When waters recede,

as high-elevation precipitation changes from rain to snow in northwestern Montana, stream discharges naturally wane during fall months. This may serve as a natural cue for some native species to migrate downstream seeking winter refugia in deeper waters, as is the case with the threatened Bull Trout (*Salvelinus confluentus*) that inhabit the St. Mary River drainage of the Blackfeet Reservation and Glacier National Park – the only native Bull Trout population east of the Continental Divide in the United States.

Each summer adult Bull Trout migrate from the main-stem St. Mary River to ascend Boulder Creek in search of pristine spawning habitats. Boulder Creek appears to be the primary spawning tributary for this unique population. In fact, Bull Trout redd surveys conducted by Montana FWCO biologists this past October identified 68 redds (spawning sites) - the highest recorded number since surveys were initiated by our office in 1997.
Photo Credit: USFWS / Jim Mogen

What's the Problem?
While habitats in Boulder Creek remain pristine and protected deep within Glacier Park, access to and from Boulder Creek require critical corridor habitat in the larger Swiftcurrent Creek downstream.

Upstream access is rarely a problem throughout the spring and summer, however, the fall out-migration is often interrupted as regulated flows are dropped to essentially zero.

Nearly a century ago, the Bureau of Reclamation (Reclamation) constructed Sherburne Dam, a large storage facility in the Swiftcurrent Creek drainage a few miles upstream from the Boulder Creek confluence. Annually around the first of October, Swiftcurrent Creek flows are halted as operations require complete closure of the dam to begin the reservoir filling process. The stream typically remains dewatered until downstream water demands require releases in the spring. Consequently, fish stranded in the remnant pools below the dam are left isolated as the stream bed dries. While their fate is not entirely known, past telemetry studies conducted by Montana FWCO biologists indicate that many native species that use this stretch of water, including adult Bull Trout, seasonally become stranded and eventually succumb to predation and/or anoxic conditions under heavy snow and ice.

What can WE do?
As the US Fish and Wildlife Service works with Reclamation to implement long-term conservation measures to protect Bull Trout in the Saint Mary watershed, short-term salvage efforts are helping to conserve the species.

When Reclamation needs to close the Sherburne Dam control gates, they coordinate with Montana FWCO staff. This year, Jim Mogen, Robbin Wagner, and Jason Marsh conducted fish salvage efforts which recovered Bull Trout and several other native species from the Sherburne Dam outlet works (background structure) and disjunct pools immediately downstream. All rescued fish were transported and released approximately three miles downstream, below the Swiftcurrent-Boulder creek confluence, where winter flows do exist, albeit significantly less than natural, and provide safe passage back to the St. Mary River.

Photo Credit: USFWS / Jim Mogen

With the control gates closed, Sherburne Reservoir is poised for refilling. *Photo Credit: USFWS / Jim Mogen*

Sikes Act Work at Malmstrom Air Force Base

Integrated Natural Resources Management Planning, invasive plant inventories, National Public Lands Day event and planning, fish management work on Powwow Pond…Whew, it's been a busy fall at Malmstrom, but great things are being accomplished.

During Septmber and October, the 1st draft revisions of the Integrated Management Plan (INRMP) were completed and the 2nd revision initiated. This is an important document and process that will help guide future resources management on-base.

Planning and details associated with a multi-base invasive plant inventory were finalized in September and the on-the-ground inventory work was completed during October at Malmstrom. The output from this effort will greatly facilitate future invasive plant management at Malmstrom and help establish the way for native vegetation restoration efforts in subsequent years; the draft report is expected from contractors in November.

National Public Lands Day (NPLD) is the nation's largest hands-on volunteer effort to improve and enhance the public lands Americans enjoy.

The 2014 NPLD on Malmstrom AFB was funded by a grant from the Defense Department's Legacy Foundation and included planting 56 large trees and shrubs throughout the base, as well as acquiring native plants and materials for pollinator gardens planned for Spring 2015.

Lastly, the year's final fish sampling and water data measurements were completed at Powwow Pond. This work is part of ongoing efforts to provide and maintain a quality recreational fishery for base personnel and their families.

This year, Dr. Elin Pierce organized the National Public Lands Day event on Malmstrom Air Force Base. Both airmen and civilian volunteers lent a hand with planting trees and shrubs throughout the base, including some at the Medal Of Honor Park which will be dedicated next year to honor fallen airmen. *Photo Credit: USFWS / Elin Pierce*

As the sun begins to set following a hard day's work, a solemn moment is observed as the National Anthem echoes across Malmstrom Air Force Base. The planted trees in Medal of Honor Park will serve as a living testament for those whose service and sacrifice will always be appreciated.

Photo Credit: USFWS / Elin Pierce

Fish on! A young angler assessing our fish management efforts at Powwow Pond, Malmstrom Air Force Base, Montana. Our efforts were rewarded with a sheepish grin and affirming nod of approval….priceless.

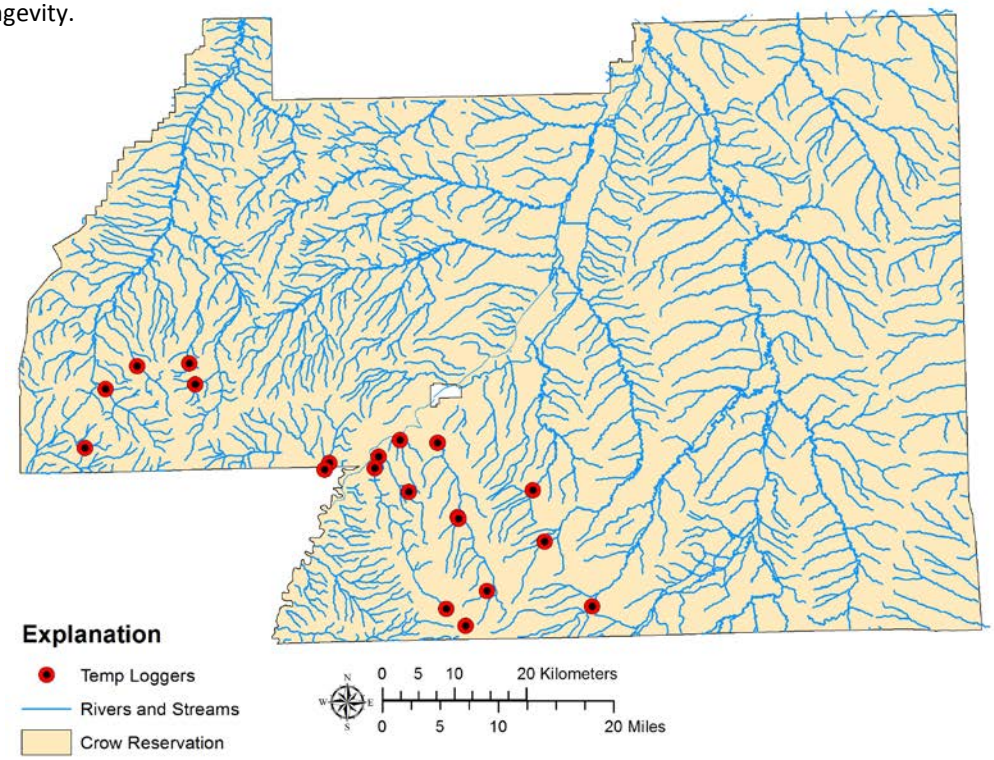
Photo Credit: USFWS / Elin Pierce

Water Temperatures,

air temperatures, and Yellowstone Cutthroat Trout habitat are all related. As part of an ongoing effort to collect long-term data trends and to better assess potential effects from climate changes, we have worked closely with the Crow Tribe and Bureau of Indian Affairs to increase the number of data loggers in tribal streams.

To date, 21 temperature loggers have been strategically placed in current and potential habitats of Yellowstone Cutthroat Trout. The deployment of 7 more loggers is planned for subsequent years.

This fall, many of these sites were revisited to retrieve stored data and equally important, to replace steel cables used to secure the data loggers. The original steel cables were replaced with stainless steel to ensure longevity.



Current location of temperature data loggers on the Crow Reservation, Montana.

The Montana FWCO also wishes to extend a special "Thank You" to Jason Marsh, our seasonal biotech, for his outstanding work this past field season; would not have accomplished all we did without him.