LAKE AUBURN WATERSHED PROTECTION COMMISSION

2025 WATERSHED REPORT

Farewell 2025...

and welcome 2026! It is with enthusiasm and excitement that we reflect on the year that has passed and welcome the one to come. We've had a lot of changes at LAWPC this year – from new employees and partnerships, to the successful approval of our watershed plan – and we have much to be grateful for. First and foremost, however, we are grateful for you. This community is at the heart of everything we do, and is the reason we exist. True, we are here to protect the water quality of Lake Auburn, but only so that it can be preserved for and used by the community. We couldn't do it without you, and we so appreciate your support. Cheers to another year!

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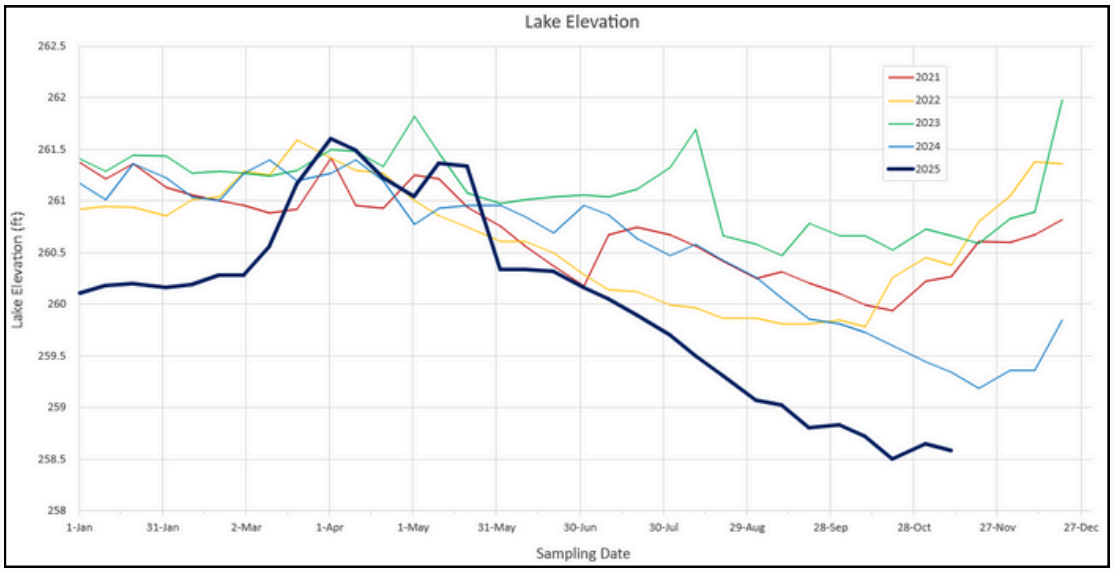
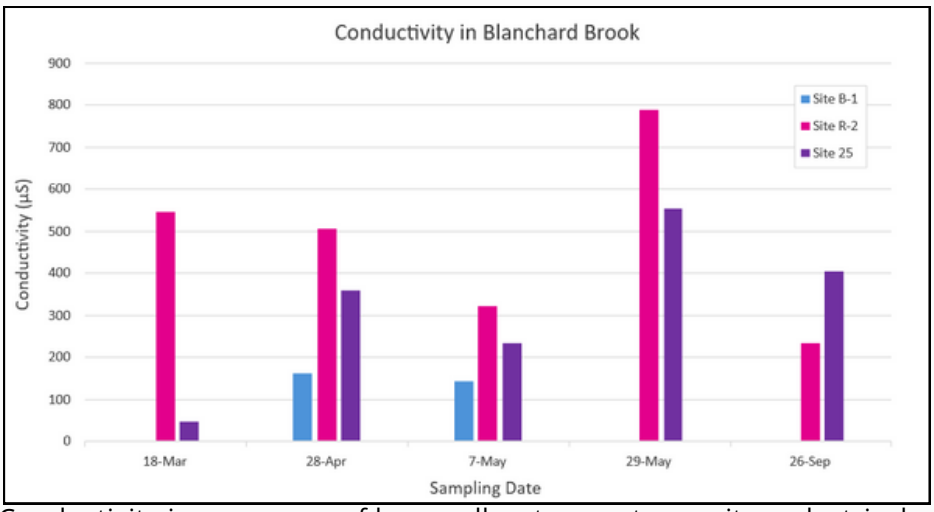
Lake Elevation



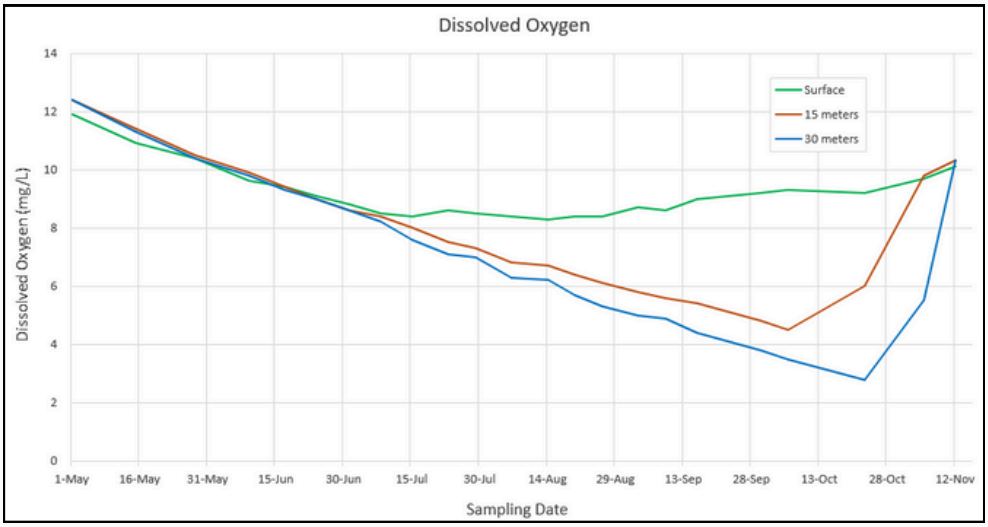
Lake elevation (more commonly known as water level) often fluctuates over the course of the year. As you can see in the graph, the general trend is for elevation to stay fairly steady through the winter when the lake is iced-in, drop over the course of the summer when temperatures are high, and rebound again when precipitation picks up in the fall. This year gave us quite a deviation from the trend, however. We entered 2025 with a much lower water level than normal due to the extremely dry conditions in fall of 2024. Spring precipitation brought things back up to normal, but the severe drought Maine experienced this year has brought the lake elevation to the lowest it has been since 2007. Even with a low elevation, Lake Auburn has more than enough water in it to meet the needs of Auburn and Lewiston's residents; the real issue with a low water level is its impact on water quality. Low water levels expose more shoreline, which can cause instability in the soil and lead to increased erosion, impacting turbidity, water temperature, phosphorus levels, and many other aspects of water quality.

Conductivity



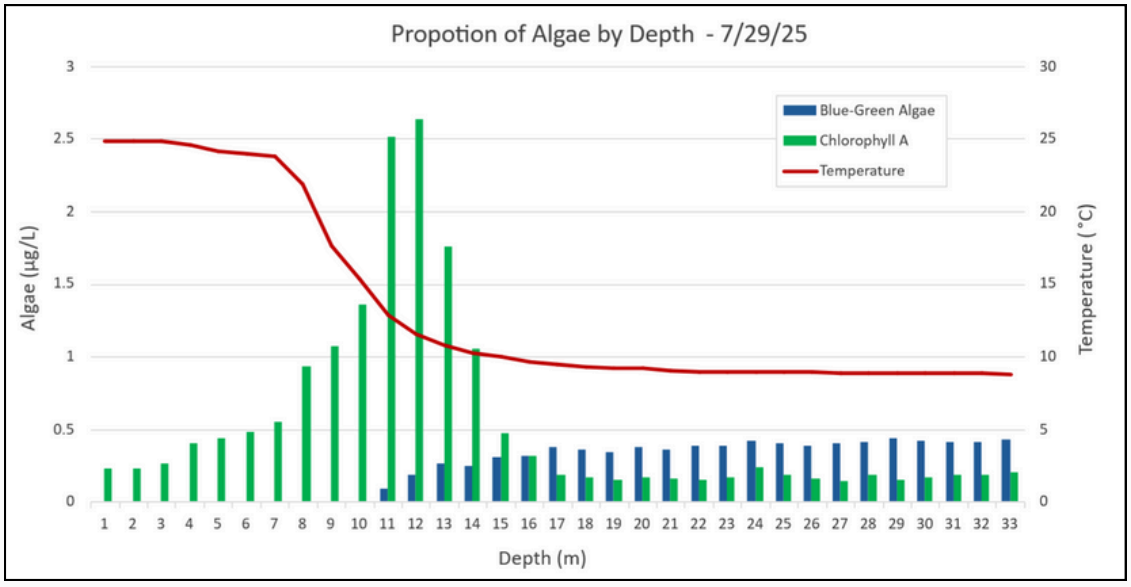
Conductivity is a measure of how well water can transmit an electrical current, and is measured in microsiemens. It is a useful proxy measurement for sediment levels in the water because inorganic compounds (like the dissolved salts that are often found in dirt and sediment) increase conductivity. You may be wondering why we don't just look at turbidity, or the cloudiness of the water, to determine sediment levels. Turbidity is a useful indicator for sediment as well, but it can also be influenced by pollen, algae, and other organic compounds in the water, so it's not always linked to erosion. The graph above shows conductivity levels along the Blanchard Brook tributary from five different sampling dates during 2025. Tributary sampling occurs just after a significant rain event and can show which tributaries around the lake may be contributing sediment due to erosion. We didn't have much rain throughout 2025 so the data is fairly sparse, but we can see that conductivity generally peaks along Blanchard Brook in the area just south of Turner Road and decreases somewhat by the time it gets to the sampling site near Lake Shore Drive. Though we would want to look at more long-term data than is represented here when making management decisions, this type of information can help us determine where erosion-control projects would be most impactful throughout the watershed.

Dissolved Oxygen



Dissolved oxygen (DO) levels are linked to the seasonal cycles of the lake, and directly impacted by both biotic and abiotic factors. As we can see in the graph, DO levels at the lake's surface remained fairly steady throughout the 2025 sampling season, with a slight dip during the warmest months of the summer due to warm water being unable to hold as much oxygen as cold. The steady DO level at the surface is due to gas exchange between the air and water, helped by wind and wave action. At lower depths (represented by the brown and blue lines), the oxygen is steadily depleted over the course of the growing season, with a sharp rebound in the fall. Lake Auburn goes through a period of stratification during the summer, when the upper layer of water warms while the lower depths stay cool. This creates a density difference between the two layers that prevents them from mixing, so the oxygen at the surface does not penetrate to the lower depths. During the fall the upper layer of water steadily cools until it finally reaches the same density as the lower layer. This causes the water in the lake to mix rapidly during a period known as "fall turnover," redistributing dissolved oxygen across the entirety of the lake and leading to the abrupt increase in DO levels we see on the far right of the graph. Fall turnover, which occurred in late October this year, is one seasonal change that we track each year to help us understand the impacts of a changing climate on Lake Auburn.

Algae



Algae levels in Lake Auburn naturally vary, both over the course of the season and at different depths in the lake. We measure two different algae indicators. Chlorophyll a is a key component of photosynthesis, and so is an indication of photosynthetic organisms at work in the water (a large group of which is algae). Blue-green algae, or cyanobacteria, is a group of algae that can cause toxic algal blooms in large amounts. Algal abundance has a strong relationship to water temperature, which is clearly shown in the graph above. This data was collected on July 29th at the deepest section of the lake, allowing for samples to be taken at one-meter intervals to a depth of 33 meters. The dip in temperature that starts around nine meters occurs at a layer called the thermocline and shows a clear temperature delineation between the upper and lower layers of the lake (for more information on this, see the Dissolved Oxygen section above). We can see that chlorophyll a levels spike at the thermocline, meaning that photosynthetic activity is highest there, and blue-green algae only shows up in samples taken below the thermocline. Tracking algal growth throughout the season allows us predict potential blooms, helping protect the drinking water quality of Lake Auburn.

Watershed Projects

With the year's end, we reflect on many successes in the watershed from 2025. From state approval of Lake Auburn's watershed protection plan, to rolling out an assistance program for septic system inspections, to conserving 66 additional acres in the watershed, we feel proud to continuously achieve our goals to protect the local drinking water supply and provide a special place for those living in and around the watershed.

To ensure the accomplishment of these major goals, watershed staff have spent this year developing and strengthening important relationships with many partners, such as the City of Auburn, DEP Nonpoint Source and Watershed Programs, CDC Drinking Water Program, DACF Maine Conservation Corps, DOT, and MDIFW. Collaboration with these partners will continue in an effort to ensure resiliency and help protect Lake Auburn from all angles.

In 2026, these partnerships will enable the continued implementation of the watershed protection plan, and staff will focus on vegetated buffers along Lake Shore Drive and planning shoreline stabilization projects. Those living in the watershed will be prioritized, as staff offer technical assistance on private properties and conservation planning solutions. We look forward to meeting more community members and bringing them along on this journey to protect Lake Auburn.

Outreach & Education

In 2025, we prioritized getting outside and appreciating the beautiful nature and scenery of our watershed! We hosted birding and tree-identification walks in the spring and partnered with Androscoggin Land Trust on a hiking and paddling series in the fall. In the summer we attended a number of area events and were able to meet community members at the Lewiston Farmers' Market, L/A Balloon Festival, and Lewiston Summer Fun and Films nights. We also continued to provide educational opportunities to schools, guiding field trip tours of the UV treatment plant, and coordinating student surveys of local streams.

Another big focus in 2025 was the roll out of our Lake Auburn Watershed Septic System Inspection Program. This program is designed to provide educational, technical, and financial assistance to homeowners living within the watershed boundary in the city of Auburn to help them comply with the new city ordinance. Last year we hosted a number of informational sessions to help homeowners understand the ins and outs of septic system maintenance, and we will continue to serve as a resource to homeowners in the upcoming year.

We believe the heart of watershed protection lies in bringing community together in appreciation and support of the natural resources that we all share. We look forward to growing our recreational and educational offerings in 2026, and we are excited to share this journey with you.

Shore Corps

In May, we welcomed Lily Gallagher as LAWPC's Shore Corps Steward. Shore Corps is a Maine Conservation Corps program focused on combating shoreline erosion along Maine's coastline and inland water bodies. During her term, Lily piloted the OUR SHORE erosion control framework – a new approach to erosion control that focuses on nature-based solutions. Lily hosted an erosion control demonstration project in the watershed at Basin Park, working with volunteers to collect and plant over 50 dogwood and arrowwood live stakes. We look forward to seeing the fruits of this work in the spring, when the stakes will begin to grow roots which will help anchor the soil and prevent further erosion from entering the lake.

In addition to this project Lily also focused on invasive plant eradication, mobilizing 27 volunteers who cleared a large amount of Japanese knotweed from the Whitman Spring Road Trail. She also conducted 11 site assessments for property owners, providing recommendations for native species to plant and erosion control techniques they might implement on their land. We are excited to announce that Lily has accepted a position with Androscoggin Valley Soil & Water Conservation District, and will begin her new role this month. We wish her continued success, and look forward to continuing to work together!

Volunteers

We would be unable to do the work we do without the help of our incredible volunteers and partners. Their dedication, expertise, and support are essential to our success, and we offer them our deepest thanks. With volunteer help, this year we were able to:

- clear invasive plants from sections of Whitman Spring Road Trail
- harvest and plant live stakes to help control erosion along Basin Park
- host community nature walks in the watershed
- survey and clean popular fishing sites along the shoreline
- monitor and maintain 14 fishing line disposal tubes around lakeshore

In the year to come, we look forward to growing and strengthening our network, and providing more opportunities for involvement based on the interests and needs of our community. We plan to administer a comprehensive survey to help guide our volunteer planning going forward, and we hope you will share your ideas with us!

Thank You!

Lake Auburn Watershed Protection Commission is incredibly grateful to have community members like you who care about Lake Auburn and support the protection of the watershed. Together, we can protect the drinking water source for tens of thousands of our neighbors in Auburn and Lewiston and keep Lake Auburn beautiful and clean for many years to come.

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Photo by Rob Crosby