Lakescape

Newsletter of the Wabamun Watershed Management Council | No. 35 | Fall 2024


Ingrid Smith

WEDNESDAY
23
OCTOBER

Mark Your Calendar for the AGM

Annual General Meeting of the Wabamun Watershed Management Council (WWMC)

Wednesday, October 23, 2024
7 p.m.

The meeting will be held in person and online via Zoom. All members are welcome to attend.

Keynote Presentation:
Wabamun Lake in Comparison to Other Alberta Lakes
by Bradley Peter, Executive Director, Alberta Lake Management Society

Attend in person:
Seba Beach Seniors Centre
109 1st Street S

Join via Zoom:
https://us02web.zoom.us/j/86037363311

To **phone in** (voice only), look for your local telephone number here:
https://us02web.zoom.us/u/kcyHzAjJVp

Inside This Issue

Wabamun Watershed Management Council

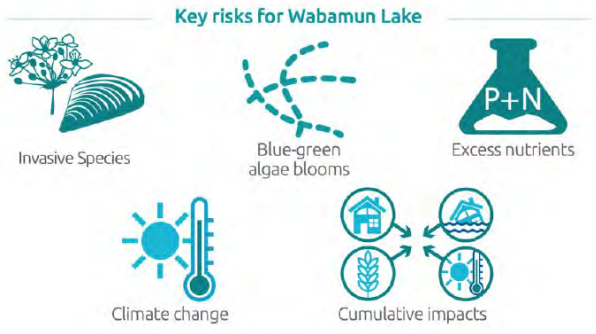
CHAIR REPORT:
The Lake Speaks

By Sue Styles, WWMC Chair

Welcome to the Fall edition of *Lakescape*, with a fresh new design! Let's start with some updates about the past summer season and information about upcoming activities.

Of foremost concern in the Wabamun watershed was the unfortunate manifestation of some threats clearly identified in the 2020 Wabamun Lake Watershed Management Plan (WMP): invasive plant species (see article on page 4) and intense blue-green algae blooms in late summer. You may be familiar with the "Key risks for Wabamun Lake" graphic from the WMP 2-page summary, which identifies these threats:

- Invasive species
- Blue-green algae blooms
- Excess nutrients
- Climate change
- Cumulative impacts



With the vivid manifestation of these threats this past summer, the lake speaks to us. These are indicators of a strained ecosystem and may be the proverbial "tip of the iceberg." The cumulative impacts and effects of the last century — namely area economic development, urbanization, and climate change — are currently stressing the lake's resilience. To strengthen resilience, local ecosystems require support. The future requires thoughtful change. Going forward, all decision-making (big, small, and minute) impacting the lake and watershed must boldly err on the side of protection of the health of the lake. It's an admittedly complex process, but alongside collaborative partners, the WWMC will continue to work as the voice of the lake, always in support of lake health and protection.

WWMC initiatives and collaborative efforts continued through the summer since the last *Lakescape* was published. Here are some highlights:

- **Water quality monitoring:**
  - WWMC completed the ALMS Summer LakeWatch program again (view the latest LakeWatch Reports).
  - WWMC participated in the exciting Cyanobacteria Algal Bloom Remote Sensing Project.
- **2024 Invasive Plant Species Assessment:** Alberta Environment and Parks (AEP) aquatic invasive species team completed an assessment of Purple Loosestrife and Himalayan Balsam (see article on page 4).

- **Bulrush restoration pilot project:** The first year of monitoring and survivability assessment was completed. The survivability outcome is most encouraging (see article on page 7).
- WWMC continues **stakeholder engagement** with:
  - **TransAlta**, regarding the Sundance Water Treatment Plant and Highvale Mine Reclamation application. The TransAlta combined Highvale Mine Decommissioning and Final Reclamation Plan application materials are currently under review by the Alberta Energy Regulator.
  - **Parkland County**, to better assess implications of the Wabamun Waterfront Projects on the health of the lake and ecosystems.
  - Summer Villages of **Seba Beach**, **Betula Beach**, **Kapasiwin**, **Lakeview**, and **Point Alison**, to update and maintain communication on key lake and watershed topics.
  - **Paul First Nation**, to build a relationship to better enhance lake and watershed stewardship for all.
  - Community stakeholder groups, including the **Committee on Keephills Environment** (**COKE**) and **Edmonton Old Timers Fishing Club**, to exchange information on lake and watershed issues.
- **Governance:**
  - The WWMC is undertaking transition in the communications portfolio to enhance this key portfolio and to provide an opportunity for Don Meredith (current WWMC Communications Chair) to step back after almost two decades of extraordinary work with the WWMC Board of Directors. The Board sends a huge, heartfelt "Thank you!" to Don for his years of dedication, for sharing his combined biology and writing expertise, and for shaping the solid integrity of the WWMC. The quality and accuracy of lake stewardship communication will continue, but you may see design changes to give more vitality to the delivery of information.

Blue-green algae bloom, Summer 2024. *Neil Fleming*

  - We continue to move forward with establishing a governance model to strengthen organizational capacity and sustainability in order to most effectively implement the Watershed Management Plan.

In closing, I would like to thank each member of the WWMC Board of Directors for their contributions, dedication, and commitment to lake stewardship work throughout the year, including the summer months. Out and about over the summer, board members had opportunities to casually meet with stakeholders, citizens, and visitors around the lake and watershed. You shared thoughtful ideas and questions, interests, and concerns. We value these interactions as opportunities to share information and resources. The WWMC will continue to champion lake stewardship, and we encourage you to do the same — to speak up for the health of the lake.

Invasive Species at Wabamun Lake

By Kallum McDonald, MSc, Aquatic Invasive Species Technician, Alberta Environment and Protected Areas

Alberta Environment and Protected Areas has become aware that Wabamun Lake is under threat from aquatic invasive species. The culprits are **Himalayan Balsam** and **Purple Loosestrife**. These beautiful yet destructive aquatic plants are spreading rapidly along shorelines and within adjacent properties, posing a serious risk to biodiversity, water quality, and recreational use. Both species are regulated as prohibited under the *Fisheries (Alberta) Act* and the *Weed Control Act*.

Understanding the Threat

Himalayan Balsam (*Impatiens glandulifera*) is a fast-growing annual plant with typically pink (sometimes white or magenta) flowers. Originally introduced as an ornamental plant, it has spread uncontrollably. It thrives in damp areas like riverbanks and lakeshores, where it can quickly outcompete native vegetation. This plant's dense stands prevent other species from growing, and when it dies back in winter, it leaves behind bare soil, leading to significant erosion.

Purple Loosestrife (*Lythrum salicaria*), recognizable by its tall spikes of magenta-purple flowers, is also destructive. It invades wetlands and lakeshores, forming dense populations that choke out native plants. These dense stands reduce food and habitat availability for local wildlife, particularly birds, insects, and amphibians. Purple Loosestrife can also alter water flow, contributing to the degradation of aquatic ecosystems.

Both species pose a serious risk to the health and function of Wabamun Lake.

Himalayan Balsam (*Impatiens glandulifera*).
Kallum McDonald

Purple Loosestrife (*Lythrum salicaria*).
Kallum McDonald





Himalayan Balsam can range in colour from white to shades of pink, to a rich magenta. Get to know its flowers and foliage. *Kallum McDonald*

The Need for a Collaborative Approach

Managing these invasive species requires coordinated efforts between government, local landowners, conservation organizations, and the Wabamun Lake community. Invasive species do not recognize property boundaries, so a patchwork approach will not be sufficient. Instead, we need a partnership that unites everyone to tackle infestations at their source and prevent further spread.

You can be part of the solution:

1. **Early Detection and Reporting**: Community members can play a crucial role in spotting new infestations. Report all sightings of Himalayan Balsam or Purple Loosestrife to government to enable early intervention and meet reporting requirements.

Purple Loosestrife produces tall spikes of magenta-purple flowers. *Kallum McDonald*

2. **Removal Efforts**: Planning is underway to control the aquatic invasive plant infestations around Wabamun Lake. Volunteers can help physically remove these species from infested areas, ensuring that plants are disposed of correctly to prevent further spread. Residents are encouraged, but not required, to remove prohibited aquatic invasive plants growing on the provincial shoreline adjacent to their properties, but are required to remove them if they are within their property. It is easiest to remove these species once they start blooming and are more easily spotted. Himalayan Balsam blooms mid-July until frost. Purple Loosestrife blooms late July until mid-September. Please contact the Aquatic Invasive Species program for directions for effective removal and disposal. Reporting is required before removal.
3. **Education and Awareness**: Awareness campaigns are vital in educating the community about the dangers of these species. Spread the word across the Wabamun Lake community.

Get Involved!

Protecting Wabamun Lake from the spread of Himalayan Balsam and Purple Loosestrife requires everyone's involvement. Together, we can safeguard our lake for future generations to enjoy.

For more information or to report an infestation, please contact **epa.ais@gov.ab.ca** or call the Aquatic Invasive Species Hotline at **1-855-336-BOAT (2628)**. You can also report via EDDMapS (Early Detection and Distribution Mapping System).

Bulrush Restoration Project: Year 1 Monitoring

By Sue Styles, WWMC Chair

Neil Fleming

In 2023, the WWMC, in collaboration with Associated Environmental Consultants Inc. (AE), implemented a Wabamun Lake bulrush restoration pilot project (see the article in the Fall 2023 *Lakescape*) to establish aquatic and riparian vegetation along the shoreline of Wabamun Lake. The project was aimed at restoring aquatic plants that provide critical habitat and food for fish and waterfowl, help improve water quality, and dissipate wave energy to reduce shoreline erosion.

The three main objectives of the project were:

1. Restore shorelines to reduce erosion and improve habitat.
2. Replace non-native plant species and increase native species cover.
3. Educate community members on restoration methods and the benefits of restoration.

This project installed over 1,000 hardstem bulrush (*Schoenoplectus acutus*) in four shallow-water areas in August 2023, using three different planting groups including plugs from harvested bulrush seed at Wabamun Lake, greenhouse-grown plugs, and wild-harvested bulrush stalks moved from nearby colonies on the lake. In May 2024, a volunteer workshop was also held to install willow stakes at one of the four locations to establish native woody riparian vegetation (see the article in the Summer 2024 *Lakescape*) along the shoreline. In August 2024, AE visited all the installation sites to conduct formal Year 1 monitoring.

The main objectives of the monitoring program include:

- Monitoring survival in the four separate locations.
- Identifying if some plant material sources do better than others.
- Providing a baseline to monitor over time and determine if plants can spread and colonize a greater area.

AE has provided a report summarizing the data collected to evaluate the Year 1 bulrush survival and site conditions (the final copy will be made available on the WWMC website).

Neil Fleming

Based on the pilot project Year 1 monitoring, planting native bulrush is a viable solution for increasing native species cover and restoring shorelines. Wild-harvested stalks had the best survivorship (at water depth up to 30 cm) of all three planted groups, which suggests they will be the best planting option for improving habitat and reducing erosion. Some bulrush plugs were concentrated on the shorelines; these may have relocated by wave action after planting. Establishment of relocated plants on the shoreline also indicates good survival of greenhouse-grown material, and future planting can include near-shore areas with water depths less than 15 cm. Due to the varying locations of the pilot sites, wind and wave conditions on the lake may contribute to the variance in survivorship. Ice conditions in the first planting year were not significant.

To establish the variation between sites, further sites can be established around the lake, which will improve understanding of conditions impacting survivorship and expand benefits of increasing community awareness. Long-term monitoring of established sites will allow for determination that long-term survival, and colonization of large areas, is possible from small planting projects.

In conclusion, the Year 1 monitoring results are encouraging for bulrush aquatic vegetation restoration at Wabamun Lake.

This project was financially supported by the Alberta Conservation Association, Land Stewardship Centre of Canada, and the Summer Village of Point Alison.

Bulrush restoration in action. *Neil Fleming*

LAKE LEVEL

By Neil Fleming, WWMC Past Board Chair

Understandably, lake water level continues to be a topic of great concern for most lake users. This year's low levels are made worse by persistent and worsening blue/green algae blooms. Predictably, rumours begin circulating about factors affecting lake level, often focused on outflow and the TransAlta water treatment plant, so it is maybe time to revisit these issues.

There is only one outflow from the lake, at the far east end on Paul First Nation land where water flows to Wabamun Creek. The outflow has been diverted over a "weir," which is simply a depression in a portion of a paved road. The weir is intact. There is no means of adjusting the weir up or down and short of using dynamite or a backhoe to reroute the water, it cannot be altered or tampered with. In the 1990s, an agreed-upon height of 724.55 metres above sea level was established for the weir. When lake level is above that level, water leaves the lake; when it falls below that level, it does not.

There has been no surface outflow from the lake for about three years now. The current level is about 723.96 metres (59 cm or 23 inches below the height of the weir), approaching the record low of 723.72 metres in 2003. Only a few short years ago, the level was about 40 cm above the weir and people were complaining that the water wasn't leaving the lake fast enough.

The other issue that is inevitably discussed is the effect of the TransAlta water treatment plant (WTP) on lake level and how is it managed. We have recently received an update from TransAlta on the operation of the WTP that confirms that after being offline for almost two years (the result of an "extreme weather event"), the plant has been reengineered and has been in operation since late 2022.

TransAlta is required to capture all precipitation falling on the Highvale mine site and divert it to their cooling ponds to prevent contaminated water from entering the lake. When needed, supplemental water is also drawn from the North Saskatchewan River into the cooling ponds, which are the source of water for the treatment plant. Based on a third-party water balance model, TransAlta is required to pump fully treated water to the lake in volumes equal to what would have naturally flowed to the lake had the mining operations not existed. The yearly volume to be pumped is calculated based on precipitation amounts from the previous year and, as a result, will change from year to year, varying from 4.4 to 7 million cubic metres (m^3) per year. The current debt to the lake from the plant being offline is 10.82 million m^3, which will be repaid by 2029 to 2030. For context, 10.82 m^3 translates to about 10 to 12 vertical cm (about 4 to 5 inches).

Dry weir, 2015. *Neil Fleming*

Weir flowing, 2019. *Neil Fleming*

We are satisfied that TransAlta is being transparent in this issue; they have committed to providing the WWMC with monthly updates on the operation of the WTP. Residents can view the Water Production Table on the TransAlta Sundance website, and also see for themselves if the plant is in operation by viewing the outflow pipe located at the new Sundance boat launch. Furthermore, the WWMC has produced a position paper that provides all the relevant background information on the WTP. The position paper and other factors contributing to lake level can be found on the Lake Water Level page of our website.

WABAMUN Q&A

By Sheila Smith, WWMC Board of Directors

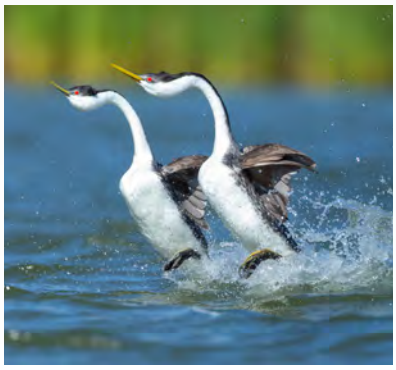
WWMC board members are often asked questions about lake health, wildlife, and other lake-related topics. We'll feature your questions and the answers here in Lakescape. If there's something you want to know, please email your question to info@wwmc.ca.

Western Grebes

Q: Are there any endangered species on the lake?

A: One species at risk is the western grebe. The western grebe is a colony-nesting waterbird that lays eggs in floating nests attached to emergent vegetation, typically bulrush and to a lesser extent, cattail. The species is considered an important bioindicator for wetland health and diversity, especially in the Boreal Plains ecozone, which includes much of central and northern Alberta. In 2014, the species was listed as Threatened under Alberta's Wildlife Act based on information showing population declines, colony losses, and a reduced extent and quality of habitat in the province. The good news is a pair of western grebes was spotted in June 2024 at the outflow canal east of Point Alison.

What do we need to do to ensure that western grebes remain a part of our landscape? Protecting wetlands and nesting grounds and reducing human disturbance are good places to start. For more information, check out the Alberta Western Grebe Recovery Plan.



Join Our Board of Directors

Help us be a voice for Wabamun Lake.

The WWMC is a registered charity and not-for-profit society that represents a cross-section of Wabamun Lake stakeholders committed to maintaining and improving the health of the lake and its watershed. If you have a passion for the lake, consider joining the motivated and forward-looking WWMC Board of Directors to contribute to advancing the important mission and vision of protecting Wabamun Lake.

WWMC Board work is not onerous, and from a personal and professional stance can be immensely satisfying. For details about what a board member does and what makes a great board member, please have a look at the Join Our Board of Directors document on our website.

Interested? Please contact us at info@wwmc.ca.

Share Your Amazing Lake Photos!

We're looking for great pictures of Wabamun Lake to use in our newsletters and on our website. Do you have some beautiful photos of lake landscapes, shorelines, wildlife, or vegetation you would like to share? Please send them to us, in as **high-resolution** format as possible, with **your name**, the **date** the picture was taken (approximate is fine), and the **location**. Please note that pictures of people will require their express consent. You can email your pictures to communications@wwmc.ca. Thanks!

Our Supporters

Partners

The WWMC thanks the following governments and organizations for their support of specific WWMC projects:

Alberta Government
ALMS Alberta Lake Management Society
Land Stewardship Centre
North Saskatchewan Watershed Alliance
parkland county
Alberta Conservation Association
Summer Village of Point Alison

Donors

The WWMC gratefully thanks the following people who have donated to the WWMC to continue our work protecting the health of Wabamun Lake: Kelly & Mary Aldridge, Matt Anderson, Margaret Bakker, Todd Baldwin, Lyn ter Borg, Conrad Clement, Rob Cowley, Gail de Vos, Sandy Drummond, Carol & Keith Epton, Susan Evans, Neil Fleming, George and Jean Haw, Colleen & David Judge, Kobylko Family, Maurice Lemieux, Kathy MacDonald, Rick MacPhee, Averie & Carman McNary, Don and Betty Meredith, Julia & Tony Nelson, Barb Parker, Cliff Richard, Robarts Family, Ron & Patricia Rolfe, Bill & Kate Russell, Ian Simpson, Jeff Stadnick, Sue Styles, Denny Thomas, Peter & Jordyce van Muyden, Denise & Bernie Wade, Sheila Wynn, Dwayne Zon. Edmonton Community Foundation: *Stan & Janet Franklin Fund, McIvor Kent Endowment Fund*.

Remember: Donors to the WWMC receive a tax receipt. Please visit our Donate page for more information and to support lake health in just a few moments of your time.

Corporate Members

The WWMC thanks the following businesses, governments, and organizations for joining the WWMC as corporate members and helping the council achieve its goals. Please visit our Get Involved page for more information about Corporate Membership.

Gold Members

Summer Village of Seba Beach Alberta
DEGNER CONSTRUCTION
Wabamun Home hardware
ULTRA SEAT CORPORATION

Silver Members

MACTAGGART Veterinary Clinic
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Lakescape

No. 35 | Fall 2024

Box 1005, Wabamun, Alberta, T0E 2K0

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The Wabamun Watershed Management Council (WWMC) respectfully acknowledges that Wabamun Lake and its watershed are situated on Treaty 6 territory, traditional lands of Cree, Saulteaux/Ojibway/Anishinaabe, Blackfoot, Dene, Iroquois, Nakota Sioux, and Métis peoples. We acknowledge Indigenous peoples' deep connection to the watershed lands of Wabamun Lake, and thank them for their long history and ongoing role in lake watershed management. In an act of reconciliation, as we consider our role as watershed stewards, the WWMC intends to strengthen relationships with local Indigenous peoples so we may journey together to care for Wabamun Lake and its watershed for future generations.

Wabamun Watershed Management Council