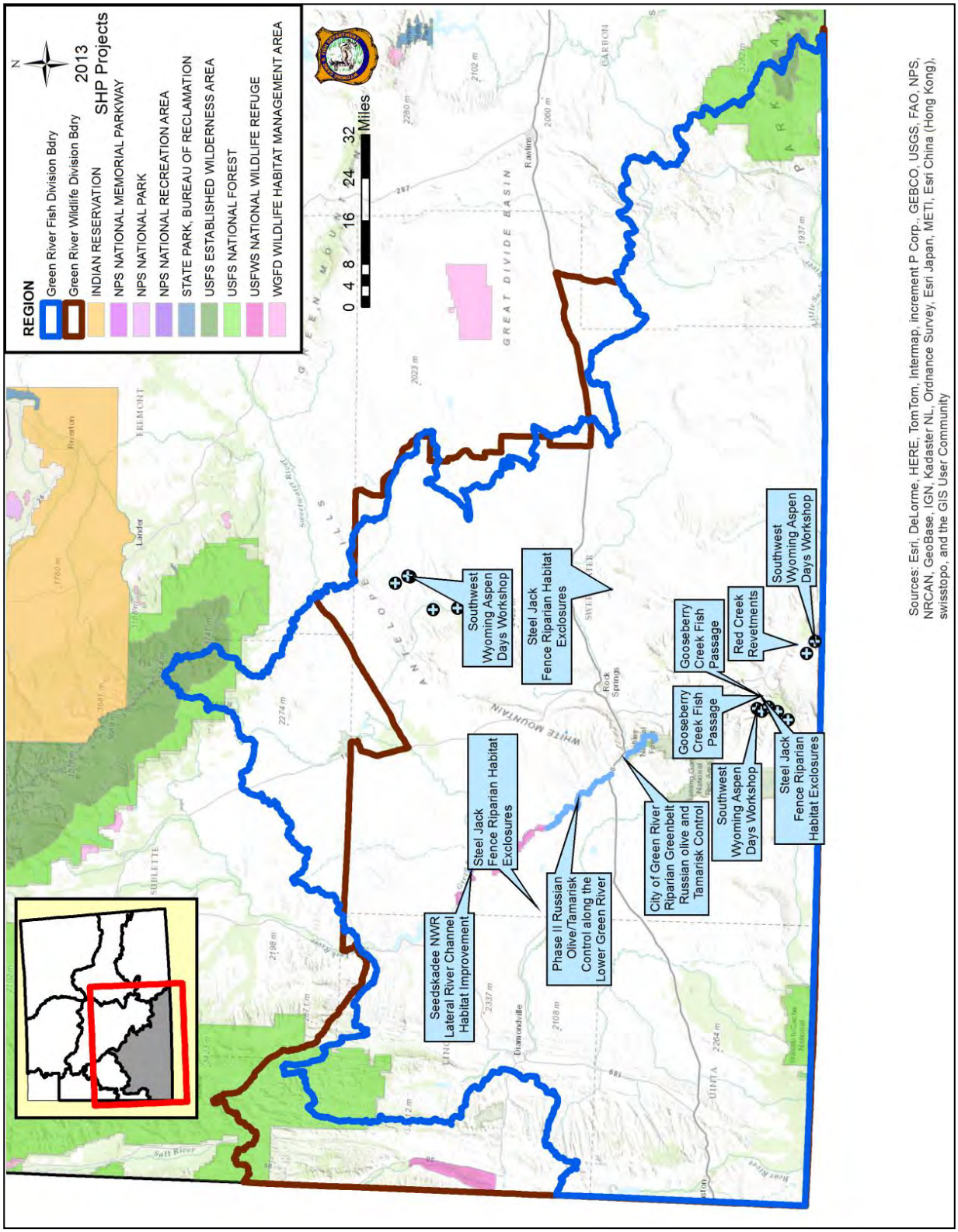
GREEN RIVER REGION



City of Green River Riparian Greenbelt Russian Olive and 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 five miles of the Green River between Expedition Island and the Scott's Bottom area. As a component of the Russian olive and tamarisk control effort, the city utilized WGFD Habitat Trust Fund contributions to purchase and rehabilitate the treated sites with larger sized native riparian tree and shrub plantings during the summer of 2013 (Figure 44). Approximately seventy-seven 15-20 ft tall narrowleaf cottonwood trees and thirty-three 6-8 ft silver buffaloberry shrubs were planted in clusters at select riparian locations. City crews also installed watering drip systems at each planting site and utilized portable water tanks hauled behind ATVs to water each planted tree and shrub multiple times a week during the summer to encourage survival. Speedy re-establishment of large stature native riparian tree and shrubs not only will provide the horizontal and vertical structure needed for wildlife habitat with the appropriate species composition for maintaining sound ecological processes (Figure 45), but may also encourage other urban river front landowners to participate in future control programs.

Figure 44 – Green River Parks and Recreation contracted native riparian tree and shrub plantings in select areas previously treated to control Russian olive and tamarisk along the town reach of the Green River.

Figure 45 – Narrowleaf cottonwood cluster planted to restore habitat in an area recently treated to control Russian olive and salt cedar.

As expected, a large number of young invasive Russian olive and salt cedar 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 basil 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. The city has also agreed to conduct monitoring and follow-up chemical control of invasive re-sprouts for at least two more consecutive years.

Southwest Wyoming Aspen Days Workshop (Goal 4) – Kevin Spence, Ben Wise, Patrick Burke

The Green River Region hosted an aspen ecology workshop on August 6th and 7th that focused on aspen communities of the high desert ecosystems in Southwest Wyoming. Western aspen experts Dr. Dale Bartos, Robert Campbell, and Dr. Paul Rogers gave formal presentations and shared their expertise and insights on field tours of aspen sites (Figure 46). The workshop consisted of two days of field tours and an evening of lectures, and was open to both professionals and the general public. Most of the workshop attendees were Department employees, however a local teacher, Muley Fanatics Foundation, USGS, Sweetwater Conservation District, and the BLM participated in all or a portion of the workshop. The first field day was spent in the Jack Morrow Hills area looking at pocket aspen stands on Bush Rim, Joe Hay Rim, Monument Ridge, and Steamboat Mountain. The second field day was spent on Little Mountain and the Red Creek watershed looking at aspen restoration efforts. Workshop participants were given an opportunity to learn about and discuss aspen ecology, succession, effects of big game herbivory, climate change, biodiversity, aspen's role in watershed function, wildfire response, and examples of both successful and unsuccessful restoration efforts.

Figure 46 – Aspen expert Robert Campbell demonstrates sucker regeneration via lateral roots at the Southwest Wyoming Aspen Days Workshop during August.

Seedskadee National Wildlife Refuge Lateral River Channel Habitat Improvement (Goal 3) – Kevin Spence

During 2012, the Double Sill structure located on the Green River at Seedskadee National Wildlife Refuge (NWR) was reconstructed to improve water diversion/delivery for the Hamp wetland complex. The structure reconstruction also lifted the river level and now provides consistently higher flows to the adjacent north lateral side channel. During July 2013, conifer revetment structures were installed in the lateral river side channel to complement the increased flows and further improve aquatic habitat.

A crew of regional Department personnel, Seedskadee NWR personnel, Wyoming Student Conservation Corps, and local Trout Unlimited volunteers harvested several 6-12 ft green conifer trees from BLM lands in the Miller Mountain area (Figure 47) and delivered the trees to the Double Sill lateral river side channel. The conifers were harvested from an encroached aspen stand delineated by the BLM as one of the sites for the Wyoming Front Aspen Regeneration Project, and the conifer removal served as a treatment to improve this aspen stand on Miller Mountain. Crews later used harvested trees to construct conifer revetment structures along the streambank at predetermined reaches of the lateral river channel to improve aquatic habitat for juvenile fish at Seedskadee NWR (Figure 48).

Figure 47– Freshly cut fir trees from Miller Mountain to be used for aquatic habitat improvements on the Green River at Seedskadee NWR.

Lateral river side channels are very important juvenile trout rearing habitat with margin niches and laminar flows needed for small fish survival and recruitment to the adult population in the Seedskadee reach of the lower Green River. The conifer revetment features are expected to provide immediate juvenile fish escape and hiding cover along approximately 800 ft of the river side channel margin, and encourage sediment deposition to gradually build streambanks.

Figure 48 – Wyoming Student Conservation Corp workers building a lateral river side channel revetment structure at Seedskadee NWR.

Trout Unlimited-led Colorado River Cutthroat Trout Habitat Improvements in the Little Mountain Ecosystem (Goal 5) – Kevin Spence, Craig Amadio, Jim Wasseen (WLCI)

Technical support and assistance, led by Trout Unlimited (TU) during 2013, was provided for Colorado River cutthroat trout (CRC) habitat improvements located within the Little Mountain Ecosystem. As an expansion of similar work conducted in 2012, Department habitat and fisheries biologists provided manpower and technical assistance to the Seedskadee Chapter of TU to install approximately 300 ft of conifer stream bank revetments and woody debris structures in upper Red Creek to improve pools and cover for CRC. Labor assistance and $10,000 of Department Habitat Trust Fund dollars were provided to the TU Green River Project Coordinator and contractor to install a total of 30 log/rock vane step pool structures providing upstream fish passage at two locations in upper Gooseberry Creek and reconnecting two miles of stream for the CRC population (Figure 49). During September, assistance was provided to TU, Muley Fanatics Foundation, and a group of Green River High School biology students with planting approximately 100 coyote willows along Gooseberry Creek where the vane structures were installed (Figure 50). The planted willows are expected to stabilize stream banks adjacent to the fish passage structures and begin restoring riparian habitat.

Figure 49 – One of two locations in upper Gooseberry Creek where Trout Unlimited installed log/rock vane step pool structures to provide fish passage.

Figure 50 – Green River High School students planting willows at the newly installed fish passage structures on Gooseberry Creek.

Steel Jack Fence Riparian Habitat Exclosures (Goal 5) – Kevin Spence, Ben Wise, Patrick Burke, Mark Zornes, Tom Christiansen

Regional biologists provided technical assistance, labor, and equipment to local conservation groups, landowners, and an Eagle Scout candidate with erecting steel jack fence exclosures to improve riparian habitat at four different sites in Southwest Wyoming during 2013. Steel jack fencing is desirable because of the reduced annual maintenance involved after installation compared to conventional wood and wire stock fences.

Muley Fanatics Foundation provided 1,000 ft. of steel jack fence materials and partnered with TU, BLM, livestock permittees, and the Department to erect an exclosure around the reach of Gooseberry Creek containing the upper fish passage structures that TU had previously constructed. The exclosure encourages riparian vegetation reestablishment in order to stabilize the stream reach.

Figure 51 – Muley Fanatics and Anadarko Petroleum workers partnered to protect a spring source near Black Butte.

Muley Fanatics Foundation purchased steel jack fence materials and partnered with Rock Springs Grazing Association to construct an exclosure at the head of Scott's Spring located on White Mountain west of Rock Springs. This exclosure serves to protect the integrity of Scott's Spring and associated riparian vegetation for the benefit of mule deer and other wildlife species in the area. Muley Fanatics Foundation also used their steel jack fencing to partner with Anadarko Petroleum Corporation and the Department to install an exclosure at a spring source near Black Butte, southeast of Rock Springs (Figure 51). This spring is an important summer water source for big game and other wildlife in this arid area (Figure 52). The fencing is expected to improve the water availability and enhance riparian vegetation associated with the spring source.

Figure 52 – Big game and other wildlife rely heavily on the spring and will benefit from the improvement.

With the assistance and guidance of Department biologists, the Eagle Scout candidate utilized 2,400 ft of steel jack fencing purchased by the Southwest Wyoming Sage Grouse Working Group to erect an exclosure at an artesian well site at Seven Mile Gulch near Granger. The exclosure is expected to improve riparian vegetation near the water source to enhance brood rearing habitat for sage grouse while also benefiting numerous other wildlife species.

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

The Department 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 Seedskadee National Wildlife Refuge and Interstate 80 and the portion of the Flaming Gorge National Recreation Area between Scott's Bottom and Davis Bottom. Treatments will be focused on a half-mile wide belt of riparian floodplain adjacent to and along approximately 28 miles of river totaling 8,658 acres of the riparian habitat corridor. Due to an unanticipated change in the Sweetwater County Weed and Pest District's staff during mid-summer 2013, control treatment implementation was postponed until 2014.

Aspen Joint Venture (Goal 2) – WLCI, Jim Wasseen

The Little Snake River Basin Aspen Conservation Initiative is a ten-year project to restore and enhance more than 12,000 acres of aspen habitat on federal (BLM & USFS), state, and private lands. Mechanical treatments and prescribed fire have been used to enhance aspen communities (Figure 53). Since 2007, over 2,000 acres have been mechanically treated and approximately 400 acres treated with fire. In 2013, approximately 300 acres of mixed aspen, beetle killed lodge pole pine, and subalpine fir stands were treated by removing all conifers. Any merchantable timber was salvaged and used by a local sawmill. Non-merchantable timber, which comprised the bulk of the material removed, was either cut and scattered or skidded into burn piles to be burned at a later date. Some material was used for stream restoration/aquatic habitat improvement on the Little Snake River.

Figure 53 – Serviceberry and Aspen regeneration two years after conifer removal.

Bitter Creek Restoration (Goal 2) – WLCI, Jim Wasseen

Channel restoration on Bitter Creek at Pierotto Ditch involves replacing a failing in-stream structure, controlling invasive plant species in the riparian corridor, and re-establishing native vegetation in the Bitter Creek watershed. The Pierotto Ditch diversion off Bitter Creek is in danger of being rendered dysfunctional as a channel incision moves upstream. The Sweetwater County Conservation District's boring contractor collected core samples near the structure. These core samples will be analyzed to determine the best location and method for installation of a new structure to benefit the Pierotto Ditch.

Black's Fork - Muddy Creek Tamarisk Control (Goal 2) – WLCI, Jim Wasseen

The objectives of this long term project are to control and minimize salt cedar infestation within the Blacks Fork River and its tributaries, maintain existing riparian habitat, increase native riparian tree densities, and improve the condition of native vegetation. Accomplishments during 2013 included treating previously sprayed areas and herbicide applications at new locations along the Blacks Fork River (Figure 54). More than 31 acres were treated along Muddy Creek, Blacks Fork River, Smiths Fork River and Cottonwood Creek (parts of Uinta County and Lincoln County to the Sweetwater County line) on federal, state, and private lands. Approximately 204 acres of streambank were surveyed for salt cedar. Field Services LLC and Uinta County Weed and Pest (UCWP) crews also treated 129 acres of noxious weeds including perennial pepperweed, Canada thistle, black henbane and an area of spotted knapweed within the Blacks Fork River Drainage. The total area improved was approximately 2,566 acres. UCWP crews watered native trees planted last year throughout the summer. Among these native plantings, survival of buffaloberry was approximately 60% in the fenced planting areas, cottonwood 40%, and willow approximately 25%.

Figure 54 – Treated Tamarisk plants along the Black's Fork (photograph courtesy of Uinta County Weed and Pest District).

Buckhorn Flowing Well (Goal 2) – WLCI, Jim Wasseen

This is a three phase project dependent upon donated materials to enclose approximately 100 acres around a flowing well and associated riparian area southwest of Farson. In 2013, enough material was donated to enclose a 40-acre area and posts have been driven for the second phase (Figure 55). During winter 2013-14, time and weather permitting, BLM field staff will weld railing to posts until materials are depleted.

Figure 55 – Fence posts installed and rails ready to enclose the 40-acre area.

Baggs Deer Crossing (Goal 2) – WLCI, Jim Wasseen

This project previously installed two underpasses to allow mule deer to continue their migration under Hwy 789. In 2013, in an effort to understand how the deer interact with the underpass and associated fencing, 46 deer were captured and marked, and a "real time" video camera system was installed to monitor deer using the underpass. Over 15,000 deer crossings have been recorded using the underpasses.

Carbon County Perennial Pepperweed (Goal 2) – WLCI, Jim Wasseen

The Perennial Pepperweed Partnership involves treating two main stream branches in the Sage Creek watershed for perennial pepperweed, whitetop, salt cedar, leafy spurge and Russian knapweed. Chemical treatments are used to control weeds in this remote area. Only half the project area was completed in 2013 due to access and funding issues on private lands.

Cottonwood Reservoir (Goal 2) – WLCI, Jim Wasseen

The Cottonwood Creek project, located on private lands in the Mountain View area of Uinta County, is designed to increase and improve existing wetland habitat for a variety of wetland-dependent wildlife species. Habitat improvements include constructing and repairing dikes, installing water control structures, and development of a reservoir on flood-irrigated land. Proposed dikes and water control structures were completed during 2013. These activities created or enhanced 16.3 wetland acres.

Ferris Mountain Leafy Spurge Treatment (Goal 2) – WLCI, Jim Wasseen

Monitoring in 2005 showed infestation, for the first time, of leafy spurge in the Ferris Mountain Wilderness Study Area (WSA), along with a marked increase of infested acres along the fringes of the WSA. In 2013, 500 acres in this area and the adjacent hogback ridges were treated with herbicide for leafy spurge, whitetop, and Russian knapweed. Chemical treatments, inventory and

monitoring were carried out on state, federal, and private lands. Past treatments have thinned infestations to the point that aerial treatments were not conducted this year, and may not be necessary in the future, provided on-the-ground maintenance activities continue.

Fossil Butte Invasives (Goal 2) – WLCI, Jim Wasseen

A WLCI funded intern (Student Conservation Association) contributed to the control of non-native invasive plants within the Fossil Butte area by pulling 13,692 invasive plants, 37 bags of Russian thistle, 308 musk thistle plants, 35 bull thistle plants, and 20 spotted knapweed plants. Approximately 61 acres were treated for Canada thistle (649 plants) with the herbicide Milestone within the park and adjacent BLM land. Dry spring weather contributed to the difficulty of locating and treating weeds in the park.

Commissary Ridge Whitebark Pine Sanitation (Goal 2) – WLCI, Jim Wasseen

This is an ongoing project located on Commissary Ridge in the southern Wyoming Range. The goal of the project is to improve Whitebark Pine stands, a candidate species, through the removal of diseased whitebark and limber pine trees to reduce the spread of both mountain pine beetle and white pine blister rust, thus improving survivorship of younger aged cohorts. Activities may also include the removal of a proportion of subalpine fir in order to release young whitebark pine. Diseased whitebark pine and subalpine fir trees will be removed from the area to increase viability and regeneration of whitebark pine (Figure 56). Tree thinning and removal activities occurred on 73 acres during 2013. Treatments on the remaining 177 acres will be completed between July 1, 2014, and September 30, 2014.

Figure 56 – Sub-alpine fir and whitebark pine before treatments.

Grizzly Wildlife Habitat Management Area Fence Conversion (Goal 2) – WLCI, Jim Wasseen

This project converts woven wire, six-strand, and five-strand fencing to meet wildlife standards on BLM, State, and WGFD lands within the Rawlins BLM Grizzly Wildlife Habitat Management Area. This work is part of a long-term plan to convert fences in the Red Rim Grizzly WHMA to support big game migration. Previous WLCI funding has supported conversion of 12.5 miles of fencing within the WHMA. During 2013, the WGFD contracted fence reconstruction work for five miles of fence conversion to be completed by September 30, 2014.

Raymond Mountain Invasives - Lincoln/Uinta Weeds (Goal 2) – WLCI, Jim Wasseen

This is a long term, continuing project aimed at treating Dalmatian toadflax and Dyer's woad on Raymond Mountain in Lincoln County. Lincoln County Weed and Pest treated 192 acres and inspected and monitored nearly 1,000 acres with the aid of a helicopter during two days of spraying. An assessment was conducted to determine progress and to identify funding and areas to treat in 2014.

Rawlins Fence Conversions (Goal 2) – WLCI, Jim Wasseen

The crew completed 3.5 miles of fence conversion which included two miles along the Buzzard/Pole Canyon allotment boundary, a quarter mile of wood post and rail-top construction, and 1.5 miles of pasture fence conversion. A contract was awarded in August and is planned to be completed during the spring of 2014 for six miles of fence burned in the 2012 Ferris Mountain wildfire.

Sand Creek Salt Cedar Control (Goal 2) – WLCI, Jim Wasseen

The Sand Creek salt cedar control project will treat approximately 30 miles of stream corridor in the Colorado River Watershed with aerial and ground applications of herbicide to remove salt cedar (tamarisk). The project area is located in Southeast Sweetwater County and Southwest Carbon County and comprises the Sand Creek watershed, a tributary to the Little Snake River Drainage in southern Carbon County. Accomplishments during 2013 included 250 acres of herbicide applications on part of Sand Creek, all of Willow Creek, and 63 of the area reservoirs. An intensive assessment of reservoirs during 2012 indicated that nearly one in three reservoirs is infested with salt cedar. The current plans are to monitor treated areas every three years to find and treat re-sprouts or new plants before they are old enough to set seed. During 2013, 500 acres were inventoried for new salt cedar plants and re-sprouts.

News Releases and Photo Essays/Features (Goal 4) – Lucy Diggins

The Green River I&E Specialist provided nine news releases on the following topics: Poor habitat conditions due to extreme drought conditions; Please Don't Camp on Water Holes that wildlife need; Cooperative Habitat Projects at Seedskadee National Wildlife Refuge; sage grouse viewing ethics and habitat protection; don't feed deer; illegal to pick up shed antlers and horns west of Continental Divide; city and WGFD work together to remove invasive tree species Russian olive and Tamarisk; how bad the winter/drought is affecting local mule deer herds and Fish Mercury Advisory Information on our Website.

Two photo essays/features were given to local newspapers on Special Fishing and the Fish Management Section in the *Rocket Miner* newspaper and a Fish Management Photo Feature for the *Rocket Miner* newspaper with State Rep. Mark Baker assisting with gill netting on Fontenelle Reservoir.

Weekly Radio Spots (Goal 4) – Lucy Diggins

Green River I&E completed approximately 16 radio spots on the following topics: don't transfer live fish, how to release fish properly, watch for game in the right of way, don't camp on top of water holes due to extreme drought conditions, Fontenelle Fire Update, big game winter range closures, illegal burbot introduction and AIS, snowmobile and winter ethics, shed antler and horn collection restrictions, too hot to catch and release fish, sage grouse viewing ethics, habitat needs for wildlife, leave young wildlife alone and don't transfer live fish.

Conservation Education (Goal 4) – Lucy Diggins

More than 900 K-12 students were instructed regarding general wildlife management concepts (habitat, food chain) basic habitat management and why we do not feed wildlife; local mule deer projects and mule deer ecology; wildlife viewing safety; bear ecology and safety in Wyoming; unique wildlife in Wyoming and their habitat requirements; International Migratory Bird Celebration for school children joint event with Audubon and Natrona County School District; the importance of migratory birds using activities from NatureScope and Project WILD; and bird activities at Seedskadee National Wildlife Refuge.

Two Project WILD and Project Learning Tree curriculum workshops were conducted for formal and non-formal educators, discussing wildlife habitat requirements for mule deer, birds of prey, elk and bear, forest succession, sage grouse habitat requirements and invasive species issues in Wyoming.