

LAKE AUBURN

WATERSHED — NEWSLETTER

Life Beneath the Ice

Mary Jane Dillingham, Water Quality Manager

Lake Auburn officially froze January 19th, 2016, which is the second latest date since 1952. The latest date ice completely covered Lake Auburn was January 24, 2006. While most are reluctant to talk about climate change, our data suggest that indeed, our lake is freezing later and thawing earlier. The significance of shorter periods of ice on the lake is not yet known.

Since the Algal blooms of 2011 and 2012, we have regularly monitored the algae and zooplankton (microscopic plants and animals) of the lake. The populations of these organisms change constantly and are sensitive to light, temperature, chemistry of the water, and the presence of other organisms.

In the late winter, the lake water is typically slightly warmer in the depths of the lake and coldest at the surface. The oxygen levels slowly deplete from ice-on until the ice melts. Zooplankton and phytoplankton move through the water and continue to thrive if the conditions are in their favor. Less ice means more sunlight available for photosynthesis, the mechanism by which plants, even microscopic ones, create energy. Some lakes and ponds can have algal blooms in the winter, and with shorter ice-on periods Lake Auburn may have a higher chance of algal blooms.

We continue to collect and analyze data. Although we have to deal with climate changes as they come, it is safe to say that by keeping Lake Auburn free of pollutants we have a greater chance to prevent algal blooms in our drinking water source.

Contents

- Lake Lines..... pg. 2
- Residential Landscaping
for Clean Lakes..... pgs. 2-3
- Watershed Wildlife: Barred Owl..... pg. 4
- Grant Update..... pg. 4
- Watershed Projects:
North Auburn Dam..... pg. 5
- New Natural History Brochures pg. 6

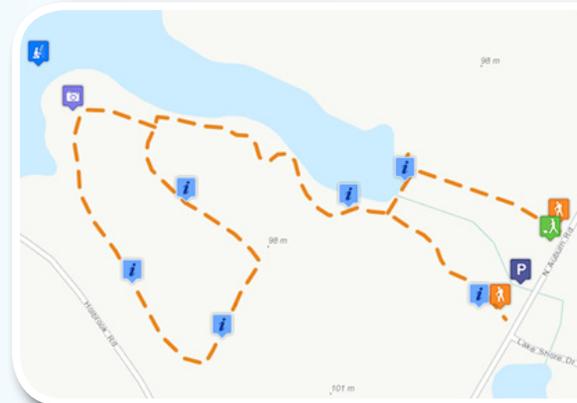
Volunteers Wanted!

Developed land is more likely to negatively impact water quality. Roofs, driveways, lawns, roads, etc., all hasten the flow of pollution into nearby waterways. This was known even 100 years ago, when Maine legislators implemented laws and rules for water utilities to protect drinking water sources.

In our watershed land has been purchased to help protect Lake Auburn for now and for the future. While no building or potentially polluting activities are allowed on the properties, the LAWPC invites low-impact recreational pursuits on the conserved lands; resulting in nearby green space right within the City of Auburn’s boundaries.

Some trails, such as the Whitman Spring are well used, but others have become overgrown and are harder to use. For instance, the former Land Lab parcel once hosted many educational trails and even a low ropes course. Remnants of those good days can still be found but for the most part the trails are in poor shape.

We are seeking volunteers to bring these trails back to their former glory! The trails need pruning, delineation, water diversions, and some signage. If you’d like to offer manual labor in exchange for the satisfaction of a job well appreciated, please contact richard@awsd.org.



Approximate location of “Land Lab” trails that need work.

Lake Lines

NOTES FROM THE COMMISSION CHAIR

Joseph Grube, Chair LAWPC

The Lake Auburn Watershed Protection Commission is happy to report that our professional staff is reporting that Lake Auburn was healthy in 2015. No pressing chemical treatment plans were needed to protect the quality of the water and there were no major incidents that adversely impacted the lake. Once again no news is good news.

The Commission has been in existence for 23 years. Its very existence stems from the desire of the cities of Lewiston and Auburn to protect the quality of water in this wonderful natural resource. Throughout the time the Commission has been operating the members have been expected to act as stewards of the lake. With the continuing waiver from filtration and the high quality of the lake's water it can be said that the members have been faithful with their charge.

The upcoming year will provide new challenges for the Commission as we continue to strive to ensure that activities that occur in the Lake Auburn watershed do not negatively impact the quality of the lake. Hopefully 2016 will also be no news is good news. The Commission members will do their part to protect the watershed and encourage all users of the watershed to be responsible to ensure the health of the lake. Happy 2016 and thanks again to the Commission members and our Auburn and Lewiston water professionals for their commitment to the quality of Lake Auburn.

Lake Auburn Watershed Protection Commission

Joseph Grube, Chair, *City of Lewiston*

Lee Upton, *Auburn Water District*

Richard Thibodeau, *Turner*

Bob Thompson, *AVCOG*

Bethel Shields, *City of Auburn*

John Bonneau, *City of Auburn*

Michael R. Lachance, *City of Lewiston*

David Jones, *City of Lewiston Director of
Public Services*

Steve French, *Hebron, Minot & Buckfield*

Residential Landscaping for Clean Lakes: *Beautiful Ways to Prevent Pollution!*

People along the shore of lakes, rivers, or other waterways may hear about "BMPs or Best Management Practices". Basically, these installations can help keep pollution from getting into the water, by working with rather than against the natural flow from rain and snowmelt. If you live in the Lake Auburn watershed and are within 250 of a shore, you may be eligible for financial assistance to install some of these and other BMPs. Contact us at help@awsd.org. Here is an overview of some common treatments:

Vegetated Solutions:

Buffer Planting: The use of plants to intercept runoff before it enters the lake. A great buffer consists of shrubs, small trees, and groundcovers whose roots stabilize the shore and whose limbs and leaves intercept rainfall and flow, thereby eliminating erosion.

Rain Garden: A depression in the landscape that holds water so that it can slowly infiltrate over time. Rain gardens are often planted with small shrubs, grasses, and flowers to make them attractive and functional.

Infiltration Structures:

Swales: Gently sloping wide ditch-like structures, designed to slow and hold runoff, allowing for gentle infiltration rather than runoff. Usually planted with grasses, and/or lined with rocks/stone.

Infiltration Steps: An alternative to a stairway, using stone-filled boxes on a slope. The boxes intercept downhill flow and hold the water to prevent runoff into the lake.

Dripline trench: Stone-filled trenches under the gutterline of a house, prevents splash erosion and compaction from roof runoff.

Diversion Structures:

Water Bar: Stone or berm that diverts water from flowing into the lake, and instead conveys it to a vegetated area.

Open Top Culvert: Wooden structure that captures runoff and directs it away from the lake.

Rubber Razor: Often used in driveways, a rubber barrier that directs water into a vegetated area.

Visit the LAWPC website at:



Beautiful shoreline buffer



Swale, grassed and with rocks



Infiltration steps



Dripline trench, water diverter, erosion control mulch

Watershed Wildlife: Barred Owl

Barred Owls thrive in the Lake Auburn Watershed, as they prefer to live in mature forests with a combination of deciduous and coniferous trees that are near a body of water. Older woodlands contain larger trees for these cavity nesters and the variety of growth provides homes to an assortment of prey animals. Barred Owls are opportunistic predators, and their typical prey animals include mice, voles, and chipmunks, but will also hunt rabbits, birds, reptiles, and the occasional fish. Their feathers have adapted such that they are completely silent during flight, making them excellent and efficient hunters. Barred Owls are nocturnal; they are quiet and still during the day, but hunt and can be heard calling at night. They have a distinct call that sounds as though they are saying “Who cooks for you? Who cooks for you all?”

Barred Owls have a distinct *barred* pattern, with horizontal bars across their throat and breast and vertical bars on their bellies. Their feathers extend down to their feet, giving them a fuzzy look. Barred owls have dark eyes, a light beak, and a distinct disc pattern on their face which funnels sound towards their ears. Owls’ ears are set with one slightly higher on the head than the other to help triangulate the exact location of their prey, which is especially helpful in low light settings.

Barred Owls do not migrate and rarely move far from their home territory. They have few natural predators but are often impacted by human activity. The most common detriment to Barred Owls is a common, but easily avoided human habit: litter. Tossing litter from your car to the side of the road draws small animals and birds who forage for food scraps, which in turn attracts the owls to swoop down to the highly visible prey. When owls are hunting they are completely focused on their prey and may not see a car speeding their way. An easy way to help to protect this beautiful species right here in the Lake Auburn Watershed (and everywhere!) is to use a trash bag in your vehicle to collect unwanted items, which can then be disposed of properly. Pass the suggestion on to a friend for even greater impact.



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Grant update — *Funding still available for shoreline projects!*

The 319 Erosion Control Projects manager is looking forward to a productive construction season!

In discussion are a couple of culvert replacements to reduce phosphorus inputs to Little Wilson Pond, thereby ensuring that the outflow into Lake Auburn is not full of nutrients which can trigger algae blooms. The engineering has been completed; now it's a matter of town budget approval and work plan scheduling.

A handful of technical assistance visits along Little Wilson have hopefully sparked ideas for lake-friendly landscaping that can be

put into effect this coming summer. Residents can look forward to financial assistance for up to 60% of approved costs. For ideas about how to keep runoff from your property out of the lake, check the LAWPC website for brochures explaining a variety of installations Contact the LAWPC (help@awsd.org) for free technical help and funding assistance with your project.

INFILTRATION STEPS
~ controlling erosion on steep paths ~

Purpose: Infiltration steps use crushed stone to slow down and infiltrate runoff. They are effective on moderate slopes, but consider building wooden stairways on 1:1 slopes (45°) or areas where rocks or surface roots make it difficult to set infiltration steps in the ground.

Note: Prior to installation, contact the Maine DEP and town Code Enforcement Officer to find out if permits are required.

Installation: Infiltration steps are steps built with timbers and filled with crushed stone or pea stone. See separate sheet for retrofitting existing timber steps. Build new infiltration steps as follows (adapted from www.homestore.com):

The graphic includes the logos for the University of Maine System and the Portland Water District. A photograph shows a set of infiltration steps built with timbers and filled with crushed stone on a grassy slope.

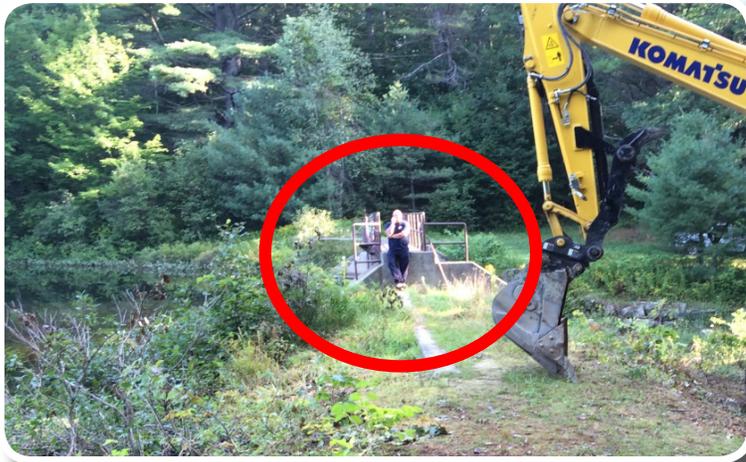
Watershed Projects: North Auburn Dam

A walk across the North Auburn Dam catwalk is now a little easier due to recent improvements at the spillway. The spillway is the earthen area on each side of the concrete center of the structure. The spillway acts to hold back the pond, directing the flow of water to the opening at the dam. To function properly, spillways must be able to hold water even after large storms.

When the dam was first built, (photos from the mid 1900's), it slowed and pooled in what was then a river between Little Wilson Pond and Lake Auburn, creating the shallow pond we now refer to as the Basin. Over decades of time since, large amounts of sediment have been trapped and accumulated behind the spillway. At the same time, the spillway gradually lost about 3' of material from storm erosion and wear, exposing the concrete structure. (shown in red circles)

With the change in storm pattern that we've been experiencing over the past few years, engineers were concerned that the reduced spillway could be overtopped; introducing loads of phosphorus-carrying sediment into Lake Auburn. In fact, fixing this potential problem was in the top five recommendations from our Lake Diagnostic Study of 2013.

After obtaining required permits, our crews took advantage of this past longer-than-usual construction season to complete the upgrades to the old spillway. Material chosen for its ability to withstand wear and weather was added to each side to build it up to almost level with the catwalk. Erosion control mix and filtering riprap was added for improved infiltration and stability. We expect this work to protect Lake Auburn for decades to come!





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Lewiston, ME
Permit 96

New Natural History Brochures

Last May, Paula Curtis-Everett from North Auburn became a certified Maine Master Naturalist. Throughout the intensive year-long course Paula learned how to identify wildflowers, shrubs, trees and ferns, mammal tracks, scat, signs and skulls, trees in winter, insect orders, and other topics. She also refined skills in bird watching, teaching natural history, and profiling natural communities. Each Master Naturalist is required to spend 40 volunteer hours teaching natural history in the year following graduation.

Paula has walked, skied, and snowshoed the Spring Road area for more than 30 years, taking photos and making observations. She has agreed to compile her stores of information in a reader-friendly brochure series called The Natural History of Spring Road. So far, she has completed two in the series; *Ferns of Spring Road* and *Broad Leaf Trees of Spring Road*. These brochures are available online now at www.lakeauburnwater.org and you can pick up hard copies at the Auburn Water District office on Court St. In the works are issues for Conifers, Birds, Mammals, and more.

