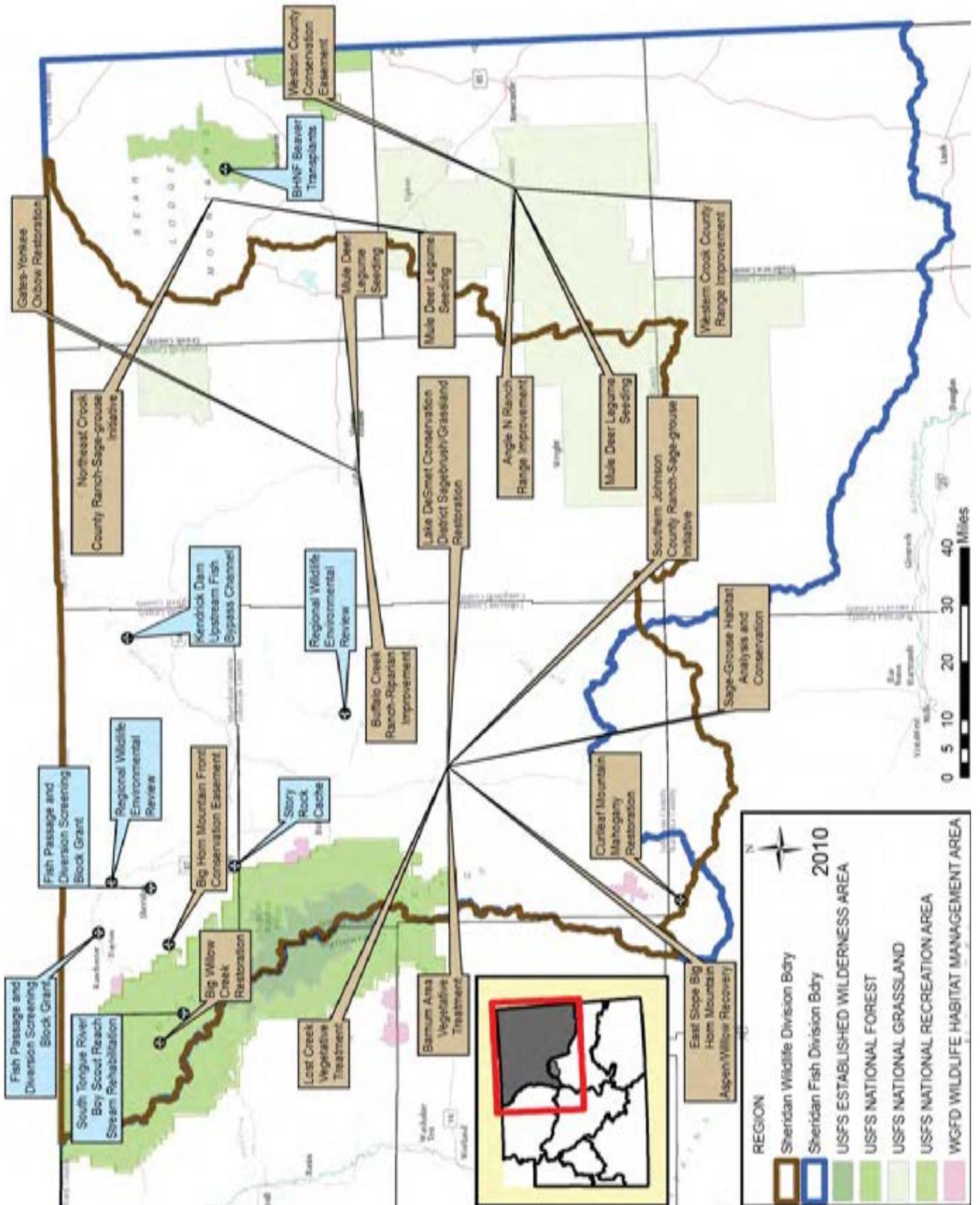


SHERIDAN REGION



SHERIDAN REGION HIGHLIGHTS

- 1,478 acres were mechanically aerated and interseeded with 2,956 pounds of forb and shrub seed to enhance sage-grouse habitats
- Conifers were removed from 80 acres of curlleaf mountain mahogany to conserve mule deer winter browse
- 11 trash-catchers and 26 beaver were transplanted to restore a willow complex in the Big Horn Mountains
- 1,020-acre conservation easement was purchased to preserve crucial elk winter range along the east slope of the Big Horn Mountains
- Began operating the Kendrick bypass which reopened 36-miles of Clear Creek to native fish
- Helped reconnect 37-stream miles along pieces of the Tongue River and Big Goose Creek
- Helped partners screen fish from the Tongue River Diversion
- Transplanted 15 beaver to two watershed segments on the Black Hills National Forest
- Inventoried or monitored about 8-miles of stream and riparian corridors

Regional Wildlife Environmental Reviews (Goal 1) - Travis Cundy

The Aquatic Habitat Biologist concluded two environmental reviews. One involved recommending options to rectify a culvert crossing on Crazy Woman Creek (Figure 1 and 2) that created a fish barrier and violated Corps of Engineers permitting stipulations. The crossing was replaced with a bridge and associated streambank erosion was rehabilitated. The other review involved providing input into the final Goose Creek Watershed TMDL Implementation Plan.



Figure 1. Crossing on Crazy Woman Creek.



Figure 2. Crossing replaced with a full span bridge.

Sage-grouse Habitat Analysis and Conservation (Goal 1) - Bert Jellison

The Sheridan terrestrial habitat biologist spent considerable time participating in statewide initiatives involving sage-grouse and their habitats. The State is working with University of Wyoming's WyGISC department, Audubon Wyoming, USGS, energy industry representatives and their consultants, and other federal and state agencies to remotely sense and map sagebrush communities and develop habitat suitability models to predict sage-grouse nesting, brooding and winter habitats. This assignment originated from the Governor's Sage-Grouse Implementation Team.

The Sheridan terrestrial habitat biologist also partnered with the Lake DeSmet Conservation District (LDCD), Audubon Wyoming and NRCS to determine if NRCS Ecological Site Descriptions (ESD's) could be used to predict the value of nesting habitat for sage-grouse. The LDCD and NRCS have extensive rangeland survey information for northern Johnson County, where sage-grouse had been researched by the University of Montana. These two data sets were analyzed to determine if soil type, ESD's and the ecological condition of these sites can be used to predict sage-grouse nesting preferences and success. Results were presented at the 16th Wildland Shrub Symposium in Logan, Utah in May of 2010. The title of the abstract is A comparison of ecological site descriptions to local and landscape level habitat characteristics known to influence sage-grouse nest site selection and nest survival by Jeffrey Beck, Kevin Doherty, and David Naugle and can be viewed at

<http://wss2010.usu.edu/Abstracts.pdf>

Assistance was provided to the BLM who are proposing an approach to restoring sage-grouse habitats within the Powder River Basin, called the Powder River Basin Initiative. The goal is to integrate the habitat improvement programs and projects implemented by the Conservation Districts, the NRCS, WGFD and Northeast Wyoming Sage-Grouse Local Working Group in conjunction with the BLM coal-bed methane abandonment program and to leverage funding and interagency coordination for the purpose of enhancing sage-grouse habitat reclamation.

Weston County Easement (Goal 1) - Erika Peckham

Preliminary work was initiated on a conservation easement adjacent to one currently in the process of closing (Figure 3). This property provides yearlong habitat for mule deer, white-tailed deer and various other wildlife. The south Black Hills crucial priority and enhancement areas are located just east and southeast of this location. Development pressure is the primary concern with wildlife managers; this is one way to address this concern.



Figure 3. Weston County Easement.

Big Horn Mountain Front Conservation Easement Progress (Goal 1) - Bert Jellison

Within the WGFD Sheridan Region, TNC is the leader in long-term conservation of wildlife habitats. Because they are a valued partner, the terrestrial habitat biologist participates on TNC’s Northeast Wyoming Advisory Board and assists their program director with planning and project implementation. Several conservation easements are being planned by TNC and the RMEF. One, near Beckton Wyoming, was just closed.

The Beckton Stock Farm, owned and operated by the Forbes family, is located approximately ten miles west of Sheridan. The easement prohibits subdivision and restricts housing development while permitting agricultural activities. It is also almost entirely designated as crucial elk winter range (Figure 4).

Partners and programs that helped TNC with this important accomplishment include the WWNRT, NRCS Farm and Ranch Protection Program, RMEF, WGFD, El Paso Corporation, WGBGLC and private donors.

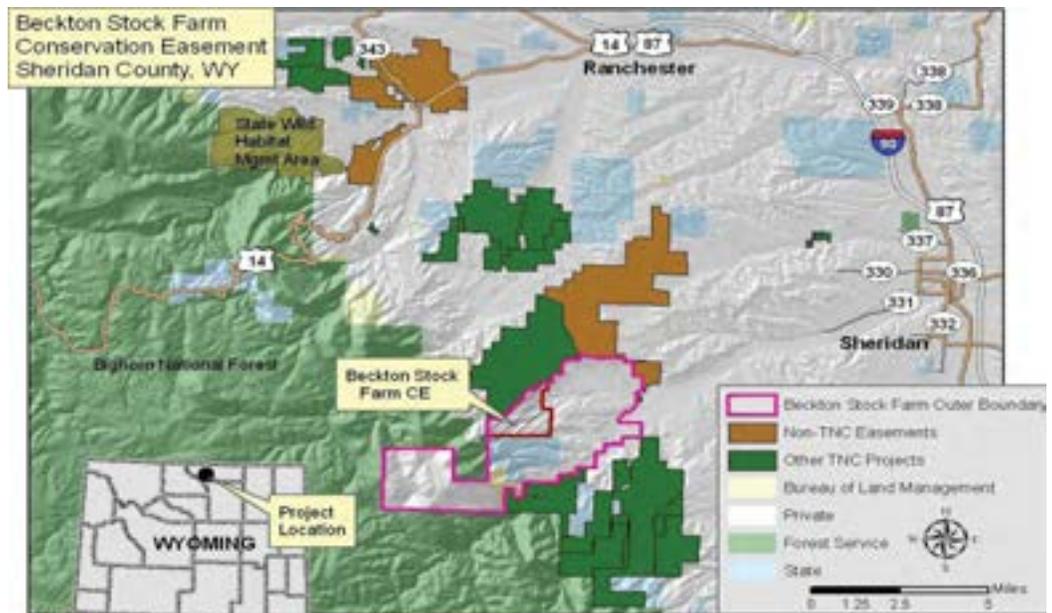


Figure 4. The Beckton Stock Farm is a 1,020-acre property on which TNC has completed the purchase of the easement. The property is located on the east slope of the Big Horns in Sheridan County.

Lake DeSmet Conservation District Sagebrush/Grassland Restoration (Goal 2) - Bert Jellison

This program just completed its sixth year of working with ranchers to enhance sagebrush and grassland communities. LDCD in partnership with private landowners and the NRCS initiated this program on private and public lands in northern Johnson County.

Since then, the LDCD has partnered with numerous agencies, non-governmental organizations, foundations and industry to restore the productivity of sagebrush/grassland communities. This community-based program has had tremendous success. So far, approximately \$3.3 million have been granted. Phase VI of the program involved implementing grazing strategies and plans on seven ranches.

The NRCS and contractors have prepared ranch management plans for all 24 participating ranches (Figure 5). These plans include rangeland resource and wildlife inventories, conservation strategies, identification of best management practices, livestock grazing practices and monitoring techniques for measuring management changes. The WGFD prepares reports showing sage-grouse seasonal distribution maps and suggested livestock grazing best management practices per pasture. All resource information is managed in a geographic information system database to supply a rapid decision-making tool for land managers. Dr. Roy Roath, a rangeland and livestock grazing specialist from Colorado State University and others are contracted to educate livestock producers and assist them with developing progressive plans that will benefit both livestock and wildlife.

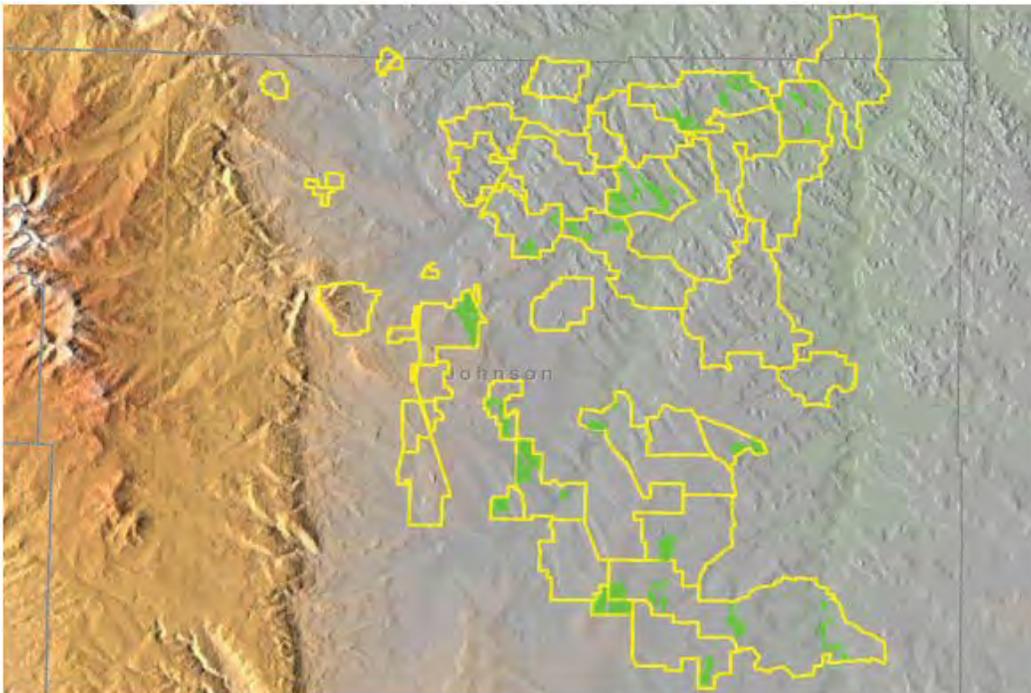


Figure 5. The LDCD has enrolled 24 livestock producers, consisting of approximately 353,722 acres (yellow polygons), to restore and enhance sagebrush/grassland communities. This program has grown to a scale where it could potentially benefit wildlife populations on a landscape level. In addition, 15,066 acres (florescent green polygons) have been treated with an aerator and planted with an assortment of forbs and shrubs.

Funding partners, in order of contributions, include the Wyoming NRCS, private landowners enrolled in program, National NRCS, WWNRT, Wyoming Governor's Sage-Grouse Fund/NE Wyo. Sage-Grouse Local Working Group, WGFD, oil and gas industry (Anadarko Petroleum, Lance Oil and Gas, Kennedy Oil), BLM, LDCD, USFWS, Department of Environmental Quality SEP, Sheridan/Johnson County Chapter of Pheasants Forever, WGBGLC, Eyas Foundation, Wyoming Private Lands Grazing Team, Bighorn Environmental Consultants, Water for Wildlife Foundation and Bow Hunters of Wyoming.

Rangeland restoration practice accomplishments are shown in Table 1. Most practices involve creating more pastures to allow livestock rotations. Rotating livestock limits the duration of grazing use to favor positive plant responses. Fences and water facility practices are designed to be as wildlife friendly as possible. Aeration equipment is used to restore up to 5 percent of the landscape. Approximately 1,478 acres were treated in 2010. By improving herbaceous production and maintaining conservative livestock stocking rates, we expect to reserve more forage and cover for wildlife. The aerator is also used to enhance overflow and riparian sites for sage-grouse brood rearing. Seed is planted during most aeration operations. Species selected depend on soil conditions and include prairie coneflower, American vetch, white prairie clover, Spreador alfalfa, winterfat, fourwing saltbush and yarrow.

Table 1. Conservation practice achievements to date and for 2010.

Conservation Practices	2010 Achievements	Program Achievements to Date
Restoration of depleted rangelands and enhancement of sage-grouse brooding habitats.	1,478 acres mechanically aerated and interseeded with 2,956 pounds of forb and shrub seed.	13,588 acres mechanically aerated and interseeded with 13,277 pounds of forb and shrub seed.
Livestock grazing system practices that are designed to improve rotational grazing and management	22 tanks installed 10 miles of pipeline installed * 1 wells drilled * 0 solar-system pumps 41 wildlife escape ramps installed 14 miles of fence installed	74 tanks installed 18 miles of pipeline installed * 3 wells drilled * 6 solar-system pumps 122 wildlife escape ramps installed 54 miles of fence installed
Note: * The Lake DeSmet Conservation District’s program does not offer financial assistance for wells or stock-water pipelines. These are landowner expenses.		

Mule Deer Legume Seeding Program (Goal 2) - Erika Peckham

Seven private landowners enrolled 881 acres in northeast Wyoming into a legume seeding program to benefit mule deer and sage-grouse. Associated with this program, technical assistance was provided to a landowner to try an experimental planting of sanfoin, a valuable forage for many wildlife species. Sanfoin had not been previously planted in the area.

Range Inventory and Grazing Plan (Goal 2) - Erika Peckham

Information was collected and assembled for an in-depth range inventory and grazing plan on ranches in Campbell, Crook and Johnson counties to benefit sage-grouse under the NRCS SGI (Figure 6). This included development of a grazing system with 2 private landowners that will provide residual grass cover in areas important to nesting and brood-rearing sage-grouse.



Figure 6. Johnson County Sage-grouse Initiative property.

Kendrick Dam Upstream Fish Bypass Channel (Goal 2) - Travis Cundy

The 800-foot long fish bypass channel around Kendrick Dam on Lower Clear Creek was completed in late winter 2010 and became operational in mid-April 2010. The new bypass allows fish to move upstream past the dam when stream flows are sufficient. Meanwhile, the Pee Gee Ranch continues traditional irrigation operations from the dam. Tuning of the Kendrick Dam bypass channel was completed in fall. The bypass (Figure 7) restored fish species access to about 36 miles of historic habitat in Clear Creek for the first time in nearly a century. Thanks to the Pee Gee Ranch for their cooperation to make this project a reality.



Figure 7. The Kendrick Dam fish bypass channel became operational in April 2010.

Department biologists began sampling fish use of the bypass channel in May. Thus far, channel catfish, goldeye, river carpsucker, plains minnow, and flathead chub, all of which were previously isolated below the dam, have moved upstream past the dam, which is about seven miles upstream from the confluence with the Powder River. During spring runoff, these fish migrate up the Powder River to Clear Creek where they spawn before returning downstream. Some of these native fish, such as channel catfish are expected to reestablish longer-term residency in Clear Creek. Passage by sauger and shovelnose sturgeon is also anticipated, though has not yet been documented.

Buffalo Creek Ranch-Riparian Improvement (Goal 2) - Erika Peckham

Several species of wildlife will directly benefit from this project including but not limited to elk, mule deer, white-tailed deer, sharp-tailed grouse, pheasants, turkeys, and neo-tropical migrants. The landowner has previously excluded adjacent draws from grazing and has seen increased use by these species. This additional acreage will add value to the watershed and conserve unique riparian areas in the Buffalo Creek drainage (Figure 8). Improvements will be implemented in 2011.



Figure 8. Buffalo Creek riparian project.

East Slope Big Horn Mountain Aspen/Willow Recovery (Goal 2) - Bert Jellison

Willow, aspen and adjacent herbaceous vegetation were analyzed to diagnose nutrient deficiencies along the east slope of the Bighorn National Forest. We need to know what minerals are lacking in the environment that may be accumulated in willow and aspen browse. Results will be compared to nutritional requirements of wild and domestic ungulates. Samples were taken where heavy browsing is documented and analyzed at Colorado State University's Soil, Water and Plant Testing Laboratory.

A report is being prepared by the University of Wyoming Cooperative Extension Service to guide livestock producers in the selection of supplements that fulfill nutritional gaps and may be encouraging the selection of aspen and willow (to satisfy this demand). We would like to test this management tool, to see if aspen and willow resources can be protected by providing an alternative source of minerals, in the form of salt blocks and/or lick-tubs.

Gates-Yonkee Oxbow Restoration (Goal 2) - Erika Peckham

This restoration will improve forage and cover conditions for all wildlife utilizing this riparian area. The adjacent portions of Wild Horse Creek are currently enrolled in FSA's CCRP. This area of the creek is in its second year of rest from grazing. Restoring this oxbow, in conjunction with the deferred grazing will provide more and better quality riparian habitat in this portion of Wild Horse Creek (Figure 9). Restoration will be completed in 2011.



Figure 9. Wild Horse Creek oxbow restoration site.

Curlleaf Mountain Mahogany Restoration (Goal 2) - Bert Jellison

Curl-leaf mountain mahogany (mahogany) is drought tolerant, slow growing, long-lived and an evergreen shrub that exists on well drained nutrient poor soils. The preservation of functional mahogany habitats is essential for maintaining the diversity and abundance of wildlife in the region. Mahogany benefits wildlife by providing crucial forage for wintering ungulates. The shrub also provides thermal cover, hiding cover, and nesting cover for a variety of wildlife species. Threats to mahogany in the region include fire and encroachment by conifers.

Invariably the greatest threat to mahogany in the region is encroachment by juniper, limber and ponderosa pines. They also compete with mahogany for sunlight, nutrients and water. Conifers exhibit a faster rate of growth than mahogany. As conifers mature and canopy closure increases they begin to overshadow and choke out the mahogany.

Mature mahogany is largely shade intolerant. The removal of mahogany due to encroachment by conifers depends largely on the density of conifers. Aggressive infestations of conifers eventually lead to the removal of entire mahogany stands. To help prevent conifers from replacing stands of mahogany, two projects are underway. They are:

Lost Creek Project - The BLM's Casper Field Office initiated this vegetative treatment project in coordination and partnership with the WGFD, WWNRT, RMEF and the MDF. Located in the southern Big Horn Mountains 2,700 acres are identified for treatment and will occur in relatively small blocks over a ten-year period. Legal access to the project area is available through BLM-administered lands and State Lands off the 33-mile Stock Driveway. In 2010, an 80 acre block of mahogany was mechanically treated to remove conifer encroachment (Figure 10).



Figure 10. This curlleaf mountain mahogany stand was mechanically treated to remove conifer encroachment. The treatment and spread of white pine blister rust (note standing dead trees) will preserve this crucial winter browse resource.

Barnum Area Project - WGFD initiated this vegetative treatment , since it occurs on WGFD, private and BLM lands. Funding partners include the WWNRT (grant not approved as of the writing of this report), MDF and BLM. These sites are located along the eastern foothills of the southern Big Horn Mountain range near Barnum. Kaycee is approximately 17 miles east of this area. The first group of mahogany communities proposed for treatment involves 1,165 acres.

For both areas, mechanical treatment (Table 2) will be accomplished using a hand crew with chain saws. This treatment method is thought to be the most feasible , given the topographic variation and density of vegetation.

Table 2. Conservation practice achievements to date and for 2010.

Conservation Practices	2010 Achievements	Program Achievements to Date
<i>Lost Creek Project</i> - Mechanically remove limber pine from 2,700 acres of mahogany stands	80 acres treated	80 acres treated
<i>Barnum Area Project</i> - Mechanically remove limber and ponderosa pines and juniper from 1,165 acres of mahogany stands	Presently waiting for the BLM Environmental Assessment Decision Notice	None

BHNF Beaver Transplants (Goal 2) - Travis Cundy

Fifteen beaver were transplanted to two watershed segments on the Black Hills National Forest. The ponds established by new beaver colonies (Figure 11) will retain and slowly release runoff water, thus augmenting stream flows later into the year, and provide habitat for various fish and wildlife.



Figure 11. Colony establishment occurred at beaver transplant areas in headwaters segments of Blacktail Creek on the Black Hills National Forest. Beaver dams will raise streamside water tables and increase late season stream flows.

South Tongue River Boy Scout Reach Stream Rehabilitation (Goal 2) - Travis Cundy

A five acre electric rope enclosure was erected around an oxbow channel enhancement along the Boy Scout rehabilitation reach on the South Tongue River (Figure 12). Wyoming Governor’s Big Game License Coalition funding covered the fencing materials and Bighorn National Forest personnel helped erect the fence. The contractor for the stream rehabilitation project increased flows to the oxbow by adjusting the water control grade structure.



Figure 12. The oxbow on the right is supplied flow from the South Tongue River by the grade structure pictured mid channel. It was temporarily excluded from cattle grazing to allow transplanted sod time to stabilize.

Big Willow Creek Restoration (Goal 2) - Bert Jellison

On the BNF, beaver populations have plummeted from approximately 1,200 individuals in the 1950's to less than 200. In response, the RMEF, WGBGLC, Bow Hunters of Wyoming, WGFD and USFS have cooperated to restore beaver to unoccupied habitats. It's hoped that beaver can use residual willows to build dams and restore the hydrology needed to support these water-loving plants.

The absence of beaver dams has allowed streams to run faster and straighter, cutting more deeply into the substrate. Where dramatic changes have occurred in stream morphology and function, it's difficult for beaver to successfully dam the primary stream channel.

The objective is to construct weed-catcher structures within an incised section of Big Willow Creek. Weed-catchers are expected to form the structural support to enable beaver to dam the incised channel (Figure 13). This stream section was selected because the livestock-grazing lessee had voluntarily reduced stocking rates, resulting in the recovery and release of willow resources. It was also selected because it's a broad floodplain with significant willow resources.



Figure 13. One large dam complex and many smaller plugs have been added to Big Willow Creek since the beginning of this project.

We hope to restore the complex of historic beaver dams within the 178-acre willow community, thus restoring stream morphology and function (Table 3). The elevated water table will re-hydrate the riparian zone, encourage willow growth and vigor, create seedbeds for new willow establishment, keep water on the land longer and extend the green-growth period of most vegetation.

Table 3. Conservation practice achievements to date and for 2010.

Conservation Practices	2010 Achievements	Program Achievements to Date
Construct weed-catcher structures within an incised reach of Big Willow Creek.		10 weed-catchers constructed.
Transplant beaver to secure and expand seed-catcher structures.	11 beaver transplanted.	26 beaver transplanted.

Fish Passage and Diversion Screening Block Grants (Goal 2) - Travis Cundy

Cost share assistance was provided to the Sheridan County and Lake DeSmet conservation districts to provide upstream fish passage or screen fish from ditches at irrigation diversions sites. Projects were completed on Big Goose Creek (Figure 14) and the Tongue River (Figures 15 and 16). Planning continued at three projects on Clear Creek. Many thanks to the NRCS and conservation districts, for these ventures would not have been possible without their efforts to administer and coordinate the projects.



Figure 14. The Flume Diversion project improved fish movements between a 2.8-mile segment of the Big Goose Creek below the diversion and a 2.9-mile segment above the diversion.



Figure 15. The Tongue River Diversion project provided fish passage over a roughened ramp.



Figure 16. Screened fish from entering the diversion ditch via a flat bottom plate screen. The project reconnected 25.7-mile of the Tongue River downstream to the Interstate Diversion to 5.7-miles upstream to the York Diversion.

Story Rock Cache (Goal 2) - Travis Cundy

A contractor was enlisted to stock-pile rock available from construction work at the Story Hatchery at the hatchery entrance and Penrose trailhead. About 300-2 to 3.5 foot boulders are available.

Educational Efforts (Goal 4) - Travis Cundy

The Aquatic Habitat Biologist completed a presentation on stream habitat rehabilitation efforts in Wyoming to an NRCS sponsored stream assessment course. Four tours of fish passage and screening, or stream rehabilitation projects were completed with requesting groups in the region during 2010.

Sand Creek Public Access Area (Goal 5) - Travis Cundy

Three hundred twenty four head of cattle were grazed on the Sand Creek public access unit from late May until early June. This use equated to about 130 animal unit months (0.4 months * ~324 animal units).

Extension Services To Landowners, Organizations And Agencies (Goal 5) - Bert Jellison

The Sheridan habitat biologist works in partnership with NRCS offices in the towns of Sheridan, Buffalo and Kaycee, to help deliver Farm Bill programs and extension services. Considerable time was spent helping the agency with their new Sage-Grouse Initiative (SGI) program. This involved:

- Helping with the development of a scorecard/screen evaluation procedure for prioritizing and awarding program dollars, as well as a habitat assessment process.
- Identifying priority ranches.
- Delivering the SGI program to interested landowners. This included meeting with nine (9) landowners to provide technical assistance.
- Evaluating and ranking properties.
- Delivering educational opportunities.

Other wildlife extension services included:

- Helping Sheridan County planners and their consultants with mapping critical wildlife habitats for their comprehensive plan.
- Delivering information to eight (8) ranches concerning improved livestock grazing techniques and mechanical and fire treatment.
- Assisting two (2) natural gas producers with controlling annual bromes in disturbed landscapes.

Aquatic Habitat Information and Technical Assistance Requests (Goal 5) - Travis Cundy

The Aquatic Habitat Biologist assisted landowners, managers, consultants, or agency representatives on 21 projects. One contact resulted in further assistance to Bighorn Forest, Sheridan County Conservation District and TU personnel to complete bio-revetment treatments at three eroding streambank segments on the North Tongue River. Two contacts involved proactive outreach to ditch companies to promote fish passage and screening projects at high priority diversion locations on Clear Creek and the Tongue River. Another contact with multiple interests involved recommending a short-term fix to temporarily remediate a sediment bar that was impinging water delivery to the Story Hatchery. The temporary fix was completed by the department's statewide construction crew (Figure 17).



Figure 17. Before (left) and after (right) photos depicting the substrate bar redistribution project completed above the South Piney Mead Coffeen Diversion Dam. A long-term solution is needed to limit future reformation of the mid-channel bar.