

Assessing Impacts of Fire on Streams in the Clearwater Watershed

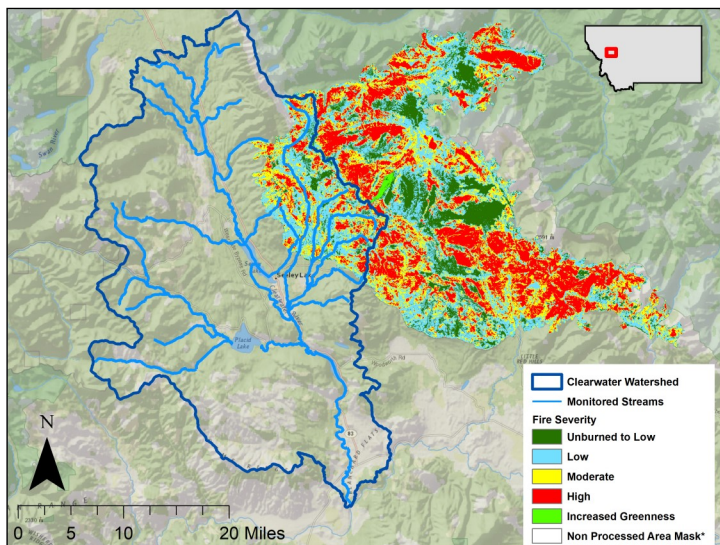


Figure 1: monitored streams and their spatial relationship to the Rice Ridge Fire.

As monitoring continues this field season for our Adopt-a-Stream (AAS) program, the Clearwater Resource Council has focused our 2020 monitoring efforts on 11 streams within the Clearwater Watershed.

Currently, our top analysis priority is assessing how the 2017 Rice Ridge Fire has affected and continues to affect nutrient loading in our streams. The Rice Ridge Fire burned over 17,000 acres of land within and just outside of the Clearwater Watershed (Figure 1). From an initial spatial analysis, we found that preprocessed imagery of the burned area directly intersected with the watersheds of 8 streams from the AAS monitoring program. With this information, we selected 11 streams, 8 fire affected and 3 non fire affected, to continue monitoring this year.

Preliminary data analysis of the post fire monitoring data has shown that the fire significantly increased nutrients in the streams most affected by the fire. To determine the degree to which each stream was impacted by the fire, we used Burned Area Reflectance Classification (BARC) data, which utilize remotely sensed satellite imagery to classify land within 4 fire severity categories: high, moderate, low, and unburned. These data were then analyzed on a stream by stream basis to identify the percentages of each stream's watershed within each severity class.

According to this analysis, Morrell and Blind Canyon Creek were the most affected -- their watersheds had the highest percentage of area classified as "high" severity, at 19.08 and 20.04%, respectively. Median total nitrogen levels in these two streams were significantly elevated in 2018 and 2019 as compared to levels before the fire (Figure 2).

Wildfires have substantial impacts on nitrogen availability in

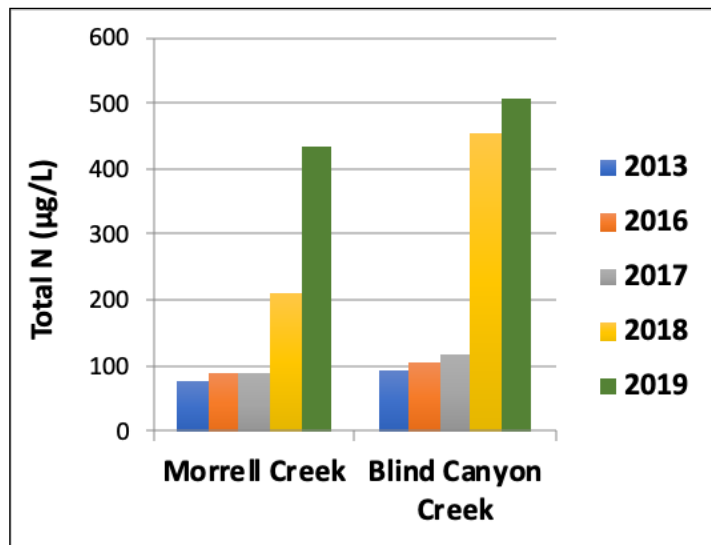


Figure 2: median total nitrogen in Morrell and Blind Canyon Creeks.

adjacent terrestrial and aquatic ecosystems. Fires release the nitrogen that has been tied up in plants and microbes and make it available for new life post fire. Studies have shown that elevated levels of nitrogen in streams may enhance growth of aquatic organisms and correspond with an increase in biological productivity.

This year, CRC plans to sample macroinvertebrates, which will provide yet another insight into post fire stream conditions, and the responses of aquatic organisms to fire.

Stay tuned for a full report and analysis on how the fire has and continues to have measurable impacts on our streams. We also look forward to incorporating 2020 data into this ongoing analysis as it is collected and analyzed.



Clearwater

NEWS

Save the date for our upcoming youth conservation summer camp!

Clearwater Resource Council is excited to announce a new summer youth camp which we will be piloting for the first time ever this summer.

Open to middle school students (rising 6th-8th graders), this camp will be located in Seeley Lake in the picturesque Clearwater Valley. The beautiful surrounding landscape of lakes and mountains will provide the perfect outdoor classroom for campers to learn about a variety of conservation topics, outlined in detail below.

Dates:

4-day camp: July 20-23

2-day camp: August 1-2

Day I

In the morning, students will focus on lake ecology and associated water quality issues. A hands-on exhibit will be provided to enhance the understanding of human-caused water quality issues and sustainable riparian practices. In the afternoon, students will visit lake water quality monitoring sites to conduct water quality sampling. Sampling results and their implications will then be discussed, along with actions that can be taken locally to improve water quality conditions.

Day II

In the morning, students will focus on stream ecology and macroinvertebrates (aquatic bugs). Hands on activities will again be stressed, with students learning by playing “bug bingo” and engaging in a macroinvertebrate identification contest. In the afternoon, students engage in macroinvertebrate monitoring. The results of the monitoring will be discussed, along with the implications of the results and actions that can be taken to promote aquatic diversity and species resilience.

Day III

In the morning, students will be presented with portions of a pre-existing aquatic invasive species curriculum from Watershed Education Network, with a focus on hands on activities, with students learning by playing “fly swatter jeopardy,” conducting mock boat inspection(s), and competing in an interactive exercise on exponential growth. Students will focus on “Don’t let it loose” and “Clean, Drain, Dry” and what can be done at the local level to prevent AIS introductions. In the afternoon, students will visit with a K-9 AIS detection dog/handler team and will end the day with a “mussel walk.”

Day IV:

The final day of the program will focus on the intersection between arts, culture and conservation. In the morning, students will focus on how art/design is integral to conservation messaging. Students will then design their own conservation art related to one of the three topics studied, that can be deployed in the local community.



Photo: Joann Wallenburn

Students will present their conceptual work to peers, parents and other community stakeholders. In the afternoon, a tribal representative will discuss topics related to native culture and the environment. The day will end with a closing ceremony/party.

The 2-day weekend camp is an abbreviated version of the 4-day camp and will be held at Placid Lake.

Costs:

4-day camp: \$125 (\$25.00 with scholarship)

2-day camp: \$75 (\$25.00 with scholarship)

Scholarships are available for campers residing full-time in the Clearwater Basin and whose families meet the stated income criteria.

Note: The camp dates are subject to change and cancellation depending on stay-at-home and social distancing requirements.

Learn more about the program at crcmt.org/summer-program. Interested in registering or applying for one of the local youth scholarships? Visit crcmt.org/summer-program-registration. If you have any questions or for further information, email emily@crcmt.org.

Interested in getting involved?

CRC is continuing the Adopt-A-Lake program in 2020 for the twelfth season of monitoring on the lakes in the Clearwater Watershed. In 2020 monitoring will include Secchi depth, temperature, and dissolved oxygen.

If you plan to reside in the Seeley Lake region this summer and want to help out with monitoring, give us a call or email at 908-229-3855 or emily@crcmt.org.

Follow us on social media!

We are always looking for fun photos of the Seeley-Swan valley, Potomac to Ovando areas, and Clearwater and Blackfoot corridors. 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



@clearwaterresourcecouncil



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Clearwater

NEWS

Updates from our Fuels Management Program

Free homesite assessments:

Fire season is approaching! The Clearwater Resource Council is committed to protecting the Seeley Lake community from wildfire through our fuels management efforts. CRC is offering free homesite assessments from May through September of 2020 in order to assist local landowners in completing forest health and fire risk assessments on their property. CRC assists in setting up Community Fire Protection grants to help landowners with the cost of forest management activities to reduce fire risk.

Upcoming meeting:

CRC is hosting a zoom meeting for interested stakeholders to learn more about our fuels program on **June 30 from 6:00-8:00 pm**. The following topics will be discussed:

- An overview of our fuels mitigation program;
- Pre and post thinning photos to illustrate how forest management can reduce the risk of catastrophic wildfire;
- Experiences from the field from folks that have participated in the program; and
- A question and answer forum.

Note: this is a virtual meeting! Follow the link below to join the meeting:

<https://us02web.zoom.us/j/86028931754>

For audio participation only, call the following number:

+1 669-900-6833 US (meeting ID: 860 2893 1754)

CRC is also offering fuels mitigation presentations for interested homeowners associations in the Clearwater Valley. Contact us if your HOA is interested in hosting a CRC fuels mitigation presentation as part of your ongoing meeting agendas, or as a separate meeting.

Upcoming workshop:

In September, CRC will host a workshop on Climate Change and Wildfire, and what we can do to prevent catastrophic wildfire. Stay tuned and follow our social media pages for event updates.

Photo: aftermath of the 2017 Rice Ridge Fire

