

Winter 2026

SEBAGO IN DEPTH

Water, Land, Community



PHOTO BY: HEATHER NEARY

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INTEGRATED PEST MANAGEMENT

Controlling pests while protecting the lake



By Nate Whalen

Water Resources Specialist Nate Whalen can be reached at nwhalen@pwd.org

It may feel like there are a lot more pests around these days. In addition to mosquitoes, black flies, horseflies, and variable leaf milfoil, Maine is now actively managing several newly established or emerging species. Deer ticks carrying Lyme disease, browntail moths causing rash, and hemlock woolly adelgids, emerald ash borers, and beech leaf disease all threaten our healthy forests. There seems to be something new on the horizon every year that is challenging our environmental protection efforts.

In one generation, we have transitioned from annoying mosquitoes buzzing around to ticks carrying disease, and when you look up in the forest, you can see the trees are turning brown due to some infection. The increase in pests does not happen by accident. As humans evolved from local inhabitants to global travelers, and with the rise of world economic trade and shipping, pests were sure to follow.

How do we deal with all of this? We receive many questions asking how to combat these pests without inadvertently harming Sebago Lake. The answers are nuanced and complex. Traditional fixes include cutting trees and applying pesticides, but these are not always the solutions that are appropriate for lakeside properties and not always ones PWD or the Maine Department of Agriculture, Conservation & Forestry (MDACF) would recommend. As always, PWD

strives to be a helpful source of information, enabling people to make informed choices.

The most science-based approach to pest control that minimizes risks to people, property, and the environment is known as “Integrated Pest Management” (IPM). It relies on a combination of common-sense practices and a tiered approach to address the root causes of pest problems. There is no one-size-fits-all approach. It’s generally a series of guidelines based on prevention, physical, and nature-based control strategies. Some real-world examples are probably the most straightforward explanation of how to use IPM as a homeowner.



Browntail moth web



Browntail moth caterpillar

Browntail moth is an invasive insect from Europe that has been spreading inland from the coast of Maine. The hairs of the caterpillar stage are capable of causing an itchy rash and can be exceptionally bothersome for people with sensitive skin. The first instinct may be to remove large oak trees that overhang decks or patios where people congregate. IPM solutions entail behavioral changes that avoid chemical use or full tree removals and reliance on natural controls.

BROWNTAIL MOTH CONTROL: What You Can Do

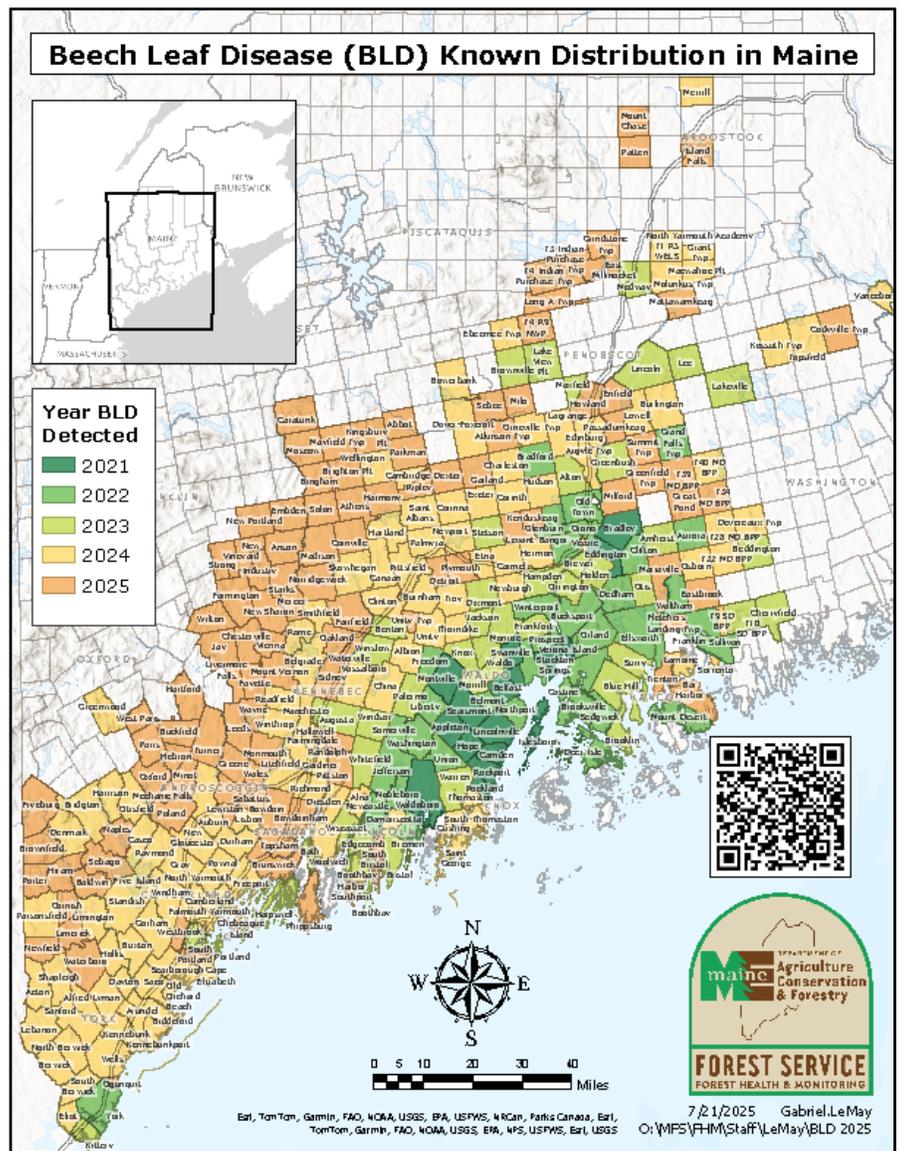
- 1 **Remove winter webs.** Look for browntail moth webs at the tips of branches in winter and clip them before spring to reduce emerging caterpillar numbers.
- 2 **Turn off outdoor lights.** Reduce outside lighting in late summer and early fall to help prevent adult moths from gathering and laying eggs near your home.
- 3 **Rely on natural controls.** Avoid broad chemical treatments; natural predators, fungi, and weather patterns help reduce browntail populations over time.
- 4 **Learn more.** Visit our Winter 2025 Sebago in Depth newsletter for additional management tips: pwd.org/publications/Sebago-in-depth-winter-2025

strategies require tailored applications based on scientific research and practical judgment. With a changing climate and people and goods travelling farther and more often, hitchhiker pests are sure to follow. Living organisms are always looking to fill their niche in the environment. When pests adapt to new ecosystems, the natural controls that have evolved before they arrived are no longer effective. Humans often need to become the control solution. **We need to be mindful that our involvement doesn't cause more harm than good.**

For more information on Integrated Pest Management, visit the MDAF's website: Maine.gov/dacf/php/integrated_pest_management

One of the most challenging new pests is the nematode (a small, microscopic worm) that feeds on the inside of beech leaves and causes Beech Leaf Disease (BLD). The disease was first discovered in Maine in 2021 and has since spread rapidly across the state. Since the disease is so new, not much is known about it. It is characterized by beech leaves that are cupped, shriveled, brown, and deformed. It is a lethal condition that can kill beech trees after five to seven years of infection. Researchers have been conducting a variety of BLD treatment trials over the past several years. Some encouraging preliminary results have been noted through these trials. One treatment that individuals can perform is the hand-bottle spray application of potassium phosphite on the exposed roots and up the bark of the tree. For every inch in diameter around the tree, spray one foot up the bark. This phosphite product is not the same as phosphorus that causes algae blooms in lakes; however, general precautions should still be taken during application. These general precautions include avoiding spraying on windy days, following the manufacturer's safety guidelines, and refraining from spraying within 25 feet of the lake.

Combating pests with an Integrated Pest Management approach is challenging because no universal solution exists. Effective





PROFILE OF A SEBAGO PROTECTOR

Lee Dassler
Program Director,
Western Foothills Land Trust

Western Foothills Land Trust conserves land and preserves native ecosystems, farm and forest lands, watersheds, and scenic landscapes in the upper Sebago Lake watershed, and plays a key role in the Sebago Clean Waters partnership. Lee has been involved with land conservation in the Oxford Hills region for 33 years.

How long have you worked for WFLT and in what roles?

Lee: I joined the Board of the Land Trust in 1992 right after moving to Maine. I started helping with newsletters and mailings, initially. I created the logo by carving it into an eraser that could be used as a stamp. At that time, we held donated easements that, together, protected 300 or so acres of farmland, which is commendable for a volunteer-run organization. I remember being excited when we discovered we could raise funds to purchase land as a means of conservation.

When and how did you decide you wanted a career in land conservation?

Lee: I don't think I ever did decide, per se. My undergraduate degree was in theater arts which I found to be great preparation for working in the nonprofit sector. My graduate degree was in historic preservation which fit

in perfectly with a decade as Executive Director at the McLaughlin Garden in South Paris. When the Land Trust board asked if I would work for the Trust, the transition to larger landscape conservation seemed logical.

How did you get to where you are now in your career?

Lee: Mostly by listening to and copying the work of smarter people. Having been raised in suburban St. Louis, I'm curious about the geology and geography of this region. Who and what thrived here and why, and who or what will be able to continue to live here, given the stresses of a warming climate.

What's your favorite thing about your job?

Lee: I love the community: those who are drawn to work in and/or protect our natural resources are just the best people. I also treasure that every hour of every day is different, and most days, I get to wear hiking boots or ski clothes for a portion of the day.

Tell me your perspective on the work WFLT is doing with PWD and why it's important.

Lee: As the Crooked River flows through our service area, we have been involved with trying to protect forested lands within the River's watershed

for decades. With support from PWD and other partners, that focus was enlarged to embrace the Sebago Lake watershed in 2017, creating a partnership of 11 organizations called Sebago Clean Waters. The power of that partnership, with PWD at its core, has been remarkable.

What is your biggest concern for the region's water resources?

Lee: As a lake swimmer and a nordic skier, my days are defined by water. Climate change is squeezing our ski season at both ends, and threatening the health of our lake waters which are warming. Changes to our recreational opportunities cannot be compared to the impacts of climate change upon the many plant and animal species which live in the watershed.

What is your favorite preserve in the Sebago Lake watershed and why?

Lee: Hard question, Twin Bridges Preserve in Otisfield. The Preserve is now part of a 2,300-acre contiguous conserved landscape bridging the Crooked River. The forested trails are level, mossy and quiet, providing opportunities for reflection, inspection, and access to river views.



WHAT'S MAKING WAVES: Around Sebago Lake

Follow the Water

The recently released short documentary, *Follow the Water*, details a 100-mile kayak trip that began on May 5th, 2024 in honor of National Drinking Water Week. It documents the journey water takes from Songo Pond in Bethel all the way to Casco Bay and interviews people who are involved with water all along the route, including several PWD employees. The journey emphasizes how forests are connected to the water quality of Sebago Lake. Watch the video: youtube.com/watch?v=eB6qQrw503E

Restoration Projects at Southern End of Lake

In late summer of 2025, PWD and Maine Department of Transportation partnered to daylight Standish Brook, removing a 250-foot underground granite culvert and an abandoned chlorine drip station building. The building and culvert had caused water quality and flooding issues. The brook was restored to a natural, free-flowing stream. At the same time, an old water intake building on the shorefront was demolished, and the site revegetated to encourage conversion of the old building lot to a vegetated buffer to enhance protection of Sebago Lake.



Standish Brook BEFORE



Standish Brook AFTER

BIG UPGRADES for Upper Watershed Stream Crossings

Lakes Environmental Association was busy at the end of September, installing three stream crossing upgrades in just two weeks! With funding from Sebago Clean Waters' Regional Conservation Partnership Program award, culverts on Little Pond Brook, Carsley Brook, and Woodsum Brook, in the towns of Otisfield and Harrison, were replaced with bridges. These projects will collectively open an additional 2.5 miles of stream habitat to cold water fish.

Culverts can be a barrier to fish and other wildlife if they are too small, not set at the right elevation, or damaged. In extreme cases, undersized culverts can cause roads to wash out completely during large storms, leading to costly infrastructure repairs and downstream pollution. LEA's work on these three streams will make a big difference.

These new bridges were installed using "Stream Smart" guidelines for size and placement. The stream is no longer constricted by a pipe, and can maintain its natural flow and rise and fall with water level, making it more resilient in storm events and healthier for the ecosystem it supports. The water in all of these streams eventually makes its way to Sebago Lake, so these projects are helping to keep our water supply clean and safe too!



BEFORE and AFTER photos of the Carsley Brook crossing project

GLOEOTRICHIA in SEBAGO LAKE

By Carina Brown

Water Resources Specialist Carina Brown can be reached at cbrown@pwd.org

Dry summer conditions are often great for water quality in Sebago Lake. While analysis of 2025 lake water quality data hasn't begun at the time of writing this, the rainy spring and public concern

over lake water quality in the summer has us curious what the 2025 data will reveal. In late August, we received complaints about a possible cyanobacteria bloom on the west shore of Sebago Lake with concerns that it posed a risk to the health of people and pets. Our investigations, which included conferring with Lakes Environmental Association (LEA) and Maine Department of Environmental Protection's Lakes Program, concluded that *Gloeotrichia* was present at densities typical of late summer and the risk to lake users remained low.

In order to discuss *Gloeotrichia* – full name *Gloeotrichia echinulata* and referred to as “Gloeo” for short - it's important to understand its biology and

ecological context in Sebago Lake. Gloeo is a type of cyanobacteria, or blue-green algae, commonly found

in Maine lakes in late summer and early fall. It sits at the bottom of the lake in spring and early summer, then absorbs phosphorus (food for plants and algae) from the bottom sediment and rises up through the lake. Floating near the surface, Gloeo uses sunlight and stored phosphorus to reproduce. A colony is 1-3 mm in diameter, composed of numerous hair-like filaments that take on a fuzzy, yellow ball appearance, and can be noticeable even in low densities. Under conditions where excess phosphorus is available in the water column, Gloeo can quickly multiply.

Many types of cyanobacteria, including Gloeo, can produce toxins if found in high numbers. Cyanobacteria sometimes reach a level of concern when they form blooms - thick mats or scums with a green or blue-green tint and foul odor. In these conditions, Gloeo can cause rashes and skin irritation.

In response to last summer's public concern, a water sample was analyzed by LEA for the presence of microcystin (the toxin produced by some cyanobacteria). Results of the test indicated that microcystin was not present in the Gloeo and surrounding water.



A Gloeo colony viewed through the microscope.



Typical occurrence of scattered Gloeo

Since 2013, PWD has monitored for Gloeo monthly in Sebago Lake. We have observed scattered Gloeo every year. **In no case has there been any occurrence that we would consider a bloom, nor has there ever been a concern for the quality and safety of our drinking water.** Generally speaking, Sebago Lake holds nearly a trillion gallons of water that is cold, clear, and low in nutrients like phosphorus, which feed algae and cyanobacteria growth. Each spring we provide an annual lake monitoring report that compares the most recent year's data to historical data, which dates back to 1976 in Lower Bay. That report can be found here: pwd.org/sebago-lake/



Clear Sebago Lake water along a vegetated shoreline

What you can do

As lakefront property owners, you play a unique role in the lake's health. Phosphorus comes from soil, fertilized lawns, failing septic systems, and storms and snowmelt that wash it into the lake. To reduce the risk of your property or neighborhood becoming a source of excess phosphorus, here are simple actions to take.

- Reduce soil erosion by stabilizing bare areas (vegetating, mulching, seeding)
- Maintain a buffer of trees and plants between your lawn and the lake
- Direct runoff from gravel roads, roofs, and driveways into vegetated or stable areas
- Eliminate the use of fertilizer
- Regularly pump your septic tank

If you notice something out of the ordinary in the lake, contact us. We appreciate the opportunity to address your concerns and investigate them.

If you suspect algae is causing health effects, there are several things you can do before contacting us to help investigate the situation:

- Collect a water sample in a quart mason jar or gallon milk jug
- Take pictures of what you see on the surface
- Report on BloomWatch or Lake Observer apps



PWD STAFF PROFILE

Steve Herrick
Lake Security

Steve has worked part-time at PWD for 18 years implementing security programs around Lower Bay, where the water intake pipes are located and protection zones exist. You would most likely encounter Steve on the Sebago Lake Land Reserve (SLLR), the 1,700 acres of PWD-owned forests around Lower Bay which are open to the public.

The SLLR has a large network of trails, but Steve was here when there were only half as many trails. He and other Security staff created many of the 13.5 miles of trail that exist now. He fondly recalls walking the old grown-in logging trails, following tree stumps for orientation. *"We would walk them to see where they led, then cut through and make the new trails. That was fun! I really enjoyed it."*

His love for the woods pairs well with his primary responsibility, land patrol and maintenance. He checks that visitors have permits to access the land, are engaged in allowed uses, cleans up downed trees, and conducts other maintenance as needed. To Steve, the most fun thing is when people talk to you and thank you for maintaining the trails and keeping them open. *"I've met a lot of nice people out there."*

Steve also captains the patrol boat from time to time, but you'd only engage him on the lake if you enter a restricted zone or need assistance. He's been on Sebago his whole life so he enjoys it. He got his first boat when he was nine and recalls, *"It was a little 8-foot aluminum boat with a 3-horse Johnson. This boat's a lot different than that."*

His favorite spot on the land reserve is Hidden Valley trail and his favorite spot on the lake is in the big bay just outside Frye Island, where he likes to go and sit and drift.

Steve commends those who live close to the lake for taking care of it and shares that, *"Everybody loves the lake and thinks it's such an asset, me included. It's beautiful."*





CONNECT WITH PWD'S SEBAGO LAKE PROTECTORS

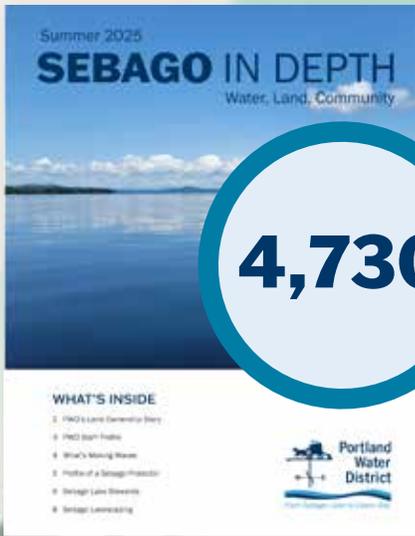
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printer to add their Wind Power, FSC, and PrintReleaf logos

2025 SOURCE PROTECTION STATS



Copies of Sebago in Depth mailed

4,730



2,018

Acres of Sebago Lake watershed forests conserved



29,000

Public visits to the Sebago Lake Land Reserve

38

Lakescaping Consultations



498

Water Samples analyzed for *E. coli* Bacteria