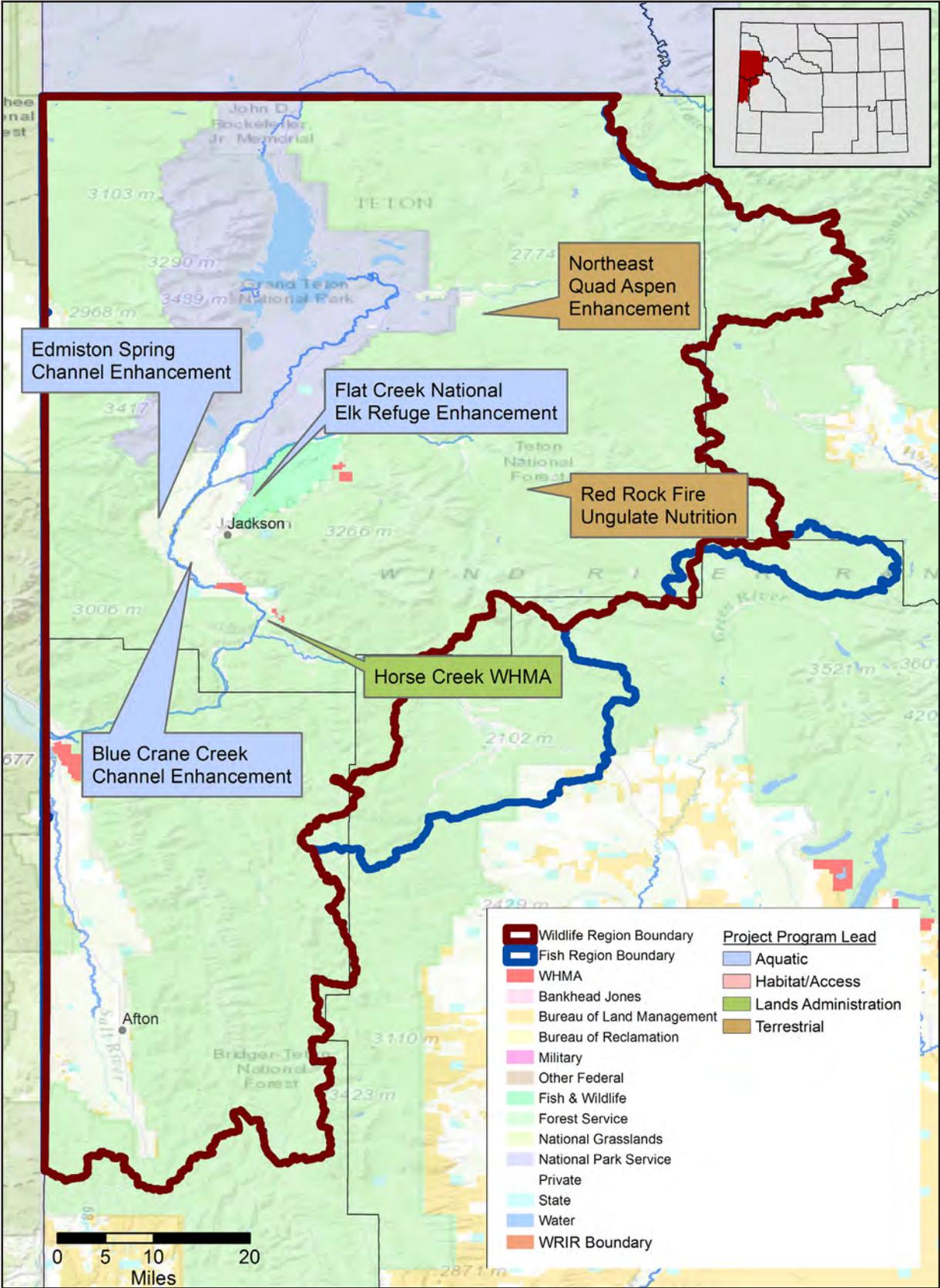


Jackson Region



Jackson Region

There was a great deal accomplished for Wyoming's fish and wildlife in the Jackson Region this past year. Wyoming Game and Fish biologists collaborated with the Bridger-Teton National Forest on a prescribed fire to improve habitat for moose and elk east of Moran Junction. This is part of a much larger habitat improvement project that targets several additional areas for treating and improving habitat in the future.

Another multi-year habitat enhancement project was initiated on Flat Creek, a world-class fishery for Snake River cutthroat trout on the National Elk Refuge. The initial year enhanced approximately one mile of stream, which resulted in an 81% increase in spawning fish. There will be another 2.5 miles of stream enhanced over the next two years.

A third project involved meadow restoration at the South Park Wildlife Habitat Management Area, which also serves as an elk wintering area and feedground. Game and Fish Habitat & Access personnel worked with the Teton Conservation District and the Teton County Weed and Pest District to remove invasive vegetation, including cheatgrass, and reseed the area with a native plant seed mix. Initial results are quite positive.

Red Rock Fire Ungulate Nutrition (Goal 2) - Ben Wise and Alyson Courtemanch



Figure 61. Excellent aspen and forb regeneration 1 year post-fire (left) and 3 years post-fire (right) at an aspen site that burned at high severity.

Fire is generally considered to be beneficial for big game habitat because it sets back forest succession and improves forage quantity and quality. However, a recent study from the Wyoming Cooperative Research Unit on the Jackson moose herd in northwest Wyoming found that summer forage quality was significantly lower in areas burned in the 1988 Yellowstone fires than in unburned sites. These findings call into question whether all types of fire are beneficial for ungulates. In 2011, the Red Rock Wildfire burned over 9,000 acres in the Gros Ventre drainage on the Bridger-Teton National Forest (BTNF). The wildfire burned in a mosaic of burn pattern severities, ranging from unburned areas to high severity, stand-replacing fires. This event presented a unique opportunity to monitor changes in the nutritional quality of ungulate forage in response to fire of varying severities (Figure 61).

In summer 2012, a collaborative project was initiated to monitor these changes in ungulate forage quality with BTNF, with funding support WGBGLC, RMEF, and Wyoming Wild Sheep Foundation. The overall goal is to understand how fires of varying severity affect the nutritional and mineral content of common forage species for bighorn sheep, elk, moose, and mule deer. Nutritional and mineral content will be tracked over both the short-term (1-5 years) and the long-term (6-10+ years).

57 permanent sampling sites in aspen, conifer, meadow, and willow communities within the Red Rock Fire were established. These sites were selected to represent a range of burn intensities in each community, from unburned (control) to high severity. Key ungulate forage species were sampled at each site. In total, 231 vegetation samples were collected representing 11 different plant species. These samples were sent to the Colorado State University Plant and Soil Lab for nutritional and mineral analysis. Preliminary results indicate that forage quality increases with increasing burn severity. These sites will be re-visited each summer to collect samples from the same plant species to track changes in nutritional content over time. Results will reveal how fire severity affects nutritional quality for ungulates, and improve understanding regarding the benefits of prescribed fire and wildfire for big game populations.

Greys River, South Park and Horse Creek WHMAs (Goal 2) - Miles Anderson, Matt Miller, Kade Clark, Daniel Tumblin

The Greys River WHMA received annual fence maintenance on all 13 miles of crucial winter range elk fence. A new elk jump was added to the elk fence just south of Alpine to aid in seasonal elk migrations to the Alpine Feedground (Figure 62).

Annual fence maintenance continued on the South Park WHMA. Seven and one-half miles of boundary fence were maintained along with one mile of crucial winter range elk fence. The South Park elk feeding area was harrowed in spring 2014 to break up elk scat and promote growth of new grasses.



Figure 62. *New elk jump aids in seasonal elk migrations to the Alpine Feedground.*

The Horse Creek WHMA received annual maintenance on one mile of crucial winter range elk fence. Three miles of boundary fence around the Horse Creek WHMA were also removed. This fence was dilapidated and a cause of concern for migrating wildlife. There are no grazing allotments on the adjacent National Forest Service lands. Sixty acres of grass meadows on the Horse Creek WHMA were also irrigated before and after haying from May through August. The irrigation after haying helps provide highly nutritious natural forage for elk when they arrive on the Horse Creek Feedground prior to feeding in the fall.

The Jackson Region WHMAs and PAAs also received noxious weed treatment from the Teton County and Lincoln County Weed and Pest Districts. In 2014, 21.4 acres of noxious weeds were treated on WGFD Commission owned and managed lands.

South Park WHMA Reseeding (Goal 2) - Matt Miller



Figure 63. *Reseeding at South Park WHMA.*

South Park WHMA had sections of meadow reseeded in spring 2014 (Figure 63). Thirty-five acres of meadows were harrowed and reseeded in order to remove noxious weeds and establish desirable species. The WGFD worked with the Teton Conservation District and the Teton County Weed and Pest (TCWP) District to plan and pay for the reseeded. TCWP provided the hours and supplies to remove the noxious weeds in the 35 acres. The largest concern was the increasing amount of cheatgrass on the WHMA. Once the area was boom sprayed in fall 2013, WGFD personnel harrowed the area and then reseeded the 35 acres with native seed provided by the TCD and TCWP. In fall 2014, great results were noticeable and the TCWP and WGFD have set up photo points, monitoring transects and exclosures to keep track of growth and species composition.

Alpine Wetlands Water Delivery System Maintenance (Goal 2) - Matt Miller

The Alpine Wetlands complex provides nesting and brood rearing habitat for many species of waterfowl including trumpeter swans. Alpine Wetlands received an overhaul to its water delivery system in 2014. The WGFD jointly manages the Alpine Wetlands complex with the Bureau of Reclamation (BOR). After meeting with the BOR in spring 2014, it was determined that the Salt River diversion and canal feeding the wetlands complex needed updating. The BOR donated equipment and hours towards reshaping the diversion and dredging the canal feeding the wetlands. The improvements allow the wetlands to receive more water later into the summer once high water flows slow down.

Edmiston Spring Channel Enhancement (Goal 2) - Anna Senecal and Lara Gertsch

The Edmiston Spring project entails organizing multiple stakeholders to improve instream habitat for Snake River cutthroat trout while maintaining existing wetlands and riparian benefits. Edmiston Spring is a small tributary to Fish Creek that flows through the town of Wilson. This project, despite its small size, has the potential to create future stream improvement projects throughout the Fish Creek drainage, a class one, blue ribbon Snake River cutthroat trout fishery suffering from the impacts of historical development and land use. Edmiston Spring Creek provides habitat for a suite of terrestrial and aquatic organisms in the form of excavated ponds used by adult cutthroat, ungulates, waterfowl and other bird species, a relatively robust riparian corridor, and sections of flowing stream (Figure 64). WGFD partnered with Jackson Hole Trout Unlimited (JHTU) to undertake a stakeholder process involving the county, the school district, and all stream-adjacent private landowners to accomplish three primary goals: increase habitat for juvenile Snake River cutthroat trout, optimize fish habitat in late winter flow conditions, and promote and maintain existing wetland and riparian habitat. The project design contract was awarded to a local, private consulting firm in fall 2014 and conceptual designs are being finalized through a consensus-driven stakeholder process. Proposed stream modifications include limited earthwork, replacement of one culvert with a bottomless arch, enhancing spawning riffles and placing large wood structures using (volunteer) hand crews. Project implementation is slated for late summer/fall 2015. Successful completion of this project may create additional habitat improvement opportunities throughout the Fish Creek drainage.



Figure 64. *Habitat on Edmiston Creek benefits a host of aquatic and terrestrial species. Future stream improvements will maintain existing benefits and accentuate flowing portions of the creek for fisheries.*

Flat Creek National Elk Refuge Enhancement Phase 2 (Goal 2) - Anna Senecal and Lara Gertsch

The WGFD and project partners are collaborating to improve Flat Creek for native cutthroat trout. This system is locally and nationally renowned as an iconic Snake River cutthroat trout fishery located just north of Jackson on the National Elk Refuge. This native fishery, sustained by wild recruitment alone, boasts trophy fish and breathtaking views. This combined with road-side accessibility make it one of the most popular fisheries in Wyoming. Maintenance of instream and riparian habitat is critical for the persistence of wild spawning fish.



Figure 65. *Installed instream and bank structures are functioning to narrow the channel and provide overhead cover for native trout.*

Flat Creek's lack of flushing flows causes sediment and aquatic vegetation to fill the channel, pools, and spawning habitats. Sediment deposits have raised the stream bed and widened the channel. The stream lacks large woody debris and undercut banks to provide habitat diversity and overhead fish cover. The Flat Creek National Elk Refuge Enhancement project objectives include narrowing and deepening the channel to enhance trout migration and spawning habitat (Figure 65). The design strategically places instream structures, positions gravel for spawning, and uses bank fill and channel dredge to decrease the stream width and increase channel depth. The first phase of Flat Creek enhancements focused on instream, riparian and floodplain improvements to 1 stream mile in 2013. Post-construction monitoring indicates an 81% increase in spawning fish. Phase II was initiated in 2014 with removal or repair of existing structures and materials staging (Figure 66). Phases II and III construction will take place over the next two years (Octobers 2015 and 2016), accommodating cutthroat spawning, elk and bison hunting, elk feeding, and winter range restrictions. Approximately 1.25 miles will be treated each year.

Figure 66. *A local contractor loaded, hauled, and deposited these cottonwood logs for the next two phases of the Flat Creek National Elk Refuge Enhancement.*



Northeast Quad Aspen Enhancement (Goal 2) - Alyson Courtemanch

The Northeast Quad Aspen Enhancement Project was partially completed in 2014. The overall goal of the project was to enhance aspen communities by removing conifers and stimulating aspen regeneration with prescribed fire. The project area is located east of Moran on the Bridger-Teton National Forest. It is part of the Buffalo Valley Habitat Enhancement, which targets several areas for treatments. The Dry Quad Prescribed Burn was completed in 2014. The area provides moose crucial winter and transitional range and elk winter/year-long and transitional range. This is also a key migration corridor for elk moving to winter ranges in the Jackson Hole area from Yellowstone National Park. The area is very popular for elk and moose hunting. Mechanical removal of commercial-sized conifers and slash-



Figure 67. *A conifer-encroached aspen stand that was targeted for treatment in the Northeast Quad project area.*

ing of non-commercial conifers was completed in 2010. In October 2014, prescribed burning was completed on approximately 100 acres, including old and decadent aspen stands (Figure 67) to stimulate regeneration. Post-treatment monitoring will occur at 1, 2, 5, and 10 years post-treatment to evaluate whether objectives were met. Funding was provided by the WGFD Habitat Trust Fund and Bridger-Teton National Forest.

Horse Creek and South Park WHMA Haying (Goal 2) - Miles Anderson, Matt Miller, Kade Clark, Daniel Tumblin

Horse Creek and South Park WHMAs were hayed in 2014. In all, approximately 80 acres were hayed (Figure 68) and the WGFD produced 140 tons of hay (Figure 69). The hay was fed to big game on the Horse Creek and South Park Feedgrounds. The WGFD teams up with the Teton Conservation District (TCD) in order to fund the haying annually. The main goal of haying on the WHMAs is to produce more nutritious forage for wintering big game during the late fall and early spring as elk are migrating to and from the feedgrounds. Haying will continue on the Horse Creek and South Park WHMAs in the future with the hope of continuing to provide forage for big game and hay for the feedgrounds. This also reduces chances for commingling between elk and cattle on private land adjacent to elk feedgrounds, and reduces the amount of hay that the WGFD needs to purchase each year by feeding hay that we produce on our own lands.



Figure 68. *Hay being cut on the Horse Creek.*



Figure 69. *WGFD produced 140 tons of hay that was utilized on the Horse Creek and South Park Feedgrounds.*

Blue Crane Creek Channel Enhancement (Goal 2) - Anna Senecal and Lara Gertsch



Figure 70. *Before (left) and after (right) cross vane structure installation designed to narrow the creek, increase water velocities and move sediment through the system.*

Since completion of the original Snake River levee system in 1964 for flood protection, lateral connectivity within the Snake River floodplain has been dramatically reduced and rejuvenation of spring tributaries is lacking. Reduced availability of suitable spring tributary spawning habitat for Snake River cutthroat trout in the form of clean, appropriately sized gravels, is one limiting factor for this native, trophy fishery. To mitigate the effects of lost flushing flows and sediment transport, habitat improvement to lateral Snake River tributaries is a priority. One example of this work is a continuum of fish passage and habitat improvement projects collectively termed the “Snake River Spawning and Migration Project” that span approximately 15.5 miles of Spring and 2.5 miles of Blue Crane creeks.

Enhancement projects have taken place over the past 8 years in a series of phases. The most recent work took place on Blue Crane Creek during the spring of 2014 and winter 2014-15. Spring work entailed the construction of 7 cross vane weirs (Figure 70), mechanical dredging of 17 pools, and adjusting or removing existing trees to improve trout habitat quality and sediment transport dynamics. Improvements to Blue Crane Creek downstream of the Spring Creek confluence took place winter 2014-15 and included decreasing creek widths, increasing pool depths, excavating sediment detention basin and cleaning and rearranging existing gravels to improve spawning habitat.

This project has the potential to expand to the confluence with the Snake River, connecting spawning habitat throughout the length of these two important tributaries. Making these habitats readily available to the native fish community will result in resilient populations that are more able to withstand major events like fire, flood or drought. Increased connectivity to lateral, aquatic habitats will continue to provide a source of recruitment to the Snake River fishery.