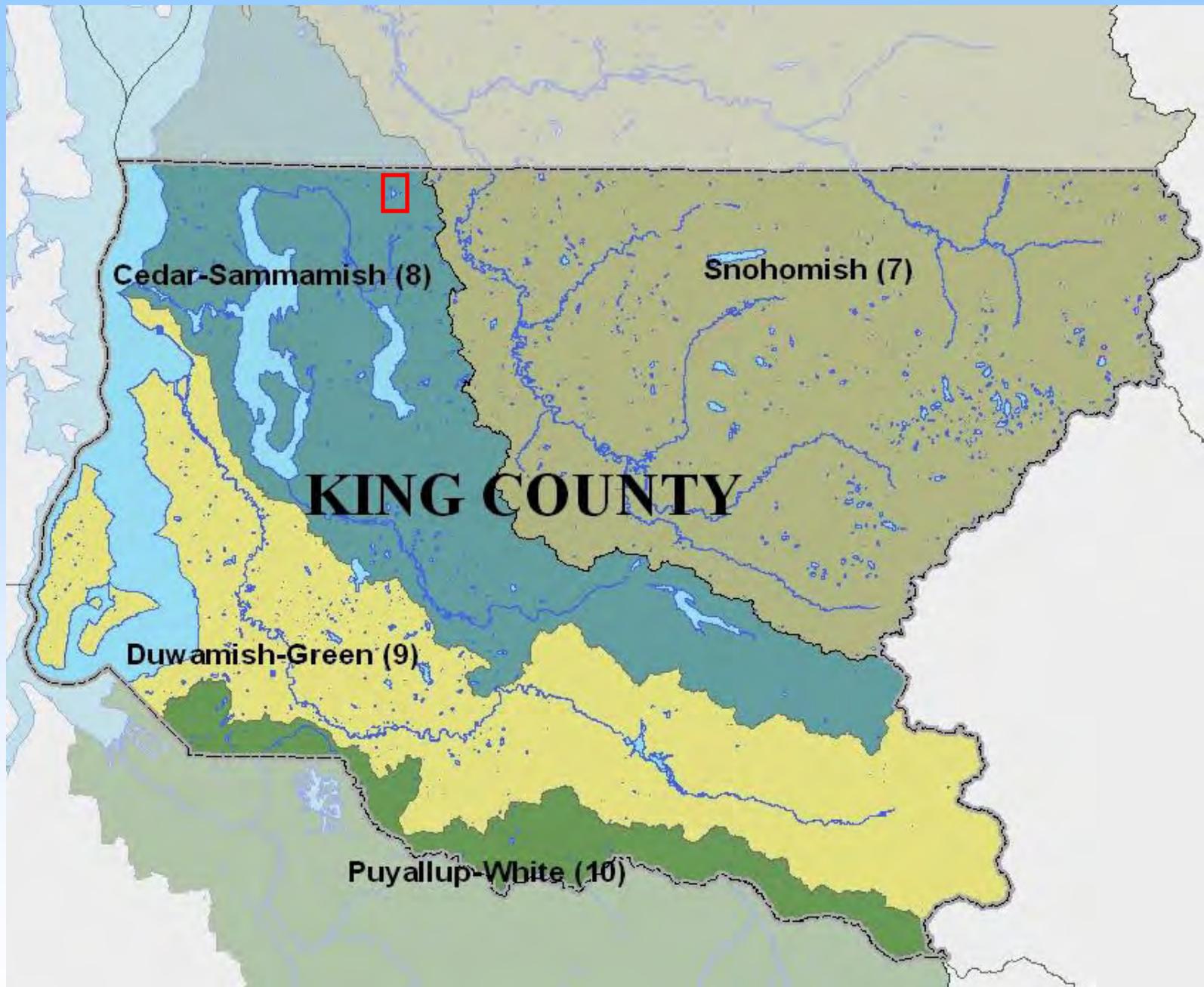
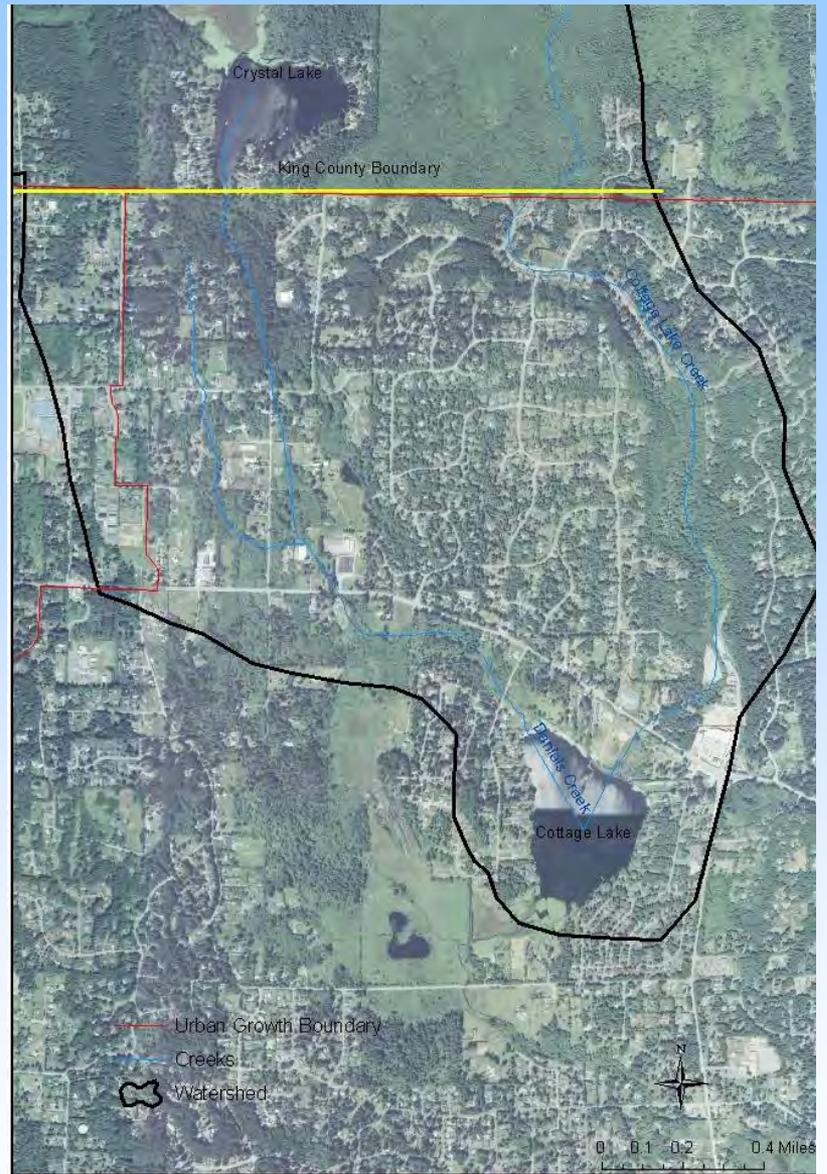
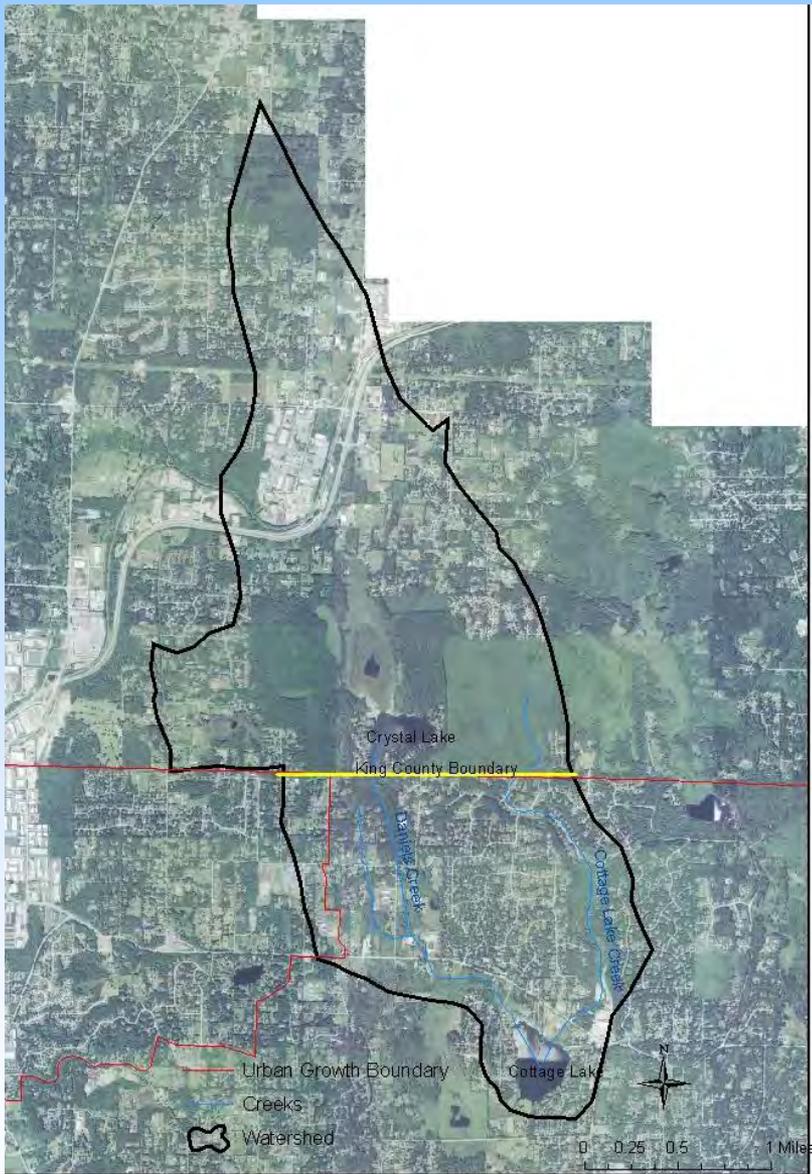


Cottage Lake Phosphorus Reduction Project:



Community Oriented Phosphorus
Reduction Project on Cottage Lake





HISTORY

- Characterized as eutrophic since early 1970s based on concentrations of phosphorus, chlorophyll *a* and water transparency.
- Listed on 303(d) list for phosphorus in 1996, 1998 and again for 2002/2004.
- 1996 a Phase I study done with Centennial Clean Water money.
- The phase I study led to the design and completion of a TMDL for phosphorus in the lake, EPA approved TMDL in 2004. Detailed implementation plan completed in 2006.
- TMDL set forward a goal of a 20 µg/L in the epilimnion of Cottage Lake between June and September.
- King County in partnership with Friends of Cottage Lake applied for a Centennial Clean Water Grant in late 2004 and was awarded the grant in 2005.



GRANT SPECIFICS

Three main components to the grant

– Education

- Outreach including mailings, newsletters, web pages
- Workshops
- Pre and post project survey

– Restoration

- Cottage Lake Park
- Private
- Hobby Farms

– Monitoring and Assessment

- Inlet streams and lake
- Habitat assessment for restoration potentials.



PROJECT MANAGEMENT

Constructive Outcomes

- Kept the project on task.
- Forced to stay on top of billing and deliverables.
- Made it easy to reconstruct the project for annual report.

Hard Outcomes

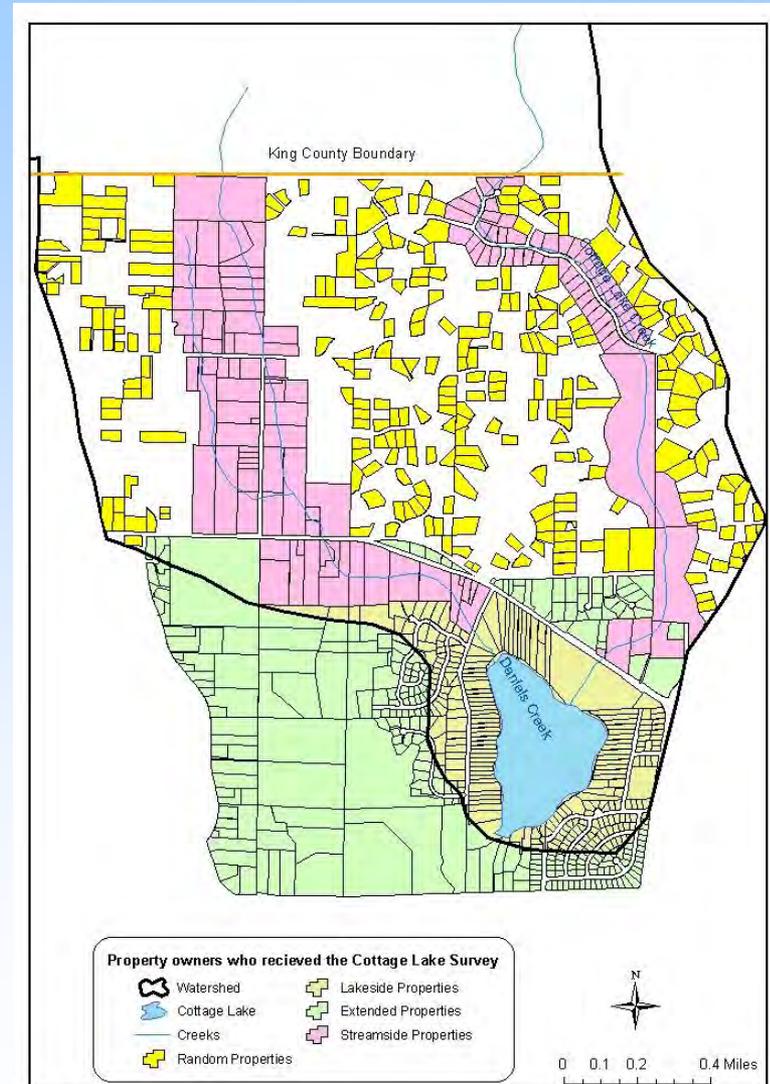
- Need to stay on top of communication with entire grant team.
- Hard to estimate how much time/money project management will cost.



EDUCATION

Cottage Lake Community Survey

- Best way to get a baseline of community knowledge of the problems facing Cottage Lake.
- What people are willing to do to change behaviors.
- What behaviors people currently participate it in.
- Baseline responses to compare to a post survey done at the end of the grant.



WORKSHOPS

Natural Yard Care

- Workshop based off of survey results
- 3 night class at Molbak's Nursery
- Community business donations for raffle
- Worked with PR firm
- Attendance
 - 1st night - 115
 - 2nd night - 73
 - 3rd night - 72



Green Building/LID

- Focus on saving money through efficient energy and water choices.
- 10 people attended.

Septic System

- Joint community with Crystal Lake and Cottage Lake.
- Put on by Teri King at Sea Grant.
- 28 people attended.

**Cottage Lake
Thursday January 24, 2008
7:00 - 8:30 p.m.**

Come to the Low Impact Development and Green Building workshop at the King County Library in Woodinville on Thursday January 24, 2008.

Learn about:

- Healthy homes—create a healthier home through material and finish choices
- Save money—implement low-cost energy and water efficiency strategies
- Increase home value—with green materials and landscaping choices
- Clean green—help protect yourself and the environment while you clean

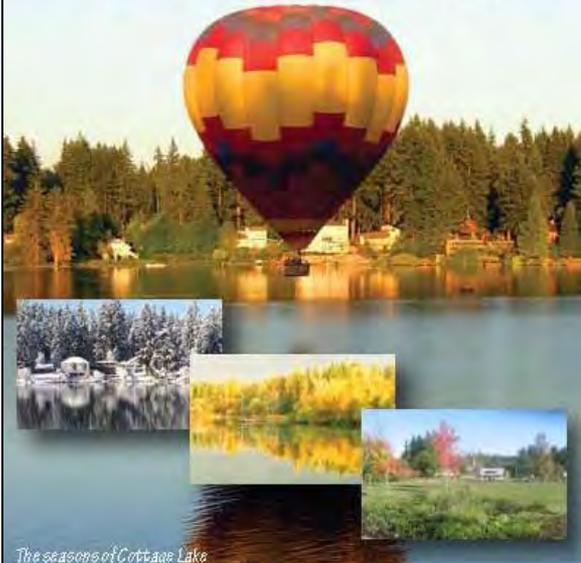
For questions please contact Beth Cullen at beth.cullen@kingcounty.gov or 206-263-6242.

Brought to you by King County and Friends of Cottage Lake



Alternate Formats and Disability Accommodations by calling 206-263-6242 or TTY Relay: 711.

*There are three guarantees in life...
You know the first two, death and taxes.
Often we overlook the third one: POOP.
How we handle it can significantly impact our quality of life.*



The seasons of Cottage Lake

SIGNAGE

This stream flows to Cottage Lake:

It's your water.

Across tributaries

History of Cottage Lake Park Property

1840 William Fitch sets up the Cottage Lake Park property.

1850 Fitch sells the property to the University of Washington.

1860 The University of Washington acquires the property.

1870 The University of Washington acquires the property.

1880 The University of Washington acquires the property.

1890 The University of Washington acquires the property.

1900 The University of Washington acquires the property.

1910 The University of Washington acquires the property.

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1950 The University of Washington acquires the property.

1960 The University of Washington acquires the property.

1970 The University of Washington acquires the property.

1980 The University of Washington acquires the property.

1990 The University of Washington acquires the property.

2000 The University of Washington acquires the property.

At park kiosk

Lots of ways to love Cottage Lake!

In your community

- Pick up trash.** Organize a community cleanup or encourage neighbors to do it.
- Attend public meetings.** Stay informed about what's happening in your area.
- Attend public meetings.** Stay informed about what's happening in your area.
- Attend public meetings.** Stay informed about what's happening in your area.

Around the neighborhood

- Wash your car at the wash.** Use a car wash to prevent oil and other pollutants from entering the lake.
- Use organic lawn care.** Avoid synthetic fertilizers and pesticides.
- Use organic lawn care.** Avoid synthetic fertilizers and pesticides.
- Use organic lawn care.** Avoid synthetic fertilizers and pesticides.

At the shoreline

- Don't feed the ducks.** Feeding ducks can harm them and pollute the water.
- Don't feed the ducks.** Feeding ducks can harm them and pollute the water.
- Don't feed the ducks.** Feeding ducks can harm them and pollute the water.

At park kiosk

Cottage Lake Park Wet Garden

Many homeowners in this area have wet, boggy areas in their gardens that make it hard to grow common garden plants. This boggy area is an excellent opportunity to create a wet garden that will grow successfully and sustainably. The boggy area is an excellent opportunity to create a wet garden that will grow successfully and sustainably.

- 1. **Wet garden**
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- 49. **Wet garden**
- 50. **Wet garden**

In the restoration

FOCL EDUCATION MATCH

Last updated: 07/22/10 [Search](#) [Contacts](#)

Home
Lake Info
Projects
Funding
Membership
Newsletter
Calendar
Meetings
History
Contacts
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Gallery

What's new: (Last updated: 07/22/10)

- Water Lily Treatment scheduled for early August** - notices just sent out to lakefront properties. More details soon.
- Fishing season opens on April 24th** - Cottage Lake was stocked with 10,000 rainbow trout on April 19th (see [website](#) for details). Check out this web page for information on fishing licenses: <https://fishhunt.dfw.wa.gov/>
- There will not be a FOCL plant sale this spring (2010)** - we still have some plants available for restoration projects, etc.
- Cottage Lake Triathlon** - there will be two triathlons on Cottage Lake again this year: June 19th and Sept 11th. See the [Mary Meyer website](#) for more details
- Join Friends of Cottage Lake on Facebook:** [Click here](#) to apply to join the private group.
- Let your friends know you support Friends of Cottage Lake:**
 - Like 4 people like this.

Next events:

- Community Meeting**
When: TBD
- COTTAGE LAKE TRI AND TRI AGAIN**
Sept 11, 2010
Cottage Lake Park, Woodinville
[http://www.marymeyer.com/newtri/](#)

We are currently working with King County to apply for grant money to help fund various lake improvement projects. In the summer of 2005, our lake was chosen as a recipient of a [Centennial Clean Water Fund grant](#)—this grant targets the phosphorus problem and will fund water quality monitoring and community outreach programs for years.

FOCL is also working with the community to deal with the w...

July 1, 2006
Volume 1, Issue 2

Fourth of July Celebrations on the Lake

Welcome to our second issue of the Cottage Lake Connection. For those who may have missed our first issue, this is a quarterly newsletter published by the Friends of Cottage Lake for those living in the Cottage Lake area. It is our hope that this will be a fun, informative, and motivating newsletter that will help build a caring community spirit.

While this newsletter will be a new Cottage Lake tradition, we thought we'd look back at one of Cottage Lake's older traditions—the 4th of July fireworks on the lake. Many of you may have heard of the impressive fireworks displays that Norm Fragione (owner of Norm's Raftery) put on for the community during the 60s and 70s. Weeks before the 4th of July, volunteers canvassed the Cottage Lake neighborhood seeking donations to cover the cost of the fireworks. The actual date for the celebration fireworks was July 3rd, so the Norm would have an easier time finding an available pyrotechnician. It was a great excuse for lakefront residents to invite many friends and relatives over for a BBQ and then watch the glorious display of brilliant colors in the evening sky and reflections on the water. The finale often involved an enormous wooden structure that was constructed to see what spectacular image would appear. Carol still remembers the year that it was a very large American flag. It was a quite a sight!

At the suggestion of the Buck's who live on the east side of the lake, a new tradition was started during the last couple years. A Ring of Fire. At dusk, residents who live around the lake light red flares along their shoreline resulting in a beautiful red fiery ring around the lake the following evening.

Speaking of traditions, FOCL would like to invite Cottage Lake area residents to the following event:

Cottage Lake BBQ & Litter Pickup
Saturday, July 8th
3 pm Litter Pickup - 4 pm BBQ
Cottage Lake Park - Large Pavilion
Hot Dogs & light picnic fare provided
If you are unable to pick up litter, please feel free to join us at the BBQ.

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Chuck Cushing (425) 788-8950
chucksa@tqm.com

SECTION AT LARGE
(425) 788-1933

Friends of Cottage Lake MEMBERSHIP RENEWAL

Member since: _____
Address: _____
E-mail (optional): _____
 Yes, please renew my membership for one year.
 Yes, I would like to make a donation to support FOCL programs (member list and related mailings, phosphorus reduction, water quality monitoring, charcoal restoration, etc.) in the amount of: _____
Total enclosed: _____
Please send this renewal form along with your dues and any possible donation to Friends of Cottage Lake.
Your membership is valid through 07/31/2010.

MAIL TO:
Friends of Cottage Lake
212 Jonathan Morrison
1004 11th Ave NE
Woodinville, WA 98097
#4449

LEARN THE LATEST IN GARDENING TECHNIQUES AND GET FREE GARDENING ADVICE

garden seminars and master gardener clinic

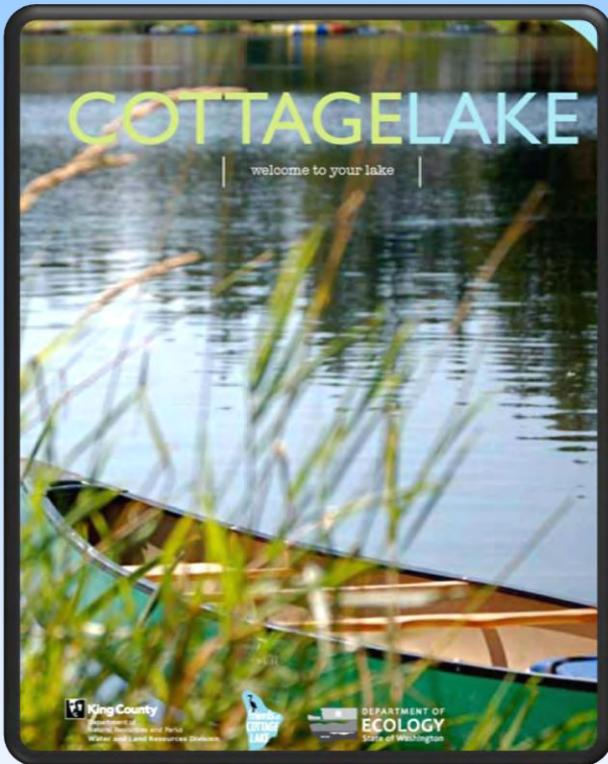
1ST SATURDAYS OF THE MONTH {April 3, May 1, June 5, Aug 7, Sept 4}

LOCATION:
Woodinville Water District
1738 NE Woodinville-Duwali Rd,
Woodinville, WA 98072
Seminars in Building A, Clinic in Garden

10am to 11am Free Seminars*
11am to 12:30pm Master Gardener Clinic

*Seminars limited to first 60 registrants.
Register by email at publicinfo@woodinvillewater.com or call 425-487-4102.

WELCOME TO THE LAKE BOOK



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Contents

- 1 History of Cottage Lake: from summer recreation to great found enjoyment.
- 2 Welcome to Cottage Lake: state about your lake.
- 3 Phosphorus in Cottage Lake: we have too much!
- 4 Cottage Lake plants: the good, the bad, the macroalgae.
- 5 Cottage Lake creatures: meet your neighbors.
- 6 Along the shoreline.
- 7 Tips for keeping your lake healthy.
- 8 **Top ten DOs for Cottage Lake**

Report Credits:
 Content: Sally Abella, Beth Cullen, Susie Egan
 Design: Megan Devine
 Photos provided by: Anchor Environmental, Ned Ahrens, Susie Egan, Jonathan Morrison, King County Lake Stewardship Program, King County Noxious Weed Control Program, Bill Priest, The Watershed Company
 File name: 1006_1549_CottageLakeBook.indd
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This publication was produced with CCWF grant funds from Washington State DOE in collaboration with FOCL.

Top ten DOs for Cottage Lake

- TEN:** DO attend neighborhood meetings to become an active member of the Friends of Cottage Lake and the community.
- NINE:** DO plan your landscape to catch rainwater in rain gardens and encourage infiltration into the soil instead of running off directly into the stormwater system.
- EIGHT:** DO wash your car at a car wash, or use only hot water if you wash it on your property.
- SEVEN:** DO keep your septic system functioning with regular check-ups and maintenance.
- SIX:** DO shrink your lawn by planting native plants both to cut down on garden maintenance and to provide natural habitat for area wildlife. Make sure non-native plants are not on the noxious weed list.
- FIVE:** DO scoop pet poop and dispose of it in the trash, rather than leaving it to wash into the lake.
- FOUR:** DO use low or no phosphorus fertilizers for your lawn and clean up spills of garden products before rain or irrigation moves them into the lake.
- THREE:** DO dispose of aquarium plants and animals in the trash so they cannot get into our waterways and cause environmental damage.
- TWO:** DO dispose of hazardous chemicals and waste safely to keep dangerous and harmful materials out of the lake.
- And **NUMBER ONE:** DO enjoy the natural beauty and peacefulness of where you live. It makes the other nine DO's worthwhile!

LESSONS LEARNED IN EDUCATION

Constructive Outcomes

- Survey is critical to understand how education works and gives solid evidence to behaviors and understanding
- Can be a good source of grant match when using instructors for workshops.
- Creates excellent materials that can be used elsewhere and will be available for more than just target group.
- Helps people visualize the message

Hard Outcomes

- Very labor intensive
- Can be very expensive when factoring mailing, postage
- It takes a LOT of effort to get people to attend evening workshops
- Cottage Lake community found it easier to find grant match dollars in restoration projects versus education



RESTORATION



- Large restoration at Cottage Lake Park.
- Some private restoration along shoreline of lake.
- Small hobby farm restoration.



PARK WORK

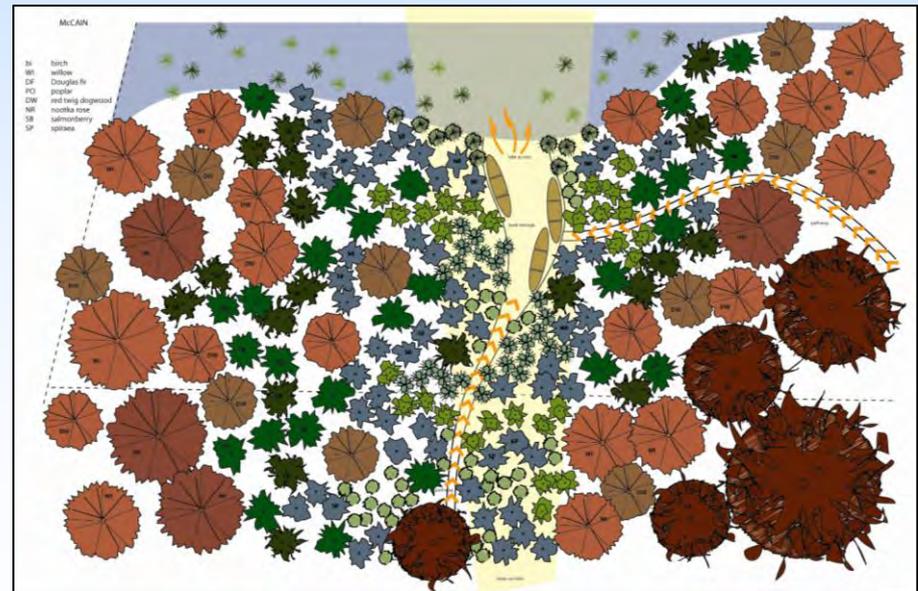


- Done mainly through volunteer labor.
- Slated in the future to plant the east side of the park through grant match.
- Ongoing maintenance.
- Easy to organize over time.

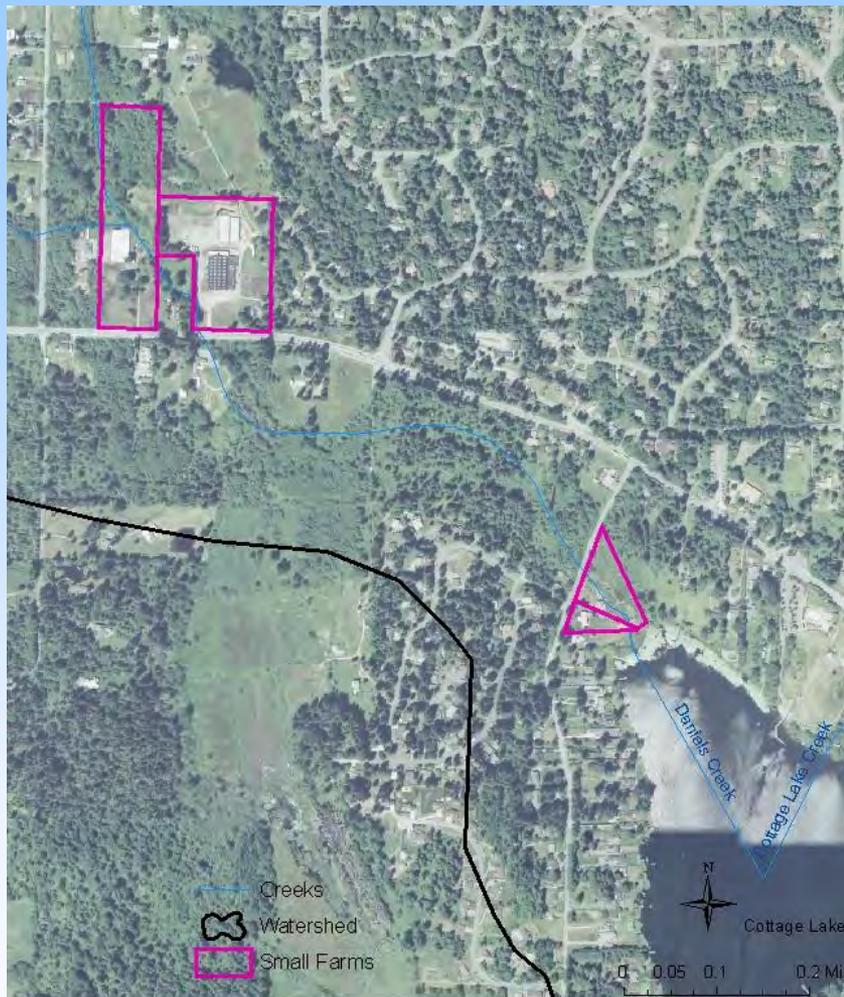


PRIVATE RESTORATION

- Contacted landowners along lake shore to improve shoreline buffers along the lake. Hard to get participation
- Small response, but very willing participants. Landowner agreements necessary to purchase plants.



SMALL FARM ISSUES



- Violations at farms and several groups involved to try to problem solve.
- All three had varying degrees of involvement with different agencies and groups.



LESSONS LEARNED IN RESTORATION

Constructive outcomes

- Volunteers responded to the restoration projects.
- Most visible task in the grant to the community.
- Private restoration takes extreme coordination and patience, with varying results.
- Farm restorations have huge impact both visibly and in the community.



Hard outcomes

- Private restoration takes extreme coordination and patience.
- Hobby farm restorations are delicate and it can be very political. Relationships are key.
- In private/farm restorations you are working with preconceived notions of what “restoration” means and what people want to happen versus what should happen.

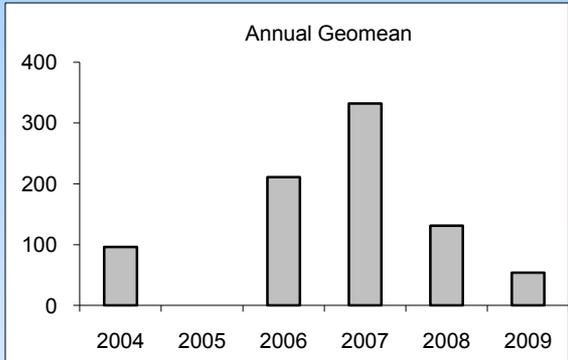
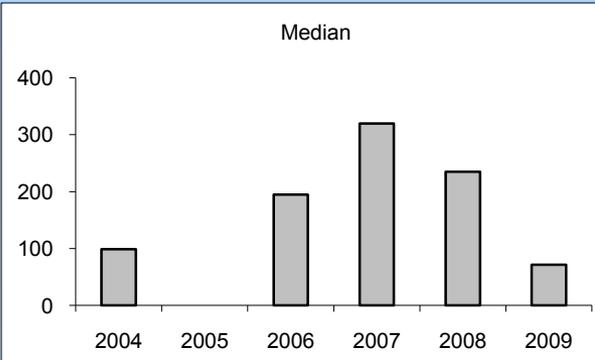
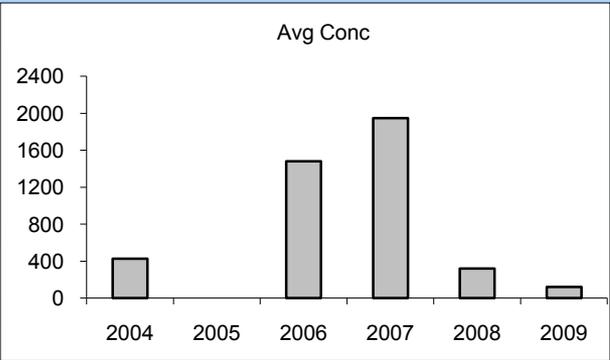
MONITORING

- Inlet streams and lake : TP, temp, pH, turbidity, TSS, color, alkalinity, chlorophyll a, phytoplankton, Secchi.
- Water year 2006 did full suite of monitoring, limited monitoring in 2007,2008,2009 and then full suite of monitoring in water year 2010. Used other monitoring programs as match.

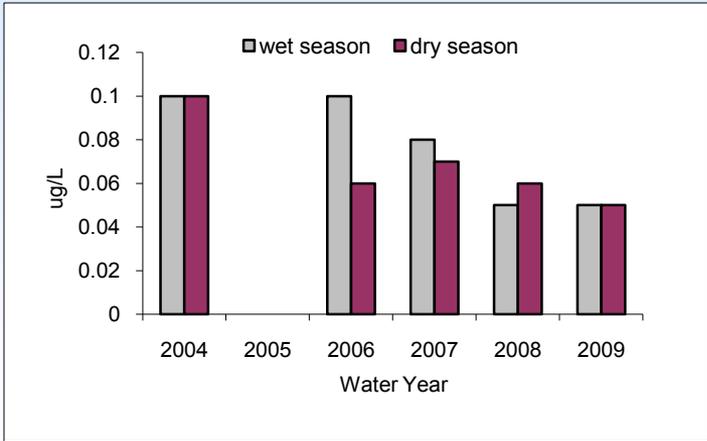
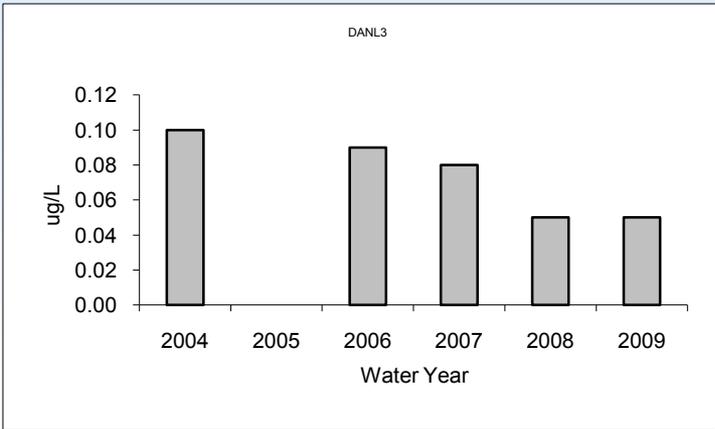


SAMPLE DATA

Fecal Coliform – DANL 3



Total Phosphorus – DANL 3



LESSONS LEARNED IN MONITORING

Constructive monitoring outcomes

- Great long term monitoring on a water body.
- Can identify source issues and habitat potential.
- Most technical information coming from the grant that will help guide policy and future work.

Hard monitoring outcomes

- Keep goals realistic.
- Be flexible without compromising the data.
- Hard to determine if water quality changes are due to work done with the grant.



OVERALL LESSONS LEARNED

- Grant team communication is key and allows for adaptive management and direction change if needed.
- Stay flexible – work with the community and encourage them in the direction where they derive the most benefits and have the most success.
- Keep goals realistic.
- Even if you fall short on expected outcomes, recognize the good that has been done.
- Make sure to evaluate!



Contact Information

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FOCL

<http://www.friendsofcottagelake.org/>



King County



Cottage Lake Phosphorus Reduction Project Guidebook: Reminders for keeping your project on task

In 1994 an in-depth limnological study of Cottage Lake, located in King County near the city of Woodinville, was completed and showed that total phosphorus was present at excessive levels in the lake. The Cottage Lake Total Maximum Daily Load (TMDL) was developed by the Washington State Department of Ecology (Ecology) and was approved by the Environmental Protection Agency (EPA) in September of 2004. The TMDL set a target level of 20 ug/L for total phosphorus in the lake in order to meet water quality standards. Ecology then developed a more detailed implementation plan, which was submitted to EPA in 2006. The implementation plan is the second half of the TMDL which details what actions should be performed and which entity will carry out those actions to help a particular waterbody meet its water quality goals. In response to this TMDL, King County applied for and was awarded a Centennial Clean Water Fund (CCWF) grant by Ecology.

The goal of the Cottage Lake Phosphorus Reduction Project was to reduce phosphorus pollution entering Cottage Lake, and its inlet streams through several different educational and restoration techniques implemented throughout the watershed. Water quality monitoring was also performed as part of this project to compare it to monitoring done for the TMDL, as well as to see if any changes in water quality could be measured while implementing the educational and restoration activities. The King County Water and Land Resources Division (WLRD) worked on the Cottage Lake Phosphorus Reduction Project for six years. During this time, WLRD flagged important reminders critical to the operation and success of any long-term, large-scale project.

The intention of this guidebook is to share the reminders WLRD staff found most useful as the project moved through a variety of challenges in staffing, task evolution, and budget. It is hoped that these reminders may prove equally useful to lake managers, citizen groups, nonprofits, homeowner associations, and government agencies as they embark on projects that are long term and have a large scope. More specific information about the Cottage Lake Phosphorus Reduction Grant can be found in the Final Grant Report available after June 2011 through Ecology. The Final Report includes templates for education materials, outlines of workshops, sampling analysis plans, restoration techniques, assessment plans, three year maintenance plans for restorations, habitat assessments and protocols.

Reminder 1: Make sure to build in time for project team meetings and communication.

This may seem obvious, but if communication within the project team breaks down, it can lead to project delays, misunderstandings, and general confusion. It may seem like overkill at the beginning of a project to build in quarterly meetings, conference calls, and other various ways of communication, but as projects unfold and team members get busy, it is critical to have set times to regroup and talk about the project. These “check-ins” with the entire team ensure that everyone is on the same page, work is progressing, and potential problems can be dealt with as they arise.

This reminder was important to the WLRD team working on the Cottage Lake project when major staff changes occurred within both the grantee and grantor organizations. WLRD had originally written the grant for a staff of five people, and over the first two years of the project the project team was reduced to two people. This left a very ambitious work plan with two people taking on all of the work in addition to their other tasks. Staff changes also occurred at Ecology within the first two years of the project, resulting in both the financial and project management of the grant reassigned to other staff. Although neither of these occurrences is likely to be fatal, it is imperative to make sure everyone shares the same understanding of the project, what is expected on both sides, and to have the ability to make adaptive management decisions in the event of changes.

A clear and concise communication plan derived from the contract that reviews project deliverables, deadlines, budgets, and goals is absolutely essential to the success of any multiyear, large-scale project.

Reminder 2: Project Management is a large task, larger than possibly anticipated.

One task that became more time intensive than WLRD anticipated was project management. Project management can sometimes be viewed as the extra tasks of tracking costs, hosting a few meetings, and writing reports, thus taking away dollars and time from the more important work of the project. However, in a long-term project there is a lot of necessary coordination and communication that needs to be done to keep the project running smoothly. Dedicating sufficient resources to project management allows the project to keep the work on track, guarantee that deliverables and actions are not forgotten, make sure people are up to date and communicate well, and produce project summary information that is much easier to share with others.

The reminder reinforced during this project is that project management cannot be shortchanged. It will generally take more time and budget than originally thought because projects are constantly changing and adapting. Without proper attention to project management, projects may be susceptible to road blocks, miscommunication, and delays in schedules and deliverables.

Reminder 3: Embrace new ideas and changes as they develop.

Every successful project originally sets out goals and deliverables to make sure the work progresses and tasks are accomplished. However, there is a greater likelihood of change over long-term projects. WLRD staff were reminded that when working on a watershed scale, flexibility to accommodate change is essential.

The Cottage Lake project focused on working with the lakeside community—both as participants in educational activities and as volunteers to help run educational and restoration activities. When working so closely with community members, the probability of change over time is high. People move in and out of the watershed, community group participation changes, and community ideas change. Although it is difficult to predict how or

when the changes will occur, preparing for inevitable change will help keep the project on track and moving forward. Below are a few examples garnered from the Cottage Lake project:

- 1) People move in and out of communities. This is important for educational efforts because to reach as many residents as possible, it is important to have educational brochures and handouts always available for new participants. It may be best to have them available on web pages or as digital files, so they can be easily shared. Periodically, give stacks of printed materials to a local library or community meeting spot where people can pick up the information. It also may be worth offering topical workshops multiple times during the project timeline, so that the issue remains prominent in the community, and everyone gets more than one chance to participate.
- 2) Community groups change both membership and character over time as well. People join and leave frequently, and project staff may have the longest attendance record of any participant by the time the project ends. Be patient with the learning curve of new members. Keep good meeting notes about your project from the beginning and keep them organized, so community members can be caught up to speed quickly about the project.
- 3) Project teams may change. When project proposals are first written, there are often specific staff in mind for doing the work. However, in long-term projects, the team may change due to people taking new jobs, budget cuts, and organizational shifts in resources. When staff changes occur, revisit the project as a team and assess what might need to change within the project. It should be established early if any flexibility exists within the contract, such as modifying deliverables, moving money between tasks, and adding new ways to measure success.

Remember that multiyear projects frequently take unexpected turns, and it is important to harness the team and volunteer energy present at any given time to accomplish what was set out to be done, even if that requires a little creative thinking and task modification.

Reminder 4: Keep goals realistic.

It is easy at the beginning of any project to think one project can “do it all.” Although it is good to be optimistic and to set inspiring and impressive goals, it is more important to set up the project for success with realistic goals and deliverables, focusing on goals that can be accomplished, and make sure that the activities are designed to achieve that goal.

In the Cottage Lake grant, one of the main goals was to attempt to reach the TMDL prescribed level for phosphorus of a summer average 20 ug/L in the lake. The more easily achieved goal would have been to reduce the phosphorus loading from the watershed, which in time might limit the amount of phosphorus recycled internally in the lake. The activities developed for the grant could not ensure that 20 ug/L TMDL would be achieved within the project timeframe. The project was able to have a direct long-term impact on

decreasing the phosphorus loading from the watershed by educating residents to reduce their use of phosphorus-laden products and restoring shorelines to intercept nutrients in stormwater.

The big reminder in goal setting is to keep it simple, attainable and realistic. It is helpful to think about what kind of improvement you can actually expect to make with your project, in what amount of time, how improvement or impact can be measured, and what actions would provide the greatest benefit.

Reminder 5: Make sure to evaluate.

Sometimes the only way to understand the real success of a project is to find new ways to evaluate it. The key is to measure things that could be attributable to the project. This allows for evaluation to be done in many forms, such as measuring water quality over time, plant survival in a restoration area, or personal activity surveys to evaluate how much a community has learned from educational efforts.

Since the Cottage Lake project was focused primarily on education and outreach, it made sense to carry out a community survey as part of the evaluation efforts. The survey targeted a subsample of the watershed population that included residents living along Cottage Lake and the inlet streams, as well as randomly selected residents living elsewhere in the watershed. The survey was distributed in the beginning of the project to evaluate perception of Cottage Lake water quality prior to any project work, and it was re-administered during the last year of the project to the same addresses to evaluate the effectiveness of the education and outreach campaign. When proposing the project, it was felt that the survey would be most informative if sent out at the beginning and end of the project. However, it became clear that a large time lapse can affect the retention of the message delivered and new residents may not have participated in early education efforts.

Water quality monitoring was used as a way to evaluate the environmental effects of the project. This evaluation method was critical, as it allowed comparison to the lake phosphorus goals that were set as the TMDL target. However, water quality changes may take a long time to react to activities, modifications, land restoration, or behavioral changes in the watershed. Although the data collected are useful for evaluating water quality compared to the first study done on the lake and its tributaries ten years ago, it is likely too soon to fully understand how the watershed projects accomplished through this project will affect water quality over time.

When it came to measuring restoration success, obvious measurables are how much area was restored and the survivorship of the planted vegetation. These are direct ways to show that the restorations were planted correctly and surviving. However, these measures do not address the impact of restoration on the goal of phosphorus reduction. Even though measuring water quality during and after restoration activities may show correlations, it does not illustrate cause and effect. Other land use actions nearby can also have a role, such as in the case of Cottage lake; the purchase of the Futurity Farms equestrian operation by the Catholic Church for

building a facility along the Woodinville-Duvall Road, thus decreasing hobby farm land use along Daniels Creek.

Reminder 6: Think outside the basics when it comes to outreach and emphasize the projects that have high participation.

It is important, especially in an educational project, to have multiple ways to get the public involved, both as volunteers and as recipients of information. WLRD staff tried several different methods to engage people from workshops and booklets to restoration events and community group participation. Over the course of the project, we learned that some approaches to community outreach and volunteer involvement worked well and others fell flat.

We discovered that workshops were not a method preferred by the community for getting information, and alternate ways needed to be used other than postcards and flyers. To increase visibility, Friends of Cottage Lake (FOCL), the main community partner on the project, put together a website that announced volunteer events, workshops, and general project information for others in the watershed to learn about the phosphorus problem facing the lake, the larger scope of the project, and how they could participate. The community also responded to the restoration work at the park. FOCL capitalized on this and started an annual plant sale in the watershed with a large emphasis on native plants and their benefits. This event allowed people to buy plants and also get information about the project through an information booth staffed by volunteers at the sale.

If people are more interested in restoration than education, it is important to cater to that. Although a project may have planned wonderful workshops, the community may be more excited about doing work outside. Make sure to gauge community and/or volunteer strengths to plan how and where to use their effort. While no task should be abandoned because the community does not show overwhelming enthusiasm, if one particular activity really gets people involved, it should be emphasized. If people become involved in one part of the project, it may lead them to expanding to other tasks.

A few key reminders cropped up during this project:

- 1) People in communities may not be able to attend weeknight workshops. Weeknight workshops were often scheduled because there was less conflict for county staff and speakers to attend them. However, this may have caused more problems for residents in the watershed because it coincided with dinner time, necessitated finding child care, and conflicted with changing work schedules. Increasing the number of weekend workshops might have attracted more attendees or at least offered alternatives.
- 2) People liked variety when it came to getting information and participating in the project. The Cottage Lake project offered both active and passive ways to get involved – some residents only wanted to

spend a few hours on a Saturday helping with restoration, others liked all the workshops, while still others liked to attend the plant sale and pick up printed information about the project. The very dedicated community members were especially helpful in spending time in community outreach by talking with neighbors, participating in phone trees for workshop invitations, and helping collect surveys by door knocking in the neighborhood.

- 3) The most effective way to connect with a community may change over time. In the initial years of the grant we had many people getting involved through activities like phone trees and door knocking. Large turnouts to restoration events were also observed. WLRD staff recognized by the midpoint of this project that volunteers had drifted away and only a dedicated few remained, which led to some burnout. Staff had to learn how to tap other groups of volunteers aside from the lakeside residents to help with projects and task completion. These groups included boy and girl scouts, churches, and even private businesses.

Reminder 7: Budget appropriately, but keep flexibility.

Budget is the hardest thing to estimate accurately in any project. Every project starts out with a budget that makes sense at that point in time. However, for long-term, multifaceted projects, costs rarely follow the budget estimates precisely. It is difficult to predict what connections a community will make during a project, and it may be that the project team put a lot of money into one task that the community doesn't respond to and shortchanged another task that the community is eager to participate in and expand. In addition, costs for outside services can change considerably from what was current at the time of budget building, due to unforeseen or unforeseeable circumstances.

In the case of the Cottage Lake project, the initial budget for education was high, from thinking that workshops and informational pieces would be most welcomed. However, the community responded to working on community property restoration more than to educational products. Restoration costs were increased at the park because of shoreline erosion issues and developing effective delivery of a positive message about shoreline restoration to property owners in the area. WLRD staff recognized that to continue the restoration work, maintain the enthusiasm and matching in-kind contribution of the community, and continue the message being delivered to residents, money needed to be redistributed between tasks in the budget.

Another important reminder was that even with building in contingency money to the tasks within the project, sometimes it is not enough. There may be unexpected budget increases that are not within the control of the project manager, such as lab analysis increases or staff salary increases, and flexibility may be required to adjust the project tasks to match the money available. Changing the water quality monitoring design was one example of an adjustment made by King County staff when it was realized that laboratory costs were going up faster than accounted for in the adopted budget.

Additionally, if there is a match requirement in the project work agreement, creative ways may need to be employed to find matching in-kind or cash contributions, both within your agency or outside. Be sure that the language in the grant contract allows for maximum matching flexibility if the project is depending on in-kind labor and materials matching from community volunteers.

Reminder 8: Keep timelines realistic.

Setting aside the right amount of time for each task is critical. If it is too short the task may not be given enough attention and short cuts may be taken or deliverables may not be completed. If the timeline is too long, there is a risk of dragging tasks out, having communities lose interest in the project, and not planning enough activities to keep the task relevant and engaging.

The Cottage Lake project encountered some timeline issues throughout the course of the six years. The long timeline was good for activities such as water quality monitoring because trends sometimes need data collected over time for detection. However, the six-year timeline was a hindrance in other tasks and deliverables, such as educational efforts and keeping volunteer/community interest. At the outset of the project, community members and groups were very excited to participate in the project, but over time the numbers of community members participating decreased and only a dedicated few remained to work on the project tasks. In discussing this with other project teams, this was a theme in common for similar projects.

Timelines are critical to think about when scoping a project. Some projects, such as ones that are focused scientific studies, may benefit from a longer timeline. Projects that are focused on community participation and education might benefit from a shorter timeline that allows for both intense involvement and evaluation of efforts while activities are still occurring. Combining both efforts has many attractions, but can be tricky to achieve success in both arenas.

Reminder 9: Plan something for wrap up and be sure to thank everyone for their help.

In long-term, large-scale projects, there are many players who help to get things done. It can be a surreal feeling when the project comes to an end. To help everyone with closure, plan one last event for participants to come together, reflect on what they have done, and hopefully make the commitment to continue the good work through their own work and efforts.

In the case of the Cottage Lake project, people will be attending one last restoration effort at the public park. Since the park has been a focal point for all the effort and is a jewel used greatly by the community, it is a great place to have people come to see all their hard work pay off, receive thanks for their efforts, spend a little more time helping out, and see all the people they worked with over the years. At this event, WLRD staff

will be sure to acknowledge those who were most dedicated to the project and let everyone know just how important their contributions were in everything that was achieved over the last six years.

WLRD was also reminded that it may be helpful to leave the community with one last education piece to help perpetuate the message of the project, to reinforce the project goals, and to leave the community with something that helps them reflect on all the hard work.

After all the time, energy, and effort that goes into long-term, large-scale projects, it is important to give some time for reflection on all the incredible things that were accomplished. Bringing everyone who worked on the project throughout the years together and offering thanks also gives people the chance to see how much was done and how their hard work and efforts paid off. A little celebration goes a long way to make sure the project ends on the highest note possible, leaves people feeling good about their efforts, and excited to continue the work towards the overarching goal.

April 12, 2006

Volume 1, Issue 1



Welcome to our First Newsletter

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Spring is the perfect time for new beginnings, so what better time than Spring to launch this new beginning . . . the first issue of *The Cottage Lake Connection*. This newsletter is designed for people who share a special connection, the love of Cottage Lake. We all are out there, scattered about. Our goal is to bring us together in a partnership of lake neighbors who can share news, share information, share skills and be a support to one another.



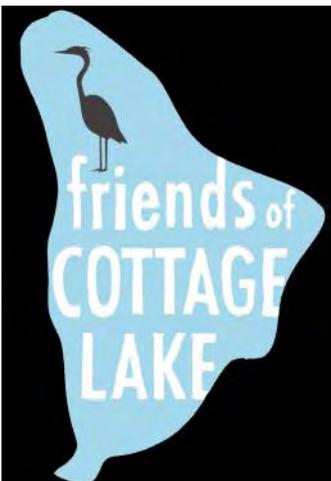
**Karen Mattson, Susie Egan and
Carol Porter co-editors**

Wouldn't it be nice to return to the good old days when people knew their neighbors, spent time with them and watched out for each other? With the news events of the last few years, we can see how important a close-knit, well informed and well prepared community can be. Hopefully *The Cottage Lake Connection* will form the thread that begins weaving this magical new connection --one where we can get to know each other better, be good lake stewards and just have fun!

By the way, this newsletter is being created by several brave souls from *The Friends of Cottage Lake*. We three, Carol Porter, Karen Mattson and myself, Susie Egan, have stepped forward to take on this venture on a quarterly basis. I guess we're a crazy trio, in that our lives are already hectic enough, but aren't everyone's? Still, we all strongly felt the need to bring our community together. With our limited experience, we've committed to putting together what we hope will be an enjoyable community newsletter. (We're keeping our fingers crossed.)

Carol has the honor of having lived on Cottage Lake the longest. She actually grew up on Cottage Lake (on the west side.) She has graciously volunteered to cover the human interest side of the newsletter which, if you know Carol, fits her personality perfectly. Karen has lived on Cottage Lake with her husband, Gary, for sixteen years. They live on the northeast side of the lake. Karen is a retired high school English teacher so you can see how handy that has come in for this newsletter. We thank her for all her editing help on this and future issues. Myself, I've lived on the east side of the lake with my husband, Kevin, for twelve years. My passions are gardening and history and I'll be covering those columns in the newsletter. But hopefully we will be able to solicit more writers for future issues, so please don't be shy. If you have a passion for writing, we would love to have you contribute to our newsletter.

Thanks again for sharing your time with us! We'll promise to make it a wonderful experience for you.



Opening Day on Cottage Lake ...[a recollection from the past]

by Bob Martin

When I was a boy I used to look forward to the first day of the fishing season with even more excitement than I reserved for opening my gifts on Christmas morning. During the long, gray winter months, I read every article about fishing that appeared in *Field and Stream* and *Outdoor Life*. I made trips to the town library under the pretense of doing schoolwork but actually I spent more time reading books about fishing than doing the homework I'd been assigned.

As that magical day in April approached, I would lovingly rub down my telescope rod and my Pflueger bait casting reel with a flannel cloth soaked in 3-in-1 oil. I'd take my granddad's old wicker fishing creel from the shelf. It served as a tackle box as well as a place to keep any fish that I managed to catch. When I pulled open the curled leather strap and lifted the lid, it reeked of seasons past, a heady perfume to any fisherman.

The contents of the creel, still adorned with a few of last year's fish scales, were checked again for the umpteenth time. There were packages of snelled hooks, a new jar of Pautzke salmon eggs, a badly corroded Boy Scout jack-knife, a container of lead sinkers, a red plastic hook remover, and a rusty pair of pliers that Dad told me to start using when he found out that I chipped my left incisor crimping the sinkers on the line with my teeth.

As soon as the weather warmed enough in March for the angleworms to become active, I would dig a bucketful from our compost piles and put them in an old wash tub that I kept in the woodshed. I fed them coffee grounds and apple cores until they became fat and wiggly, and certainly irresistible to any self-respecting fish.

On the eve of Opening Day, after dinner, I inspected my fishing gear one last time. Dad listened to the weather forecast on the radio. I'm not quite sure why he bothered, because nine times out of ten it predicted rain.

Whether true or not, most fishermen believe that the early bird catches the fish. Dad suggested we get up about six, have a big breakfast and be at the lake to start fishing around eight or so. I, on the other hand, thought we should be on the water before first

light and that meant getting up at least by four. We split the difference.

Finding a parking place at the lake was never easy. In the murky light of predawn all parking areas were already overflowing and boat launches were a beehive of activity. There were boats in the back of pickups, boats on trailers, boats on car tops and some even wedged into car trunks, all waiting their turn to be launched.

There were yellow rubber rafts in various stages of inflation being pumped up by sweaty, out of breath, young men. "Get the duct tape Otis, I found another leak near the valve." I heard someone say.

Fisherman loaded down with a tangle of rods and reels, oars, tackle boxes, seat cushions, life preservers, thermoses of hot coffee, anchors and rope, made their way from car to boat. Dads encouraged the kids and grandpa to make one last trip to the outhouse before the oars touched the water. There were always a few unlucky fishermen whose outboards wouldn't start in spite of their Herculean efforts on the starting rope. This task was usually accompanied by

curse and colorful language clearly audible on the other side of the lake. Some of the motors that did run sounded like chain saws, smoked

like smudge pots, and smelled like oil refineries, and they always propelled the boat too fast for good fishing.

Dawn's early light revealed a small flotilla of floating, or almost floating, craft on the water. I've heard it said that you could walk from one side of the lake to the other, hopping from boat to boat, and never get your feet wet. A slight exaggeration I suppose, but not far from the truth. There were rowboats and johnboats, dinghys and prams, canoes and kayaks, pontoon barges and rubber rafts. Some were anchored, some were trolling, some were drifting with the wind, and all were a part of the floating carnival of Opening Day.

Every once in awhile voices rose above the din of the outboards: "Oh oh! George, watch out for that boat right in front of us!" - "Daddy, I'm all tangled up." - Son, I thought you went to the bathroom before we left the dock." - "Honey, I'm getting cold. When



Bob Martin (right) with his father in 1950 with catch from Opening Day at Cottage Lake

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Know Your Neighbor . . . A profile on Gladys Baker and Sue Bennett by Carol Porter



Gladys Baker (left) in ICU on 3rd day post transplant. Sue Bennett at her side.

Having lived in the same neighborhood most of my life I have had the privilege of observing many special relationships that have developed among my neighbors. Time and time again I have been moved by the friendship, compassion and sacrifice shown to others. Recently, I have been especially inspired by a very extraordinary story of friendship and commitment that has been developing between two women on the west side of Cottage Lake. Woven within this story is the miracle of modern medicine, the difference one life can make in another and how the efforts of a few can give hope and courage to sick and hurting people. I wish that space allowed me to share much more of the story than this article will allow, but hopefully, this abbreviated version will serve to inspire all of us to get to know those we live near just a little better and to never underestimate the positive impact we can have on their lives and the Cottage Lake community at large.

As I watch Gladys effortlessly bustle around her kitchen, I smile. Before me is a positive, determined, energetic and most importantly, HEALTHY woman who is enjoying a “second chance at life”. It is hard to imagine that just 4 months ago she was fighting for each breath, on oxygen full time, unable to work or drive, and within weeks of almost certain death. But, Gladys Baker is a very fortunate woman. She has beaten many odds in her life.

Born with Cystic Fibrosis (a genetic condition, which causes the eventual failure of the lungs, and which is usually fatal by 35 years of age), Gladys is one of the oldest living CF patients within the United States. At 57, she is truly a walking miracle. Gladys is also fortunate for another reason. Besides having a supportive husband, Scott, by her side, she has enjoyed the gift of a tremendously committed and caring neighbor to help her through what has been a very trying last few years.

Gladys Baker and Sue Bennett began their friendship twenty years ago when they became neighbors. For awhile, they enjoyed the “typical” friendly neighbor relationship. It started with the usual “chit chat” over the fence, in which they often talked about the latest escapades of one of Sue’s four children, and of course, the frequent exchange of the emergency “cup of sugar”. Before long, Gladys and Scott were invited to the famous Bennett barbecues, and Sue and Gladys began sharing their love of movies together with the occasional “girls movie night” outing. But it was in November of 2002, during a workup for a lung transplant for Gladys, that their friendship rose to a new level. It was during this process that Sue declared her desire to be Gladys’ caregiver if she received a transplant. This was a vital offer, as it not only provided reassurance to Gladys but also fulfilled one of the critical transplant requirements (in order to qualify for a transplant a patient has to demonstrate that she has the necessary help 24 hours a day for the eight weeks following transplant). Gladys was “blown away” by this generous offer.

In 2003, Gladys was forced to take a disability leave from her job at Boeing and by the fall of 2004, was on oxygen full time. Sue began ferrying Gladys to doctors’ appointments, running errands for her, and taking her out for a movie when possible. On February 15, 2005 Gladys was listed for a lung transplant. Sue began notifying other neighbors of the seriousness of Gladys’ situation and making stand-by lists so that if she were unavailable to Gladys in an emergency or when the “transplant call” came, then someone could help with whatever was needed. With obvious admiration, Gladys states that, “Sue never left town without making sure others were noti-

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Opening Day, continued

(Continued from page 2)

is this rain supposed to stop?"- "Grandpa, I caught five fish already and you only caught one and mine are bigger too."-"I'm bailing as fast as I can, but the ice chest is starting to float."- And from the front porch of a lakeside home, "Doris, I'm darn glad this only happens once a year."

Spinners and spoons, fish eggs and worms, flies and plugs, were all being flung in every which direction, frequently landing in unintended places. "Bill, I think it was snagging that dang alder limb on your back cast that caused the tip of your rod to snap off." - "Jennifer, next time when you cast dear, try not to hit the nice people in the other boat, they're getting tired of pulling hooks out of their clothing." - "Holy smoke, Harvey, it's no wonder your casts are wild, your reel is on backwards and you missed three of your rod guides when you strung your line in the dark this morning." - "What do you mean you left the thermos of coffee on the kitchen table?"

The fishing on Opening Day can be very good or very poor or somewhere in between which is usually the case. A lot depends on the weather, the water temperature, fish plants, and most importantly, the inclination of the fish, which is always a toss of the

dice. Sometimes limits come easy, but more often, fishermen have to be content with two or three fish. The actual number caught, though, has little to do with the good times and lasting memories of an Opening Day adventure.

One Opening Day, daylight had arrived and the fog had lifted revealing a multitude of boats anchored or milling about on the slightly ruffled water. I was fishing with my friend Danny. We had been out in his small boat since 4 AM and the fishing had been better than usual, but now I had to go to the bathroom. Danny informed me that we weren't about to pull anchor and go in. We'd lose our hot spot, and besides that, he said he had a toilet on board. He handed me an old coffee can. While I was in mid stream, Danny, always the practical joker, who was still a little ticked because I had accidentally dropped his new anchor chain overboard, started rocking the boat and yelling, "Fish on! Fish on!" Everyone on the lake looked directly at us. Embarrassed? You bet. But I got even. The can tipped over.

Editor's Note: Bob Martin fished on Cottage Lake with his father from the late 1940's to the mid 1950's.



Know Your Neighbor, continued

(Continued from page #)

fied and available to me. For nine months, Sue was 'on call' 24/7!" On 11/15/05, nine months after being listed for transplant, Gladys received the precious gift of two healthy lungs. During Gladys's hospitalization, Sue and Scott, Gladys' husband, were there every day: providing support and receiving training for when Gladys returned home. Once Gladys came home, Sue, true to her word, provided care for her friend when Scott was at work. Day after day for several weeks, she arrived next door to cook, clean and help with the numerous tasks that Gladys could not do. Sue organized neighbors to fill in on the few days she was unavailable, which gave several of us the privilege of watching this wonderful miracle of healing in our friend Gladys and to also witness the level of commitment and compassion that Sue had extended to her neighbor. It was a treat!

I would be remiss in not mentioning that behind Sue, making it possible for her to completely commit herself to Gladys, was Sue's husband Lee. And behind them was their church, who knowing of the tremendous amount of time Sue was dedicating to Gladys, provided meals every three days for three weeks for the Bennett's, as well as Gladys and Scott. This even included a Thanksgiving feast for each family!

Today, four months since the transplant, Gladys is quickly regaining her strength and independence. ***"I am so thankful for my health, my new lungs and for those who helped me. The truly remarkable thing is that when there was a crisis there was support that came from neighbors who I hadn't even thought about; that I don't even know. They asked and thought about me. They responded to the call for help. That is true goodness."***

As I leave Gladys' home, I am struck with the realization that Sue's efforts and the impact she has had on Gladys, are a wonderful reminder to all of us of how fortunate we are to live in this wonderful Cottage Lake community; a place where many neighbors value and care for one another.

We're looking for someone to do a profile on for our next issue. If you know of someone, please email Carol Porter at portersbythelake@comcast.net



Recent algal bloom on Cottage Lake

Many neighbors have moved to the Cottage Lake area within the last ten years and may not be familiar with its current water quality issues. Here is a quick recap that will bring everyone up-to-date.

In 1972 Congress adopted the Clean Water Act (CWA) which requires all states to restore their waters to be "fishable and swimmable." Section 303(d) of the CWA states that every two years, all states are required to prepare a list of water bodies that do not meet water quality standards. This list is called the 303(d) list and bodies of water can be listed for one pollutant or several. A water cleanup plan, also known as a Total Maximum Daily Load (TMDL), must be developed for each of the water bodies on the 303(d) list. The TMDL identifies how much each particular pollutant needs to be reduced to achieve clean water. Unfortunately, Cottage Lake was listed in 1996 on Washington State's 303(d) list for high phosphorus levels.

In 1993, the Friends of Cottage Lake (FOCL), a group of lakeside resi-

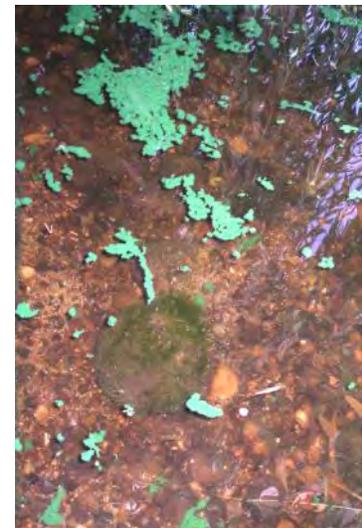
dents, became active in trying to improve the water quality of the lake. With a Centennial Clean Water Fund grant from the Washington State Department of Ecology and matched funding by King County, a two-year Phase I study was begun. The goal of the study was to determine the lake's current water quality condition and to develop a Lake Management Plan. The Management Plan included recommendations to control pollution sources, as well as possible actions that would help improve the overall water quality and habitat of the lake.

An essential part of the project was a comprehensive sampling program which took place between April 1993 and June 1994. King County staff, consultants, and many volunteers from Cottage Lake monitored the water quality in the lake and its tributaries and assessed groundwater and septic systems.

From the results of this data King County and the FOCL developed a Cottage Lake Management Plan which was finalized in February 1996. The plan noted that Cottage Lake suffered from low transparency, high nutrient levels, frequent algal blooms, and excessive shoreline aquatic plant growth which reduced the lake's beneficial uses including boating, fishing, swimming, fish and wildlife habitat and aesthetic value. It also determined that 70% of the water in Cottage Lake comes from Daniel's Creek, 18% from Cottage Lake Creek, 5% from surface water runoff, 5% from groundwater

inflow and the last 2% from direct precipitation. This proved the long-term importance of controlling the amount of phosphorus coming into Cottage Lake from its watershed.

Ultimately various recommendations were given such as an aeration system, periodic alum treatments, wetland restoration, ditch maintenance, and best management practices (BMPs) for storm water runoff from new land development. Carrying out these measures would become Phase II of the project. FOCL explored several funding mechanisms for Phase II but it wasn't until 2004 that a fire was re-lit under the project.



Blue-green algae on Cottage Lake

The new group headed by Jonathan Morrison decided to pick up where things left off. Once again

(Continued on page 6)

Water Quality Issues, continued

(Continued from page 5)

FOCL, with the help of King County, applied for a Centennial Clean Water Fund grant. A grant for \$291,728 was awarded on September 22, 2005. The money is to be used over a three-year period with the primary goal of reducing the phosphorus levels in the lake. Specifically the grant will cover lake stewardship education, lakeside restoration, and water quality monitoring. It's an exciting time to be a Cottage Lake resident!

Why are high phosphorus levels bad?

Nutrients, such as nitrogen and phosphorus, are elements naturally found in the environment. However, they can often pose problems when too much of them are allowed to enter the lake system. Phosphorus can enter Cottage Lake through storm water, soil erosion, from failing septic systems, use of detergents with phosphates, pet or livestock wastes, and excessive fertilizer used in yards that wash off during storm events. Excess phosphorus encourages algae and aquatic plants to grow.

Algae are a source of food and energy for fish and other lake organisms and are vital part of all lakes. However, too many or nuisance types of algae can interfere with lake uses by clouding the water contributing to oxygen depletion which can harm fish. Some species of algae can actually release toxins that can be harmful to pets and humans. Plus excess algae can interfere with the aesthetic beauty of the lake, not to mention recreational swimming. Unsightly algal blooms look like a scum layer floating on top of the lake's surface. The regular occurrence of visible algal blooms often indicates that nutrient levels, especially phosphorus, are too high.

It is important to note not only lakeside residents, but anyone in the watershed area, can affect the water quality in Cottage Lake. Poor practices several miles away can contribute to poor water quality.

The goal of this column will be to keep you informed about ongoing and future issues involving the health of Cottage Lake. With the current efforts toward lake cleanup we will also hope to create enthusiasm and motivation around individual practices that will benefit our beautiful lake.



What Can We Do to Help Reduce Phosphorus Levels

- Minimize use of fertilizers and use only low phosphorus fertilizers;
- Use no-phosphate detergents;
- Regularly maintain your septic systems; have it pumped at least every three years;
- Plant native plants along the shoreline to provide a buffer strip which will also provide good shoreline stability and offer refuge for beneficial insects, fish and wildlife;
- Don't leave soil exposed and vulnerable to erosion. Cover any exposed soils with leaves, straw or other mulching materials;
- Discard pet wastes in the garbage;
- Don't feed the waterfowl; duck and goose dropping contribute to phosphorus and fecal coliform bacteria to the lake;
- Make sure that livestock are kept away from streams or lakes.

Special Community Meeting Held to Discuss Water Lilies on Cottage Lake

By Susie Egan

On April 6th, Friends of Cottage Lake (FOCL) hosted a community meeting at the Woodinville Library to discuss the water lilies on Cottage Lake. Flyers were mailed in advance to all lakeside residents, to encourage attendance and to solicit community input on how to handle the invasive fragrant water lilies. The non-native fragrant water lily (*Nymphaea odorata*) is classified as a Class C Noxious Weed by King County, with control and containment required by law.

Katie Messick, Aquatic Weed Specialist from King County, provided information about the water lilies and the harm they cause to the lake and environment. She also presented various options on how to manage or eradicate them, as well as available avenues for funding. She provided excellent handouts for the meeting which can be found at <http://www.friendsofcottagelake.org/waterlilies.htm>. Also, more information on water lilies can be found at the Dept. of Ecology's website: www.ecy.wa.gov/programs/wq/plants/weeds/aqua005.html.

Although water lilies have been present in Cottage Lake for some time, they now dominate the shoreline in several areas along the lake. Their dense mats crowd out the native aquatic plant species; decrease the water flow in the lake; create low-oxygen areas that harm fish; increase the nutrient load of the lake encouraging algal blooms; and increase sedimentation of the lake near the outlet, which continually decreases the depth of an already-shallow lake. In addition, the lily mats make it difficult to swim, fish, or even paddle a canoe through them.

After Ms. Messick's presentation, a vote was taken to see how many residents were in favor of controlling or eradicating the water lilies. There was a unanimous vote of all present to pursue efforts of eradication and this led to further discussion and questions on the various types of eradication methods available. After all the questions were answered, the group agreed on the aquatic herbicide, Glyphosate, which is the active ingredient in Round-up (a commonly used residential herbicide) and has special formulations for aquatic use. It does not harm fish, pets or humans and is the most commonly used method for eradicating water lilies on lakes in our area. Many studies have been done on the effects of Glyphosate on animal life and, when applied correctly, by a licensed herbicide applicator, it is the safest and most effective means of eradication. It is sprayed onto the lily leaves and the plants die after several weeks. A repeat application is often necessary after a few weeks to remove plants that were missed during the first application. It generally takes follow-up spraying again the following year to eradicate what may be left of the remaining lilies. A



county permit will be required and mostly likely obtained through the contractor. Since the county will issue the permit, it will hold the legal responsibility.

Discussion then turned to timing and funding. The general consensus emerged that efforts to find a contractor to do the work should begin immediately, so that spraying could hopefully occur this summer. The approximate cost is dependent on the number of acres of water lilies existing in the lake. It was estimated that it may cost around \$4,000 for the first year. However, an actual cost will not be known until a bid can be obtained. Various grants are available to help cover the cost but it may be difficult to secure funding this year, due to tight deadlines. The group decided that requests for voluntary donations would be made to fund spraying for this first year while three members volunteered to work on completing grant applications for next year. It is our hope to get as many people as possible to donate toward this cause, as the more who give, the less will need to come from each individual. For example, if 25 households contributed, an average donation of \$160 would be needed per household. If 40 households contributed, an average of \$100 per household would be needed.

The results of this meeting are being published in this newsletter to help facilitate donation requests. If you are interested in helping support our goal of eradicating the water lilies, please see the donation form on page 9 of this newsletter. Also please talk to your neighbors about the project and come out to the next community meeting to discuss our progress on May 15th at 7pm at the Woodinville Library.

Gardening on Cottage Lake

by Susie Egan

We thought it might be fun to have a regular gardening column in the *Cottage Lake Connection*, because so many people love to garden and our gardening practices can



Trillium ovatum
—a beautiful NW Native Perennial

have a big impact on the health of Cottage Lake. Nowadays, gardening has evolved from having perfectly manicured, weed-free, emerald green lawns with tightly pruned shrubs to one of a more relaxed natural look, especially here in Pacific Northwest. This trend, called "sustainable gardening," basically means gardening that requires less work and is more environmentally friendly. It involves gardening with more native plants which do well in our climate, need less water, less fertilizer and are naturally disease resistant. They have the wonderful benefit of also providing food and habitat for the birds, butterflies, and other friendly wildlife. And native plants are beautiful! You no longer have to be a slave to your garden or feel stressed or guilty that you haven't spent enough time taking care of it.

The first thing in sustainable gardening is to make sure you have good soil. In the Northwest, we can have challenging soil types, so it is highly recommended that you have your soil tested. Visit the following website to learn how to take a sample and where to send it:

http://depts.washington.edu/hortlib/resources/hort_web_sites/soil_testing_tilth.pdf. The test will give you information on the nutrients in your soil and recommendations on how to amend it. Mulching, which is placing up to 4" of compost or similar organic material on top of the soil and around plants, helps build up the nutrients in the soil and also reduces weeds, regulates soil temperature, and retains moisture. Ideally, it is best to mulch every year, either in the fall or spring. While the idea of soil testing and mulching may seem like too much trouble, I have learned through experience they are KEY to having healthy plants which don't suc-

cumb to disease or other cultural stresses and will ultimately save you time in the garden.

Next, you should focus on a good garden design. You may be starting from scratch or revising what you already have. Your garden should be a reflection of your own personality and preferences. But you also need to be sensible in your design, considering the natural conditions of your garden (e.g. the amount of light it receives) and planting plants that do well under those conditions. Remember, your aim is low maintenance and this comes with a realistic and self-sufficient design. There are many books on garden design (too many to list here), but you can go down to your local bookstore and peruse what they have on hand, especially those that deal with the Pacific Northwest region.

If you would rather have professional help, here are a few tips. There are landscape architects (LA's) and landscape designers (LD's). LA's have a college degree and are state certified, but they are very expensive. LD's are far less expensive. However, anyone can call themselves a LD; so look for one that is licensed and bonded (for your protection) and even better, who has a CLT (Certified Landscape Technician) certification from the Washington Assn of Landscape Professionals. You can visit their website at <http://www.walp.org> and click under membership directory, then type in "Woodinville" under the "Businesses" box. It will come up with a list of 29 members who are either LA's or LD's in the Woodinville area.

Next, look into adding or replacing some of your more troublesome plants with native plants. To help you figure out which native plants you might like, visit <http://dnr.metrokc.gov/wlr/PI/Go-Native/index.htm> and <http://gardening.wsu.edu/text/nwnative.htm>. They even give instructions on how to make a plan, prepare the site and pick the right plants. Another great website to look at is <http://www.greatplantpicks.org/>. They have come up with "Great Plant Picks": lists of outstanding plants for the Northwest since 2001. While this was our first gardening article for *Cottage Lake Connections*, it was somewhat general. In future issues I will try to focus on more specific gardening topics.

Happy Gardening!



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Friends of Cottage Lake

MEMBERSHIP & DONATION FORM

\$10 Membership Fee

\$_____ Donation for eradication of water lilies on Cottage Lake

Name: _____

Address: _____

City, State, Zip _____

Phone: _____

Email Address: _____

Yes, please email my next *Cottage Lake Connection*

Make check payable to: Friends of Cottage Lake

and mail to: Attn: Jonathan Morrison, President
17214 185th Avenue NE
Woodinville, WA 98072

All fees & donations are tax deductible

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Simply email your request to Susie Egan at
segan@cottagelake.com

Newsletter Information

Newsletters will be printed quarterly on
Jan. 1, April 1, July 1, and Oct. 1.

We welcome any submissions; however
they may be subject to editing.

The deadline for submissions is the 15th of
the month prior to the issue date.

Send submissions to:

Susie Egan
17301 191st Ave. N.E.
Woodinville, WA 98072
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Cottage Lake Garden Club



Interested in starting an informal Garden Club for the
Cottage Lake area? It could be a great way to share
our gardening knowledge, get advice, share plants, go
on garden tours, meet some of your neighbors and possi-
bly help the elderly or infirmed with their gardens.

If you're interested, please email Susie Egan at

segan@cottagelake.com

Cottage Lake Connection

Newsletter from the Friends of Cottage Lake

17214 185th Avenue NE

Woodinville, WA 98072

www.friendsofcottagelake.com



Mailing Label Here



Picture taken by Jonathan Morrison on dock on west side of Cottage Lake—March 2006

River Otter (*Lutra Canadensis*) –Fauna Friend of Cottage Lake

Fun River Otter Facts

River otters vary in size from 3-4 ft. long, and weigh 10-30 lbs. They are aquatic mammals, but den on land and sometimes forage along the shore. They have fully webbed toes, small ears and valvular nostrils which seal upon submergence. Their dense whiskers help them sense the movement of prey even in murky water. They feed at night, capturing fish, amphibians and small mammals. They breed in late winter or early spring with a gestation period from 9.5 to 12.5 months. They bear from 1 to 4 young, who are blind at birth; their eyes open within 30 days and are weaned at 4 months. They live 13 years in the wild. They are highly intelligent mammals like humans and dolphins and unfortunately are very susceptible to contaminants such as mercury, PCBs, DDT, and other pesticides.

Calendar of Upcoming Cottage Lake Events

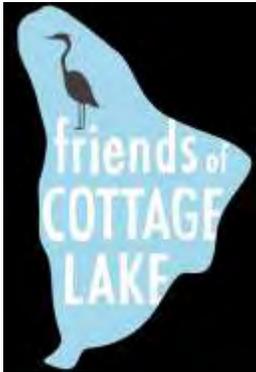
April 22nd—Earth Day & Water Tenders Adopt-a-Park Program 9 am to Noon (Meet at Mary Cash Farm Park -Woodinville-Duvall Road) to collect litter, have fun and make new friends

April 29th—Opening Day at Cottage Lake

May 15th (7:00 p.m.) FOCL meeting on eradication of water lilies

July 1, 2006

Volume 1, Issue 2



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Fourth of July Celebrations on the Lake

Welcome to our second issue of the *Cottage Lake Connection*. For those who may have missed our first issue, this is a quarterly newsletter published by the Friends of Cottage Lake for those living in the Cottage Lake area. It is our hope that this will be a fun, informative, and motivating newsletter that will help build a caring community spirit.

While this newsletter will be a new Cottage Lake tradition, we thought we'd look back at one of Cottage Lake's older traditions: the 4th of July fireworks on the lake. Many of you may have **heard of the impressive fireworks displays that Norm Ragner (owner of Norm's Resort) put on for the community during the 60' and 70's. Weeks before the 4th of July, volunteers canvassed the Cottage Lake neighborhood seeking donations to cover the cost of the fireworks. The actual date for the celebration/fireworks was July 3rd, so that Norm would have an easier time finding an available pyrotechnician. It was a great excuse for lakefront residents to invite many friends and relatives over for a BBQ and then watch the glorious display of brilliant colors in the evening sky and reflections on the water. The finale often involved an enormous wooden structure that was constructed by volunteers to create a specific custom image. Everyone would wait in eager anticipation to see what spectacular image would appear. Carol still remembers the year that it was a very large American flag. It was a quite a sight!**

At the suggestion of the Bucks who live on the east side of the lake, a new tradition was started during the last couple years: A Ring of Fire. At dusk, residents who live around the lake light red flares along their shoreline resulting in a beautiful red fiery ring around the lake.

Speaking of traditions, FOCL would like to invite Cottage Lake area residents to the following event:



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POSITION AT LARGE

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Know Your Neighbors

Frances and Rosalie

... musings with a historical perspective

By Carol Porter

Yesterday I spent a wonderful day having lunch with two of my former Cottage Lake neighbors, Frances Gasslander (90 years old) and Rosalie Kirsop-Lewis (91 years old.) They now coincidentally live down the hall from each other at Woodinville's Brittany Park Retirement Center. They are examples of the treasures that still remain from the older Cottage Lake era. They were both animated when talking about **their many memories of "The Lake" and showed an amazing recall of many names and stories from the distant past.** We are fortunate to have Frances who lived on the lake for 50+ years and Rosalie who **lived on the lake for 0 years, as well as other "old-timers" of Cottage Lake** who can share "the good ole times" and give us an appreciation for the lake's interesting history. I'd like to share with you the magic of Cottage Lake I saw through their eyes.

Frances is part of the well-known DeYoung family who came to Woodinville when she was nine years old. The year: 1925. As you can imagine things were quite different back then. Frances describes venturing out of Woodinville on hot summer days to go to "The Lake."

They drove there along the graveled "Old Cottage Lake Road" we now know as 165th which runs along the south side of Cottage Lake. Only a few homes or should I say cabins, dotted Cottage Lake's shoreline back then. Most of the people who owned property around the lake only **spent the summers there.** "A lot of women didn't like it out here so several owners sold when their wives became unhappy with the country life." noted Frances.

Frances holds a unique place in Cottage Lake history in that she met some of the original Cottage Lake homesteaders including Ezra Jurey who built the historic Jurey House in 1891 on the south end of the lake.

After many years of being a Cottage Lake "visitor" Frances finally moved to the lake when she married Dick Gasslander in 1943. They lived on Cottage Lake for over fifty years where they raised their two daughters.

Frances remembers when her first grader would have to venture out to Woodinville-Duvall Road to catch the school bus, driven by Gene Mack (founder of Mack's corner.) Back then 185th (the street on the west side of Cottage Lake where Rosalie and Frances lived) was much lower and it often flooded. Frances and Rosalie laugh when they think of how their little kids all had to take off their shoes to "fjord" the stream running over the road to get to their school bus.



Frances Gasslander and Rosalie Kirsop-Lewis
now neighbors at Brittany Park

In the early days when Frances first moved to Cottage Lake, it had two resorts, Camp Comfort (on the south end where the Cottage Lake Beach Club is now) and Erickson's Resort (on the north end which became Norm's Resort and later the King County Park.) They provided great entertainment for the Woodinville area in those days. There were Friday night dances at the dance hall, tennis during the day, boat rentals, fishing and Sunday picnics all of which made Cottage Lake a fun-filled destination and gathering place for miles around. **Some of Frances' memories of the 1930's included the**

time Cottage Lake froze over and someone drove a Model T onto the ice. Don't you wish you could have seen that? She also recalls the owner of Camp Comfort inviting all the school kids to go ice skating on the lake. That was obviously before the days of personal injury lawsuits!

Some years later in 1962, during a camping trip to Norm's Resort, Rosalie and her husband, Ray Fleek, found their Cottage Lake home. They had rented a boat to explore the lake and came across a home for sale on the west side. Despite owning and managing a Mexican restaurant in Seattle they couldn't pass up the opportunity to make Cottage Lake their home. That same year, Rosalie, anxious to share the lake with others, invited a busload of Girl Scouts from Los Angeles to stay with them at Cottage Lake. For a week the girls camped out on the **Fleek's front lawn, attended the World's Fair in Seattle** and had fun on the lake. *(continued on next page)*

Know Your Neighbors - continued from page 2

Rosalie has many fond memories of life on the lake and Norm's resort was one of them. Like the Gasslander girls, Rosalie's kids enjoyed taking swimming lessons and socializing with all the "locals" at Norm's resort. Rosalie and her husband loved the "azzy" music that came from Norm's. They would often row across the lake to join in the fun. When Rosalie's kids were at Norm's they had a unique way of communicating with each other. When she needed to get their attention, she would hang a large towel over her deck railing. When the kids saw the towel hanging there, they would go down to one of Norm's docks and proceed to shout back and forth across the lake to one another. There was much less road noise back then so it was not hard to hear each other, much different than our current method of constant cell phone contact, don't you think

An important part of Rosalie's life was being a teacher/librarian at Cottage Lake Elementary School for seventeen years. Not only did she teach during the day, but also took classes at night towards a Master's Degree in Library Science, helped her husband with their Seattle restaurant in the evenings and raised five kids. After receiving her master's degree she became the school's librarian which allowed her to have contact with all grades. During those many years at Cottage Lake Elementary, she endeared herself to many local children, including myself.



Carol Porter skating on Cottage Lake during a freeze in the late '70s

of ice skates. I wore them proudly as she cheered me on from the shore.

One of my most wonderful childhood memories was a special thing Rosalie did for me. As a young girl I loved ice skating and when the freezing weather arrived between December and February I would impatiently wait for the lake to freeze over. Rosalie and I would often talk at school about the "chance of ice". Knowing my love

of ice skating, Rosalie loaned me my first pair

One thing that amazed me was how many people both Rosalie and Frances knew in the Cottage Lake community. Today most people only know a handful of neighbors and often don't even know those who live directly across the lake or street from them. I was surprised to learn from them that the way people used to often meet each other in those days was to row their boat around the lake and visit their neighbors by water. What a great idea! I discovered long ago that walking dogs is a great way to meet people but I had never thought about rowing around the lake as a way to connect with lakeside residents.



Beside the friendships they had at Cottage Lake, they both also miss the sights and sounds of the lake. Rosalie suffers from Macular Degeneration and is nearly blind. Her son and daughter-in-law still live in the family home on the lake and bring Rosalie over to sit out on the deck. She loves having him describe what is going on around the lake: the number of people fishing, how many people are on the park's dock and what wildlife are out at the time. How often we all take these things for granted.

I know I will never see a full moon over the lake again without thinking of Rosalie, who says that one of her most treasured memories of lake life were the evenings she was treated to a full moon. She remembers how she would carefully position herself in bed at night to catch the perfect view of the moon coming over the trees on the east side of the lake, "I loved drifting off to sleep as I watched the moonlight brilliantly shimmering on the lake's surface."

Visiting with both of these women gave me a renewed appreciation for how fortunate we are to have people like Frances and Rosalie to remind us of the continuing history and beauty of Cottage Lake.

Do I Love Gardening?

Or do I need a mental checkup?

[ramblings of mentally deranged gardener]



By Susie Egan

I tell people my real passion is gardening. And those who know me and have seen me become a permanent fixture in my garden would probably agree. But I think my passion is now changing into a love-hate relationship.

One thing I love about gardening is that I get to talk to myself, a lot. It is a behavior that I have come to find reassuring and comforting. I even began answering my own questions and bantering back and forth with myself like an old married couple. "What the heck have I gotten myself into?" "What kind of a maintenance nightmare have I created?" "What was I thinking? Was I really that stupid to think I would always have unlimited energy and physical stamina to maintain all these cute little garden rooms?" "What if something ever happened to me? Would my husband keep up the garden or would it grow into a tangled jungle?" Worse yet, "Would he remarry someone who would asphalt everything over?" The more I babble, the less I seem to get accomplished. But I keep babbling and mumbling around the garden, getting sidetracked from one garden chore to the next and never finishing any. It just may be time for the funny farm. Oh. Maybe they will have a garden there that I can work on.

Gardening is supposed to be enjoyable and fun, not stressful and never-ending work. And most of the time I do enjoy it. But every spring when the plants go into hyper-gear, everything needs to be done all at once: planting all the new plants I've bought, which almost always requires rearranging the old ones, then there are the weeds which are popping up by the minute, plus there are the new volunteer seedlings that need potting up, then there are the tall perennials now flopping over and in need of staking, and there is the mulching that needs to be done before the summer's heat sets in, not to mention, oh the dreaded lawn maintenance. The list never ends. Then an overwhelming sense of panic begins to set in. How will I ever get it all done?

This week I vowed to get all the plants planted that I bought this spring. Sounded simple but I soon lost focus when I spotted the morning glory wrapping itself around some of my newly leafed

out shrubs. I sat down to patiently attend to this tedious chore when I noticed that weeds had completely infiltrated the lawn I was sitting on. Then I glanced up and saw the bright yellow flowers of dandelions and buttercup blooming in the flower beds above. Didn't I just pull out all that shot weed last week? "Where did this new crop come from?" Oh, they are so faithful in making their regular return to my garden.

And how can I possibly be sitting here typing this article when I have so much to do outside? Don't even mention the inside of my house. It is the last thing I get to, to my husband's chagrin. But I am lucky to have a husband who supports my passion. Well, up to the point that it requires him to do any weeding. But in the beginning, he did offer to help plant a few trees for me. That was until I noticed his big heavy boots were actually standing on some of my precious and rare tiny Himalayan blue poppy seedlings. "Oh, my God!" I screamed.

He shouted back, "What? What's wrong?"

"Can't you see that you're standing on my Himalayan blue poppies?"

"Well, no. I don't see anything blue; just thought they were weeds. In fact, I was going to pull them out for you."

We soon discovered it was a little too painful for both of us to have him help me in the garden, so we accepted he was best at mowing the lawn. But now I think my passion, or affliction, whichever way you view it, has passed on to him. He has become quite skilled at and somewhat addicted to clipping ferns. Did you even know you could clip ferns? We have hundreds of sword ferns on our property and I began noticing him disappearing for extended periods of time. Was he off visiting the asphalt lady? No, just out giving his little



Happy Gardening!

ferns a spring haircut. I guess I won't worry until I hear him purring away in the garden, talking to them and calling them by name. At least if we have to go to the funny farm together, it could be someplace called "Susie's Garden Terrace and Kevin's Friendly Fern Grotto."

Where are our Salmon? Do salmon still pass through Cottage Lake?

By Karen Mattson

Have you ever seen salmon in Cottage Lake? While sightings are few and far between, lately, one lakeside resident, Ron Mosher and his son Wyatt, spotted a salmon in Cottage Lake as recently as last fall. Numbers are clearly dwindling, though, as he has only seen three total, in the past four years. A few other observers also saw salmon two or three years back in upper Cottage Creek, one of Cottage Lake's tributary streams. Since then, no official data, or even much along the lines of local anecdotal sightings, has surfaced, though many groups—Salmon Watchers, biologists from the Department of Fish and Wildlife, the Basin Steward Program, Water Tenders, and others—are involved directly or indirectly with welfare of salmon and watching for their return.

What's the problem Where are our fish, a symbol of the Northwest? **Biologists aren't sure, though they tell us that over the last couple of years, salmon runs have been "horrible" that two years ago, plenty of salmon gathered in Puget Sound, then congregated in Lake Washington, waiting for fall rains, but for some reason, they didn't go on upstream when rains came (nor did signs of a major fish die-off show up in that lake). By some counts, 200,000 fewer showed up than expected in the Bear Creek basin (of which Cottage Lake is a part).**

The reason for this? Some fisheries experts speculate that in 2004, Lake Washington, or its watershed, or even the Northern Pacific itself had temperatures too high for salmon survival. In support of this theory, coastal ocean temperatures were again 2-5 degrees above normal in the spring of 2005, and the fall water temperatures last year in the Lake Washington Ship Canal and Lake Union were at the lethal level for sockeye. A further indication of temperature-as-culprit shows up in similar salmon population drops in the Cedar River Basin, south of here, as well as in the Fraser River system of British Columbia.

Some activists see the hatcheries, such as the one in Issaquah, as a solution for failing salmon runs. Certainly, several local elementary schools, including Cottage Lake, Hollywood Hill, Bear Creek, and Wilder, have involved their students in salmon restoration programs in the past. One, Bear Creek Elementary, has been part of a Salmon Release Program for fourteen years and continues through the current school year. According to Mike Wooten, a sixth-grade teacher there, the project idea originated with himself, two other 6th grade teachers, Louisa Hatala and Robin Phillips, and a teacher intern, John Schmeid. Currently, all three sixth grade classes are involved in obtaining 250 eggs each year

from the Issaquah Hatchery; those eggs must be fertilized, put into a tank, and raised to the fry stage (necessitating daily monitoring of water temperature, pH and nitrates), then released into Bear Creek, a process which takes from January until April. **First graders at the school also participate in the salmon release. "The students really take ownership for the salmon," declares Wooten, "and every year, high school kids come back here to ask about their fish."** In addition to the salmon release, the school and surrounding community have made extensive upgrades in the **riparian environment at the school's streamside location, with plantings, a pathway, and shaded waterways.**



Salmon spawning along the creek

Other salmon experts believe that salmon-friendly landscaping along lake, river, and creek banks, as well as conserving water, and removing chemicals from what we release into the watershed, may be the most direct help most of us can offer. The reason for misgivings about salmon planting is, many biologists have observed that hatchery-raised fish have less vigor, smaller size, less diversity, higher vulnerability to disease and parasites, and thus, lower survival rates than wild salmon. Thus, releasing hatchery fry into our watershed may simply overload an overstressed system, adding one more factor weighing against salmon runs. Yet even if **hatchery salmon planting doesn't recreate fish runs, the intense student participation in such programs offers clear educational value and strong motivation to preserve salmon.** After all, the same students that plant fry today will some day be citizens making decisions that affect watershed quality an environment which **may still sustain a revival of one of the Northwest's oldest cultural and economic icons.** In the meantime, as the National Academies of Science conclude, **"As long as human populations and economic activities continue to increase, so will the challenge of successfully solving the salmon problem."**

Credit for information used in this article is given to: Dick Schaezel, Water Tenders; Mike Wooten, 6th grade teacher at Bear Creek Elementary; Mary Maier, Bear Creek Basin Steward; Ron Mosher, Professional Fisherman and Cottage Lake resident; Steve Foley, Biologist and District Fisheries Manager; Jennifer Vanderhooft of Salmon Watchers; James Chandler, Project Manager for School Salmon Restoration; Beth Cullen, Water Quality Planner in King County's Lake Stewardship Program Doug Margeson's 2004 *Journal American* article reprinted in the Fall 2005 Water Tenders Newsletter; and the online article "Salmon and Society in the Pacific Northwest" by National Academies of Science, found at <http://www.nap.edu/readingroom/books/salmon/summary.html>



Michael Murphy of King County Lake Stewardship Program taking water samples

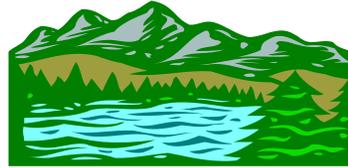
By Beth Cullen

Consider this your first class in limnology, the study of lakes! In the next few newsletters look for articles that highlight and explain the water quality measurements that are taken on Cottage Lake. Since Cottage Lake is listed on the Federal Clean Water Act 303(d) list for having too much total phosphorus, **let's take a look at this water quality parameter, how it affects the lake, and our ultimate phosphorus concentration goal.**

Phosphorus is a limiting nutrient

Phosphorus is a naturally occurring element in the environment that is essential to plant growth. It is vital in lakes to help algae and aquatic plants grow, which in turn support a healthy lake ecosystem. Phosphorus occurs naturally in soils and organic materials, but is in such small quantities in fresh water that it is often the "limiting" nutrient necessary for algal growth. A limiting nutrient is defined as a chemical that is essential for plant growth, but available in smaller quantities than other nutrients that are also necessary. Once a limiting nutrient is exhausted in the system, the plants and algae must stop growing. If more of the limiting nutrient is added, plants and algae will keep growing until that nutrient, or another one, is again exhausted.

Limnology 101



[the study of lakes]

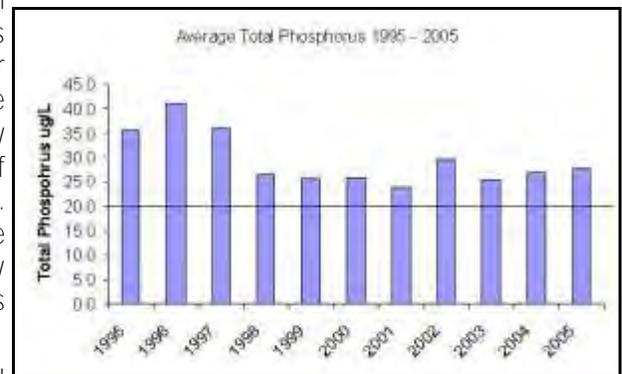
In Cottage Lake, as in many King County lakes, the limiting nutrient is phosphorus. Excess phosphorus can be directly correlated to the algae blooms and excessive plant growth, which often interfere with recreational activities such as swimming, boating, and fishing. Not only can excessive phosphorus hinder beneficial uses for humans, it also changes the lake ecosystem balance by decreasing the availability of dissolved oxygen for fish. Other effects can include changing predator-prey relationships and decreases in water clarity.

Cottage Lake and Phosphorus

In 2004, the Washington State Department of Ecology (DOE) and the Environmental Protection Agency determined a regulatory limit for phosphorus concentrations in Cottage Lake through the Total Maximum Daily Load (TMDL) process. In order to protect beneficial uses, the goal is for Cottage Lake phosphorus levels are to be at or below 20 µg/L (micrograms per liter).

Where is Cottage Lake now relative to this goal? Since 1995 Cottage Lake has been monitored by the King County Lake Stewardship Program, which takes several water quality measurements through the summer months (May through September). The program has tracked total phosphorus in Cottage Lake,

showing that since the beginning of **monitoring, the lake's total phosphorus** has been over the state and federal target goal. The chart shows the target total phosphorus level as a horizontal line, and each bar represents the May-October average of total phosphorus for each year.



The goal of the recently awarded Centennial Clean Water Fund Grant, from the Washington Department of Ecology to King County and the Friends of Cottage Lake is to reduce total phosphorus levels under the 20 µg/L threshold. Through the educational events sponsored by the grant and activities planned by the Friends of Cottage Lake, we hope to help the communities of the watershed to reach the phosphorus target in the next several years.

Stay tuned next time measuring other water clarity parameters, such as Secchi depth and chlorophyll *a*: what are they and how do they relate to phosphorus?

Plan to eradicate fragrant water lilies moves forward

By Matt McCain

This summer, as Cottage Lake’s fragrant water lilies claim a bit more lake real estate, efforts to wrangle the aggressive, non-native species have gained momentum as well. Lake residents and users could see the de-lilying process begin this July.

After two community meetings held on April 6 and May 15 to discuss how best to address the lily issue, attendees unanimously agreed to pursue eradication of the lilies using the aquatic herbicide Glyphosate. This decision was supported by King County Aquatic Weed Specialist Katie Messick, who attended the April 6 meeting.

The next step was to collect bids from several professional aquatic weed removal contractors. After reviewing bids and contractor references, the project was awarded to Aquatechnex, who will handle lily removal and necessary permitting at a cost of approximately \$5,500. **Aquatechnex’s yle Langan also attended the May 1 community meeting to answer residents’ questions.**

The permit application was submitted on May 23rd, and, after a mandatory review process, the permit was obtained in mid-June. **Pending Aquatechnex’s thorough community-notification campaign and an additional 10-day waiting period, the first application of Glyphosate is scheduled to occur in mid-July.** (FYI: Glyphosate is applied with a harmless blue dye to help indicate which areas have been sprayed. The dye will disappear quickly.)

Glyphosate is a “non-selective” herbicide that kills all plants that come in contact with the spray, but is rendered ineffective once it touches water. Once the lily leaves are sprayed, the lily will die after several weeks. A repeat application will be needed to remove lilies that are missed on the first pass, and it generally takes two summers of spraying to finish the job. Glyphosate does not harm fish, pets or humans (A.K.A. swimmers) and is the most commonly used method for eradicating lilies on lakes in our area.

Fragrant water lilies crowd out native aquatic plant species; decrease water flow in the lake; create low oxygen areas that harm fish; increase the nutrient load of lake encouraging algal blooms; and increase sedimentation of the lake near the outlet, which continually decreases the depth of an already shallow lake. **In other words, they’re nasty buggers.**

unding for this project (we’ve rounded up ,900 to date) has come exclusively from donations by lake residents and users. FOCL has applied for a King County grant of \$2500 for lily eradication, and approval is pending. More lake residents are encouraged to contribute, as funds are still needed to cover next **summer’s Glyphosate application. See the donation form below,** which can also be used to accompany checks for amounts previously pledged. In addition, all donations are now tax deductible since FOCL is a 501 (c) (3) nonprofit corporation.

In the coming weeks, please continue to talk to your neighbors about this important project.

Now is the time to pay your pledge donations! Please use the Donation Form below make your payment. Remember all donations are tax deductible.

For more information on fragrant water lilies and Glyphosate, see the articles and links at www.friendsofcottagelake.org.

Friends of Cottage Lake

MEMBERSHIP & DONATION FORM

\$ 10.00 Membership or Membership Renewal

\$ _____ Donation for eradication of water lilies on Cottage Lake

Name: _____

Address: _____

City, State, Zip _____

Phone: _____

Email Address: _____

Yes, please email my next *Cottage Lake Connection*

Make check payable to: Friends of Cottage Lake

and mail to: Attn: Jonathan Morrison,
President

17214 185th Avenue NE
Woodinville, WA 98072

All fees & donations are deductible as FOCL is an approved 501 (c) (3) nonprofit corporation

Cottage Lake Connection

Newsletter from the Friends of Cottage Lake
17214 185th Avenue NE
Woodinville, WA 98072
www.friendsofcottagelake.com



Welcome New & Renewed FOCL Members

Bill and Eleanor Barnes
Barbara Bowen
Judy Dunning
Kevin & Susie Egan
Leo and Virginia Egan
Jim Fleek & Sally Maimoni
Ed Grubbs
Anita Johnson
Gary & Karen Mattson
Mary & Matt McCain
Jonathan Morrison & Lucy Davies
Steve & Janet Okerlund
Don & Anne Pettit
David & Carol Porter
Matt Schmitter
Nidy Scott
Greg Shelton & Jean Harrison
Robert Wright

If you do not see your name on this list you can use the membership/donation form to renew your membership

Calendar of Upcoming Cottage Lake Events

- July 4 Fireworks on the Lake by lakeside residents
- July 8 Cottage Lake BBQ & Fireworks Cleanup
3 pm to 5pm - Cottage Lake Park - Large Pavilion
Hot Dogs, lemonade & cookies will be provided
- A great chance to meet your Cottage Lake neighbors and give back to the community!
- Sept 16 FOCL & Cottage Lake Garden Club Plant Sale
Location to be announced

Newsletter Information

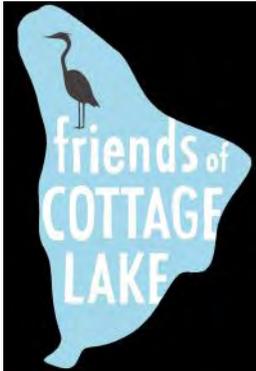
Newsletters will be printed quarterly on Jan. 1, April 1, July 1, and Oct. 1.

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Send submissions to:
Susie Egan
17301 191st Ave. N.E.
Woodinville, WA 98072
segan@cottagelake.com

October 1, 2006

Volume 1, Issue 3



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Cottage Lake Fall Plant Sale a Huge Success

The Friends of Cottage Lake and the newly formed Cottage Lake Garden Club held their first joint Fall Plant Sale on September 16th at Susie Egan's house on the east side of Cottage Lake. FOCL sold native plants that were obtained from members' gardens, bareroot stock from King County and also plants from Tadpole Haven Native Plant Nursery. The Cottage Lake Garden Club offered a wonderful selection of non-native plants from their members' gardens. Volunteers from both organizations helped in potting plants, organizing the sales area and working at the plant sale. It was a perfect example of wonderful teamwork and everyone had a great time together, especially knowing they were doing something good for their community. The fundraiser grossed over \$1,000 in sales with the profit going toward Cottage Lake improvement projects. Plans are now underway for a Spring plant sale. Our thanks go out to all those who came and supported our fundraiser.



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Jim Fleek (425) 788-1935
shy-jim@hotmail.com

Left: **Karen Mattson** helping two customers; Center: **Anna Marie Brown** helped load plants; Right: **Bronwyn Wilson**, Woodinville Weekly garden writer, served as docent.

Know Your Neighbors Leno & Antoinette Bassett

... Long-time Cottage Lake residents

By Carol Porter

In this issue of *The Cottage Lake Connection* I have the privilege of writing about a couple I have admired for years, Leno and Antoinette Bassett. Almost everyone who has lived on Cottage Lake for some time has heard of the Bassetts and Bassett Pond.

It was at one of the early Friends of Cottage Lake meetings that I first met Leno. His no-nonsense approach to dealing with lake issues, impatience with "over discussion" of problems and that marvelous twinkle in his eye immediately endeared him to me.

Having been a long-time resident of Cottage Lake, (they first purchased 133 acres on the SW corner of Cottage Lake in 1959) Leno understood many of the lake's environmental issues. Because of the location of his property at the outlet of the lake, he had first-hand and historical knowledge of the lake levels and water lily problems. His wisdom and opinions were a valuable, and often humorous, part of every meeting.

Over the years I had gotten to know them even better from their quick evening visits when driving down our road heading out to dinner. Mind you, these were not normal dinner times for most people, as this was usually around 8 o'clock in the evening! I always teased them that most people their age were in bed by then, not heading out for a "night on the town." Leno always loved that comment!

Leno has also been a very generous and caring neighbor. A few years ago, when he saw that I was building a little garden shed on my property, he showed up one day to give me some old garden tools "to help decorate the place." I treasure those tools to this day. He was also great at frequently checking in with me when my husband was ill several years ago, a simple gesture, but something that I still remember and appreciate.

Leno often shares his age (91; Antoinette is now 88) and philosophy of hard work with those of us who know him. "My

secret is to keep busy. I never take a nap. Whatever you do, don't start sitting around. That is when it starts going downhill."

Both Leno and Antoinette put this philosophy into practice every day. This was evident on the summer day Susie Egan and I pulled into their driveway to interview them. We both simultaneously gasped in sheer amazement at the spectacular gardens. Not only was there a huge vegetable garden on one side but next to it was a sweeping flower garden in a sea of colors looking like a Monet painting. And everywhere we

looked, the gardens were well maintained. We couldn't believe at their age they could possibly keep up with the maintenance. But there they were, both busily working in the garden, pulling weeds and cutting flowers for a bouquet for us to enjoy. Their strong work ethic and pride in their property was very apparent.

As we got out of the car to get a closer look at the garden, we were met with an even bigger surprise. In the middle of the garden was a huge planting of purplish-pink petunias

arranged in the shape of a heart with an arrow (of white petunias) going through it. This flower bed was a surprise gift Leno created for Antoinette ten years ago and has kept it up ever since. We got an even better view of it from their deck, where you could truly appreciate the beauty of this loving gesture.

Even before entering their house we saw many examples of their amazing creativity and handiwork. One example was an old saw blade that Leno had fashioned into a light shade for an outdoor porch light. It was a clever way of hiding the light bulb and letting just the right amount of light shine through. We also loved the thick rough-cut timber he used to side his house, which harkens back to Leno's sawmill days.



Antoinette & Leno Bassett in their garden

Know Your Neighbors - continued from page 2

As we finally sat down for tea and conversation, I found it hard to focus on just one topic, as they have had so many adventures and experiences in their lives. We first talked about both Leno and Antoinette's childhoods and how they met each other. Leno lost his dad at an early age and consequently had to quit school to work full time at a sawmill to support his mother and family. Thus began a life of hard work, starting with nothing and eventually building a successful business. The business that Leno and his wife are best known for was called Bassett's Grow Earth which sold bark, topsoil and peat moss. They ran this company for many years. "We started from zilch and kept at it. I wasn't afraid to try new things; some of them dangerous and risky. I have been very fortunate, especially to have her here beside me." he said, giving Antoinette a wink.

Leno and Antoinette raised two children, a daughter, Leanette, and a son, Roger. Leanette and her husband, Bill, live just south of them. They own and operate the Bassett's Crooked Arbor Gardens located just off of 165th Avenue NE. If you haven't had a chance to visit it, you must. It is open on Fridays and Saturdays during the summer and has a breathtaking garden, often used for weddings. It also is the location of a wonderful old barn that Leno restored years ago.

Another interesting local feature which borders the Bassett property is the beautiful Bassett's Pond County Park. This gorgeous, natural area was purchased by King County from the Bassetts and made a tremendous addition to the Cold Creek Natural area that runs from Mary Cash Park (on Woodinville-Duvall Rd.) all the way to 165th.

Our visit went by all too fast! So many stories to hear and so many questions to ask. Leno and Antoinette are a fun-loving, delightful couple with an endearing and youthful spirit. Their cheerful attitudes are as refreshing as their wisdom and their example inspiring. Our visit with them hearing stories about their past, their outlook on life and marriage was a wonderful way to spend a summer morning. I feel so fortunate to have them as my neighbors!



In Memoriam

Rev. Franklin "Frank" Schneider



by Susie Egan

I was saddened to hear that Rev. Franklin "Frank" Schneider, a long-time resident of Cottage Lake, passed away on September 8th from a heart attack; he was 78 years old.

I had the opportunity to interview him and his wife, Agnes, last year regarding their recollections of the history of Cottage Lake. He was a wonderful person and will be missed by many. I thought I would share a bit about his life with you.

Frank was born in Canada and grew up on a farm outside Barons, Alberta, Canada. In 1945 he traveled here to attend Northwest Bible School which is now Northwest University. While there he met his later-to-be bride, Agnes. They were married for 56 years and had two sons, Rick and Kirk.

During his life he worked as a pastor leading churches in Davenport and Grandview, Washington. He and Agnes also started a Christian ministry for singles called FOCAS (Fellowship of Christian Adult Singles) in the Seattle area, which later became a national group under the Assemblies of God.

In addition, he helped to found a Seattle electronics company named Dynamote Corporation. He has also worked as a court bailiff, an inventor and an electrician at the Birmingham Steel Company. Upon retiring from the steel mill, Frank kept busy starting up his own electrical business called KRAFCO (Kirk, Rick, Agnes and Frank Company).

During his time of retirement, he worked with Campus Crusade for Christ, in a prison ministry. Frank had a zest for life and adventure: owning and flying airplanes, hunting with buddies, writing poems and composing music. One of his favorite outings was attending car races at the Monroe Speedway.

On the morning of Frank's memorial service, a rainbow appeared across Cottage Lake.



Water Lily Eradication Update

By Matt McCain



View of water lilies choking south end of Cottage Lake

Come next spring, you're going to see fewer fragrant water lilies on the lake than you're used to. As planned, Aquatechnex, an aquatic weed-control specialist, began eradicating Cottage Lake's formidable crop of non-native lilies this summer.

Aquatechnex's first pass at spraying the lilies ended quickly due to high winds. During their second visit, technicians were able to spray all the way around the lake, but were unable to penetrate the dense areas of lilies in the north and south ends. Now, as temperatures drop and the lilies die back naturally, any further spraying this year would be futile.

So, the good news is, we've made a respectable dent in the lilies. The not-as-good news is that, due to our somewhat late start and time spent waiting for our permit, we didn't get as much done as we had hoped to. However, we only spent about 55% of our \$5500 budget (thanks again to those who've donated), so we will have funds to continue the project next summer. In addition, thanks to the hard work of some FOCL members, we received a small grant (\$2500) which will be used to cover part of the project's costs. Since our permit only needs to be renewed next year, we should be able to get an earlier start (mid-July).

In the coming months, FOCL will be seeking community approval to allow Aquatechnex to operate a small gas-powered motor on the lake. This will enable Aquatechnex to effectively penetrate the dense lily patches in the lake's north and south ends (it's a jungle in there).



Aquatechnex spraying water lilies in August.

Friends of Cottage Lake Receives Grant

The Friends of Cottage Lake was awarded a \$2,500 grant from the "2006 Small Change for a Big Difference Grant" for use in the eradication of the invasive water lilies.

The grant is funded by WaterWorks and awarded by the King County Department of Natural Resources and Parks with the project being funded in part by a King County Department of Natural Resources and Parks WaterWorks grant. The \$2,500 can be used for costs of permits and filings (\$400), legal and public notification costs (\$400) and the cost of the non-toxic herbicide. The grant runs from August 17th, 2006 to Sept 15th, 2007.



Why are Water Lilies Bad?

- They crowd out native aquatic plants
- Decrease water flow in the lake
- Create low oxygen areas that harm fish
- Increase the nutrient load of the lake encouraging algal blooms
- Increase sedimentation of the lake near the outlet which continually decreases the depth of an already shallow lake

Meet Sally Maimoni— who helped with our grant writing

By Karen Mattson

Meet Sally Maimoni, who is responsible for the Friends of Cottage Lake being awarded a grant of \$2500 to be used for the eradication of water lilies. The grant money will be applied to the cost of next year's second round of spraying and will reduce the need of future contributions by that amount. Her work included online research, brainstorming with others, multiple drafts, emailing and so on. It took her around thirteen hours to complete the application and she commented "A little bit of time commitment can go a long way."

Previous experience in grant writing taught Sally that "grants are always really specific," so she felt her tactic of including detailed data on water lilies and the aquatic herbicide, Glyphosate, helped to gain the grant approval. The application was submitted during the third week

of May, and approved at the end of August by King County's Ken Pritchard, Grant Exchange Coordinator in the Department of



Sally Maimoni on Cottage Lake

Natural Resources and Parks, as well as two expert "external reviewers." Sally felt the bureaucratic hurdles in this project were minimal, and showed that "King County is trying to foster communities, to encourage them in doing their part to take care of the environment. I'd certainly be willing to do it again if necessary. But now it's up to all of us to maintain control of the lilies."

Sally and husband, Jim Fleek (whose mother, Rosalie Lewis was profiled in our last newsletter) live on the west side of Cottage Lake. Sally's writing efforts will make a contribution to the health of our lake, despite the fact that she herself is currently waging a battle against breast cancer. Her advice on this challenge is characteristically upbeat and self-reliant: "Ladies, don't rely on an annual mammogram -- do your self-exams—the best early-warning system."

When she isn't in chemotherapy, or writing grants, Sally enjoys her full-time work at Premera Blue Cross as a computer programmer, and her hobby of working with stained glass.

Status of the Cottage Lake Implementation Plan

By Tricia Shoblom, WA Dept. of Ecology

The Washington State Dept. of Ecology is required under the federal Clean Water Act to prepare a list of water bodies that do not meet water quality standards. This list is then placed onto section 303(d) of the federal Clean Water Act. The Dept. Ecology updates its 303(d) list every two years, and submits it to the Environmental Protection Agency (EPA) for approval. Each water body on the 303(d) list must have a water cleanup plan developed to specifically address its pollution sources. This plan is called a Total Maximum Daily Load or TMDL. The TMDL is a technical study that identifies the amount, type, and sources of a pollutant or pollutants and corrective actions required to reduce the pollutant(s) in order to meet water quality standards.

In 1996, Cottage Lake was placed on the 303(d) list for having too much phosphorus which has negatively impacted swimming, fishing, boating, and wildlife viewing. The Dept. of

Ecology developed a TMDL (water cleanup plan) for Cottage Lake. *The Cottage Lake Total Phosphorus TMDL Analysis/ Submittal Report* was approved by the EPA in 2004. The TMDL identified the sources of phosphorus pollution affecting Cottage Lake and determined how much phosphorus concentrations would need to be reduced for Cottage Lake and its tributaries Daniels Creek and Cottage Lake Creek to meet water quality standards. The TMDL also provided the basis for developing an Implementation Plan for Cottage Lake.

Once the Cottage Lake TMDL was approved, the Dept. of Ecology along with the Friends of Cottage Lake, Washington Department of Fish and Wildlife, King County Lake Stewardship Program, King Conservation District, Woodinville Water and Sewer District, and the Upper Bear Creek Community Council formed the Cottage Lake Steering Committee and be-

(Continued on page 7)



Limnology 101

[the study of lakes]

By Beth Cullen, King Co. Lake Stewardship Program

In the last issue of this newsletter, we talked about phosphorus and where it comes from, why it is important, how it acts as a limiting nutrient, and what happens when there's too much of it in Cottage Lake. In this article we're going to explore the relationships between phosphorus, chlorophyll a and Secchi depth (water transparency).

Chlorophyll a

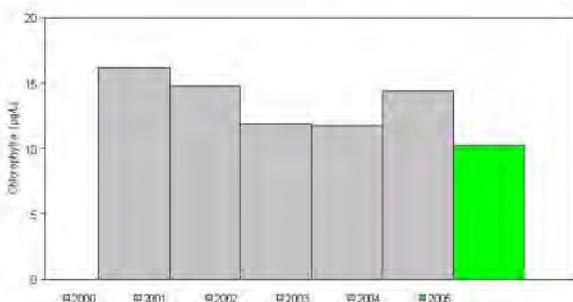
First off, what is Chlorophyll a? Chlorophyll a is a green pigment made by plants which is used to capture sunlight. The plants then combine with water and carbon dioxide to produce sugars that act as the base of the food chain

How is this green pigment important to water quality measurements in lakes? Well, all algae have chlorophyll, so chlorophyll measurements can be used to estimate the volume of algae present in a lake. Algae can have differing amounts of chlorophyll per cell, depending on the species present as well as the time of year and the health of the cells, but in general, these measurements have been found to be reliable indicators of the phytoplankton living in the water.

How does this connect to phosphorus? When there are high concentrations of phosphorus in the lake (remember, it's the limiting nutrient in Cottage Lake), you can have more frequent and larger algae blooms. And this will be reflected in the chlorophyll measurements.

Cottage Lake is among the group of King County lakes with high chlorophyll values. These higher measurements suggest that Cottage Lake is very productive and prone to frequent algae blooms.

Average Chlorophyll a, May - October, 200-2005



Secchi depth

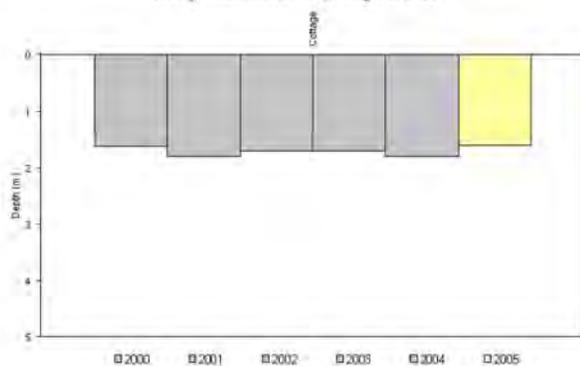
Secchi depth is a measure of the relative transparency or clarity of the water to an observer above the lake surface. It is evaluated by lowering a specially designed disk into the water until it can no longer be seen from the surface, and then measuring the length of line that was used. Transparency can be affected by many different things, including water color, phytoplankton abundance, turbidity caused by other suspended particles, wind, waves and by light glare off the surface of the water.

When transparency changes rapidly, particularly in our dry summers, it often has to do with changes in algal abundance, due either to increases in growth rates from nutrient availability or in decreases in grazing rates by zooplankton. Secchi transparency can also be affected by major inputs of silt and detritus, such as soils dislodged by large storms or moved into water as a result of human activities. Transparency measurements compared across several years may sometimes correlate with specific events, such as large scale development, which are known to have occurred.

In Cottage Lake, Secchi transparencies have remained below 2m since the year 2000. Although the lake water does have some natural coloration, the amount is not likely to impact the Secchi readings. Also, there is no significant difference between average transparency values between summer and winter, suggesting storm water runoff isn't a major influence on Secchi transparency. Most likely, the lower Secchi readings are due to the algae present in the lake, and we are now aware of what causes the algae to grow so well: excess phosphorus!

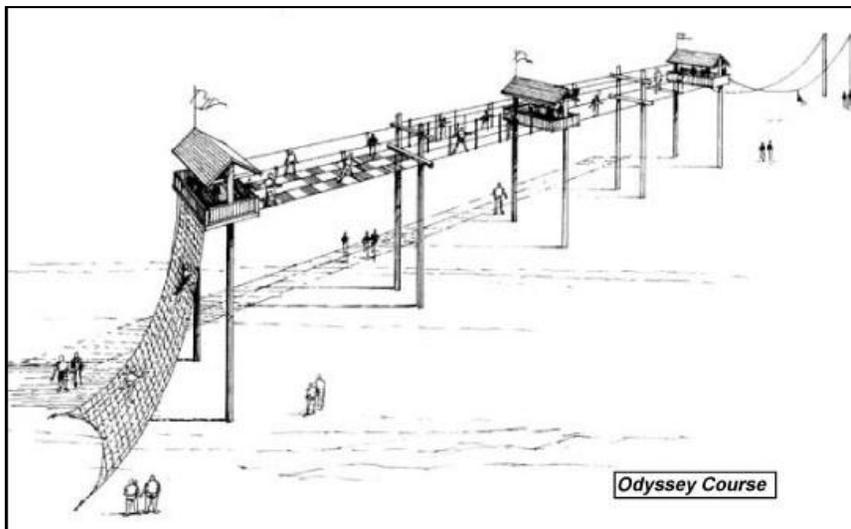
It's easy to see the connections between Secchi transparency, chlorophyll a measurement and total phosphorus. All three are directly related, especially in a system like Cottage Lake, where excess phosphorus leads to high chlorophyll a measurements and low Secchi transparency readings.

Average annual Secchi transparency 2000-2005



Stay tuned – next time we'll talk about how all three are used to form a Trophic State Indicator (TSI) value and how that helps limnologists classify your lake!

YMCA Begins Construction of Alpine Tower Facility (Odyssey III) at Cottage Lake Park



Have you noticed the telephone-pole structures being erected at the Cottage Lake Park alongside Woodinville-Duvall Road? This is the long-awaited Odyssey III Course that the Northshore YMCA and King County Parks are building for the benefit of the community. The course includes three wooden structures which sit on top of tall telephone-pole supports each connected to the other by a rope bridge. Under the direction of trained YMCA instructors, participants get involved in a relationship-building and team development program. The course cannot be completed by an individual but instead takes a team to achieve success. With proper facilitation, participants develop stronger communication skills and deeper relationship with team members.

It will become a part of many of the YMCA's current programs and will be available for use by community groups, schools, churches and local businesses. There will also be frequent open houses for the entire community. If you would like to use the Course, please contact the Northshore YMCA.

Note: The Northshore YMCA and King County Parks are committed to creating a safe experience for everyone. The access points to the course are retractable making the course inaccessible to the public when staff are not present. Staff will be given extensive training in safety.

Cottage Lake Implementation Plan cont'd

(Continued from page 5)

gan working on the second half of the TMDL, which is the plan implementation phase. *The Cottage Lake Total Phosphorus Total Maximum Daily Load Water Quality Implementation Plan* is currently in draft form, and details what type of implementation projects are being implemented in the watershed and who is responsible for carrying out those projects. The Cottage Lake Implementation Plan should be finalized before the end of year. The final draft of the implementation plan will have a 30 day public comment period, as well as a public meeting to be held at the Woodinville Public Library. Everyone is encouraged to attend. [As of the printing of this newsletter, the public meeting date has not yet been determined.]

To view a copy of the Cottage Lake TMDL, please visit the Ecology's website at: <http://www.ecy.wa.gov/pubs/0310085.pdf>. For more information on the TMDLs, please visit Ecology's website at: <http://www.ecy.wa.gov/programs/wq/tmdl/overview.html>.

Annual Fall Market Sale

bassetti's crooked arbor gardens

woodinville, washington usa

Saturday, October 14, 2006
10am – 4pm

18512 N.E. 165th Street
Woodinville, WA 98072

More than just an end of season Fall sale –
Local artists and plant vendors – No host wine
tasting and hors d'oeuvres – Music – Great
holiday gifts – Demonstrations by gallery
artists

Cottage Lake Connection

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Don & Anne Pettit
David & Carol Porter
Matt Schmitter
Nidy Scott
Greg Shelton & Jean Harrison
Robert Wright

**If you do not see your name on this list,
email jonathanmorrison@hotmail.com
to renew your membership**

Calendar of Upcoming Cottage Lake Events

- Oct. 10** 7:30 pm - Redmond\Bear Creek area Ground-water Workshop - Woodinville Water District
- Oct. 14** 10:00 am—4:00 pm
Bassetti's Fall Market [Plant & Art] Sale
Bassetti's Crooked Arbor Gardens
- Oct. 26** 7:00 pm - FOCL & Community Meeting -
Woodinville Library Meeting Room

Newsletter Information

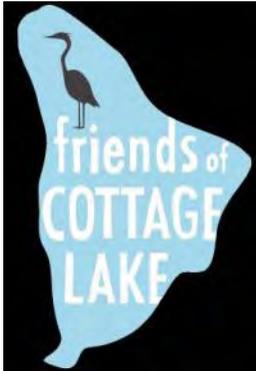
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January 15, 2007

Volume 2, Issue 1



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Cottage Lake Hit By Record Wind & Snow Storms

Around midnight on December 14th the Cottage Lake area was hit with a record breaking windstorm with wind gusts up to 69 mph. The gale-force winds continued for several hours causing many lakeside residents to sleep in lower floors of their homes for safety. Cracking and falling trees could be heard and made for a sleepless night for many.



Power, telephone and light poles



snapped into pieces and lay strewn along Woodinville-Duvall Road like pick-up sticks. Local residents directed traffic trying to detour motorists around downed power lines. For several days trees hung precariously across lines above the road as cars cautiously drove underneath. The area's

substation and its four feeder lines and many smaller lines were wiped out leaving the Cottage Lake area without power, heat, cable and internet. Unfortunately temperatures dropped to below freezing the following day and many people hunkered down in the dark to stay warm while others turned on their generators or checked into local hotels that sold out quickly. Puget Sound Energy was not able to restore power for 7 to 11 days.



Since the Seattle Times' Bothell printing plant lost power, no newspaper was printed or delivered on December 15th. Far worse, the storm brought tragedies in loss of life to 13 people in the Puget Sound area from trees falling on their cars and houses, from carbon monoxide poisoning due to improperly vented generators and from trying to keep warm inside with charcoal grills.



(Continued on page 2)

FOCL Holiday Party was a huge success

by Susie Egan



The Friends of Cottage Lake held their first holiday potluck party in recent years on December 10th. Susie & Kevin Egan hosted the party at their house and the potluck dishes were absolutely incredible. Around thirty Cottage Lake residents attended and a wonderful time was had by all. So much so that it was decided that it should become a holiday tradition. If you would like to host next year's

holiday party at your house, please contact either Susie Egan at (425) 788-1952 or Judy Dunning at (425) 788-0801 who are on the FOCL Social Committee. We're hoping for an even bigger turnout next year. Here are some of the pictures from the party.



Clockwise: Earl Whitney, Stafford & Louise Miller, Karen Mattson & Ann Whitney



Clockwise: Susie Egan, ?, Gary Mattson, Sally Maimoni, Chuck Cushing, Carol & Art Fauconnier, Sherri & David Overcash, & Juneva Cushing



Clockwise: Beth Shepherd, Gary Mattson, Ann Whitney, Diane & Bernie Clark

Cottage Lake Storms *Continued from page 1)*

While the entire Puget Sound region was affected by the storm, the Cottage Lake area was one of the hardest hit. All of downtown Woodinville was closed down with retail stores and gas stations unable to operate without power. This was a devastating economic blow to local businesses that depend on Christmas sales as a major portion of their annual revenue. Residents were forced to drive to Monroe and Snohomish County to find gas and food. The Woodinville Costco somehow had power and was able to stay open providing refuge for people with warm food and gas for their generators.

Then as things began to get back to normal, on **January 10th**, around 3:30 p.m., just in time for the evening commute, the area was hit with a snowstorm with temperatures sinking down to 19 degrees. The snow fell quickly and Woodinville-Duvall Road

became a virtual ice rink with dozens of cars left abandoned along the side of the road for several days.

For the first time in several years, the lake froze over. Not enough for ice skating but enough that a flock of white swans flew in and enjoyed a winter picnic on the surface (see photo below.) Thankfully no power was lost during this storm, but at the time of this writing snow still remains on the ground.

Here's to better weather in 2007!



Remembering Cottage Lake back in the 1930's

Many of you already know that Cottage Lake boasts one of the oldest inhabited homes in King County, which we locally refer to as the Jurey-McCain House. It is located on the south end of Cottage Lake and was built by Ezra Jurey around 1891. Ezra was a bachelor and had no children. He bequeathed his house and property to a distant relative on his mother's side of the family, Mary Slaughter, seen seated in the boat below .

gracious hospitality of Mary & Matt McCain who now own the home. It was an emotional and nostalgic step back into time for them. They enjoyed recalling the stories of spending their summers there and how the house and property looked back at that time.



Left to right: Mary Slaughter and her grandchildren, Sarah, Joseph, Joan & Marilyn (mid 1930's)

Mary and her husband, John, had three daughters, Helen, Kathryn & Mary (the latter were twins.) They lived on Capitol Hill in Seattle and used the Cottage Lake property as their summer retreat from the city. Mary loved to have her

grandchildren (Marilyn, Joan, Joseph and Sara "Sally") stay with her during the summers. Joseph actually spent an entire year living with her at Cottage Lake when he was a small boy while recuperating from an illness.

This past summer, Marilyn, Joan and Joseph were able to visit the house again after almost forty years due to the



Joseph Wilwerding with his mother Helen around 1948 holding water lilies.



Sisters Joan (Wilwerding) Whinihan and Sarah "Sally" (Wilwerding) Watchie visit the Jurey-McCain House this past summer recalling their childhood memories.



Joe Wilwerding in front of the house this past summer.

Be sure to visit [The Friends of Cottage Lake website](#) to read Joe's incredible story of spending summers at his grandmother's house on Cottage Lake in the 1930's and 1940's. He tells a wonderful story about riding his horse in the woods around the lake, hunting, fishing and running into bears. You won't want to miss it!

Living with Beavers on Cottage Lake

By Karen Mattson

Bucky's Dinner

One day, a flourishing 20-foot willow tree beside the lake, by the next morning, a tell-tale pointed stump, grooved by chisel-shaped teeth.

A not-unusual phenomenon of living on Cottage Lake, this experience has been reported by several residents. Though willows are popular with beavers, this tree is not their only target, nor are lakeside trees their only victims. Balancing respect and stewardship for the area's wildlife with protectiveness for our gardens can challenge the greenest of residents.



Actual picture taken of Gary & Karen Mattson's willow tree

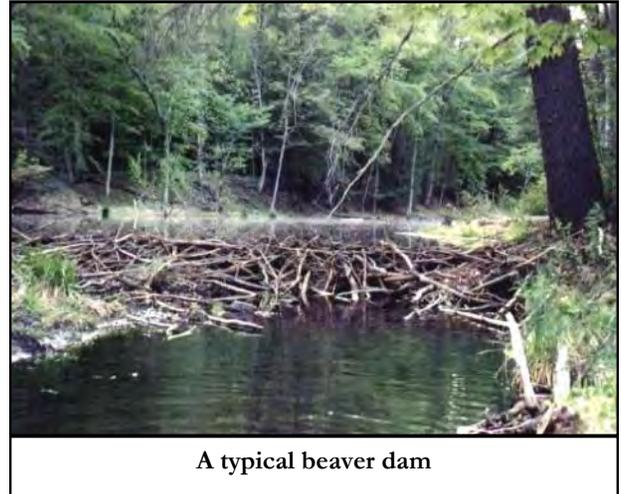
Homeowner Gary Mattson, whose willow was felled in the previous paragraph and shown in the photo above, gives this update after the felling of his tree:

"I learned that "Bucky" has returned regularly in the night to eat bark, chew small pieces, and eventually to gnaw the original five-foot piece of trunk in two. I observed it leaving the scene at 5:30 a.m. one morning, heading south back to the outlet stream of Cottage Lake. 'Why, I ask myself, does this animal choose to travel so far from its home to come to the northeast end of our lake, and then bypass my perfectly good-tasting corkscrew willow (which I would love to get rid of) to eat this nursery-bought Niobe willow, which has been nurtured and pruned since it was a mere twig? And furthermore, our neighbor's fallen willow tree, which is literally in the lake with roots still attached to the shore where it once stood, has been overlooked by this fickle eating machine. This, I tell you, is not fair. 'Death to Bucky,' I say. 'Who will rid me of this pest?' also comes to mind as I look out upon the remaining scraps of what once was beginning to be a great kingfisher perch."

Bucky At Home

Beavers take down trees for food and also to build lodges and dams (see inset on page 6 on how to protect your prized trees). Beavers build dams for several purposes: to make a safe den for

themselves and their offspring, to provide an underwater access to their home, and to make a storage place for their food supply. Flooding land also results in wetter soil, which encourages the growth of beavers' favorite foods.



A typical beaver dam

Russell Link explains: "Beavers keep their dams in good repair and will constantly enlarge the dams as the water level increases in their pond. A family of beavers may build and maintain one or several dams in their territory." How do these natural history facts affect us?

Some have lived with beavers here longer than others, and for those close to the Cottage Lake Creek outlet, beaver dams have long been a problem that would try the patience of saints. An interview with Leno Bassett enlarges the story of Bucky's depredations: Leno first purchased the Highland Dairy Farm, at the south end of Cottage Lake, late in 1959. Interestingly, Leno claims that beavers weren't in the area* when he bought the dairy farm—he didn't see any here until 1970: "we could see them bringing rhododendrons down from the other end of the lake."

"I'm an environmentalist myself, but you can go too far," explains Leno. In his experience, since 1970, when the county bought the first part of what is now Cold Creek Natural Area, it allowed the banks and surrounding area to grow over and flood the whole area (both County land and what is still Bassett land), due primarily to numerous beaver dams. For the Bassett property, officially designated as farmland, hayfields have been replaced by sedges and rye grasses, which are wetlands plants, due to the effects of flooding much of the year. "In the early '70s," Leno remembers, "we could get the machines [tractors and mowers] down onto the fields by the end of March. Now it can't be done until mid-July."

Leannette Bassetti, (Leno's daughter) and her husband Bill live (since 1982) just off the south end of Cottage Lake, where they have the beautiful Crooked Arbor Nursery and Gardens. She explains that they are located along the Cottage Lake (outlet)

(Continued on page 5)

(Continued from page 4)

Creek, and says, "We maintain the property as parkland and farmland, growing grass for mowing and haying, and trees for shade. We want to live in harmony with salmon, beaver, other fauna, flora, and people. Since the 90's, the beaver population has increased substantially on Cold Creek and Cottage Lake Creek. The beavers continually maintain the height of their dams, removing native flora and our planted trees along the creek's edge. We are hoping that Cottage Lake Creek and Cottage Lake levels will lower to 'normal levels' when the County puts in the new beaver deceiver on Cottage Lake Creek."

Other lake residents also experience fallout from this growing population of North America's largest rodent: Dan Cauffman, who owns and lives at the blueberry farm on the northwest end of Cottage Lake, experiences the consequences of dams not only along his lakefront, but on his frontage along Daniels Creek as well. When beaver dam control measures have been implemented in the past, he says, "Everyone can see the significant drop in lake level."

According to data from the King County Lake Stewardship volunteer monitoring program, the overall water level for Cottage Lake has not risen since monitoring started in 1994 (although water levels go up and down each year based on precipitation levels). So, how does that relate to what some residents are seeing? The change is that in the past several years (about five) the summer lows aren't as low as they had been in the past. The lake level highs are consistent over the years – basically, the overall lake level isn't higher, it's just not getting as low in the summer.



On Bucky's Behalf

Past efforts at controlling beaver on the lake centered on trapping the beavers or breaking up their dams, but these efforts only provided a short term solution. According to a Fact Sheet supplied by the Snohomish County Conservation District, "While trapping and relocating beavers or killing them may be temporarily effective, it will not provide a long-term solution...if there is a beaver in the area of concern, the habitat is good for beavers and the vacated habitat will soon be occupied again" (http://www.snohomishcd.org/Fact/20Sheets/Fact_Beaver.pdf).

Perhaps the information most directly pertinent here, however, comes from the King County Wildlife article on beavers:

"When people in King County think of beavers, they often think of problems. Because beavers are a misunderstood group of rodents, we want to clear up some misconceptions. The following statements are **all true** for natural systems, contrary to popular belief:

- Beavers do not cause deleterious stream bank erosion
- Beavers do not cause streams to silt up
- Beavers do not cause salmon catastrophes
- Beavers do create excellent rearing habitat for some salmonid species
- Beavers do help form wetlands that attract wide varieties of plant and animal species
- Beavers do help reduce flash flooding at one extreme and dry stream beds at the other" (<http://dnr.metrokc.gov/wlr/waterres/beavers/Beaver2.htm>).

How about just removing the beaver dams? Evidently, that remedy, too, is short-lived. One lakefront resident said, "They've [the beavers] got the dam rebuilt within just a few days." The Snohomish County Conservation District's Fact Sheet says, discouragingly, "Removing a beaver dam is not recommended. Downstream areas are often flooded and severe erosion can occur when dams are taken out suddenly. And the sediment trapped in beaver dams is washed downstream when beaver dams are removed, impairing water quality for a long period following the removal of the dam" (http://www.snohomishcd.org/Fact/20Sheets/Fact_Beaver.pdf).

Deceiving Bucky

What's the situation, at this point? If removing the beavers or breaking up the dams doesn't work, how can we deal with the beavers' effects on the lake, the creeks, and the lands nearby?

Brian Sleight, Stormwater Services Section Senior Engineer, manages the Neighborhood Drainage Assistance Program, which allows King County to use public funds to address private drainage problems—including beaver dams. He surveyed the channel bottom and water surface elevation of both Cold Creek and Cottage Lake Creek (the lake's outlet stream) last summer. The survey extended to about 400 feet south of NE 165th Street. He found two dams on Cottage Lake Creek and determined that "they were affecting water levels behind them, at least during the low-flow period." Brian also returned in early November (2006), where he found the upper beaver dam submerged: it was not controlling the outflow from Cottage Lake. He regards the "Beaver Deceiver" or "Flexible Leveler," as the best course to take for water flow problems.

Several years ago, Leno Bassett obtained a permit to install a "beaver deceiver" (a perforated pipe that, inserted through a beaver dam, keeps the creek water flowing through), but this initial attempt didn't work. The County now plans to install a larger Beaver Deceiver on the upper dam on Cottage Creek, closest to the lake.. This will include a wider pipe with more perforations, which will be harder for the beavers to plug up, and also a cage around the inlet. The projected date for this to occur is August 2007, when the lake is at its

(Continued on page 6)

(Continued from page 5)

lowest level. The Capital Projects Section is currently “seeking approval for this project from the regulating agencies” according to Don Althausen in Capital Projects.

So, our conclusion, at least at the moment? In all likelihood, the beavers are here to stay*, so we will need to learn how to co-existence with them. Fencing around vulnerable trees makes sense and the planned Beaver Deceiver may hold the best promise for managing the beaver dam problems on Cottage Lake Creek. Meanwhile, continued dialog, as in this article, on how to co-exist with beavers while still trying to protect our properties is a step in the right direction.

**Apparently, beavers in this area come and go, over the decades. Digging through online records of the Bureau of Land Management, we can find the survey notes by a surveyor staggering through the thick forests and swamps of Township 26N, Range 6E, Section 7 (that's us!), in 1873, which read, in part: "Intersect swamp extending NW & SE, caused by beaver damming the creek." (http://piso.wadnr.gov/blm_wa/wsrsvy1.asp , volume WA-R0030, pg. 888).*

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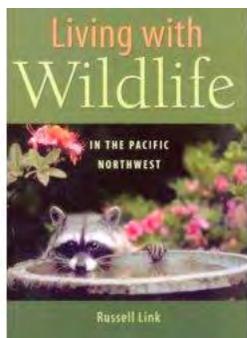
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Editors Note

Karen Mattson, who wrote the article “Living with Beavers on Cottage Lake” spent many hours researching, interviewing and writing the article which turned out to be somewhat more controversial than we ever imagined. The article was originally much more extensive but unfortunately due to space constraints within the newsletter I had to edit it down to fit. She did an incredible job showing both sides of people’s feelings about this infamous creature. I hope you enjoyed reading her article and we thank her for writing such an excellent piece.

“Living with Wildlife” by Russell Link



“Living with Wildlife” is a nearly 400-page book with 200 line drawings that serves as a valuable reference for homeowners on 68 species of animals--how to attract, identify, manage and coexist with them.

Russell Link is a wildlife biologist with the Washington Department of Fish and Wildlife. He is also the author of the very popular **“Landscaping for Wildlife in the Pacific Northwest.”**

How to Protect Your Prized Trees

Link recommends installing wire barriers around larger individual trees, and suggests using galvanized welded wire fencing, hardware cloth, or multiple layers of chicken wire. Since beavers average about 40 pounds,



they can pull down light-weight materials, such as a single layer of chicken wire. He suggests the fencing should be three feet high, and staked, “to prevent beavers from pushing them to the side of entering from underneath.”

Beaver Deceiver Links

Beaver Deceivers, complete with diagrams, are described at:

Washington Department of Fish and Wildlife website at <http://dnr.metrokc.gov/wlr/Dss/beavers/ponddesc.htm> , under “Preventing Conflicts”.

<http://dnr.metrokc.gov/wlr/waterres/beavers/Beaver3.htm>

http://www.hsus.org/wildlife/wildlife_news/us_beaver_management_tool_crosses_the_pond.html

<http://www.wildlifedamagecontrol.net/beavers/beaverpipe.php>

Friends of Cottage Lake
MEMBERSHIP & DONATION FORM

\$10 Membership Fee
 \$_____ Donation for support of FOCL activities
 Name: _____
 Address: _____
 City, State, Zip _____
 Phone: _____
 Email Address: _____

Yes, please email my next *Cottage Lake Connection*

Make check payable to: Friends of Cottage Lake

Cut out this page, complete membership form, fold, stamp & mail

All fees & donations are tax deductible—**Due now!**

**Future FOCL Notifications
 by Email**

Would you like to receive email notifications about future meetings and events? If so, please join the FOCL Community Site by going to



<http://www.friendsofcottagelake.org/cottagelake/>

In addition to receiving FOCL information, you can post your photos to share with other FOCL members and participate in discussions on lake and community issues.

See our website www.friendsofcottagelake.org for more details and to see this newsletter in **living color**.

**FOCL Officer Elections will be held
 at January 29th Meeting**



Please make sure you attend the January 29th FOCL meeting at the library, as it is that time of year to elect officers. If you are interested in running for an office, nominating someone else, or just re-electing the current officers, please come to the meeting. We need to have a quorum present to have a valid election.

The election will be for the following officers:

- President**
- Vice-President**
- Secretary**
- Treasurer**
- At-Large Board Member**

Newsletter Information

Newsletters are printed quarterly on
 Jan. 1
 April 1
 July 1
 Oct. 1

We would love to include any pictures, stories, or event announcements that relate to our Cottage Lake community.
 [Articles may be subject to editing.]

Submission deadlines are normally by the 15th of the month prior to the issue date.

For submissions contact :

Susie Egan
 17301 191st Ave. N.E.
 Woodinville, WA 98072
segan@cottagelake.com
 (425) 788-1952

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From:

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TO:

Jonathan Morrison
Friends of Cottage Lake
17214 185th Avenue NE
Woodinville, WA 98072

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Cottage Lake Park Shoreline Restoration

Friends of Cottage Lake, the King County Lake Stewardship Program, and King County Parks are planning a big project for 2007 as part of the Centennial Fund Grant. They will be removing invasive plants (mostly blackberry) in the spring and then supplementing the current vegetation with native plants in the fall (see picture below.) The native plants will help create a shoreline buffer that will reduce storm water

run-off and filter out excess nutrients and other contaminants. In addition, the plants should provide an effective, but low barrier which will discourage geese (studies suggest geese like to have an open view to the water). They are looking for volunteers to help with both phases of the project so stay tuned for more details at an FOCL upcoming meeting.



Planting Plan: Plants

- | | | |
|--|--|---|
|  Hard stemmed bulrush |  Nootka rose |  Red outer dogwood |
|  Panicked bulrush |  Swamp rose |  Pacific ninebark |
|  Slough sedge |  Highbush cranberry |  Lady fern |
|  Wapato |  Common snowberry |  Western red cedar |
|  Dugger rush |  Pacific willow |  Sitka spruce |



King County

Department of Natural Resources and Parks
Water and Land Resources Division
Lake Stewardship Program

Cottage Lake Sampling

[the year in review]

By Beth Cullen, King Co. Lake Stewardship Program

The 2006 water year (October 2005 through September 2006) marked the first full year of water sampling on Cottage Lake since 1993. This work, funded by a Centennial Clean Water Fund grant awarded to King County and Friends of Cottage Lake, provides baseline water quality data for Cottage Lake as well as Daniels Creek and Cottage Lake Creek. This data can be used to compare water quality measurements as restoration and phosphorus reduction projects proceed throughout the watershed.

As noted in previous issues, a high phosphorus concentration in Cottage Lake is leading to increased algae blooms. Below is a summary of what was found in both inlet creeks and Cottage Lake.



Beth Cullen taking water sample from Cottage Lake

Both Daniels Creek where it crosses under 185th, and Cottage Lake Creek in Cottage Lake Park have been monitored sporadically since 1994 (Figs. 1 and 2). The total phosphorus

concentrations during normal stream flows for both creeks have not altered much over time. Cottage Lake Creek has always had lower levels of total phosphorus than Daniels Creek. However, it is important to note that both streams are influenced greatly by storms, showing distinct spikes in phosphorus during heavy rain events. Much of that phosphorus is being washed in from adjacent lands. Common sources include exposed sediments

from construction areas or farms, animal waste, leaking septic systems, and extensive fertilizer use around the watershed. During dry periods, these sources don't contribute much, but during the rainy seasons phosphorus is swept into the creeks by surface water flows and deposited in Cottage Lake, where it accumulates and influences algae growth. While there are other sources for phosphorus, such as internal recycling from the lake sediments, the Cottage Lake Management Plan published in 1996 by King County identified the creeks as majority providers of phosphorus to the lake (61% of the total per year).

So how is Cottage Lake handling the phosphorus input from the creeks? At the mid-lake station, the phosphorus pattern in 2006 was identical to that of the pattern in 1994 (Fig.3). Each summer Cottage Lake stratifies into thermal layers, with warmer

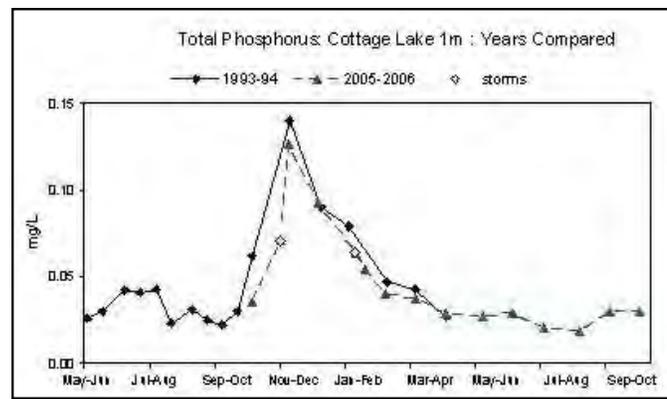


Figure 3: Total Phosphorus Cottage Lake 1994, 2006 Comparison

water near the surface and colder water near the bottom. As summer progresses, dissolved oxygen in the bottom waters is consumed during bacterial decomposition of organic matter in the sediments, resulting in anoxic conditions in water deeper than

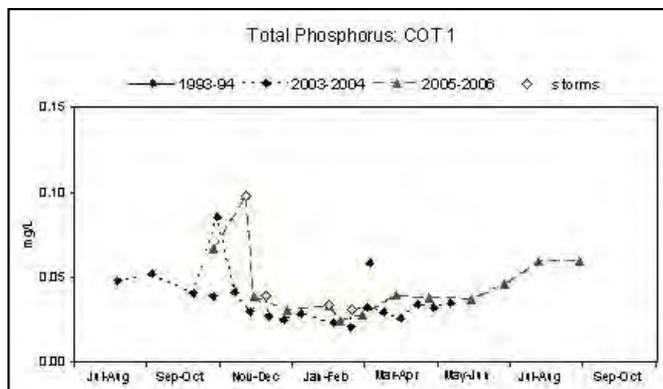


Figure 2: Total Phosphorus in Cottage Lake Creek

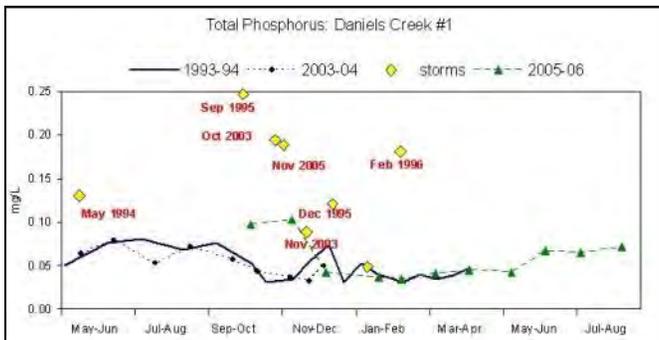


Figure 1: Total Phosphorus Concentrations in Daniels Creek

Cottage Lake Sampling continued

about three meters. Anoxia results in the release of phosphorus from the sediment into the deep water. When this phosphorus-rich deep water is mixed into the shallower water in early fall, where light is more abundant, algae blooms can often be the result. Both 1993 and 2006 show a spike in total phosphorus concentrations at 1 meter following fall turnover, when the bottom layers of water mix with the surface waters (Fig.3). These spikes were accompanied by significant algae blooms in the lake.

Fecal coliform concentrations have also been an issue of concern for many of the Cottage Lake watershed residents. In 2006, the concentrations in the creeks were influenced by storms, with the highest concentrations occurring during storm events (Figs.4 and 5). Concentrations were lower during baseline monitoring, as well as during the winter months. This is not

compared to summer where the creek water mostly originates from below ground, moves more slowly or stagnates, and acts like a warm incubator.

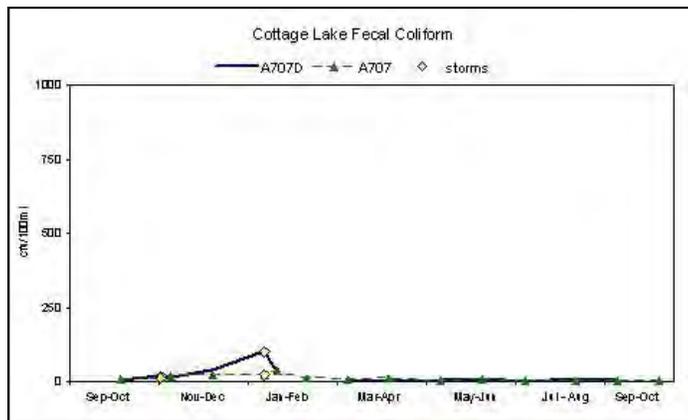


Figure 6: Cottage Lake Fecal Coliform Concentrations

Although some of the samples taken in the inlet creeks to Cottage Lake had high concentrations, the lake itself does not appear to have bacteria issues (Fig.6). All the concentrations recorded this year were well below the acceptable limit of 100 cfu/100 mL. One sample that did get close to that was during a storm event at the mouth of Daniels Creek. However, on that same day, there was very little detected at a second lake station, suggesting the lake dilutes the bacterial inputs rapidly.

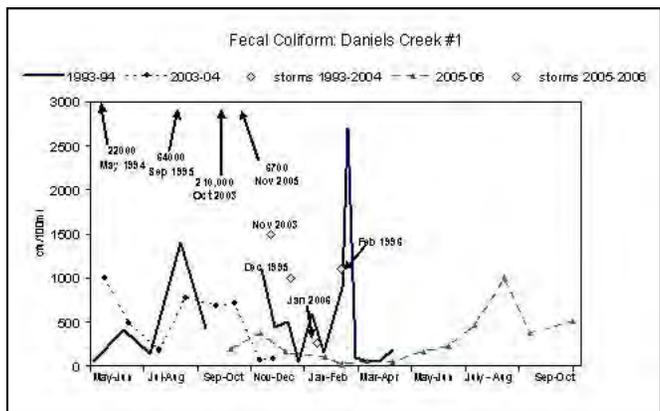


Figure 4: Daniels Creek Fecal Coliform Annual Comparisons

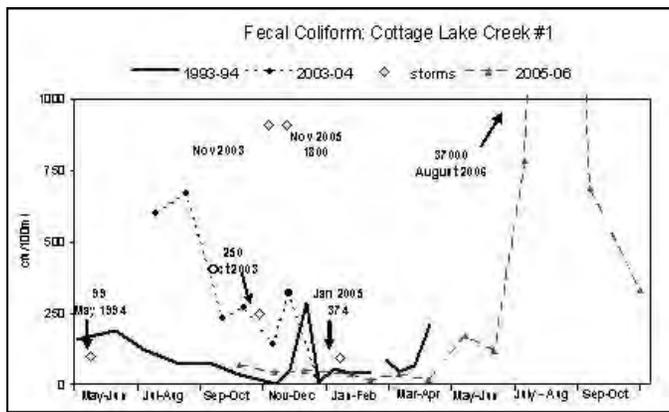


Figure 5: Fecal Coliform Cottage Lake Creek

surprising, as bacteria are highly mobile. When there is a lot of water flowing in the creeks and surface flows coming in from the surrounding land, they move quickly through the system, as

Total phosphorus patterns have not changed greatly since the 1993 water year. With the increased community knowledge on total phosphorus issues we hope to see declines in the phosphorus concentrations as people put practices like natural yard care and regular maintenance and repair of septic systems to work.



Beth labeling water samples on Cottage Lake

Cottage Lake Connection

Newsletter from the Friends of Cottage Lake

17214 185th Avenue NE

Woodinville, WA 98072

www.friendsofcottagelake.org



Cottage Lake Spring Plant Sale



Saturday, April 21, 2007
12 pm – 3pm

17301 191st Avenue NE
(behind the Woodinville Library)
Woodinville, WA 98072

Great selection of trees, shrubs and perennials at very low prices. Many native plants will be available for lakeside gardening.

Calendar of Upcoming Cottage Lake Events

- Jan. 29 7 pm - FOCL General Meeting with Elections
Woodinville Library Meeting Room
- Feb. 3 9 am to 1 pm.—King County Parks Storm
Cleanup—Meet at Mary Cash Farm
For more info. contact Tina Miller, (206) 296-2990
Tina.miller@metrokc.gov
- April 21 12 o'clock noon - FOCL & Cottage Lake Garden
Club Spring Plant Sale -17301 191st Ave NE

Upcoming King County Plant Salvages

Plant salvages are great ways to get wonderful native plants for your native lakeside garden, to help provide plants for the Cottage Lake Park's shoreline restoration or provide plants for the Friends of Cottage Lake annual plant sales. Upcoming plant salvages are:



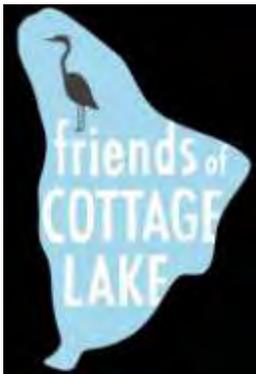
- Feb. 10 9 am to 12:30 pm - Near Cougar Mountain
Mar. 10 9 am to 12:30 pm - Snoqualmie Ridge

For maps and more information, see their website at:
<http://dnr.metrokc.gov/wlr/PI/pdf/febmar2007SalvageFlyer.pdf>

Contact Jonathan Morrison at: jonathanmorrison@hotmail.com
for carpool information.

April 1, 2007

Volume 2, Issue 2



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The Cottage Lake Connection

Cottage Lake Celebrates Spring with a Spring Plant Sale on Saturday, April 21st

Once again the Friends of Cottage Lake and the Cottage Lake Garden Club are holding a community plant sale on Saturday, April 21st from 1-3 p.m. It will be held at Susie Evin Gan's home on the east side of Cottage Lake behind the Woodinville library (17301 191st Avenue N.E.)



Cornus canadensis

FOCL will be selling many beautiful native plants including Trillium ovatum and Cornus canadensis pictured here. The CLGC will be selling plants propagated from their own gardens as well as

blooming spring bulbs. (See page 6 for a detailed listing of the plants that will be for sale.)

This plant sale is unique because the prices are far below normal retail prices, a wonderful opportunity for bargain hunters. The idea is to encourage everyone to plant native plants around the lake as well as enjoy the beauty of flowers and gardening.



Trillium ovatum

Both organizations will use the

proceeds towards improvements for Cottage Lake and community civic projects. So please come and support the Cottage Lake community and be sure to invite all your friends as well.

We are all looking forward to the beauty that spring and beautiful plants brings to the lake!



Japanese Painted Fern

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Chuck C. Cushing (425) 788-8950
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Raptors on Cottage Lake

by Gary Mattson

There are several species of raptors on our lake. The two most visible and entertaining are bald eagles and ospreys. The eagles seem to be around off and on, year round. When they appear, I always worry about our cat Yoda, a white Manx getting on in years. He thinks that he is the top of the food chain but I know better. Yoda looks like a rabbit to the untrained eye, but even to the trained eye of a hungry eagle, there is no difference in a potential meal. Food is food. I have watched the eagles hunt all variety of prey here, and have seen them catch rabbits on two different occasions. Hence my worries.

I have seen a very hungry eagle corral about eight coots under a dock and then hop around trying to panic them into a mistake for nearly an hour. *Coots one, eagle zero.* I also saw an eagle dive-bomb Canada geese. These geese actually can dive under water and swim when they have to. Finally, the eagle realized this food was too big and gave up.



Photo taken by Gary Mattson of bald eagle perched on floating dock

More recently, I spotted an eagle on a floating dock near us sitting on the swim ladder. After a lot of a g i t a t e d movement, the bird swooped at something near the shore. I figured some poor d u c k w a s doomed. Instead it was an otter

with a fish and the young raptor was trying to steal an easy meal. The otter dived and surfaced quickly only to be attacked once more by this crazed monster. Two dives were all it took for the eagle to give up.

Other times I cheered while eagles tried, alas without luck, to **snatch a cormorant. I don't like cormorants. Anyhow, the eagle's** strategy goes thus: dive at the quarry and circle until they must surface for air. The plan is simple but difficult to execute. Those dang sharks-with-feathers can stay down a long time and when they do come up, they can get a new breath and dive faster than Superman. *Cormorants twenty, eagle zero.* Occasionally, a half-hearted pass at some ducks is in order. Ducks seem to be simply too fast at flying or too wary to be an easy meal.

I did actually see an eagle take a fish on the lake. A friend and I were catching and releasing trout as we trolled. One poor fish was somewhat impaired after being unhooked. After we

released it, the poor thing floated on the surface, stunned, instead of swimming away. As we moved away from the scene, an opportunistic eagle dived out of nowhere and surgically plucked the not quite dead fish from about twenty feet away. What a great way to see a wasted life become a meal!

In my many observations of these magnificent birds, I have yet to figure out how they manage to get enough food to survive, but thrive they do. It is a mystery to me yet.

Osprey, "the other eagles" on the lake, are more likely to be seen between spring and fall. They eat only fish and are good at what they do, which is attacking their chosen target from on high by a fast dive which plunges them into the water. Their specialized wings pull them out of the water with ease. Once having seen this feat, you never forget it. At first, the hunter flies high over the water, circling in random patterns. Sometimes these big birds are observed by their tiny peep-peep-peep sound that belies their large size. Hearing this call alerts you to note a bird hunting so high as to seem impossibly ineffective. Here is the true marvel of this fish eater. As soon as a possible target is seen, the hunter hovers over one spot until a decision is made to dive or move on. A half dive is often seen as the bird aborts the assault midway to the water for whatever reason. When the full dive option is implemented, it is fast. **The bird doesn't always score a meal but keep watching and you** probably will see a kill before too long. The successful dive gets a fish which is turned fore-and-aft (head always forward) to be transported immediately to the nest. On the other hand, eagles carry their fish athwart ship (right angles to the body) when flying.



Osprey (*Pandion haliaetus*)

Common foes of both eagles and ospreys are the ubiquitous crows we all see daily. Crows will risk dives at perched birds but also **"drive" raptors** out when air e n c o u n t e r s

happen. This is much more dangerous for the crow because the harried raptor, while in the air, will suddenly flip upside down with talons ready to impale any reckless, unwary, or overly cocky member of the posse that miscalculates. What joy to rid oneself of such an oversized gnarl!

(Continued on page 3)

(Continued from page 2)

The best of both worlds is when the eagles and ospreys hunt the same territory simultaneously. A fight nearly always ensues. They are mortal enemies and do not tolerate shared space.



A cormorant landing in the water

Eagles are larger, usually present in greater numbers, and seem to be more aggressive. Ospreys have an advantage in agility and speed. A

couple of years ago, I noted a record of six eagles and three ospreys over the lake at the same time. War was inevitable. One of the ospreys eventually caught a fish and three juvenile eagles decided to attack. The osprey easily outmaneuvered the trio but could not outpace the group because of the heavy catch, which he refused to release. The threesome took turns diving and harassing the smaller bird, coming perilously close several times. They were like a pack of wolves in this life-or-death drama. They were less agile but would come in from different directions. The osprey could have simply let the fish go and fly away, but chose to persist in this game until he nearly lost his life. Only then did he drop the prize and bolt. Normally, one of the eagles would have retrieved the lost fish, but this group wanted blood and continued to chase their enemy until it became obvious that there was no way of stopping this speedster now. That poor fish died only to serve as a backdrop for a seldom seen interaction between our wonderful raptors. Days like that make it worthwhile to have a dear pet at risk by predation. We pay a price for the privilege of living here, but I wouldn't change a thing about this place (now, about those cormorants).



Yoda stalking and looking like eagle food.

FOCL Officer Elections were held at January 29th Meeting

The new 2007 FOCL Officers are:

President
Jonathan Morrison

Vice-President
Mary McCain

Secretary
Sally Maimoni

Treasurer
Chuck Cushing

At-Large Board Member
Stafford Miller

Newsletter Information

Newsletters are printed quarterly in
January, April, July, October

We would love to include any pictures, stories, or event announcements that relate to our Cottage Lake community. [Articles may be subject to editing.]

Submission deadlines are normally by the 15th of the month prior to the issue date.

For submissions contact :

Susie Egan
17301 191st Ave. N.E.
Woodinville, WA 98072
segan@cottagelake.com

Climate Change, The World, and Cottage Lake

By Matt McCain

While climate change is a big fat global issue, that little lake outside our windows stands to be impacted as well.

Concentrations of greenhouse gases and especially carbon dioxide have risen over the past two hundred and fifty years, largely due to our fast-expanding human population and combustion of fossil fuels for energy production. Scientists believe that these changes may have already begun to alter the global climate. (*Climate Change Information Resources*)

This isn't cheery stuff. Carbon dioxide levels today are nearly 30 percent higher than they were prior to the start of the Industrial Revolution, based on records

[extending back 650,000 years](#). Records show that 11 of the last 12 years were among the 12 warmest on record worldwide. According to NASA, the [polar ice cap is now melting](#) at the rate of 9 percent per decade. The number of Category 4 and 5 hurricanes has almost doubled in the last 30 years, with this trend likely to continue. (*Earth Institute at Columbia University*)

How is the Pacific Northwest fairing? Research indicates that average temperatures and precipitation have increased significantly in the Northwest over the last century. And scientists predict the coming decades in Western Washington will likely bring even warmer average winter temperatures, increased flooding, shoreline erosion from rising sea levels, decreased water supplies in summer, and a higher frequency of **“extreme” weather events, such as windstorms, heat waves, and rain and snow storms.**

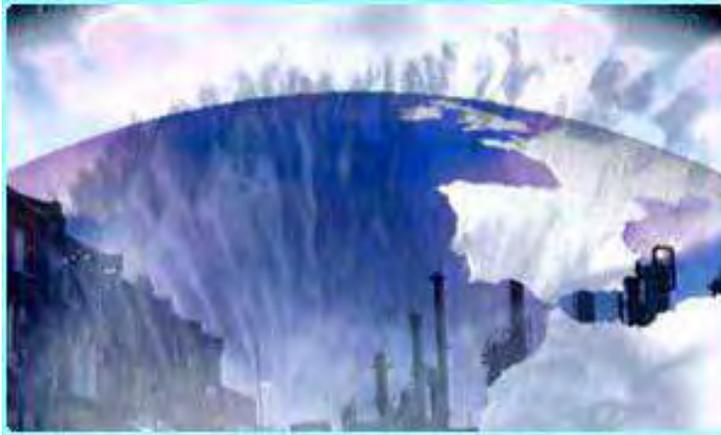
And what about Cottage Lake? Aside from the bigger issues mentioned above, increased precipitation and storm activity would likely wash more pollutants such as phosphorus into our lake via run-off through streams. Monitoring of Cottage Lake has shown that pollutant levels spike during periods of heavy rain.

Increased summer temperatures would also further stress cold-water fish species such as salmon that use Cottage Lake and connecting streams for spawning (water temperatures

above 68° F are lethal to salmon). Warmer water temperatures would also foster increased growth of certain algae in Cottage Lake, **an issue we're already facing.**

Reducing and slowing the severity of all this scary stuff depends on how much people everywhere reduce emissions from factories, power plants, cars, and other sources of

“greenhouse gases” such as carbon dioxide. Below are some **“small” ways to fight** climate change at home. A few small changes can make a big difference.



- Walk, bike, carpool or use public transportation whenever possible.

- Recycle and buy minimally packed goods as much as possible.

- Wash clothes in cold or warm water, not hot.
- Install low-flow shower heads to use less water.
- **un the dishwasher only when full and don't use heat to dry dishes.**
- Replace standard light bulbs with compact fluorescent bulbs.
- Plug air leaks in windows and doors to increase energy efficiency.
- Replace old appliances with energy-efficient models.
- Adjust your thermostat—lower in winter, higher in summer.
- Plant a tree.
- **Don't burn yard waste.**

OTHER SOURCES:

“Impacts of Climate Change on Washington's economy”, University of Oregon

“A warmer, wetter orthwest”, *Seattle Post-Intelligencer*

“Our Warming World: ffects of Climate Change bode ill for orthwest”, *Seattle Post-Intelligencer*

Spotlight on other Cottage Lake area groups

Editors Note: We thought it might be interesting to include a recurring column in our newsletter spotlighting other area groups that may be of interest to Cottage Lake residents. We are kicking off this column with an article on Water Tenders, a non-profit organization that cares about the wetlands and streams in the Bear Creek watershed.

Water Tenders

Why stop with the FOCL newsletter? Water Tenders is a conservation group that is dedicated to preserving the health of the Bear Creek watershed, including Cottage Lake and Cottage Lake Creek. We produce a newsletter twice a year devoted to the



natural world of the watershed.

Just as most FOCL members live along the shores of and consider themselves to be stewards of Cottage Lake, most Water Tenders live along the waterways of and consider themselves to be stewards of Bear Creek and its tributaries. We are a grassroots, all-volunteer group of citizens who created a non-profit organization to ensure that

the Bear Creek basin remains intact and healthy. Through educational outreach programs, we try to instill good stewardship ideals. Some of our educational efforts include **"Meet the Salmon" each fall, educational kiosks, community projects, work parties, and of course, our newsletter.**

As you might expect, our newsletter has the same focus. It includes articles on the bird, plant, insect, animal, and fish life in the Bear Creek environs, local recreational opportunities, tips for low-impact living, volunteer opportunities, reports on local and environmentally-themed books, and other conservation-oriented pieces. Each issue includes a calendar of events and phone and email contacts.

Subscription to the Water Tenders newsletter is included with Water Tenders membership, so why not join us today? Point your browser to www.watertenders.org and click Become a Member.

Guy Baltzelle

April 2007

A WATERSHED WATCHERS EVENT

Hosted by

FRIENDS OF COTTAGE LAKE and WATER TENDERS

Wednesday, May 23, 2007, 7PM – 9PM

Woodinville Water District Meeting Room

17328 NE Woodinville Duvall Road

The Cold Creek Aquifer Study

Presented by Ken Johnson, Geohydrologist, King County

Cold Creek is the primary source of cold water and summertime flow to the Bear Creek system. Where does it come from? How can we protect it?

Ecology's Plans to Improve Water quality in the Bear and Evans Creek Systems (TMDL)

Presented by Sinang H. Lee, Water Quality Improvement Lead, WA State Department of Ecology

Bear and Evans Creeks have problems with dissolved oxygen, temperature and fecal coliform bacteria. Learn about recent studies and plans to improve water quality. Share your ideas.

List of Plant Available at Cottage Lake Plant Sale

The following plants will be available at the Cottage Lake Plant Sale

On Sat., April 21, 2006—1-3 pm



Natives Plants from the
Friends of Cottage Lake:

Trees:

| | |
|------------------------------|-------------------|
| <i>Abies procera</i> | Noble fir |
| <i>Acer circinatum</i> | Vine Maple |
| <i>Pseudotsuga menziesii</i> | Douglas-Fir |
| <i>Rhamnus purshiana</i> | Cascara Tree |
| <i>Thuja plicata</i> | Western Red Cedar |

Shrubs:

| | |
|------------------------------|-----------------------|
| <i>Amelanchier alnifolia</i> | Western Serviceberry |
| <i>Aruncus dioicus</i> | Goatsbeard |
| <i>Cornus sericea</i> | Red-Osier Dogwood |
| <i>Gaultheria shallon</i> | Salal |
| <i>Holodiscus discolor</i> | Ocean Spray |
| <i>Lonicera involucrata</i> | Twin Berry |
| <i>Mahonia aquifolium</i> | Tall Oregon Grape |
| <i>Oemlaria cerasiformis</i> | Indian Plum |
| <i>Philadelphus lewisii</i> | Mock Orange |
| <i>Physocarpus capitatus</i> | Pacific Ninebark |
| <i>Ribes sanguineum</i> | Red Flowering Currant |
| <i>Rosa Nutkana</i> | Nooka Rose |
| <i>Symphoricarpos albus</i> | Snowberry |
| <i>Vaccinium parvifolium</i> | Red Huckleberry |

Perennials & Groundcovers:

| | |
|-------------------------------|--------------------------|
| <i>Achlys triphylla</i> | Vanilla Leaf |
| <i>Arcostaphylos uva-ursi</i> | Kinnikinnick |
| <i>Asarum caudatum</i> | Wild Ginger |
| <i>Cornus Canadensis</i> | Bunchberry |
| <i>Mahonia nervosa</i> | Low Oregon Grape |
| <i>Maianthemum dilatatum</i> | False Lily-of-the-Valley |
| <i>Oxalis oregana</i> | Wood Sorrel |
| <i>Tiarella trifoliata</i> | Foamflower |
| <i>Tolmiea menziesii</i> | Piggyback Plant |
| <i>Trillium ovatum</i> | Native Trillium |
| <i>Trientalis latifolia</i> | Western Star Flower |
| <i>Vancouveria hexandra</i> | Inside Out Flower |

Ferns:

| | |
|----------------------------|-------------------------|
| <i>Adiantum aleuticum</i> | Western Maidenhair Fern |
| <i>Blechnum spicant</i> | Deer Fern |
| <i>Polystichum munitum</i> | Western Sword Fern |



Exotics Plants from the
Cottage Lake Garden Club

Perennials:

| | |
|--|--------------------------|
| <i>Alchemilla alpina</i> | Alpine Lady's Mantle |
| <i>Alchemilla mollis</i> | Lady's Mantle |
| <i>Anemone blanda</i> | Anemones (blue) |
| <i>Corydalis lutea</i> | Yellow Corydalis |
| <i>Eryngium giganteum</i> | Sea Holly |
| <i>Helleborus orientalis</i> | Lenten Rose |
| <i>Helleborus argutifolius</i> | Corsican Hellebore |
| <i>Helleborus foetidus</i> | Stinking Hellebore |
| <i>Hemerocallis 'Stella d'Oro'</i> | Day Lilly |
| <i>Hesperis matronalis</i> | Dame's Rocket |
| <i>Hosta</i> | Miniature Hostas |
| <i>Iris foetidissima</i> | Stinking Iris |
| <i>Iris pallida variegata 'Zebra'</i> | Zebra Iris |
| <i>Iris siberica 'Flight of Butterflies'</i> | Iris |
| <i>Lathyrus vernus</i> | Spring Vetchling |
| <i>Petasites japonicus var. giganteus</i> | Giant Japanese Butterbur |
| <i>Phlox paniculata - Pink</i> | Garden Phlox |
| <i>Ranunculus ficaria</i> | Lesser Celandine |
| <i>Stachys monieri 'Rosea'</i> | Common Betony |

Groundcovers:

| | |
|-------------------------------|----------------|
| <i>Arum italicum 'Pictum'</i> | Marbled Arum |
| <i>Lysimachia Nummularia</i> | Creeping Jenny |
| <i>Viola</i> | Sweet Violets |

Grasses:

| | |
|-------------------------|-----------------------|
| <i>Carex buchananii</i> | Red Curly Sedge |
| <i>Tipa tenuissima</i> | Mexican Feather Grass |

Succulents:

| | |
|---------------|----------|
| Hens & Chicks | Assorted |
|---------------|----------|

Bulbs:

| | |
|--------------------------------|--|
| <i>Hyacinthoides hispanica</i> | Spanish Bluebells or English Wood Hyacinths |
| <i>Muscari armeniacum</i> | Grape Hyacinths |
| <i>Tulipa 'Triumph'</i> | Tulip Triumph' |

Ferns:

| | |
|------------------------------------|-----------------------|
| <i>Athyrium niponicum 'Pictum'</i> | Japanese Painted Fern |
|------------------------------------|-----------------------|

Interview with long-time Cottage Lake residents Louise & Stafford Miller

by Susie Egan

Editors note: While doing my research on the history of Cottage Lake I was finally able to arrange an interview with Louise & Stafford Miller. I am glad I can share with you what I learned about them and their early years on Cottage Lake.

I think almost everyone on Cottage Lake has heard of Louise and Stafford Miller. Louise is a former State Representative and former Chair of the King County Council. She was also instrumental in helping King County purchase the property for the Cottage Lake Park and the Cold Creek Natural Area. Many of us have also seen Louise and Stafford at the Friend of Cottage Lake meetings through the years. It was obvious they were a couple who knew what was going on in the community and knew how to make things happen.

For 13 years Kevin and I have lived up the street from them and somehow never had the opportunity to get to know them until last December when they came to our house for the FOCL holiday party. What a wonderful surprise it was to see them. Afterwards I told them I would love to interview them for the upcoming issue of our newsletter and they graciously agreed. I figured everyone would enjoy knowing more about this wonderful couple who has done so much for Cottage Lake.

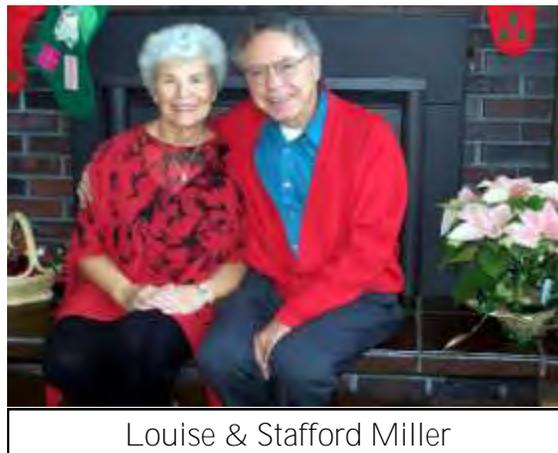
First of all Louise & Stafford have been married for 47 years! They have two children, a son, Jeff, and daughter, Becky. They both attended Cottage Lake Elementary School and went on up through the Northshore School District to Leota Junior High and then to Inglemoor High School.

Interestingly Stafford and Louise met each other in California while attending San Jose State University. They both received degrees there in music along with their teaching credentials. Louise played the guitar and Stafford the bass.

In 1966 they moved to Seattle so that Stafford could receive his PhD in Music. The following fall, they moved to Cottage Lake into **one of the original "spec" houses in the Cottage Lake Beach Club.** Then in 1971 they bought the property where they currently reside.

As with most properties on the lake, the house on the property had been a summer cabin built in 1936. They briefly rented it out to a woman who was a descendant of the Colt Firearm family but in the fall of 1972 tore it down to build a new house. They saved some of the knotty pine which they reused in the house which they moved into on January 15, 1973.

Since Louise & Stafford have lived on Cottage Lake for over 35 years now, they have many memories of Cottage Lake. **They remember when Norm's resort was located on the north end of the lake where King County's Cottage Lake Park is now located.** While many have fond memories of Norm's Resort, Stafford said there were many problems created by having a resort on the lake including loud noise late at night and litter and water pollution, especially on Monday mornings after a busy weekend. Stafford said the Cottage Lake Improvement Association was formed back then to deal with these problems since there were no noise ordinance in place at that time.



Louise & Stafford Miller

He said when Thousand Trails bought the property from Norm there was no longer public access to the lake and things quieted down quite a bit. Thousand Trails also repainted **the resort's buildings white, a color Stafford preferred over Norm's signature orange buildings.**

Another fond memory they have of **Cottage Lake's past were the mini-hydro boat races.** These races went on for probably 8 or 10 years ending around 1976 or 1977 when one of the boats went out of control and

went up on the shore. Everyone enjoyed these races and **actually felt they helped the lake's water quality by stirring up the water.**

One of their best memories though were those of Opening Day. They and their kids would stay up all night the night before so that exactly at midnight they could start fishing off the dock. Their children's friends would often come over too and they would camp outside in sleeping bags. They would have the dock lit so they could fish and Louise would fix them hot chocolate and pancakes for breakfast.

They also said that the lake used to freeze over more often especially in 1983 when the temperatures got down to 13 degrees and the lake froze a foot thick. They know it was a foot thick because Stafford actually cut a hole in the ice to check. Their daughter, Becky, used to ice skate on the lake. They also remember the flooding in 1996 when five docks floated off into the lake.

It is obvious that Louise and Stafford both love living on Cottage Lake. I am glad I could share some of their memories with you and lets hope we all have such wonderful memories to share with our children in the future.

Cottage Lake Connection

Newsletter from the Friends of Cottage Lake
17214 185th Avenue NE
Woodinville, WA 98072
www.friendsofcottagelake.org



Friends of Cottage Lake

MEMBERSHIP & DONATION FORM

\$10 Membership Fee

\$_____ Donation for support of FOCL activities

Name: _____

Address: _____

City, State, Zip _____

Phone: _____

Email Address: _____

Yes, please email my next *Cottage Lake Connection*

Make check payable to: Friends of Cottage Lake

Cut out this page, complete membership form, fold, stamp
& mail

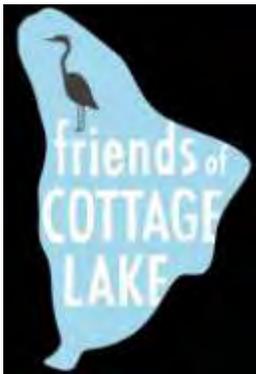
All fees & donations are tax deductible—**Due now!**

Calendar of Cottage Lake Events

- April 21 9 am Woodinville Garden Fair
Woodmoor Elementary School
(22225 NE 160th St., Bothell)
Rain Barrel & Compost Bins for Sale
- April 21 1pm to 3pm - FOCL & Cottage Lake Garden Club Spring Plant Sale -17301 191st Ave NE
- May 23 Cold Creek Aquifer Talk
Woodinville Water District
- June 4 7:00—FOCL Community Meeting—Woodinville Library

July 1, 2007

Volume 2, Issue 3



The Cottage Lake Connection

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Cottage Lake Park Shoreline Restoration Off to a Great Start!

King County and Friends of Cottage Lake are working together to beautify and restore the shoreline near the dock at Cottage Lake Park. The end goal is to enhance the natural buffer along the lakeshore with native plants and build an educational "wet garden".

A group of volunteers met at the park on June 16th to start preparing the site for the eventual fall planting. Invasive weeds (yellow flag iris and blackberry) were removed and cardboard and mulch were put down to kill the grass where the native plants will go. Great progress was made, but there is still a lot of work remaining (see the planting plan on page 3).



We have scheduled two more work parties this summer (July 21st and August 18th from 9am to noon each day) to continue the project and are looking for more volunteers. If you know of any groups that might be interested in helping with this community project, please contact Jonathan Morrison. We look forward to seeing even more people at the next event—thanks to everyone that came out!

FOCL OFFICERS

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jonathanmorrison@hotmail.com

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POSITION AT LARGE

Stafford Miller (425) 788-3404
drmusic170@comcast.net



News from our neighbors on Lake Leota

by Pati An

Editors note: Lake Leota is just down the road from Cottage Lake and faces many of the same issues we do. All of the recommendations also apply to Cottage Lake and I want to thank Pati for taking the time to put together this article.

In 2007, a “Sustainable Development Study”, including an environmental analysis of Lake Leota, was completed for the City of Woodinville. In summary, it was found:

1. Lake Leota has been identified on the King County Wetland Inventory as Big Bear Creek 9, a class 2 wetland. Although wetlands are common around the lakeshore- with a few extending up tributary channels and swales- present wetlands are but a small remnant of pre-settlement wetlands. Vegetation cover in the watershed and around the lake tends towards the coastal climax forest, which once dominated these near-ocean hills. All waterfront lots appear to have a narrow band of wetland vegetation at the **interface of the lawn and water’s edge.**
2. **Lake Leota is “perched” above the Qva aquifer. Perched lakes commonly lose most of their outflow as seepage.** King County lake monitoring reports state that nearly all out-flowing water leaves Lake Leota via groundwater flow. Surface outflow is commonly accepted as the beginning of Cold Creek, although it is still an intermittent stream at this point. **Cold Creek’s beneficial contribution to Bear Creek Watershed’s salmon habitat is unique due to the coldness of its water.**
3. Storm-water runoff is the obvious source for most of the heavy metals found in the lake. Lead and nickel were the two metals with highest concentrations relative to toxic thresholds. Based on studies of similar systems, current levels are assumed high enough to have adverse affects on more than 50% of the invertebrates in the lake. Usually, high metal levels are not a problem because Lake Leota is full of oxygen. But in the summer, Lake Leota has too many nutrients. Nutrients encourage excessive growth of weeds such as algae. These weeds suck up the oxygen, creating “anaerobic conditions”. As stated in the report: “Anaerobic conditions, however, cause a reducing environment in the sediments whereby significant quantities of toxic metals can be mobilized from (the sediments) to the overlying water column with potential toxicity to organisms lake-wide.”
4. The extensive lawns encompassing the lake undoubtedly supply large amounts of available plant nutrients to the lake.
5. **Lake Leota’s health is in danger from storm water runoff, septic tanks, and fertilizers.** The soils surrounding the lake have a low phosphorous binding capacity rendering them

poor substrate for septic drain fields. At present levels of watershed development, storm-water runoff to Lake Leota is sufficient to increase sediment phosphorus to mesotrophic levels and metals to levels exceeding toxic thresholds. **These factors are hastening the “death of the lake”.** As stated in the **Lake Leota Analysis:** “The end result of the aging process is a wetland followed by a wet meadow.”

6. The study recommended that Lake Leota and its drainage basin be kept at R-1 zoning, primarily because a limit of one residence per acre facilitates retention of native vegetation and soils and makes it easier to minimize effective impervious surface. This, in turn, helps reduce erosive storm water flows to the lake. The study did find that zoning density could be increased immediately around the lake if septic systems were converted to sewage. But, upgrading septic systems to improve their nutrient removal could provide much of the benefit of sewer service while also maintaining the benefits of lower density zoning. Upstream in the basin, cumulative harm from greater densities would likely be measurably greater than the cumulative benefit from sewer service.

Recommended practices for near-shore property owners:

- Regular maintenance of septic systems (every 3 years, 2 years with a garbage disposal). Consider upgrading drain fields to enhance nutrient retention.
- Minimize the use of fertilizer. Especially harmful are phosphorus-rich, artificial fertilizers used on lakeside lawns. If you must fertilize, use organic compost in areas *at least* 200 feet back from the shoreline.
- Minimize use of chemicals in the landscape (example: weed and bug killers) and inside the home.
- Maximize native vegetation in landscapes. This will facilitate nutrient retention in the earth rather than the water. Especially beneficial is a buffer zone of native plants **at water’s edge, which will also discourage Canadian Geese.** Geese love lawns and stick around because of them. The more our lake-side areas return to their natural, wooded state, the less desirable they will become for the geese.
- Minimize lawns and hardscaping. Lawns, being vegetation, are still better than hardscaping (such as retaining walls at shoreline or concrete patios elsewhere). Lawns do facilitate ground-water absorption- albeit

(Continued on page 3)

Update on the Water Lily Treatment

By Jonathan Morrison

Last summer the community decided to pursue the eradication of the invasive water lilies on Cottage Lake using the aquatic herbicide Glyphosate. Aquatechnex was hired to perform the spraying, but due to weather conditions, only one full treatment was done last year. The eradication will continue this summer and the first spraying is scheduled for mid-July with a follow-up spraying in August (Aquatechnex will be using a gas motor boat—see insert below for details). For more information on the water lily problem and treatment, please see our website:

www.friendsofcottagelake.org/waterlilies.htm



Water Lilies at the south end of Cottage Lake (June 2007)

Use of gas motor requested to complete water lily spraying this summer

By Matt McCain

This is a public notice to inform lake residents that **Aquatechnex**, the contractor hired to eradicate Cottage Lake's invasive fragrant water lilies, has requested permission to use an internal-combustion engine for continued eradication efforts this summer.

The non-electric motors are needed to adequately reach the North and South ends of the lake where the largest, most dense areas of the non-native lilies are located. Last summer's spraying efforts were cut short due in large part to not being able to penetrate these heavily choked areas.

While a county ordinance prohibits the use of internal-combustion engines on Cottage Lake, such use is allowed for official purposes and when adequate public notification has been given. The first one-day spraying is scheduled to occur in mid-July, with a follow-up spraying likely to occur in August. A gas motor may be unnecessary for the follow-up visit. For more information on Cottage Lake's lily eradication efforts, please visit www.friendsofcottagelake.org or contact jonathanmorrison@hotmail.com.

Friends of Cottage Lake was awarded a \$2,500 grant from the 2006 Small Change for a Big Difference Grant for use in the eradication of the invasive water lilies.

The grant is funded by WaterWorks and awarded by the King County Department of Natural Resources and Parks. The grant will be used to help fund the spraying this summer.

WaterWorks



Calendar of Summer Events

| | |
|----------------------------|---|
| July 4th dusk | Ring of Fire: Lakeside residents light red flares or tiki torches at dusk to create a "ring of fire" around the lake |
| July 5th 7pm | Music in the Park—"Dr. D and the Dixie Dogs" (Dixieland) |
| July 12th 7pm | Music in the Park—"The Bill Mattocks Band" (Blues, Ballads and Classic Rock) |
| July 19th | Music in the Park—"Hillbilly Highway" (Local Bluegrass) |
| July 21st 9am to 12pm | Cottage Lake Park Restoration Work Party II— site preparation: removing weeds and putting down cardboard and mulch. Tools and refresh- ments provided! |
| July 26th 7pm | Music in the Park—"Toucans" (Steel Drum Band) |
| August 2nd 7pm | Music in the Park—"Mach One Jazz Orchestra" |
| August 18th 9am to 12pm | Cottage Lake Park Restoration Work Party III |



Join the [Cottage Lake Community Website](http://www.friendsofcottagelake.org/cottagelake) and share your favorite photos. The site also has information on meetings, events, etc:

www.friendsofcottagelake.org/cottagelake

Did you know? Some Cottage Lake Facts...

- Cottage Lake spans 63 acres.
- In 2006, it was estimated 8 acres of invasive fragrant water lilies covered Cottage Lake.
- There are two creeks which flow into Cottage Lake: Daniels Creek in the northwest and Cottage Creek in the northeast.
- Daniels Creek originates in Crystal Lake in Snohomish County, then flows south, travels under Woodinville-Duvall Road and empties into the northwest corner of the lake.
- Cottage Creek originates from natural springs located just north of Bear Creek Elementary School. It flows behind the Safeway, under Woodinville-Duvall Road, through the wetlands of Cottage Lake Park and into the lake.
- Cottage Lake has one outlet, Cottage Lake Creek, which flows out of the southwest corner of the lake. It travels south and eventually connects with Bear Creek.
- Cottage Lake is also home to some interesting critters: trout, bass, perch, frogs, dragon flies, eagles, turtles, beavers, river otters, muskrats, osprey, geese, ducks and Great Blue Herons. In the early 1990's, a stray caiman (small alligator) was captured in Cottage Lake.
- Cottage Lake is listed on Washington State's 303(D) list of impaired water bodies for total phosphorus.
- The oldest home on Cottage Lake was built in 1891 and is still inhabited today
- Cottage Lake Park used to be a private resort and was a popular destination in the 1930s.

Cottage Lake Connection

Newsletter from the Friends of Cottage Lake
17214 185th Avenue NE
Woodinville, WA 98072
www.friendsofcottagelake.org



Friends of Cottage Lake

MEMBERSHIP & DONATION FORM

\$10 Membership Fee

\$_____ Donation for support of FOCL activities

Name: _____

Address: _____

City, State, Zip _____

Phone: _____

Email Address: _____

Yes, please email my next *Cottage Lake Connection*

Make check payable to: Friends of Cottage Lake

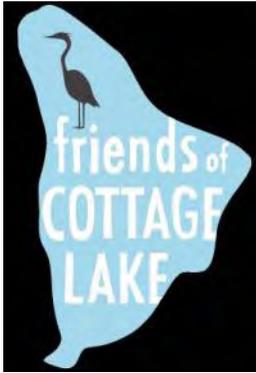
All fees & donations are tax deductible

Calendar of Cottage Lake Events

- July 4th Ring of Fire (at dusk). Lakeside residents light red flares or tiki torches at dusk to create a “ring of fire” around the lake
- July 21st 9am to 12pm - Cottage Lake Park Restoration Work Party II
- Aug 18th 9am to 12pm - Cottage Lake Park Restoration Work Party III
- Sept 25th 7pm - Watershed Watchers Event at the Woodinville Water District Meeting Room—17328 NE Woodinville Duvall Road

October 1, 2007

Volume 2, Issue 4



The Cottage Lake Connection

Inside this issue:

| | |
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| Update on Invasive Weeds | 2 |
| Plant Sale Inventory | 2 |
| Microsoft Day of Caring | 2 |
| Event Calendar | 3 |
| Response Card | Back |

Fall Native Plant Sale Fundraiser Sat October 13th from 1pm to 3pm

Friends of Cottage Lake will be having our fall native plant sale on Saturday, October 13th from 1pm to 3pm. This plant sale is unique because we sell the plants below normal retail prices. The idea is to increase access to native plants for gardens and landscapes in our area. Proceeds will be used for FOCL projects to improve Cottage Lake water quality.



Western Sword Fern

FOCL Native Plant Sale

When: Saturday, Oct 13th from 1pm to 3pm

Where: 17214 185th Ave NE, Woodinville

See page 2 for the list of plants we will have available

FOCL OFFICERS

PRESIDENT

Jonathan Morrison (425) 788-8087
jonathanmorrison@hotmail.com

VICE PRESIDENT

Mary McCain (425) 788-8244
marymccain@comcast.net

SECRETARY

Sally Maimoni (425) 788-1935
smaimoni@sprintmail.com

TREASURER

Chuck C. Cushing (425) 788-8950
chucksea@msn.com

POSITION AT LARGE

Stafford Miller (425) 788-3404
drmusic170@comcast.net

General Meeting October 18th at 7pm

There will be a general meeting on October 18th at 7pm at the Woodinville Library. The main topic will be invasive weeds (including the water lilies and Eurasian milfoil). See page 2 for more information.

Cottage Lake Park Restoration - Planting!

When: October 27th, 2007—9am to 3pm
Where: Cottage Lake Park

This is the final phase of the restoration and the most fun! We will be planting native plants and working on the wet garden.

Cottage Lake Updates

Beaver Deceivers—three beaver deceivers were installed (two on Cold Creek and one on Cottage Lake Creek) to help control water levels. Look for a future article in this newsletter on the project and outcome.

Water Lilies—the water lilies were sprayed once this summer on Aug. 2nd. Results (as reported by residents around the lake) were mixed. We'll discuss this at the meeting on Oct. 18th.

Newsletter—why is the newsletter so short? We are currently understaffed and need some new volunteers to write articles and help with editing and mailing. See page 3 if you are interested in volunteering.

Update on Invasive Weeds: Eurasian Milfoil found in Cottage Lake

Until last week, the worst invasive weed we knew about on Cottage Lake was the fragrant white water lily, but Beth Cullen from King County recently spotted a new threat to the lake. The plant was taken for DNA testing and proved to be one of the worst invasive threats to fresh water lakes: Eurasian Milfoil. Currently, the infestation is relatively small, but patches of the weed have been seen in several areas of the lake.

Eurasian Milfoil spreads very easily and is difficult to control since small pieces of the plant can root and form new plants. It generally spreads from lake to lake via fragments that are transported on watercraft.

Milfoil is an underwater plant that can form dense mats that crowd out native vegetation, reduce wildlife habitat and



Eurasian Milfoil

negatively impact water quality (increased temperature, decreased oxygen). In addition, it interferes with recreational uses such as swimming, boating and fishing.

We will discuss this latest development along with the water lily progress (or lack of progress) at our general meeting on Oct. 18th. I hope to have information on treatment options as well as more information on the current level of infestation in the lake. Please pass this information on to your neighbors - Milfoil is a huge threat to the lake and we need your input on how to respond to this new problem.

For an update on the lilies, please see:

www.friendsofcottagelake.org/waterlilies.htm

FOCL Native Plant Sale - Plant List

Here's a partial list of what will be available at the sale:

Trees:

- Abies grandis* - Grand Fir
- Abies procera* - Noble fir
- Acer circinatum* - Vine Maple
- Pseudotsuga menziesii* - Douglas-Fir
- Rhamnus purshiana* - Cascara Tree
- Thuja plicata* - Western Red Cedar

Shrubs:

- Amelanchier alnifolia* - Serviceberry
- Cornus sericea* - Red-Osier Dogwood
- Gaultheria shallon* - Salal
- Holodiscus discolor* - Ocean Spray
- Lonicera involucrata* - Twin Berry
- Mahonia aquifolium* - Tall Oregon Grape
- Oemleria cerasiformis* - Indian Plum
- Physocarpus capitatus* - Pacific Ninebark
- Ribes sanguineum* - Red Flowering Currant

Rosa Nutkana - Nooka Rose

- Symphoricarpos albus* - Snowberry
- Vaccinium ovatum* - Evergreen Huckleberry

Perennials & Groundcovers:

- Arcostaphylos uva-ursi* - Kinnikinnik
- Asarum caudatum* - Wild Ginger
- Cornus Canadensis* - Bunchberry
- Dicentra formosa* - Native Bleeding Heart
- Fragaria chiloensis* - Beach Strawberry
- Linnaea borealis* - Twinflower
- Oxalis oregana* - Wood Sorrel (evergreen)
- Xerophyllum tenax* - Bear Grass

Ferns:

- Adiantum aleuticum* - Maidenhair Fern
- Blechnum spicant* - Deer Fern
- Polypodium glycyrrhiza* - Licorice Fern

Cottage Lake Park Restoration: Microsoft/United Way Day of Caring a Huge Success

On Sept 21st, 2007 Friends of Cottage Lake and King County hosted a Microsoft/United Way Day of Caring event. Twenty-five volunteers from Microsoft worked on the Cottage Lake Park Shoreline Restoration Project preparing the site for the community planting on Oct. 27th.

The crew of volunteers was incredibly productive - 30 yards of mulch was spread out before lunch, and the two paths were almost completed by the end of the day. Cottage Lake Safeway provided snacks, Domino's Pizza provided a discounted lunch, and Starbucks provided the all important coffee to keep everyone going. Everyone had an excellent time and FOCL is hoping to host another event next year! Thanks to everyone that helped organize the event and a

special thanks to the Microsoft volunteers who took time away from work to help on our community project.



Calendar of Fall Events

| | |
|----------------------------|---|
| October 13th 1pm to 3pm | FOCL Native Plant Sale - see facing page for a plant list. |
| October 15th 7pm | Design Your Yard – Naturally! at the Woodinville Library - see box below for details |
| October 18th 7pm—9pm | FOCL General Meeting at the Woodinville Library |
| October 27th 9am to 3pm | Cottage Lake Park Restoration—Planting! |



Join the [Cottage Lake Community Website](http://www.friendsofcottagelake.org/cottagelake) and share your favorite photos. The site also has information on meetings, events, etc:

www.friendsofcottagelake.org/cottagelake

Newsletter Information

Newsletters are printed quarterly in **January, April, July, and October**

We would love to include any pictures, stories, or event announcements that relate to our Cottage Lake community.

We are looking for additional volunteers to help with the newsletter (content, layout, editing)
Contact jonathanmorrison@hotmail.com

DESIGN YOUR YARD – NATURALLY!

Natural Yard Care Neighborhoods is returning to Cottage Lake on Monday, October 15 with an exciting new workshop called *Design Your Yard – Naturally!* Speaker Doug Rice, landscape architect and co-host of television’s *Yard Talk* program, will help attendees learn how to create an attractive yard using healthy, natural techniques and materials.

The session will open with a short review of the basic steps of natural yard care – new information for some, and a quick review for anyone who has previously attended one of King County’s natural yard care workshops. The high cost of water and sensible methods of conserving it will be covered, along with building healthy soil, practicing natural lawn care, choosing the right plants and reducing the use of chemical pesticides. Doug will then share tips about how to reshape and design an outdoor space into a yard that is attractive, fits your lifestyle, provides privacy and gives you real pleasure. Finally, Darcy Batura, an environmental educator from WSU King County Extension, will speak briefly about how recycling food scraps into compost can enrich the soil in your yard and garden.

The workshop takes place at the Woodinville Library from 7 p.m. until 9 p.m. Folks will leave with a much better idea of how to turn their yards into beautiful personal sanctuaries. There will be plenty of handouts and take-home materials – and some stellar door prizes: waterless car wash kits, a one-hour design consultation from Doug Rice, other fun stuff.

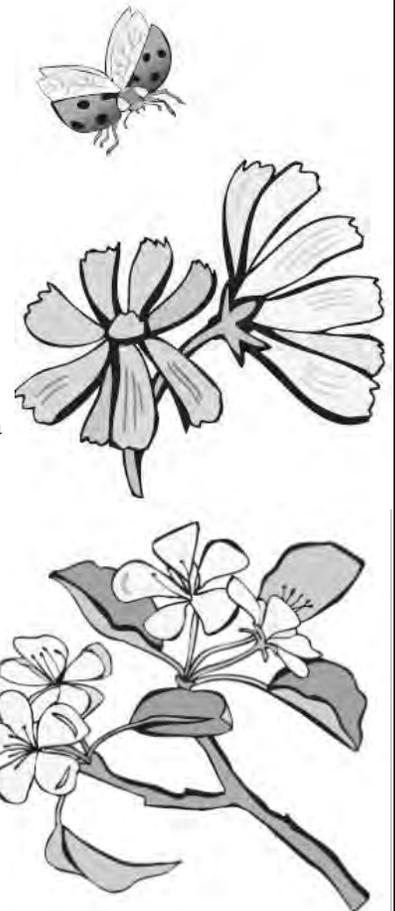
Design Your Yard – Naturally! is a free workshop. To register, call 425-368-2501 or email your name, street address and phone number to register@naturalyardcare.com.

Design Your Yard – Naturally!

Monday, October 15, 2007 from 7pm to 9pm

Woodinville Library

17105 Avondale Road N.E., Woodinville



Cottage Lake Connection

Newsletter from the Friends of Cottage Lake

17214 185th Avenue NE

Woodinville, WA 98072

www.friendsofcottagelake.org



Newsletter Mailing List Response Card

- I enjoy the newsletter—please keep me on the mailing list
- I don't need a paper copy— please email my next newsletter
- Please remove my address from your mailing list

Name: _____

Address: _____

City, State, Zip _____

Phone: _____

Email Address: _____

Mail this response card to: FOCL
17214 185th Ave NE
Woodinville, WA 98072

Or, save a stamp and email your response directly to:
jonathanmorrison@hotmail.com

Want to become a member of Friends of Cottage Lake? The membership fee is \$10 per year (make check payable to Friends of Cottage Lake and send to the address above). All fees & donations are tax deductible.

Calendar of Cottage Lake Events

- October 13th **FOCL Native Plant Sale** - Support FOCL and get a great deal on native plants for your yard!
1pm to 3pm
- October 15th **Design Your Yard – Naturally!** at the Woodinville Library - see page 3 for details.
7pm
- October 18th **FOCL General Meeting at the Woodinville Library**
7pm—9pm
- October 27th **Cottage Lake Park Restoration—Planting!**
9am to 3pm
This is the final phase of the project and we need your help! Snacks and tools provided.

**This stream flows to
Cottage Lake:**

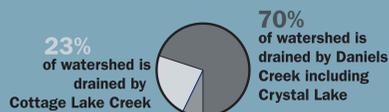


It's your water.

Lots of ways to love Cottage Lake



Facts about Cottage Lake and its watershed:

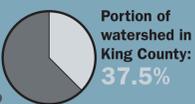


70% of watershed is drained by Daniels Creek including Crystal Lake

Direct precipitation and runoff from other areas: 7%



Portion of watershed in Snohomish County: 62.5%



Watershed size: 4275 acres Cottage Lake surface area: 63 acres Maximum depth: 15 feet

In your community

Attend public meetings. Stay informed about what's happening in your area. Ask questions about how projects and proposed developments will impact the lake and you.

Pick up trash. Organize a community clean-up day to remove litter and illegal dumping in the neighborhood that might impact lake water quality.

Talk to your neighbors. Caring and sharing information about your lake is something you may have in common. Take a new neighbor on a lake tour to introduce them to the community.

Lake-friendly landscaping

Go native. Native plants are adapted to our climate and thrive with little maintenance, fertilizer, or extra water. The more of them you plant, the easier your gardening will be.

Practice natural yard care. Build healthy soil to reduce fertilizing and help your plants fight pathogens. Use the right plant for the site and water only when necessary. Think twice before using a manufactured garden product: what will it help, and what will it hurt?

Use organic, slow-release fertilizers on your lawn – or none at all! Conventional fertilizers and weed-and-feed products release their active ingredients all at once, which end up mostly in the lake instead of benefiting the grass. Use phosphorus-free or slow-release natural fertilizers on lawns.

Around the neighborhood

Wash your car at a car wash. Washing it in your driveway sends harmful car oil and residue right into surface runoff systems.

Clean up after your pets promptly. Pet waste can contribute significant fecal contamination to your lake, even if it's just from rain or sprinklers washing over it.

Maintain your septic system. Failed septic systems can cause significant water quality problems for lakes. Get regular inspections every three months or three years, depending on the type of system, by an experienced professional.

At the shoreline

Don't feed the ducks. They are very cute when they beg, but bread is not healthy food for ducks. And when they gather in large flocks – to be near the freebie food source – they can transmit diseases. Large amounts of fowl poop can contribute to water quality problems as well.

Learn to identify noxious weeds living at the lake. Be on the look-out for noxious weeds, such as Eurasian milfoil, fragrant waterlily, Brazilian elodea, purple loosestrife and yellow flag iris. Find out who to notify if you do locate some of these species.

Check boat trailers for noxious weeds. Boats and trailers carry aquatic weed fragments from lake to lake, creating infestations in new areas. Wash boats and trailers thoroughly between visiting different lakes.

And finally

Enjoy the park, the fun, and the beauty of the lake and its surroundings. That is what makes the rest of these things worth doing!

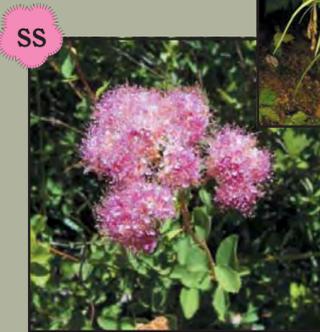


Cottage Lake Park Wet Garden

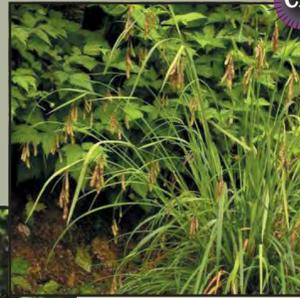
Many homeowners in this area have wet, boggy areas in their gardens that make it hard to grow common garden plants. This native garden showcases interesting and colorful plants that will grow successfully in seasonally wet areas. The flowers and shrubs planted here are all native to the Northwest and will make fine additions to any garden. Take a moment to identify the varieties using this key. The pictures show what many will look like in bloom. From here in the center of the garden, you can take a closer look at the plants that interest you!

This project is a Centennial Clean Water Fund project funded by the Washington State Department of Ecology. The work was carried out by King County Lake Stewardship Program, and volunteers from Friends of Cottage Lake, with help from the Microsoft Day of Caring.

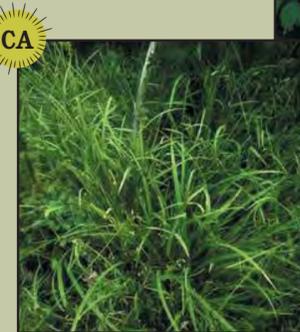
PARKING LOT



Subalpine spiraea



Merten's sedge



Big-leafed sedge



Goatsbeard



Sweet gale



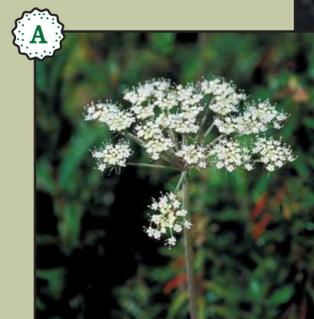
Slender rush



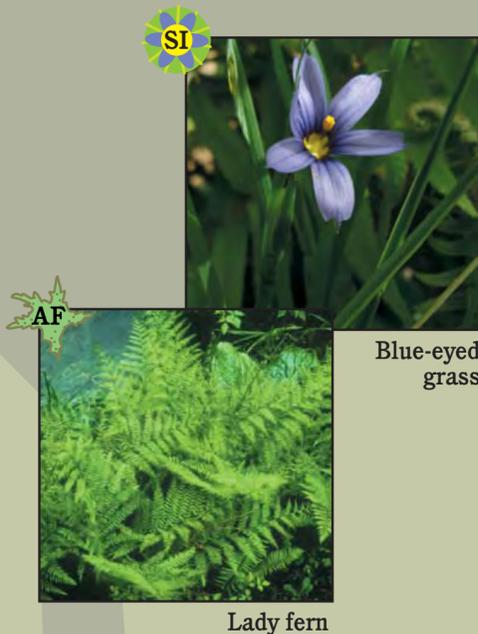
Yellow monkey flower



Douglas aster



Angelica

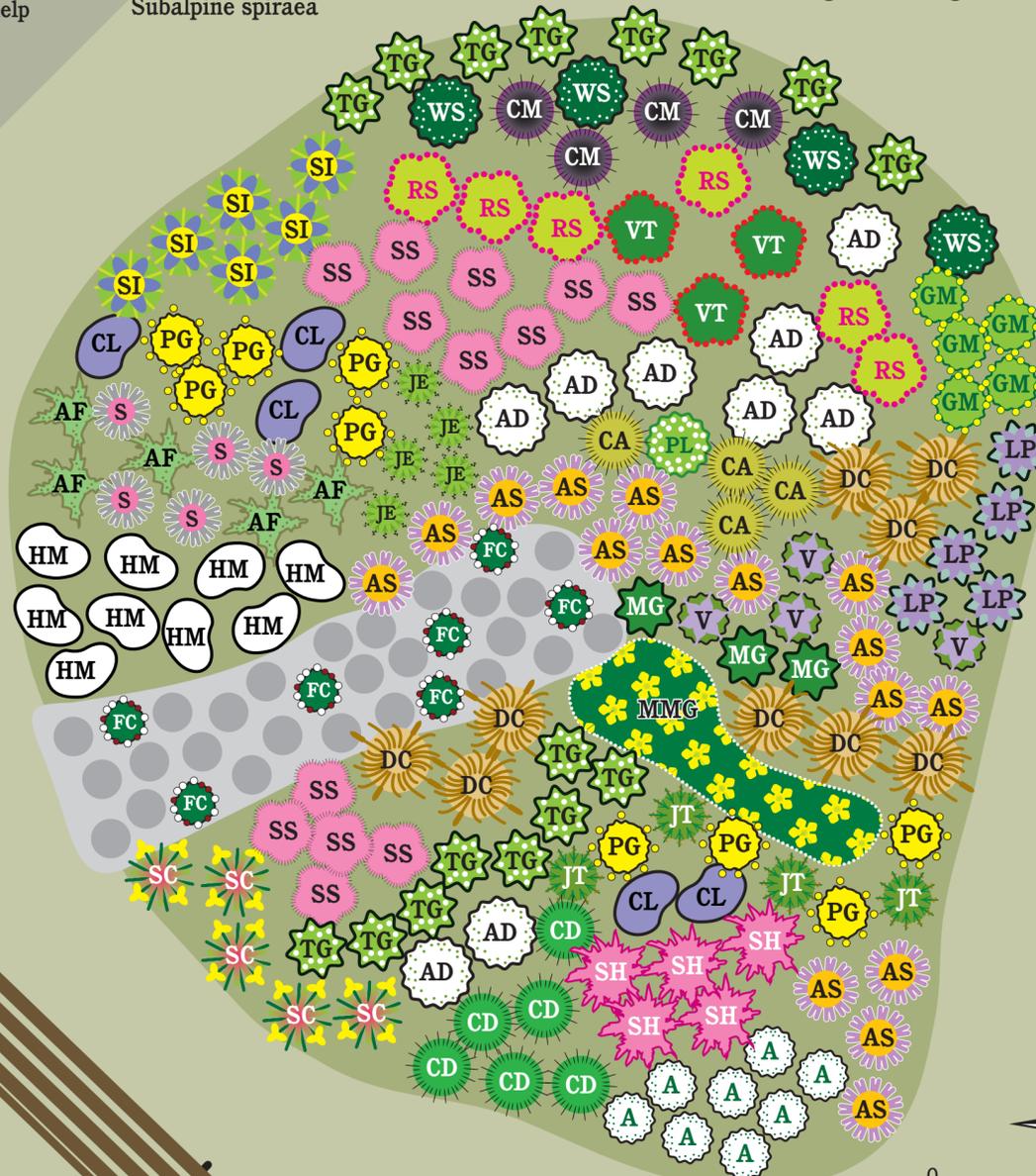


Blue-eyed grass



Lady fern

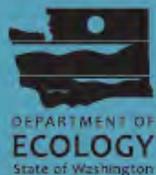
-  Angelica
Angelica geniflexa
-  Lady fern
Athyrium filix-femina
-  Goatsbeard
Aruncus dioicus
-  Douglas aster
Aster subspicatus
-  Big-leafed sedge
Carex amplifolius
-  Dewey's sedge
Carex deweyana
-  Great camas
Camassia leichtlinii
-  Merten's sedge
Carex mertensii
-  Tufted hairgrass
Deschampsia caespitosa
-  Large leaf avens
Geum macrophyllum
-  Beach strawberry
Fragaria chiloensis
-  Alum root
Heuchera micrantha
-  Dagger-leaf rush
Juncus ensifolius
-  Slender rush
Juncus tenuis
-  Large-leaf lupine
Lupinus polyphyllus
-  Sweet gale
Myrica gale
-  Yellow monkey flower
Mimulus guttatus
-  Graceful cinquefoil
Potentilla gracilis
-  Mock orange
Philadelphus lewisii
-  Flowering current
Ribes sanguineum
-  Hedgenettle
Stachys pilosa
-  Yellow-eyed grass
Sisyrinchium californicum
-  Henderson's checkermallow
Sidalcea hendersonii
-  Blue-eyed grass
Sisyrinchium idahoensis
-  Subalpine spiraea
Spiraea densiflora
-  Fringecup
Tellima grandiflora
-  Marsh violet
Viola palustris
-  Highbush cranberry
Viburnum trilobum
-  Western serviceberry
Amelanchier alnifolia



It's your water!



Restoring shorelines with native plants promotes good water quality and provides habitat for aquatic animals such as fish, birds, and frogs. Planted buffers reduce algae in lakes by intercepting phosphorus in runoff from landscaping.



Collaborators on this project include Friends of Cottage Lake, King County Department of Natural Resources and Parks, Washington Department of Ecology, Students in the King County DCHS YouthSource Program, and Volunteers with the Microsoft Day of Caring and United Way.

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 SEATTLE WA 98104-9856

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Please fold and seal with tape at the top open edge in the center of the Business Reply Mail panel.



Department of Natural Resources and Parks
 Water and Land Resources Division
 201 South Jackson Street, Suite 600
 Seattle, WA 98104



King County

Please return by November 23, 2005.

**Cottage Lake Clean Water Project
 Community Survey**

Tape Here

(continued from reverse)

- 17. How many people currently live in your household? _____
- 18. How many of these people are under 18? _____
- 19. Do you have any other suggestions or ideas to help protect and improve Cottage Lake and it's streams?

**Cottage Lake Clean Water Project
 Community Survey**

Friends of Cottage Lake and the King County Lake Stewardship Program are conducting this survey to help in planning programs to protect and improve water quality in Cottage Lake and its streams. Please take a few minutes to complete the following questions so that we can include your input in our planning. All responses to the survey will be anonymous and confidential. Results will be reported in aggregate only and will be used in project planning and programs. **Please fold the completed survey with the business reply panel facing out, tape the top open edge in the center, and return by November 23, 2005.**

1. How close do you live to Cottage Lake?

- On the shore
- Across the street
- Within a short walk
- On or near a stream that empties into the lake
- Do not live near Cottage Lake or its streams

Other: _____

2. How many years have you lived within 5 miles of Cottage Lake?

- Less than a year
- 1 – 2 years
- 3 – 5 years
- 6 – 10 years
- 10+ years
- Do not live near Cottage Lake

3. How familiar would you say you are with water quality issues facing Cottage Lake?

- Very familiar with water quality issues facing Cottage Lake
- Somewhat familiar with water quality issues facing Cottage Lake
- Have heard of any water quality issues, but know very little about them
- Have not heard of water quality issues facing Cottage Lake

4. In your opinion, what is the overall water quality in Cottage Lake?

- Excellent
- Very good
- Fair
- Poor
- Very poor

5. What do you think is the overall quality of the Cottage Lake ecosystem?

- Excellent
- Very good
- Fair
- Poor
- Very poor

6. In your opinion, how big a threat is each of the following to the water quality of Cottage Lake? Please use a scale from 1 to 5, where 5 means the item is a "very serious threat" and 1 means it is "not a threat" to water quality of Cottage Lake. Please circle one number for each item.

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Algae blooms | 1 | 2 | 3 | 4 | 5 |
| Fecal bacteria from pet waste | 1 | 2 | 3 | 4 | 5 |
| Fecal bacteria from water fowl (such as geese, ducks) | 1 | 2 | 3 | 4 | 5 |
| Livestock waste | 1 | 2 | 3 | 4 | 5 |
| Poorly maintained septic systems | 1 | 2 | 3 | 4 | 5 |
| Non-native, invasive aquatic plants (such as purple loosestrife and white water lilies) | 1 | 2 | 3 | 4 | 5 |
| Detergents (such as laundry soap or car wash soap) | 1 | 2 | 3 | 4 | 5 |
| Poor agriculture practices | 1 | 2 | 3 | 4 | 5 |
| Fertilizers/lawn and garden run-off | 1 | 2 | 3 | 4 | 5 |
| Pesticides from lawn/garden/agriculture run-off | 1 | 2 | 3 | 4 | 5 |
| Trash, illegal dumping, litter | 1 | 2 | 3 | 4 | 5 |
| Pollution from roads (such as motor oil) | 1 | 2 | 3 | 4 | 5 |
| New development in the watershed | 1 | 2 | 3 | 4 | 5 |

Alternate Formats Available
 206-269-6519 or 711 (TTY relay)

Thank you very much for your time and opinions.
 Your input will be extremely helpful in our planning and programs. Please return this questionnaire to Beth Cullen, 201 South Jackson Street, Seattle WA 98109 by November 23, 2005.

ALL RESPONSES WILL BE CONFIDENTIAL

If you have any questions regarding the questionnaire please contact Beth Cullen at 206-263-6242 or by e-mail at beth.cullen@metrokc.gov

7. In your opinion, how much does each of the following contribute to **algae blooms** in Cottage Lake? Please use a scale from 1 to 5, where 5 means the item is a major cause of algae blooms and 1 means the item does not contribute to algae blooms. **Please circle one number for each item.**

| | Does not contribute | | | | Major cause |
|---|---------------------|---|---|---|-------------|
| | 1 | 2 | 3 | 4 | 5 |
| Fecal bacteria from pet waste | 1 | 2 | 3 | 4 | 5 |
| Fecal bacteria from water fowl (such as geese, ducks) | 1 | 2 | 3 | 4 | 5 |
| Livestock waste | 1 | 2 | 3 | 4 | 5 |
| Poorly maintained septic systems | 1 | 2 | 3 | 4 | 5 |
| Non-native, invasive aquatic plants (such as purple loosestrife and white water lilies) | 1 | 2 | 3 | 4 | 5 |
| Detergents (such as laundry soap or car wash soap) | 1 | 2 | 3 | 4 | 5 |
| Poor agriculture practices | 1 | 2 | 3 | 4 | 5 |
| Fertilizers/lawn and garden run-off | 1 | 2 | 3 | 4 | 5 |
| Pesticides from lawn/garden/agriculture run-off | 1 | 2 | 3 | 4 | 5 |
| Trash, illegal dumping, litter | 1 | 2 | 3 | 4 | 5 |
| Pollution from roads (such as motor oil) | 1 | 2 | 3 | 4 | 5 |
| New development in the watershed | 1 | 2 | 3 | 4 | 5 |

8. How often do you participate in each of the following activities? **Please check one box for each activity.**

| ACTIVITY | Always | Most of the time | Sometimes | Never but considering it | Never and not considering it | Not applicable |
|---|--------------------------|--------------------------|--------------------------|--------------------------|------------------------------|--------------------------|
| Use organic, low phosphorus fertilizer in my yard | <input type="checkbox"/> | <input type="checkbox"/> |
| Scoop my pet waste | <input type="checkbox"/> | <input type="checkbox"/> |
| Plant native plants in my garden | <input type="checkbox"/> | <input type="checkbox"/> |
| Plant native vegetation between my lawn and the shoreline (create a buffer) | <input type="checkbox"/> | <input type="checkbox"/> |
| Have my septic system checked and pumped at least every 2 – 3 years | <input type="checkbox"/> | <input type="checkbox"/> |
| Attend workshops about lake issues | <input type="checkbox"/> | <input type="checkbox"/> |
| Attend local lake community groups that deal with water quality issues | <input type="checkbox"/> | <input type="checkbox"/> |

9. What other things have you done to protect or improve water quality in your area?

10. If you do **not** participate in one or more of the following activities, please check all that apply for each activity.

| ACTIVITY | I don't think this action will make a difference | It would be too expensive | I don't have the time | I need more information | I participate in this activity | Not applicable |
|---|--|---------------------------|--------------------------|--------------------------|--------------------------------|--------------------------|
| Use organic, low phosphorus fertilizer in my yard | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Scoop my pet waste | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Plant native plants in my garden | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Plant native vegetation between my lawn and the shoreline (create a buffer) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Have my septic system checked and pumped at least every 2 – 3 years | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Attend workshops about lake issues | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Attend local lake community groups that deal with water quality issues | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

11. Overall, how interested are you in helping to restore and protect Cottage Lake and its streams?

- Extremely interested
- Very interested
- Somewhat interested
- Not very interested
- Not at all interested

12. How interested are you in learning more about the following practices and activities? Please use a scale from 1 to 5, where 5 means you are extremely interested and 1 means you are not at all interested. **Please circle one number for each item.**

| | Not at all interested | | | | Extremely interested |
|--|-----------------------|---|---|---|----------------------|
| | 1 | 2 | 3 | 4 | 5 |
| Use organic, low phosphorus fertilizer in my yard | 1 | 2 | 3 | 4 | 5 |
| Plant native plants in my garden | 1 | 2 | 3 | 4 | 5 |
| Plant native vegetation between my lawn and the shoreline (create a buffer) | 1 | 2 | 3 | 4 | 5 |
| Remove non-native, invasive weeds from my lake shore | 1 | 2 | 3 | 4 | 5 |
| Have my septic system checked and pumped at least every 2 – 3 years | 1 | 2 | 3 | 4 | 5 |
| Attend workshops about lake issues | 1 | 2 | 3 | 4 | 5 |
| Attend local lake community group meetings that deal with water quality issues | 1 | 2 | 3 | 4 | 5 |

13. In the future, how likely are you to participate in each of the following practices and activities? **Please check one box for each item.**

| ACTIVITY | Definitely not | Probably not | Might or might not | Probably will | Considering it |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Use organic, low phosphorus fertilizer in my yard | <input type="checkbox"/> |
| Plant native plants in my garden | <input type="checkbox"/> |
| Plant native vegetation between my lawn and the shoreline (create a buffer) | <input type="checkbox"/> |
| Remove noxious weeds from my lake shore | <input type="checkbox"/> |
| Have my septic system checked and pumped on a regular schedule | <input type="checkbox"/> |
| Attend workshops about lake issues | <input type="checkbox"/> |
| Attend local lake community groups that deal with water quality issues | <input type="checkbox"/> |

14. How do you use Cottage Lake, Cottage Lake Creek and/or Daniels Creek? **Please check all that apply.**

- Birding or other nature activities
- Boating
- Swimming
- Fishing
- Visiting Cottage Lake Park

Other: _____

The following questions are for demographic purposes only:

15. Please indicate what types and how many pets you have below.

| | Yes | No | Number |
|---------------|--------------------------|--------------------------|--------|
| Dog | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| Cat (indoor) | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| Cat (outdoor) | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| Horse | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| Chicken | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| Goat | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| Other | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

16. What is the highest level of education you had the opportunity to complete?

- High School or equivalent
- Some college
- 4-year college degree
- Some graduate school
- Graduate degree

(continued on reverse)



King County

Department of Natural Resources and Parks
Water and Land Resources Division



Cottage Lake Community Survey

In order to develop programs to protect and improve Cottage Lake and its streams, the King County Lake Stewardship Program and Friends of Cottage Lake are conducting a survey of area residents. Please look for the survey in your mail in the next few weeks, and take a few minutes to complete your questionnaire so that we can include your opinions in our planning and actions.

For your convenience we have put the questionnaire on-line at <http://dnr.metrokc.gov/dnrp/survey> and follow the link called "Cottage Lake Community Survey".

Thank you very much for your time.





Department of
Natural Resources and Parks
Water and Land Resources Division

201 South Jackson Street, Suite 600
Seattle, WA 98104

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Cottage Lake Community Survey

Please look for your questionnaire
in the mail in the next few weeks.

You may also fill out the questionnaire
on-line at [http://dnr.metrokc.gov/
dnrp/survey](http://dnr.metrokc.gov/dnrp/survey). Follow the link called
“Cottage Lake Community Survey”.



King County

Department of Natural Resources and Parks
Water and Land Resources Division



Cottage Lake Community Survey

This is to remind you that we would very much like to include your opinions in our future planning for Cottage Lake and its streams. If you have not done so already, please take a few minutes to complete the questionnaire we recently mailed to you. For your convenience we have put the questionnaire on-line at <http://dnr.metrokc.gov/dnrp/survey> and follow the link called "Cottage Lake Community Survey". If you have already submitted your questionnaire, please accept our thanks for your time and input.

If you have any questions or need a new copy of the questionnaire, please contact **Beth Cullen** at **206-263-6242** or beth.cullen@metrokc.gov.





Department of
Natural Resources and Parks
Water and Land Resources Division
201 South Jackson Street, Suite 600
Seattle, WA 98104

REMINDER



Cottage Lake Community Survey



This is to remind you to complete the questionnaire we recently mailed to you.

You may also fill out the questionnaire on-line at <http://dnr.metrokc.gov/dnrp/survey>. Follow the link called "Cottage Lake Community Survey".

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Beth Cullen

King County

Lake Stewardship Program

Cottage Lake Clean Water Project Community Survey

Preliminary Results





Background



King County

- 781 surveys sent out
 - 511 targeted population
 - 270 “random”
- Recipients for survey selected by location
 - Proximity to the lake
 - Proximity to the inlet creeks
 - Neighborhoods identified for high use of the lake
- Random properties generated by random number generator

“The first two years (I lived on the lake) each fall salmon entered the lake from Cottage Lake Creek, I would see them swimming along the shore and jumping.....”



Response



King County

- 202 surveys were sent back, 30 of which came from the on-line system
(25.9% return rate)
- 42 of 202 surveys came back from the random population (15.6%)
- Any response rate over 10% in a community survey is considered successful

“Volunteers can make a difference when it comes to general cleanup. Organizing it can be hard sometimes but we’re interested in helping. The park itself, is something we all can be proud of.”





How close do you live to Cottage Lake?

n = 198



King County

- On the shore: 22.22%
- Across the street: 9.09%
- Within a short walk: 42.93%
- On or near a stream that empties into the lake: 14.65%
- Do not live near Cottage Lake or its streams : 5.56%
- Other 5.56%
 - Beach club, near Lake Leota, 1 mile

“(I have) encouraged others to use native plants and organic products, recycle, use minimal and alternate natural cleaning products and compost”



How many years have you lived within 5 miles of Cottage Lake



n=200

- Less than a year – 2.97%
- 1- 2 years – 8.42%
- 3-5 years – 13.86%
- 6-10 years – 22.77%
- 10 or more years 51.98%

“I’ve fished the lake since 1978, I’ve seen it change”



King County

Highest level of education

n=199

Number in Household

n=197

| | | | |
|------------------------------|--------|-----|-------|
| High school or equivalent | 5.03% | 1-2 | 41.6% |
| Some college | 20.60% | 3-4 | 47.7% |
| 4-year college degree | 35.68% | 5+ | 9.6% |
| Some graduate school/ degree | 38.7% | | |

Household members under 18

n=194

How do you use Cottage Lake?

n = 182

| | | | |
|---|--------|------------------------------------|--------|
| 0 | 44.33% | Visiting Cottage Lake Park | 80.22% |
| 1 | 18.04% | Swimming | 42.31% |
| 2 | 30.41% | Boating | 35.71% |
| 3 | 21.56% | Birding or other nature activities | 32.42% |
| 4 | 2.58% | Fishing | 30.22% |





King County

How familiar would you say you are with water quality issues facing Cottage Lake?

n= 197

- Very familiar– 18.78%
- Somewhat familiar – 35.53%
- Have heard of them, but know very little – 28.93%
- Have not heard – 16.75%

“More posted information at the Cottage Lake Park to educate people on the water quality and what people should or should not do to help improve it.”

“Distribute written material concerning the issues/causes of poor water quality in Cottage Lake and its streams. Describe what citizens can do to make a difference.”



Overall water and ecosystem quality



- Over half of the respondents feel the overall water quality and ecosystem of Cottage Lake is fair

| Water Quality | | Ecosystem | |
|---------------|--------|-----------|--------|
| n=194 | | n=191 | |
| Excellent | 0.52% | Excellent | 0.52% |
| Very Good | 9.79% | Very Good | 13.61% |
| Fair | 57.22% | Fair | 64.92% |
| Poor | 27.84% | Poor | 16.75% |
| Very Poor | 4.64% | Very Poor | 4.19% |

“(I use Cottage Lake) just to float and relax in my float tube on a hot day/but starting to need to be cleaned up!”



King County

In your opinion how big a threat is each of the following to the water quality of Cottage Lake?

Very serious/ serious threat

| | |
|---|----------------|
| Fecal bacteria from water fowl (n=193) | Overall: 75.1% |
| Algae blooms (n=187) | Overall: 61.5% |
| Fertilizers/lawn garden run-off (n=189) | Overall: 60.9% |
| Pesticides (n=188) | Overall: 60.7% |
| Poorly maintained septic systems (n=184) | Overall: 51.1% |
| New development in the watershed (n=188) | Overall: 49.4% |
| Fecal bacteria from pet waste (n=191) | Overall: 43.9% |
| Pollution from roads (n=190) | Overall: 35.8% |
| Detergents (n=185) | Overall: 34.6% |
| Poor agriculture practices (n=187) | Overall: 33.2% |
| Livestock waste (n=187) | Overall: 32.0% |
| Trash, illegal dumping, litter (n=185) | Overall: 27.5% |



What is the greatest contribution to algae blooms?



King County

Very large/ large contribution

| | |
|--|----------------|
| Fecal bacteria from water fowl (n=166) | Overall: 63.8% |
| Fertilizers/lawn garden run-off (n=160) | Overall: 56.2% |
| Pesticides (n=161) | Overall: 41.0% |
| New development in the watershed (n=160) | Overall: 31.9% |
| Livestock waste (n=159) | Overall: 30.8% |
| Detergents (n=161) | Overall: 29.2% |
| Poor agriculture practices (n=160) | Overall: 27.5% |
| Non-native, invasive aquatic plants (n=160) | Overall: 26.3% |
| Fecal bacteria from pet waste (n=158) | Overall: 23.5% |
| Pollution from roads (n=156) | Overall: 21.8% |
| Trash, illegal dumping, litter (n=161) | Overall: 18.6% |





How often do you participate in the following activities?



Always or most of the time

**Pump/check septic every 2-3 years
(n=197)**

Overall: 74.1%

**Plant Native Plants in my garden
(n=188)**

Overall: 48.9%

Scoop Pet Waste (n=198)

Overall: 43.5% (44.9% NA)

**Use organic low phosphorus
fertilizer in the yard (n=193)**

Overall: 37.9%

**Plant native shoreline buffer
(n=193)**

Overall: 21.7% (60.6% NA)

**Attend local lake community
groups (n=196)**

Overall: 11.7%

**Attend workshops about lake
issues (n=167)**

Overall: 7.2%



If you do not participate in the activity – why not?



King County

| | | |
|--|-------------------|------------------------|
| Pump/check septic every 2-3 years (n=163) | 71.8% participate | 8.6% too expensive |
| Plant Native Plants in my garden (n=164) | 58.5% participate | 22.0% more info. |
| Use organic low phosphorus fertilizer in the yard (n=167) | 41.3% participate | 26.3% more information |
| Scoop Pet Waste (n=172) | 40.7% participate | 51.7% NA |
| Plant native shoreline buffer (n=167) | 19.8% participate | 65.9% NA |
| Attend workshops about lake issues (n=146) | 46.6% more info | 31.5% no time |
| Attend local lake community groups (n=169) | 44.4% more info | 29.0% no time |



King County

How interested are you in learning more?

Extremely Interested/ Interested

| | |
|--|----------------|
| Use organic low phosphorus fertilizer in the yard (n=181) | Overall: 56.9% |
| Pump/check septic every 2-3 years (n=99) | Overall: 56.5% |
| Remove noxious weeds (n=161) | Overall: 52.8% |
| Plant Native Plants in my garden (n=181) | Overall: 48.9% |
| Attend local lake community groups (n=182) | Overall: 36.3% |
| Attend workshops about lake issues (n=184) | Overall: 35.9% |
| Plant native shoreline buffer (n=146) | Overall: 25.3% |



King County

How likely are you to participate in each of the following practices and activities?

Definitely/ Probably will

Remove noxious weeds (n=137)

Overall: 76.8%

Pump/check septic every 2-3 years (n=172)

Overall: 76.8%

Plant Native Plants in my garden (n=173)

Overall: 65.3%

Use organic low phosphorus fertilizer in the yard (n=173)

Overall: 60.7%

Plant native shoreline buffer (n=133)

Overall: 45.9%

Attend local lake community groups (n=182)

Overall: 33.6%

Attend workshops about lake issues (n=177)

Overall: 32.8%





Information gathered by comments



King County

- Water lilies a major concern – many people want to see them controlled.
- People are curious when sewer will come on line. Large concern over poorly maintained septic systems.
- People very interested in “natural yard care” topics – many people pointed out they use organic fertilizer and would like to know more.
- Education a huge point – want more information easily accessible – at the park, in the library, Woodinville Weekly. Need more visibility because not everyone is getting the information.



Contact Information

Beth Cullen

King County Lake Stewardship Program

(206) 263-6242

beth.cullen@metrokc.gov

Friends of Cottage Lake

President: Jonathan Morrison

jonathanmorrison@hotmail.com

<http://friendsofcottagelake.org>



Cottage Lake Survey

Preliminary Results

2005 vs. 2010



Background



- 781 surveys sent out
 - 511 targeted population
 - 270 “random”
- Recipients for survey selected by location
 - Proximity to the lake
 - Proximity to the inlet creeks
 - Neighborhoods identified for high use of the lake
- Random properties generated by random number generator

“I've planted 300+ trees on my 1 acre lot and have left my pasture go to grasses and **trees**”

Response

2005

- 202 surveys were sent back
(25.9% return rate)

2010

- 176 surveys were sent back
(22.5% return rate)



“Daniels Creek runs thru my property and we love the salmon and have an interest in the Creek's health”



How close do you live to Cottage Lake?



2005 (n= 193)

- On the shore: 22.22%
- Across the street: 9.09%
- Within a short walk: 42.93%
- On or near a stream that empties into the lake: 14.65%
- Do not live near Cottage Lake or its streams : 5.56%
- Other 5.56%

2010 (n = 174)

- On the shore: 21%
- Across the street: 12%
- Within a short walk: 45%
- On/near a stream that empties into the lake: 12%
- Do not live near Cottage Lake or its streams : 5.2%
- Other 5.8%



How do you use Cottage Lake?



2005 (n=182)

- Visiting Cottage Lake Park
80.22%
- Swimming
42.31%
- Boating
35.71%
- Birding or other nature activities
32.42%
- Fishing
30.22%

2010 (n=154)

- Visiting Cottage Lake Park
80%
- Swimming
38.1%
- Boating
38.1%
- Birding or other nature activities
36.8%
- Fishing
27.7%



How familiar would you say you are with water quality issues facing Cottage Lake?

2005 (n=197)

- Very familiar— 18.78%
- Somewhat familiar – 35.53%
- Have heard of them, but know very little – 28.93%
- Have not heard – 16.75%

2010 (n=174)

- Very familiar— 21.8%
- Somewhat familiar – 42.0%
- Have heard of them, but know very little – 29.3%
- Have not heard – 6.9%

“Replaced part of shoreline surfacing: formerly impermeable, it's now turfstone with non-fertilized grass.”



2005 Water Quality (n=194)

| | |
|-----------|--------|
| Excellent | 0.52% |
| Very Good | 9.79% |
| Fair | 57.22% |
| Poor | 27.84% |
| Very Poor | 4.64% |

2005 Ecosystem (n=191)

| | |
|-----------|--------|
| Excellent | 0.52% |
| Very Good | 13.61% |
| Fair | 64.92% |
| Poor | 16.75% |
| Very Poor | 4.19% |

2010 Water Quality (n=168)

| | |
|-----------|-------|
| Excellent | 0.0% |
| Very Good | 16.6% |
| Fair | 62.7% |
| Poor | 18.9% |
| Very Poor | 1.8% |

2010 Ecosystem (n=169)

| | |
|-----------|-------|
| Excellent | 0.6% |
| Very Good | 28.2% |
| Fair | 60.6% |
| Poor | 10.0% |
| Very Poor | 0.6% |



In your opinion how big a threat is each of the following to the water quality of Cottage Lake?



Very serious/ serious threat

| | 2010 | 2005 |
|---|----------------|----------------|
| Algae blooms | Overall: 64.4% | Overall: 61.5% |
| Fecal bacteria from water fowl | Overall: 63.7% | Overall: 75.1% |
| Pesticides | Overall: 63.4% | Overall: 60.7% |
| Fertilizers/lawn garden run-off | Overall: 61.7% | Overall: 60.9% |
| Poorly maintained septic systems | Overall: 52.7% | Overall: 51.1% |
| Fecal bacteria from pet waste | Overall: 44.8% | Overall: 43.9% |
| Detergents | Overall: 37.6% | Overall: 34.6% |
| Pollution from roads | Overall: 34.7% | Overall: 35.8% |
| New development in the watershed | Overall: 32.9% | Overall: 49.4% |
| Livestock waste | Overall: 25.3% | Overall: 32.0% |
| Trash, illegal dumping, litter | Overall: 23.6% | Overall: 27.5% |
| Poor agriculture practices | Overall: 23.0% | Overall: 33.2% |

“Practice organic yard care, don't was cars in my yard, use no phosphate detergents, take care of septic system”



King County

What is the greatest contribution to algae blooms?

Very large/ large contribution

| | 2010 | 2005 |
|-------------------------------------|----------------|----------------|
| Fecal bacteria from water fowl | Overall: 58.2% | Overall: 63.8% |
| Fertilizers/lawn garden run-off | Overall: 58.8% | Overall: 56.2% |
| Pesticides | Overall: 45.9% | Overall: 41.0% |
| Poorly maintained septic systems | Overall: 43.4% | Overall: 44.2% |
| Detergents | Overall: 39.3% | Overall: 29.2% |
| Fecal bacteria from pet waste | Overall: 29.5% | Overall: 23.5% |
| Poor agriculture practices | Overall: 27.8% | Overall: 27.5% |
| Non-native, invasive aquatic plants | Overall: 23.9% | Overall: 26.3% |
| Livestock waste | Overall: 22.9% | Overall: 30.8% |
| Pollution from roads | Overall: 22.6% | Overall: 21.8% |
| New development in the watershed | Overall: 20.7% | Overall: 31.9% |
| Trash, illegal dumping, litter | Overall: 10.9% | Overall: 18.6% |

"Part of King Co Conservation District -we are a compliant horse farm!"



How often do you participate in the following activities?

Always or most of the time

2010

2005

Pump/check septic every 2-3 years

Overall: 74.6%

Overall: 74.1%

Plant Native Plants in my garden

Overall: 48.8%

Overall: 48.9%

Scoop Pet Waste

Overall: 49.4%

Overall: 43.5%

Use organic low phosphorus fertilizer in the yard

Overall: 45.8%

Overall: 37.9%

Plant native shoreline buffer

Overall: 24.1%

Overall: 21.7%

Attend local lake community groups

Overall: 11.0%

Overall: 11.7%

Attend workshops about lake issues

Overall: 12.2%

Overall: 7.2%



If you do not participate in the activity – why not?

| | 2010 | 2005 |
|--|---------------------|--------------------|
| Pump/check septic every 2-3 years | 10.7% too expensive | 8.6% too expensive |
| Plant Native Plants in my garden | 16.7% more info. | 22.0% more info. |
| Use organic low phosphorus fertilizer in the yard | 19.6% NA | 26.3% more info. |
| Scoop Pet Waste | 53.1% NA | 51.7% NA |
| Plant native shoreline buffer | 63.0% NA | 65.9% NA |
| Attend workshops about lake issues | 32.9% no time | 31.5% no time |
| Attend local lake community groups | 34.3% no time | 29.0% no time |

I have not heard about workshops or community groups that meet about water quality but would be interested.



How likely are you to participate in each of the following practices and activities?

Definitely/ Probably will

2010

2005

Remove noxious weeds

Overall: 57.4%

Overall: 76.8%

Pump/check septic every 2-3 years

Overall: 86.1%

Overall: 76.8%

Plant Native Plants in my garden

Overall: 73.0%

Overall: 65.3%

Use organic low phosphorus fertilizer in the yard

Overall: 74.8%

Overall: 60.7%

Plant native shoreline buffer

Overall: 56.3%

Overall: 45.9%

Attend local lake community groups

Overall: 39.7%

Overall: 33.6%

Attend workshops about lake issues

Overall: 37.9%

Overall: 32.8%



How interested are you in learning more?



Extremely Interested/ Interested

2010

2005

Overall: 43.4%

Overall: 56.9%

Use organic low phosphorus fertilizer in the yard

Pump/check septic every 2-3 years

Overall: 47.4%

Overall: 56.5%

Remove noxious weeds

Overall: 50.7%

Overall: 52.8%

Plant Native Plants in my garden

Overall: 53.1%

Overall: 48.9%

Attend local lake community groups

Overall: 30.6%

Overall: 36.3%

Attend workshops about lake issues

Overall: 30.7%

Overall: 35.9%

Plant native shoreline buffer

Overall: 37.0%

Overall: 25.3%

"Use no fertilizer, eradicate invasive seedlings yearly, use cleaning products with no phosphorus. Actively oppose unnecessary urban development in the area, absent proper oversight from King County."

COTTAGELAKE

welcome to your lake



King County

Department of
Natural Resources and Parks

Water and Land Resources Division



DEPARTMENT OF

ECOLOGY

State of Washington



Contents

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back cover Top TEN DOs for Cottage Lake

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Content: Sally Abella, Beth Cullen, Susie Egan

Design: Megann Devine

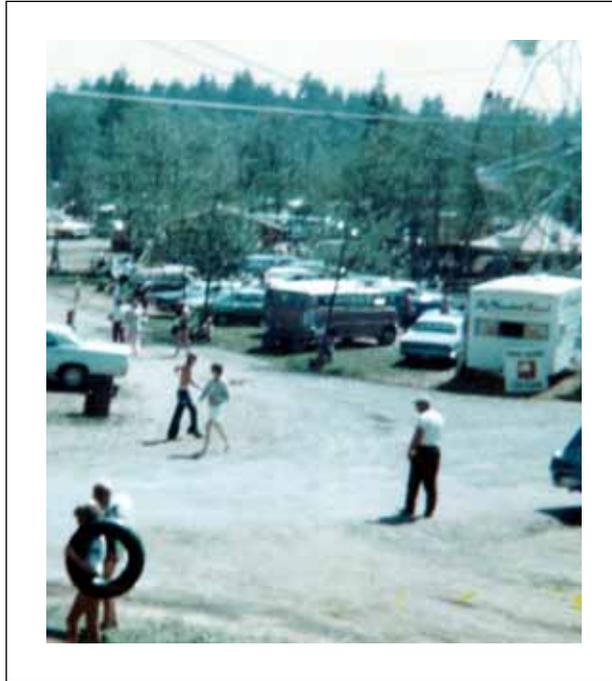
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This publication was produced with CCWF grant funds from Washington State DOE in collaboration with FOCL.

Alternative Formats Available Upon Request.



KAYO corporate picnic at Norm's Resort, 1947

History of Cottage Lake: from summer recreation to year round enjoyment

by lake resident Susie Egan



Welcome to Cottage Lake! You will love living in this somewhat undiscovered paradise just east of Woodinville. Most people enjoy hearing about the history of their home place. After we bought our house on Cottage Lake in 1999, we uncovered an old wall board signed by the original owner in 1937. That discovery spurred us into doing some research on the history of our house as well as the Cottage Lake area in general.

This simple curiosity started a several-year research project. It began with joining the local historical society to find out anything they knew

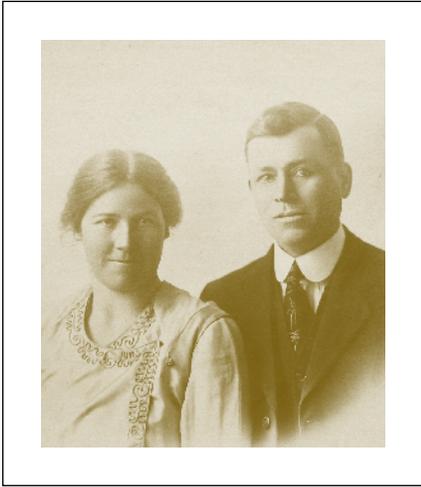
about Cottage Lake's history. We were quickly dismayed to find that, while there was a lot of information on the history of Seattle and Woodinville, there was very little, if anything, written or published on the history of Cottage Lake. Trying to find old photographs of Cottage Lake was equally as challenging, which seemed odd for such a picturesque location.

Our research project involved locating and interviewing old-time Cottage Lake residents (some now deceased), digging up old newspaper articles, researching old property records, taking a class on

researching your local history and researching and tapping into other local historical resources.

Here's what we learned about Cottage Lake's history:

Prior to the 1800's and well before the appearance of white settlers, the Simump Tribe lived in the area along the Squak Slough (today's Sammamish River). They didn't live on Cottage Lake, but traveled east from what is now known as Hollywood Hills along the southern side of Cottage Lake (approximately the location of today's NE 165th Street) to what we now know as Avondale Road. Then they traveled



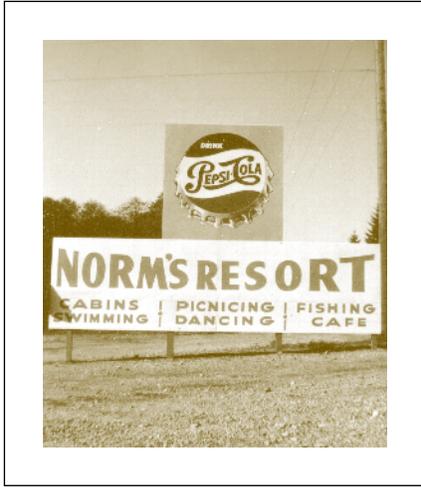
Fay and Gus Erickson, 1916

north to what is now Woodinville-Duvall Road and then east and south to Carnation, the headquarters of the Snohomish Indian tribe.

In my research I found home owners along the lake that had found many Indian artifacts in support of this history, including a very interesting story of a female Indian ghost who is a frequent visitor to one home along the shoreline.

While the first white settlers arrived in Seattle in 1851, the first to settle in the Cottage Lake area arrived in 1876, taking advantage of the new Homestead Act. The first property was homesteaded in 1876, with a log house located over the west ridge of Cottage Lake built by the Nielsen family. It was restored in the 1990s and is still occupied to this day.

The second historic Cottage Lake house was built by Ezra Jurey in 1891 and was located on the south shore of Cottage Lake. Ezra belonged to the local Grange and frequently entertained local residents at his South Cottage Lake home.



Norm's Resort

Logging & Railroads Comes to Cottage Lake Area

In the 1880s Woodinville was developing into a town with its own post office and church. The lumber industry arrived and many mills were built, followed by the development of the railroads that transported logs to market. Washington became a state in 1889 and Woodinville got its first permanent school, followed by several stores, hotels and saw mills. The original section of Woodinville was located just west of the current downtown Woodinville across the railroad tracks on NE 173rd Place.

Around 1886, William Perrigo, a Redmond pioneer; set up several outposts of his Redmond Trading Post; one of which was located on the south end of Cottage Lake on the south side of NE 165th Street. The building could still be seen up until the 1980s.

Logging was a booming industry in the area in late 1890's. Cottage Lake School was built in 1899 in the center of a logging community located around the current Reintree housing area. Soon afterwards, the surrounding land was cleared of most of its timber and more



Norm and Georgianna Fagner

families began moving into the area, building homes and farming the land.

Roads, Telephones & Vacationers Arrive

The original road from Woodinville to Cottage Lake ran along the south end of the Lake east from Hollywood Hills along what is now 165th to Avondale Road. (the same path traveled by the early Indians.)

In 1920, Cottage Lake homes finally got electricity and telephones, with help from Cottage Lake Civic Club. At this time Gus Erickson bought the property stretching along the north end of Cottage Lake and started a family resort business there. The Woodinville-Duvall Road was paved in 1930, which brought visitors from Seattle to Erickson's Lake Resort in the country where they enjoyed swimming, boating and fishing. There was also another resort on the south end of the lake called Camp Comfort (formerly called Cedar Grove Resort) where the Cottage Lake Beach Club is now located.

In 1937 the Seitmans bought part of the Ezra Jurey property on the southwest shore of Cottage Lake and started a dairy business called the Highlander Dairy. The old milk-

ing house and barn are still intact and are currently part of Bassetti's Crooked Arbor Gardens.

In 1942 Norm Fragner bought Gus Erickson's family resort, improved it over time and re-opened it under the name of "Norm's Resort." It was a well known destination place and the location of many corporate picnics and events over the years. Many local residents have fond memories of their summers spent at Norm's Resort.

In 1959, Leno Bassett bought the Seitman property on the south end of Cottage Lake and ran a landscape supply business where he sold peat, manure and other soil mixtures. Since there was a natural peat bog on the property, Leno obtained a permit from the county to harvest the peat. The present day Bassett Pond, which is now part of Cold Creek Natural Area, resulted from digging out the peat.

In the mid-1970s Bruce McCain, a marine biologist working for NOAA, lived in the Jurey house and took the first water samples of Cottage Lake, discovering an abnormally high phosphorus content. He and other Cottage Lake residents revitalized the Friends of Cottage Lake to focus on water quality issues.



Work party at Cottage Lake Park

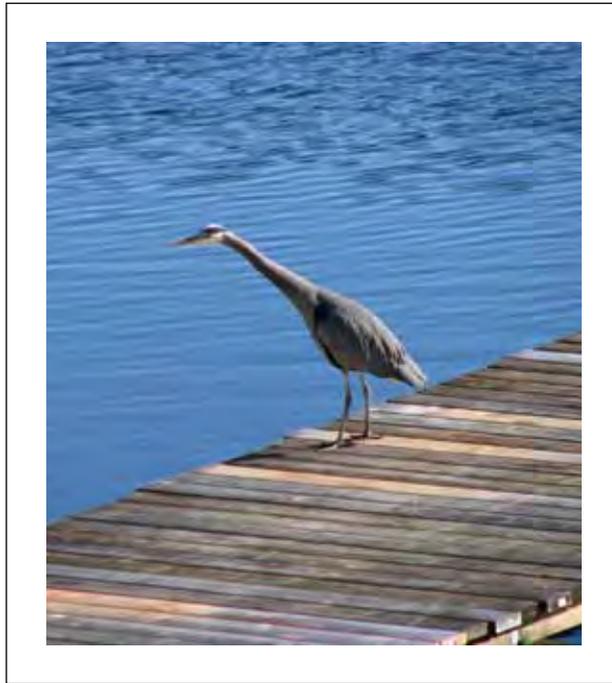
In 1979, Norm's Cottage Lake Resort closed, following Norm Fragner's death. The resort was sold to American Adventures, which built an outdoor swimming pool and operated the property as a members-only recreational vehicle park. It subsequently closed in 1989 and King County bought the property for \$1.8 million in 1991 with funds from an open space bond issue. Cottage Lake Park opened to the public in 1992, with extensive renovations carried out in 1997, adding a new fishing pier; a trail system including a boardwalk through the wetlands area, a new picnic shelter, a children's play area, restrooms and habitat restoration along Cottage Lake Creek.

Cottage Lake Today

Today many houses surround the shoreline of Cottage Lake, including a subdivision on the south end called the Cottage Lake Beach Club whose members share a community beach and park area.

There is also a non-profit organization called the Friends of Cottage Lake, comprised of active volunteers who work with the county and state in improving the water quality of the lake. They are currently working on reducing the phosphorus content of the lake, as well as combating non-native water lilies and newly discovered milfoil within in the lake.

Cottage Lake Park, a King County park, located on the north end of the lake is enjoyed by the public and provides public access to the lake, which is stocked with trout at the beginning of each fishing season. No combustible engines are allowed on the lake, but human-powered boats such as canoes and kayaks are welcome. ■



Welcome to Cottage Lake: stats about your lake



Basic Statistics and location information

Cottage lake is located east of the City of Woodinville in the Puget lowlands at an elevation of 231 feet above mean sea level, in the area designated by Washington State as WRIA-8 (Water Resource Inventory Area), which drains to the Puget Sound by way of Cottage Lake Creek, through the Sammamish River to Lake Washington.

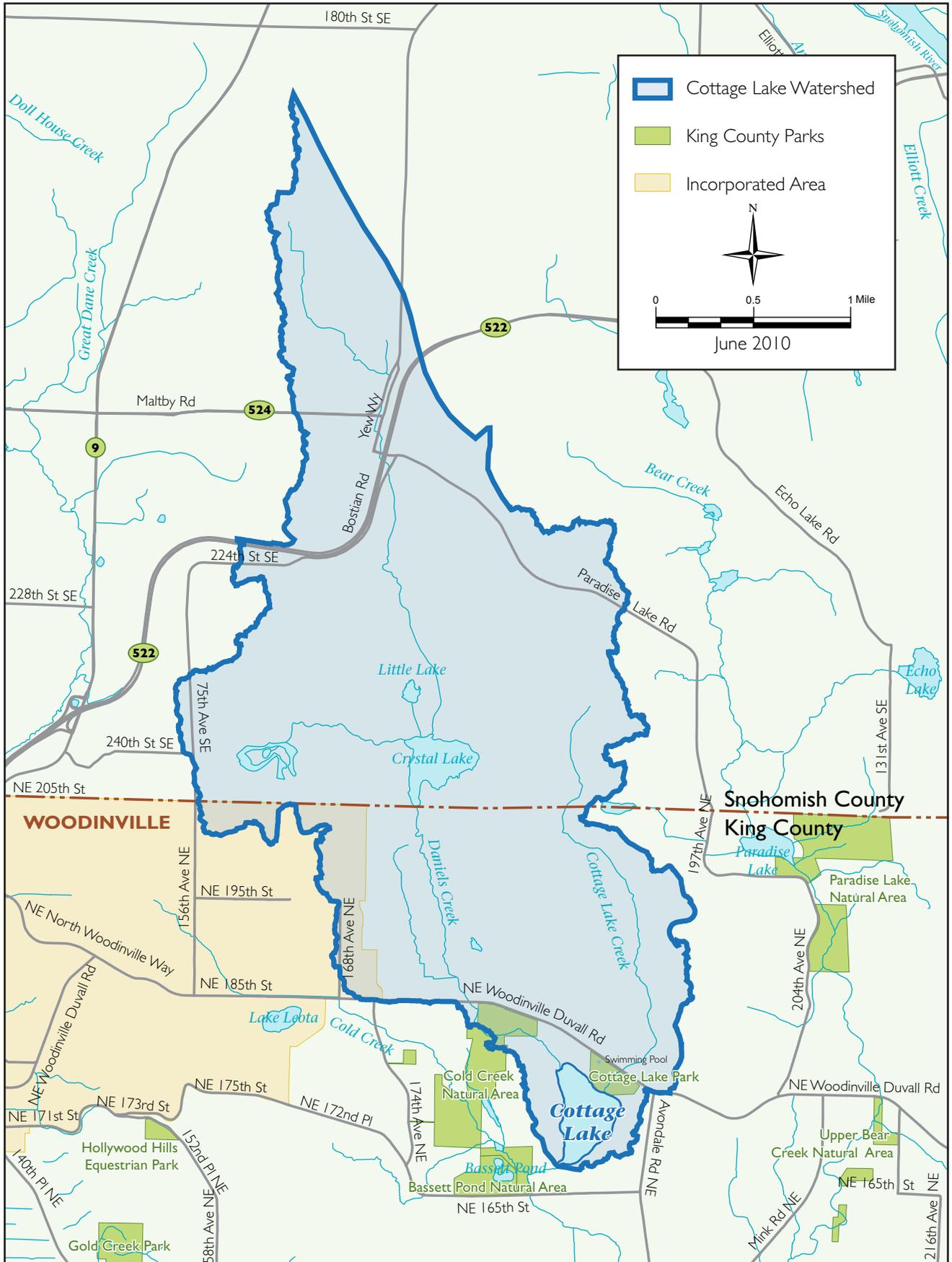
The lake is mapped in the Maltby Quad of the USGS 1:24000 topographic map, which was last updated in 1993. Its township-range location is T26N R06E, in section number 7. The main roads running through the watershed are

the Woodinville-Duvall Road, which originates from State Highway 202 east of Woodinville and runs northeast to Duvall, remaining north of Cottage Lake, while Avondale Road, which originates from Highway 520 in Redmond, runs north to Woodinville-Duvall Road, remaining east of Cottage Lake (See map on following page).

The lake is 63 acres in surface area, with a reported maximum depth of 25 feet (or 6 m). The watershed draining to the lake is approximately 4275 acres, with the majority of the watershed in Snohomish County. There are two identifiable inlet streams flowing into the lake. Daniels Creek originates about 2.5 miles to the north above Crystal Lake in Snohomish County. Its entry into Cottage Lake is in the northwest

corner of the lake. Cottage Lake Creek originates 2.7 miles north of Cottage Lake in a wooded area less than a mile east of Crystal Lake. In addition to the inlet streams and direct runoff from properties, there is significant groundwater seeping into Cottage Lake from the bottom and shoreline.

The outflow from Cottage Lake is also named Cottage Lake Creek, which joins Cold Creek just south of the lake and then merges with Bear Creek at NE 116th, shortly before entering the Sammamish River system. There is a King County park along the north side of the lake at the site of a former resort. It has several amenities, including a swimming pool, fishing pier, park space and a ropes challenge course run in conjunction with the YMCA.



Watershed map for Cottage Lake



Scenes of Cottage Lake

Water quality of Cottage Lake

The data collected by King County between 1995 and 2008 indicate that Cottage Lake is high in primary productivity (a lot of algae) with fair water quality that has remained relatively stable over time. Human impacts to the lake were detailed in the Cottage Lake Management Plan that was completed by King County in 1996, funded by a Centennial Clean Water Phase I grant and subsequently adopted by the King County Council.

Data from different water depths in the lake suggest that thermal stratification is stable through summer, with breezes and storms not mixing the water all the way from top to bottom. Therefore, oxygen becomes depleted in deep water, and phosphorus concentrations build up from sedimentary releases, which then spreads throughout the lake with fall mixing.

The nitrogen to phosphorus ratio is often below 20:1 through the growing season, indicating that bluegreen algae (which can produce toxins on occasion) may be favored over other algae. To date, water samples have yielded the presence of bluegreen toxins sporadically, but the values have not risen to the level of exceeding the Washington State draft guidelines

for recreational safety. Decreasing phosphorus inputs to the lake should allow for some increased control over bluegreen algal growth, although internally generated phosphorus recycling from lakebed sediments may be much harder to manage.

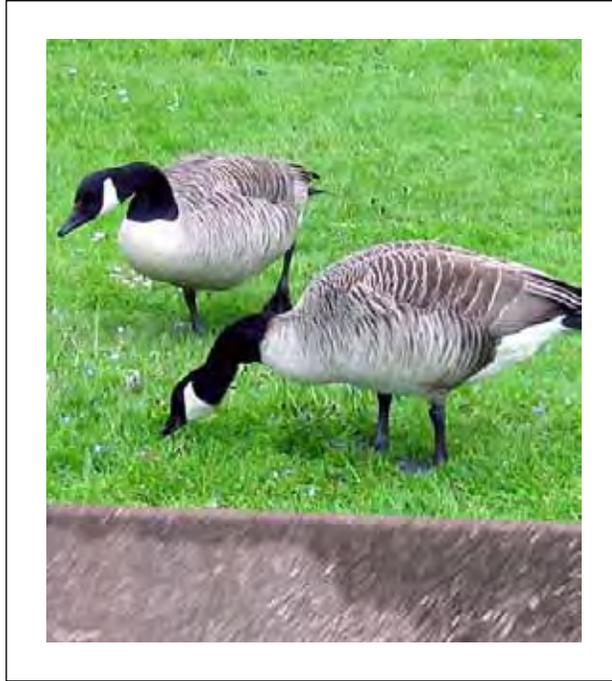
Cottage Lake was first placed on the EPA list of impaired water bodies (the "303d" list) in 1996 for excess phosphorus concentration. In 2004, a Total Maximum Daily Load (TMDL) analysis was completed by the Washington State Department of Ecology that identified major phosphorus sources based on the lake management plan data, set a summer concentration goal of 20 ug/L for phosphorus, and identified how much phosphorus could be introduced to the lake from each source in order to meet the goal. In 2007, a water quality implementation plan was issued that discussed phosphorus pathways in the environment, identified the stakeholders and activities anticipated, and discussed monitoring objectives.

In 2005, Friends of Cottage Lake and King County received funding from the Washington Department of Ecology through the Centennial Clean Water program to work on phosphorus reduction activities, with an emphasis on educational opportunities and shoreline/riparian restoration. Grant-funded activities are due to sunset in June 2011. ■

Internal combustion engines are not allowed on the lake, but there is a small area at the park that allows for canoes and kayaks to be launched. There is also a large fishing pier at Cottage Lake Park and the fishing season is open each year from the last Saturday in April to October 31. It is routinely stocked with rainbow trout by the Washington State Fish and Wildlife Department.

Other recreational activities are available for members of the Cottage Lake Beach Club. The Beach Club maintains a community access point on the lake for dues-paying residents that is not open to the general public.

Most of the watershed located within King County is zoned RA-5, which means one dwelling is allowed per 5 acres of land. Properties immediately to the west and south of the watershed are also zone RA-5. The area is characterized by rural land uses, including hobby farms, with some suburban residential development. There are some commercial properties and churches along the Woodinville-Duvall Road, which are zoned for office and neighborhood businesses. The land immediately to the east of the Cottage Lake watershed is predominantly zoned RA-2.5 to allow for increased density.



Phosphorus in Cottage Lake: we have too much!



*F*eeding the Algae

Webster's Dictionary defines "nutrients" as something that nourishes or a nourishing ingredient in a food. Nutrients are the building materials that algae need from their environment in order to grow and reproduce. The more nutrients plants and algae have, the better they grow.

The primary food nutrients for algae are phosphorus and nitrogen, which they need in addition to the sugars they make in order to grow. Other nutrients necessary in smaller amounts include calcium, magnesium and iron.

In most King County lakes, phosphorus is less available than nitrogen and is called the "limiting nutrient" because as the algae are taking

up nutrients from the water, the phosphorus supply runs low first. When limiting nutrient runs out, the algae must stop growing. This means that when the phosphorus supply in the lake is increased, the algae in the lake can also grow more. This increase in growth, left unchecked in a lake or stream, can result in unsightly and nuisance algal blooms.

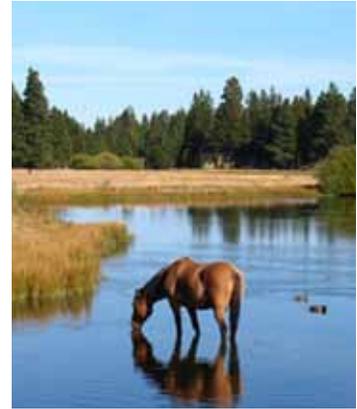
Where Does Phosphorus Come From?

Phosphorus is a naturally occurring element in the environment that is essential to plant growth. It is vital in lakes to help algae and aquatic plants grow, which in turn support a healthy lake ecosystem by providing food and habitat for fish and other aquatic animals. Phosphorus is found naturally in plant and ani-

mal tissue, and we all need some phosphorus in order to live, grow and reproduce. When watersheds are developed, new or modified sources of phosphorus in the landscape can produce big increases in the amount of phosphorus getting into the water:

There are a variety of phosphorus sources to consider. For example, when aquatic plants in shallow water die back and decay in the autumn, phosphorus is released into the water. Aquatic plants are essential as refuge for fish, snails and amphibians, but an overabundance of aquatic plants can mean big phosphorus releases to the water in the fall.

Phosphorus is also excreted by animals as part of their feces. This can create a problem if the waterfowl population becomes very large. Big-bodied animals such as horses



Some sources of phosphorus in the watershed

and cattle can also release phosphorus through their feces into water bodies, particularly when they have direct access to a stream or lake, or if the runoff from their pastures enters nearby surface waters and their excreta are not picked up and collected into managed manure piles. Domesticated pets can also be contributors if their droppings remain in places where they can wash into the surface waters.

Failing septic systems can contribute phosphorus from human feces to nearby surface waters. Some synthetic detergents and other cleaning agents still contain soluble phosphorus. Soaps and detergents flushed down the drain into a septic system can end up in nearby waters when the binding properties of the soil can't hold any more phosphorus. Washing your car at home can also contribute nutrients from the soap and the car surface into nearby surface waters through storm drains. Fertilizers also contain soluble phosphorus and when improperly used in our yards, they can wash into our lakes and streams.

What Does It Do?

All this extra phosphorus encourages nuisance algae blooms and excessive plant growth in lakes. When phosphorus increases greatly over

the natural concentrations, the resulting algae can severely impact recreational uses. For example, activities such as swimming, boating and fishing all can be affected by algae blooms, both in terms of enjoyment and even health and safety.

Not only can excessive phosphorus hinder beneficial uses for humans, it also changes lake processes. Cloudiness caused by the algae shades the water and changes conditions for plants and animals that use vision to catch prey. Bacteria decomposing algal remains use up oxygen in the water that fish depend on, particularly in the cool deep habitats that trout love. If blue-green algae blooms become dominant, there is also the possibility of toxin production that could affect the health of animals and humans.

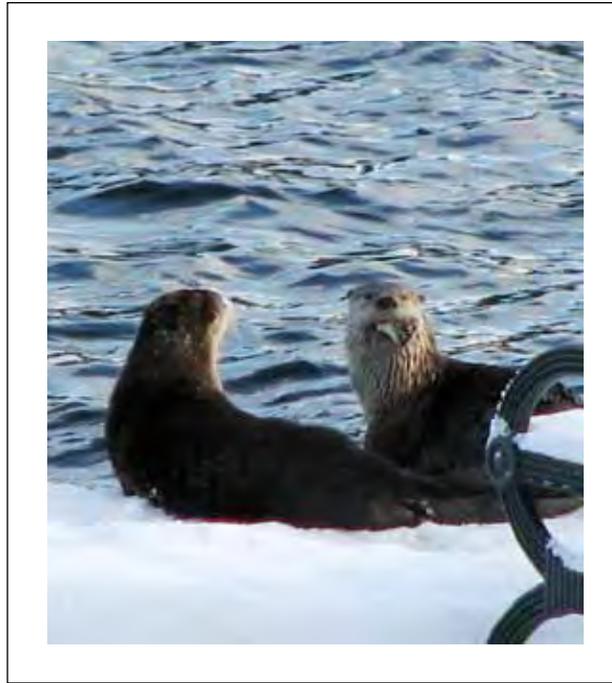
What Can You Do?

To minimize the amount of phosphorus your own activities may be contributing to nearby water, there are a number of very helpful things that people living in the watershed can do:

- **Minimize use of phosphorus cleaners.** Clothes-washing detergents have been phosphorus free since the 1970s, but other cleaners often still contain it. A ban on phosphorus in dishwashing detergents goes into effect

across Washington State soon, but there are P-free products available now. Read the labels to see which products contain phosphorus and try the ones without it. With our soft water, they should be very effective.

- **Wash your car at a car wash** that recycles its water, keeping soaps and road dirt out of the surface waters of the watershed. If you must wash your car at home, use water only.
- **Use low or no phosphorus fertilizers** on your lawn. Grass needs nitrogen and potassium in fertilizers to become lush and green. It doesn't need the phosphorus for good color or leaf production and the excess phosphorus will leach out when you water, getting into streams and lakes.
- **Don't dispose of grass clippings in or near water.**
- **Don't feed the geese and ducks.** They will congregate on beaches near good food sources and their feces will wash into the surface water and eventually into the lake.
- **Scoop your pet's poop** and dispose of it in the trash or into the septic system.
- **Keep your septic system maintained and functioning properly.** Have it checked every three to five years and don't put anything down the toilet that the system



Along the shoreline



Lake shorelines are special places in the landscape, where human recreational activities, natural environmental qualities and ideals of aesthetic beauty all meet. Because there are so many different needs and uses for shorelines, as well as differing opinions about them, there are often disagreements about how they should be managed and preserved. The following includes a general discussion of the permitting framework that King County uses for the shorelines of Cottage Lake, some information on docks and bulkheads and a section on how to deal with hazard trees.

Shoreline regulation and Management

King County initiated special shoreline management through assess-

ment and permitting in 1975 with the completion and acceptance of the first Shoreline Master Program (SMP) for the county following passage of the Shoreline Management Act in 1971. Cottage Lake was included among the lakes listed for shoreline management for the first master program. This action invoked extra regulatory considerations of project proposals on land near or adjacent to the shorelines of Cottage Lake in order to maintain their ecological functions, while still allowing some water-dependent uses such as boating and swimming activities.

The county is currently updating the original Shoreline Master Program, and Cottage Lake will be included in the revised program once it is accepted as one of the county lakes larger than 20 acres in surface area. However, state guidelines for the master program

updates include a requirement that the Shoreline Master Program, while allowing for water dependent uses, should not be less protective than the Critical Area Ordinance (CAO) in effect, so it is likely that the transition in regulation from CAO to SMP will be hardly noticeable for property owners. Dock and bulkhead requirements may differ somewhat from past policies based on county experiences with regulating under the CAO.

How Docks & Piers Affect Shoreline Areas

Building docks and piers from the shoreline out into the water makes it easy to moor small watercraft as well as providing a place for diving directly into the water when going for a swim. People also simply enjoy sitting out on their docks on sum-

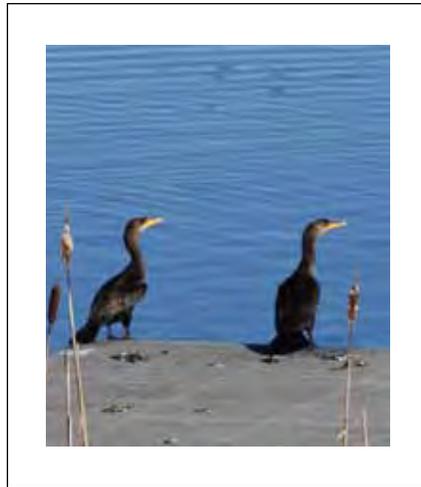
mer evenings, enjoying the cooling breezes and light reflections that come off the water.

However, docks can have direct impacts on the animals and plants living in lakes, both as structures that shade the water and impede movement, as well as the inadvertent introduction into the water of hazardous products that are used to preserve and maintain them. In addition, vegetation is commonly removed in order to build or maintain docks and armoring of the shoreline may be included as part of the structure as well.

Fish have complicated reactions to docks and piers. Native vegetation overhanging the water often sheds small bits of debris, including insects that provide meals for many small fish. In addition, small fish such as young trout rely on a complex structure of submerged tree branches, root wads and other forms of natural cover along the shoreline as refuge from predators. Docks and piers are relatively simple structural elements that provide very little protection for small creatures. In fact, piscivorous fish such as bass will use the shade from docks to conceal themselves from small fish before they attack, thus giving the predators a big advantage. Blockage of both water movement and light can disturb the ability of aquatic plants to grow in the shallow areas under the dock, can affect sediment processes and may disturb bottom dwelling animals as well.

In lakes where motors with propellers can be used, docks can also promote localized sediment erosion due to the increased boat traffic coming in to land.

There are a number of design features that can be built into docks to reduce the impact on the shoreline, water, animals and plants of the lake. These include:



Cormorants on Cottage Lake dock

Dock Maintenance



Remember, when it's time for periodic maintenance, existing docks can be made more lake-friendly by replacing some of the decking with surface grating.

Many wood maintenance products contain toxic chemicals, since their purpose is to reduce the natural process of decomposition. Spilling these chemicals into the water can definitely have impacts on the animals of the lake. There are a number of oil products on the market now that are advertised as "natural deck oils" which do not contain toxins and rely in filling the wood with oils/resins to drive out the water needed by decomposers and preserve it over time. ■

- building narrower ramps and structural pilings
- using materials other than wood that are stronger
- using larger spans between pilings that allow more water movement as well.
- leaving off skirts or fascia boards to let more light in under the dock
- adding light permeable elements on the deck such as surface grating will reduce shading.

Deck grating is made either from wood such as teak or ironwood (which does not need chemical treatment) or from recycled plastic lumber that comes in a variety of colors to match the rest of the dock. The surface is non-skid – and splinter-free. Homeowners like its low maintenance and durability.

Bulkheads and Shoreline Stabilization

Bulkheads or armoring are man-made structures constructed along shorelines to reduce shoreline erosion or, in some cases, as a design element to make the property look tidy and under control. Construction materials commonly used include wood pilings, large boulders stacked to form walls, or hard surfaced walls built of concrete or another similar material.

Although they are generally considered a form of shoreline protection, studies over the past few decades have shown that bulkheads can actually increase erosion of the shoreline waterward of the bank armoring by changing the energy, direction and movement of wave action, particularly in areas that are downwind from the prevailing winds. Such changes in sediments can negatively impact the fish and wildlife habitat associated with offshore shallow areas, as well as the adjacent land and vegetation.



On the lake: natural shoreline, summer fun, and partial bulkheading

Increased scouring action can transform a silty, organic, or sandy bottom into one composed of larger rocks such as cobble or hard clay. Changes in sediment will affect the plants and animals that can live there. Over time, scouring can also lead to sediment buildup under bulkhead footings, thereby causing these structures to become more vulnerable to failure. In addition, bulkheads may direct wave and water energy to adjacent neighboring properties, causing erosion problems that did not previously exist.

Bulkhead construction often entails the removal of plants that are stabilize bank soils and contribute organic matter to shoreline areas, thereby also reducing habitat quality for fish and wildlife. Bulkheading may also permanently prevent regrowth of native shoreline vegetation, which often shades the ground and water beneath it, creating the necessary cool, dark refuges that certain fish and other wildlife need to survive and reproduce.

Better Alternatives to Shoreline Armoring

Natural shorelines are a great model to look for ways to enhance nature's ability to absorb energy and stabilize the shore, while introducing the designed look that many property owners want

to achieve. Setting back structures from the shore in combination with preservation or revegetation of a designed native plant buffer can be an important part of these plans. Slopes are naturally vulnerable to erosion simply through gravity on rainfall. Allow for a natural beach contour free of hard structures for greatest benefit.

Retaining and planting native plants along the shoreline has many advantages:

- The roots bind soils and help buttress and stabilize slopes.
- Branches and leaves shade underlying areas, thereby helping maintain temperature that certain wildlife need to survive and reproduce.
- The leaves and bark provide habitat for terrestrial insects that are important food sources for aquatic organisms, including salmon that forage along our freshwater and marine shorelines throughout the year.
- The leaves deflect raindrop energy and help reduce the erosive effects of surface runoff on slopes.
- They provide escape cover in which fish and wildlife can evade predators, as well as perching and roosting sites for terrestrial

wildlife to rest and search for food.

- Native plant shoreline buffers help filter pollutants in stormwater such as lawn fertilizer.
- Native plants are naturally drought resistant, requiring less irrigation water to thrive.
- They enhance the natural beauty of the property, while strategically placed trees can frame and actually improve views from the house.
- They do not change the natural rates of sediment input and transport along beaches.
- Even after death, the remaining woody debris continues to provide benefits to shoreline areas. This is part of the natural cycle of life at the water's edge.

Understanding trees: up & down, in the water & out

During our often windy Northwest winters, trees can blow down, which can be a serious safety problem. Susceptible or diseased trees that could fall on property or people, often known as "hazard trees," can be dealt with in advance. Yet, as we know, healthy trees can

also be blown down even in their prime at the whim of the wind. This poses a particular challenge for lake side dwellers, since their properties include the fragile, highly regulated edges of some of the most important natural resources in our county.

Lakes and their upland edges are considered “sensitive areas.” For a variety of environmental reasons—including water quality, water storage and wildlife habitat—it is especially important to make sure trees are not moved unnecessarily in these areas. Logs and branches that have fallen into the water can make excellent habitat and refuge for many creatures, as well as provide underwater structures that can slow down erosion and sediment movement along the shoreline.

If a tree falls...do you need a permit to move it?

Prior to removing a tree, check to make sure no permits are required from the King County Department of Development and Environmental Services (DDES) and/or other local, state or federal agencies.

If a tree falls down and does not obstruct anything, the best thing to do is leave it to become a wildlife tree. However, if a diseased or downed tree poses a safety or structural damage risk, the King County Code states that you may remove it without a permit as long as report your actions to DDES immediately. Also note, that once a tree falls into a lake it is considered habitat; removing habitat requires a Hydraulic Project Application Permit from the Washington State Department of Fish and Wildlife.

It is important to know that DDES addresses each situation individually. There is no blanket rule for dealing with trees at risk of falling, and it is important to contact DDES prior to any tree removal within a sensitive area.



Fall colors and wildlife snag

Trees can be down, but not totally out

Is the damaged or downed tree out of the way? Not threatening structures or safety? Snapped off eight or more feet above the ground but otherwise sound? Partially submerged in a lake or stream? If it is, consider leaving the tree for the numerous native wildlife species that make good use of dead and dying trees.

Pileated woodpeckers, wood ducks, hooded mergansers and chickadees nest in cavities of dead trees, also known as “snags.” Kingfishers, eagles and osprey search for fish from branches overhanging the water; while juvenile salmon and trout hide in tangled underwater branches, and bats roost under loose bark on decaying snags. Once decay starts, wood boring insects move in and attract many other species who feed on them, from woodpeckers to raccoons.

Working with a tree service provider, experienced in creating wildlife trees, can be a win-win. A chainsaw in the right hands can simulate all sorts of natural habitats and bring wildlife to you without danger. To locate a company near you, contact the Plant Amnesty referral service at 206-783-9813 or go to www.plantamnesty.org.

Hazard Tree Recognition

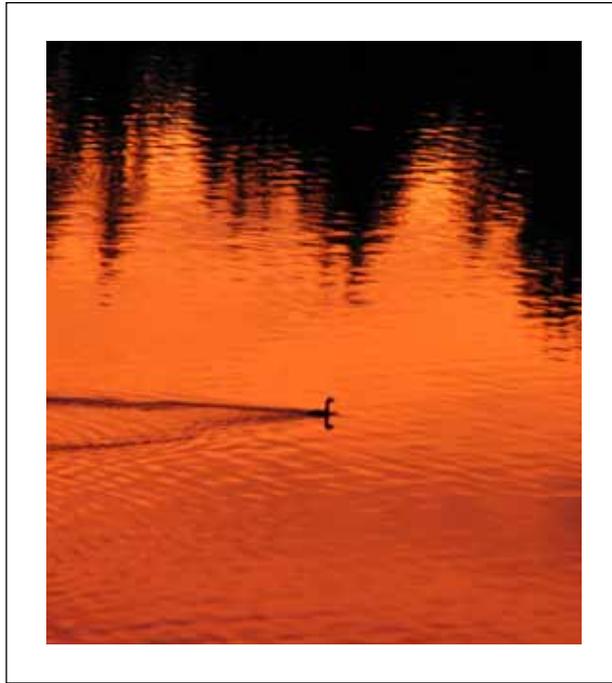
Trees, or parts of trees, that are structurally weak may pose a threat to people and property. Check trees near your home for the following signs:

- Dead or dying, poorly attached limbs.
- Leaning trees or cracks in soil around the base, which indicates root movement.
- Old wounds and obvious signs of decay (fungal conks, hollow trunks).
- Shortened height of new growth or sudden large crop of cones.
- Signs of root damage (including compaction, fill over the root zone, or eroded, exposed roots with foot traffic marks).
- Yellowing, reddening or thinning foliage. (Some discoloration and loss of older foliage is normal in the fall. This may be more pronounced in drought years and in pines and cedars.)

If the problem is confined to a single branch, corrective pruning may solve the problem. If all or most of the tree is affected, removal may be necessary. Trees that exhibit symptoms of overall decline can rarely be saved.

For more information, call the Washington State DNR Forest Health Program at 360-902-1300, e-mail forest_health@wadnr.gov or ask a certified arborist.

For King County DDES, go to <http://www.kingcounty.gov/property/permits.aspx> for more information. ■



Tips for keeping your lake healthy



The following text includes a variety of tips on household activities and products that will keep your rural property attractive, cared-for and won't add to problems in the nearby lake!

Use Low Impact Gardening and Lawn Care

The lush green lawn concept originated on the east coast of the U.S. where frequent summer rains kept the open spaces regularly watered and growing freely. However, in the West where we commonly have summer droughts, keeping a lawn looking good can still be accomplished by using some lake-friendly practices. With some simple techniques, you can be well on your way to a healthier garden and lawn, while reducing your impact on Cottage Lake. Here are some tips to get you started:

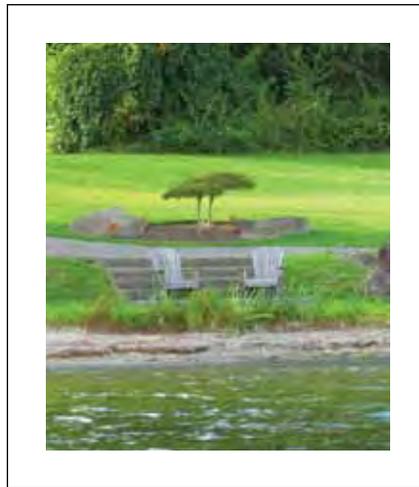
- **Reduce the size of your lawn** to the area you actually use frequently and replace the turf with native plants that provide habitat for wildlife and make landscape pictures for you to enjoy year-round from the house, as well as the street. A good resource for learning about native plants can be accessed online at <http://green.kingcounty.gov/GoNative/Index.aspx>
- **Add Pavers.** Make your garden look designer-perfect by installing paver steps and grasscrete instead of solid concrete or asphalt driveways and walks. Edging of flower beds with cobble or untreated wood and fences of natural materials can finish the look and fit in with the charm of the rural neighborhood.
- **Plant native plant shoreline buffers** to help

filter pollutants in stormwater such as lawn fertilizer.

- **Install a rain garden.** If you have a low spot on your property, consider installing a rain garden—an area that is designed and planted with rain collection and percolation in mind. The soils are modified to increase rain penetration and plants are chosen with occasional standing water in mind. You can direct runoff to the spot and reduce the amount of rain that leaves your property and runs directly into the lake by creating free-flow, ditches or pipes. Information on rain gardens in the northwest can be found at <http://www.pierce.wsu.edu/Lid/index.html>
- **Only water once a week.** If you water, do it thoroughly and only once a week. Place tuna cans here and there in

the sprinkler range and continue watering until an inch of water has collected in the cans. This will also let you know if your sprinkler is applying the water evenly over the lawn area; you can make adjustments if it is spotty and places are being missed.

- **Improve lawns with aeration** and overseeding in the fall or spring. Aeration gets needed oxygen to the roots of the grass and increases water penetration. Thick turf behaves like an impervious surface and can actually prevent water from percolating downward. Aeration will help compensate for this and will encourage healthy root growth, which will make grass less dependent on summer watering. Overseeding will reduce bare patches and replace older grasses that have stopped growing well. Doing this during seasons when there is more rain and mild temperatures will encourage new grasses to sprout and grow.
- **Become a “grass-cycler”** by setting your mower on “high” and leaving those grass clippings behind, which as they dry and shrivel will settle between the growing blades and will decompose to recycle nutrients back to your lawn. Mulching mowers work best for this, because they shred the clippings into very small pieces that compost in place.
- **Get your soil tested** to determine how much fertilizer you need. Most soils in the Pacific Northwest have sufficient phosphorus already present and do not need any more applied. Excess phosphorus will run off the lawn with watering and will drain into Cottage Lake. Nitrogen is the nutrient most needed by grass in our area for a good green color and healthy growth, and luckily, it is usually available



Partial shoreline armoring

NOTE: In 2011, it will be illegal in King County to apply chemical fertilizers containing phosphorus on your lawn unless a soil test has shown your soil is deficient in that nutrient, or you are establishing new turf. ■

in excess in fresh water bodies here, so more added to the lake will not have a such major impact.

- **Apply fertilizer sparingly.** If you need to fertilize, apply it moderately in September and May and use natural organic, slow release fertilizers – these will provide small steady doses of nutrients as grasses need them, during the periods for best growth.
- **Sweep up any fertilizer** that has spilled on hard surfaces such as walks and driveways. Otherwise, the nutrients (especially the phosphorus) will be carried by water directly to the lake and give the algae a meal.
- **Use pesticides and herbicides only as a last resort:**
 - o Read labels carefully; most will specify use restrictions for

waterfront areas because of their potential harm to nearby fish and wildlife.

- o Do not apply pesticides when it is windy to avoid the possibility of it drifting off your target and landing where it can cause harm.
- o Use the least toxic and most readily degradable pesticide – those with “caution” on the label are considered least toxic whereas the word “warning” indicates moderate toxicity.
- o Purchase only what you need to control the problem for the current season; it’s not good to store pesticides long term and accidents can happen.
- o Dispose of pesticides properly – make sure to take them to a household hazardous waste drop-off site, like the Waste-mobile or the nearest King County receiving site.

NOTE: Many products found in homes can be harmful to lakes and are considered corrosive, toxic or flammable. Common offenders include oven cleaners, floor wax, furniture polish, drain cleaner and spot removers. Check for the following toxic components on the label of these household products:

- lye
- phenols
- petroleum distillates
- trichlorobenzen

Home maintenance products such as paints, preservatives, strippers, brush cleaners and solvents also contain a wide range of manufactured chemicals as well, some of which are suspected carcinogens. ■



Things you can do to keep your lake healthy: be a grasscycler, use fewer pesticides, and choose your cleaning products carefully

For more information, go to <http://your.kingcounty.gov/solidwaste/naturalyardcare/lawncare.asp>

Learn about the Chemicals in your Daily Life

At Home

There are some common sense alternatives to store-bought chemical products and the recipes below can be used to make them, along with some suggestions for their best use.

All-purpose household cleaner:

- 2 quarts water
- ½ cup household ammonia
- ½ cup white vinegar
- ¼ cup baking soda

This can be used to clean countertops, windows, walls, appliance faces, sinks and many other surfaces.

Laundry Bleach:

½ cup of borax per load of laundry will whiten and remove spots. If you need to use a bleach, use an "oxygen bleach" like sodium perborate instead of chlorine bleach (sodium hypochlorite or sodium dichloroisocyanurate). You can find these names in the ingredient list on the label.

Drain Cleaner:

Pour the following down the drain:

- First add ½ cup of baking soda
- Follow with ½ cup vinegar
- Cover and let sit for 15 minutes, then rinse with 2 quarts boiling water. Treating drains once a week with the recipe above will prevent problems and keep your drains smelling fresh. For a bad clog, remove the trap and clean out the obstruction with a plunger or a plumber's snake.

Oven Cleaner:

- 2 tablespoons of borax or baking soda
- 1 gallon of water

Wear gloves and scrub with very fine steel wool. For difficult baked-on spots, try scrubbing with pumice (available at hardware stores.) As a last resort, use an aerosol oven cleaner that includes the statement "No caustic fumes" on the label.

Purchased Home Maintenance Products

If you need to use products containing any of the substances on the list in the blue box to the near left, read the label carefully and use the product precisely as directed, wear appropriate protective clothing and always have good ventilation in the space where you are using the product.

Important consideration: these products should never go down the drain or be thrown out in the trash. Dispose of them at a hazardous waste site.

In Your Car

Cars are wonderfully useful and our modern life often depends on them. However, they do have an environmental cost. Motor oil, battery acid, gasoline, car wax, engine cleaner, antifreeze, degreasers, radiator flushes and rust preventatives are all common car care materials and they all contain toxic chemicals.

Many people still change their own oil and some even pour it down the nearest storm drain, directly polluting nearby waterways. You can now recycle your oil by putting it in a sturdy container like a plastic milk jug, and taking it to nearly any waste transfer station. Antifreeze can also be taken to transfer stations for disposal.

Safer alternatives for car care products:

Automotive Antifreeze

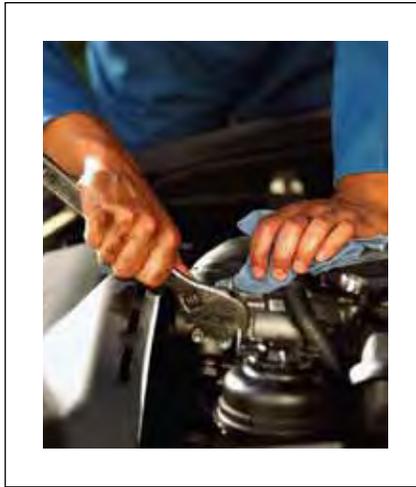
Propylene glycol-based antifreeze is significantly less toxic than ethylene glycol-based products. Ask for it or check the ingredient label when you buy antifreeze.

Automotive degreaser

Use water-based cleaner such as Simple Green or a citrus-based product. Look for the words “non-toxic,” “biodegradable,” or “non-flammable” on the label.

For grease spots on the garage floor: sprinkle kitty litter or corn-meal on the spot, sweep up after several hour and dispose of it in the garbage

Even better, take your car to a service station nearby and they will take care of recycling and disposing of all your cars fluids and parts so you don't have to worry about it!



Quick tips for handling and disposing of household chemicals

(from The Lake Book, 1992)



- Read the label at least twice before buying – find out exactly what is in the product and what the potential hazards may be.
- Always store products in their original containers so the label can be referred to whenever the product is used.
- Choose alternative, less harmful products whenever possible.
- Use the least toxic product you can find and never buy more than you need.
- Dispose of all household chemicals at a King County Hazardous Waste site. ■

Disposing of household chemicals

Cottage Lake residents can take products containing toxins to King County Household Hazardous Waste. To find a location near you and what can be accepted at King County Household Hazardous Waste sites go to the following website for more information: <http://www.govlink.org/hazwaste/house/index.cfm>

Maintain your Septic System

Homeowners new to rural living may not be used to having a sanitary septic system receiving their wastewater instead of a sewer line that leads to a treatment plant many miles away. The whole concept of on-site wastewater treatment may be a new idea to them, and sometimes information is not provided on what they as country homeowners are expected to do.

Septic systems can work well, but there are a few basic rules and activities that must be followed to keep them in top shape and functioning the way they are designed. By treating your septic system properly you can save money on costly repairs, or worse yet, replacing your entire system. They need a regular schedule of inspection and maintenance.

Septic systems are sized and designed to fit the number of residents expected to live in a home. This usually means that the number of bedrooms in the house is the key to understanding how many people can use the system on a daily basis for proper functioning. If you have 10 people routinely using the waste water facilities in a house with two bedrooms, your daily activities may be overloading the system and you may be headed for problems.

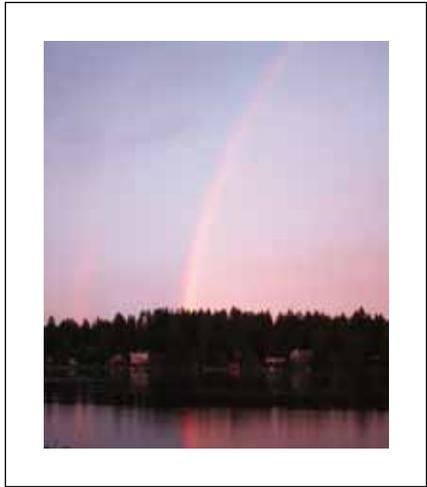
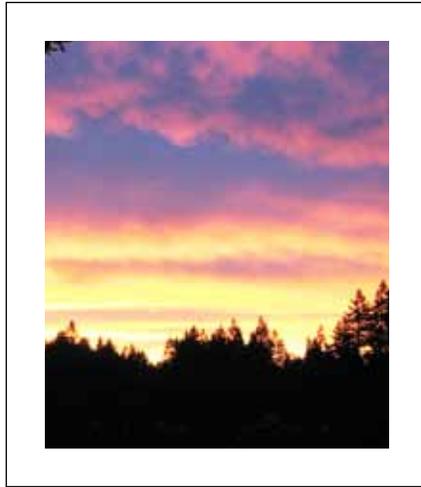
What exactly is a septic system?

A typical septic tank is a buried, watertight container made of concrete, fiberglass, or polyethylene that is designed to pre-treat domestic wastewater that is sent to it by means of outlet pipes from the home.

It clarifies wastewater by holding it long enough to allow for solid material to settle out (sludge), be reduced by bacterial decomposition, or float to the surface (scum). The clarified wastewater is then pushed out of the tank and into the accompanying drain field for further treatment every time new wastewater enters the tank.

Helpful hints to make sure your septic system works properly:

- **Have your septic tank checked** by a professional service every two or three years and cleaned or pumped out when necessary.
- **Use phosphate-free, liquid detergents** and wash only full loads of clothes. Schedule running your washer a number of times throughout the week to avoid overloading the system on any one day with



Beautiful Cottage Lake; let's keep it that way!

multiple loads, which can push water out of the tank and into the drain field before solids have been treated in the tank.

- **Use water-saving shower heads** and flushing toilets to decrease the amount of water entering your septic system.
- **Do not use kitchen sink garbage disposals.** They increase the amount of solid material entering your septic tank and contribute to drain field failures.
- **Do not use commercial septic system additives.** Keep all solvents and chemical cleaners out of the system.
- **Do not dispose of plastics** of any kind, Q-tips or tissues (other than the necessary toilet paper), diapers, feminine products or any other similar items down the toilet and into your septic system. There is a tradition started many years ago of posting folk poems in bathrooms to remind (and inform) users of what can and cannot go into a septic tank for treatment. There are many variations and it's easy to find different versions online. Here's one example that gets the message across in a light-hearted way:



Those of us with
septic tanks,
Would like to give a
word of thanks,
For putting nothing in
the pot
That isn't guaranteed
to rot.
Kleenex is bad,
cigarettes too,
Feminine products
are taboo,
No hair combings -
use the basket.
There's a darn good
reason why we ask it!
With your kind
cooperation
We'll keep our tank in
operation!

- **Do not pave or park on your drain field.** The soil above the field needs to breathe to work properly and compaction or impervious surfacing will cause problems.
- **Do not plant large trees and shrubs over septic tanks or drain fields.** The water-seeking roots of these plants can damage the system. Grass and small plants will work better and allow for easier access to the tank and drain field for maintenance or repair.

What can you look for as indicators that your septic system might be failing?

- **Offensive odors,** surfacing fluids looking like sewage, wet spots or especially lush vegetation over the drain field (especially in summer dry conditions when the rest of the yard is brown)
- **Toilet back-ups** into the tub or shower
- **Slow-draining toilets** or sinks (but check first for clogged pipes).

For more information on your septic system and trouble-shooting tips: <http://www.wsg.washington.edu/mas/pdfs/SepticSense.pdf>



Cottage Lake Park

Cottage Lake plants: the good, the bad, and the microscopic

There are numerous signs of life everywhere you look when you live in the country. Plants sprout, grow and bloom, followed by shedding leaves and dropping fruit as the seasons change. Birds sing, fly overhead and bounce in and out of shrubbery. Squirrels and mice scamper through the grass to find food and shelter, while the occasional deer nibbles on your favorite garden ornamentals and vegetables. Bears may browse through your garbage cans, raccoons eat from the pet dishes and moles are very busy underground.

There are plenty of earth-bound plants and animals to hold your interest through the year, but there are also other worlds of creatures living in the water of Cottage Lake, from organisms too small to see with the naked eye, to sizeable fish

and mammals such as beavers and muskrats.

This section will introduce you to some of the good and “not-so-good” (from a human or ecological perspective) animals and plants that use the lake or call it home.

Green Links in the Chain of Life

In fresh water, algae are very small to tiny aquatic plants that grow either as single living cells, in variously-shaped colonies, or attached end-to-end in long filaments. Their shapes, forms and colors can be very beautiful when viewed under a microscope.

Algae are one of the first links in the aquatic food chain, using sunlight, dissolved gases and water

to make and store energy. They also take up inorganic nutrients to use for growth and reproduction, such as nitrogen and phosphorus compounds. Algae make good food for microscopic aquatic animals called zooplankton, which in turn are food for many fish and other larger aquatic animals. Algae also give off oxygen into the water as a by-product of photosynthesis, which aquatic animals can use to breathe. However, when large quantities of algae or aquatic plants die, the bacteria that decompose the cells can rob the water of that oxygen, taking it away from other lake organisms.

An algae bloom is a sudden explosion of algal growth, typically encouraged by good weather conditions and abundant available nutrients in the water.

Quite often one or two species will out-compete the others present to become the predominant form in the group. Most algae blooms die back naturally as conditions change or as nutrients are used up, but overlapping blooms of different species can appear as one continuous bloom over time to lake users. King County lakes can experience blooms throughout the year, but the onset of warmth and sunlight in the spring and summer and the wind mixing of deep water nutrients up to the surface in the fall are all common triggers for blooming.

Blooms usually last several weeks, then “crash” as conditions change to slow down growth. Some algae are buoyant, occasionally causing colorful scums to form on the water surface, particularly along the downwind shorelines where they can accumulate. Certain species are known for causing unpleasant smells or tastes to the water. In rare instances, the species producing an algal bloom may produce toxins, causing stomach aches in people who ingest the water or unexplained illness and even deaths among small wildlife and pets.

Toxic Algae

Cyanobacteria, formerly known as bluegreen algae, are actually more closely related to bacteria than to algae. These ancient organisms are found among the first fossilized signs of life preserved in rocks on earth and species have persisted up to the present in a variety of wet or humid habitats. They are similar in size to algae, and like algae, can convert light in the presence of the pigment chlorophyll to carry out photosynthesis, capturing energy by making sugars for cell growth and metabolism. Cyanobacteria also have other special pigments that aid in photosynthesis, which can turn them a variety of colors, including blue-green, bright green, brown, olive green, reddish-brown and maroon.



Bluegreen algae

The bluegreen genera *Anabaena*, *Aphanizomenon* and *Microcystis* are among the most commonly found bluegreens in lakes of the Puget lowlands during the summer. All three can produce toxins on occasion that may cause liver or neurological damage to mammals. The toxins stay inside the cells until released by cell death or rupture. This toxicity can remain in lake water from a few days to a week after a bloom disappears.

Signs of toxic damage to the liver include jaundice, shock, abdominal pain and severe thirst; while signs of neurological toxins include staggering, paralysis and involuntary muscle movement. Both types of toxins have been reported to kill fish, waterfowl and animals. No confirmed human deaths in the United States have been reported from contact with a toxic bloom, but skin irritation and gastroenteritis have been documented.

The mere presence of cyanobacteria does not mean toxic conditions are present, as most blooms appear not to produce the toxins or only in trace amounts. However, there is no change in appearance between a toxic and nontoxic bloom. Specific testing must be completed to make the determination as to whether or not a bloom presents a health and safety risk. Because

Be algae aware



Cyanobacteria blooms can look like green, blue-green, olive, red-maroon, or brownish paint spilled across the surface of water. They are buoyant and can be blown downwind to accumulate along a leeward shoreline.

If the lake water looks like pea soup or has an unusual color or offensive smell, it is probably undergoing an algal bloom that might be dominated by cyanobacteria. If an algae bloom is spotted, take these steps:

- Call the Washington State Department of Ecology freshwater algae program at 425-649-7288 to report the bloom and ask for a toxicity determination.
- Rinse your skin with tap water immediately after contact, especially if swimming in an algae-filled lake and dry off vigorously with a towel.
- Never drink untreated lake water, regardless of its clarity or algae content. Keep animals and livestock from drinking the water if scum is visible along the shoreline.
- Stay out of the water if a bloom is present, especially small children and animals who are more susceptible to the toxins.
- **NOTE:** If you, your child or animal come in contact with a suspicious algae bloom, consult a doctor or veterinarian as soon as possible and be sure to mention the algae bloom. ■



Cottage Lake aquatic plants: submerged coontail, wetland rushes, and quillwort

of the expense, toxicity testing is often limited to those lakes where other signs of toxicity have been observed. Studies are underway to understand whether environmental conditions or genetic background are better determinants of what causes the cyanobacteria to produce toxins.

Macrophytes: plants along the shoreline and in the water

Aquatic plants growing in shallow water and along the edge of a lake play significant roles in the delicate system of ecological checks and balances. Native plant species, which evolved along with other plants and animals in the Northwest, offer many benefits for healthy lakes. They provide food and shelter for fish and wildlife, stabilize shorelines, produce oxygen in the water and keep sediments from being re-suspended in the water. Native aquatic plants also add to the natural beauty of lakes.

Branches and trunks of terrestrial plants that fall into the water can also provide shade and refuge for fish, turtles and amphibians such as frogs and salamanders, as

well as a place to attach for many microscopic aquatic creatures such as rotifers and juvenile stages of insects. There can be whole unseen worlds of small creatures in and around rocks and large wood. Late in the summer, freshwater sponges and colonies of bryozoans (relatives of marine corals) can make jelly-like masses attached to underwater branches or logs. Bryozoans may even be found free-floating, looking like clear, squishy baseballs.

There are many different aquatic plant species found in our regional lakes, including plants that have floating-leaves, are grass-like, may be fully submerged and or only have their “feet” in the water. A good source for identifying the plants in your lake is an easy-to-use handbook published by the Washington State Department of Ecology in June 2001 as publication number 01-10-032, entitled “An Aquatic Plant Identification Manual for Washington’s Freshwater Plants.” Information on acquiring the manual, as well as an online version can be found at <http://www.ecy.wa.gov/Programs/wq/plants/plan-tid2/index.html>.

In addition, a visual key created by the King County Noxious Weeds Program to identify common plants found in our area lakes is included

with this booklet to get you started in identifying a plant that has caught your eye.

Aquatic plants are necessary to the well-being of lake ecosystems, but they can also grow out of control when changes to the system occur that interrupt the balance of life in the lake, such as invasions of non-native species, new diseases or predators, large-scale plant management efforts or increased nutrient sources.

When unidentified plants suddenly begin to grow prolifically, possibly out-competing other plants and even causing problems for those who live around and use the lake, they may well be non-native and invasive, a sign of trouble to come.

Non-native species can cause a number of different problems in lakes:

- By crowding out species that provide quality food and shelter for aquatic life, they can lower fish growth and reproduction, causing fish populations to become unhealthy or decline in numbers.
- Plant masses can form large, loose mats over the water surface, which can entangle boat motors, rudders and oars, as well as posing a danger to swimmers.

- When they die back in the fall, bacteria decomposing the plant material can reduce oxygen levels, release nutrients and impart an unpleasant smell and taste to lake water.
- Nutrients released from decaying aquatic plant material become available for algal growth, sometimes causing additional water quality problems.

How Weeds Spread

Weeds are aggressive plants that can escape backyard gardens and ponds with the help of birds or by hitchhiking on tires, shoes, or animals. Boats and boat trailers may carry plant fragments between lakes and thoughtless dumping of aquarium into the water can introduce exotic aquatic plants to lakes. In addition, natural water flow moves weed seeds and fragments down stream to other areas.

Both non-native and native aquatic plants can grow faster and denser than normal when too many nutrients enter a lake. These nutrients come from many sources: failing septic systems, runoff from fertilized lawns and gardens, animal wastes, stormwater runoff and erosion from construction sites. Nutrients and soil from these sources help to enrich lake bottom sediments, providing "fertile ground" for aquatic plants. With all this extra plant food, aquatic plants can grow rapidly and become a nuisance.

Prevention

- **Build water gardens away from lakes** – choose a site that is isolated from any potential flooding situations and make sure your ornamental pond does not drain to the lake at any time.
- **Familiarize yourself with invasive plants** of regional and national concern. Visit the King County Noxious Weed Program at <http://www.kingcounty.gov/environment/animalsandplants/noxious-weeds.aspx>



Milfoil on an outboard motor

- **Use regional native plants** in your garden instead of unknown horticultural varieties that could seed freely and expand over the landscape. Ivy, butterfly bush, purple loosestrife, yellow flag iris and reed canary grass are just a few examples of these bullies that got their start as ornamental plants.
- **Choose a reputable nursery.** Ask if the vendor is aware of what species are regionally and federally restricted.
- **Ensure that your purchases are free of any "hitchhikers"** in the soil or on the plant. Rinse plants in a bucket of tap water until they are clean. The dirtier the plant, the more likely it is to have hitchhikers. Be on the lookout for snails and other invasive animals as well as plant fragments. This is most likely how the European slugs that eat holes in our produce got here!
- **Dispose of aquatic plants** from aquaria or winterized water gardens into the garbage if there is any possibility they could spread into nearby waterways.

Noxious Weeds in Cottage Lake

Cottage Lake has had a history of several different noxious weed introductions, including Eurasian water milfoil, purple loosestrife, fragrant water lily and yellow flag iris. In some cases these may have moved in by means of boat trailers or migrating animals. But in others they were introduced by people who wanted to beautify the landscape or couldn't bear to throw the inhabitants of an aquarium in the trash. The aquatic weed staff of the King County Noxious Weed Program can answer questions from interested citizens and urges everyone to keep their eyes open for the occurrence of noxious weeds. Many infestations have been found by reports from people who noticed a plant that they didn't recognize or that suddenly became abundant or spread quickly.

Plant Control Techniques

If you have identified a noxious aquatic weed in the lake, there are a few methods of control that you can follow. Some of these require a permit in order to work in the water, while others may not. There are four main categories of aquatic plant control techniques: manual, mechanical and chemical, as well as biological (which we won't cover here).

Manual methods

- **Hand pulling** – similar to pulling weeds out of a garden; be sure to remove the entire plants (leaves, stems and roots) from the area of concern and dispose of them where they cannot re-infest the lake.
- **Cutting** - Cutting differs from hand-pulling in that plants are cut and the roots are not removed. This may control the plants, but is not likely to eradicate them.

Washington's noxious weeds law



Similar to most states, Washington has noxious weed laws (RCW 17.10 and WAC 16-752) that identify which alien species are legally “noxious” and defines how they are to be treated when an infestation is found. There are various levels of response, from refraining from purchase and removing plants when possible, to mandated control if found, to an obligation to work toward complete eradication. Although there is an overarching state noxious weed list that is updated annually, the counties in Washington have the authority to edit the list for their own situations. The noxious weed list was originally initiated in response to alien plants causing economic damage to agricultural activities, but it was soon recognized that environmental threats were equally important to state resources and native species diversity.

To get more information on the current list in King County, visit the King County Noxious Weed Program's website at <http://www.kingcounty.gov/environment/animalsAndPlants/noxious-weeds.aspx> ■



Yellow flag iris

- **Bottom barriers** - A weighted bottom screen or barrier covers the bottom sediment of the lake like a blanket, keeping plants from rooting and growing, while reducing or blocking light to the bottom.

Advantages

- Manual methods are easy to use around docks and swimming areas.
- The equipment is generally inexpensive; usually aquatic weed rakes and cutters can be found online.
- They are environmentally safe.
- Manual methods do not require expensive permits and can be performed on a small scale with a Hydraulic Project Approval obtained just by reading and following the practices in the published pamphlet Aquatic Plants and Fish (publication #APF-1-98) available from the Washington Department of Fish and Wildlife.

Disadvantages

- Plants can re-grow or fragments can re-colonize the cleared areas, so the treatment may need to be repeated several times each summer.
- These methods are labor intensive, they may not be practical for large areas or for thick weed beds.

- Some plants, like water lilies have massive rhizomes, are very difficult to remove by hand pulling.
- Hand-pulling and raking disrupts bottom-dwelling animals.

Mechanical methods

- **Diver Dredging** – Diver or suction dredging is carried out by SCUBA divers using hoses attached to small dredges (similar to dredges used by miners for mining gold from streams) that suck plant material out of the sediment. The purpose of diver dredging is to remove all parts of the plant, including the roots.

Advantages

- Divers can remove plants around docks and in other difficult to reach areas.
- Can be used in situations where herbicide use is not an option for aquatic plant management.

Disadvantages

- Can be very expensive.
- Stirs up large amount of sediment and interferes with bottom-dwelling animals. This may lead to the resuspension of nutrients or long-buried toxic materials into the water column.
- Plants growing in rocky or hard sediments may not be entirely removed by the suction, leaving a viable root crown or tuber behind to initiate regrowth.
- **Rotovation** – Rotovators are machines that use underwater rototiller-like blades to uproot plants. The rotating blades churn seven to nine inches deep into the lake sediment to dislodge plant root crowns that are generally buoyant and float to the surface when freed from the bottom. The plants material may then be removed from the water, using a weed rake attachment to the rototiller

head or by harvester or manual collection.

Advantages

- Can be a less expensive option than hiring divers, particularly if the rotovator can be rented or a contractor can do the job quickly.
- Roots of plants are removed, unlike mechanical cutting and harvesting.
- Can be used in situations where herbicide use is not an option for aquatic plant management.

Disadvantages

- An HPA permit is required for disturbing bottom sediments.
- May be difficult to find and remove all fragments created by rotovation, thus increasing the potential for reinfestation at the site and elsewhere in the lake.
- May be difficult to maneuver around docks and large woody debris or rocks in the water.
- It's necessary to know where underwater utility lines are located in order to avoid them.
- Stirs up sediment and interferes with bottom-dwelling animals. This may lead to the resuspension of nutrients or long-buried toxic materials into the water column.
- This is a method for control, but is not considered an eradication tool.
- **Harvesting** – Mechanical harvesters are large machines, which both cut and collect aquatic plants. Cut plants are removed from the water by a conveyor belt system and stored on the harvester until disposal. Harvested weeds are disposed of in landfills, used as compost, or in reclaiming spent gravel pits or similar sites.

Advantages

- Appropriate for very large infes-



Harvesting weeds

tations that cannot be controlled effectively by other means and provides open water immediately for recreation.

- With only shallow water removal of plant material, some habitat is left for fish and other aquatic organisms.
- Specific areas can be targeted, leaving other conserved areas alone.

Disadvantages

- Harvesting may need to be done several times each season.
- Purchase and operation of harvesters can be very expensive.
- It may be difficult to find and remove all fragments created by harvesting, thus increasing the potential for reinfestation at the site and elsewhere in the lake.
- Some small animals such as fish and amphibians may be killed by harvester operations.
- This is a method for control, but is not considered an eradication tool.

Chemical methods

- **Aquatic Herbicides** – Aquatic herbicides are chemicals specifically formulated for use in water to eradicate or control aquatic plants. Aquatic herbicides are sprayed directly onto floating

and emergent aquatic plants or are applied to the water in either a liquid or pellet form. Because of the environmental risks from improper application or use of herbicides with specific dangers or safety hazards, aquatic herbicide use in Washington State waters is regulated and has certain restrictions.

In order to treat lake weeds with herbicide you must have an herbicide applicator's license from the Washington State Department of Agriculture or hire a firm that has licensed staff. You must also make sure that the herbicide preparation is approved for use in Washington State. While nearly all retail stores in the state follow the guidelines and do not offer banned products for sale, it is possible to buy online some products banned for use in Washington State; therefore, it is extremely important to check the active ingredients of any chemical to be sure that it is legal to use it in or near water.

Advantages

- Can sometimes be less expensive than other aquatic plant control methods.
- Easily applied around docks and underwater obstructions.
- Sometimes appropriate when weeds are widely dispersed, when total eradication is the goal or when a whole lake treatment is found to be necessary.

Disadvantages

- Some herbicides have swimming, drinking, fishing, irrigation and water use restrictions.
- Non-targeted plants may be killed by certain herbicides.
- Depending on the herbicide used, it may take several days to weeks or several treatments during a growing season before the



Cottage Lake aquatic weeds: fragrant water lily, purple loosestrife, and Eurasian water milfoil

herbicide controls or kills treated plants.

- Some herbicides linger in the water for long period.
- Some people have strong feelings against using any chemicals in water.
- Some cities or counties may have policies forbidding or discouraging the use of aquatic herbicides.
- Using a licensed applicator and acquiring necessary permits can slow down the treatment schedule.

Contact King County Water and Land Resources Division (WLRD) to learn which of these permits you will need for a particular project and the steps to obtain them. King County WLRD has a limited supply of rakes and weed cutters to lend out to community groups who have obtained the necessary permits for removing aquatic plants. Contact the WLRD Lake Stewardship Program to borrow these or other weed control tools at 206-296-8382.

The Washington State Department of Ecology has developed a step-by-step guidance manual for developing an Integrated Aquatic Vegetation Management Plan. The goal of this plan is to define the problem, assess methods of control

relative to the lake and recommend preferred solutions that respect beneficial uses and the balance of life in the lake and the watershed, are affordable and really work. For more information about this planning program, contact the Department of Ecology at 360-407-6562.



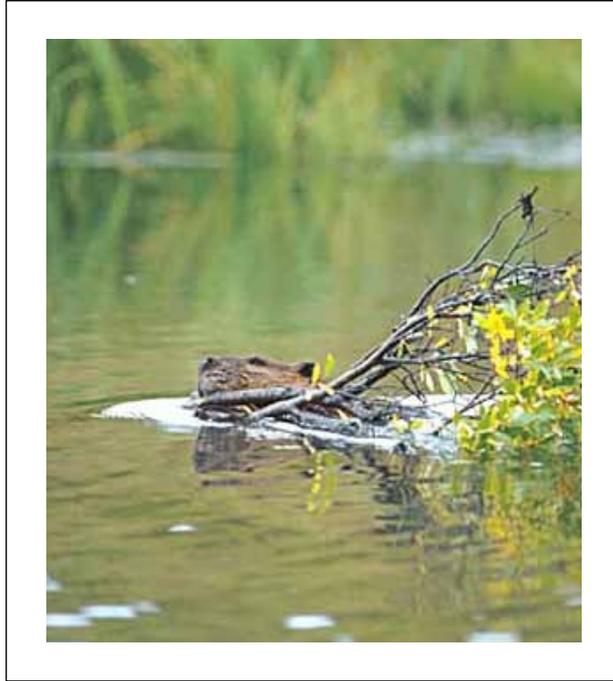
Resources

Aquatic Plants: Identification, Benefits and Management, available from King County Surface Water Management 206-296-6519; ask for publications.

A Citizen's Manual for Developing Integrated Aquatic Vegetation Management Plans, available from the Washington State Department of Ecology, 360-407-6562.

Also visit WDOE's aquatic plant management Web page at <http://www.ecy.wa.gov/programs/wq/plants/management/index.html>

Or the King County Lake Stewardship Web page at <http://www.kingcounty.gov/environment/waterandland/lakes.aspx> for more information. ■



Cottage Lake creatures: meet your neighbors



Most everyone enjoys watching turtles basking on logs, frogs slipping behind the cat tails and fish gliding near the lake bottom. When the lake edge has lots of good habitat, animals will move in to use it. Some are native creatures, while others are introduced either intentionally or by accident.

There are also many animals living in the water too small to be seen without a hand-lens or microscope, as well as larger animals so well camouflaged that you could be inches from them without ever knowing they are there.

Small worlds

Just up the chain from the algae discussed in the plant life section are the tiny creatures which feed on them, as well as on bacteria and small organic particles. Protozoa

and rotifers are not much bigger than algae, but will feed off them and then are eaten by larger zooplankton, such as copepods and cladocerans, which are crustaceans that are the freshwater relatives of shrimp. There are many different species of these tiny creatures and they can be very abundant at certain times of the year. Sometimes you can see them swarming in patches on the lee side of docks, and if you throw a fine-meshed net in the water and then look at what you've caught with a hand-lens, you will be amazed at the colors and details of the creatures swimming in your catch. One of the most commonly found animals is *Daphnia* (water flea) which can be seen swimming in a jerky fashion. They are rarely larger than 1 mm in length and they make tasty meals for little fish.

There are too many other creatures living in lakes to list in this short guide, but a fine book for introducing those who are interested is *Pond Life* by George K. Reid, in the Golden Guide series. Many insects have aquatic juvenile stages, from the ubiquitous mosquitoes and midges to the more elegant dragonflies and damselflies. *Pond Life* has a good general introduction to the various groups of insects with aquatic life stages, but for more information on local dragonflies, there is a small book available from the Seattle Audubon Society called *The Dragonflies of Washington* by Dennis Paulson. Another book that has information on dragonflies and larger animals is *Pond and River* by Steve Parker, in the Eyewitness Books series.



Cottage Lake creatures: bottom-dwelling bugs, Western red dragonfly, and Chinese mystery snail

Bacteria



While bacteria are not considered either plants or animals, a short discussion should be included because the presence of certain kinds can have major consequences for recreational activities. Most bacteria do not pose a problem for people. In fact, their work of breaking down organic material is essential nutrient recycling that must be done to keep the planet's processes healthy and life moving forward. However, there are several kinds of bacteria that can make people sick if ingested, including those that can get into Cottage Lake from septic systems that have not been properly maintained or tested, as well as waste from domesticated animals and a number of other warm-blooded animal sources such as geese.

Suggestions on how residents can help to prevent bacterial contamination of the lake are included in the daily activities and household hints section on page 27.

Some mollusks

While there historically have been native freshwater snail and mussel populations in the lakes of the Puget lowlands, many of these populations have been decreased greatly by development, hydrological changes, their inter-relatedness to salmon life histories and as collateral loss when fish management techniques have included applying rotenone to water bodies to kill undesirable fish. Native mollusc communities have not been described for Cottage Lake. However, there is documentation of one non-native species that has been introduced into the lake and one that should be monitored because it can inhibit dam operations. For more invasive freshwater invertebrates, please go to the Washington Invasive Species Council home page at <http://www.invasivespecies.wa.gov/>

Chinese Mystery Snail

The Chinese mystery snail (*Cipangopaludina malleata var chinensis*) was first documented in the Pacific Northwest more than forty years ago, but very little is known of its spread or impacts on native snails or the ecosystems of local lakes. There are anecdotal reports as far back as 1892 that the snail was offered for sale as a food item in Chinese markets in both San Fran-

cisco and Vancouver, BC. However, it is equally likely that it was introduced into our fresh waters from hobby aquariums emptied into nearby ponds and lakes because it was sold as a tank glass cleaner, a job that it actually doesn't do very well.

While they may be eaten routinely in some parts of Asia, the lack of information about the snail's hosting parasites should make the would-be gourmet pause before gathering and cooking them. In their native habitat, they are known to harbor parasites such as flukes and schistosomes (the parasite group responsible for swimmer's itch around here). Eating them is definitely not recommended until more is known.

Describing the impact these snails have had on native species may prove a difficult task. Various local lakes have been managed in the past for fish communities, sometimes with little known about the effects that management techniques might have on other animals living in the water. For example, several lakes were treated with toxic chemicals such as rotenone to kill off nuisance fish species, which could have also affected other animal species. The introduction of the Chinese mystery snail might have been into environments that were already under extreme stress.

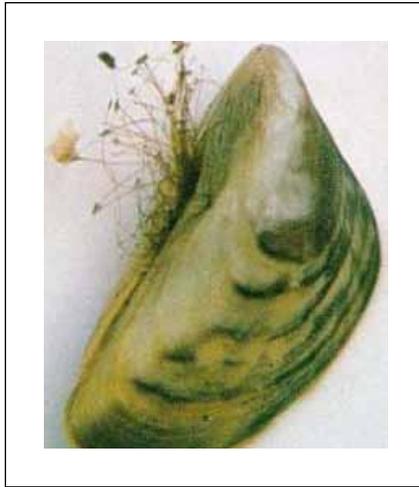
Other lakes in King County with known populations are mostly located in the southern part of the county, including Sawyer, Spring, Desire, Wilderness, Pipe, Lucerne, Killamey, Meridian, Morton, Dolloff, Kathleen and Shady.

Zebra Mussels

Zebra mussels could be considered the most troublesome freshwater animal to have entered the United States. It is thought that the zebra mussels came over from Europe in the ballast of a ship that made a transatlantic trip into the Great Lakes in the mid-1980s.

Female zebra mussels can produce up to one million veligers (larval stage of the mussel), which may spend several weeks in the water column until they become heavy enough to settle on the nearest hard surface (rock, wood, rubber, glass, fiberglass, metal, gravel). While they are floating, they may be transported to other bodies of water through hydrological connections or recreational boat engine cooling systems or bilges. Adult mussels can also transport themselves on the backs of other animals such as crayfish attach to boat hulls and to boat trailers. The mussels are rampant throughout the Midwest and have been detected as far west as Lakes Powell and Mead and have recently entered the southern California water delivery system reservoirs.

The mussels clog intake pipes at dams. They colonize docks, break boat bottoms and encrust engine parts. Recreational shorelines have been abandoned due to the sharp-edged shells littering the beaches and the stink from decomposing mussel flesh. It is critical to be able to identify these mollusks, so that if they do find their way into King County swift action can be taken to eradicate them before they become established.



Alien zebra mussel

Zebra mussels look like small clams, with a yellow or brownish D-shaped shell, often with dark and light-colored stripes.

- They can be up to two inches long, but most are under an inch.
- They usually grow in clusters and are generally found in shallow (6-30 feet) water.
- Zebra mussels are the only freshwater mollusk that can attach itself firmly to solid objects - submerged rocks, dock pilings, boat hulls, water intake pipes, etc.

NOTE: if you suspect you've found a zebra mussel, collect it; keep it in water in a cool, dark place; and call the Department of Fish and Wildlife to ask how to proceed.

Fish

The most commonly found native fish in the Puget lowlands include several species of trout, but there are also many varieties of introduced warm water fishes native to the eastern and midwestern areas of the U.S.A.

According to the Washington State Department of Fish and Wildlife (WDFW), the fishing season for

Cottage Lake is the last Saturday in April through October 31. The lake yields 10- to 12-inch rainbows from a spring fry plant (typically in mid-April), along with some native cutthroat trout. A large plant of catchable-size rainbows occur at Cottage Lake too. Cottage also provides better-than-average opportunity for yellow perch, largemouth bass, black crappie and brown bullhead catfish.

Amphibians and Reptiles

A number of frogs and salamanders can be found in the damp spots along the shorelines of lakes and streams in the Puget lowlands, it is very likely that they could be found under logs and along the shoreline of Cottage Lake, both as tadpoles and as adults. A good identification book is published by the Seattle Audubon Society, entitled *Amphibians of Washington and Oregon* by William P. Leonard. Some species that might be found include the northwestern salamander and the long-toed salamander. Many frogs and toads have been undergoing severe population decreases in recent years, several previously common species include the western toad, the Pacific chorus frog (tree frog) and the red-legged frog.

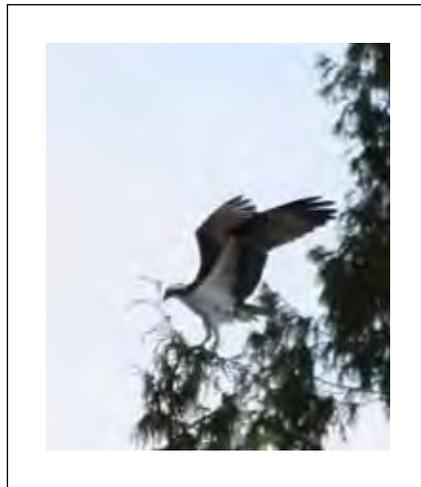
Bullfrogs

The bullfrog is probably one of the most commonly found amphibian species now in the Puget lowlands, but it is not native to the area and has been implicated in the decreases in native frogs, turtles and even some water birds due to both competition and predation. The bullfrog is classified in the Washington administrative code as a prohibited aquatic animal species (WAC 220-12-090). No license is required to hunt bullfrogs, there are no bag limits and the season is open year round.

Destroying bullfrog egg masses when discovered is another way to control populations, but you must be certain that the masses are positively identified as bullfrog eggs in order not to endanger the native species further. In general, the native frog and salamander egg masses are produced early in the year and will thrive in cool temperatures, whereas bullfrogs must have warm water and lay their eggs mostly in June and July. One exception is the native Western toad that lays eggs in flowing water in the summer; however, its egg masses look quite different from those of a bullfrog. The toad lays its thousands of eggs in dual strings, while the bullfrog lays big circular masses of thousands of eggs that are dark on top and light on the underside. The Washington Department of Fish and Wildlife addresses bullfrog management and includes some illustrations of egg masses at <http://wdfw.wa.gov/wlm/living/frogs.htm>

Turtles

The native western pond turtle and painted turtle are rarely seen in Western Washington anymore, although there are local programs at zoos to raise young western pond turtles and release them in the hope of reestablishing viable populations. Frequently, the turtles seen basking on logs in the Puget lowlands are slider turtles, introduced from eastern North America and sold in pet stores, then released by soft-hearted owners. There are also a number of records of snapping turtles found, they can be recognized by their massive heads and legs, as well as very long tails. Of the snakes found in Western Washington, only the several varieties of native garter snakes are found near water.



Osprey looking for fish

Birds

Many different birds make Cottage Lake their home for at least part of the year. Eagles and ospreys are commonly seen hunting over the water and a number of different kinds of ducks and waterfowl frequent the lake.

Many good bird identification books can be checked out from the library or purchased. Be sure that the book you use deals with birds found in the Western United States because there are East and West coast variations in some species.

Canada geese

The native, migratory populations of Canada geese in our area were in decline before the 1960s when U.S. Fish and Wildlife Service, along with state wildlife agencies, purchased goose eggs from elsewhere and reared them in hopes of providing more game birds for local hunters. The eggs were hatched from incubators and the birds were reared by humans until they were old enough to survive on their own. When released in the Puget Sound lowlands, these young transplanted geese did not have parents to teach them to migrate and the climate was mild enough, with plenty of food available year round to sustain the birds all year.

The geese are a problem for lake residents largely because of the copious amount of feces they produce. The waste material is not only unsightly; it contributes to fecal coliform pollution in the lake as well as increases nutrients.

Geese can definitely be seen as a nuisance, but there are a few ways to deal with them. Landscape adaptations can be very effective. Maintaining grass lawns at a height of 10 inches rather than 2 inches works well. Breaking up visibility of lawn from the water with clumps of shrubbery along the shoreline makes them less comfortable in an area, apparently fearing predators.

A harmless repellent (ReJeXITM or Goose Chase™) derived from grapes is effective in keeping geese away from specific areas like golf courses, parks and lawns because they apparently don't like the taste of it on the grass. Other methods to make areas inhospitable to geese include stringing low wires or very firmly secured (to avoid entanglement) fishing line on their landing sites, mylar tape or flags that flash and make a noise in the wind, and noisemakers. All these methods are most effective if begun in the spring before geese get in the habit of grazing where they are not wanted.

Aquatic Mammals

Many different aquatic mammals live around and use Cottage Lake, either as a watering hole or as habitat. This booklet focuses on those that can occasionally collide with human activities and goals.

Muskrats

Muskrats (*Ondatra zibethicus*) are quite a bit smaller than nutria or beavers, usually weighing between 2-5 pounds, but can be mistaken for them as they swim through the water with just a furry head

showing. However, muskrats nearly always have their tails sticking out of the water behind them, while beavers never do. They are somewhat difficult to tell from the non-native nutria that is currently spreading in our area. Muskrats can stay under the water for as long as 20 minutes and can also remain motionless in vegetation with only their noses and eyes above water, making them very hard to detect when hiding.

They are good habitat providers for birds by keeping water open, but they can be considered pests because they burrow into banks for dens, which can destabilize the bank and cause it to fail. In addition they find certain wetland species very tasty, which can jeopardize some restoration work.

Nutria

Nutria (*Myocastor coypus*) are rodents native to Argentina that were raised by farmers in Washington extensively between the 1930s to the 1950s. Feral populations have recently been discovered in several Western Washington lakes. At a glance, nutria appear similar to beavers or muskrats. However, they are generally smaller than beavers and larger than muskrats – adult nutria average from 11 to 22 pounds. The main distinguishing trait is the tail: unlike the beaver's flat, paddle-shaped tail or the muskrat tail, which is hairless and flattened vertically, nutria have thin, round, hairy tails that are pointed at the tip.

Their voracious eating habits have resulted in billions of dollars in damage to native wildlife habitats and agricultural lands throughout the United States. Nutria breed at an alarming rate, so once they migrate to a new area, they can quickly become a problem. Nutria inhabit riverbanks, sloughs and drainage ditches and rear their



Nutria

young in large dens burrowed into banks, often creating bank and dike erosion problems. Nutria are also well-adapted to traveling long distances over land, meaning that it's likely that they will eventually migrate to other King County lakes.

If you spot what you believe to be nutria at your lake, you can contact the Washington Department of Fish and Wildlife to discuss next steps.

Beavers

Beavers have lived in King County since the last ice age. In the 1800s beavers were heavily hunted for their fur and almost became extinct, but now their numbers are on the rise and people who are not used to cohabiting with beavers are being surprised by the changes they can make.

Beavers are able to engineer the environment to suite their needs. They build dams and canals in order to create deep water near their food source, for safety and to facilitate the transport of tree limbs. By this process, beavers also make homes for many other animals and plants. However, beavers can become a nuisance if their feeding requirements and dam building instincts endanger your property. It is illegal to kill beavers in King County

or to remove beaver dams without obtaining the appropriate permits from the Washington Fish and Wildlife (WDFW) and King County. Luckily, there are a number of techniques which may allow you to live with these animals in harmony.

Trickle Levelers: A trickle leveler—a perforated pipe placed through the dam—can be installed to regulate the water level after a beaver dam is constructed. The current created by the pipe's many intake holes is so small it goes undetected by the beavers. However, installation of trickle levelers is complicated and requires careful research. You most likely will need permits to complete this task such as an hydraulic permit for working in the water, so contact the regional office of the WDFW for help.

Fencing: If beavers are eating your trees, a four-foot high fence of heavy wire mesh placed around the trunk and dug one foot into the soil will discourage them.

Live trapping: Trapping and/or relocation requires a permit from the WDFW. However, trapping is not considered to be an effective long term solution because generally other beavers will move into the site once it is vacated.

Motion detectors: Outside motion detectors with automatic bright lights can deter beavers from your property. Some systems can also be equipped so that an outdoor sound system goes on with the sound of barking dogs or other loud noises. The sound has to be changed from time to time to keep the beavers from becoming habituated and ignoring it. It is VERY important to talk with any neighbors before employing this beaver-deterrent tactic. ■

Top TEN DOs for Cottage Lake

- 10 **DO** attend neighborhood meetings to become an active member of the Friends of Cottage Lake and the community.
 - 9 **DO** plan your landscape to catch rainwater in rain gardens and encourage infiltration into the soil instead of running off directly into the stormwater system.
 - 8 **DO** wash your car at a carwash, or use only hot water if you wash it on your property.
 - 7 **DO** keep your septic system functioning with regular check-ups and maintenance.
 - 6 **DO** shrink your lawn by planting native plants both to cut down on garden maintenance and to provide natural habitat for area wildlife. Make sure the non-native plants in your garden are not on the noxious weed list.
 - 5 **DO** scoop pet poop and dispose of it in the trash, rather than leaving it to wash into the lake.
 - 4 **DO** use low or no phosphorus fertilizers for your lawn and clean up spills of garden products before rain or irrigation moves them into the lake.
 - 3 **DO** dispose of aquarium plants and animals in the trash so they cannot get into our waterways and cause environmental damage.
 - 2 **DO** dispose of hazardous chemicals and waste safely to keep dangerous and harmful materials out of the lake.
- And NUMBER 1 **DO** enjoy the natural beauty and peacefulness of where you live. It makes the other nine DO's worthwhile!

Natural Yard Care Workshop #1



- * Learn safe, water-wise ways to have a beautiful yard
- * Discover how to control unsightly insect damage without harmful chemical pesticides
- * Meet our experts...ask questions...receive materials to take home

Our **FREE** workshops teach you how easy and rewarding Natural Yard Care can be. Join us at Molbak's where the first 75 registered attendees will receive a **10% off certificate** for pre-workshop shopping. Molbak's will be open from 6:00-7:00 p.m. exclusively for workshop participants.

Basic Natural Care

Wednesday, March 15

7-9 p.m.

Ladd Smith from **In Harmony** presents **Natural Lawn Care**. An engaging speaker and one of our region's most knowledgeable natural lawn care experts, Ladd will discuss mulch mowing, slow-release fertilizers, smart watering, and other natural practices that will help you grow a healthy, beautiful lawn.

EJ Hook, gardener extraordinaire, joins Ladd with the entertaining and informative "**Good Bug, Bad Bug.**" Learn all the tips EJ uses to have a naturally healthy, pesticide free garden, and hear professional secrets about natural care, collected during years of managing landscapes and horticulture at **Woodland Park Zoo**.

YOU COULD WIN GREAT NATURAL YARD CARE PRIZES!

At each workshop we'll randomly draw from the names of everyone present to award some wonderful natural yard care products and services – including a brand new mulching lawn mower during Workshop #3.

LOCATION: Molbak's, 13625 N.E. 175th Street

UPCOMING WORKSHOPS

We'll send details describing the following workshops about two weeks before each scheduled date. Mark your calendars now, and watch your mail for more information.

PLANTS AND WATERING

Wednesday, March 29 7-9 p.m.

Topics: *Smart Watering* and *Honey, I Shrunk the Lawn!*

SOIL MAGIC

Wednesday, April 12 7-9 p.m.

Topics: *It's Alive! Growing Healthy Soil* and *The Magic of Mulching/Composting*

If you have questions about any of our workshops, contact Beth Cullen, King County Lake Stewardship Program, 206.263.6242, beth.cullen@metrokc.gov.



Natural Yard Care Workshop #2

- Learn safe, water-wise ways to have a beautiful yard
- Discover how to control unsightly insect damage without harmful chemical pesticides
- Meet our experts...ask questions...receive materials to take home



Our **FREE** workshops teach you how easy and rewarding Natural Yard Care can be. Join us at Molbak's where the first 75 registered attendees will receive a **10% off certificate** for pre-workshop shopping. Molbak's will be open from 6:00-7:00 p.m. exclusively for workshop participants.

Smart Watering *and* Right Plant, Right Place

Wednesday, March 29

7 - 9 p.m.

Natural yard care pro **DEBBIE NATELSON** starts off with “**SMART WATERING,**” a session brimming with excellent suggestions about how to use less water in your yard and garden. Learn how the right watering method will help your lawn and plants grow long roots that require less water over time, and pick up tips about reducing water use through irrigation alternatives and mulching.

“**RIGHT PLANT, RIGHT PLACE**” offers natural yard design options that don't rely exclusively on having a lot of lawn. It's presented by King County's **GREG RABOURN**, an expert at redesigning yards with sheet mulching and using native, drought tolerant plants that require minimal care and water. Less lawn and more native plants will help attract songbirds and wildlife to your yard.

YOU COULD WIN GREAT NATURAL YARD CARE PRODUCTS!

We'll randomly draw from the names of everyone present at tonight's workshop for some great natural yard care products. Participants will also receive a bonus entry in the drawing for next week's raffle: a brand new mulching mower!

LOCATION: Molbak's, 13625 N.E. 175th Street

UPCOMING WORKSHOP:

We'll send details about the following workshop two weeks before the scheduled date. Mark your calendar now!

Soil Magic

Wednesday, April 12, 7-9 p.m.

Topics: *Growing Healthy Soil and Home Composting and Mulching*



If you have questions about any of our workshops, contact:
Beth Cullen, King County Lake Stewardship Program
206-263-6242

Natural Yard Care Workshop # 3

- Learn how to build healthy, plant-friendly soil
- Find out how mulching helps reduce water use
- Meet our experts...ask questions...receive materials to take home



Our **FREE** workshops teach you how easy and rewarding Natural Yard Care can be. Join us at Molbak's where the first 75 registered attendees will receive a **10% off certificate** for pre-workshop shopping. Molbak's will be open from 6:00-7:00 p.m. exclusively for workshop participants.

SOIL MAGIC

Wednesday, April 12

7 - 9 p.m.

A beautiful yard starts with healthy soil—and tonight you'll learn how to build a rich loam your lawn and plants will love. **BRING** a lawn sample. Take a shovel and cut a thin slice from your lawn, down to about 10-12 inches. Try to keep the slice intact by putting it in a Ziploc bag or plastic wrap. We'll show you how to analyze your soil and read roots!

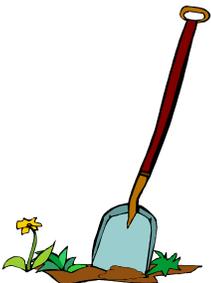
LISA TAYLOR of **SEATTLE TILTH** will discuss the importance of healthy soil, and how to improve the soil in your yard to grow more attractive, robust plants. **DARCY BATURA**, compost guru for **WSU EXTENSION EDUCATION**, will follow Lisa with great tips about composting at home. The workshop will conclude with an extensive Q&A session to help ensure you leave with solutions to your individual soil problems.

YOU COULD WIN A BRAND NEW MULCHING LAWN MOWER!

We'll randomly draw from the names collected over the course of our three workshops.

We will also raffle off a free naturescaping consultation by Greg Rabourn to one lucky resident.

LOCATION: Molbak's, 13625 N.E. 175th Street



If you have questions about any of our workshops, contact:

Beth Cullen, King County Lake Stewardship Program, 206-263-6242



**Cottage Lake
Thursday January 24, 2008
7:00 - 8:30 p.m.**

**Come to the Low Impact Development
and Green Building workshop at the
King County Library in Woodinville on
Thursday January 24, 2008.**

Learn about:

- Healthy homes—create a healthier home through material and finish choices
- Save money—implement low-cost energy and water efficiency strategies
- Increase home value—with green materials and landscaping choices
- Clean green—help protect yourself and the environment while you clean

For questions please contact Beth Cullen at beth.cullen@kingcounty.gov or 206-263-6242.

*Brought to you by King County and
Friends of Cottage Lake*

Do you want to
learn what it
means to
"BUILD GREEN"?



Do you want to
save money?



Do you want to create a
healthier home for
you, your family
and your pets?



**Alternate Formats and
Disability Accommodations
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King County

**Department of
Natural Resources and Parks
Water and Land Resources Division**
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**Come to the Low
Impact Development
and Green Building
workshop at the
King County Library
in Woodinville.**

See back for details!

*There are three guarantees in life...
You know the first two, death and taxes.*

Often we overlook the third one: POOP.

How we handle it can significantly impact our quality of life.



The seasons of Cottage Lake

**FREE
workshop
February 10**

PROTECT YOUR SEPTIC SYSTEM & YOUR LAKE!

Learn the ins and outs and dos and don'ts of home septic system operation and maintenance at a **FREE WORKSHOP** on Tuesday, February 10, 6 to 9 p.m., at the Crystal Lake Community Clubhouse, 23909 Crystal Lake Rd.

Does the type of toilet paper you use make a difference? What household cleaning products are safe? What should you expect from a septic system inspection? Can you grow vegetables on your drainfield?

Bring your questions and curiosity and learn how to protect this valuable part of your home. Contact Beth Cullen at 206-263-6242 or beth.cullen@kingcounty.gov to register to ensure that we have enough handouts and space.

Sponsored by Friends of Cottage Lake, Crystal Lake, King County and the Department of Ecology.

Photos by Susie Egan • File name: 0901CottLkSepticPostcard.indd • Printed on recycled paper. Please recycle.