

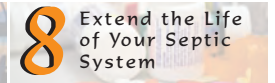
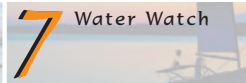
# SEBAGO LAKE

WATERSHED NEWS

SPRING 2010

Photo Credit: James & Christopher Drake

Portland Water District • 225 Douglass Street • Portland, Maine 04104-3553 • 207.761.8310 • www.pwd.org



## Sharing a Multi-Use Lake BY ROGER PARADIS

Once you experience Sebago Lake you know it truly is one of Maine's prized resources. It's unlike any other lake in Maine. Sebago is special, in part, because it accommodates so many uses. It is a recreational destination for thousands of people each year. Sebago is a major resource for fishing and boating, a summer playground for seasonal homeowners and summer campers, and a photographer's best friend. Tens of thousands of boats launch on Sebago every summer and countless ice fishermen frequent the lake during the winter months. Sebago is often at the center of events and tournaments. It's a busy lake during all seasons. Additionally, there are over 2,600 septic systems within 200 feet of the lake. Despite having so many different uses, Sebago still manages to provide clean drinking water to over 200,000 people.

### Compared with Others

So how can a lake accommodate recreation and still provide clean, safe drinking water? If you look at water supplies across New England and the rest of the country, you'll quickly see that Sebago Lake is not the norm. For instance, the Quabbin Reservoir in Massachusetts, which delivers water to Greater Boston, has very strict policies prohibiting activities that are common on or around Sebago Lake.

Swimming or contact with the water is not allowed on the Quabbin Reservoir. Connecticut took this a step further by enacting a law that prohibits swimming on all of its municipal water supplies. Even here in Maine some municipal water supplies are protected by legislation that prohibits many or all recreational activities.

### Sebago's Natural Advantages

Realistically, not all restrictions needed on other water supplies are necessary on Sebago Lake. Although less than one percent of the land around Sebago is owned by PWD, a very low percentage by industry standards, the lake has unique features that allow it to function as a water supply and multi-use lake. Sebago's size and depth allow contaminants to settle out, and the land surrounding the lake is largely forested. Greater Portland and its most developed areas drain away from Sebago toward Casco Bay.

### Multiple Barriers of Protection



Along with these physical advantages, Sebago is protected by a series of barriers – a combination of procedures and strategies that have been used for many years, some dating back to 1913. For example, PWD enforces a two-mile, no-bodily contact zone and a 3,000-

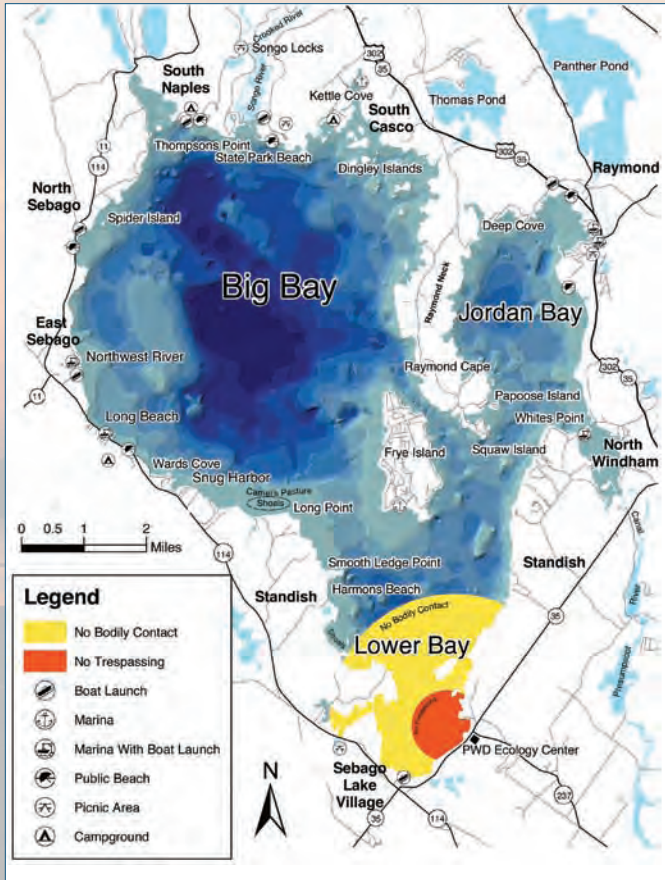
foot no trespassing zone around the water intakes to help safeguard against certain threats and contaminants. Some drinking water reservoirs are less than 2-miles across in total, but the two-mile zone on Sebago only restricts access to 10 percent of the lake.

CONTINUED ON PAGE 3

PRST STD  
U.S. POSTAGE  
PAID  
Permit # 7  
Portland, ME

# Drinking Water Protective Zones

BY PAUL HUNT



Many water supply lakes in the northeast are off limits to boating and swimming. Boats carry fuel which could spill and contaminate millions of gallons of water while human contact can introduce disease-causing organisms (pathogens) which can pass through water treatment systems. Sebago Lake accommodates drinking water needs and recreation by keeping these two uses separated with protection zones.

through the cold, inhospitable (to them) lake, the more likely they'll die before they reach the water intakes. Disinfection at the treatment plant does the rest.

Later amendments to the 1913 law established a 3000-foot zone located inside the two mile limit. Except for Water District staff, no trespassing is allowed inside this zone. The "3000-foot limit" is marked by buoys or flags during ice fishing season.

As with the two-mile limit, there is nothing magic about 3000 feet. But more is better. If fuel were to spill into the lake, the farther it has to travel, the more we can expect will dilute and evaporate.



Since 1913, bodily contact within two miles of the water intakes has been prohibited by Maine law (Private & Special Law 1913, Chapter 157). On the lake this "two-mile limit" is marked by buoys, and the area is patrolled to ensure the law is respected.

These restricted zones make up less than 10 percent of Sebago Lake and is critical to protect the water supply for one out of six Maine residents. These restricted zones make up less than 10 percent of Sebago Lake and are critical for protecting the water supply for one out of six Maine residents.

Why two miles? There is nothing magic about that distance but having a long setback distance is important. Human contact introduces pathogens including bacteria, viruses and protozoa. The ability of these organisms to survive in lake water varies but some can still be infectious many months or even years later. The longer they have to travel



Paul Hunt is the environmental services manager at the Portland Water District. He can be reached at [phunt@pwd.org](mailto:phunt@pwd.org).



The Sebago Lake Watershed News is published by the Portland Water District.

## EDITORIAL TEAM

Michelle Clements, Brie Holme, Paul Hunt

## CONTRIBUTORS

Brie Holme, Paul Hunt, Kirsten Ness, Roger Paradis, Lynne Richard, Chad Thompson, Nathan Whalen, Betty Williams

The Watershed News is printed with soy-based inks on 100% recycled paper.

# Sebago Lake Conservation Project Update

BY BETTY WILLIAMS

The purpose of this project is to significantly reduce erosion and export of sediment and phosphorus into Sebago Lake. Conservation practices that reduce erosion and polluted runoff will be installed at 12 road sites for an estimated annual reduction of 68 tons of sediment (48 pounds of phosphorus). Technical assistance will be provided to landowners to address existing erosion sites.



BEFORE



AFTER

The Conservation Project, which began last year, continues with work on several private and public roads. To date the following improvement projects have been accomplished:

- Anderson Road improvements include new ditching, culverts, and road grading and material.
- Camp Mataponi, Equestrian Center Road improvements include rehabilitated ditching, a new culvert and three inches of road gravel, crowning and grading, and a stabilized plunge pool.
- Maine Avenue/Sebago Avenue improvements are completed and include new road material, re-grading, new ditches, five new culverts with inlet and outlet protection, a level lip spreader, and erosion control mix spread on all disturbed soil.

- Engineering designs have been completed and construction improvements are scheduled to take place this summer and fall on Burnell Road in Naples, Camp O-At-Ka, and Camp Mataponi.
- The Casco Bay Youth Conservation Corps is available again this summer to provide free labor to landowners to help install conservation practices and erosion controls. If you have an erosion problem on your property and want to schedule a free technical assistance visit or would like to request support from the Youth Conservation Corps, contact Betty Williams at CCSWCD.



Betty Williams is the senior project manager at the Cumberland County Soil and Water Conservation District. She can be reached at 892-4700 or [betty-williams@cumberlandswcd.org](mailto:betty-williams@cumberlandswcd.org).

CONTINUED FROM PAGE 1

PWD also oversees low impact recreation activities on land around the lower bay of the lake and regulates septic systems located within 200 feet of the lake.

## Many Organizations Contribute

Many entities play a big part in lake protection. Sebago's size works in our favor when dealing with contaminants but against us when trying to implement regional protective goals. One agency or organization can't effectively manage a lake of this size. Multiple groups need to manage multiple uses with a similar goal in mind: protect water quality. Town officials in all the towns around the

lake and the Maine Department of Environmental Protection work with PWD to ensure that local and state ordinances and rules are followed. This is particularly critical in the shoreland zone of the lake. The warden's service of the Department of Inland Fisheries and Wildlife polices boating and fishing on the lake and educates about invasive species. Local land trusts that preserve undeveloped land and nongovernmental agencies also play an important part in lake protection.

## Monitoring and Enforcement are Critical

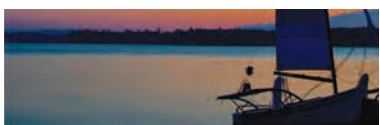
Sebago isn't invincible and no one wants to see it decline whether you drink from it, swim in it, fish or boat on it, or live

near it. So continued monitoring of the lake and evaluating the effectiveness of the barriers are necessary to protect public health. As population grows and uses of the lake increase, it is conceivable additional barriers will be needed.

In this issue of the Watershed News we explain how some of these barriers work and what purpose they serve. From protective zones on the lake to responsible boating, you'll get a feel for the different types of strategies used to keep Sebago functioning as a multi-use lake.



Roger Paradis is a water resources specialist at the Portland Water District. He can be reached at [rparadis@pwd.org](mailto:rparadis@pwd.org).



# NATIVE PLANT SPOTLIGHT

## Eastern hemlock

*Tsuga canadensis*

**Size:** Large, irregular, pyramidal tree.  
Can grow up to 80 feet with a 30 foot spread in ideal conditions.

**Foliage:** Small, deep-green needles with a loose, feathery appearance.  
Small, interesting cones.

**Soil Conditions:** Prefers cool, moist, well-drained soil.

**Light:** Sun to shade.

**Zones:** 3-7

Visit the Sebago Lake Ecology Center to see examples of native plants!



## Homeowners Can Help

### Top Ten Ways You Can Care For Sebago

1. Plant and maintain a strip of shrubs and plants along the shore to filter runoff.
2. Have your septic system pumped out every 3-5 years.
3. Use little to no fertilizer or other chemicals on your lawn.
4. Mulch or plant all exposed soils on your property.
5. Keep trees around your property to reduce rainfall impact and keep the area cool.
6. Pick up after your pet. Always.
7. Wash vehicles away from the lake, preferably at a car wash.
8. Use extreme care when fueling boats, lawn equipment, etc.
9. Inspect all boats, prior to launching, for invasive aquatic plant fragments.
10. Visit the Sebago Lake Ecology Center to learn more!

# Responsible Boating and Fishing BY CHAD THOMPSON

Sebago Lake is one of the most popular destinations in southern Maine for fishing and recreation. For some anglers, Sebago Lake is most famous for its outstanding coldwater fisheries since it is home to one of only four populations of landlocked Atlantic salmon indigenous to Maine. Whether you are casting a bobber and worm for pan fish or trolling the depths for salmon or lake trout, it is important to be safe and responsible.



▶ Rubber baits such as rubber worms, jigs, or frog and salamander imitations have been found to be a major cause of trout death. These baits are often scented to enhance their attraction to fish and as a result become ingested long after they fall from your hook. Rubber baits can block the digestive tract of fish which can cause death from starvation. Look for alternatives that are biodegradable or made from fish food.

## Boating Behavior

Fishing and boating often go hand in hand, especially on a lake the size of Sebago. Here are some simple measures you can take to ensure your impact on the lake and its fisheries are minimized:

▶ Obey no wake zones and avoid shallow areas of the lake where your propeller can chop up underwater vegetation that many fish species use for habitat. Follow Maine boating laws by maintaining headway speeds within 200 feet of the shoreline. Boat wakes cause erosion, pollution, and deterioration of shoreline fish habitat.

- ▶ Fueling and boat maintenance should be done before you get to the lake. If it must be done on the lake, avoid spilling gas, oil, paint, varnish, or any other chemicals. Never pour these chemicals while over the water and do not “top-off” fuel tanks, as the overflow valve will likely spew excess fuel directly into the water. Even if these chemicals don’t spill directly into the lake, they often end up in your bilge, only to be pumped overboard at a later time.
- ▶ Check your boat, trailer, outdrive, live-well, and fishing gear and remove all aquatic plants or animals that may have hitched a ride. Even tiny fragments of invasive plants or larvae of aquatic organisms can lead to horrible infestations that can ruin your fishing enjoyment. It is a good idea to wash your boat, trailer, and all of your fishing equipment between fishing trips to avoid the transfer of these organisms between bodies of water. In Maine it is illegal to transport plants and other exotic species and violators are subject to hefty fines.

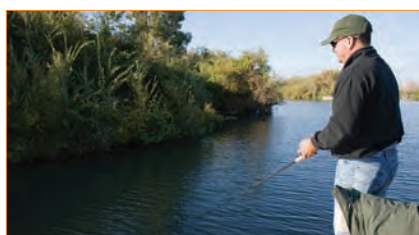
## Fishing Gear and Tactics

You don’t necessarily need a boat to fish, but you will certainly need some gear and bait. While it would be ideal for anglers to carry out everything they carry to a water body, leaving something behind is sometimes unavoidable. Many of the issues with fishing gear and bait occur after they have been used or have fallen off your line. Here are some tips for using the effective and environmentally friendly gear and bait:

▶ Use eco-friendly sinkers such as those made from tin, bismuth, ceramic, or other non-toxic material. Lost lead sinkers are toxic to aquatic organisms and often end up on the lake bottom where they are mistaken for food by animals. A single lead sinker can cause lead poisoning in aquatic birds, like loons, and result in death.

▶ Choose your bait wisely. Use live bait that is native to the waters you are fishing. Maine law requires that bait dealers abide by rules designed to protect native aquatic species so buying bait at a commercial dealer in the area you are going to fish helps prevent the introduction of a non-native species into our water bodies. Besides, native bait are preferred by the native fish.

▶ Don’t be a litter-bug. When it comes to your worm containers, beverage bottles and beer cans, and snack wrappers, make sure you secure them in your boat or backpack and dispose of them properly. Litter not only makes your fishing spots unattractive, but can be mistaken for food and pose a choking risk to wildlife. Not to mention that whatever trash the fish eat, you end up eating too!



Chad Thompson is the source protection coordinator at the Portland Water District. He can be reached at [cthompson@pwd.org](mailto:cthompson@pwd.org).

# What's Making Waves Around Sebago Lake?

BY BRIE HOLME



Photo Credit: Lisa Adams

## \$500,000 Grant to Fight Milfoil

Seven Maine lakes have been awarded \$500,000 of federal money to address milfoil, an invasive aquatic plant. The goal of the grant is to prevent, manage, mitigate, research, and possibly eradicate the milfoil infestations. On Sebago Lake, Save Sebago Cove, the Lakes Environmental Association, and PWD will be focusing efforts in Sebago Cove.



## Sebago to the Sea Trail

The Sebago to the Sea Coalition continues to work toward the goal of a contiguous walking/biking trail from East End Beach in Portland to Sebago Lake. The Portland Water District has agreed to allow the trail to cross through the District's Sebago Lake Land Reserve in Standish. More details are available at [www.sebagotothesea.org](http://www.sebagotothesea.org).

## Lakes and Loons Presentation

Listen to the call of the loon, examine a loon mount up close, and see a presentation by a loon expert. Learn the life history of loons, the biggest threats to their success and how we can protect these denizens of the lakes we all love.

**WHEN:** Wednesday, July 14.  
6:00 p.m. – 8:00 p.m.

**WHERE:** Sebago Lake Ecology Center

Registration required.  
Limit 15.  
[sebagolake@pwd.org](mailto:sebagolake@pwd.org).

## Loon Count

Do you know where Sebago's loons live? Each July, PWD coordinates Sebago Lake's annual Loon Count for the Maine Audubon Society. We have a dedicated team of counters, but there are still segments of the lake which need coverage. If you are interested in taking on an assigned area contact us at [sebagolake@pwd.org](mailto:sebagolake@pwd.org).



Photo Credit: Wendy Rosenberg

## Buoy Strobe Lights Coming to Lower Bay

This spring the Portland Water District will be installing low light strobes on buoys in Lower Bay. These strobes will delineate the no trespassing zone enacted by the Maine Legislature. The strobes will be activated from sunset to sunrise.

## Call for Calendar Photos

The sixth Images of Sebago Lake Calendar will be published in the fall of 2010. We're looking for shots of Sebago Lake, taken by amateur or hobbyist photographers. We'll accept photos until late August and the calendars will be available sometime around Thanksgiving. Photographers will receive a copy of the calendar- free!



Photo Credit: Beth Kus

For more information or to send photos: [sebagolake@pwd.org](mailto:sebagolake@pwd.org).



Brie Holme is a water resources specialist at the Portland Water District. She can be reached at [bholme@pwd.org](mailto:bholme@pwd.org).

# WATER WATCH

BY NATE WHALEN



## Sebago's Water Quality Stable Since Mid-70's

**A statistical analysis of 35 years of water quality data from Sebago Lake reveals that the lake's water quality is neither declining nor improving over that time.**

The Portland Water District has been monitoring the clarity of Sebago Lake since the mid 1970s. Over time, methods and sample locations have changed – making it difficult to compare old and new data directly. Because of changes in testing methods and sampling locations, there are two distinctly different data sets for Sebago Lake - from 1976 to 1989 – and from 1990 to present.

Most lakes experience cyclical changes in water quality. Therefore the longer the period of record, the more meaning the data has for historical context. That is why a newly released report links the two data sets. Through a series of statistical tests and side-by-side comparisons, results of the combined data sets for the Lower Bay of Sebago Lake show that the phosphorous, algae, and transparency measurements from 1990 to present are

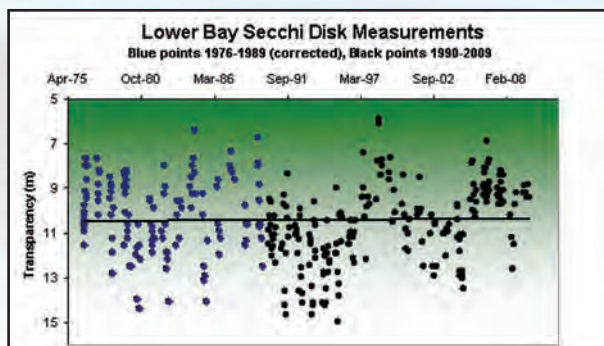
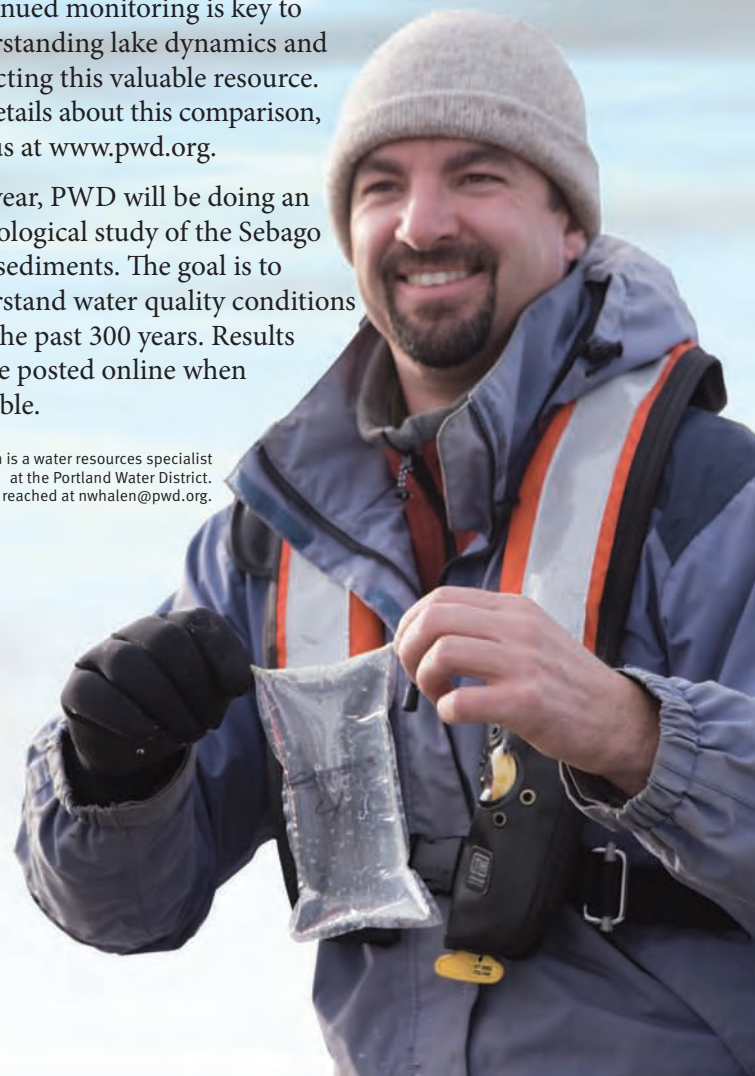
not statistically different from those taken between 1976 to 1989. The overall trend of the combined data sets is neutral.

This is good news as it suggests the trend toward lower clarity over the last 18 years does not represent a significant trend when measured over the past 35 years. Overall, there are periods of improvement and decline but the lake water quality from 1990-present is similar to what it was from 1976-1989.

Continued monitoring is key to understanding lake dynamics and protecting this valuable resource. For details about this comparison, visit us at [www.pwd.org](http://www.pwd.org).

This year, PWD will be doing an archeological study of the Sebago Lake sediments. The goal is to understand water quality conditions over the past 300 years. Results will be posted online when available.

Nate Whalen is a water resources specialist at the Portland Water District. He can be reached at [nwhalen@pwd.org](mailto:nwhalen@pwd.org).



This chart shows the combination of two different data sets. Through a series of statistical adjustments, the data can be combined. The overall combined trend is neutral.

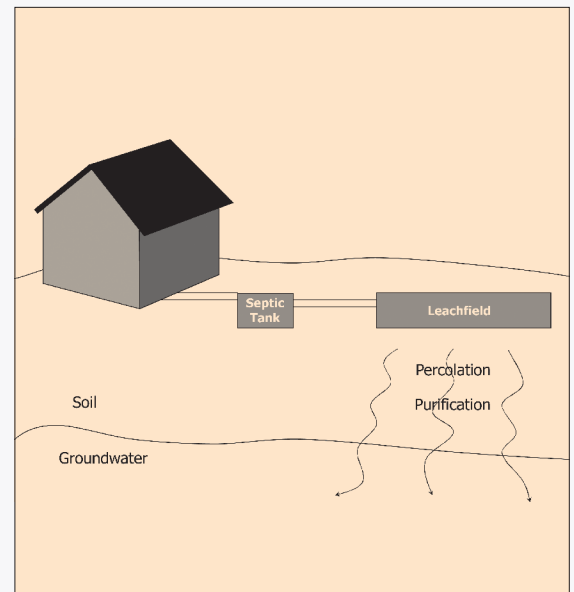
# Extend The Life of Your Septic System

BY KIRSTEN NESS

## What is a Septic System?

Septic systems are used in rural, non-sewered areas to treat wastewater onsite and return it to the groundwater. A septic system consists of a septic tank and a leachfield. Solids collect in the tank and are broken down by beneficial bacteria that live there. The liquid waste flows to the leachfield where it is slowly released into and filtered by the soil.

Proper maintenance of your septic system is key to its function and longevity; it saves you money and helps protect the environment. A malfunctioning septic system can contribute pathogen-laden wastewater to lakes, streams, and groundwater.



## DOs:

- **Do** know the location of your septic tank and leachfield.
- **Do** use water efficiently to reduce the amount entering your septic system.
- **Do** have your septic tank pumped regularly (every 3-5 years, depending on use).
- **Do** restrict the use of a garbage disposal because food waste is not easily broken down by the bacteria in the system.
- **Do** plant only grass over your septic system. Tree and shrub roots can damage pipes in the leachfield.
- **Do** keep roof drains and sump pump drains away from your leachfield. Excess water over your leachfield can cause it to malfunction.

## DON'Ts:

- **Don't** drive or park vehicles on your septic system unless it is designed to handle the weight of vehicles.
- **Don't** dump large amounts of household chemicals, including cleaners and paints, down the drain. These chemicals can kill the beneficial bacteria that treat waste in your septic tank.
- **Don't** drain your pool or hot tub into your septic system. Doing so can overload your leachfield and cause it to malfunction.
- **Don't** flush non-biodegradable products into your system. Examples include: cigarette butts, cotton swabs, cat box litter, cleaning wipes, etc.
- **Don't** flush medications down the toilet. Septic systems are not designed to treat pharmaceuticals.
- **Don't** attempt to fix your septic system yourself. Hire an experienced contractor to fix any problems.

## SIGNS OF FAILURE:

- Sewage backing up into toilets, tubs, and sinks.
- Slowly draining fixtures.
- Pooling water or muddy soil over your system.
- Raw sewage smells.



Kirsten Ness is a water resources specialist at the Portland Water District. She can be reached at [knness@pwd.org](mailto:knness@pwd.org).

