



# Lake Steward

The newsletter of the WLR Lake Stewardship program Vol. 8, No. 1 Winter 2001



Plan now for a native spring

## Lake-friendly landscaping

Living near a lake offers residents beautiful surroundings and recreational opportunities. It also comes with the shared responsibility to keep the waters clean and healthy. One easy and inexpensive way to achieve this is to add a mix of native plants near the water's edge or along unstable slopes.



### Rewards of Going Native

In the past, clearing vegetation near the shoreline and filling in low areas with sand or creating bulkheads was the standard practice.

While this brought homeowners more traditional beach areas, water quality was detrimentally affected. Runoff from adjacent fertilized lawns and oils and other pollutants from nearby roads easily moved into lake water. Moreover, this type of landscape proved to attract nuisance waterfowl such as Canada geese.

Today we know that restoring native vegetation as a buffer along the edge of streams, lakes, and wetlands helps to maintain and improve the quality of our water. It also helps to prevent erosion, especially along slopes.

Plants clean stormwater runoff by filtering out sediments, pollution, and bacteria. Homeowners are further rewarded with less erosion,

minimal landscaping hassles, and far fewer geese calling their yards home.

### Getting Started

Planting a native plant buffer is not much different from planting a garden. A variety of beautiful trees, shrubs, perennials, and ground covers are available that are suitable for all tastes and budgets. Many local nurseries now offer native Northwest plants and advice on how to plant and maintain them. Additionally, a wealth of information is available through **King County's Department of Natural Resources**. A good place to start is with the DNR website <http://dnr.metrokc.gov/wlr/PI/npresrcs.htm>. The site offers links to books and publications on native

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See native landscaping

## Self-tours to inspire

Oregon Ash? Pacific Crabapple? Western Maidenhair Fern? Sure these native plants sound interesting but what do they look like in the ground? If you are thinking of transforming your yard into a more natural setting, get ideas at these public gardens and other natural areas showcasing native plants. All offer educational, self-walking tours.

A good place to start is **Bellevue Botanical Garden**, 12001 Main Street, Bellevue. Also in Bellevue is the **Lake Hills Greenbelt Ranger**

**Station** at 15416 SE 16th. It features a model native back yard.

**Classic Nursery (425) 885-5678** in Redmond has a free nature trail featuring extensive native plantings.

Owners of the **Shadow Lake Bog (425) 432-9965** offer free tours of this rare, native treasure. A boardwalk winds through the bog featuring many remarkable NW plants.

In Seattle, check out the **University of Washington Arboretum** for planting ideas. The north end features native trees and a great nature walk.

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## Lake monitors report

# The ups and downs of lake levels

Lots of sunshine this autumn meant less precipitation and lower lake levels than in previous years. Sea-Tac Airport reported 223 millimeters (mm) of precipitation between October 1 and December 31 of this year compared with 428mm, 616mm, and 315mm during the autumns of 1999, 1998, and 1997, respectively. The historical average autumn rainfall at Sea-Tac for 1948-1999 is 393mm.

## Typical Lake Levels

Typical Northwest weather patterns involve dry summers followed by wet autumns and winters. This pattern translates into local lake levels that decline during the summer, are lowest in October, but then rapidly increase during the winter. Most lakes reach high levels in late November or early December and then stay high into the spring with occasional peaks in level following rainstorms.

## Lake Levels This Autumn

Lake level ranges reported by volunteers reflected a lack of rainfall for autumn 2000 (Figure 1). These ranges were consistent with 1997, which also received below average rainfall, and were much less than years that received above average rainfall (1999 and 1998). The ranges in level at each lake were calculated as the difference between the minimum and maximum values reported by the volunteer.

Lakes Horseshoe and Margaret exhibited the greatest ranges in lake level this fall, 97mm and 72mm respectively. These large ranges are related to Horseshoe Lake's geology, a closed depression lake with no surface outlet, and the outlet management strategy employed at Lake Margaret. In contrast, Lake Marcel, which also has a managed outlet, only fluctuated by 9mm. The rest of the volunteers reported differences near the 20mm to 40mm range.

## Effects on Wildlife

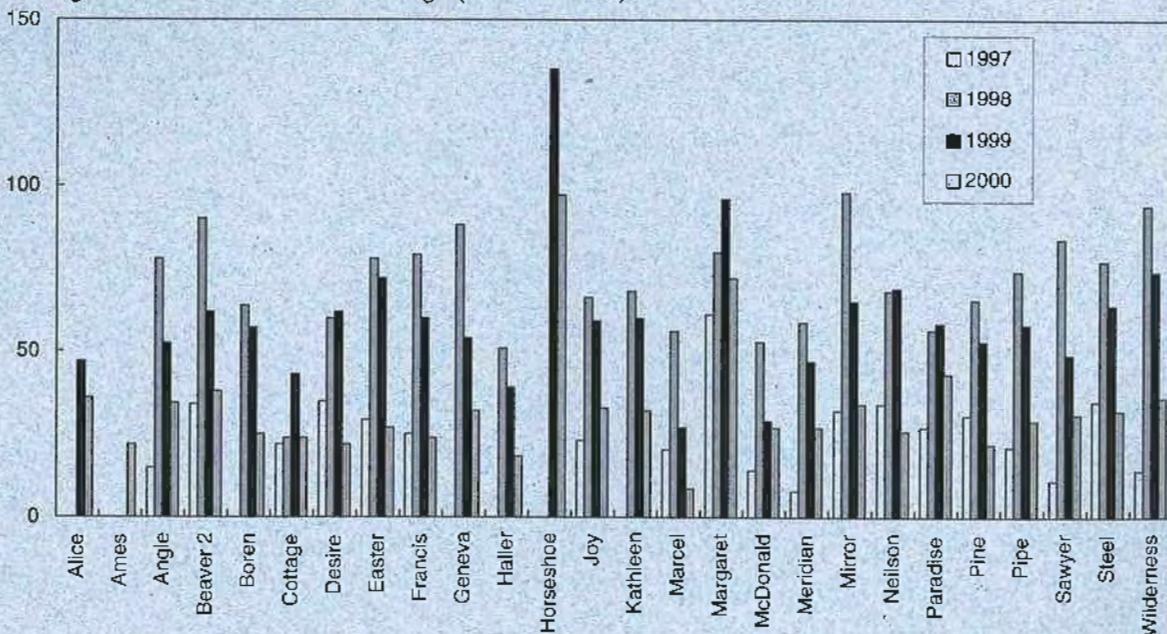
As land is developed, less rainfall infiltrates to groundwater and more runs off directly to lakes and streams causing greater flow during wet periods but less flow during dry periods. These manmade extremes in water levels can negatively impact wildlife.

For example, low stream flows in the fall can inhibit migrating salmon while high winter flows can scour water channels and destroy the nests they spawned. In lakes and wetlands, dropping water levels in the spring may expose and dry out amphibian eggs laid during the winter. Water below the level of shoreline vegetation in the summer limits habitat for amphibian larvae and exposes them to predators.

So how can you decrease surface runoff from your yard:

- Use porous pavements or material on driveways, patios, and walkways.
- Keep native plants, especially trees, in your yard. 🌿

Figure 1. Oct-Dec Lake Level Range (in centimeters)



## Volunteer spotlight

# Watching over Lake Dolloff

He's only 16 but already he has an impressive resume. Meet Jason Hesla, Eagle Scout, star



Eagle Scout Jason Hesla.

athlete, and someone who really knows the value of making a commitment and sticking with it. Jason became a volunteer lake monitor for Lake Dolloff when he was just 12 years old! Rain or shine, Jason has been taking water samples, recording temperatures, analyzing water clarity, and tracking waterfowl on or near the lake for the last five years.

Jason has always liked the water, enjoying swimming, boating, and fishing. Last year, Jason became an Eagle Scout, Scouting's highest honor, for the restoration work he accomplished on Lake Dolloff. The project included constructing two informational signs, removing trash from the boat launch area and a

nearby stream, and constructing a log boom to prevent further debris from entering the stream. Furthermore, Jason financed construction costs by securing a grant through King County's Waterworks program.

When Jason is not on the lake, he attends Thomas Jefferson High School in Federal Way where he is a champion swimmer on the school's swim team.

With so much time and energy spent monitoring the health of Lake Dolloff, you might suspect that Jason would pursue a career in environmental sciences or oceanography. But it is the health of people that really interests Jason. He hopes to attend University of California-Berkeley to study medicine. We wish him great success. 🐾

## Lake-friendly...

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plants and a list of nurseries specializing in Northwest native plants. Another good website for information is **Washington's Native Plant Society** at <http://www.wnps.org/index.html>

### Right Plant, Right Place

Take a moment to assess what you already have and then work to augment existing plantings. Each native plant performs a role. Some are excellent at reducing erosion, others are beneficial for birds and other wildlife. For example, to attract hummingbirds, plant red flowering currant and orange honeysuckle.

Placement is important too. Sedges, rushes, and reeds grow best

at the edges of water in sun or partial shade. Vine maples and dogwoods are good understory trees, preferring lightshade.

### Slope-side Planting

Some native plants have extensive root systems and excellent soil holding abilities. These plants can be used on steep slopes or on eroding water edges. For dry slopes, plant bigleaf maple, black hawthorn, kinnikinnick, Nootka roses, thimbleberry, or sword fern. To control erosion near the water's edge, red osier dogwoods, willows, Oregon ash, and vine maples are good choices. For more plant information, contact **Greg Rabourn** at (206) 296-1923. 🐾

## Goose be gone

Geese love to feed on the succulent grasses of well kept lawns. With few natural enemies to keep their numbers in balance, waterfowl have become a nuisance for many lakeside residents.

Geese prefer to rest and feed on open, grassy areas next to water, and they generally walk onto land using routes that allow them easy access. One way to discourage these web-footed creatures is to create a buffer of native plants between the water's edge and the lawn. Fearing hidden predators, waterfowl are reluctant to step through the vegetation to dine on the grass. Large boulders placed in front of the buffer may enhance the effectiveness of your "Keep off the grass" message. 🐾

## King County at work

# Information at your fingertips

King County oversees a myriad of important restoration, engineering, and environmental programs. However, figuring out where to report a specific problem or even pass along a comment or suggestion can sometimes be a daunting process. To save you from a series of phone calls, we have compiled a list of common questions along with information on who to call. If none of the numbers below addresses your specific need, start by contacting **King County's General Information Line** at (206) 296-0100.

You are cleaning your basement and want to properly dispose of some oil-based paint: Call the **Seattle-King County Hazardous Waste Line** at (206) 296-4692 for information on household hazardous waste collection locations.

Since the expansion of a nearby shopping center, you notice increased flooding on your property: Call **King**

**County's Drainage Services** at (206) 296-1900. They handle many types of questions and complaints relating to stormwater, drainage requirements, water quality, and flooding.

You are concerned about weeds in your lake: Call the **Noxious Weed Program's Information Line** at (206) 296-0290.

Living next to a lake, you have questions about shoreline development: Call **King County's Department of Development and Environmental Services (DDES)** at (206) 296-6600. Any shoreline (waterfront) development or structural changes is subject to the jurisdiction of the state's Shoreline Management Act of 1971 and typically requires a permit from DDES. Most permit questions can be answered by calling the DDES number above. For information on **Sensitive Areas** and its ordinances call (206) 296-6759.

You notice a strong sewage odor coming from your septic tank: Call **Seattle-King County Health Department** at (206) 296-4932. They can provide information on steps to take to correct the problem.

You are interested in forming a lake management group to oversee water quality issues: Call the **Lake Stewardship Program** at (206) 296-8382. They also have information on volunteer water monitoring opportunities and other volunteer activities. 🐾



King County staff showing volunteers how to take water flow measurements.

I've heard a lot lately about **food webs**. Is this something I can buy at my grocery store?



—Confused and Hungry

Dear Corn-fused:  
Food webs are not prepackaged meals available at your nearby mini-mart. Instead it is a story of who eats whom in an ecosystem and

## Ask Dr. Lakenstein

how basic elements become plants that are then eaten by animals. Generally, many interconnections exist within food webs creating a complex, interdependent organization or "web." All living organisms are part of a food chain and larger food web. If one part of the food chain becomes disrupted, it affects the entire food web.

To better understand food chains and webs, look at your lake. The sun provides the energy

that supports growth of the tiny phytoplankton (algae) that feed on nutrients in the water. Zooplankton (small, filter feeding organisms) then feed upon the phytoplankton. Next, juvenile fish eat the zooplankton. These small fish are consumed by larger adult fish, which in turn are eaten by even larger predators such as eagles, ospreys, herons, and humans. The creatures living in your lake's ecosystem are a great example of a food web. 🐾

# Healthy septic system, healthy lake

Many properties in more rural areas and around smaller lakes have on-site septic systems to treat household wastewater. Most homeowners living near water are aware that heavy winter rains present potential problems with flooding, but did you know that an extended period of rain can saturate septic systems to the breaking point? A failing septic system leaches out harmful, untreated sewage and may degrade the water quality of a nearby lake or stream. Even though this year's winter has been mild and dryer than most, it is still a good idea to check your drainfield and septic tanks to make sure they are functioning properly.

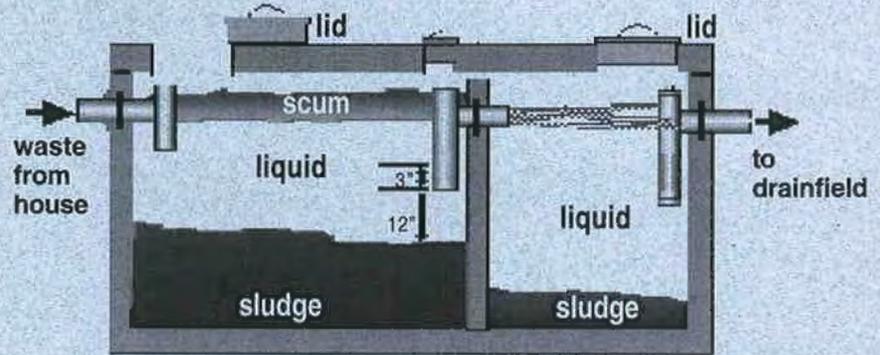
## How Does it Work?

A typical septic system consists of a septic tank (Figure 1) and drainfield. The septic tank is either a single (prior to 1975) or double (since 1975) compartment tank that functions to store and separate the solid, liquid, and floating waste materials originating from your household. In the septic tank, bacteria naturally present in the wastewater break down much of the accumulated solid material. The resulting liquid waste is slowly discharged from the tank to a drainfield where remaining nutrients are consumed by soil bacteria.

## Does it Need Maintenance?

To keep the septic system operational, leftover solid and floating waste materials must be removed from the septic tank every three to five years. The frequency of pump-

Figure 1. Design of typical septic tank



ing depends upon the size of the tank, the amount of solids entering the tank, and the habits of household members. The septic tank should be pumped when the floating layer is within three inches of the bottom of the outlet or the top of the solid layer is within 12 inches of the bottom of the outlet (see Figure 1).

## Locating Your Septic System

Depending on the age of your home and the availability of records, there are several ways to find your septic tank and drainfield. As-builts are sketches of your property that show the location of your house, septic system, landmarks, and property boundaries. The health department requires as-builts to approve new septic systems. If you don't already have these drawings, you can call the health department at (206) 296-4932 and request a record search to identify whether as-built sketches are available for your property.

If you are building your home or installing a new system, take photographs as the system is installed. In the future, you can use landmarks (like the house and nearby trees) to

pinpoint where you should dig. It may take you a few tries but once you have located it the first time, use markers (a stepping stone is ideal) to tag the location of each lid.

## Other Methods

When all else fails, you may need to do some detective work. Locate where the plumbing leaves the foundation wall or use plumbing vents (coming from a bathroom) to estimate the approximate exit point of wastewater from your home. A probe bar can be used to locate the tank if it is made of concrete and within one to two feet of the surface. Otherwise you may need to rent an electronic detection device. Never fear, a pumping service will always help locate your system for a fee.

## Is my System Failing?

Now that you know the approximate location of your septic tanks and drainfield, check the area at least once a year for early warning signs of failure. Your system may be failing if there is a sewage odor, surface seepage and soggy spots around the drainfield, or lush green growth near the system.

(continued on page 6)

# Healthy septic systems. . .

Inside the home you may notice other signs of trouble including plumbing back-ups, slow draining fixtures, or gurgling sounds in the pipes. If you think your system may be failing, you can call the **Seattle-King County Department of Public Health** at (206) 296-4932 or your local septic tank service for assistance.

## Tips for Healthy Septic Systems

- Inspect your septic tank once every year and pump as necessary.
- Avoid putting materials down the drain such as paints, cleansers, coffee grounds, oils, grease, paper towels, and cigarettes.
- Limit garbage disposal use to reduce a build up of solids in your tank.

- Avoid commercial additives sold to enhance septic operation—all the necessary bacteria are naturally present in human waste.
- Clogged drain? Try using a plunger, coat hanger, or a drain snake instead of caustic chemicals.
- Avoid parking vehicles over the septic tank and drainfield.
- Grow grass or extremely shallow rooted plants over the septic tank and drainfield to prevent damage and ease of maintenance access.
- Use water wisely to avoid water “overloads” and premature system failure.
- Discharge roof drains away from the drainfield and septic tank. ♻

## Upcoming events Reshore Workshop

King County's Lake Stewardship program continues its new workshop series “**Re-shoring Your Lake**” with a second workshop on **Saturday, March 31**. The Re-shoring series is for lakeside residents wanting to re-design their yards with native landscaping. At this workshop experts will be on hand to help with individual design issues. Attendees must come with a site plan of their yard. Look for an informational flyer that will be sent a few weeks prior to event or call **Michael Murphy** at (206) **296-8008** with questions.



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