

Final Completion Summary

This project is located Southwest of the town of Mitchell in the Bridge Creek Watershed in Southern Wheeler County. West Branch Bridge Creek runs through the participating landowners property and drains into Bridge Creek. Bridge Creek then drains into the John Day River. The area has been heavily encroached by Western Juniper. This has had a negative effect on water quality, quantity, and upland and riparian habitat. Of the seven limiting factors in the Bridge Creek Watershed, this project addressed flow, sediment load, temperature, and key habitat quantity. The project had elements from stream to ridgetop. These elements included riparian exclusion fence, brush management (juniper removal), spring developments, as well as aspen protection and restoration. Project partners included FSA, NRCS, CTWS, Wheeler SWCD, and OWEB.

Background

According to Oregon Department of Fish and Wildlife (ODF&W), the Bridge Creek Watershed is one of the largest steelhead producing sub-basins in the Lower John Day River. The John Day Sub-basin Plan also lists the Bridge Creek Watershed as a Level 1 priority for restoration. West Branch is a productive steelhead stream within the Bridge Creek Watershed. The loss of riparian vegetation has reduced shade along the stream and no longer provides large wood recruitment. Where streambanks are void of vegetation active erosion is taking place and affecting water quality. Decades of this type of erosion has also disconnected the stream from the floodplain and altered the natural flow regime. The juniper encroachment also denies the understory from capturing water as the canopy can intercept 0.6% of rainfall for every percent of juniper canopy [Potential Impacts on Western Juniper on the Hydrologic Cycle Eddleman & Miller 1991]. The encroachment of juniper and annual grasses has also affected terrestrial wildlife as native grasses, forbs, and keystone species such as Aspen leave the landscape. Junipers are highly competitive with the understory vegetation for water and nutrients, often reducing the productivity of grasses and forbs and increasing the amount of bare soil. [Thurow et. Al. 1997] The reduction of the herbaceous understory has reduced the food source for wildlife. The loss of the higher protein forbs is particularly detrimental to the elk, mule deer, and other smaller herbivores in the area that require higher protein contents in their food source. The Aspen communities on the landscape are disappearing as juniper invades the stands. Aspen communities provide considerably greater foraging and nesting opportunities for all types of wildlife than sites that have become converted to dense juniper [RF Miller 2001].

Work Done

Priority juniper was selected for removal based on Northern aspect slopes where soils are deeper and grass and forb communities are healthier. On slopes greater than 30%, juniper trees were hand fell and left to be jackpot burned at a later date. Slopes 30% and under were slated for removal through the Natural Resource Conservation Service (NRCS), and the Wheeler SWCD's North Slope Ochoco Regional Conservation Partnership Project (RCPP). Under RCPP, 80 acres of juniper were cut and piled to be burned at a later date. These practices breathe life into the established grass and forbs

communities and frees up valuable resources for them to thrive. Juniper removal may also influence flows to streams as less precipitation is intercepted by the juniper overstory and allowed to infiltrate the hydrologic system of the Bridge Creek Watershed. Utilizing OWEB funding, a total of 133 acres of juniper were hand fell, and 20 acres of range planting were completed throughout those 133 acres. Three declining Aspen stands were protected from livestock browse by erecting a standard 4 strand wire fence consisting of one smooth bottom wire and three sequential strands of barbed wire. Saplings within these livestock exclusion enclosures were also protected with heavy duty wire caging materials where individual saplings are surrounded with 18-24in diameter x 5-6ft tall welded wire mesh cages held in place with "T-posts" and/or rebar stakes. This will allow the saplings to reach an age of maturity where they are no longer vulnerable to wildlife browse. At that point in time, the caging can be removed and up-cycled to protect additional saplings within the enclosures creating age diversity among the Aspen stands. One spring development consisting of a 2ft diameter x ~ 2.5ft tall HDPE (High-Density Polyethylene) perforated pipe was used as a collection device and plumbed into two 528 gal rubber tire watering troughs via a buried 1 1/2 inch PVC pipeline. All the above ground plumbing installed was 1 1/2 inch galvanized steel to maintain longevity and prevent accidental breakage by livestock or wildlife. Again, partnering with NRCS under the RCPP, three additional watering systems were completed using identical construction methods with the exception of retrofitting the buried pipeline to an existing galvanized culvert collection device on one of the three systems. This collection device was functioning properly but the pipeline connecting to the trough was undersized and the trough itself was no longer functional. Additionally, this project treated 40 acres of road networks, and one 235 acre pasture with Plateau herbicide to prevent the spread of the invasive annual grass commonly known as medusahead rye. In the early 2000's, the landowners worked with Roger Sheley and a team of USDA-Agriculture Research Scientists to extensively treat the range ground on the property for this invasive annual grass, and through our project those efforts were continued at the management level.

Continuing with a landscape scale restoration approach, a total of 27.25 acres of West Branch of Bridge Creek were enrolled into the USDA/Farm Service Agency's CREP program. This allowed for the removal of 25.46 acres of invasive Western Juniper from the floodplain and riparian corridor. The 27.25 CREP acres were also fenced and excluded from the ranch's livestock grazing operations. Continued restoration efforts are planned in the form of installing an additional 1,200 woody riparian plantings with HD caging protection this coming winter-spring. The combination of these restoration practices will help secure stream banks reducing erosion, lower stream temperatures by providing shading, serve as a source for large wood recruitment increasing habitat complexity and diversity, and provide species diversity for a range of terrestrial wildlife use.

Changes from Proposed

A few project changes occurred throughout the course of implementation. At the time of project conception, a strain of weed suppressive bacteria was scheduled for widespread release in Oregon that was alleged to be an effective source of control with medusahead rye infestations. Especially at the levels of light infestations associated with the range ground on the Circle Bar Ranch. This bacteria was planned to be used as a part of the restoration strategy but soon after the award of this grant, the Oregon

Department of Agriculture restricted the use and sale across the State of Oregon. Instead of using the weed suppressive bacteria, the acreages were sprayed with an Imazapic solution, a more traditional herbicide.

Another project change that occurred during implementation, was a switch from using the USDA Farm Service Agency's CREP program to in-kind in order to develop one of the spring sites into a reliable water source. This was due to the fact that the USDA Natural Resource Conservation Service dropped cultural resource responsibilities, and it was known that spring developments most certainly trigger the need for an on site survey performed by a registered professional archaeologist. While the Wheeler SWCD had secured funding to hire a private archaeology firm to mitigate these situations, it was feared that this would too greatly hinder the planned restoration timeline.

The final project change involved the completion of the proposed metrics outlined in the application. Securing reliable contractors to complete proposed juniper work has become more difficult in Wheeler County in recent years. One issue that arose with this project and the proposed OWEB funded portion of the juniper reduction, was the budgeted price per acre. Even though the landowner was willing to compensate the contractor and additional \$49.18/acre, the contractor had a tendency to prioritize other work ahead of this project, especially during warmer months when fire danger was prevalent. Nearing the project end date, this ranch entered into sale negotiations with an interested buyer. This new prospective owner did not like that juniper was only being hand fell and left, rather than piled where it could be jackpot burned at a later date. This resulted in the immediate halt of all juniper cutting. Since that time, the Wheeler SWCD District Manager and NRCS District Conservationist have had a conference call with the current owner and the new prospective buyers. During this conference, it was decided to allow this OWEB project to close and not pursue an additional time extension, but to also hold off on the completion of the sale until the NRCS/RCPD cut & pile contracts can be fulfilled.

Public Awareness or Education

Aspects of this project have been featured in displays presented at the Wheeler SWCD's annual meeting, and at the Wheeler County Fair and Rodeo.

Lessons Learned

One lesson learned throughout project implementation stemmed from project management with contractors. One of the contractors selected has a very good reputation with spring developments. However, during the development of the OWEB grant funded site, a different collection device could have been installed. This contractor preferred to use a universal "box" or perforated barrel type collection device where this particular site might have benefitted from the use of a specialty collection device. This resulted in the contractor trying to "chase" the source of the water and gain more flow, rather than utilizing what was slowly seeping to the ground surface. In my opinion, a longer, more shallowly buried

"drain-type" collector rather than a "box" collection device would have better served this site.

Recommendations

The Wheeler SWCD would suggest working closely with contractors and landowners to fully explore all construction options to select the most appropriate methods for site specific project construction.

Aquatic Habitat

Wheeler SWCD has read the Oregon Aquatic Habitat Restoration and Enhancement Guide and all project components are within compliance.

Special Conditions

Special Conditions for this project are fulfilled within the uploads section.

Funding Sources

Source	Identifier	Cash	InKind Type	Inkind
Landowner	Landowner	\$0.00	Labor	\$10,161.00
Landowner	Landowner	\$6,541.00		\$0.00
OWEB	218-6008-15623	\$47,267.82		\$0.00
USDA Farm Services Agency (FSA)	Conservation Reserve Enhancement Program	\$27,955.00		\$0.00
USDA-NRCS	RCPP	\$27,297.00		\$0.00

Totals

OWEB Amount	Non OWEB Cash	Inkind Total	Non OWEB Amount	OWEB Match	Total Project Cost
\$47,267.82	\$61,793.00	\$10,161.00	\$71,954.00	152.0%	\$119,221.82

Uploaded Files

Image Type	File Name	Description
Photo Point	PA062593.JPG	Overview of juniper hillside to be treated.

Photo Point	PC096445.JPG	Landscape view of juniper removal along hillside.
Photo Point	PA062598.JPG	Showing typical understory and canopy cover of juniper in project.
Photo Point	PC096392.JPG	Showing juniper treatment along northern slope with healthy bunchgrasses.
Photo Point	PA062592.JPG	Close up of juniper to be treated.
Photo Point	PC096451.JPG	Close up of treated juniper and bunchgrass communities.
Photo Point	PA062603.JPG	Overview of spring to be developed through OWEB funding.
Photo Point	PC096373.JPG	View of spring development through OWEB funding.
Photo Point	P9168653.jpg	Overview of watering troughs through OWEB funds.
Photo Point	PA102675.JPG	Silted in shallow pond to be replaced with spring development, and pipe to trough system.
Photo Point	IMG_1969.JPG	Spring box to be re-worked.
Photo Point	P9168619.JPG	Two of four springs developed by match through NRCS.
Photo Point	IMG_1971.JPG	Spring to be developed to increase stock water, and help distribute grazing patterns.
Photo Point	P9168635.jpg	Three of four springs developed by match through NRCS.
Photo Point	IMG_1967.JPG	Spring to be developed through NRCS funding.
Photo Point	P9168627.jpg	View of fourth spring development funded by match.
Photo Point	PA062635.JPG	Overview of Quaking Aspen Stand to be protected with fencing.

Photo Point	P5060508.JPG	View of Quaking Aspen Stand protected with exclusion fencing.
Photo Point	PA243053.JPG	View of Quaking Aspen Stand to be protected with fencing and tree cages.
Photo Point	IMG_2432.JPG	View of Quaking Aspen Stand and saplings protected with fencing and HD caging.
Photo Point	PA243051.JPG	Quaking Aspen Stand to be protected with fencing.
Photo Point	P4130339.JPG	Overview of Aspen Stand protected with exclusion fencing.
Photo Point	P5192220.JPG	Showing juniper encroachment and soil erosion in Carroll Creek.
Photo Point	PC096486.JPG	Overview of juniper removal in Carroll Creek CREP project area.
Photo Point	P5192221.JPG	Overview of juniper to be removed in Carroll Creek riparian area.
Photo Point	PC096499.JPG	Landscape view of juniper treatment in Carroll Creek floodplain.
Photo Point	PB013063.JPG	View of juniper in the riparian area of West Branch Bridge Creek.
Photo Point	PC096507.JPG	View of juniper removal along West Branch Bridge Creek.
Photo Point	PC096419.JPG	One of four springs developed by match through in-kind.
Photo Point	PA062602.JPG	Overview of trough placement.
Map	Final Project Components_V2.pdf	Map of Final Project Elements
Exhibit B	218-6008 EXHIBIT B Final.pdf	