WALPA The Washington State Lake Protection Association Newsletter

WATERLINE

SEPT 2008

In This Issue

WATERLINE is the newsletter of the Washington State Lake Protection Assoc. (WALPA). Send submissions to Polly Freeman at **polly_freeman@msn.com**

For information about the organization, call **1-800-607-5498** or visit the WALPA website

www.walpa.org

Please save *WATERLINE* issues for future reference.

Watch for Cyanobacteria "Blue-Green Algae" on Your Lake

By Kathy Hamel

Cyanobacteria, better known to lakeside residents as blue-green algae, are found in Washington's lakes and ponds with increasing frequency. Dramatic blue-green blooms are often mistaken for paint spills because they can look like bright green paint floating in scums on the water's surface. Although many lakeside residents still call them algae, scientists have now established that blue-greens are really photosynthetic bacteria. They have an ancient lineage, and have been present on earth for 3.5 billion years. Today's cyanobacteria appear to be very similar to fossil forms.

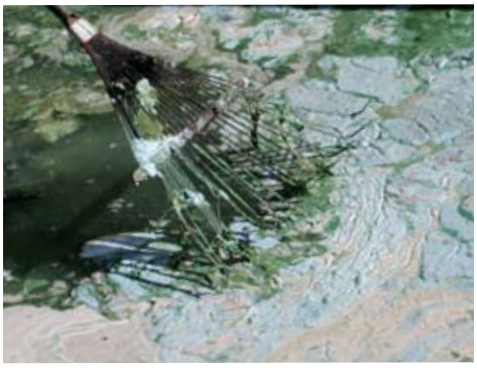
Cyanobacteria blooms are often a sign that lakes are becoming enriched with plant nutrients like phosphorus. Many species of blue-greens can "fix" nitrogen from the atmosphere, just like legumes do (as many gardeners know). Their ability to get nitrogen from the air rather than the water may help blue-greens outcompete "good" algae like diatoms or green algae.

In addition to being ugly and often smelly when they decompose, some species of cyanobacteria produce toxins. Scientists do not know what triggers toxin production by cyanobacteria -- not all species produce toxins and even known toxin producers do not produce toxins all the time.

As mentioned in last September's *Waterline*, the most common cyanobacterial toxins are microcystin, a liver toxin, and anatoxin-a, a nerve toxin. Both toxins can affect humans, pets and livestock, and fish and wildlife. Human health symptoms may include stomach pains, vomiting, diarrhea, skin rashes, sore throat, ear and eye irritation, fevers, mouth blisters, or nerve and liver damage. Algae toxins may also have long-term human health effects; they may promote liver cancer and possibly neurological diseases.

So just how risky are algal blooms? Since cyanobacterial toxins can be lethal to animals in relatively small amounts, caution should always be taken when a bloom occurs. As cells die, toxins are released into surrounding waters. Some toxins, like microcystins, are very stable and can remain in the water for days or weeks after the bloom has disappeared.

Consequently, many of Washington's local health districts take algal toxins seriously, posting warning signs when toxin levels reach 6 μg/l for microcystin or 1 μg/l for anatoxin-a. In Washington, people have developed skin rashes and gastrointestinal distress when exposed to cyanobacterial toxins, but to date there have been no reports of more serious illness here. Toxin exposure has led to serious illness and even death in other states and countries.



Dramatic blue-green blooms are so vibrant, they're often mistaken for paint spills.

It is very important to keep pets from

Continued in box on page 2

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Watch for Blue-Green Algae

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drinking or swimming in water when blue-green blooms are present. In 2007, veterinarians reported that two dogs died in separate incidents after swimming in Potholes Lake in Grant County; a blue-green bloom was occurring at the time. In December a dog died after swimming in American Lake, Pierce County, which was experiencing a bloom. In 2006, two dogs died after swimming in Anderson Lake in Jefferson County; toxin levels in the lake were high at the time. In earlier years, pets have died after exposure to toxic blooms in Lake Steilacoom and other water bodies.

So what should you watch out for? Blooms may turn the water pea-soup green, turquoise, brown, or even red. When blue-green blooms start decomposing, they can turn bright blue or white and are often reported as paint spills. For photos of cyanobacterial blooms, see the Washington Department of Ecology (Ecology)'s website at: **http://www.ecy.wa.gov/programs/wq/plants/algae/monitoring/AlgaeBlooms.html**

In 2007, Ecology started an algal identification and toxicity testing program, contracting with King County Environmental Laboratories to identify algae to genus level and test for cyanobacterial toxins. Lakeside residents may contact Tricia Shoblom at **(425) 649-7288** or tsho461@ecy.wa.gov if they suspect that a cyanobacterial bloom is occurring in their lake. In most instances, Tricia can arrange for the resident to collect and mail in a sample or she can work with the local health district to sample the lake. Results are reported back to the sampler and can also be found in Ecology's on-line database at: **https://fortress.wa.gov/ecy/toxicalgae/InternetDefault.aspx**

For more information about cyanobacteria, see the Washington Department of Health's website at **http://www.doh.wa.gov/ehp/algae/default.htm** or Ecology's site at: **http://www.ecy.wa.gov/programs/wq/plants/algae/publichealth/index.html**. You may also contact Kathy Hamel, Ecology, at **(360) 407-6562** or Joan Hardy, Department of Health, at **(360) 236-3173**.

21st Annual Conference
Washington State Lake Protection Association

Sept 30-Oct 1, 2008
Arlington, WA

The Science of Lakes

Monday September 29th

Exhibitor Set-Up: 5:00pm – 8:00pm

Tuesday September 30th

Plenary Session: TBD 8:30 – 10:00am

Break 10:00 – 10:30am
- Visit exhibitors, displays, and posters (2nd Floor Ballroom)

Session 1: 10:30am – Noon

Session 1A: Aquatic Plant Management Projects
- Session Chair: Kathy Hamel, Washington Deptartment of Ecology (Ecology)
- Speakers:
  - *Milfoil management efforts in Liberty Lake, WA*
    BiJay Adams, Liberty Lake Water and Sewer District
  - *Noxious weed management in North and Steel Lakes, WA*
    Daniel Smith, City of Federal Way Surface Water Management
  - Egeria densa *control in Duck Lake and Canals*
    Doug Dorling, Northwest Aquatic Eco-Systems

Session 1B: Lake and Reservoir Science
- Session Chair: Karl Mueller, ENVIRON International
- Speakers:
  - *Predation on juvenile salmon in Lake Washington and the importance of alternative prey*
    Dave Beauchamp, University of Washington
  - *Green Lake 2004 alum treatment update*
    Rob Zisette, Herrera Environmental Consultants
  - *Vulnerability of lake ecosystems to species invasions in Washington*
    Julian Olden, University of Washington

Lunch: Noon – 1:30pm

Session 2: 1:30 – 3:00pm

Session 2A: Emerging Aquatic Plant Issues
- Session Chair: Jenifer Parsons, Ecology
- Speakers:
  - *The status of phragmites (common reed) in Washington*
    Greg Haubrich, Washington State Department of Agriculture
  - *What's the rush? Why flowering rush is causing concern*
    Tim Miller, WSU; Laurel Baldwin, Whatcom County Noxious Weed Control Board; and Alison Halpern, Washington State Noxious Weed Control Board
  - *Native plants that sometimes act invasive*
    Jenifer Parsons, Ecology
  - *Garden loosestrife: is biology behind its invasiveness?*
    Katie Messick, King County Noxious Weed Control Board

Session 2B: Citizen Activism
- Session Chair: Michael Murphy, King County
- Speakers
  - *Community involvement in aquatic weed management.*
    Dave Barber, Lake Wilderness (King County)
  - *Using funds from cooperatively-owned timber harvest to monitor and manage Crystal Lake.*
    Solveig Whittle, Crystal Lake (Snohomish County)
  - *Community involvement in controlling milfoil at Mason Lake*
    Steve Boothe, on behalf of Mason Lake residents

Break: 3:00 – 3:30pm
- Visit exhibitors, displays, and posters (2nd Floor Ballroom)

Session 3: 3:30 – 5:00pm

Session 3A: WALPA and the Legislative Process
- Session Chair: Jonathan Frodge, King County
- Speakers:
  - *How to get clean dishes without making dirty lakes: Grassroots success in dishwasher soap P-ban*
    Tom Brattebo, Liberty Lake
  - *"How To" - Legislation in Olympia*
    Arlen Harris, WALPA Lobbyist
  - *WALPA's 2007 Efforts, or 'Wait til next year!'*
    Beth Cullen, King County WLRD

Session 3B: Lake Modeling/Data
- Session Chair: Joe Ravet, University of Washington
- Speakers:
  - *Modeling the feeding and growth response of kokanee to*

water management in Lake Roosevelt
Mike Mazur

-*How reliable are eutrophication models as management tools?*
Mike Brett, University of Washington

-*Lake Whatcom TMDL study – Linking HSPF to CE-QUAL-W2,*
Steve Hood, Ecology

-*Verifying the use of specific conductance as a surrogate for chloride in seawater matrices*
Mike Phillips, Electronic Data Solutions

No-Host Social Gathering 5:00 – 7:00pm

- Visit exhibitors, displays, and posters (2nd Floor Ballroom)

Wednesday, October 1st

Session 4: 8:30 – 10:00am

Session 4A: Lake Monitoring

- Session Chair: Norm Dion, USGS Retired
- Speakers:

-*The 2007 statewide lake survey – what does it mean to you?*
Maggie Bell-McKinnon, Ecology

-*Wapato Lake, Tacoma: The need for monitoring data to guide management decisions*
Chris Burke, City of Tacoma

-*Impacts of salmon carcass decomposition on reservoir eutrophication and drinking water quality in Seattle, WA*
Rebecca Dugopolski, Herrera Environmental Consultants

Session 4B: Student Work and New Technologies

- Session Chair: BiJay Adams, Liberty Lake
- Speakers:

-*A look at benthic macroinvertebrates from glacial and non-glacial stream habitats in the North Cascade Mountains, WA*
Kelly Turner, Western Washington University

-*Elwha River Restoration Project: Pre-dam removal wildlife and microbial analysis*
Brittany Wilmot, Western Washington University

-TBD

Break: 10:00 – 10:30am

- Visit exhibitors, displays, and posters (2nd Floor Ballroom)

Session 5: 10:30 – Noon

Session 5A: Urban and Suburban Lake Issues

- Session chair: Gene Williams – Snohomish County
- Speakers:

-*Beaver & beaverworks: how we can all live together*
Jake Jacobsen, Snohomish County Surface Water Management

-*Urban source control investigations in the Wapato Lake Watershed, Tacoma, WA*
Chris Burke, City of Tacoma

-*Lake Crabapple Project—modeling with volunteer data for more effective lake management*
Gene Williams and Marisa Burghdoff, Snohomish County Surface Water Management

Session 5B: Toxicity in Lakes

- Session chair: Shannon Brattebo – Tetra Tech
- Speakers:

-*Evaluation of PCBs and PBDEs in the Spokane River*
Dale Norton, Ecology

-*Analysis of cyanobacterial toxins from Washington lakes*
Gabriela Hannach, King County Environmental Lab

-*Toxics assessment of boundary reservoir for FERC relicensing*
Robert Plotnikoff, Tetra Tech

-*Redox transformations of heavy metals in sediments of Lake Coeur d'Alene, Idaho*
Matt Mora, University of Idaho

Lunch: Noon – 1:30 pm

- Business meetings, scholarship awards, retiring board members and more.

Joint Session: Blue-Green Algae!

- Session Chair: Jean Jacoby – Seattle University
- Speakers:

-*An overview of Ecology's freshwater algae program and 2008 results*
Kathy Hamel, Ecology

-*An overview of Washington State recreational guidelines for algal toxins*
Joan Hardy, Washington State Department of Health

-*The Jefferson County blue-green algae experience: a small jurisdiction responds to a big problem*
Neil Harrington, Jefferson County Public Health Department

-*Past, present and future: the toxic algae experience in Pierce County*
Ray Hanowell, Tacoma-Pierce County Health Department

Recertification Credits Now Available for Two Conference Sessions!

Take note that recertification credit is now available for Session 1A: Aquatic Plant Management AND Session 2A: Emerging Aquatic Plant Issues. So attending both sessions will get you two recertification credits toward maintaining your herbicide application license. Not to mention all the other great information, networking and fun to be had at the conference – plan to join us!

Mason Lake Residents

Continued from back page

numbers and GPS coordinates, lake workers could easily find milfoil locations for treatment or inspection.

In 2002, Ecology's permitting system changed, leading to the formation of the Mason Lake Management District II and the production of a 300-page Mason Lake Integrated Aquatic Vegetation Management Plan by one of the lake families. The group also created a website and hired an Aquatic Plant Specialist to help them identify aquatic plants. The group built a large viewing tube and attached it to the front of one member's party barge so they could cruise the lake shoreline hunting milfoil. They built their own floating dredge system and customized bottom barriers. When observers began to suspect that fresh water inflow from Mason Lake's underwater vents was washing away the costly herbicide, lakeside residents built "tents" to increase the milfoil's exposure to the chemicals.

The *Sagittaria* was another matter. As a new plant to Washington, no protocol existed for its treatment, so residents made one up. During the summer, they boated along the shoreline, cutting off *Sagittaria's* seed-producing flowers. Small groups gathered for "sag-pulling parties" using rakes, floats, boats and wheelbarrows and hired divers to pull deeper plants. The chemical application company, hired to eradicate the milfoil, began experimenting with other herbicides to find a control method for Sagittaria.

It takes a committed group to combat invasive aquatic plants effectively. WALPA salutes the Mason Lake Management District for its innovation, enthusiasm and integrity in grant management.

WALPA Needs to Grow

If you are receiving this edition of *Waterline*, you are probably already a member of WALPA. There's also a good chance your membership is due to expire in the next couple of months. If you renewed when we contacted you earlier this year, a hearty thank you!

If you plan to attend WALPA's annual conference in Arlington this fall, please renew your membership then. If you cannot attend, please renew by mail – how about today? Send your dues to: WALPA, P.O. Box 4245, Seattle, WA 98194-4245.

Annual dues rates remain very reasonable:

- $15 Students
- $20 Individuals
- $30 Professionals
- $40 Organizations and lake assoc.
- $10 Individuals who belong to lake associations that are WALPA members

WALPA needs to grow! Given the large number of lakes in Washington and WALPA's lake protection goals, our current size – about 115 members – is barely adequate. We'll be starting a major membership drive in spring 2009. Meanwhile, if you know individuals or lake associations that should be WALPA members, please give us their contact information and we will get in touch and explain the benefits of WALPA membership.

Send that information, or any ideas you have for increasing WALPA membership, to Norm Dion, **npdion@comcast.net** or **(253) 565-2753**.

Thanks for your past support, and we hope to see most of you at the conference this fall!

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In This Issue

Mason Lake Residents Make History

By Arline Fullerton

Mason Lake is a five-mile long, multi-use lake in a wooded setting in Mason County, Washington. This clear, deep lake supports many types of aquatic plants; some are listed as threatened species and some are threatening the health of the lake. The lake hosts an unusual cyanobacteria-algae mix called Nostoc found near the many underwater vents that flow into the lake. Thousands of balls of jelly-like material ranging from minuscule to 6 inches in diameter lie on the lake bottom as if in an ancient marble depository waiting for the games to begin.

At the lake's north end are Mason County Park and the public boat launch. At the south end is the Simpson Timber Company's recreation area, where employees and guests launch boats, camp, picnic, swim, fish and play in the water. In between are hundreds of private property owners and about 200 private boat launches.

In 1998 Jenifer Parsons, Aquatic Plant Botanist for the Department of Ecology, first surveyed Mason Lake and identified a large patch of grass-leaf arrowhead (*Sagittaria graminea*) growing next to the public boat launch. She decided to keep an eye on it because it was also growing rapidly on several other lakes. Next, she identified Eurasian water milfoil (*Myriophyllum spicatum*) thriving around Paradise Cove's private boat ramp. This discovery launched the Mason Lake Milfoil Committee and culminated in the award of an Ecology grant in 1999 to address the situation. Drawing from the hundreds of families living near the lake, an enthusiastic and active group came together and began work to purge their lake of this nuisance.

Mason Lake residents pulling Sagittaria

Jenifer also identified *Lobelia dortmanna* growing in the water along the lake's clean and sandy shoreline. This timid little plant with a small rosette of narrow leaves sends one thin stem to the surface to display its little flowers. It is listed as an endangered species in Washington. However, the very existence of the native Lobelia was threatened by the exotic Sagittaria growing in the same environment.

Because of Mason Lake's size, it was hard to identify specific shoreline locations, so lake activists adorned the end of each dock with a small painted wooden number. Armed with dock

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