

# SEBAGO LAKE

## WATERSHED NEWS

Photo Credit: Kerry Freeman

SUMMER 2014

Portland Water District · 225 Douglass Street · Portland, Maine 04104-3553 · 207.761.8310 · [www.pwd.org](http://www.pwd.org)

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## Swimming in Sebago

By Kirsten Ness

*During the hot summer months, many people flock to the Lakes Region to find relief from the heat by plunging into the crystal clear waters of Sebago Lake.*

Over 90 % of the lake is open to swimming while the remaining 10 % is protected as a drinking water source.

We are often asked, “if swimming is prohibited in the protected zone, why are boats allowed?” Swimming actually poses a higher risk to drinking water quality because humans can carry bacteria and viruses that can make people sick, while much of the gasoline from boats floats to the surface and evaporates. You can read more about the testing that has been done for gasoline in Lower Bay on page 7.

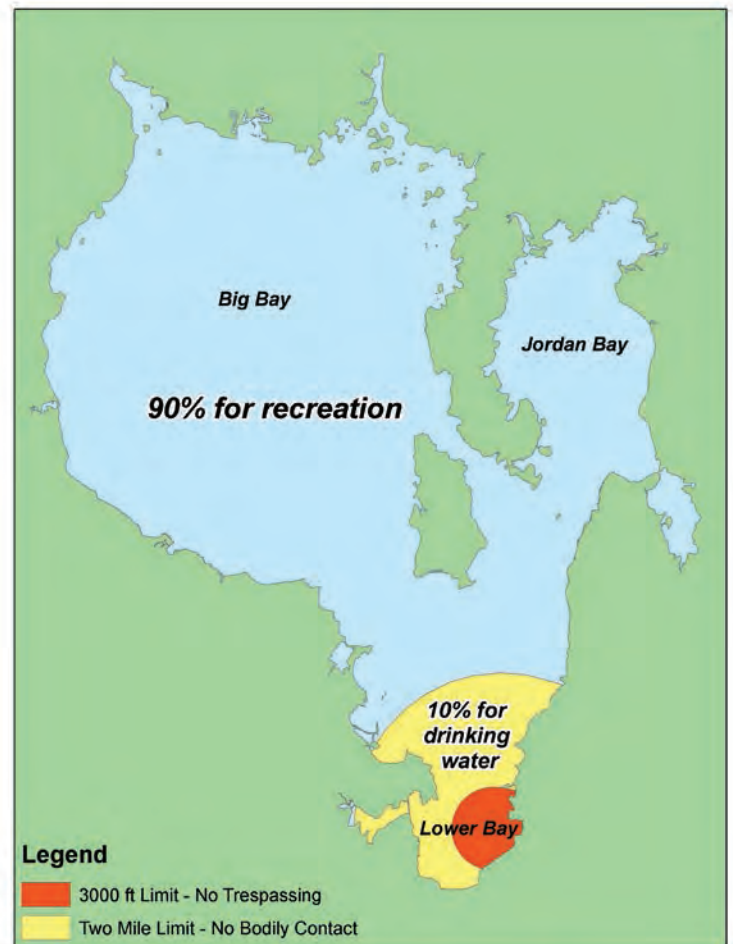
“But, isn’t the drinking water disinfected to remove pathogens?” Yes, the water is disinfected (in three different ways!) but pathogens can be deadly and no treatment process is completely effective at destroying all pathogens. Fewer pathogens in the water to begin with results in safer water for people to drink.

One of the pathogens that we test for in Sebago Lake is *Escherichia coli*, more commonly known as *E. coli*. *E. coli* are bacteria that are commonly found in the guts of warm blooded animals. People often think of *E. coli* in relation to illness

from contaminated hamburger, but there are many different types, most of which do not make you sick and in fact aid in proper digestion of food. But because *E. coli* are found in your gut, the presence of *E. coli* in a water sample is a very strong indicator that it’s not safe to drink – certainly not before it is disinfected.

Because *E. coli* is an indicator of possible contamination that can make you sick, we monitor many sites around Sebago Lake for it. We take water samples at beaches in Lower Bay where swimming is prohibited, as well as at beaches outside the two-mile limit where swimming is allowed. We test these beaches weekly in the summer months. We also test the water for *E. coli* at several other spots around Lower Bay monthly,

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from May to October. We find that *E. coli* levels are higher at beaches where swimming occurs as compared to the beaches around Lower Bay where swimming is prohibited. Additionally, we find that the samples from other sites around the shoreline of Lower Bay typically have zero to very few *E. coli*. Year after year, our beach monitoring shows higher levels of *E. coli* where people are in contact with the water (Fig. 1).

To protect the water quality in Lower Bay, bodily contact is prohibited within two miles of the drinking water intake pipes. This restricted area, known as the two-mile limit, was created in 1913 by the Maine State Legislature “for the purpose of protecting the purity of the waters.” Even back in 1913, the legislature recognized that swimming in Lower Bay poses a threat to the drinking water. The two-mile limit helps keep human pathogens from entering the lake and allows any pathogens that are in the water from outside the two-mile limit a chance to die before reaching the intakes.



The District tests for *E. coli* at swimming beaches



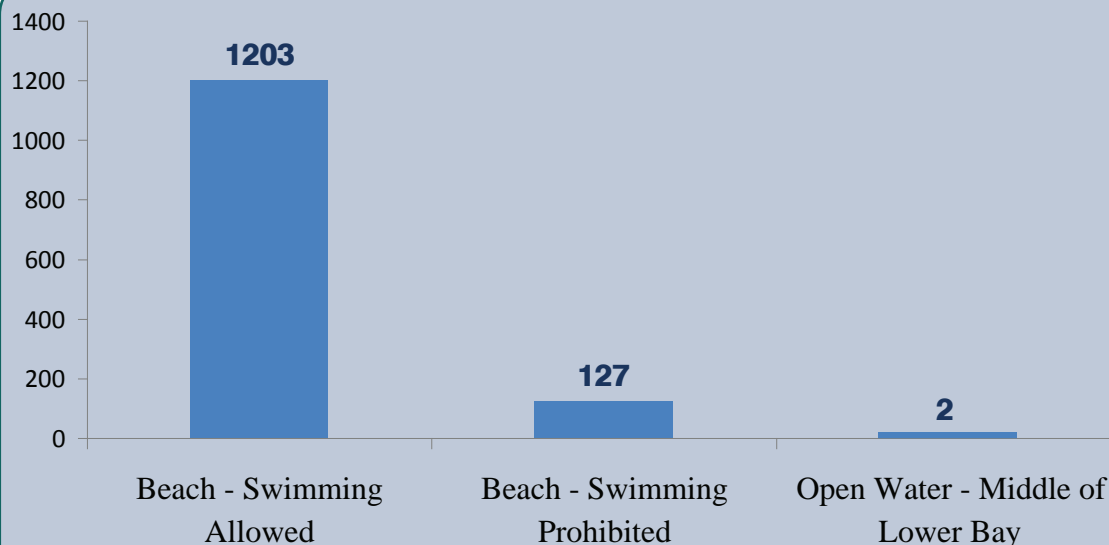
### How You Can Help Keep Our Drinking Water Clean and Our Beaches Safe

1. Please respect the two-mile limit buoys when you are boating on Sebago.
2. While boating is allowed in the two-mile limit, jet skis are not allowed.
3. When you re-fuel your boat or jet ski, ensure that you do not spill fuel into the lake.
4. Do not feed ducks or geese. Doing so encourages them to hang around, increasing the risk of “swimmers itch” and water contamination from their droppings.
5. Keep babies with diapers out of the lake.
6. Clean up after your pets.

These simple measures will help reduce gas and bacteria from entering Sebago Lake, meaning a cleaner lake for drinking water and your recreational enjoyment.

Figure 1. Maximum *E. coli* found in Lower Bay in the past 3 years

*E. coli* Colony Forming Units / 100ml



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



# Native Plant Spotlight:

COMMON  
BLADDERWORT  
(*Utricularia vulgaris*)

**Common bladderwort** is often found in the near shore areas of lakes, also known as the littoral zone. This plant floats freely in the water and does not root itself in sediments. Along its stem are leaf-like branches that are highly divided. Bladderwort is a carnivorous plant that has bladders attached to the branches. Each bladder has tiny hairs that trigger the bladder to open when touched by a small aquatic organism. When the bladder opens it creates a vacuum that sucks the organism into the bladder where it is digested. Bladderwort is one of many beneficial native plants that can be found in Sebago Lake!



Photo: *Utricularia vulgaris*, "common bladderwort" by Dennis Roberge, courtesy of VLMP

## Aquatic Plant Survey on Sebago Lake

By Laurel Jackson

This summer Portland Water District is partnering with the Volunteer Lake Monitoring Program (VLMP) to conduct a comprehensive survey of the aquatic plants living in Sebago Lake. "Plant patrollers" will be out on the lake throughout the summer checking out the coves and shoreline of the lake to see what is growing there. Volunteers and District staff have been trained by VLMP to identify the different types of plants that grow in the lake.

While people may see aquatic plants and think "ugh, weeds," most of these plants are an important part of a lake's ecosystem. Many people are familiar with invasive aquatic plants, such as Eurasian milfoil, which can be detrimental to the health of a lake and don't realize that most aquatic plants occur naturally and aren't harmful at all. A variety of different native aquatic plants exist and they all add diversity to the lake environment.

Some aquatic plants exist fully submerged under the water while others may send their flowers above the water's surface. Plant communities provide shelter and food to aquatic animals and add oxygen to the water- an element vital to all living things. While they are important, little is known about distribution of native aquatic plant communities throughout Maine lakes.

*Continued on page 4*



Photo courtesy of VLMP



*Nymphaea odorata*, "fragrant water lily," by Dennis Roberge, courtesy of VLMP



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According to a 2008 report from The Nature Conservancy, their limited data shows that the number of plant species collected from an individual lake or river can range from three to twenty-five.

Once the District has catalogued the aquatic plants in Sebago, they can be monitored for changes over time. A change in aquatic plant populations may indicate other changes in water quality, such as a decrease in clarity causing a reduction in available sunlight. If you are interested in becoming a plant patroller, VLMP offers training and identification workshops throughout the summer. Find more information on their website at [www.mainevlmp.org](http://www.mainevlmp.org).



*Eriocaulon aquaticum*, "pipewort" by Dennis Roberge, courtesy of VLMP



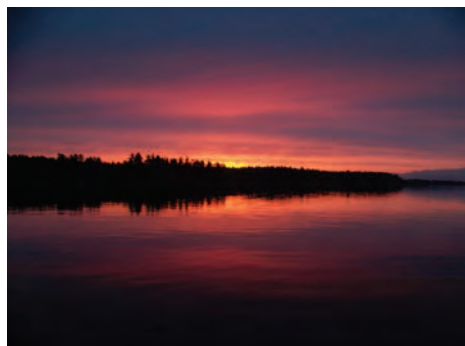
*Pontederia cordata*, "pickerel weed" by Dennis Roberge, courtesy of VLMP



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



Calendar submission by Linda Panzera



Calendar submission by Rich Antinarelli



Calendar submission by Diane Larrivee

## The Images of Sebago Lake Calendar: *A decade of beauty and appreciation*

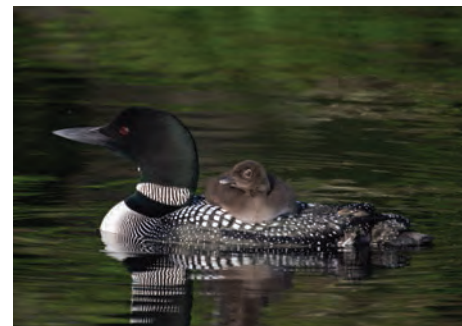
Over the past decade, hobbyists and amateur photographers have submitted photos for inclusion in the *Images of Sebago Lake* calendars. The submissions have varied as much as the photographers. Photos capturing the natural beauty of this remarkable resource vary with the changing seasons, water, and subjects. Some photographers are lifelong Sebago Lake residents while others capture a quick shot while passing by on their way to somewhere else. The constant thread, however, is Sebago Lake's striking and constant beauty and a deep appreciation for the lake as a valuable resource.

The tenth *Images of Sebago Lake Calendar* will be published in the fall of 2014. You are invited to share your photos for consideration. Over 280 photographs from 46 amateur photographers were submitted last year. Once submitted, a committee of Portland Water District staff reviews and selects photos that show the lake in all seasons.

The deadline for submissions is August 15, 2014, and submitted photos must be at least 1 MB in size. Each photographer may submit a maximum of five photos total. The calendars will be available for free at the beginning of December, and all photographers will receive a complimentary copy! For more information or to send photos, email [sebagolake@pwd.org](mailto:sebagolake@pwd.org). Please note: Our email system does not accept attachments larger than 10 MB.



Calendar submission by Bill Wheatley



Calendar submission by Rich Antinarelli



# Sebago Lake Land Reserve: Additions & Events

By Sarah Plummer & Rod Beaulieu

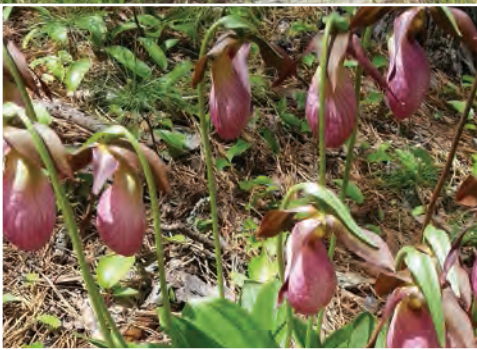
## Join us on the Sebago Lake Land Reserve in 2014!



*The 2,500-acre Sebago Lake Land Reserve is a managed forest intended to protect Sebago Lake, the source of drinking water for 200,000 people in the Greater Portland region. About 1,700 acres of The Land Reserve have been open to the public since 2005 for recreation such as hiking, snowshoeing, fishing, and horseback riding. Visitors must stop at one of twelve kiosks to complete a permit each day they visit. The Land Reserve's trail network connects to other local trail systems, including the Sebago to the Sea and Mountain Division Trails.*



*In 2013, PWD concluded a three year project on the Land Reserve trails to improve access and usability. Trails were cleared, defined, and identified using GPS technology, signs were installed, and a new trail map was created. The map, available at kiosks and the Sebago Lake Ecology Center, depicts over 13.5 miles of trails within the 500 acre Otter Ponds section of the Land Reserve.*



### NEW ADDITIONS

A second phase of trail work was completed in the fall of 2013. This section contains arguably the most scenic portion of trails in the Otter Ponds section, with beautiful spots overlooking the ponds. These trails are accessed via the Johnson Field parking lot off of Route 35 in Standish. Follow the Mountain Division Trail for approximately a third of a mile, and look on the left for the "Half Moon" and "Otter" trail signs.

Be on the lookout for new granite benches throughout the Land Reserve this summer. These resting spots will

be placed at scenic overlooks throughout the Land Reserve, with locations to be determined. If you have a favorite spot, be sure to let us know! Additionally, a wide bridge will be constructed over a brook that crosses Hidden Valley Trail this summer, increasing access and protecting the stream's water quality.

### TRAIL DAY

The second annual Trail Day was held on Saturday, May 10 as part of PWD's celebration of Drinking Water Week. The free event offered a variety of activities and drew 126 participants. Many local partners contributed to the day's success, providing experts to lead many activities. District educators provided an interactive "Signs of Spring" scavenger hunt for young learners. Experts from the Department of Inland Fisheries & Wildlife's Hooked on Fishing program taught fishing basics to children ages six through fifteen, and participants put their new skills to use in the Otter Ponds. Though the fish weren't biting that day, the kids did not seem discouraged. PWD staff led a four-mile trail run on the wide, wooded trails. The Bicycle Coalition of Maine and New England Mountain Bike Association led a beginners' mountain biking clinic, teaching basic riding techniques and leading a trail ride afterwards. The Presumpscot Regional Land Trust hosted a nature walk on the first leg of the Sebago to the Sea Trail, ending at scenic Two Mile Beach. All events ended at 11:00, when participants were treated to snacks and water.

**If you'd like to receive information about our events and efforts to protect Sebago Lake, like us on Facebook or join our email list – email [sebagolake@pwd.org](mailto:sebagolake@pwd.org) to sign up!**



Sarah Plummer is the environmental education coordinator at the Portland Water District. She can be reached at [splummer@pwd.org](mailto:splummer@pwd.org)



Rod Beaulieu is chief of security operations at the Portland Water District. He can be reached at [rbeaulieu@pwd.org](mailto:rbeaulieu@pwd.org)



# What's Making Waves Around Sebago Lake

By Brie A. Holme



## DISTRICT AWARDS CROOKED RIVER LAND CONSERVATION GRANT

In March the District's Board of Trustees voted unanimously to approve a contribution of \$268,899 to support the conservation of 791 acres in the Sebago Lake watershed. The pledge marks the biggest grant awarded under PWD's Watershed Land Conservation Program which was revised in 2013 to allow for larger donations. Western Foothills and Loon Echo Land Trusts are working together to raise the full amount needed to purchase the parcels. If the acquisition is successful, it will create new public access for hunting, fishing, hiking, canoeing, and equestrian use. It will also protect the forested land which acts as a natural filter, keeping soil from eroding and removing contaminants before the water reaches the lake. The forested watershed helps keep Sebago Lake water so clean! To learn more visit [loonecholandtrust.org](http://loonecholandtrust.org) or [wflmaine.org](http://wflmaine.org)



The Twin Bridges parcel along the Crooked River

## LEA TO BUILD THE MAINE LAKE SCIENCE CENTER

The Lakes Environmental Association is planning the construction of the Maine Lake Science Center in Bridgton. The purpose of the project is to attract lake researchers to the region and provide them with housing, lab facilities, and work space. The Center will be located on 17 acres adjacent to Pondicherry Park and will include three housing units, a 50-seat conference room and a new education facility. LEA has assembled a Lake Science Advisory Board with researchers from Maine to California to help guide the project and its research. The budget for the center is \$600,000 and fundraising has already begun. To learn more about the Maine Lake Science Center, visit LEA's web site at [www.mainelakes.org](http://www.mainelakes.org).



An artist's rendition of the Maine Lake Science Center

## NEW BOAT REGISTRATION/MILFOIL STICKER LEGISLATION

When the \$10 "milfoil sticker" law was enacted in 2002, 60% of the money collected was given to the Maine Department of Environmental Protection (MDEP) for boat launch inspection, education, and eradication (removal of plants from infested lakes). The remaining 40% of the money was given to the Maine Warden Service for law enforcement and the issuing of summonses. A new law this year changes the money allocation. Now, 80% of the money will go to MDEP (20% of which is to be used on eradication efforts) and the remaining 20% will go to the Maine Warden Service for law enforcement.



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





Photos: Neil Hiltunen

# WATER WATCH

## *Gasoline in the Lake*

By Nate Whalen

People often ask us, “Why are boats allowed to launch so close to the water intake?” While a boat launch so close to water intakes does pose a risk of contamination, the District and the Town of Standish staff the launch all summer to help people launch their boats safely so that the risk to the water supply is minimized.

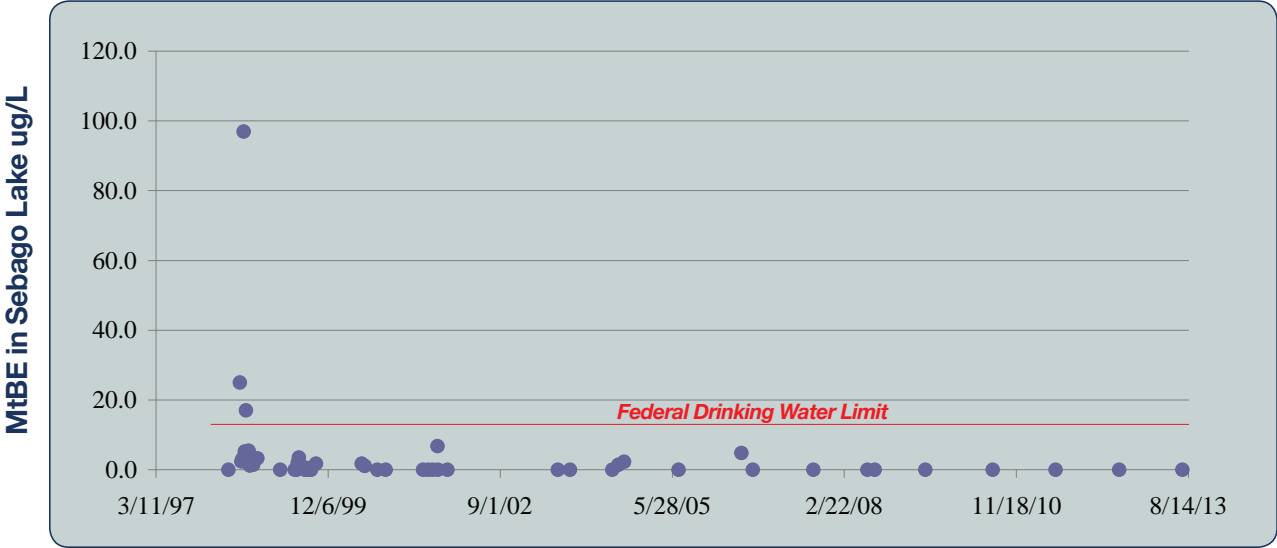
“But isn’t gasoline bad for the water?” Yes, gasoline is bad for the water. There are toxic chemicals in gasoline that would make you

extremely sick if you drank them and fish would die suddenly if immersed in gasoline-laden water. But on a lake as large as Sebago, the small amount of fuel that winds up in the lake from boats mostly floats and evaporates into the air. Some gas does dissolve into the water but fortunately it quickly dilutes and dissipates and has never been detected at the water intake pipes.

The District has tested for gasoline at the Standish Boat Launch in the summer when boat traffic is high. Trace

amounts of gasoline components have been detected, but due to evaporation and dilution gasoline is generally not found. In the late 1990’s we found high levels of MtBE (the gasoline additive Methyl Tertiary Butyl Ether). MtBE was banned in Maine on January 1, 2007, and we have not detected any MtBE or other components of gasoline in the water since 2006 (see Figure 2).

Figure 2. Gasoline Testing in Sebago Lake



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



# Grant Funds for Crooked River and Sebago Lake

By Heather True

Federal grant funds are available to fix erosion sites along the Crooked River and Sebago Lake. Landowners whose property drains into one of these waterbodies are eligible for limited grant funds. Please contact Heather True at CCSWCD at 207-892-4700 or [htrue@cumberlandswcd.org](mailto:htrue@cumberlandswcd.org) to schedule a free, non-regulatory site visit this summer to determine if your property qualifies.

In addition to improving erosion sites along the lake, CCSWCD is working with PWD and local partners to create a Sebago Lake Watershed Management Plan. This plan will prioritize drainage areas of the lake needing funding and assistance to reduce the flow of sediment and pollutants into the lake. Surveying of these areas will occur this summer and fall with a report of findings expected by 2015.

The grant funds for these efforts partially come from US Environmental Protection Agency (EPA) under Section 319 of the Clean Water Act. Section 319 grants are administered by the Maine Department of Environmental Protection in partnership with EPA in order to prevent or reduce water pollution in Maine.



Erosion site before



Erosion site after



Heather True is a project manager at the Cumberland County Soil and Water Conservation District. She can be reached at [htrue@cumberlandswcd.org](mailto:htrue@cumberlandswcd.org)

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