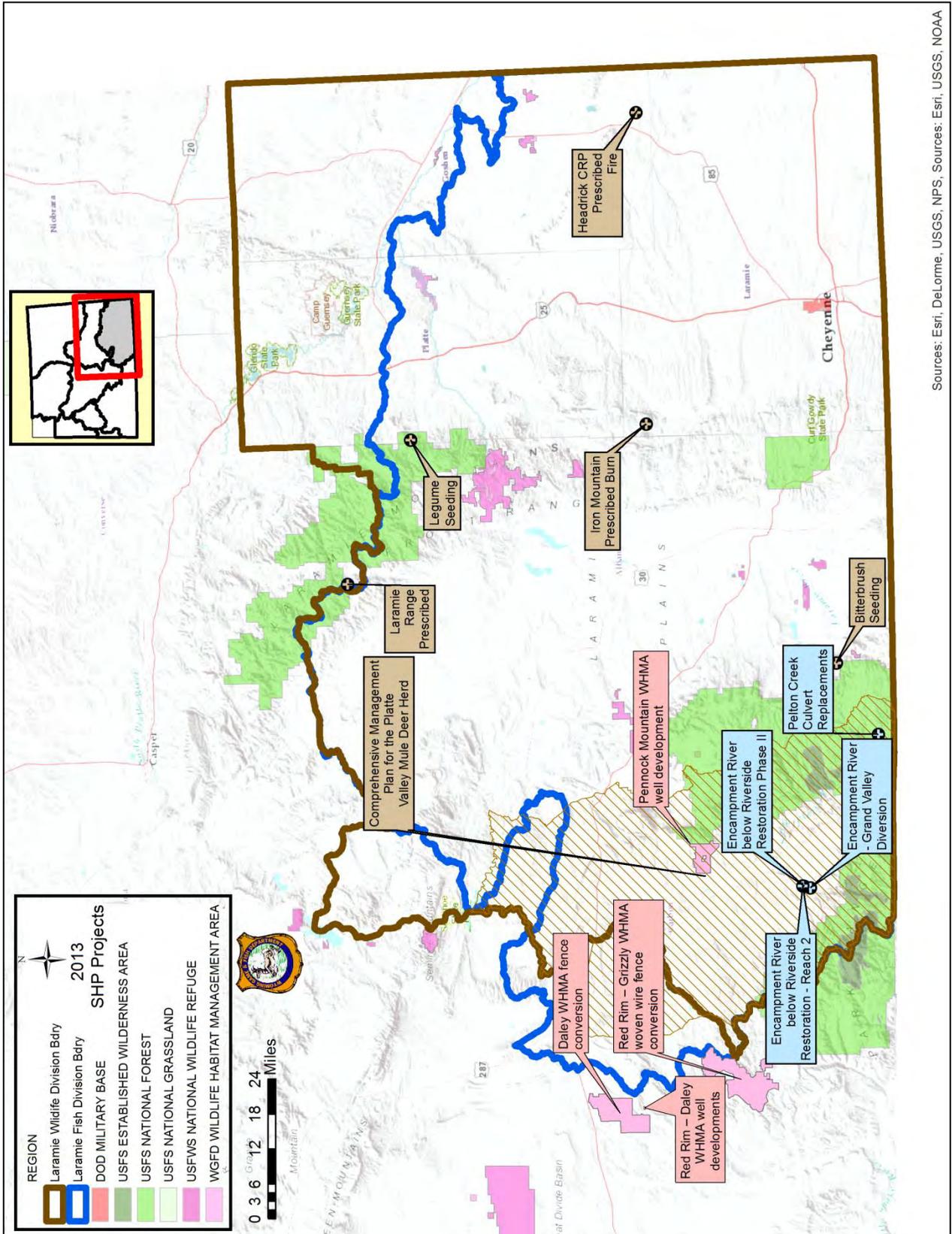


# LARAMIE REGION



Sources: Esri, DeLorme, USGS, NPS, Sources: Esri, USGS, NOAA

### **Encampment River – Grand Valley Diversion (Goal 2) – Christina Barrineau**

The Encampment River – Grand Valley Diversion improvement involved removing a cobble push-up dam (Figure 94) and replacing it with a more stable cross-vane structure. In 2012, WGFD contracted with Stantec Consulting Services, Inc. for a survey and design of the diversion, which is located on the Encampment River, near the town of Riverside. Each year, during the irrigation season, heavy equipment was used to push-up the riverbed to divert flow into the Grand Valley Ditch. The push-up dam spanned the width of the channel and inhibited upstream fish movement. Downstream of the dam, the channel was over-widened and could not efficiently transport sediment.



Figure 94 – Encampment River – Grand Valley Diversion push-up dam prior to replacement.

The new diversion structure was constructed in fall 2013 (Figure 95) and allows water users to receive their water without having to manipulate the riverbed, while also allowing for fish passage (primarily brown trout and rainbow trout). For improved bed stability below the diversion, the stream channel was narrowed and deepened. Rock constructed riffle structures were placed to maintain riffle dimensions and provide pocket pool habitat. Trout habitat was also enhanced by the placement of toe wood along a deepened pool below the diversion.

The Saratoga-Encampment-Rawlins Conservation District was the lead for the project and worked closely with landowners, water users, and funding partners. WGFD provided permitting support in addition to engineering and construction funds. Other partners for the improvements include WLCI, USFS Resource Advisory Council, WWNRT, Trout Unlimited, landowners, and water users.



Figure 95 – Encampment River – Grand Valley Diversion after replacement of cobble-push up dam with cross-vane structure to allow for fish passage.

### **Encampment River below Riverside Restoration Phase II (Goal 2) – Christina Barrineau**

The Encampment River below Riverside Restoration Phase II comprises streambank stabilization, channel reconstruction, and riparian enhancements downstream of the Town of Riverside (Figure 96).

The Encampment River downstream of Riverside is highly unstable with areas of bank erosion, extensive mid-channel bar and transverse bar development, channel degradation and aggradation. Causes of the instability include; historic tie drives, mining, land use activities, channel dredging, water diversions, and the Cheyenne Stage II project. The channel instability is causing



Figure 96 – Riffle shaping and radius of curvature adjustments along the Encampment River below Riverside Restoration Phase II.

riparian habitat and agricultural land loss. Additionally, the channel degradation is lowering the water table and leading to a decrease in deep-rooted native riparian vegetation. The unstable channel and streambanks have led to degraded riverine habitat for aquatic species, and degraded riparian habitat for both amphibious and terrestrial species.

For Phase II, 1,350 linear feet of stream channel was restored in 2013. Within the restored reach, streambank toe wood stabilization with bankfull benches was installed on 850 feet of streambank. Three pools were enhanced to a design maximum bankfull depth of 10 feet. Three riffles were shaped for a maximum bankfull depth of 4.6 feet and a maximum width of 85 feet. A series of four rock vanes was installed in one riffle to help narrow the riffle and provide grade control and fish habitat enhancement. The radius of curvature was modified on two meander bends. In late fall, over 3,000 coyote willow stakes were planted along the Phase I and Phase II reaches (Figure 97). Six willow clumps were also transplanted along one of the three enhanced pools in the Phase II reach.



Figure 97 – Planting willow stakes along a restored riffle within the Encampment River below Riverside Restoration Phase II.

encompasses the Phase I and II reaches. Riparian vegetation restoration efforts will be on-going over the next few years along the restoration reach. Several pilot projects focusing on vegetation species and planting locations will occur in 2014. Monitoring efforts will also continue including photo points and channel cross-sections.

Partners for the 2013 Encampment River below Riverside Restoration Phase II included TU, WGFD, private landowner, WWNRT, WLCI, and USFS Resource Advisory Council.

In total, the Encampment River below Riverside Restoration has restored 3,450 linear feet of stream channel. Restoration activities consisted of streambank toe wood stabilization, bankfull benches, pool enhancements, riffle shaping, rock vane structures, radius of curvature adjustments, riparian plantings, and a 1.5-acre oxbow wetland development. Additionally, a 77-acre riparian pasture with deferred grazing was created and

## **Encampment River below Riverside Restoration – Reach 2 (Goal 2) – Christina Barrineau**



Figure 98 - Collecting channel morphology data for the next reach of the Encampment River below Riverside Restoration

Planning began on the next reach of the Encampment River below Riverside Restoration (Figure 98). The new reach is immediately downstream of the river restoration completed in 2013. Preliminary channel morphology data was collected by Stantec engineers and WGFD using GPS grade surveying equipment. Stantec then provided a preliminary restoration design for 1,200 feet of channel. The design calls for 500 feet of toe wood bank stabilization along two pools, one constructed riffle (5 mini vanes), and one hardened riffle for ranch travel use. Construction is slated for late summer/early fall 2014.

## **Pelton Creek Culvert Replacements (Goal 2) – Christina Barrineau**

In response to the mountain pine beetle epidemic, an inter-agency group was organized in 2009 to develop projects for mitigating impacts. The group identified the replacement of undersized culverts as one way to mitigate impacts from increased flows due to the reduction of water uptake by live vegetation. The USFS identified three undersized culverts on Pelton Creek that were not likely to withstand flow greater than a 25- year flood event. Additionally, the three culverts were found to be movement barriers for trout. Pelton Creek lies within the Douglas Creek Watershed, an aquatic habitat enhancement area.

In 2013, the third and final culvert was replaced along Pelton Creek completing the replacements that began in 2011. Bottomless arch culverts were used for each replacement. In total, 7.3 miles of Pelton Creek are now connected for fish passage. The USFS will continue to conduct monitoring to ensure vegetation and stream channel recovery. Partners for this project included WGFD, USFS, and WWNRT.

### **Baggot Rocks Invasives (Goal 2) – WLCI, Jim Wasseen**

The Baggot Rocks project is a continuing project located in the Platte Valley. Objectives for this project include controlling the spread and prevalence of invasive plants within the winter range complex for mule deer on Baggot Rocks; maintaining the area as crucial winter range; and, lessening fire frequency and subsequent conversion of the area to annual grasses. In 2012, the BLM and WGFD chemically treated the area for cheatgrass invasion. In 2013, the BLM contracted crews to remove encroaching junipers from 3.5 acres of a small riparian drainage to increase water quality in the drainage. Slash was piled for controlled burning.

### **Platte Valley Habitat Partnership (Goal 1) – Ryan Amundson**

The Platte Valley Habitat Partnership (PVHP), formed in May 2012, is a result of the Platte Valley Mule Deer Initiative (PVMDI) implemented by the WGFD in July 2011. The PVHP was developed to establish effective partnerships in order to maintain and improve mule deer habitat (Figure 99) throughout the Platte Valley. The PVHP is comprised of private landowners, concerned citizens, hunters, outfitters, members of the Saratoga-Encampment-Rawlins Conservation District (SERCD), the WGFD, BLM, UW Extension, the USFS and Non Governmental Organizations (NGOs) (Figure 100).



Figure 99 – Mixed shrub habitats in the Platte Valley identified for treatments ranging from aeration, herbicide application, or prescribed fire.

One of the outcomes of the Partnership includes a comprehensive habitat management plan designed to be implemented collaboratively between all interested stakeholders. A source document and working plan document provide an explanation of the PVHP's collaborative process, mule deer ecology, objectives and desired habitat conditions of the Platte Valley, indirect benefits to society by improving the mule deer herd, and details regarding grant applications, project funding, and implementation.

This plan outlines work to be completed to improve habitat conditions for mule deer in the Platte Valley. Habitat improvement focus areas for mule deer have been delineated, but do not preclude beneficial project development for mule deer anywhere in the Platte Valley.



Figure 100 – Participants gathered in the field and in the local community center for educational outreach efforts throughout the year.

In 2013, extensive on-the-ground habitat assessments were completed on several properties in the Platte Valley encompassing private, federal, and state lands. Post-habitat assessment, grant applications to PVHP and other conservation entities were completed to fund planned habitat work in the coming year. Five PVHP sponsored projects were

delivered to the WGF Commission in November 2013 for consideration and

were unanimously approved. \$94,864 of PVHP's \$500,000 fund was allocated and was matched at a rate of 7:1 with external funding sources. Over 10,000 acres of upland and riparian habitats will be affected by planned treatments in the next two years.

**Prescribed Fire (Goal 2) – Ryan Amundson**

Several prescribed fires were planned for 2013, with one CRP mid-contract enhancement burn project being completed (Figure 101). Phase II of the Iron Mountain prescribed burn in mixed mountain



Figure 101 – Volunteer firefighters in Goshen County assisted with a prescribed burn on CRP acreage. The prescribed burn provides excellent training opportunities.



Figure 102 – Brush mowing was completed around perimeters of areas planned for prescribed burning in 2014.

shrub habitats was not conducted in 2013 due to a fall weather window being missed, federal government shutdown, and delays in obtaining clearances for working in potential Preble’s Meadow Jumping Mouse habitats. Plans are to complete Phase II and III of the Iron Mountain project, totaling over 3,000 acres by Fall 2014. Extensive tree felling, brush mowing, and hand-line construction were completed on the Bell Otte and KeSa Ranches in 2013, totaling nearly five linear miles of burn boundary (Figures 102 & 103).

Follow-up prescribed burning is planned to be conducted in 2014 totaling over 1,300 acres of limber pine, ponderosa pine, aspen, and mixed shrub habitats on the two ranches.



Figure 103 – Contract crews assisted with timber management by cutting hazardous fuels along fire perimeters to reduce spotting and further assist with fire containment.

#### **Information / Education Efforts in SE Wyoming (Goal 4) – Ryan Amundson**

In May 2013, WGF D personnel assisted Albany County students with shrub seedling plantings in the Squirrel Creek fire area west of Laramie. Over 600 antelope bitterbrush seedlings were planted in a drainage impacted by high fire severity. Students were informed about positive impacts of fire, mule deer biology, and importance of winter ranges.



Numerous I&E presentations containing conservation information were provided to over 200 individuals at organized events, which included PVHP, Wyoming Wild Sheep Foundation Summer and Winter convention, (Figure 104) and a WGF Commission meeting.

Figure 104 – Members of the Wyoming Chapter of the Wild Sheep Foundation learn about wildlife research, wildlife habitats, and bighorn sheep herds in southeast Wyoming at the Thorne Williams Wildlife Research Facility at Sybille in December 2013.

#### **Shrub Production / Utilization 2013 (Goal 4) – Ryan Amundson**

In 2013, shrub production returned to more normal levels following a disastrous 2012 in the Laramie Region. Shrub stands within areas treated by prescribed fire or mechanical means bounced back to normal production rates, while untreated stands showed reduced vigor and were slower to recover following the stresses of extreme drought. Unusually high precipitation received in Fall 2013 should bode well for shrub production in Spring 2014. Utilization rates by wild ungulates were excessive in some transect locations due to the drought of 2012 and suspected increased competition for remaining standing forages in winter months (Figure 105).



Figure 105 – Sagebrush habitats in the Laramie Plains continue to exhibit high browsing pressure by pronghorn.

**Private Land Sagebrush Mowing and Seeding of Native Forbs & Legumes (Goal 2) – Mark Cufaude & Dave Lewis**

The Habitat & Access (H&A) biologist mowed 25 acres of sagebrush and seeded 50 acres of native forbs/legumes on private lands as a demonstration habitat treatment for sage grouse, mule deer and pronghorn. The landowner purchased and supplied 130 lbs of seed (Western yarrow, Palmer penstemon and American vetch) as recommended by the WGFD Terrestrial biologist for the project while the H&A crew supplied the personnel, tractor, mower and rangeland drill to perform the work.

**Pennock Mountain WHMA Well and Wildlife Water Enhancement (Goal 2) – Josh DeBerard & Mark Cufaude**

The Laramie Habitat and Access crew installed bentomat pond liner, a new pond overflow pipe, and modified the wildlife escape ramp. This project will provide a seasonal water source for wildlife including sage grouse, pronghorn, mule deer and elk. The well development site is located on a dry sagebrush / grass upland bench. This completes the development of the well, pond, water trough and solar pump at this site.

**Red Rim – Grizzly WHMA Forage Reserve Grazing (Goal 1) – Dave Lewis**

Six cattle operators grazed the WHMA under the cooperative management of the WGFD and BLM in a rest rotation grazing plan designed to benefit wildlife habitat values inside the WHMA and habitat adjacent to the WHMA boundary on the operator’s grazing allotments (3,852 AUMS utilized).

**Red Rim – Grizzly WHMA Fence Conversion (Goal 1 & Goal 5) – Dave Lewis**

Competitive bids were solicited from contractors for the conversion of five and one-half miles of woven wire and five wire fences to improve migration of pronghorn and other big game. The fence will be converted to a four-wire wildlife friendly design pending the approval of WLCI funding for calendar year 2014 (Figure 106).



Figure 106 – Contractor working on fence at Grizzly WHMA.

### **Rawhide WHMA (Goal 1) – Jerry Cowles**

Using WWNRT grant funds, a contract was awarded to a private sector contractor to perform a follow-up herbicide treatment on Russian olive re-sprouts and seedlings. The herbicide treatment will occur in March, inside the previous 75-acre area of Russian olive mechanical removal performed in 2012. This project will improve riparian habitat adjacent to the North Platte River within the WHMA.

### **Wildlife Habitat Management Areas (Goal 2)**

- In Albany County, 12 acres of WGFD Public Access Areas were treated for noxious weeds.
- In Carbon County, 25 acres of WGFD Public Access Areas were treated for noxious weeds.
- 574 acres of hay meadows were irrigated on the **Wick WHMA** to provide forage for wintering wildlife. A total of 224 acres of noxious weed control were completed by the contractor and 20 miles of crucial winter range fence were maintained. The livestock operator used 220 AUMs on the existing grazing lease. Sheet pile and rock rip-rap were installed on the Carlson Creek ditch west as gradient controls to prevent erosion.
- 38 acres of hay meadow were irrigated on the **Pennock WHMA** and 29 miles of crucial winter range boundary fence were maintained. A contractor completed 25 acres of noxious weed control.
- 88 miles of boundary fence were maintained on the **Red Rim - Grizzly WHMA** and 3,852 AUMs of livestock grazing were utilized in forage reserve.
- Four miles of boundary fence were maintained on the **Forbes WHMA** and Albany County Weed and Pest sprayed two acres for noxious weeds.
- Six miles of crucial winter range fence were maintained on the **Laramie Peak WHMA** and Albany County Weed and Pest sprayed one acre for noxious weeds.
- Seven miles of boundary fence were maintained on the **Thorne-Williams WHMA**. Bids were awarded for two miles of woven wire fence conversion, and four acres of noxious weed control were completed by a contractor.
- 120 acres of warm season grasses and 10 acres of cool season grasses were irrigated under a pivot irrigation system by a contract farmer on the **Springer WHMA**. The farming contractor also planted, irrigated and harvested 120 acres of corn and 47 acres of an oats/peas hay mix. The farmer also irrigated 35 acres of small grain food plots that were left standing for wildlife forage. There were also 15 acres of dryland food plots left standing for wildlife. The noxious weed contractor sprayed 161 acres on **Springer, Bump Sullivan, and Mac's 40 WHMAs**. Three new plywood goose pit/blinds were constructed and installed under the Thaler south pivot to provide improved goose hunting to the public. Goose nesting structures were repaired and re-bedded with assistance from the Two Shot Goose Hunt volunteers. Six miles of boundary fence was maintained and the WGFD crew repaired and rip-rapped 1,600 feet of wetland dikes at the Wellnitz ponds.
- 50 acres of food plots were planted and left standing for wildlife propagation on **Table Mountain WHMA**. Goshen County Weed and Pest sprayed 27 acres of noxious weeds. Ten miles of boundary and interior pasture fences were maintained and 297 livestock AUMs were used by the BLM livestock grazing permittee.
- Three miles of boundary fence was maintained on **Cottonwood Draw WHMA**.
- A contractor sprayed five acres of noxious weeds, seven miles of boundary fence were maintained, and seven acres of corn were planted, irrigated and harvested through the Exchange of Use agreement with an adjacent landowner on **Rawhide WHMA**.

## **Laramie H&A Summary Totals**

- 612 acres of hay meadows were flood irrigated
- 85 acres of food plots were planted and flood irrigated for wildlife
- 256 acres were irrigated under pivot sprinkler system
- 15 acres of dryland food plots seeded
- 205 miles of WHMA crucial winter range fences were maintained
- 412 acres of noxious weeds were treated with herbicide
- 194 acres of contract farming were completed (130 acres of corn & 47 acres of oats/pea hay, 17 acres of food plots)
- 26 miles of fences were maintained around waterfowl and upland bird WHMAs

## **Information and Education (Goal 4) – Robin Kepple**

- **August**-Assisted at a habitat tour for the Platte Valley Habitat Partnership
- **September**-Stream trailer at Farmer's Market in Laramie to teach about stream health.
- Stream trailer presentation for members of the Wyoming Rural Water Association
- **October**-Education program with Laramie County Conservation District for about 40 elementary school kids from Snowy Range Academy in Laramie
- Wrote an article on Encampment River Below Riverside Stream Restoration Project for Wyoming Wildlife magazine
- **November**- Information booth at Muley Fanatics Banquet