

Hello friends of Muriel Lake:

Spring is finally here and we are hoping this will be a good one for Muriel Lake. Judging by the lake level, spring runoff has been late, but has started and the lake level is rising. After reaching a level of 556.3 meters above sea level (as measured by the government monitor near Gurneyville) in spring of 2021, the lake level dropped to just under 556.0 masl through the dry summer and fall. This spring, as the ice melts and spring runoff started it has begun rising and is now about 556.2 masl. Hopefully the upward trend continues.

Below you will find news on upcoming MLBMS events and information on what your society has been up to. There's lots to tell you about. If you want to hear more just contact us, attend one of our events or better yet join our executive for one of our meetings, in person or electronically (our meetings are accessible virtually by Zoom/Skype etc.) Mark these dates in your calendar: **Sunday June 5 at 9AM** (Highway cleanup) and **Saturday August 6 at 11AM** (Annual General Meeting). We have several other opportunities to participate - see the **Participation and Volunteer Opportunities** section below.

Digital elevation / Drainage / Surface Water Flow Studies

Last year we completed our second phase of studies of surface water flow in the Muriel Lake Basin, and found 2 locations where flow to the lake was restricted. The project was made possible by a grant from Alberta Conservation Association, which paid for about 75% of the study; MLBMS member donations and fund raising efforts paid for the balance. The final report is published on our website under Reports & Studies tab - have a look. In the first study we had a consultant build a digital elevation model of the entire Muriel Lake drainage basin, and plot elevation of the 12 largest creeks flowing into Muriel Lake. This second study looked into five specific locations. We found two locations where man-made problems were restricting water flow. In one location drainage was prevented by a section of road without a culvert - creating a boggy area. In the second, an access road to a well site, coupled with blockage of culverts by beavers, had dammed up a large valley. The Orphan Well Association has removed the road and we have asked the MD of Bonnyville to correct the other. Together, these two locations have a drainage area of about 695 hectares. We estimate affected drainage of about 150 decameters (150,000 cubic meters) of surface water flow per year was restricted. That may sound like a big number, but adding that much more water to the lake would raise the level about 2.5 mm per year - or 1 inch in 10 years. The digital elevation model can be used to study any location in the Muriel Lake area, so if there is an area you are concerned about let us know and we will consider further studies.

Highway Cleanup:

Our next big fundraising event is Sunday June 5 from 9AM until about noon. Again this year we will be picking up trash along Gurneyville Road on the west side of the lake near Gurneyville. Please come out and help - we need more people involved. "Many hands make light work". You can bring your kids - this is a positive character-building activity! You will be teamed up and assigned a section of highway to walk along and pick up any trash you see. There is a pre-job tailgate meeting with the program supervisor from the MD at 9 AM on Elk Road (at #56). Dress for the weather, leather gloves recommended, no open toe shoes, a visibility vest and garbage bags are provided. Should only take 1 to 3 hours. **Please join us!**

Website and Facebook:

We have added new material to the web site. Check it out <http://www.savemuriellake.com/>
The DONATE NOW button on the website works - try it out! Tax receipts available.

We have over 700 followers on our Facebook page. A couple years ago our post on the lake's water level "went viral" -Facebook's statistics say it reached over 11,500 people and had 5,600 engagements (i.e. the post was clicked on 5,600 times)! So either a lot of people care about Muriel Lake, or one of you can't believe it and keeps revisiting the post...

Several new items have been added to the website including the surface water flow study, creekwatch info and winter dissolved oxygen reports.

Muriel Lake Restoration Team:

MLBMS has partnered with some fishing enthusiasts to form the Muriel Lake Restoration Team (MLRT), with a focus to restore Muriel Lake so as to support recreational fishing again. While Muriel lake was once one of the top fishing lakes in Alberta, as the water level dropped, so did sport fish populations. As the lake level has stopped dropping, and has recovered somewhat, this group is investigating how to restore fishing on our lake. Having identified that in winter the oxygen levels in the lake drop below that necessary for fish to survive, this group has been looking at the possibility of aerating the lake. A big job but hopefully something comes of their work. Stay tuned!

Oxygen Monitoring

In conjunction with the Muriel Lake Restoration Team, MLBMS volunteers have been monitoring the oxygen levels in the lake over the past 3 years. 4 times this winter our volunteers bundled up and took an oxygen monitor out on the lake. Thanks to LICA, from whom we borrowed the measurement equipment. Measured oxygen levels were quite low - probably too low for fish to survive. Results from previous years are on the website, and we will get this year's report on there as soon as the report is completed. Oxygen levels in March 2022 were low - we need more water in the lake!

Want to join the monitoring team? Need an excuse to upgrade your snowmobile? Let us know, we need you.

Bottle & Can Recycling program:

This is an important fundraising program for us, raising over \$2000 per year. Friends of Muriel Lake drop off their recyclable bottles and cans at the south side waste transfer station.

Alternatively, you can drop off bottles at the Dove Center in Bonnyville for donation. No need to wait while they are sorted - just mark your bag "Donation to Muriel Lake" and skip the lineup!

Annual General Meeting

This year we have scheduled the AGM for a Saturday afternoon, August 6 from 11 AM to 1 PM. Same place - Muriel Lake M.D. campground. Join us to hear more details about the lake and what your society has been up to. All are invited. We will also elect our board of directors for the next two years, and there is room for you to join.

Creekwatch Program

We will once again be participating in the Creekwatch Program, in which we monitor the chemical and aquatic health of creeks flowing into Muriel Lake. This is a fun opportunity for you to get involved. The program will run from June through September. Volunteers are needed to help perform simple chemistry tests and to catch and identify benthic invertebrates (tiny bugs) that live in the creek bed. All you need are rubber boots - no experience necessary. A trained leader will be present at each event, which takes 1 1/2 - 2 hours depending on the number of people involved. Last summer we sampled the south creek about once every two weeks; this year we are going to add the creek at Beaumieux on the east side. We will be scheduling sampling events and you can join us for any one (or several). This is a kid-friendly activity, and a great introduction to environmental science. A virtual training session for session leaders will be held May 25 7-8:30. We need more session leaders so if you are interested, join the virtual training session from home! The first sampling session will be Saturday June 4 from 10AM to 12 PM. A schedule for the rest of the summer will be published after the training, so contact us or watch Facebook for the dates.

Thanks to LICA for sponsoring this and arranging it with the Creekwatch / Riverwatch Association. LICA is organizing creekwatch events at numerous locations in the Beaver River watershed - see the Call for Volunteers and 2021 Report on the website for more information and some pictures of what it's about.

ALMS Lakewatch

We are once again doing the Alberta Lake Management Society Lakewatch program this summer. This involves taking an ALMS technician out on the lake to specific spots to sample the lake water 4-5 times per year. ALMS gets the water analyzed and publishes the results. We have one volunteer to take them out in his boat but if you would like to join the crew or take the ALMS person out once or twice please volunteer - if you need an excuse to put your boat in the water! Thanks to LICA for sponsoring this. Previous years have shown Muriel Lake's water quality is still pretty good.

Groundwater Monitoring:

We are still monitoring the water level and pressure in two aquifers that lie below Muriel Lake. The water pressure is still relatively high in these aquifers - higher than the level of the lake, so groundwater is flowing up into the lake - the lake is not draining into the aquifers. Unfortunately we don't know what the aquifers were like many years ago, before all the seismic and fracking activity in the area occurred, so we may be getting much less groundwater than we used to. This information is vital for scientists to evaluate what effect new industrial wells into these aquifers would have. Thanks again to Baytex who covered the cost of the monitors back in 2015. We have to move the monitors to different wells from time to time, so we are looking for new locations to install them. The monitor is easy to install/remove, just sensors on the end of a line we drop down the well. If you have a well you are not using and would let us use it, please let us know and we will check your well out.

Beaver Deceiver Project:

Our beaver deceiver project has ended, but beavers remain active in our watershed. If they are causing problems in any area let us know as we may be able to help by installing beaver deceivers or diversion fences. Beaver deceivers are basically pipes laid through the dam in a way that the beaver doesn't notice. The pipes are set at a height such that the beaver still has enough pond to live in, but prevents them from raising their dams and lets any additional

water flow through the pipe to the lake. Last year LICA and the MD ran a program to install these devices in the Municipal District of Bonnyville.

Riparian Assessment:

Last year LICA commissioned a Watershed Riparian Area Assessment along approximately 1169 km of shoreline on waterbodies in the Jackfish - Muriel Creeks sub-watershed, including Muriel Lake and some of the tributaries flowing into Muriel Lake. The Riparian Zone is the shoreline vicinity, and plays an important role in maintaining the environmental health of the lake and wildlife. Most of Muriel Lake's shoreline was determined to be under moderate pressure, which is better than some other lakes and creeks in the area. The areas of Muriel Lake under highest pressure are in the south west. The Muriel Creek which runs from the lake to the north east was worse, and immediate restoration was recommended in some places. The tributaries flowing into Muriel Lake that were looked at were typically under low pressure, which probably contributes to the relatively good water quality we still have. Residents are asked to minimize disturbance of the riparian zone. Keep your wheels out of water, and if you need to clear an area for a boat launch, swimming access or enjoyment of the lake, please minimize the shore area you impact. The full report is on the LICA website.

Participation and Volunteer Opportunities

- Highway Cleanup Sunday June 5 9AM-12 PM
- Creekwatch: Virtual Training May 25 7:00-8:30 PM, first sampling event Saturday June 4 at 10AM, other dates to be scheduled.
- Board of Directors - virtual and in person meetings. Vacancy for Treasurer.
- Summer water sampling (Lakewatch)
- Winter Oxygen Monitoring (December 2022 to March 2023)
- Muriel Lake restoration Team - fish enthusiasts and anyone with aeration experience - join the team

This email is from the Muriel Lake Basin Management Society. You are on our membership list as someone who is concerned about the environmental health of this lake and has given us your email address. If you don't want to receive emails from us in future just reply and we will take you off our email list.

Hope to see you soon - at the lake or at an MLBMS event. And we are always looking for people who want to get more involved!

Muriel Lake Basin Management Society