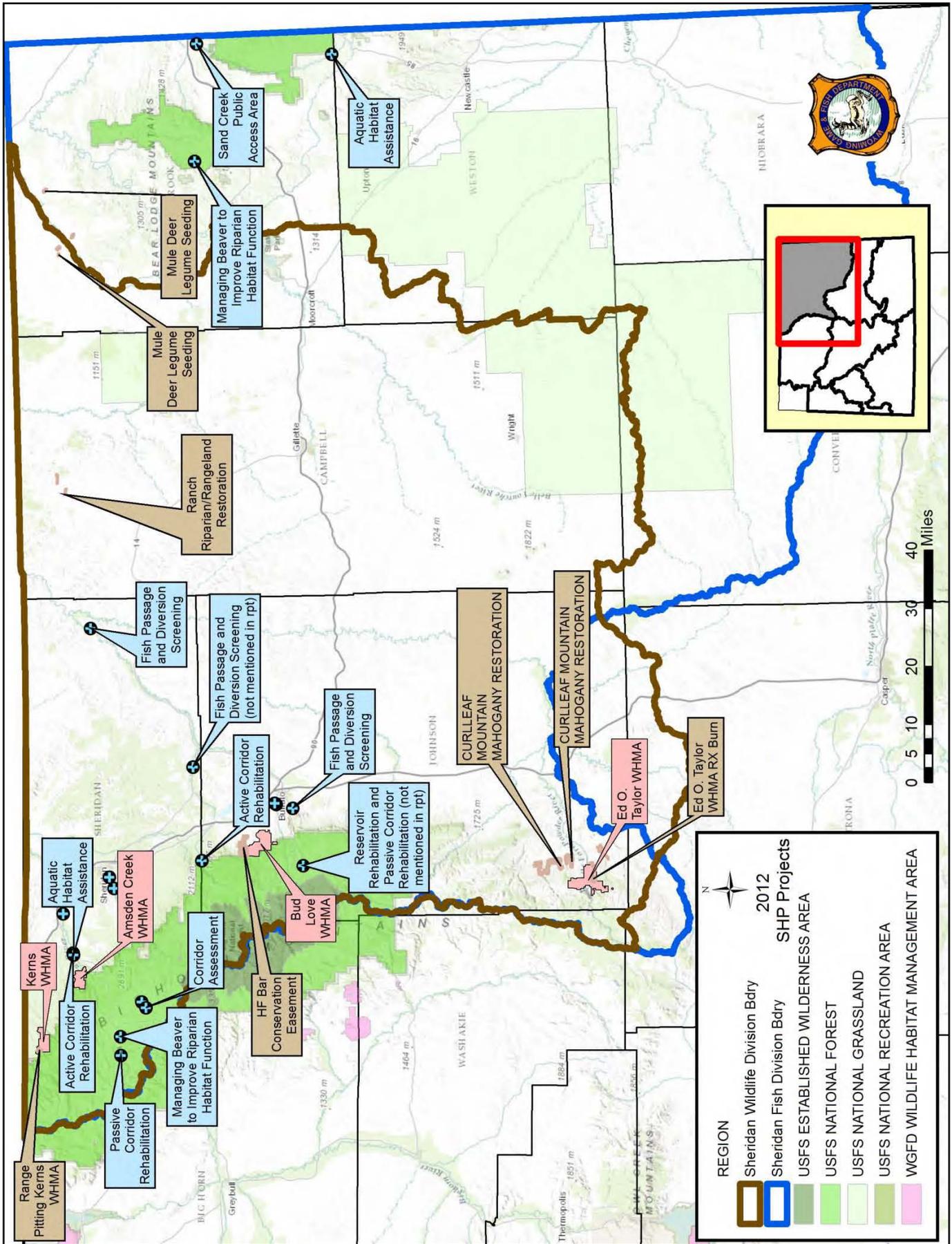


SHERIDAN REGION



SHERIDAN REGION HIGHLIGHTS

- Established 6 willow L-D index monitoring sites in the South Tongue River watershed.
- Assisted partners with 4 fish passage and screening, 2 active and 2 passive stream corridor rehabilitation projects, responded to 41 new aquatic technical assistance requests, and developed partnerships on 10 new projects requesting cost share assistance or services.
- Inventoried or monitored 11-miles of stream and riparian corridors.
- Treated 183 acres with a range pitter on Kerns WHMA.
- Maintained fences along 53 miles of crucial winter range on WGFC WHMAs.
- Treated noxious weeds with herbicide on 123 acres in WGFC WHMA/PAA.
- Added 2 new PAAs south of Buffalo.
- Competitive conifers were removed from approximately 1,347 acres of curleaf mountain mahogany within crucial mule deer winter range.
- TNC in Wyoming and RMEF partnered to protect a northeast Wyoming landmark with two CEs totaling 2,166 acres. WGFC and local WGFD staff participated in getting this easement funded.
- Responded to 61 new terrestrial habitat technical assistance requests and provided input on 43 new projects. One project concerned 23,500 acres of burned sage grouse habitat that were treated with herbicide to control cheatgrass and leafy spurge infestations.
- Over 2,900 students were presented with information on habitat values, opportunities and issues.

Curleaf Mountain Mahogany Restoration Project (Goal 2) – Bert Jellison

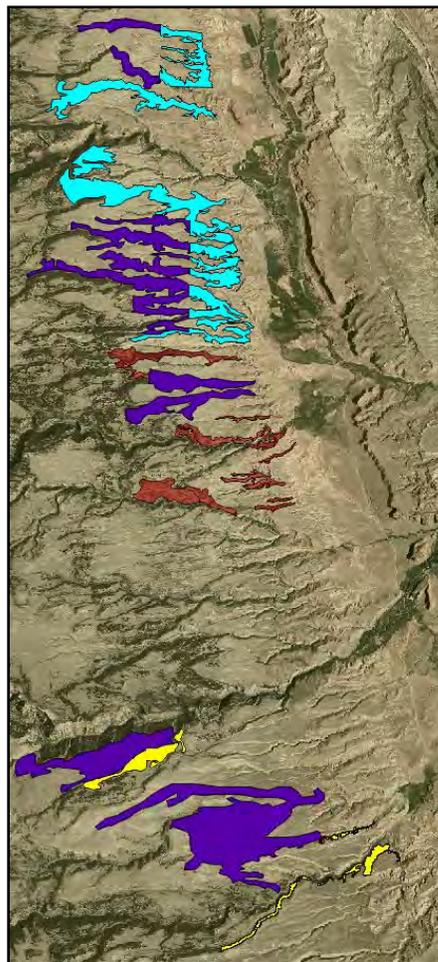
Curleaf mountain mahogany (mahogany) is a drought tolerant, slow growing, and long-lived evergreen shrub that exists on well drained nutrient poor soils. The preservation of functional mahogany habitats is essential for maintaining the diversity and abundance of wildlife in the region. Mahogany benefits 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.

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 loss of entire mahogany stands. To help prevent conifers from replacing stands of mahogany, two projects are underway:

- Lost Creek - The BLM's Casper field office initiated this vegetative treatment project in coordination and partnership with the WGFD, WWNRT, RMEF, and the MDF. The project area is located in the southern Big Horn Mountains of northern Natrona County. Approximately 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 (Natrona County Road 110). In 2012, a 150 acre block of mahogany was mechanically treated for a grand total of 430 acres treated so far.

- Barnum Area - WGFD initiated this vegetative treatment project, since it occurs on WGFD, private, State, and BLM lands. Funding partners include the WWNRT, MDF, WGBGLC, WGFD Trust Fund, BLM and Wyoming Conservation Corps who were financially sponsored by Devon Energy Corporation. These sites are located along the eastern foothills of the southern Big Horn Mountain range near Barnum. The town of Kaycee is approximately 17 miles east of the project area (Figure 1).

Figure 1. The prescribed method of removing conifers from mountain mahogany patches varied and was based on landowner preferences. For instance, within blue polygons, small age classes (of conifer) were cut and scattered while larger age classes were girdled and left standing. Within red polygons, loppers were used to remove smaller age classes and larger trees were not treated. Yellow polygons involved cutting and scattering all but the very largest age classes. Larger trees were de-limbed (up to five feet) to allow more sunlight to reach the mahogany. Purple polygons will be treated in future years.



In 2012, funding partners spent \$68,500 to remove competitive conifers from approximately 1,197 acres of curleaf mountain mahogany that exists within crucial mule deer winter range (Table 1).

Table 1. Curleaf Mountain Mahogany Restoration achievements to date and for 2012.

Conservation Practices	2012 Achievements	Achievements to Date
Lost Creek Project - Mechanically remove limber pine from mahogany stands.	150 acres treated.	430 acres treated.
Barnum Area Project - Mechanically remove limber pine, ponderosa pines, and juniper from mahogany stands.	1,197 acres treated.	2,010 acres treated.

A contractor was hired to mechanical remove conifers from curleaf mountain mahogany stands using hand crews (Figure 2).



Figure 2. Mechanical treatment is accomplished using hand crews with chain saws and pruning loppers. The above “before and after” pictures shows the results of conifer removal.

Fish Passage and Diversion Screening (Goal 2) – Travis Cundy

Cost share assistance was provided through the WGFD’s habitat trust fund and fish passage program to help partners’ complete four diversion rehabilitation projects. Each project included design elements to improve diversion infrastructure, and benefit aquatic wildlife and anglers by improving upstream fish passage or screening fish from the diversion ditches. Completed projects included two headgate replacement and fish screening projects on French Creek (Figure 3). The landowner previously added a coarse fish screen to another diversion, and added stepped structures to provide fish passage at all three diversions. Other completed projects were one upstream fish passage and diversion screening project on Clear Creek (Figure 4), and one upstream fish passage and diversion screening project



Figure 3. Fish screen added to an irrigation diversion on French Creek.

on Big Goose Creek (Figure 5). The project on Big Goose Creek included some additional stream rehabilitation treatments above the diversion. Many thanks are extended to the landowners, ditch companies, and Sheridan County and Lake DeSmet Conservation Districts for participating in these partnerships.



Figure 4. Coanda diversion screen and fish return channel serving a 29.5 cubic feet per second irrigation ditch on Clear Creek.



Figure 5. Stepped diversion structure provides upstream fish passage along a 3.5 mile segment of Big Goose Creek.

WGFD biologists continued assessing fish use at the Kendrick Dam bypass channel by placing passive inductive transducer (PIT) tags in sauger, channel catfish, and shovelnose sturgeon caught below the dam in Clear Creek and the Powder River, and monitoring if the fish were detected ascending the bypass at PIT tag antenna arrays placed in the bypass channel (Figure 6). Channel catfish were frequently found ascending the bypass.

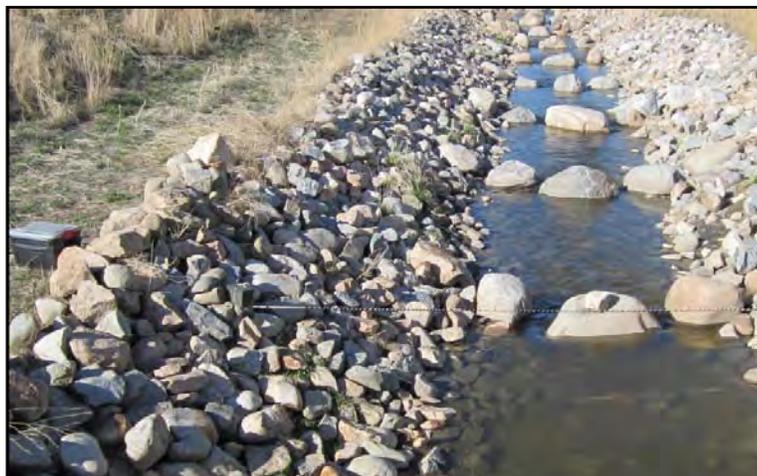


Figure 6. PIT tag antenna array placed in the Kendrick Dam fishway to detect use by native fishes from lower Clear Creek and the Powder River.

Managing Beaver to Improve Riparian Habitat Function (Goal 2) – Travis Cundy

In recent years, beaver have been transplanted to headwater streams on both the Black Hills and Bighorn National Forests. The ponds established by beaver colonies detain runoff in the streamside water table and then slowly release the detained water as streamflows throughout the year, deposit sediments that allow new willow plants to develop through either seedling establishment or sprouting from branch segments partially buried in the sediments, and provide moist and diverse habitat conditions for a variety of fish and wildlife species. Recent aerial imagery of transplanted beaver colonies are displayed for a tributary of Blacktail Creek (Figure 7) on the Black Hills National Forest southeast of Hulett, and Big Willow Creek (Figure 8) on the Bighorn National Forest (BNF) west of Burgess Junction to illustrate how beaver ponds function to expand riparian water tables and detain water on the land longer.



Figure 7. Beaver colony found on Hershey Creek in the Black Hills National Forest.



Figure 8. A beaver dam on Big Willow Creek is elevating the riparian water table and supplying flow to two stream channels below the dam. Only one channel flowed yearlong before the beaver colony became established.

Transplant goals were not achieved in 2012 due the lack of an abundant beaver supply (i.e. making it profitable for a trapper) and a reliable contract trapper. Monitoring of riparian habitat conditions resulting from beaver activities continued in areas of previous beaver releases. Beaver activity appeared to be stable or expanding in those watersheds. Colony increases are desired in the target watersheds, particularly on the BNF where more abundant riparian resources and streamflow conditions are available to sustain beaver.

Passive Stream and Riparian Corridor Rehabilitation (Goal 2) – Travis Cundy

Passive rehabilitation involves identifying land use management deficiencies that are causing declines in habitat values and improving management practices to trigger natural improvement processes. Improved management practices coupled with natural environmental resiliency may then allow desired habitat conditions to recover over time.

North Tongue River

Riparian plantings, which began in 2010, continued along segments of the North Tongue River under the lead of the BNF. Partners include the WGFD and volunteers from the Little Bighorn Chapter of TU. Goals are to use riparian plants to stabilize the bankfull channel margin (greenline) where no floodplain currently exists, encourage riparian floodplain development behind the greenline, and reduce sediment inputs into the stream over the long-term. Willow cuttings and sedge rootstock cores were planted along a 300 foot eroding segment that had some surviving plantings remaining from a previous planting. Volunteers planted about 500 new willow cuttings, about half of these using the WGFD's water jet stinger, and about 100 new sedge root stock cores. Photo comparisons over time indicated some of the largest and deepest-placed cuttings are surviving. Most of the sedge root stock cores are surviving. Riparian greenline response at the planting sites has occurred and is encouraging (Figure 9). Significant riparian floodplain development behind the greenline is not yet obvious.



Figure 9. Plantings are helping a riparian greenline to develop (B) along the channel margin of previously unvegetated streambanks (A) on the North Tongue River.

South Tongue River Watershed

Streambank erosion and extensive lateral channel migration, in-part due to declining woody riparian vegetation, is a problem along some tributary and mainstem stream segments in the South Tongue River watershed. To begin addressing these problems, the WGFD is collaborating with the BNF to build management exclosures along segments of the West Fork South Tongue River and Sucker Creek. Upon completion, willow plantings are planned inside the West Fork exclosure, while existing willow stands are expected to regenerate inside the Sucker Creek exclosure, to test alternatives for managing lateral stream channel migration. In 2012, WGFD and USFS personnel retrofitted half of the Sucker Creek exclosure to exclude big game (Figure 10). Maintenance of the other half of the existing Sucker Creek livestock exclosure and construction of the West Fork big game exclosure are planned during 2013. Willow plantings will begin at a larger scale in 2014.



Figure 10. Seven acre buck and pole exclosure completed on Sucker Creek.

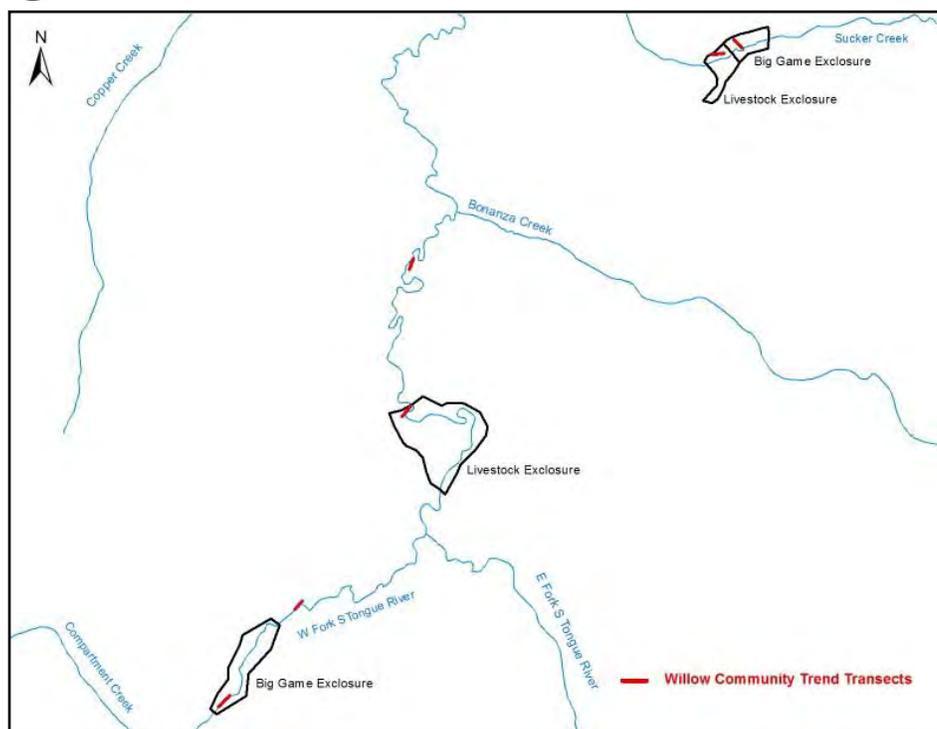
East Slope Big Horn Mountain Conservation Easement (Goal 1) – Bert Jellison

TNC and RMEF partnered to protect a northeast Wyoming landmark with two CEs totaling 2,166 acres. The HF Bar Ranch, the second oldest guest ranch in the country, supports a family business, working ranchlands, and crucial wildlife habitat. The WGFC and local WGFD staff participated in getting this easement funded, since it borders the Bud Love WHMA and involves crucial habitats for mule deer and elk. For more details concerning these CEs, TNC and RMEF news release can be viewed at:

<http://www.rmef.org/NewsandMedia/PressRoom/NewsReleases/NEWyomingLandmark.aspx>

<http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/wyoming/wyoming-hf-bar-ranch.xml>

Stream and Riparian Corridor Assessment (Goal 2) – Travis Cundy



The passive stream corridor rehabilitation treatments occurring in the South Tongue River watershed provided an opportunity to begin monitoring declining willow communities. Monitoring to assess willow growth and use trends was established inside and outside exclosures (Figure 11). Our hope is to determine what the threshold or “trigger point” is when willow use by various ungulates becomes too much and willow communities begin to decline. Monitoring will continue over the next 3 to 5 years.

Figure 11. Management exclosures and willow monitoring sites located in the South Tongue River watershed.

Factors other than ungulate use may also be contributing to declining willow communities. By isolating the confounding effects of browsing, the exclosures also provide opportunities to assess if other factors (i.e. hydrology, disease, and shading) are affecting willow growth potential.

Active Stream and Riparian Corridor Rehabilitation (Goal 2) – Travis Cundy

Active rehabilitation involves identifying where natural channel and floodplain characteristics are outside the range of functional conditions observed in natural settings, and in turn, reconstructing features to emulate more functional stream and riparian conditions. Similar to passive rehabilitation, where improved land use management practices provide improved natural function, improved management practices often need to accompany active rehabilitation treatments to sustain or increase the functional improvements derived from the treatments.

Dayton Tongue River Rehabilitation

Partners including the WGFD, Town of Dayton, Sheridan County Conservation District, and WWNRT completed the Scott Bicentennial Park stream rehabilitation project on the Tongue River in Dayton. Goals were to actively improve the function of the stream and the quality of the fishery available to anglers. Rehabilitation along the one third mile long reach included placing nine channel-spanning structures to direct streamflows and improve riffle to pool habitat features, narrowing and deepening the channel along portions of the reach, and placing some streambank revetments. Based on pre- and post- rehabilitation photos, the channel was narrowed and deepened, and riffle to pool features defined to improve stream function and increase cover for fish (Figure 12).



Figure 12. A comparison of pre (A) and post (B) rehabilitation conditions on the Tongue River inside Dayton's Scott Bicentennial Park.

South Piney Creek Rehabilitation

A feasibility assessment and concept design project was undertaken at the Mead Coffeen Crossover Diversion on South Piney Creek. The dam augments streamflows to Spring Creek, which is the primary flow-through water supply for the Story Fish Hatchery. If affordable, a fish passage will be included in any future design to improve stream function at the dam.

Aquatic Habitat Assistance, Information, and Education (Goal 5) – Travis Cundy

The AHAB consulted with landowners and other agency representatives on 41 new requests for information or assistance. Ten project partnerships involving cost share or services from the WGFD are developing from either new or previous year's requests. Six additional requests are being considered for future action pending further investigation of the potential for cooperative win-win partnerships. New projects or phases of on-going projects include a cooperative stream and riparian corridor assessment along the Tongue River above Dayton, a phase-2 block grant with the Sheridan County Conservation District to make fish passage and screening objectives affordable at five diversion rehabilitation sites on the Tongue River and Big Goose Creek, a streambank rehabilitation project on the Tongue River below Rancheater, a fish passage and screening project on Piney Creek, a fish passage and stream rehabilitation project on South Piney Creek, and additional beaver transplants in the Black Hills. The six other requests being considered for future attention include fish passage or screening, and stream and riparian corridor rehabilitation projects.

Extension Services to Landowners, Organizations, and Agencies (Goal 5) – Bert Jellison

The terrestrial habitat biologist works in partnership with NRCS offices in Sheridan, Buffalo and

Kaycee to help deliver Farm Bill programs and extension services. Sixty-one landowner, consultant, and agency contacts were made this year. The more significant contacts included the following:

- WGFD personnel participated in a group consisting of the Lake DeSmet Conservation District (LDCD), BLM, NRCS and the Johnson County Weed and Pest District (JCWPD) in Johnson County to apply Plateau® herbicide within the boundary of this summer's Cato wildfire. The fire damaged habitats crucial to sage grouse. Thanks to the LDCD, JCWPD and BLM, approximately 23,500 acres were treated to help control cheatgrass and leafy spurge - two plants that threaten the quality of these habitats. In addition, the LDCD cost-shared with ranchers to reconstruct approximately 60 miles of fence.
- The NRCS - Buffalo Field Office prepared contracts to include another 175,000 acres in their SGI. To date, over 325,000 acres have been enrolled on 25 ranches. WGFD works with NRCS and the private landowners on these contracts.
- Assisted the NRCS-Sheridan Field Office with one SAFE-CRP contract. This project restored 318 of cropland to native grasslands and 96 acres to a native sagebrush community. In addition, 298 acres were enhanced by adding a forb and shrub component to native and non-native dryland hay fields. A total of 1,818 acres will be enhanced throughout the contract. All acres must be deferred from grazing for a 10 year period to assure the success of the plantings and to provide wildlife cover.
- Helped the NRCS-Buffalo Field Office and LDCD monitor sagebrush plantings that occurred after a fire in 2010.
- Assisted the Yonkee Ranch with the management of their wooded draw communities. Grants will be prepared to batch dollars for restoring these valuable habitat types.
- Assisted NRCS-Sheridan with an oxbow restoration project on the Tongue River.
- Met with BNF personnel to discuss grazing standards on crucial big game winter ranges. Literature and information were sent to support more restrictive livestock grazing standards.
- Met with BLM personnel that are tasked with reclaiming expired coal-bed natural gas fields within sage grouse habitats. They discussed habitat restoration and funding opportunities, as well as strategies for prioritizing locations.
- Met with Wyoming Army National Guard and NRCS personnel to initiate a habitat management plan process for the Sheridan Local Training Area.

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

Three hundred twenty four head of cattle grazed the public access area from May 28th to June 7th. This use equated to about 130 animal unit months, which is slightly above the 123 animal unit month maximum use prescribed by the lease agreement. The agreement provides fishing access on private lands in return for grazing use. The grazing lease agreement is due for renewal in April 2014.

Wildlife Habitat Management Areas (Kerns, Amsden Creek, Bud Love, and Ed O. Taylor) (Goal 2) – Bert Jellison, Seth Roseberry

The Habitat and Access Section used a range pitter to treat 183 acres on the Kerns WHMA (Figure 13). This implement creates large divots that capture moisture and stimulate forage production by breaking up sod-bound grasses. The treatment occurred on the Broderick Flats portion of the habitat area, which is one of the preferred winter foraging areas for approximately 650 elk. This habitat area has always been precariously close to having inadequate winter food supplies.

Prescribed burns were conducted on the Ed O. Taylor WHMA last spring to improve forage for wintering elk and mule deer. More than 930 elk had been counted the previous week on treated acres, so there wasn't much fuel to carry the fire. Still, a couple hundred acres were blackened (Figure 14).



Figure 13. Range pitting on the Kerns Wildlife Habitat Management Area.



Figure 14. New green forage resulting from prescribed burning on the Ed O. Taylor WHMA.

Monitoring Prairie Stream Riparian Buffer Strips (Goal 2) – Bert Jellison

Twelve riparian buffer strips are periodically monitored by terrestrial and aquatic habitat biologists via “before and after” images. These projects are the result of the NRCS, conservation districts and WGFD working with landowners to enroll riparian habitats in Farm Service Agency’s CCRP. Most of these livestock-exclusion projects are near their 15-year expiration date. The differences are miraculous (Figure 15). Because the images communicate an important message concerning the importance of managing livestock in riparian areas, a report will be prepared and distributed via the WGFD’s internet site. A report prepared in 2007 can be viewed at:

http://wgfd.wyo.gov/web2011/Departments/Wildlife/pdfs/HABITAT_RIPARIANBUFFERREPORT0000335.pdf



Figure 15. These images show the changes that have occurred from 13 years of livestock exclusion on Clear Creek, near Buffalo, Wyoming.

Wildlife Habitat Management Areas and Public Access Areas (Goal 2) – Seth Roseberry

- **Kerns WHMA:** Ten miles of crucial winter range elk fence were maintained.

- **Sand Creek PAA:** 62 acres of noxious weeds were controlled by contractor. Livestock grazing was utilized for cheatgrass and Canada thistle control in exchange for two miles of fishing access on Sand Creek.

- **Amsden WHMA:** 50 acres of hay meadow were irrigated and harvested through an AIPA with Amsden Creek Ranch (Figure 16). 10.5 miles of crucial winter range boundary fence were maintained.



Figure 16. Amsden WHMA north of Dayton.

- **Ed O. Taylor WHMA:** 20 miles of boundary fence were maintained. 27 acres of noxious weed control were completed by a contractor, primarily in the Middle Fork of the Powder River Canyon. Two wildlife water facilities were maintained; a natural spring and solar well.

- **Bud Love WHMA:** 12.6 miles of crucial winter range fence were maintained in 2012 and 34 acres of noxious weed control were completed by a contractor. One mile of electric drift fence was installed for trespass livestock control. The 8,189 acre Gilead Wildfire occurred on and adjoining the WHMA. The WHMA was utilized for crew staging. Hand and dozer lines were constructed on the WHMA for backburn purposes (Figure 17).



Figure 17. Gilead Wildfire on Bud Love WHMA west of Buffalo.