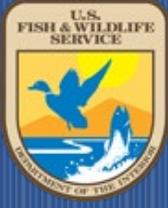


Montana Fish and Wildlife Conservation Office

BILLINGS–BOZEMAN–LEWISTOWN, MT

Summer/Fall 2019



Fulfilling Tribal Trust Responsibilities

In 1941, a memorandum of understanding was developed between the U.S. Fish and Wildlife Service (USFWS) and the Bureau of Indian Affairs (BIA). In this agreement, both agencies agree to “...*make a real effort to have personnel available for solving mutual problems. In the field, Fish and Wildlife Service personnel will assist...in fish and game matters, including wildlife census procedures...*” As part of our ongoing trust responsibilities, Montana FWCO continues to work with tribes in Montana to assist with management of their natural resources.

[Blackfoot Tribal Stream Surveys:](#)

Biologists Andrew Gilham assisted the Blackfoot Environmental Office (BEO) with annual stream surveys in the Cut Bank Creek drainage. Our office has been assisting BEO with annual stream surveys since 1998. These surveys use the Environmental Protection Agency’s rapid bio-assessment protocol to characterize species diversity of fish and aquatic macroinvertebrates as well as riparian health. Additionally, species data collected at sites throughout the watershed can be used to extrapolate occupied habitats throughout each watershed. Each year a different watershed is chosen for surveys.



Confluence of Cut Bank Creek and Two Medicine River (Blackfoot Reservation, MT). Photo: USFWS Andrew Gilham

While these surveys have always been conducted with backpack electrofishing units. Andrew is working with the Blackfoot Fish and Wildlife Department to augment stream surveys with equipment that will increase

capture probability of all fish species. This would likely include a combination of netting and bank-electrofishing in an effort to improve confidence and a higher degree of resolution on population demographics.

St. Mary Bull Trout:

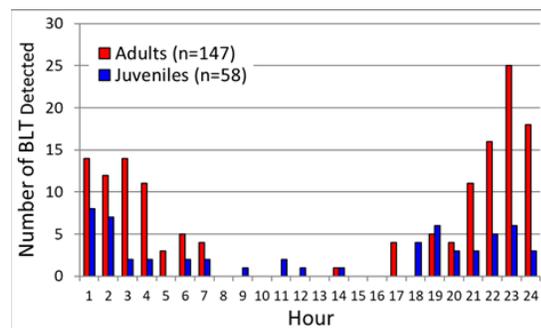
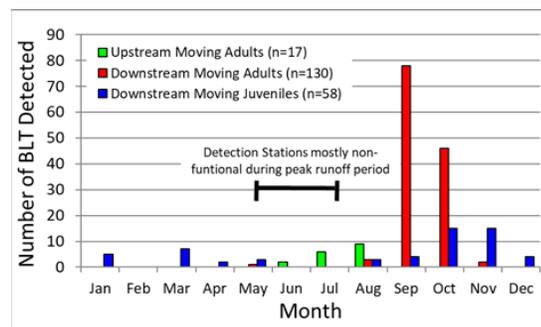
As part of our long-term St. Mary Bull Trout monitoring project, biologists Jim Mogen, Andrew Gilham, Josh Melton, technicians Jason Marsh and Geoff Popken, and volunteer Sarah Mogen conducted backpack electrofishing surveys in three different tributaries of the St. Mary drainage – Boulder, Divide and Canyon creeks. All trout (Bull, Cutthroat, Rainbow and Brook) and Mountain Whitefish encountered were counted and measured and most Bull Trout greater than 100 mm in total length were implanted with a PIT (Passive Integrated Transponder) tags. As expected, Bull Trout were encountered at all locations sampled. Juveniles and young-of-the-year (age-0) Bull Trout were observed at most locations indicating recent successful reproduction. Unfortunately however, the trend of reduced fish abundances that we have observed in most tributaries over the past several years continues.

In recent years, we have operated a pair of PIT-detection stations near the mouth of Boulder Creek, the primary spawning tributary for migratory Bull Trout in the St. Mary drainage. By taking advantage of the large investment of PIT tags already in the system, these stations (an array of

scanning antennae) log PIT-tagged fish as they swim past a stationary site and provide additional insight regarding seasonal movements associated with adult spawning migrations and juvenile emigration, as well as population size and survival rates. Our plan is to increase the number of stations in the drainage over the next couple of years, focusing on those areas of potential impact on Bull Trout, including the St. Mary Diversion Dam and Canal headworks as well as in Swiftcurrent Creek downstream from Sherburne Dam. In October we returned to St. Mary to download data from the existing stations and to install two additional stations.



MFWCO Biologist, Josh Melton (left), and biotech Jason Marsh (right) PIT-tagging a migratory Bull Trout. St. Mary River drainage, MT. Photo: USFWS/Jim Mogen.



Graphs depicting the type of information collected from the PIT-Detection Stations. Interesting is the strong indication of a nocturnal pattern of movement for both adult and juveniles. Also evident is the spawning related movements, first upstream then downstream, of large migratory adults in summer-fall months.



PIT-Detection Station St. Mary River drainage, MT.

Photo: *USFWS/Jim Mogen.*



MFWCO Biologists, Jim Mogen (right) and Andrew Gilham (back), and USBR Biologist, Eric Best (left) Stringing Antenna for PIT-Detection Stations in Boulder Creek. St. Mary River drainage, MT.

Photo: *USFWS/Sarah Mogen (Volunteer)*

Ageing structures (otoliths and fin spines) collected during this spring's sampling on Duck Lake, Kipp Lake, and Four Horn Reservoir were extracted, and are being prepared and cross-sectioned. Technician Geoff Popken has collected and prepared 74 walleye spines sampled from Four Horn Reservoir, and has begun work on preparing and cross-sectioning over 150 Rainbow and Brown Trout otoliths from Duck Lake, Kipp Lake, and Four Horn Reservoir.



Walleye spines collected for age analysis.

Photo: *USFWS/Geoff Popken.*

Roberts Creek Westslope Cutthroat Trout Genetic

Sampling: We collected fin clips from Roberts Creek (St. Mary Drainage) to determine the genetic purity of what we believe to be an aboriginal population of Westslope Cutthroat Trout (WCT). We are partnering with Glacier National Park to have the genetic clips analyzed. If the Roberts Creek samples are determined to be pure and of St. Mary origin, the population will be a candidate for establishing a St. Mary WCT genetic reserve in Gunsight Lake. Like many WCT populations, the St. Mary WCT are at risk of extirpation through competition with introduced Brook Trout and hybridization with introduced Rainbow and Yellowstone Cutthroat Trout. The establishment of an aboriginal St. Mary WCT population will be important if future efforts to restore the genetic integrity of the population at a larger scale are implemented. Moreover, by furthering our understanding of the genetic status of Roberts

Creek WCT, efforts can be made to conserve the population. Roberts Creek was a stream Andrew identified during his graduate research project as having significant habitat degradation due to livestock grazing. If the WCT population is determined to be pure or have significant conservation value, restoration opportunities should be implemented to improve their probability of persistence.



MTFWC Biologist Josh Melton and technician Geoff Popken collecting fin clips at Roberts Creek (Blackfeet Reservation, MT, August 2019).
Photo: USFWS-Andrew Gilham

Habitat Restoration and Conservation

Working with partners, the Montana FWCO continues to facilitate 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 funding sources for restoring habitats to improve recreation and promote species conservation. Following are some highlights of projects completed during this reporting period.

Cottonwood Creek, MT

Funding from the Western Native Trout Initiative (WNTI), along with funding from Montana Fish Wildlife and Parks, the US Forest Service, and private donations administered by the Clark Fork Coalition, who also provided oversight, was used to replace an undersized culvert with an appropriate sized bottomless arch to restore access to 3.1 miles of upstream habitats benefitting Westslope Cutthroat Trout.



(Left) undersized perch culvert on Forest Road 1504 Pintler Ranger District, Beaverhead-Deerlodge National Forest. (Right) Thirteen-foot bottomless arch pipe during final phases of installation will provided unrestricted passage for Westslope Cutthroat trout. Photo: Will McDowell, Clark Fork Coalition

South Fork of Meadow Creek, MT

The South Fork of Meadow Creek houses a genetically pure population of Westslope Cutthroat Trout. A natural fish barrier in the lower portion of the main stem of Meadow Creek helps to keep this genetically pure population separate from non-native and hybridized populations. Upstream of this barrier,

restoration was needed in this tributary of the Yaak River to protect and restore important habitats. WNTI funds were provided to the Yaak Valley Forest Council who coordinated other funding match and provided project oversight. The overall project consisted of road re-contouring (1.2 miles), which included stream channel restructuring, bank stabilization, and natural native plant revegetation. In addition, 3.9 miles of road were decommissioned resulting in culverts being removed and the streambed stabilized to reduce sediment deposition. Finally, two culverts were removed in the upper portion of the tributary that were acting as barriers to fish passage. Overall, the project reconnected 5.1 miles of steam.



9.5 foot diameter culvert crossing on Forest Road 5971A (Upper left). Culvert being excavated (Upper Right). Site after culvert removal with horse trail crossing incorporated. (Lower Left).

Photo: USFS Three Rivers District Hydrologist, Ben Hegler

National Wildlife Refuge Management Assistance:

LOST TRAIL NWR— Dahl Lake lies in the Pleasant Valley in northwestern Montana. A large portion of the valley (7885 ac.) was purchased in 1996 by the Montana Power Company, which transferred ownership to the U.S. Fish and Wildlife Service. In 1999, the tract of land became Lost Trail National Wildlife Refuge. Prior to the establishment of the Refuge, the valley was part of working cattle ranch that channelized many of the tributaries to Dahl Lake in an effort to drain the natural wetland and Dahl lake itself in order to increase agricultural production and forage for livestock grazing. Refuge staff, began backfilling the channelized tributaries to restore water levels in Dahl Lake in 2004. Additional efforts were made to restore willows and stream meanders to the outlet stream. Following restoration, Dahl Lake has increased from 180 surface acres to nearly 1,000 surface acres. In October, biologists Andrew Gilham and Josh Melton, along with seasonal

biotech Geoff Popken, conducted gill-netting surveys and habitat reconnaissance to determine if any fish species currently occupied the lake and assess the potential for reestablishing a native fish population.

Although, we currently have no historical fish data on Dahl Lake, both Red Band Rainbow Trout and Westslope Cutthroat Trout are native to the drainage (Kootenai River).

We deployed 4 gill-nets and were pleased that we found no fish in the lake. We also deployed a dissolved oxygen (D.O.) sensor and thermograph to determine if the relatively shallow lake meets criteria for D.O. and temperature tolerances for salmonids.



Early morning boat launch at Dahl Lake (October 2019).
Photo: USFWS-Andrew Gilham

Sikes Act work, Malmstrom Air Force Base, MT.

Game Camera Project—

In 2017, Twenty-five game cameras were installed near missile launch facilities controlled by Malmstrom Air Force Base. The goal of the project is to annually survey and record occurrences of large mammal species that are of current conservation concern. During October we went to each site to install fresh batteries and memory cards as they had not been serviced since May. During this 6 month period, the cameras cumulative collected 10,649 video files totaling 59.5 GB of data which equates to 88.7 hours of video to review.



While an early blizzard made servicing game cameras challenging, we were able to take care of all 25 cameras. Photo: USFWS-George Jordan

Powwow Pond Sampling—

During July, Josh and Geoff collected and transferred approximately 220 Bluegill from Drag Reservoir to Powwow Pond in an effort to increase the forage base. In September, Josh, Andrew, and Geoff conducted the annual electrofishing surveys.

Prairie Management—

In early December, Montana FWCO staff applied 1,296 pounds of a native grass seed mixture to 72 acres that were treated with a controlled burn earlier in the year. Grass seed was applied with seed spreaders mounted on ATVs.



Josh Melton and Geoff Popken applying native grass seeds via ATV mounted seed spreaders as a UH-1N helicopter from the 40th Helicopter Squadron passes overhead. Photo: USFWS-George Jordan

Other happenings:

Judy Kobus Fisk spent a week helping Saratoga NFH with Lake Trout and Brown Trout Spawning.

Jason Marsh accepted a position as full-time term technician. His start date is December 9.



Grizzly Bear walking along Swiftcurrent Creek. Photo: *USFWS-Jason Marsh*

*For more information, click on the following logos
Or feel free to contact any of the Montana FWCO
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