

Montana Fish and Wildlife Conservation Office



BILLINGS–BOZEMAN–LEWISTOWN, MT

Spring 2018

Habitat Restoration and Conservation

Waters fragmented by dams (large or small) and poorly placed road culverts keep fish from accessing important habitat. While the U.S. Fish and Wildlife Service recognizes that stream-dwelling fishes need connected habitats, there are numerous barriers to fish and other migratory aquatic organisms throughout the United States.

Working with partners, the Montana FWCO engages in various projects to improve the health of aquatic systems, including reconnecting important aquatic habitats. The National Fish Passage Program and National Fish Habitat Partnerships are integral to restoring habitats to improve recreation and promote species conservation.

Before and after images of culvert outlets. The undersized and perched culvert (top) was replaced with a fish-friendly alternative (bottom). This project, will facilitate migrations of threatened Bull Trout at mile 5.8 on forest road 75 in the Bitterroot National Forest. Photo: USDA - Forest Service





Before (left) and after (Right) images inside a road crossing. This aquatic organism passage project on the South Fork of Skalkaho Creek, Montana will facilitate migrations of Westslope Cutthroat Trout and the threatened Bull Trout at a road crossing at mile 6.0 on forest road 75 in the Bitterroot National Forest. Photo: USDA - Forest Service

In addition to the above projects, we entered into agreements with Trout Unlimited and the Custer-Gallatin National Forest to implement fish passage projects at five new sites to help native species conservation in Montana.

Tribal Technical Assistance:

Blackfeet Tribal Sport Fishery Management:

After a thorough analysis of all available data for four of the most popular fisheries on the Blackfeet Reservation, MTFWCO biologists identified a number of management strategies to maintain or improve the quality of Rainbow Trout fishing in these Tribal waters.

While populations of hatchery- released Rainbow Trout in Four Horn and Mission lakes appear to be stable and will be monitored every other year, populations in Kipp and Duck lakes continue to lag behind and warrant more intensive management and monitoring.



Weir deployed in Kipp Lake feeder canal for removing spawning WSU. Photo: USFWS – Andrew Gilham



White Suckers migrate up the feeder canal to Kipp Lake to spawn. The weir on Kipp Lake feeder canal stopped this year's sucker migration. Suckers were removed both by electrofishing and a large congregation of White Pelicans that took advantage of the easy food source.

Photo: USFWS – Andrew Gilham

Two, potentially-limiting factors were identified for Kipp Lake; water depths less than 10 ft. (seasonally) and competition with White Suckers (WSU). On May 14th we installed a weir in the Kipp Lake feeder canal in an attempt to trap and remove spawning WSU. Initially our plan was to quantify our removal efforts to better understand the WSU population response in Kipp Lake. However, during the operation of the weir, a large congregation of feeding pelicans (150-200) was observed each morning at the site, presumably feeding on the mass of suckers blocked by the weir. With no estimate of this unmeasurable take by pelicans, a valid estimate of the total numbers of suckers removed was unobtainable. However, our WSU catch per unit effort for gill-net surveys in June 2018 was significantly lower than the previous two years — suggesting our removal efforts were successful.



Seasonal biotech, Leah Gunnink, with a Brown Trout captured during gill-netting surveys on Kipp Lake.

Photo: USFWS – Andrew Gilham

Competition with WSU was also identified as the most likely limiting factor for growth of Rainbow Trout in Duck Lake. Due to the size and depth (1500 surface acres and 88 feet, respectively) mechanical removal of WSU would be costly and resource intensive. As an alternative, we plan to introduce Burbot as a bio-control for WSU. Although not native to Duck Lake, Burbot are native and plentiful in the neighboring St. Mary River and lakes and are a species of value and concern in Montana. We will also gill-net Duck Lake later this summer to assess the relative performance of recently introduced Westslope Cutthroat versus Eagle Lake Rainbow Trout.

Mission and Four Horns Lakes are scheduled for gill-netting surveys every other year because they have exceptional and reliable Rainbow Trout performance year after year. This year we netted Mission Lake. Although the data hasn't been analyzed, the Rainbow Trout population appears to be similar to previous years—average Rainbow Trout size continues to be excellent (4-6 lbs).

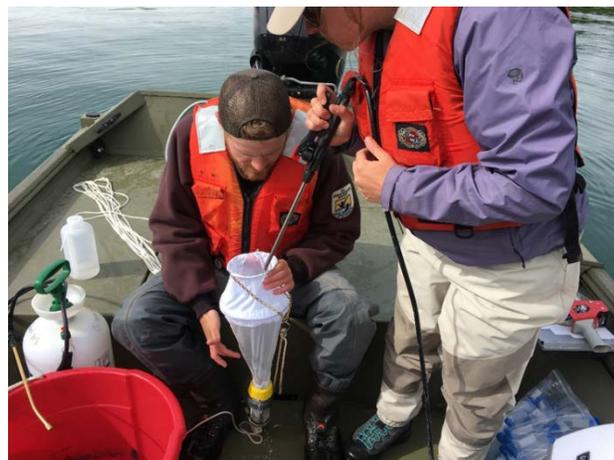


Seasonal technician Geoff Popken with a typical Rainbow Trout captured in Mission Lake
Photo: USFWS – Andrew Gilham



Brown Trout captured in Mission Lake
Photo: USFWS – Andrew Gilham

Aquatic Invasive Species Monitoring: We sampled Mission, Four Horn, Duck, and Lower St. Mary Lakes for aquatic invasive species (AIS). Recent documentation of Quagga Mussels in Montana lakes in 2016, prompted a comprehensive detection plan for Blackfoot Reservation waters. The effort is collaborative between Blackfoot Fish and Wildlife, Bureau of Indian Affairs, and the U.S. Fish and Wildlife Service. We collect water samples that are required for AIS testing using eDNA. To date, AIS have not been detected in any of the lakes we've tested so far; however, Blackfoot sponsored boat check stations have intercepted two boats infested with Quagga Mussels in the past year.



AIS sampling on Lower St. Mary Lake.
Photo: USFWS – Andrew Gilham

Red Rock Lakes National Wildlife Refuge Management Assistance:



Above photo: MTFWCO crew conducting May electrofishing surveys, Red Rock Creek, MT

Top-right photo: Tagging, weighing, and measuring YCT-hybrids, Red Rock Creek, MT.

Bottom-right photo: Weighing and measuring FLOY-tagged YCT-hybrid before returning to Red Rock Creek, MT.

Photos: *Jim Mogen, USFWS*



This spring, Montana FWCO continued to provide management assistance to our sister division—Refuges. Our work was focused on monitoring the population of non-native Yellowstone Cutthroat X Rainbow trout hybrids (YCT hybrids) and evaluating the success of a major stream restoration project completed autumn 2016. Biologist Andrew Gilham, Josh Melton, and Jim Mogen, along with seasonal technicians Jason Marsh, and Geoff Popken conducted electrofishing surveys on Red

Rock Creek to assess the population status of the YCT hybrids. In the past, YCT hybrid abundance was estimated using a simple count at a fish weir operated on Red Rock Creek by MTFWCO. Because YCT hybrid abundance is now being used as one of several covariates in the modeling of the Red Rock Lakes Arctic Grayling population, a more accurate estimate of the abundance is important. Over the last 5 years, YCT hybrid abundance has been estimated

using mark-recapture methodology based on counts at the fish weir along with subsequent electrofishing surveys. This was the first year mark/recapture electrofishing surveys were used to estimate spawning YCT hybrid abundance which were conducted separately from Arctic Grayling surveys.

In addition to estimating abundance of YCT hybrids, we also continue to monitor the success of the Elk Springs Creek reroute that occurred in 2016. Last year a single adult Arctic Grayling was collected. This year two were caught. Additionally, a series of Passive Integrated Transponder (PIT) tag arrays were maintained to gain insights on fish movement within the Elk Springs Creek Drainage as well as equipment used to monitor dissolved oxygen and temperatures.



Above photo: A boat within a boat. One of the logistical challenges associated with sampling Elk Springs Creek is the remoteness of the stream. Here Jason Marsh prepares to transport the electrofishing barge across Upper Red Rock Lake.

Lower photo: Jason Marsh (left) and Andrew Gilham (right) prepare to release two adult Arctic Grayling collected from upper Elk Springs Creek.

Photos: USFWS- Geoff Popken.



Sikes Act work, Malmstrom Air Force Base, MT.

Powwow Pond

Management: Montana FWCO biologist, Josh Melton, coordinated fish stockings by Montana Fish Wildlife and Parks (FWP) and Ennis National Fish Hatchery who stocked Rainbow Trout (200 and 300, respectively), in preparation for Kid's fishing day.

Weed control:

We continue to utilize both herbicide application and bio-control methods to help combat invasive weeds at Malmstrom AFB. Weeds are sprayed in a targeted manner—that is individual weeds are identified and sprayed versus traditional broadcast application. This helps reduce the amount of herbicide used and reduces the risk of killing useful pollinator friendly species. Herbicide application in this manner will continue through the summer.

Game Camera Surveys:

This spring MFWCO staff continue to ensure batteries and memory cards are replaced at 25 sites within the missile complex. Each camera is triggered when something passes in



Above photo: Following the success of last year's goat grazing, approximately, 500 Spanish Boer Cross goats and a herder arrived at Malmstrom AFB in early June to help control noxious weeds. Photo: *Prescriptive Livestock Services*.

Below: A group of four Grizzly Bears captured by a game camera near a missile launch facility along the Rocky Mountain Front.



front of it. This results in hundreds of hours of footage to review. While there are a lot of spectacular images

showcasing some of Montana's finest cattle, occasionally something interesting wanders into the frame.

Other happenings:

Leah Gunnink joined the MTFWCO team as a new seasonal biotech. Geoff Popken returned for a second season and Jason Marsh returned for his fifth season. Welcome aboard Leah and welcome back Jason and Geoff!



Photo: USFWS – Geoff Popken

*For more information, click on the following logos
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