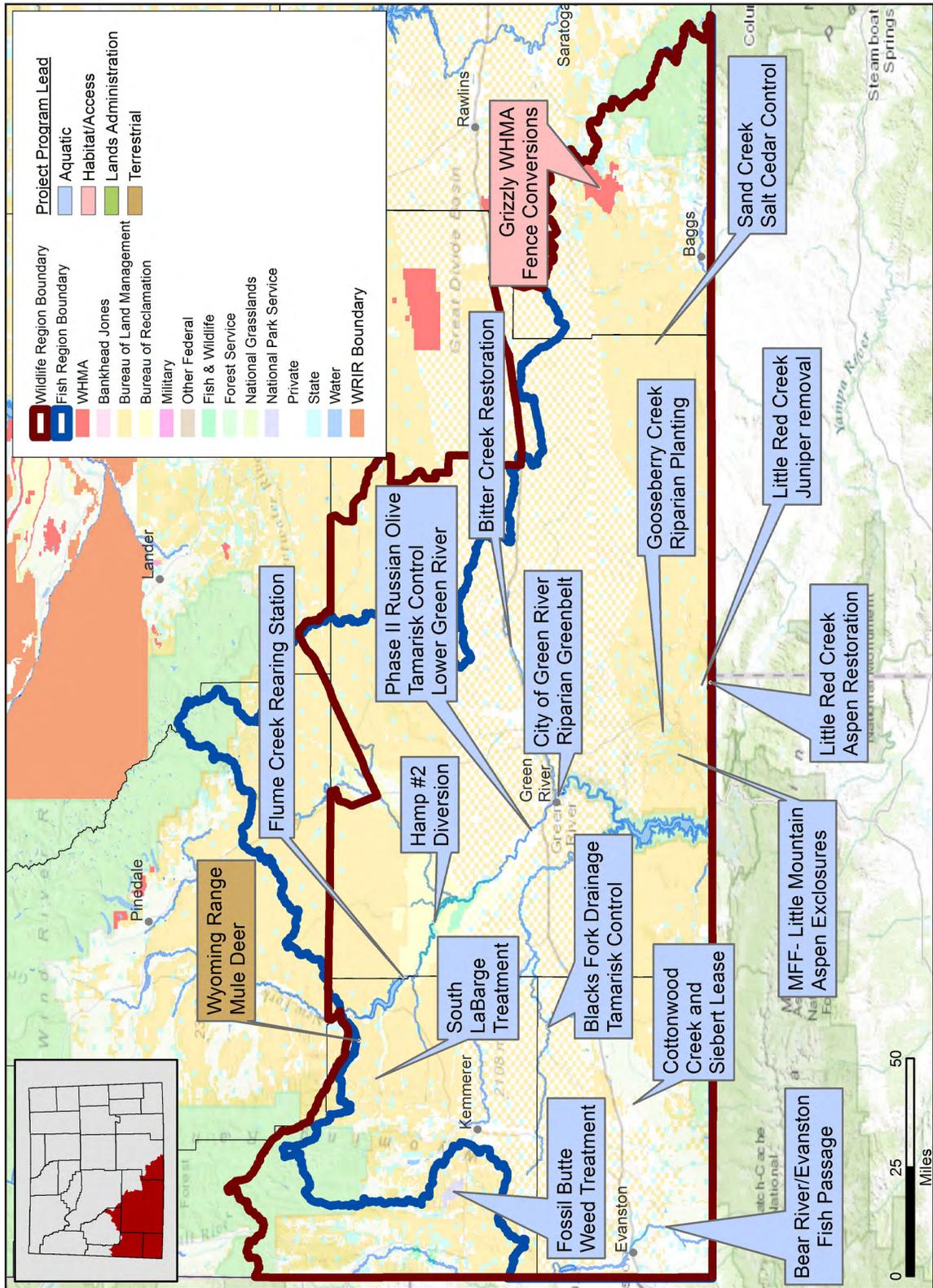


Green River Region



Green River Region

Habitat improvement projects in the Green River Region in 2014 focused on control of invasive species, improvement of riparian and aspen communities, maintaining and improving fish passage and spawning areas, spring fencing, and enhancing ungulate migration through fence modification. Areas of focus were driven by priorities defined in the Strategic Habitat Plan (SHP), the Wyoming Range Mule Deer Initiative, and plans developed by the Southwest and South-Central Sage-Grouse Local Working Groups. Project partnership development was also of prime interest for the region, including NGOs, the Wyoming Landscape Conservation Initiative (WLCI), county commissioners and conservation districts, and other federal or state agencies.

Another major focal area included planning for continuing and future projects and monitoring. Monitoring activities focused on determining aspen stand, mountain shrub, and riparian habitat health. Additionally, a catastrophic die-off of Wyoming big sagebrush throughout a large portion of the region led to a monitoring effort to determine the extent of the impact.

The final area focused on habitats and how terrestrial and aquatic wildlife species use these habitats. This included education programs designed specifically to improve the public's understanding and awareness of the importance of habitat. These programs included a wide variety of audiences and venues, including the Green River Riverfest, an annual local celebration, and a multi-year habitat data collection program with Green River High School students. Additionally, regional personnel provided the opportunity for public involvement in habitat related research projects through the use of deer capture and cameras, such as those deployed in Baggs and new ones for the Red Desert to Hoback Mule Deer Migration Route.

V- Cross Public Access Area (Goal 2) - Miles Anderson, Matt Miller, Kade Clark, Breanne Thiel



V- Cross Public Access Area (PAA) had to have road improvements to prevent further resource damage. The road bed was prepared, culverts installed and 700 tons of road base applied to the road surface. V- Cross PAA is primarily used for big game hunting.

Cottonwood Creek Wetlands (Goal 2) - WLCI, Jim Wasseen



Figure 47. *Enhanced wetland, July 2014 (photograph courtesy of U.S. Fish and Wildlife Service).*

This project is designed to increase and improve existing wetland habitat for a variety of wetland-dependent wildlife and terrestrial game and non-game wildlife species by constructing and repairing dikes, water control structures, and a reservoir on flood-irrigated land, within the Black's Fork drainage. Due to an unanticipated change in engineering firms, the repairs to Cottonwood Reservoir were not completed this year. However, monitoring of dikes and water control structures that have created or enhanced 16.3 wetland acres did occur (Figure 47). These structures were completed during 2012 and 2013.

Fossil Butte National Monument Invasive Plant Control (Goal 2) - WLCI, Jim Wasseen

The objective of this project is to increase wildlife forage by reducing invasive plant populations. In 2014, Fossil Butte National Monument (FBNM) used WLCI funds to hire an intern for three months to mechanically and chemically remove weeds from within the park. The intern hand pulled, applied herbicides, or mowed 13 weed species (flixweed, cheatgrass, henbane, yellow sweet clover, musk thistle, Canada thistle, black henbane, spotted knapweed, halogeton, hounds tongue, field bindweed, Russian knapweed, and Russian thistle) on more than 26 acres. The FBNM used a variety of methods to monitor weed species within the park during 2014. The FBNM used the National Park Services' National Inventory and Monitoring Team to continue monitoring routes that were established in 2011. The FBNM utilized their own Weed Team for treating weeds and identifying areas within the park infested with invasive weed species. The FBNM staff also conducted ocular monitoring.

Blacks Fork Drainage Invasive Species Treatment (Goal 2) - WLCI, Jim Wasseen



Figure 48. *Treated tamarisk along banks of Muddy Creek (photograph courtesy of Uinta County Weed and Pest District)*

This is a long-term project to minimize tamarisk from encroaching on the stream banks, preserve existing riparian habitat, and to improve native vegetation capacities. The area treated for invasive species and tamarisk consists of Uinta County and parts of Lincoln and Sweetwater Counties, along portions of the Black's Fork River, and Dry and Cottonwood Creeks. During 2014, the Uinta County Weed and Pest in collaboration with a private contractor treated 85 acres of tamarisk within a 3,803-acre area (Figure 48), and treated 141 acres of perennial pepperweed, Canada thistle, Musk thistle, Black henbane and Hoary cress within 1,775 acres. Unfortunately,

previously planted trees and shrubs on the Black's Fork were removed by ice jams during the winter of 2013-2014. Currently, the survival rate of the remaining trees and shrubs are approximately 20% with buffaloberry being the most prevalent species.

BQ Pole Top Fence (pole replacement) on the Rock Creek Allotment (Goal 2) - WLCI, Jim Wasseen

The BLM Kemmerer Field Office purchased 495 (16-foot) poles and replaced approximately 1.5 miles of pole top fence on the Rock Creek Allotment between the Beaver Creek pasture and Antelope pasture. The old poles had been re-attached several times and were rotted to the point that new poles were needed to make this fence functional. Permittees provided the labor to install the new pole tops. Pole replacement will help control livestock and also allow for free movement of wildlife species on their migration routes.

Raymond Mountain Invasive Weed Control (Goal 2) - WLCI, Jim Wasseen

Raymond Mountain is a highly visible area at the junction of U.S. Highway 30 and State Highway 89 in Lincoln County. This area is important winter and summer range for mule deer and elk and important to livestock producers for forage use. Dalmation Toadflax and Dyers Woad are problem species encroaching upon the area. With the partnership of Lincoln County Weed and Pest, the BLM, and local landowners a comprehensive weed control plan was created that has enhanced this area for the past several years. WLCI has been an important partner in helping control these invasive plants on the BLM-administered portion. The Lincoln County Weed and Pest District (LCWPD), through the use of aerial herbicide applications, has been able to reach many acres that are inaccessible by other methods of weed control. In 2014 the LCWPD again contracted with an aerial applicator to treat 443 acres on Raymond Mountain and the Hawkins Creek drainage, and monitored over 500 acres.

City of Green River Riparian Greenbelt Russian olive & Tamarisk Control (Goal 2) - Kevin Spence and Jim Wasseen

The City of Green River Parks and Recreation Department used grant funding from WWNRT, WLCI, and the USFWS Private Land Habitat Partners program during 2012 to complete mechanical removal of Russian olive and tamarisk on 586 acres of riparian habitat along 5 miles of river between Expedition Island and the Scott's Bottom area. As expected, a large number of young invasive Russian olive and saltcedar re-sprouts were observed by the end of the growing season in 2012 following the mechanical control treatment. The City of Green River Parks and Recreation Department hired a contractor to assist them with the initial follow-up basal bark and stump cut chemical treatments of re-sprouts during the fall of 2013 within the original 586 acres of riparian habitat treated mechanically during 2012. Additional sites with Russian olive and tamarisk growth were detected during 2014 along the 5 mile reach of river associated with town. These sites were either specific islands or sites missed during the initial mechanical and follow-up chemical treatments. The Green River Parks and Recreation Department were granted \$15,000 from WLCI in 2014 for follow-up control treatments and native tree plantings. Chemical control treatments were planned for late fall, however early winter weather conditions prevented treatments and the work was postponed until 2015.



Figure 49. *Green River High School students survey woody riparian vegetation along the river greenbelt to evaluate results of Russian olive and tamarisk control treatments.*

Technical assistance was provided by the Green River High School (GRHS) college prep biology class with monitoring woody riparian vegetation along the river greenbelt area during September. The City of Green River in cooperation with WLCI and other partners have been conducting Russian olive and tamarisk control efforts along the greenbelt area since 2012. Monitoring plots were established for GRHS biology students to survey and evaluate the results and effectiveness of the invasive vegetation control efforts (Figure 49), and provide the Green River Parks and Recreation Department with data regarding the possible need for follow-up control of Russian olive and tamarisk re-sprouts. The monitoring activity provided students with an opportunity to apply vegetation survey and evaluation skills while learning about native riparian vegetation communities and the threats of invasive plant species.

Little Red Creek Watershed Improvements (Goal 2) - Kevin Spence



Figure 50. *Before (left) and after (right) comparison of juniper removal from a narrowleaf cottonwood gallery along upper Little Red Creek.*

During July, a crew of regional WGFD and BLM workers cut several encroaching mature juniper trees from the understory of a 3-4 acre cottonwood gallery located on private lands along upper Little Red Creek (Figure 50). The goal was to promote and maintain healthy cottonwood habitat along the stream for the benefit of several wildlife species. Removal of the junipers is expected to reduce competition and promote more riparian ground water availability for young cottonwood tree survival. The cut juniper tree biomass was used to fashion woody debris barriers around cottonwood regeneration to discourage over-browsing by big game and allow the young trees to grow vertically and mature (Figure 51).

Past attempts by BLM fire crews to successfully implement prescribed burn treatments in a large conifer encroached aspen stand located near the tri-state site in upper Little Red Creek have fallen short of goals for restoring healthy aspen habitat and improving watershed function. One reason treatment attempts have not met project goals was the inherent difficulty in conducting a prescribed burn that



Figure 51. *Cut juniper trees fashioned into a debris barrier around young cottonwood trees along upper Little Red Creek to discourage browsing and promote vertical growth.*

was both intense enough to be effective yet controlled enough to prevent it from crossing the jurisdictional boundary of the Wyoming-Utah State line. Collaborative efforts with Utah Division of Wildlife Resources (DWR), BLM Rock Springs and Vernal Field Offices, and Wyoming State Forestry Division occurred during 2014 to expand the original project across the Utah state line and include treatment for the entire conifer encroached aspen stand. The effort has now increased from 1,000 acres to 1,262 acres in treatment size, and includes multiple phases of mechanical cutting and prescribed burning to meet aspen restoration goals. Mechanical treatment phases are expected to begin during 2015.

Bitter Creek Drop Structure (Goal 2) - WLCI, Jim Wasseen

This project is intended to replace a failing drop structure on Bitter Creek, located approximately 18 miles east of Rock Springs, Wyoming. The drop structure has restricted a 20-foot headcut from moving up the watershed for the past 40 years and protected the Flannelmouth Sucker (a native fish Species of Greatest Conservation Need) from cross breeding with other sucker species, maintaining a genetically pure population. In 2014, the Sweetwater County Board of Commissioners and Anadarko (the property owner) entered into negotiations. The negotiations resulted in Anadarko donating 20 acres to Sweetwater County. The land exchange will allow the project to move forward.

Phase II Russian Olive/Tamarisk Control along the Lower Green River Riparian Corridor (Goal 2) - Kevin Spence and Jim Wasseen

The WGFD collaborated with the Sweetwater County Weed and Pest District to obtain \$56,128 of WWNRT and \$39,128 of WLCI grant funding to initiate the Phase II Russian olive and tamarisk control treatments along the lower Green River. The Phase II effort was a result of a Teton Science School inventory completed in 2012 of the Green River riparian corridor between the southern boundary of Seedskaadee National Wildlife Refuge and Interstate 80, and that portion of the Flaming Gorge National Recreation Area between Scott's Bottom and Davis Bottom. In January, Sweetwater County Weed and Pest District hired Field Services and Weed Control LLC to complete the initial stump-cut and basil bark chemical treatments to control Russian olive and tamarisk along 28 river miles and within about 9,000 acres of riparian habitat where landowners were willing participants.

Phase II efforts to control Russian olive and tamarisk along the lower Green River corridor continued again in early August. WGFD biologists took advantage of the unusually high late season river flows and the WGFD's jet boat to shuttle contracted crews and equipment to treat Russian olive/tamarisk on



Figure 52. Crews utilize a jet boat to access and treat Russian olive and tamarisk during the Phase II Lower Green River riparian corridor control effort.

river islands, hard to reach river bank locations below cliff bands, and areas that were covered with ice sheets when control treatments began in January (Figure 52). This round of control treatments involved stump cut/herbicide spraying and foliar herbicide applications. Treatments focused on the Green River reaches between Pioneer Trails Picnic Grounds and the I-80 crossing, and Scott's Bottom to Davis Bottoms near the Flaming Gorge Reservoir inflow area. A total of 19 islands and 16 hard to reach locations were treated.

Preventing the gradual invasion of Russian olive/tamarisk from becoming a vegetative monoculture along this reach of the lower Green River system will be extremely important for future populations of fish and wildlife. Without projects such as this one, Russian olive and tamarisk invasion threatens to disrupt riparian ecosystem processes, including degradation or possible elimination of essential life stage habitat needs for many terrestrial and aquatic wildlife species.

Sagebrush Mortality Investigations (Goal 5) -

Jill Randall, Mark Zornes, Kevin Spence, Tom Christiansen

Several reports of dying sagebrush over the past several years coincide with a marked increase in sagebrush death occurring from 2010 to 2014. Areas of die-off were observed in the Farson area in 2010, and around Muddy Creek and Slate Creek in 2012. Local biologists noticed extensive sagebrush mortality in 2014 in the vicinity of Fontenelle Reservoir (Figure 53). A multi-agency group convened for a field tour in July 2014 to observe and discuss the event in southwestern Wyoming. The two-day event raised concern over extensive changes to the vegetation community and implications to wildlife and range resources, and prompted several additional days of work to investigate field conditions.



Figure 53. Sagebrush mortality in Eighteen Mile Canyon (left) and Sagebrush mortality observed near Shute Creek turn off (right).

Several causal factors have been discussed amongst the group comprised of experts from WGFD, NRCS, University of Wyoming, USGS, BLM, USFS, Sublette County Weed and Pest, Wyoming Natural Diversity Database, Colorado Division of Wildlife and other private consultants. Future monitoring will be required to understand changes to the sagebrush communities as well as impacts to sage grouse, pronghorn and other sagebrush obligates. The cause is not determined at this time but likely includes impacts from the 2012 drought in combination with other factors such as changes in soil chemistry, herbivory, old age of sagebrush and possibly insect defoliation. At this time, it is undetermined what future management actions, if any, will be taken across this affected landscape. Managers will have further discussions after data is collected and analyzed in 2015. Potential options include; hands-off management thereby letting the ecological processes occur naturally, managing livestock grazing and wildlife use for recovery, and facilitating recovery with a combination of range seeding and livestock management.

Native Plants for Reclamation and Restoration: Seed Collection and Germination Testing to Determine Optimal Planting Times (Goal 2) – WLCI, Jim Wasseen

This project is designed to study dormancy and germination characteristics of wild-collected and cultivated seeds of common species used in ecological restoration of Wyoming grass and shrublands. Laboratory-based germination and seed burial studies with wild-collected and cultivated seeds were initiated during 2014. These trial studies will conclude in 2015. Future plans include coordination with two landowners in Carbon County where the majority of seed collections took place. Wild collections will be compared and contrasted with cultivated ones in germination studies.

Anadarko Fence Modifications (Goal 5) - Mark Zornes and Jill Randall



Figure 54. *Volunteers team up with agency personnel to remove a net-wire fence on Anadarko Corp. land and improve wildlife movement between winter and summer ranges.*

Anadarko Corporation, Uinta Development Division (AC-UDD) recently replaced a fence that has long been identified through radio-marked animals as a barrier to pronghorn movement in Hunt Area 93. The fence is located (in part) on the jurisdictional boundary between the Rock Springs and Kemmerer BLM Field Offices. The WGFD provided funding to AC-UDD to modify the fence from a net-wire fence to a 4-strand wildlife friendly design. The original project began in 2013, and approximately 8 miles of fence was modified by AC-UDD. In 2014, the FMC Corporation replaced approximately two miles of this same fence on the southern end, and the aforementioned funds were provided to AC-UDD to convert another 8+miles. Pronghorn immediately redistributed in response to this project, reopening a large area for seasonal use, and facilitating migration from winter to summer ranges. In October, an additional 2 miles were removed during a work day that included representatives from the WGFD, NRCS, Muley Fanatics Foundation, Lincoln County Conservation District, Kemmerer Alternative High School, and grazing lessees (Figure 54).



Viva Naughton Reservoir PAA (Goal 2) - Miles Anderson, Matt Miller, Kade Clark, Breanne Thiel

Viva Naughton Reservoir PAA had day use and overnight campground construction completed. Roads were graveled and boulder barriers placed to prevent resource damage. Campsite construction was completed by the WGFD in cooperation with PacifiCorp and the town of Kemmerer.

Red Desert to Hoback Mule Deer Assessment (Goal 2) - WLCI, Jim Wasseen

Western Wyoming supports some of the largest and most diverse ungulate populations in North America. The health and abundance of these herds is largely dependent on their ability to seasonally migrate from low-elevation winter ranges to high-elevation summer ranges, where they can accumulate the fat reserves needed to successfully reproduce and survive the harsh Wyoming winters. The longest mule deer migration ever recorded (and 2nd longest land migration in North America) was discovered where deer travel a one-way distance of 150 miles from the Red Desert to the Hoback (RD2H). This newly discovered migration originates from sagebrush basins in the Red Desert and extends 40 miles north across the desert to the east side of the Wind River Range. From there, mule deer merge with several thousand other deer and travel a narrow corridor along the base of the Wind River Range for 60 miles, before crossing the upper Green River Basin and moving another 30-50 miles to their respective summer ranges in the Hoback Basin. An estimated 500 mule deer start the migration in the Red Desert (Figure 55), but >4,000 mule deer use the route from the Wind River Range north.



Figure 55. *Muley Fanatics Foundation volunteers help to release a collared mule deer doe in the Red Desert near Superior, WY (photograph courtesy of the University of Wyoming).*

Spatially-explicit information will be compiled through a “conservation assessment” synthesis document includes a combination of fieldwork, aerial survey, data analysis, and mapping. The completed conservation assessment will be produced by the Wyoming Migration Initiative team and will include detailed maps, images, GIS data, threat information, and potential conservation actions. The RD2H migration conservation assessment was begun in May 2013 and was completed in April 2014. The RD2H threat assessment will be used as a toolbox for conserving this migration route by providing the tools to prioritize conservation work, and WGFD believes this process may serve as a model for how to provide effective conservation for other migration routes in Wyoming and elsewhere.

The Wyoming Migration Initiative unveiled the Red Desert To Hoback Mule Deer Migration Assessment in April of 2014. This effort resulted in a 56-page document which details the entire 150+ mile migration route of deer that winter to the east of Rock Springs and summer in the high country of the Hoback Basin. Researchers mapped the entire migration route, inventoried fences, documented land ownership, identified stopover areas and determined bottlenecks and areas which restrict mule deer migration or could impede their migration in the future. In addition to the unveiling of the migration, researchers collared an additional 18 deer in March from this herd for continued monitoring. Two of these animals carry satellite collars, which allow real-time tracking of individuals, and have shown at least a portion of this long-distance migratory herd has been captured. Ten camera traps were placed in strategic places along the migration route. The goal is to determine whether remote camera traps would be able to capture timing, duration and density of mule deer migrating through this route. If successful, this technique could be utilized by wildlife managers to take proactive management techniques during the migratory time period. A specific example would be to inform managers when they might open an impassable fence crossing for a two to three week time period to facilitate migration.

Sand Creek Saltcedar Control (Goal 2) - WLCI, Jim Wasseen

The Sand Creek Saltcedar control project expanded in 2014 to include treating approximately 65 miles of stream bottom and all infested reservoirs/sites in the block BLM-administered land portions of the Colorado River Watershed. Treatment consists of ground application of herbicide to cut saltcedar stalks. This area is home to mule deer, elk, antelope, greater sage-grouse and other wildlife species. The headwaters contain an abundance of sensitive species in the lower tributaries. The project directly improves water quantity, erosion and sedimentation, and salt loading into the Little Snake River, a tributary to the Colorado River. The project area was expanded to include all tributaries of Sand Creek and Muddy Creek, as well as all incidental saltcedar found in the southwest portion of the BLM Rawlins Field Office. Chemical treatments, inventory, and monitoring were conducted on state, federal, and private lands from September through October 2014. Past treatments reduced infestations with approximately 98% kill rate. In total, 24 miles of stream bottom/floodplain were monitored and re-treated when necessary, along with 170 reservoirs/sites.

Sibert Ecosystems Services (Goal 2) - WLCI, Jim Wasseen

The primary objective of this project, located in the Black's Fork drainage, is to implement a five-year contract for ecosystem services (habitat improvements) on private lands to enrich native vegetation and wetland conditions. A collaborative effort between the landowner and a multiagency team resulted in habitat improvements and the design and implementation of monitoring objectives aimed at improving range condition for livestock and wildlife. Accomplishments during 2014 (year two of five) included the control of invasive weed species and reduced stocking rates. Invasive plants were controlled with herbicides and mechanical removal. Additional forage for big-game was accomplished by reducing stocking rates and leaving 218 AUMs unused for half of the grazing season. The landowner is also working with the WGFD to restrict human activities on his lands to reduce stress on wildlife during winter. The project area is located within crucial winter range and migration corridors for mule deer and elk. In addition to providing additional forage and improved range conditions, WLCI also benefits from this project by gaining the knowledge and experience on the best approaches to implement ecosystem services with on-the-ground habitat improvements that demonstrate outcomes that may expand this tool to a watershed level (landscape scale) in the future.



Figure 56. *Trout Unlimited Green River Project Coordinator Nick Walrath leads a crew of BLM and WGFD workers in planting native riparian trees and shrubs along Gooseberry Creek.*



Figure 57. *BLM employees Dennis Doncaster and the late John Henderson install a solar powered sprinkler system to water planted trees and shrubs along Gooseberry Creek.*

Support for Conservation Partner Projects (Goal 5) - Kevin Spence

Efforts to assist with Trout Unlimited and the Muley Fanatic Foundation-led activities continued through the year. During May, a crew of regional WGFD and BLM workers assisted the Trout Unlimited Green River Project Coordinator on planting native trees and shrubs in the riparian area along Gooseberry Creek where fish passage improvements were installed in 2012 and enclosed by steel jack fences erected in 2013 by TU and Muley Fanatic Foundation. Several potted and bare root aspen, narrowleaf cottonwood, coyote willow, currant, and redosier dogwood plants and trees purchased from the Sweetwater County Conservation District were planted to expedite recovery of the riparian zone previously disturbed by the installation of fish passage structures (Figure 56). Synthetic ventilated tree protectors were used to discourage ungulate browsing to several of the planted aspen and cottonwood trees. Trout Unlimited obtained a temporary water right for Gooseberry Creek. This facilitated the use of a solar powered pump and sprinkler set on a timer to water the planted trees and shrubs through the summer months (Figure 57).

During October, the Green River Habitat Biologist participated on a tour of the Little Mountain area with representatives of the Muley Fanatic Foundation, Wyoming Wildlife Federation, Trout Unlimited, and 4 of the 5 Sweetwater County Commissioners. The tour was organized by the Greater Little Mountain Coalition and provided an opportunity for commissioners to experience and learn more about the valuable wildlife resources of the area, observe some of the ongoing habitat restoration efforts, and discuss the need for conserving the area.

Several WGFD biologists participated in the River Festival event held in the City of Green River during August. The River Festival is an annual event produced by the Green River Chamber of Commerce. The event is held at Expedition Island, and includes games and entertainment for the community. Trout Unlimited worked with event organizers to promote public awareness about the ecological aspects of the Green River during the festival by expanding the event during 2014 to include a river walk where participants could visit stations along the greenbelt to learn about fisheries, stream and riparian habitats,

and terrestrial wildlife resources. The regional aquatic habitat biologist (AHAB) participated at a river walk station along with Green River Parks and Recreation, Wyoming Wildlife and Natural Resources Trust, and Sweetwater County Conservation District representatives, where festival goers learned about efforts to control Russian olive and tamarisk along the river corridor, the ecological importance of native riparian plant communities. Additionally, participants were able to plant native trees along the riparian greenbelt (Figure 58).



Figure 58. *Green River Festival participants plant native trees along the riparian greenbelt and learn about invasive tree species control efforts.*

Technical assistance was provided to the Muley Fanatic Foundation in planning and developing a steel jack fencing project to protect aspen regeneration from excessive browsing at select locations on Little Mountain. The Little Mountain landscape supports some of the most ecologically diverse wildlife habitats found in Southwest Wyoming. The top of the mountain itself literally is an oasis in the high desert ecosystem exhibiting montane habitat types of mixed mountain shrubs, aspen, riparian, and conifer that support numerous species of terrestrial and aquatic wildlife. Summer concentrations of ungulates in Little Mountain aspen stands result in excessive browsing of young aspen regeneration. Browsing impacts to aspen suckers at many locations impede vertical growth, and some sites exhibit browsing severe enough to cause retrogression and death of aspen suckers. Ungulate browsing not only limits vertical growth, but also weakens vigor and subjects aspen regeneration to losses from disease and insects. The cumulative effects of ungulate browsing likely are preventing enough young aspen trees from growing to maturity and being able to replace older trees in a stand when they die, and ultimately reducing aspen habitat on the Little Mountain landscape. The project's intent is to use portable fencing to exclude most ungulate use at select sites and encourage unimpeded vertical growth of aspen regeneration for stand replacement. A WLCI funding proposal was prepared and approved for half of the cost for the steel jack fencing. Sweetwater County Conservation District has also approved funds for the effort. The regional AHAB intends to pursue additional cost share funding in early 2015, so that project implementation may begin later in the year.

Flume Creek Rearing Station Channel Maintenance (Goal 3) - Anna Senecal

Flume Creek is a small, spring tributary to the Green River that enters a Green River side channel immediately downstream of Fontenelle Dam. The creek feeds directly into a rearing station that was brought online in the 1990's to supplement the state's kokanee salmon stocks. The station's doors shut shortly thereafter due to declining numbers of spawning fish as a result of prolonged drought and increasing water temperatures. The

lower Green River kokanee spawn occurs in two waves: an early and a late run. State stocks have historically consisted predominantly of early run fish. An attempt is being made to revive a late run stock that spawns later in the fall when water temperatures are cooler and percent success of egg take and rearing is likely to be higher. Flume Creek is currently too wide,



Figure 59. Flume Creek project area and design elements.

shallow and warm to safely and reliably allow adult kokanee entrance into the rearing station. Some channel maintenance of the spring creek directly downstream of the rearing facility is necessary to encourage spawning fish to return to the station. These improvements include narrowing and deepening the stream to maintain suitable flows and temperatures as well as protecting fish running from the Green River to the rearing station from predators. Two mainstem barbs are also proposed to redirect the Green River, reducing back eddy scour and deposition at the mouth of Flume Creek (Figure 59, Figure 60). Stream improvements are scheduled to take place the spring of 2015 pending permitting.

Figure 60. Flume Creek where it enters the Green River side channel. A wide, flat plug of sediment has developed at the creek's mouth and impedes upstream movement of kokanee.



Red Rim – Grizzly Wildlife Habitat Management Area Improvements (Goal 2) - WLCI, Jim Wasseen

The BLM and WGFD worked together to convert up to 15 miles of woven-wire fence to 4-strand wildlife friendly fence standards within the Upper Muddy Creek/Red-Rim Grizzly Wildlife Habitat Management Area (WHMA). Fence conversion locations were established by mapping mule deer migration paths from the Atlantic Rim mule deer study. These fence conversions also benefit pronghorn and elk movements. WLCI funding was used toward materials and labor costs for constructing the fences. Grazing lessees on the Red Rim Grizzly WHMA completed an additional three miles of fence construction or conversion during the summer and fall of 2014.

Little Snake River Basin Aspen Conservation (Goal 2) - WLCI, Jim Wasseen

The objectives of this project are to restore aspen woodland communities, enhance watershed/ecosystem function, improve aquatic and terrestrial wildlife habitat, and sustain regional and local economic and aesthetic values through a vibrant aspen community. Project accomplishments in 2014 include: improved aspen age class and diversity in treated aspen stands, reduced threat of catastrophic wildfire, improved wildlife habitat, and improved watershed function. In 2014, 355 acres of aspen and mixed, aspen-conifer stands were mechanically treated on private, state, and BLM-administered lands in the Upper Savery Creek Watershed. Over 2,300 acres of treatments have been completed across the 78,000 acres of aspen habitat in the Little Snake River Basin.