

Montana Fish and Wildlife Conservation Office



BILLINGS—BOZEMAN—GREAT FALLS—LEWISTOWN, MT
AND MOUNTAIN HOME, ID

Spring 2017

Sikes Act work, Malmstrom Air Force Base, MT.

Spring was busy at Malmstrom AFB. Activities ranged from initiating a new big game camera-monitoring project in the missile complex, grazing goats, to restoring habitat on the base proper. Following are accomplishment highlights.

Arbor Day Celebration:

It's well known that trees provide many benefits, such as improving air quality and enhancing the community appearance. Additionally, the act of planting trees can also be important for team-building and morale-boosting. For the first spring event of the year, Elin Pierce, Montana Fish and Wildlife Conservation Office (MTFWCO) Biologist/Natural Resources Manager at Malmstrom AFB, organized permissions, logistics, equipment and materials to host the annual Arbor Day celebration. She joined together with the Explosive Ordnance Disposal (EOD) group, who stepped forward to volunteer for the event.

Trained to detect, disarm, detonate, and dispose of explosive threats all over the world, EODs bravely serve as the AF's bomb squad. The goal of their Arbor Day team-building event was to plant trees around the EOD headquarters.



Members of Malmstrom AFB's Explosive Ordnance Disposal group are offloading trees to be planted to commemorate fallen comrades.
Photo: USFWS/Elin Pierce

As the EOD have the highest casualty rate in AF, each tree was planted to commemorate one of their fallen.

A total of 18 large trees were planted, each with their own irrigation tube, straps, and stakes.

The Arbor Day proclamation ceremony was led by LtCol Purcell, after which Montana DNRC bestowed Malmstrom AFB their 24th Tree City USA award.

Species Conservation and Management:

Several large mammal species in Montana are either listed or considered for listing under the Endangered Species Act and/or are recognized as State Species of Special Concern.

To gain knowledge about whether those species might occur near certain missile sites, Elin designed a long-term surveillance study using game cameras.

Sikes Act work continued...

Once permissions were acquired from the Base, MTFWCO biologists, Elin and Josh Melton, deployed game cameras at 25 missile sites along the Rocky Mountain Front Range, and in the alpine habitat of the Highwoods, Big Belt, Little Belt and Snowy Mountains east of Great Falls.

The data from this multi-year project will be used to develop an informed management strategy, including conservation recommendations, for Montana's sensitive mammal species. This management strategy will be added to Malmstrom's Integrated Natural Resources Management Plan.



Montana FWCO biologist, Elin Pierce, checking game camera mounts. Photo: USFWS/ Josh Melton

Wetlands Restoration:

Elin Pierce, planned and coordinated a wetlands

restoration project at Outfall #3 to reduce erosion and enhance natural habitat.

To help achieve these goals, Levi Morgan, USFWS-Montana Partners for Fish and Wildlife Program and MTFWCO's Judy Kobus-Fisk were enlisted, along with equipment from nearby Benton Lake National Wildlife Refuge to plant 47 large trees, 30 treelings, and 50 medium-sized shrubs along the creek and in the retention area. Additionally, 60 feet of erosion control matting were installed along a section of eroding stream bank, through which 400 wetland plants and grasses were planted.

Prairie Restoration:

This spring, a multi-year restoration project was initiated to restore native prairie habitat to the undeveloped side of Malmstrom AFB. The project aims to restore not only native grasses, but also native forbs that can enhance and expand the pollinator habitat on the installation. The native plants, once established, will be more drought-tolerant and lower-maintenance than non-native plants, and will help prevent weed growth by crowding them out. In order to ensure the native plants are suited to Malmstrom AFB conditions, and to increase the likelihood of growth success, the native seeds were purchased from a local Montana seed vendor.



Montana Partners for Fish and Wildlife equipment operator, Levi Morgan, used a tractor-drawn commercial seed drill to plant a blend of 15 different native grasses and forb seeds on an approximately 3 acre plot. Photo: USFWS/Elin Pierce

Aquatic Habitat Management:

Powwow Pond is a popular spot for leisure-time fishing. In order to help maintain oxygen levels at the pond, a new electric aerator was installed. Elin researched and purchased all the necessary equipment, obtained permissions, and worked with the Electric shop to install the compressor. Subsequently, Josh and William Sharp, assembled the parts, connected the aerator and, submerged three airstones in the best suited areas of the pond. Additionally, the submerged airstone and air hose connected to the pond's wind-driven aerator were replaced with improved versions.

Sikes Act work continued...

Also during this time period, Montana Fish Wildlife and Parks (FWP) and Ennis National Fish Hatchery stocked Rainbow Trout (200 and 300, respectively), in preparation for Kid's fishing day.



Josh Melton making final adjustments to the updated "air stone" for the wind-driven aerator. This updated design is more efficient at promoting water circulation. (Note: The old stone being replaced is the round object in the foreground.) Photo: USFWS/George Jordan

Kid's Fishing Day:

In early June, USFWS, Montana FWP, and Malmstrom AFB held a kid's fishing day event at Powwow Pond. This year's event turned out to be a huge success with many smiles found on young and old alike. Special thanks to all involved in the coordination, set-up, and participation in this event.



MSgt Jason Wintersteen (front) assists Jim McThall (rear) with stocking approximately 300 Rainbow Trout from the USFWS Ennis National Fish Hatchery. Photo: USFWS/Elin Pierce



Top Left: Anglers young and old enjoying the day at Powwow Pond. **Top Right:** Bruce Auchley (MT FWP, left), MSgt Jason Wintersteen (USAF, center), and Grant Grisak (MT FWP, right) stand poised to answer any questions. **Bottom:** Renee Martin (USFWS) performing an educational fish dissection for interested kids.

Photos: USFWS/Elin Pierce

Sikes Act work continued...

Weed control:

Currently we are utilizing both herbicide application and bio-control methods to help combat invasive weeds at Malmstrom AFB. During June, Josh and a volunteer, Robbin Wagner, applied approximately 80 gallons of herbicide (Tordon and/or Telar) in a targeted manner—that is individual weeds were identified and sprayed versus traditional broadcast application. Weeds were targeted in areas where bio-control was not a suitable option. Herbicide application in this manner will continue through the summer.

Following the success of last year's pilot bio-control project utilizing goats, Elin secured base approval for a much larger herd to return in 2017. During late June, approximately, 500 Spanish Boer Cross goats and a herder arrived at Malmstrom to help control noxious weeds. Additional goats are scheduled for arrival later in the season. The project will last approximately 6-8 weeks. *See also:* <https://theelectricgf.com/2017/06/26/goats-enlisted-for-weed-control-at-malmstrom/>



Spanish Boer cross goats combating weeds on Malmstrom AFB. Photos: USFWS/Elin Pierce

In addition to goat grazing, additional weed bio-control efforts included the release of Dalmatian Toadflax Stem Weevil. This species is approved for release in the United States by the Department of Agriculture. These insects are plant-specific and pose no known danger to neighboring native vegetation or crops.

Thirteen strategic locations were selected and mapped to help control Dalmatian Toadflax. Approximately 105 weevils were released per site for a total of 1,365 weevils being released.

Arctic Grayling Restoration efforts at Red Rock Lakes National Wildlife Refuge.

Elk Springs Creek, Red Rock Lakes National Wildlife Refuge, MT, historically supported a large spawning run of grayling. Today, grayling are rarely found in Elk Springs Creek. One of the leading hypotheses for the grayling's absence was an anthropogenic re-route of Elk Springs Creek in the early 1900s that resulted in the stream first flowing through Swan Lake (a large shallow pond) rather than flowing directly into Upper Red Rock Lake as it had historically. Swan Lake experiences extreme water quality and habitat shifts on both a diel and seasonal basis that are believed to preclude the passage of fish through the pond during their migration attempts into and out of Elk Springs Creek.

During 2015 Red Rock Lakes National Wildlife Refuge and MTFWCO staff began working together to restore Elk Springs Creek by returning the stream to its historical channel and allowing it to flow directly into Upper Red Rock Lake. This re-route effort utilized approximately 3,200 pounds of fire-line explosives to blast a channel 4-5 feet deep and 10-12



Blasting a new path with fire-line explosives was a 2016 collaborative effort involving USFWS (Refuges and FAC) and the Forest Service. The new channel continues to be assessed regularly by Montana FWCO staff to better understand the success of the restoration effort.

Photo: USFWS/Jason Marsh



One of hopefully many to follow...

This Arctic Grayling is the first adult physically collected in Elk Springs Creek following stream restoration work in 2016.

Photo: USFWS/Cheyenne Owens

feet wide was completed September 15th, 2016. Jason Marsh has been leading the effort to monitor the project's success post restoration.

During sampling in Elk Springs Creek in May 2017, MTFWCO staff documented an adult

Arctic Grayling via electrofishing and an additional tagged adult grayling was detected by stationary detection arrays as it migrated through the restored channel — good indicators that the project was successful at restoring some migratory access to this once important spawning stream.

Red Rock Lakes continued...

In an effort to gain additional insight and understanding about fish movement within the Elk Springs/Picnic Creek complex, Montana FWCO staff continue to electrofish various reaches of both Picnic and Elk Springs creeks. All collected fish are implanted with a Passive Integrated Transponder (PIT) tag.

Additionally, MTFWCO staff installed and operated the fish weir on Red Rock Creek to monitor the Arctic Grayling spawning population as well as assisted staff from the Refuge, Montana FWP, and the Centennial Valley Association with removal of beaver dams on Red Rock Creek, to improve passage of grayling to the upper reaches of Red Rock and Hell Roaring Creeks. Breaching beaver dams is the next management action identified in the Centennial Valley Adaptive Management Plan.



Jason Marsh fine tuning a PIT tag reading array on Elk Springs Creek, Red Rock Lakes National Wildlife Refuge.

Photo: USFWS/Geoff Popken



Adult migratory Bull Trout – St. Mary River drainage, MT.

Photo: USFWS/Jim Mogen

Bull Trout in the St. Mary

Montana FWCO, working collaboratively with the Blackfeet Tribe, Glacier National Park, and the U.S. Bureau of Reclamation, has conducted biological investigations in the St. Mary River drainage since 1997.

As a result of these investigations, we now possess much of the contemporary definitive information concerning the St. Mary Bull Trout population that was so deficient at the time of listing. We have a strong understanding of the biology, life history, movements, relative

abundance, spawning-site locations, and most importantly, an accurate understanding of the threats to this unique population. This new information will be vital as we move forward towards recovering the St. Mary Bull Trout Recovery Unit.

St. Mary Bull Trout continued...

The use of PIT (Passive Integrated Transponders) tags and information obtained from the recapture of tagged fish has provided a wealth of knowledge associated with Bull Trout movement and life history within the St. Mary drainage. Over the past 20 years, nearly 4,000 individual Bull Trout have been tagged during summer electrofishing surveys and fall fish-trapping, and of that total, around 25% have been recaptured in subsequent years.

PIT-tagging juvenile and adult migratory fish allows us to monitor their movements past known obstacles such as natural and man-made barriers. Knowing when Bull Trout are actually moving through an area or past an obstacle and are most vulnerable to things like canal entrainment and other project threats adds important management flexibility when developing operational guidelines to reduce entrainment or minimize take. PIT-Detection Stations can provide this type of temporal movement information by taking advantage of our large investment in PIT tags already in the system.

We are currently operating a remote, solar-powered “experimental” PIT Detection Station in Boulder Creek near its



MTFWCO Biologist, Josh Melton PIT-tagging migratory adult (left) and juvenile (right) Bull Trout, St. Mary River drainage, MT.

Photos: USFWS/Jim Mogen

confluence. This site should provide additional insight regarding seasonal movements associated with adult spawning migrations and juvenile emigration in this important spawning tributary.

Since deployment (Nov 2015), our ability to detect tagged-fish as they pass over the submerged antennae has increased from only a few inches above the stream bottom to greater than 20 inches, which in this system



MTFWCO Biologist, Jim Mogen and Andrew Gilham with USBR Biologist Eric Best during PIT-detection antennae in Boulder Creek, St. Mary River drainage, MT.

Photos: USFWS/Sarah Mogen (volunteer)

St. Mary Bull Trout continued...

encompasses the entire water column under most flow conditions.

So far we have successfully logged 30 individual Bull Trout at the site which have already provided some interesting seasonal movement information. Even more exciting is that of the 58 juvenile Bull Trout (150-200 mm TL; mostly age-2) that were

tagged many miles upstream in Boulder Creek during 2016, an incredible 30 percent (n=17) of them were logged at the downstream station between late October 2016 and late May 2017.

As we learn more about this technology and our ability to detect tagged fish, we hope to establish other PIT detection stations at key locations in St Mary watershed, including outfitting Reclamation's proposed St. Mary Diversion and associated Fish Screening

and Passage Facilities to help monitor entrainment and hopefully success after passage and entrainment protection measures are eventually constructed.



MTFWCO biologists downloading information at our remote PIT Detection Station, Boulder Creek, St. Mary River drainage, MT. Photos: USFWS/Jim Mogen

Tribal Technical Assistance:

Montana FWCO biologists Andrew Gilham and Josh provided technical assistance to the Blackfeet Tribal Fish and Wildlife Department by implementing benthic and shoreline plankton tows to collect eDNA samples in Duck, Lower St. Mary, and Mission lakes as well as Four Horns Reservoir. The samples will be evaluated for potential invasive mussel DNA.

Additionally, Andrew and Josh, along with seasonal biotechs, Bill Sharp and Geoff Popken, and Jason Wintersteen, volunteer, conducted population assessment surveys on 3 Blackfeet Reservation lakes (Duck Lake, Hope Lake, and Four Horn Lake). Survey data are then used to develop stocking requests to support recreational fishing opportunities on the reservation.



Geoff Popken deploying an experimental mesh gill-net as part of population sampling efforts on the Blackfeet Reservation.

Photo: USFWS/Jason Wintersteen



Montana FWCO seasonal biotechs Bill Sharp (left) and Geoff Popken (right) prepare an experimental mesh gill-net for deployment as part of population sampling efforts on the Blackfeet Reservation.

Photo: USFWS/Jason Wintersteen

Other happenings:

- Montana FWCO, National Park Service, and local fly-fishing guides conducted a fly-fishing clinic at Fort Smith Elementary School, Montana. The class consisted of nine 4th/5th graders who were taught basic fish biology, entomology, fly-rod set up, and basic casting skills. At the end of the class the kids were allowed to keep their new Martin Caddis Creek fly-rod combo sets that were donated by Zebco. The kids were very grateful for the opportunity to learn and for the new fly-rods.
- Geoff Popken joined the MTFWCO team as a new seasonal biotech and William Sharp returned for a second season. Welcome aboard Geoff and glad to have you back Bill!
- Late last fall an ongoing fish passage project was completed on the Redwater River in north-eastern Montana. This collaborative effort included Montana FWP, BLM, USFWS and others. The project benefits many native species and received funding assistance from the [Great Plains Fish Habitat Partnership](#).



After basic “dry” casting instructions in the grass were provided to the Fort Smith Elementary School students, it was time to get a feel for how the line acts on the water.

Photo: USFWS/George Jordan



Before (left) and after (right) images of fish passage project on the Redwater River in north-eastern Montana. A series of undersized culverts were replaced with I-Span culverts to re-connect approximately 23.5 miles of the Redwater River to the Missouri River. Photo: Montana Fish Wildlife and Parks

For more information, click on the following logos
Or feel free to contact any of the Montana FWCO
Team members below:



George Jordan

Project Leader
2900 4th Ave. North, Room 301
Billings, MT 59101
Phone: 406-247-7365
Email: george_jordan@fws.gov

Jim Mogen

Fisheries Biologist
4052 Bridger Canyon Road
Bozeman, MT 59715
Phone: 406-585-9010
Email: jim_mogen@fws.gov

Judy Kobus-Fisk

Administrative Support Officer
4052 Bridger Canyon Road
Bozeman, MT 59715
Phone: 406-585-9010
Email: judy_kobus-fisk@fws.gov

Andrew Gilham

Fish and Wildlife Biologist
4052 Bridger Canyon Road
Bozeman, MT 59715
Phone: 406-585-9010
Email: andrew_gilham@fws.gov

Jason Marsh

Seasonal Biotech
4052 Bridger Canyon Road
Bozeman, MT 59715
Phone: 406-585-9010
Email: jason_marsh@fws.gov

William Sharp

Seasonal Biotech
4052 Bridger Canyon Road
Bozeman, MT 59715
Phone: 406-585-9010
Email: william_sharp@fws.gov

Geoff Popken

Seasonal Biotech
4052 Bridger Canyon Road
Bozeman, MT 59715
Phone: 406-585-9010
Email:
mailto:geoffrey_popken@fws.gov

Michael (Josh) Melton

Fish and Wildlife Biologist
335 Airport Road 61
Lewistown, MT 59715
Phone: 406-535-2800 ext 23
Email: michael_melton@fws.gov

Elin Pierce, PhD.

Fish and Wildlife Biologist
Malmstrom Air Force Base
Great Falls, MT 59715
Phone: 406-731-7702
Email: elin.pierce@us.af.mil

Jamieson-Lee Scott

Fish and Wildlife Biologist
Mountain Home Air Force Base
Mountain Home, ID 83648
Phone: 208-828-1784
Email:
jamieson_lee.scott.2@us.af.mil