Clearwater Resource Council
Contact Us at 406-677-0069
NOVEMBER 2020

Clearwater NEWS

2020: Successes and Challenges

Algae Blooms Identified on Placid and Salmon Lakes

Two potentially toxic algae blooms were identified on Placid and Salmon Lakes this fall. CRC collected algae samples in early October near the state parks on both lakes. Samples were then sent to the Flathead Lake Biological Station (FLBS) for analysis. FLBS identified both algal blooms as *Anabaena.* This type of algae is capable of producing a range of toxins which can be fatal if ingested. While most blue-green algae blooms do not produce toxins, all blooms should be considered potentially toxic to both animals and humans.

Toxic algae exposure in animals can cause vomiting, seizures, and death. Although no human deaths have been directly associated with these toxins, they can cause skin irritations or nausea, and it is recommended that both humans and animals stay out of the water until algae blooms fully dissipate.

The cause of harmful algal blooms is still unknown; however, certain conditions such as high nutrient levels, warm temperatures, and decreased water flow can increase the frequency of toxic algae growth. Toxic blooms can occur naturally, but the number of blooms has been increasing both locally and globally in recent years due to human impacts on aquatic ecosystems.

Blooms on Salmon Lake have occurred historically, as seen in the photograph to the right. CRC plans to continue monitoring for these potentially harmful blooms to keep the public informed and to track changes in the frequency of their occurrence. Through diligent monitoring and water quality improvements, we hope over time to better manage our lakes to protect both human health and aquatic ecosystems.


Photo: Karen Pratt (2013)


Photo: Jeff Harrits (2020)

Then and now: top: an aerial view of the 2013 Salmon Lake algae bloom, photographed by Karen Pratt on a flight piloted by David Wallenburn. Bottom: the 2020 Salmon Lake algae bloom identified and photographed by Jeff Harrits south of the state park boat launch area.

An Note from CRC Executive Director, Caryn Miske

Despite the unique challenge of working during the C'ovid-19 pandemic, the year has been a great success! CRC was able to maintain, and in some cases expand, our existing field programs, with the help of our dedicated volunteers. We were also able to add several new initiatives to our portfolio including: a climate change adaptation project; macroinvertebrate monitoring (see article below); the *Make-the-Cut* invasive lily eradication project; the Placid Lake Northern pike monitoring project; and the initiation of a watershed planning process for the Valley. We are looking forward to a productive 2021, with a significant expansion of our Adopt-a-Lake monitoring program and hopefully a return to our public education programs, which were limited in 2020 due to Covid restrictions. We are always interested in your input, so please contact me at caryn@crcmt.org with any questions or ideas you may have.

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Macroinvertebrate Pilot Monitoring Program

Just in time to beat the mid-October snowfall, CRC piloted its first macroinvertebrate sampling project on five streams in our watershed – Richmond Creek, Blind Canyon Creek, Trail Creek, Morrell Creek, and the East Fork of the Clearwater River. We collected, counted, and identified over 300 specimens in each stream – a total of over 1,500 bugs! The goals of the monitoring were to (1) identify potential differences in the macroinvertebrate communities between streams that were affected by the 2017 Rice Ridge fire and those outside of the fire's influence; and (2) monitor for aquatic invasive species like whirling disease and New Zealand mudsnail.

Stoneflies, mayflies and caddisflies are considered "indicator species," as their presence indicates a healthy stream ecosystem. These species were collected at all five streams and they made up over 90% of the total count, signifying potentially excellent water quality. In addition to aquatic bugs, we collected three young and healthy trout, a sculpin, and a Rocky Mountain tailed frog tadpole – and no signs of aquatic invaders! Due to the pilot program's success, CRC will continue this program next year.

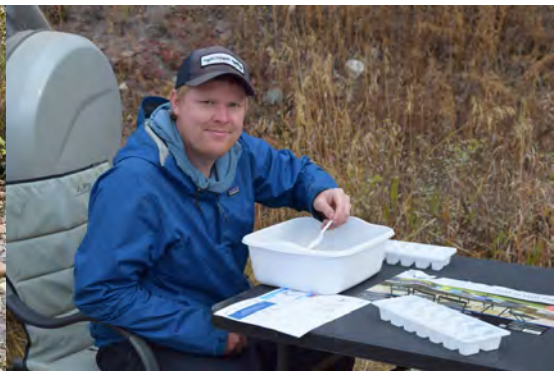
Learn more about this year's sampling process below:

Sampling began by kicking substrate into a net at upstream and downstream habitat sites:

Solid material was then transferred into tubs for sorting:

Then the fun began!

Bugs were sorted and identified at each stream site:



Contact us to get involved with macroinvertebrate sampling in 2021.

New Projects on the Horizon

Climate Change Solar Energy Initiative: CRC recently obtained funding to work with Missoula Electric Co-op, local schools and the Bonneville Environmental Foundation to develop a plan for a solar energy project in Seeley Lake.

Large Tree Retention & Recruitment: CRC is currently verifying existing satellite imagery to better determine the location of mature trees. The data obtained will be used to develop fuels mitigation plans to protect these trees from catastrophic crown fires.

Watershed Planning: CRC will be crafting a watershed plan to identify site specific aquatic and terrestrial restoration needs in the Clearwater Valley.

Adopt-a-Lake: The AAL program will be expanded in 2021 as CRC will collect baseline nutrient data for all lakes in the Clearwater Chain of Lakes. These data will serve as a benchmark to better track changes in water quality over time.

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Aquatic Invasive Species (AIS) Monitoring

This field season, CRC completed AIS monitoring on 11 lakes, with each lake being monitored a total of 5 times at various sampling sites. A total of 310 samples were collected in the summer of 2020! Our success is attributed to our dedicated volunteers and our amazing Big Sky Watershed Corp member, Emily McGuirt, who managed both the AIS and Adopt-a-Lake programs.

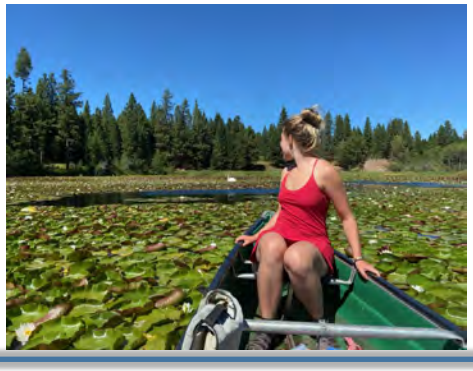
On each of the 11 lakes monitored (Lindbergh, Holland, Placid, Seeley, Salmon, Big Sky, Inez, Alva, Browns, Upsata, and Coopers), volunteers towed a net either vertically through the water column or horizontally on the water's surface to strain large volumes of lake water. Solid materials suspended in the water were collected in the net through the straining process, preserved in alcohol, and sent to the Montana Fish, Wildlife & Parks lab in Helena to be analyzed under a microscope for the presence of invasive zebra and quagga mussels veligers (larvae).

The first round of samples collected in mid-July were confirmed to be free of invasive mussels. We are still awaiting results for rounds 2-5 and will release updates as results become available.

Considering becoming an AIS volunteer? Here's what monitoring looked like in 2020:

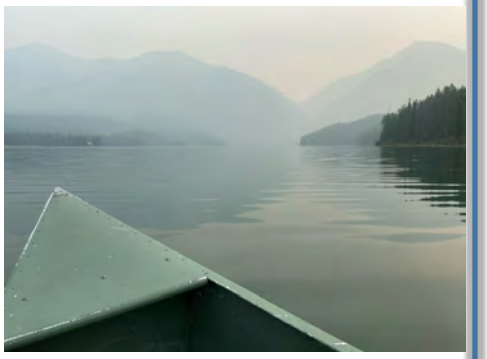
Most monitoring days this summer were loaded with great weather and stunning views:

Left: volunteer Allison Hurcomb rinses the net before taking a surface tow on Holland Lake (October 2020).



Right: volunteer Juliana Ritter eyes a trumpeter swan in the distance on Lake Upsata (August 2020).

However, 2020 also presented challenges:



Right: the view from the canoe on Holland Lake was obscured by smoke after fires ravaged the West Coast (September 2020).

Left: the Lindbergh Lake monitoring team wears masks during AIS training with Joann Wallenburn (July 2020).

Through wind, rain, smoke, and a global pandemic, our volunteers helped to make monitoring possible. We couldn't have done it without the help of an amazing group of dedicated people: Chris Hunter, Carol Hunter, Jeff Holm, April Woodhouse, Steve Woodhouse, Jed Dewey, Judd Binley, Dave Johnson, Penny Johnson, Pat Gleason, David Wallenburn, Clyde Sterling, Sherry Sterling, Fred Fleming, Barry Gordon, George Leighton, Jeff Harrits, Cathy Harrits, Roger Marshall, Tom Dauenhauer, Allison Hurcomb, Britt Wood, Reyna Abreu-Vigil, Tommy Driscoll, Avery McGuirt, Juliana Ritter, Abby Schmeichel, Abigail Toretsky, and Sarah Klaus.

And a huge thank you to Joann Wallenburn whose dedication to preserving Montana's aquatic resources has allowed for the continuation and expansion of CRC's aquatic invasive species monitoring program.

Follow us on social media!

We are always looking for fun photos of the region! If you have any photographs you would like to submit for consideration for posting on our social media or website pages, please do so here: crcmt.org/photo-submissions

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Interested in getting involved?

Although we have wrapped up all of our monitoring for the year, CRC is always looking for help! Contact us at caryn@crcmt.org if you would like to volunteer in the field or the office in 2021.