Winter 2011

Snohomish County Volunteer

Lake Monitor

Mink on Lake Beecher Edge

Photo by Jenifer Poole

IN THIS ISSUE

2010 MONITORING STATISTICS

- 47 Volunteers at 34 Lakes
- 272 Secchi Readings
- 271 Total Phosphorus Samples
- 122 Chlorophyll Samples
- 107 Temp/DO Profiles
- 224 Toxic Algae Samples

Herb Hainey - Armstrong & Bryant

2010 - Here's to a Great Monitoring Season

For the second year in a row, you have helped break all previous records for data collected by volunteers for the Snohomish County Lake Management Program. With water color sampling and the continued algae monitoring, more water quality samples were collected in 2010 than ever before (see the numbers to the left). In addition, we have seen the highest rate of secchi depth collection and temperature/dissolved oxygen profiles in our program's history. Thank you for all of your hard work and dedication for such a productive year!

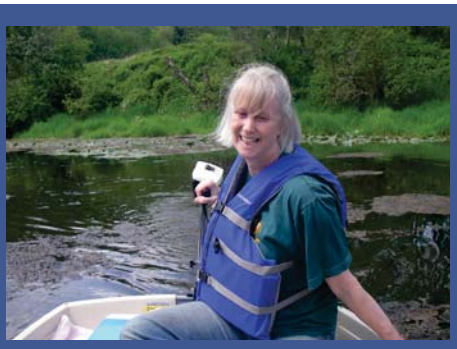
All of your data have been entered and are available at www.lakes.surfacewater.info. We have just now begun to analyze the data and your updated lake reports will be available on the website in the coming months.

As most of you know, we collected some extra samples for water color this year. The idea was to determine if any changes had occurred in water color since data were last collected for most lakes in 1994 and 1995. Initially, it appears that most lakes are actually slightly darker in color than in the past. Of the 25 lakes with historic data, 8 lakes appeared to be significantly darker, 14 were slightly darker and only one (Panther) was slightly lighter. We will be continuing water color monitoring for one more year to see if this is in fact a change or if there is just higher than expected annual variation.

Volunteers Find Aquatic Invaders First

Water quality monitoring is just a part of being a lake volunteer. The observations you make throughout the year help to identify problems and changes at lakes. Just in the past year we have had extremely helpful reports on algal blooms, lake level issues, water quality violations, and wildlife sightings (even bears!). This past year was also notable as three new invasive aquatic plants were identified in Snohomish County – two of which were spotted by volunteers.

Billie Garber at Echo Lake made one of the first observations of Australian water-clover (*Marsilea mutica*) in the state. Although the water-clover has been problematic in the southeast, it is very new to the northwest. This plant may be cute, but it is apparently an aggressive invader that spreads rapidly through rhizomes. In just a few short months, a large patch was established by the boat launch. Thanks to Billie's efforts, the plant will likely be added (cont. on pg. 2)



Jenifer Poole - Lake Beecher

Australian Water-Clover

Bur Arrowhead

Pickerelweed

Eurasian Watermilfoil

Aquatic Invaders (cont. from pg 1)

to the state quarantine list, so that the sale of this plant will be banned to prevent future invasions. As for Echo Lake, control in the next year will hopefully be feasible before the plant becomes problematic for the lake.

The second new plant is Bur Arrowhead (*Sagittaria rigida*), found by Jenifer Poole on Lake Beecher. There are a few native species of arrowhead (also known as duck potato or wapato) found in many WA lakes. Thanks to Jenifer's excellent photos of the plant, it was easily identified as the bur arrowhead which is only native to the Midwest and Eastern United States. We are not sure how long ago the plant was introduced, but it has become well-established at Lake Beecher and neighboring oxbow lakes. Given the widespread local distribution of the plant, control is not likely feasible at this location. However, the State will also be recommending adding this plant to the quarantine list.

Finally, a small patch of the non-native plant, Pickerelweed (*Pontederia cordata*) was found at Lake Ketchum. Jenifer Parsons, the State aquatic plant specialist, identified the plant during a routine survey. Pickerelweed is common in the eastern half of the US, but only a few plants have been identified in Washington. It is an attractive plant with bright purple flowers and would likely have been introduced as an ornamental plant. It is not yet known whether this plant will spread easily and become an invader. We'll be keeping an eye out for its progress in the coming year.

Euarasian Watermilfoil Grows Rapidly in 2010

From all across the county, we received reports of dense of aquatic plants in 2010. The highly invasive Eurasian watermilfoil was no exception, making efforts to control this plant particularly difficult. Eurasian watermilfoil (or milfoil) is a non-native, invasive aquatic plant. Left untreated, milfoil spreads rapidly, crowding out native plants and forming dense mats at the surface. Plant mats can entangle motors, paddles, swimmers, and fishing gear.

Lake Stevens, in particular, suffered the effects of the robust growth this year. Milfoil has become very problematic in this lake in the last two years. The severity of the problem there is not only impeding recreation on the lake, but poses a threat to all neighboring lakes as it only takes a small fragment to spread to a new lake and establish a population. The City of Lake Stevens has been working on a control plan that should be implemented in 2011.

Residents at Nina Lake know first hand about the ease of milfoil spread. At this private lake it appears that the plant was newly introduced from one of their own resident's boats. The citizens have taken the initiative to plan a herbicide treatment to prevent further spread of the plant.

The heavy milfoil growth also made long-term ongoing treatment difficult at Lakes Goodwin, Shoecraft, Roesiger, and Serene. The milfoil populations at these lakes have been kept under control in recent years by annual hand-picking by divers. With so many large plants in 2010, picking was hard, and the threat for spreading is greater. Only next summer will we be able to determine if our efforts this year were enough to keep widespread growth from returning.

Update on Lake Protection Bill

You may remember from last year that the Washington State Lake Protection Association (WALPA) was working on passing a bill that would ban the application of phosphorus-containing fertilizers for residential turf in Washington. The bill relates to lakes because lawn fertilizer is one of the primary contributors to high nutrient levels in lakes that decreases water quality and creates nuisance algal blooms. In addition, phosphorus is not typically needed for healthy lawns in this region as the soils are already rich in this nutrient. Last year, the bill passed in the Senate, but did not make it through the House before the session ended. The bills (HB 1489 & SB 5149) have been introduced again in 2011 and now propose a ban on sale of lawn fertilizer. For more information visit the state legislature at www.leg.wa.gov or WALPA's website at www.walpa.org.

Field Trip - A Time to Learn About Other Lakes

In July about a dozen volunteers participated in our first ever volunteer field trip. The first stop was Lake Serene where we were hosted by Mark Fussell. Mark shared details about his planned lakefront restoration project. He also gave some insight into the benefits of starting a lake association and how it worked for his community. Lake Serene, with its plant life, was also the perfect setting for volunteers to see a host of aquatic plants that we had collected from around the county. Volunteers were able to get a close up look at plants such as the carniverous bladderwort and the dreaded Eurasian watermilfoil.

Crystal Lake was our next destination where we were hosted by Solveig Whittle, Tom Blum, and Shirley Post. We were delightfully surprised by a gourmet lunch that was served in Crystal Lake's beautiful club house. Solveig and Tom talked about their unique Crystal Lake Community. The Community actually owns a significant portion of undeveloped land in the lake watershed that they actively manage for forestry. Their association also has a water quality committee that has worked to do extra monitoring to determine if new watershed development is impacting the lake quality. Following the presentation, we were treated to two tour options. Half of the group took a walking tour around the perimeter of the lake. The other half took to canoes to explore the unique bog habitat north of the lake. Overall, thanks to everyone who attended and especially to our hosts!

Mark Your Calendars

April 23	Annual Volunteer Workshop
May 7	First week of lake monitoring
June 13	First water quality sample pick-up date

Volunteer Spotlight

Nick Martinoli

For this year's volunteer spotlight, we though we would introduce you to Nick Martinoli, our youngest volunteer. Nick is a highschool sophomore and already has 3 years of volunteering under his belt! Here is what he had to say about his monitoring experience and Lake Wagner.

Why did you decide to get involved in the water quality monitoring?

Well it was really two part, first was because I am in the Boy Scouts and I love being outdoors and I want to help protect the wildlife, and the second part is because I live on Lake Wagner (the lake that I monitor) and during the summer I don't want to be swimming in a lake that is gross.

Would you like to share something about Lake Wagner?

Lake Wagner is a very interesting place. It has abundant plants and wildlife. During the summer we have bald eagles and ospreys and during the winter we have trumpeter swans. It has a rich history of being a logging lake where loggers dumped logs to await shipping. Across the lake from my house, there is an old house where logs were milled. Next to the house is a row of pilings that used to be the place that served as the platform for a train to dump logs into the lake. I have even heard that there is a locomotive on the bottom of the lake that fell there when a board rotted away.

What types of activities are available on the lake?

There are many fun things to do here. My family is the only family on the lake that owns a sandy beach so I love to play in the sand and my sister likes to sunbath. We also go swimming, snorkeling, fishing and canoeing. We have frequently had my Boy Scout troop over to practice for the canoeing and swimming merit badge. So in summary, we love to enjoy the sun (whenever we get it Ha-ha) by spending time on our lake.

Goose eggs Nick found in old railroad piling on Lake Wagner

Toxic Algae Update - 2010

Volunteers have now been helping to identify blooms of potentially toxic algae in Snohomish County for five years. This past year was also the second of three years that volunteers will be doing intensive toxic algae monitoring at ten lakes with a high risk for toxic algae. The extra monitoring is part of a larger project funded by the U.S. Centers for Disease Control (CDC). The project is in partnership with King and Pierce Counties as well as the Department of Health, Department of Ecology, and Seattle University.

If you are unfamiliar with the term toxic algae – it refers to toxins sometimes produced by a type of algae known as cyanobacteria or blue green algae. These algae are a natural component of lakes but under certain conditions (usually during blooms) they can produce toxins posing a health risk to people or pets who recreate in affected waters. The two most common toxins of concern are anatoxin-a (a neurotoxin) and microcystin (a liver toxin).

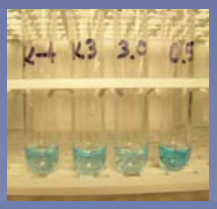
In 2010, seven lakes had visible surface scum of cyanobacteria including: Beecher, Blackmans, Cassidy, Howard, Ketchum, Stevens, and Sunday. All of these lakes were also found to be toxic during the summer with the excepetion of Lake Beecher, which was not tested. Lake Armstrong and Martha N. also had low toxin levels, but without visible surface scum. In most cases, the toxin levels were well below or close to the recreational standards set by the State Department of Health (6 parts per billion for microcystin and 1 part per billion for anatoxin-a). However, Lake Cassidy and Lake Ketchum each had several weeks where the toxin microcystin was present at poten tially dangerous levels. Thanks to the extra monitoring, the lakes were posted and notices sent to citizens to warn them of the potential risk.

Next year will be the final year of the comprehensive study. When complete, we should gain a better understanding of the toxic algae problem in this region and better understand why blooms and toxin production occur.

2010 Toxic Algae Results

Lake	Microcystin* (Parts per billion)	Anatoxin-*a*** (Parts per billion)
Armstrong	0.165	NA
Blackmans	2.77	0.042
Cassidy	732	0.175
Howard	>6	NA
Ketchum	24.8	NA
Martha N.	0.050	NA
Stevens	2.51	0.027
Sunday	NA	0.021

*Washington State Recreational Standard = 6 ppb
**Washington State Recreational Standard = 1 ppb



Introducing our newest addition

As many of you know, I have been absent for the last three months following the the birth of my daugher. Her name is Colette Amy and she was born on Sept. 28. Everything went very well. She is an extremely happy baby, and I really enjoyed my time off getting to know her and spending time with her sister Hazel. I am back at work now, and I just wanted to say a quick thank for all of the warm wishes - *Marisa*

Winter Lake Levels Reminder

We encourage all of our volunteers to take weekly lake level readings throughout the winter if possible. Lake levels are one of the most common concerns of lake residents. High levels can threaten yards and structures and low levels can affect lake access.

If you are interested in tracking lake levels this winter, forms are also available at www.lakes.surfacewater.info under "resources for current volunteers". You can also just keep a log in a notebook.

Calling All Photographers

A new year brings a new opportunity to win the lake photo contest. Submit your best shot of lake scenery, wildlife, or recreation and you could be the next winner. Winners will be chosen at the workshop. To enter send your shot to marisa.burghdoff@snoco.org with the photographer's name, photo title, and lake name.

2010 Winner

Lake Beecher Birds in Fog

Photo by Jenifer Poole

2010 Winner

Ice Bubbles on Lake Serene-

hoto by Mark Fussell