

LANDER REGION HIGHLIGHTS

- Radio tagged 20 fish and marked an additional 22 in Sheridan Creek to assess upstream movement through a potential barrier
- Designed and implemented over 1,000 ft. of in-stream rehabilitation work in the Dubois area to reduce bank erosion and enhance fish habitat
- Assessed nearly 40 miles of irrigation drains to Ocean Lake for maintenance needs and other potential projects to improve habitat conditions
- 425 acres of juniper removed/thinned
- 200 acres of Russian olive and saltcedar resprouts sprayed
- 500 acres of sagebrush mowed

Resource Management Plan (Goal 1) - Carrie Dobey

Participated in the Lander BLM Resource Management Plan revision and commented on the range of alternatives for wildlife, vegetation, weeds and fire as well as the first draft.

Diamond G Ranch Conservation Easement (Goal 1) - Nick Scribner

Assisted and coordinated with Ellen Vanuga of the Jackson Hole Land Trust on several funding applications to secure a conservation easement on the Diamond G ranch in the upper Dunoir Valley near Dubois, WY. The Diamond G Ranch is approximately 5,130 acres including 1,100 acres of wetlands and 5.5 miles of streams surrounded by public land on 3 sides of the property. The ranch provides crucial winter and yearlong habitat for moose, elk, and deer. It is also a significant migration corridor (Figure 1) for these species connecting winter range with summer ranges. Numerous species can be found in the Dunoir drainage including Canada lynx, grizzly bear, gray wolf, trumpeter swan, boreal owl, and Yellowstone cutthroat trout. A total of 32 species of SGCN can be found on the property (24 birds and mammals, 8 amphibians and fish) making this a key area for sensitive species. Development is one of the primary threats to fish and wildlife in the upper Wind River Valley, thus protecting intact habitat like the Diamond G Ranch is vital to preserving future wildlife populations.



Figure 1. The Diamond G Ranch provides a critical migration corridor for many species including elk.

South Pass Aspen/Willow Habitat Improvement (Goal 2) - Carrie Dobey

Stand inventory began in summer 2010 for an aspen/willow improvement near Atlantic City. The department is working with the BLM and USFS to improve aspen health by removing encroaching conifers. Inventory is the first phase of the proposal. Stands will be digitized in GIS over winter to determine acreages of treatments which may include hand removal, mastication with machines and prescribed burning. Open houses will be held in winter 2011 to get comments and concerns from the public. Archeological clearances and EA writing will occur in 2011 with treatments starting in 2012.

Ferris and Seminoe Mountains Prescribed Burns (Goal 2) - Carrie Dobey

The Rawlins BLM office held public scoping during the WGFD season setting open houses in Rawlins and Casper to provide the public an opportunity to learn about planned prescribed burns on Ferris and Seminoe Mountains. The goals of the burns are to improve aspen health, conifer age structure, remove encroaching juniper and limber pine from sagebrush and mountain mahogany stands and increase forage availability for newly

transplanted bighorn sheep. The BLM has received \$40,000 from the RMEF to assist with the first burn on Seminoe Mountain, planned for spring 2011. The first burn on Ferris Mountain is planned for fall 2011.

Lander Front Mule Deer Habitat Improvement - Phase 2009 (Goal 2) - Carrie Dobey

Activities this year included 425 acres of juniper thinned, 200 acres of Russian olive and saltcedar resprouts treated on Beaver Creek and 500 acres of sagebrush mowed to stimulate grass and forb growth (Figure 2). Four nested frequency transects were established pre-mowing to determine the effects on cheatgrass growth. Two of the sites were supposed to be treated with Plateau in fall; however the cheatgrass never germinated and will be treated next year. Transects established in previous treatments were monitored with positive results. Juniper sites had an average increase in forbs (217%), grasses (85%) and litter cover (98%) as well as a decrease in bare ground (38%). Unfortunately annuals such as cheatgrass and desert alyssum also increased on average by 118%. This was not an unexpected result as ground disturbance from the machines will create bare ground ripe for annual germination. The amount of cheatgrass resulting from machine disturbance is minimal compared to what would return post fire. A surprising result in a couple of the juniper treatments was the appearance of currant. Birds landing in the branches of juniper dispersed currant seeds and once the competition from the juniper was removed, the currants exploded growing two feet in one year. Sagebrush treated with Spike also had positive results with an increase in forbs (47%) and grasses (103%) and a decrease in bare ground (23%). Litter cover decreased slightly by 7%. Because it was not a mechanical treatment, minimal change in litter cover was expected. Annuals did increase but still remain less than 10% of the total canopy cover.



Figure 2. Currant growth following juniper removal.

Phase III of the project is currently being planned for the Red Canyon/Weiser Knoll area and includes additional juniper and sagebrush treatments as well as cheatgrass spraying.

Shrub Production/Utilization Monitoring (Goal 2) - Carrie Dobey

Regional wildlife personnel collected production and utilization data on 10 shrub transects located throughout the region. Utilization over the 2009-2010 winter was relatively low at all transects, ranging from 1-26% with an average of 11%. Wildlife could easily roam during the winter due to minimal snow cover throughout the region therefore they did not focus use in any particular area and over browse the shrubs. Sagebrush production declined slightly from 0.8 inches in 2009 to 0.7 inches in 2010. Bitterbrush production also declined from 3.7 inches to 2.9 inches. Decreased growth was likely due to very dry summer conditions.

Herbaceous Production/Utilization Monitoring (Goal 2) - Carrie Dobey

Transects for over winter utilization were not monitored for the 2009-2010 winter on Red Canyon and Red Rim/Daley WHMA's due to late snow cover. By the time the areas were accessible, vegetation had already begun to green up making clipping extremely difficult. Utilization on the Whiskey Basin WHMA was 30%, Inberg/Roy WHMA was 50% and Spence/Moriarty WMA was 40%, all below the recommended level of 60%. Across the region, production decreased or remained stable from 2009 with an average of 553 lb/acre. The decline was likely due to dry summer conditions.

Sheridan Creek Yellowstone Cutthroat Protection (Goal 2) - Nick Scribner

In 2008, the lower section of Sheridan Creek was identified as a possible location for construction of a barrier to block upstream movement of non-native fish, which would allow YSC to be restored above the barrier and provide an additional 7 miles of YSC occupied habitat. Preliminary stream survey work was completed in 2009

directly upstream of USFS road #532, an area easily accessible for construction activities. The data documented a steep and slightly entrenched stream reach. However, high flows would likely spill out of the channel, indicating this location is not suitable for a barrier because flood flows could circumvent any barrier built and provide an avenue for non-natives to move upstream.

Additional Sheridan Creek assessments in 2010 identified a more suitable barrier location approximately 0.75 miles upstream of USFS #532 where the creek emerges from a small canyon. Data were collected on stream dimensions through 4 cross sections and an upstream to downstream profile of channel slope and other features. It appears this location may already be a fish barrier at particular flows based on visual observations (Figure 3) and initial data analysis. However, without fish movement data we cannot verify this theory. As a result, we partnered with Trout Unlimited and Gregory Aquatics to initiate a telemetry study. In October, 42 fish were captured from both upstream and downstream of this potential barrier and released 1 mile below it. Twenty fish that were large enough (0.3 lbs) were radio tagged while the other 22 just had their adipose fins clipped. Radio tagged trout were brook trout and cutthroat trout and will be tracked once a month until the tags battery life expires (440 days). Electroshocking will be done above the barrier site in 2011 to assess movement of fin clipped fish. To date, most of the radio tagged fish have remained in Sheridan Creek, though 1 has moved downstream into the Wind River and 4 were not located in December 2010 (Figure 4). Rainbow trout presence was also assessed since they are the primary threat to Yellowstone cutthroat conservation efforts in Sheridan Creek through hybridization. Rainbow trout are present in upper Wind River and lower Sheridan Creek, but have never been found above the canyon we surveyed in Sheridan Creek. Our electrofishing efforts confirmed these data as we captured 1 rainbow trout in lower Sheridan Creek, but zero above the canyon. Additional sampling will occur in 2011 to validate these results.



Figure 3. A steep gradient with fast water, few pools, and bedrock substrate may impede upstream fish movement at certain flows in Sheridan Creek.

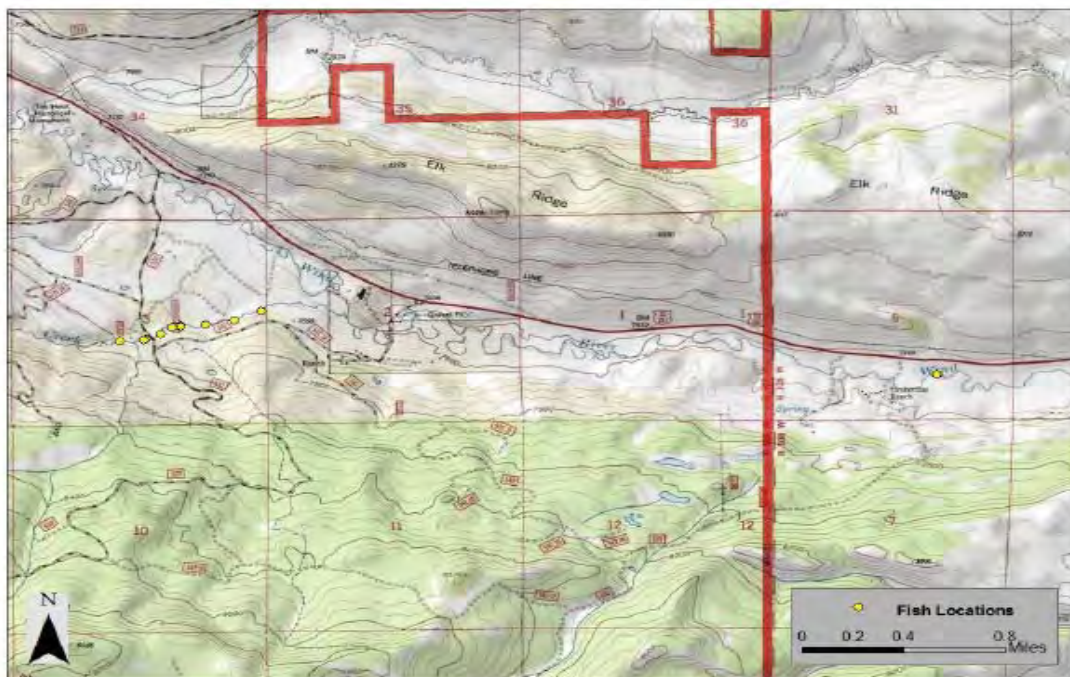


Figure 4. Locations of radio tagged fish from Sheridan Creek in December 2010.

North Fork Popo Agie Riparian Fence (Goal 2) - Nick Scribner

Popo Agie Anglers partnered with WGFD, NRCS, BIA, WWNRT, and Ralph Alley to implement a fencing project on the North Fork Popo Agie River public fishing access near Lander. Objectives are to improve riparian shrub conditions, reduce bank trampling from cattle, and improve water quality. This easement on Mr. Alley's property is annually used for both winter/spring grazing and calving, putting considerable pressure on riparian shrubs and stream banks and resulting in stream instability. Project partners felt fencing would improve aquatic habitat by enhancing shrubs that would in turn stabilize stream banks and increase insect input to the stream. A fence would also improve cattle management for Mr. Alley by eliminating their access to properties across the river. Pine Tree Fencing of Lander completed construction of the fence in early October, 2010. They installed approximately 1.5 miles of fence with 3 water gaps and 4 gates to allow cattle access to water and the ability to periodically graze (Figure 5). In addition, a new well and watering tank were installed at the corrals to eliminate a water gap and decrease barnyard runoff to the river.



Figure 5. New fence along the corrals on the North Fork Popo Agie River eliminated a troublesome water gap.

Dubois Area Extension Services (In-stream habitat) (Goal 2) - Nick Scribner

Approximately 25 yards of rock were used to extend existing rock barbs and construct 4 new barbs in the Wind River at Dubois City Park. These barbs deflect flows to the mid-channel to protect stream banks and develop deeper scour pools. This project was done as a demonstration to the Dubois school kids involved with the "adopt-a-trout" program to show them what a habitat enhancement project could mean for fish.

Another was designed for a landowner desiring to stabilize an eroding bank and provide trout holding cover in the Wind River below Dubois. A total of 220 yards of rock and 30 trees were set along 350 ft. of eroding bank (Figure 6). Several of the trees had root wads, which were placed upstream to provide a barb type structure to redirect flows towards the mid-channel and create scour pools. In addition, 4 boulder clusters were placed near the thalweg to create scour pools for more holding cover.

An additional one was designed for a landowner interested in enhancing overhead cover in the Wiggins Fork at the East Fork Wind River confluence. A total of 300 yards of rock and 12 trees were used on over 500 ft. of bank. Rock work was done primarily to protect the banks where the landowner is building a house. Trees with root wads were integrated into the rock to create 5 log vanes to create downstream scour pools and also deflect flows to the mid-channel. Additional trees were cabled along the bank to provide more overhead cover. Large rock was used to create 6 boulder clusters (3-4 rocks) near the thalweg to create more break water for holding fish.

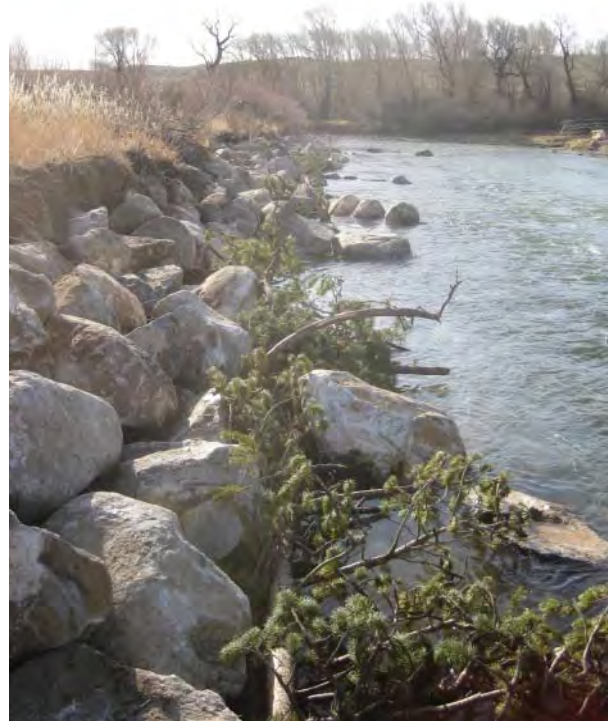


Figure 6. Looking downstream on the Wind River after installation of trees and rock revetments to protect the eroding stream bank.

Spence Moriarty WMA East Fork Wind River Habitat Improvement (Goal 2) - Nick Scribner

Approximately 7 miles of the East Fork Wind River were assessed possible habitat improvement projects to benefit fish, primarily Yellowstone cutthroat trout (YSC). Prior studies on this drainage have noted a strong association between YSC and complex habitat (i.e., woody debris, rock). The assessment identified areas of unstable banks, excessive erosion, undercut banks, and suitable pools where adding a combination of tree and/or rock revetments would stabilize banks and enhance fish habitat. A total of 30 sites were identified downstream of Bear Creek on the Spence Moriarty wildlife management area. Ten sites were selected to work on over the next 2-3 years, and were all downstream of the Wiggins Fork confluence. Sites range from 150 – 300 ft. in length and several have extensive erosion issues. Authorization from the Army Corp. of Engineers was secured in October and work began in November with mobilizing supplies to the stream sites. We were able to complete one 200 ft. long site prior to ice conditions becoming too severe (Figure 7). Approximately 25 yards of rock and 20 trees were used to increase overhead cover for fish and provide bank protection during high flows. The project continued in December with additional stockpiling of rock (300 yards) and trees (60) for installation in 2011. Additional trees will be needed and will come from the Bear Creek conifer removal project.



Figure 7. Rocks were used in combination with cable to hold trees in place to increase woody debris for fish habitat.

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Inberg/Roy WHMA Bear Creek Conifer Removal (Goal 2) - Nick Scribner

In 2009, a conifer removal project began along Bear Creek on the Inberg/Roy WHMA to enhance riparian deciduous vegetation, increase soil moisture and invertebrate biomass and thereby improve aquatic habitat. To date, over 80% of the 50 acre project area has had conifers removed. In 2010, over 80 trees were cut and hauled out of Bear Creek by the statewide HAMS crew (Figure 8). These trees were stockpiled at 3 different locations along the East Fork Wind River for future use as woody debris jams in the East Fork Wind River habitat project. Most of the trees cut were between 25-40 ft. tall and heavily branched, which should provide excellent overhead cover as in-stream habitat. Additional cutting will be done in 2011 to complete the project area and provide enough trees for the East Fork Wind River habitat project.



Figure 8. A loader was used to skid trees to the landing area.

Red Canyon WHMA Sheet Piling (Goal 2) - Nick Scribner

Two log bunker structures were modified in Red Canyon Creek by placing sheet piling in front of the structures to slow flows and trap sediment. The bunker structures had failed and were not reducing downgrading of the streambed as intended. Approximately 45 ft. of sheet piling was used between the two sites and placed directly upstream of the log structures. Additional fill material was placed around the sheet piling to secure leaks and force flows through a channel over the structure.

Ocean Lake Irrigation Drain Assessment (Goal 2) - Nick Scribner

Ocean Lake has been classified since 1998 as an impaired water by the Wyoming Department of Environmental Quality (DEQ) due to sediment. In December 2009, a total maximum daily load (TMDL) was approved by DEQ that strives to calculate the allowable sediment load for the lake to meet water quality standards to support assigned designated uses. Although most of the sediment is already in the lake and is re-suspended each year, 72 miles of irrigation drains contribute additional sediment each year. There are very few options to address sediment within the lake and to do so would be very expensive, thus an assessment of the drains for possible improvements is a more realistic approach.

The goal is to determine maintenance needs, problem areas, and improvements that can be made to decrease sediment input to Ocean Lake and enhance habitat conditions for various wildlife. It has been roughly 20 years since many of the Save Ocean Lake projects were completed, so it is also time to evaluate these projects. Overall, the drains are relatively stable, but a list of recommendations were produced to help direct management priorities and funding for future projects:

Management Recommendations:

- Repair deteriorated water gaps with new fencing and work with landowners to construct new ones where grazing is impacting vegetation and bank stability
- Remove debris that is adversely affecting drain flows and bank stability
- Stabilize eroding banks and reestablish vegetation to hold them in place
- Reduce impact of falling water from culvert outlets by directing it to the irrigation drains with rock or other suitable material
- Assess if additional rock-drop structures are needed to reduce water velocities, which might be contributing sediment and causing downcutting in the drains
- Remove Russian olive where feasible and plant native shrubs (e.g., willow, alder, chokecherry, etc) where suitable to enhance wildlife habitat
- Look for opportunities to construct more wetlands or sediment settling ponds on drains 4, 6, and 7 to eliminate direct flows from drains to the lake
- Drain #4 should be the highest priority for maintenance

Energy Development Reclamation Study (Goal 5) - Carrie Dobey

Extremely dry conditions have led to unsuccessful reclamation on newly constructed oil and gas pads in the Lysite and Beaver Creek areas. WGF D assisted the BLM, NRCS, ConocoPhillips and Devon Energy in the development of a reclamation study being conducted at ConocoPhillips' Lysite field and at Devon's Beaver Creek field. In an effort to increase reclamation success both companies agreed to complete various planting techniques on three different soil types at each oil field. Tests were set up on a clayey, sandy and saline site on both units. Each pad was divided into a split plot design to test 3 variables: cover crop vs. no cover crop, drilling vs. broadcasting, and irrigated vs. non-irrigated. In 2009, the sections selected to receive a cover crop were planted with barley in May and mowed in July-August. Native seeds were drilled or broadcasted in November 2009. Barley germinated at all but one saline site. Initially the group decided not to erect temporary electric fencing because of cost, but grazing on the cover crop was significant. Fences were put up over winter to prevent cattle from grazing seedlings.

Both fields received significant moisture in April, May and early June 2010 and the group decided not to irrigate. Russian thistle and halogeton were the dominate species present when monitoring was completed in mid-June. A few native species were found in very low numbers, some from the seeding and some recruited from neighboring areas. The saline site in the ConocoPhillips field had the worst results with very poor germination. Sites will be monitored again in 2011.

Sinks Canyon (Goal 2) - Carrie Dobey

An arsonist started several fires in the Sinks Canyon WHMA during 2009 ranging from 1 to 30 acres. In an effort to control cheatgrass spread, WGFD contracted with the Fremont County Weed and Pest to spray Plateau on approximately 13 of the 18 acres burned in February. The fires started in July were too rugged to spray by foot and not large enough to warrant using a helicopter.

The results of the Plateau treatment were very positive (Figure 9). There was less cheatgrass and more native species present in the herbicide treatment than the non-treated burn which was almost solid cheatgrass. There is still a lot of bare ground in the treatment providing room for the cheatgrass to spread and the treatment will continue to be monitored.



Figure 9. Plateau treatment one year post spray.

Inberg/Roy WHMA and Spence/Moriarty WMA (Goal 2) - Carrie Dobey and Brian Parker

Habitat Access and Maintenance crews removed conifers from 4 aspen stands and began construction on exclosures on the Inberg/Roy WHMA (Figure 10). These aspen stands are on the verge of disappearing because elk browsing is prohibiting new growth. By protecting the suckers from browsing, new healthy aspen should thrive.

A weed contractor was hired to spray roads, ditches and hay fields on both units to treat cheatgrass and white top. Cheatgrass was supposed to be treated in fall 2010 but it never germinated and both species will be treated next year.



Figure 10. Crews removing conifers from aspen stands prior to fence construction.

Ocean Lake WHMA (Goal 2) - Brian Parker

Approximately forty-acres of barley food-plots was planted in three different fields at Ocean Lake (Figure 11). The food-plot planting was the Area Improvement Project Agreement (AIPA) payment for the grazing lessee. The grazing lease is a five-year winter rotation used to maintain irrigated meadows and promote waterfowl nesting success.



Figure 11. Food-plots on Ocean Lake.

Inberg/Roy WHMA (Goal 2) - Brian Parker

Phase 1 of the Dennison Meadows pipeline and restoration was completed during the fall of 2010 (Figure 12). Approximately 4,500 feet of transport ditch was converted to buried pipeline. Field spreader ditches will be replaced with gated pipe during spring 2011. Farming two of the four meadows with palatable, drought-tolerant species will begin in spring 2011 followed by an analogous treatment for the remaining two meadows in spring 2012. Pipeline installation will greatly increase water use efficiency, which will benefit Yellowstone cutthroat trout, while meeting needs of supplemental forage production for wintering elk.

Whiskey Basin WHMA (Goal 2) - Brian Parker

Phase 2 of the Basin Meadow restoration was completed during the spring of 2010. Phase 2 consisted of gated pipe conversion and supplemental weed spraying following the farming effort of 2009.

Red Canyon WHMA (Goal 2) - Brian Parker

Cows from the Red Canyon CRM grazed the upper and east meadows to remove decadent vegetation and promote vigor and palatability of meadow vegetation for wintering elk. Grazing occurs every other year.

Sand Mesa WHMA (Goal 2) - Brian Parker

Farming continued at Sand Mesa in the three pivot fields and fields four and five where corn was planted.

Ferris Invasives (Goal 2) - WLCI

The Ferris Mountain Wilderness Study Area (WSA) Leafy Spurge project entails treating the WSA adjacent Hogback ridges for invasive weeds, mainly leafy spurge, with some whitetop and Russian knapweed. Treatment consists of the application of herbicide to control weeds in this extremely rugged area. Monitoring in 2005 showed actual infestation into the WSA for the first time, along with a marked increase of acres infested along the fringes in this wildlife-rich WSA. These weeds are also increasing in the adjacent hogback ridges. The project benefits the Wilderness Study Area native vegetation, sage-grouse, and other native wildlife. 500 acres of treatments were accomplished this year. Partners include grazing permittees and Carbon County.



Figure 12. Pipeline and restoration on Dennison Meadows.