	11	11.5	17.5	100	none	light	lt brown	No algae, odor, scum, plants. 16 ducks.
11/16/1997	1.6	9	9	16.5	0	none	breezy	lt brown	No algae, scum, plants, odor. 17 ducks.

1998

DATE	Secchi Depth (meters)	Air Temp (C)	Water Temp (C)	Lake Level (in)	Clouds (%)	Rain	Wind	Color	COMMENT
5/10/1998	2.3	10.5	15.5	17	100	light	light	lt brown	No odor, slight scum (on N shore), plants, moderate algae (predominantly microcystis). 4 mallards w/ 9 ducklings; 2 Canada geese w/ 7 goslings; 1 Osprey. Yellow waterlilies are blooming.
5/24/1998	2.5	12.5	16	22	100	trace	calm	lt brown	No scum, odor, slight algae, plants. 1 Mallard hen & 7 ducklings. 16 boats on the lake. Nuphar is blooming.
6/7/1998	2.8	17	20	21.3	0	none	breezy	lt brown	No algae, scum, odor, slight aquatic plants. No ducks/geese. Nuphar is blooming. Volunteer saw an amphibian egg mass (similar to that of Western Toad) in shallow water at mid west shore.
6/21/1998	2.4	19.5	19.5	22	10	none	light	lt brown	No scum or odor; slight aquatic plants; moderate algae; no ducks/geese.
7/5/1998	2.4	13.5	19	23.5	100	light	light	lt brown	No algae, scum or odor; slight plants; 5 mallards; septic tank in port-a-potty damaged. Possible spillage of sewage onto access road approx. 100' from lake; water lilies at so. shore; spiraea.
7/19/1998	2.7	15.5	23	24.5	100	none	breezy	lt brown	No algae, scum or odor; slight plants; 14 Mallards; 1 'other' duck; Hydrogen sulfide odor in 13m sample; portable toilet has been replaced.
8/2/1998	3.2	17.5	23	26.5	10	none	light	lt brown	Slight algae, scum & plants; no odor; 3 Mallards + 1 unidentified duck; 9 Canada geese; algae scum at south shore. Pondweed at south central area of lake in approx. 3-4' of water. Algae is microcystis.
8/16/1998	2.8	13	22.5	28.8	100	trace	light	lt brown	Slight algae & plants; no scum; slight rotten egg odor; heavy rotten egg odor at 7-10 m; 4 Mallards; intermittent rain during monitoring period.
8/30/1998	3.6	17.5	22	30	0	none	light	lt brown	Slight algae & plants; no scum or odor; no ducks/geese; Gloeotrichia bloom.
9/13/1998	3.4	17.5	20	31.8	50	none	light	lt brown	Slight algae & plants; no scum or odor; HS odor from 7-12m; 18 Mallards; 3 Canada geese.
9/27/1998	3.9	14	17.5		0	none	calm	lt brown	Slight algae (microcystis), scum and plants. No odor. 15 ducks.
10/11/1998	2.8	11.5	14	24	75	light	breezy	lt brown	Slight algae, plants; no scum, strong odor 5-12m.
10/25/1998	3.2	11.5	12.5	21	100	light	light	lt brown	Slight algae, scum; no odor or plants. 9 cormorants. Approx. 20 dead fingerling fish in shallow water near boat ramp. 6-10 discarded tires in wetland adjacent to lake access road.

1999									
DATE	Secchi Depth (meters)	Air Temp (C)	Water Temp (C)	Lake Level (in)	Clouds (%)	Rain	Wind	Color	COMMENT
5/9/1999	1.3	5	11.5	15	100	light	light	lt brown	
5/23/1999	2.1	13	17	12.5	0	none	light	lt brown	Algae is microcystis.
6/6/1999	2.8	7.5	15	12.5	100	moderate	light	lt brown	Nuphar blooming.
6/13/1999	2.4	17.5	19.5	13.3	100	none	light	lt brown	Algae is anabaena. New home & dock @ SW shore.
6/27/1999	2.1	12	17	11.8	100	light	light	lt brown	
7/4/1999	2.1	12.5	16.5	11	100	moderate	light	lt brown	
7/18/1999	2	16.5	19	15	100	light	light	lt brown	
8/1/1999	2.7	14	21.5	16.5	100	none	light	lt brown	
8/15/1999	3.2	13	19.5	17.8	100	moderate	breezy	lt brown	1 Osprey. Hydrogen sulfide odor from 7-12 m.
8/29/1999	2.7	13	22	18.5	100	trace	light	lt brown	1Eagle.
9/12/1999	3.1	16	19	19.8	0	none	calm	lt brown	2 Osprey. Algae is Anabaena. H2S odor 6-12 m.
9/26/1999	2.4	10	17	20	90	trace	light	lt brown	
10/9/1999	3.2	9.5	14	19.3	75	light	calm	lt brown	H2S odor from 7-12 m.
10/24/1999	3.7	9	12	19.5	25	trace	calm	lt brown	Anabaena.

2000									
DATE	Secchi Depth (meters)	Air Temp (C)	Water Temp (C)	Lake Level (in)	Clouds (%)	Rain	Wind	Color	COMMENT
5/7/2000	2.6	9	14.5	9.25	0	trace	light	lt brown	No ducks, algae, algae scum, or aquatic plants.
5/21/2000	2.2	15	16.5	13.8	100	none	breezy	lt brown	No ducks, algae, algae scum, and slight aquatic plants.
*06/04/00	2.2	25	20.24	13.8	0	none	calm	lt brown	No algae or algae scum.
*06/19/00	3.1	12	18.25		100	light	light	medbrown	1 duck, moderate algae, no algae scum, and slight aquatic plants.
7/2/2000	2.8	12	19.5	17	50	light	light	lt brown	No ducks, algae, algae scum, and slight aquatic plants.
*07/20/00	3.5	21	22.65		100	none	calm	medbrown	6 ducks, no algae or algae scum, and slight aquatic plants.
7/30/2000	3.1	19.5	23	19	0	none	light	lt brown	11 ducks, slight algae and aquatic plants, and no algae scum.
8/13/2000	3	15	21.5	20.5	50	none	light	lt brown	No ducks, slight algae and aquatic plants, and no algae scum.
8/27/2000	3	11.5	19.5		100	trace	light	lt brown	No ducks, slight algae and aquatic plants, and no algae scum.
9/17/2000	3.3	17.5	19	18.3	10	none	calm	lt brown	7 ducks, moderate algae, no algae scum, and slight aquatic plants.
10/1/2000	2.9	10.5	16	27.3	100	light	light	lt brown	3 ducks, slight algae and aquatic plants, and no algae scum.
10/22/2000	2.7	6.5	12	25.5	25	light	breezy	lt brown	No ducks, algae, or aquatic plants, and slight algae scum.

[Click here to view more recent data.](#)

HOW YOU CAN HELP STORM LAKE

- Educate yourself about lake ecology and the lake's health.
- Use lawn and garden fertilizers sparingly; test your soil first; choose low or no phosphorus fertilizers.
- Retain or plant native vegetation adjacent to the water to protect the shoreline and filter pollution.
- Infiltrate or filter the runoff from rooftops, patios, and driveways rather than piping it to the lake.



- Cover or mulch bare soil areas.
- Use pesticides, herbicides, and household chemicals sparingly and never near the water.
- Maintain your septic system—have it inspected every two years and pumped when needed.
- Conserve water both inside and outside.
- Clean up pet wastes and keep livestock away from the lake shore.

- Learn to identify non-native invasive aquatic plants and animals; check your boat and trailer for invaders; never empty an aquarium into the lake.
- Do not feed geese or ducks.
- Join with neighbors or the local property owners' association to work together to protect the lake.



Contact Snohomish County Surface Water Management at 425-388-3464 for information about these topics or if you have questions about Storm Lake.

(TTY users call 425-388-3700)