

# ENVIRONMENTAL ASSESSMENT OR-054-02-027

TITLE: Sheep Mountain and Owens Community Sagebrush Steppe Restoration Project (juniper reduction)

EA NUMBER: OR-054-02-027

RESOURCE AREA: Central Oregon Resource Area

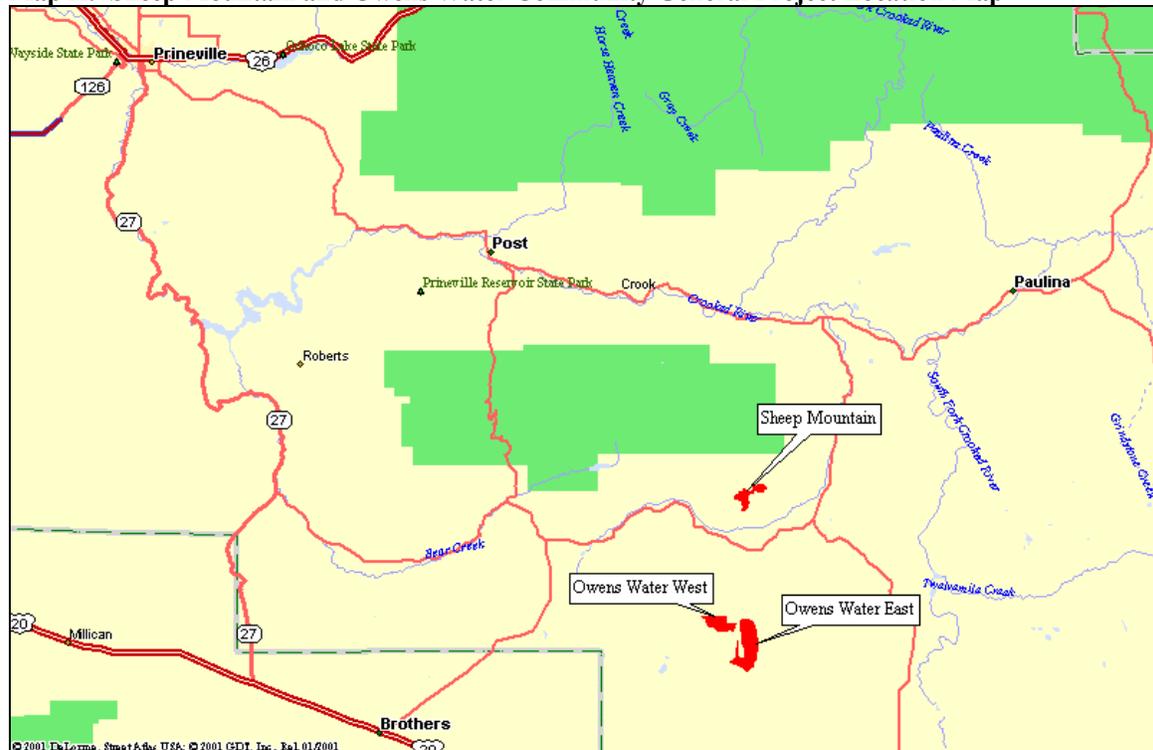
BUREAU OF LAND MANAGEMENT (BLM) OFFICE: Prineville District

## PROJECT LOCATION:

Sheep Mountain project area lies approximately 14 miles southwest of Paulina Oregon, in Township 18 S., Range 21 E., Sections 28,29,30,31,32.

Owens Water project area lies approximately 25 miles southwest of Paulina Oregon, in Township 19 S., Range 20 E., Section 25, Township 20 S., Range 21 E., Sections 5,6. Township 19 S., Range 21 E., Sections 29,30,31,32.

**Map A: Sheep Mountain and Owens Water Community General Project Location Map**



## **INTRODUCTION**

This Environmental Assessment (EA) has been prepared for the Central Oregon Field Office's proposed **Sheep Mountain and Owens Community Sagebrush Steppe Restoration Project**. The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare and Environmental Impact Statement (EIS) or a "Finding of No Significant Impact" (FONSI). A FONSI is a document that briefly presents the reasons why implementation of the proposed actions will not result in "significant" environmental impacts (effects) beyond those already addressed in the Brothers/La Pine Resource Management Plan (Brothers/La Pine RMP, July 1989). If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an EIS would be prepared for the project.

A decision record (DR) may be signed following public comment on the EA to document the decision.

### **1.0 PURPOSE OF AND NEED FOR ACTION**

#### **1.1 Proposed Action**

The proposed action is to conduct restoration work (juniper reduction) on approximately 300 acres within the Sheep Mountain project area and on approximately 1600 acres within the Owens Water Community project area to improve the health of sagebrush steppe habitat communities within these project areas, to comply with the Brothers/La Pine Resource Management Plan (RMP) and Rangeland Program Summary Record of Decision (ROD), and to meet the objectives of the National Fire Plan.

#### **1.2 Project Locations**

Sheep Mountain project area lies approximately 14 miles southwest of Paulina Oregon, in Township 18 S., Range 21 E., Sections 28, 29, 30, 31, and 32.

Owens Water Community project area lies approximately 25 miles southwest of Paulina Oregon, in Township 19 S., Range 20 E., Section 25, Township 20 S., Range 21 E., Sections 5,6. Township 19 S., Range 21 E., Sections 29, 30, 31, and 32.

The project area locations closely conform to the boundaries of allotments by the same name and referred to in the Brothers/La Pine RMP and ROD. However, the boundaries of the project areas, particularly in the Owens Water Community project area, expand beyond the boundaries of the actual allotments.

#### **1.3 Need**

The increased growth of juniper into the Sheep Mountain Community and Owens Water Community project areas has caused an imbalance in the vegetative composition when compared to the ecological site potential. An ecological site, as defined for rangeland, is a distinctive kind of land with specific physical characteristics that differs from other kinds of land in its ability to produce a distinctive kind and amount of vegetation. An ecological site has a characteristic plant community, which is typified by an association of species that differs from that

of other ecological sites in the kind/or proportion of species, or in total production. An ecological site also has evolved with a characteristic fire regime. Fire frequency and intensity contribute to the characteristic plant community of the site.

The movement of these project areas toward their ecological site potential would improve wildlife habitat and diversity, improve riparian vegetation and stream channel conditions, and assist in moving the areas toward fire cycles that could be maintained (Central Oregon Fire Plan [Chapter 3, pgs 3-6] and Federal Land Management Policy Act [Sec 102(43 U.S.C. 1701) (a) (8)]).

The Prineville District Central Oregon Resource Area also has a need to comply with the objectives for the maintenance of wildlife habitat, rangeland health, riparian vegetation and stream conditions, and juniper control in the Brothers/La Pine RMP and Rangeland Program Summary ROD (pgs. 88-90).

Based on resource specialists' field reviews and in order to meet the objectives of maintaining wildlife habitat, rangeland health, riparian vegetation, and stream conditions in the Brothers/La Pine RMP/ROD this EA proposes to conduct additional acres of juniper control in the project areas than what was proposed in the RMP/ROD. However, throughout the planning area covered by the Brothers/La Pine RMP/ROD juniper control acres are well below the total acres proposed within the RMP/ROD.

The RMP/ROD proposed 1000 acres of juniper reduction for the Sheep Mountain allotment and 1050 acres of juniper control for the Owens Water Community allotment. Under this proposed action the Sheep Mountain allotment would have had juniper control work (prescribed fire or conducted on 300 acres, which would be in addition to previous prescribed burning for a cumulative total of approximately 2400 acres, and Owens Water Community would have juniper control conducted on approximately 1600 acres.

The Brothers/La Pine RMP also stated that forb composition (measures as percent of cover) should be 20 to 25 percent for John Day range sites and 10 to 15 percent for High Desert range sites (Brothers/La Pine RMP, pg. 89). Current field surveys indicate that the sites are not meeting the forb composition measure as stated in the RMP. Based on resource specialists' reviews of the project areas additional acres of juniper reduction, than those proposed in the Brothers/La Pine RMP, are necessary to move the sites toward those forb composition measures described in the RMP/ROD.

#### **1.4 Purpose and Objectives**

The purpose of the project is to maintain or improve the ecological condition and watershed health and function in these project areas, with the following objectives:

- Move the sites toward the RMP's goal of forb composition (measures as percent of cover) of 20 to 25 percent for John Day range sites and of 10 to 15 percent for High Desert (RMP, pg. 89);
- Reduce erosion by increasing herbaceous vegetation and shrubs;
- Improve watershed hydrologic function and stream channel conditions by improving infiltration and reducing peak streamflows;

- Retain large structure within the project areas to maintain visual characteristics, wildlife habitat diversity, and as represented by the ecological site potential (RMP, pg. 89);
- Reduce the potential for reestablishment of invasive or increasor species (Central Oregon Fire Management Plan, Chapter 3 pgs. 3-6); and
- Maintain or enhance visual quality through project design and layout by visually mimicking historical fire-induced patterned vegetation mosaics to blend with the surrounding landscape (RMP pg. 90).

## 1.5 Issues

### ***How may big game hiding and foraging cover be maintained or enhanced in the area?***

Juniper cover affects big game habitat in two primary ways:

1. *Juniper provides visual screening thus increasing habitat security.* Habitat security is a measure of how willing an animal is to use a particular habitat based on its' feeling of vulnerability. Habitat security is primarily affected by two elements: 1) the amount of human access/use in an area and 2) the level of visual screening. Hiding cover is a means of analyzing the level of visual screen and measuring the effects to habitat security. Hiding cover is defined as the ability of the vegetation to conceal 90 percent of deer or elk at 200 feet or less. The removal of juniper in the project areas should consider this requirement for big game hiding cover.
2. *At high densities juniper competes for resources and can limit forage availability.* Juniper limits the production of grasses and shrubs primarily by competing for water resources. The density of juniper occupation that limits the amount of grasses and shrubs depends upon the depth and water holding capacity of the soils. Reduction in the amount of juniper occupation in the project areas would be expected to increase the production of forage species, and subsequently allow wildlife more abundant forage.

### ***Should the BLM mechanically remove juniper in the Sheep Mountain project area where a prescribed burn already occurred? How would this help the project area return to a more appropriate fire regime cycle?***

The area is classified as a Fire Regime II, which has a short fire return interval of 15 to 40 years and has a stand replacement type of fire represented by grass and shrub types. The goal of fuels management for the area is to return the area to a Condition Class 1, which is described as “ready to burn now, with enough fine fuels available to carry a fire (Central Oregon Fire Management Services Fire Management Plan, pg.5).”

A prescribed burn was performed in the Sheep Mountain area in September of 1999. The perimeter of the burn covered approximately 2,640 black acres and resulted in successful juniper kill on approximately 80 percent of the area (approximately 2112 acres). This burn converted the Condition Class 2 areas to Condition Class 1. Condition Class 2 areas are described as “narrow window for fire only restoration, juniper encroaching are 4 feet tall or less or old sage stand with few grasses or forbs to carry a fire (Central Oregon Fire Management Services Fire Management Plan, pg. 5).”

The areas that did not burn in 1999 are in a Condition Class 3, which is described as “site occupied by exotic species (weeds) or advanced juniper conversion with few fine fuels,

or severe soil damage. Mechanical entry or herbicide may be needed (Central Oregon Fire Management Services Fire Management Plan, pg. 5).”

These areas did not burn previously, not because they are historically fire resistant, but because the advanced juniper conversion of the area has reduced ladder fuels such as grasses and shrubs that would normally carry a fire.

***How could livestock grazing be managed following the removal of juniper from the sites in order to continue to meet the objectives stated in this environmental assessment?***

To continue to meet the objectives stated in this environmental assessment the project area pasture could use a rest or deferred rotation grazing system. Under deferred rotation the pasture would be used each year, but only after seed ripe. Generally grazing use would begin in the early fall when lower temperatures occur thus giving better livestock distribution through the pasture. Under the rest rotation system, in a four year period, the pasture would be grazed once during the critical growing season (CGS), twice before and after the CGS and receive a full grazing season rest once. Both of these systems allow key species to complete the growth stage and should allow for an increase of key species after cutting of juniper from the site. Key species within the project area are the perennial grass plants; Idaho fescue (*Festuca idahoensis*), Bluebunch wheatgrass (*Pseudoroegneria spicata ssp. spicata*), Thurbers needlegrass (*Stipa thurberiana*), and Prairie junegrass (*Koeleria cristata*). Grazing systems, which allow key species to complete the growth stages generally, result in increases or maintenance of key species. An increase in key species would help achieve the objectives 1,2,3, & 5 listed in this EA.

***How are junipers affecting soil productivity? How can soil productivity be maintained if junipers are removed?***

Juniper has been gradually extending its range, numbers, and canopy coverage into the mountain big sagebrush communities of this treatment area. Juniper is an efficient competitor for soil moisture not only in the deeper subsoil layers but also in the upper soil layers as well. Juniper has adapted itself well to the 10 to 18 inch precipitation zone competing intensely with the big sagebrush communities. If not checked Juniper will eventually dominate the plant community at the expense of shrub, grass and forb layers. Shallow soils, less than 18 inches to hard pan or unfractured bedrock, make the competition for available soil water even more intense. A healthy grass cover is necessary to provide for water infiltration, organic matter build up, and soil sediment holding capacity (Gaither, Buckhouse 1981). Reducing the Juniper coverage has been shown to be an effective way to benefit perennial grass coverage (Rose, Eddleman 1997).

To Maintain Soil Productivity:

- Check the invasion of juniper by reducing juniper numbers.
- Use a planned grazing system to maintain the vigor, health, composition and amount of native perennial grasses.
- Reduce early spring vehicle traffic when the ground is wet, soil strength is low and rutting hazard is high.
- Limit construction of new roads and trails into the area to reduce rutting, soil compaction and soil disturbance hazards.

- Reduce the chance of intense wildfire, which could damage the existing grass and shrub components allowing the spread of annual grass with less topsoil holding capacity.
- Reduce the need for mechanical entry, which could increase compaction, rutting, and disturbance of micro biotic crusts that help protect the soil surface from erosion and topsoil loss.

***Could the removal of juniper increase the amount or distribution of noxious weeds?***

A botanical examination has been done on the project area and no noxious weeds were found to exist in or near the project area. Juniper cutting generally increases the amount of available soil moisture for other plant species to use. This increase in available soil moisture would help increase the vigor and number of key species (discussed in #3 above) thereby improving ecological condition within the project area. If noxious weeds were to show up later in the area, improved ecological condition would make it harder for most weed species to establish. Juniper cutting should have a strong positive impact in keeping noxious weeds out of the project site.

However, machinery used during juniper reduction may have the potential to carry noxious weed seed from other locations

***How should juniper trees that occupied the project areas prior to large-scale fire suppression and livestock grazing activities be retained while still meeting the objectives of the Purpose and Need?***

Historically some areas were more prone to fire return than others. This provided for a diversity of plant communities. Areas with long periods between fire return intervals had retained juniper trees. Other areas had mosaics including no juniper occupation, pockets of juniper, and savanna like juniper occupation. Primarily the project areas ecological sight potential describes savanna type occupation; however there were areas of higher juniper occupation and areas with no juniper occupation.

***What are the appropriate levels and distribution pattern of juniper trees to meet desirable values while moving closer to the ecological site potential?***

Large diameter and old age juniper has several desirable values. These include visual aesthetics, habitat structural diversity, wildlife niches, boughs for Christmas wreaths, and berries.

## **2.0 DESCRIPTIONS AND COMPARISONS OF THE ALTERNATIVES**

### **2.1 No Action Alternative**

The No Action Alternative is required by NEPA and provides a baseline for the comparison of alternatives. This alternative represents the existing condition. Under the No Action Alternative current management practices would continue and no additional juniper control would occur within the project areas in the near term. Future actions in the project area would not be precluded and could be analyzed under a subsequent EA.

## **2.2 Flexible Pattern Manual Removal Action Alternative (Preferred Alternative)**

This alternative would involve the manual removal (chainsaw) of juniper trees 18-inches dbh (diameter at breast-height) and less across the project areas (See Maps B and D).

In locations where water is present some trees greater than 18-inches dbh would be removed due to the number of larger trees in those areas. The presence of water in riparian areas has caused a larger number of big trees to develop and create a closed canopy, which has more severely limited the growth of grasses and shrubs in riparian areas.

Key wildlife habitat areas requiring high juniper cover/density would not be cut. These areas include rock outcrops, crossing areas, road edges, ridgelines and tops, roosting/nesting sites, and those pine sites where vegetation laddering/complexity is needed.

Areas that have multiple access points to the same location may be reduced through the placement of lopped and scattered juniper material across these multiple routes, providing access is maintained, especially to the Owens Water – South Pole Creek area where historic and current recreational rock collecting is occurring. A two-growing-season rest period from livestock grazing in the project areas would occur following treatment.

## **2.3 Unit Treatment Manual Removal Action Alternative**

This alternative would involve the manual cutting (chainsaw) of all juniper trees within designated units, with a maximum unit size of 100-acres (See Maps C and E).

## **2.4 Features Common to All Action Alternatives**

All action alternatives would comply with the Brothers/La Pine RMP by following the guidelines for juniper and shrub control projects (RMP, pgs. 88-89) and all the Standard Operating Procedures for juniper control projects (RMP, pg. 90).

The guidelines for juniper control projects include the following:

1. Project layout and methods of control used would be such that the projects would blend into the natural environment as much as possible.
2. Mosaic patterns would be incorporated into all control projects.
3. Juniper control projects would be restricted to no more than 60 percent removal of juniper trees with leave areas concentrated on sites providing optimum thermal cover. Areas within the 40 percent leave zone should constitute a minimum of 5 acres each and be evenly distributed.

The standard operating procedures for juniper control projects (the complete list is located on pg. 90 of the RMP) state that all vegetation manipulation actions would be consistent with the BLM's Visual Resource Management criteria, surface disturbance would be held to a minimum and would be rehabilitated to blend with surrounding soil surfaces and reseeded as needed, and that the cost effectiveness of vegetation treatments would be analyzed before any land treatment is conducted.

In addition for all action alternatives BLM contract and cooperator cutting activities would be subject to the following requirements:

- 1 Trees with particular value for visuals, wildlife (cavities, nests, etc.), or that have historical significance (survey trees, blaze trees, juniper structures, etc.) would be retained. Only juniper trees would be cut.
- 2 All known or newly located raptor nests would have an appropriate leave-buffer and seasonal restrictions applied.
- 3 Unless otherwise authorized by the BLM wildlife biologist, no dead trees would be felled.
- 4 Cutting activities would be scheduled to minimize compaction and rutting to road surfaces.
- 5 BLM contracts/cooperator agreements would include a provision for stump heights no greater than 10 inches. To increase wildlife habitat diversity one stump per acre would be left at a height of 48 inches or greater. These stumps should be chosen from the largest diameter trees cut, and would have all live limbs removed.
- 6 If possible, leave patches would be on sites that show indicators of understory vegetation health and lower bare soil interspace components.
- 7 If during the course of layout work, motorized vehicle-caused resource damage sites (such as mud-bogging or trash dumping sites, or user-created trails through critical habitats or other sensitive areas) were discovered, the BLM recreation specialist would be consulted concerning whether or not slash treatment should be applied on the site; and if so, actions would be taken accordingly.
- 8 Existing roads would provide vehicle access to cutting areas. No new road or trail construction would be authorized in connection with this project. BLM contractor use of rubber-tired off-highway vehicles would be subject to BLM approval and restrictions. All-terrain vehicles (ATVs) would be the only vehicles allowed off-road. No pickups would be allowed.
- 9 In the event of catastrophic alterations of existing juniper cover (such as could result from a large wildfire); planned cutting acreages would be reduced to a level necessary to meet project objectives and mitigation requirements.
- 10 Project activities would be canceled or modified as necessary if a new wildlife species is listed or found to use the project area.
- 11 In juniper cutting units, an average one wildlife cover pile per acre would be created by directionally falling three or more junipers to a common point.
- 12 Within the Sheep Mountain portion of the project area, trees felled into all stream channels shall not exceed 8-10 inches diameter-at-breast-height (dbh) and shall not exceed 1 stem/75 feet of channel length, on average. Trees felled into channels should be oriented pointing upstream at a 20-30 degree angle. The exception would be all trees  $\leq$ 2-3 inches dbh, which would have no limit on number, but should still be felled at a 20-30 degree angle.
- 13 Within the Owens Water Community portion of the project area, trees felled into all stream channels shall not exceed 6 inches dbh and shall not exceed 1 stem/75 feet of channel length, on average. Trees felled into side gullies and tributaries shall not exceed 4 inches dbh. Trees felled into channels should be oriented pointing upstream at a 20-30 degree angle. The exception would be all trees  $\leq$ 2-3 inches dbh, which would have no limit on number, but should still be felled at a 20-30 degree angle.
- 14 Juniper cutting would not occur within 50 feet of springs.

## 2.5 Comparison of Alternatives

**Table 1: Comparison of Alternatives For Objectives**

Objectives	Alternatives		
	No Action	Flexible Pattern (2.2)	Unit Treatment (2.3)
Movement of site toward Forb/Shrub/Grass component goals - Ecological Site Potential (amount and distribution of plant cover –plant composition and community structure)	<i>Will continue to increase juniper numbers and move further from site potential under a present burn frequency.</i>	<i>Reduce juniper numbers and increase shrub, forb and grass numbers. Would meet forb, shrub, grass, and tree distribution goals. Vegetative diversity would be greatest with this alternative.</i>	<i>The removal of all junipers in some areas with a high coverage of juniper in other areas would cause the untreated areas to continue to increase in juniper numbers and move the location further from site potential (similar to no action). The shade tolerant grasses such as Idaho fescue would decline in cleared areas.</i>
Reduce erosion by increasing herbaceous vegetation and shrubs	<i>Erosion can be expected to increase as juniper canopy increases to 40 percent and bare ground increases to more than 30 percent.</i>	<i>Would maintain or increase shrub and grass cover and maintain or decrease bare surface erosion levels through the project area.</i>	<i>Would maintain or increase shrub and grass cover in areas where juniper has been removed. Bare surface erosion and sedimentation could increase in untreated areas as canopy levels approach 40 percent and bare surface levels increase to more than 30 percent.</i>
Improvement of Hydrologic Function (upland watershed conditions – Rangeland Health Standards and Guides Criteria)	<i>Sheet erosion, overland flow, and peak flows would continue to increase; infiltration would decrease.</i>	<i>Sheet erosion, overland flow, and peak flows would decrease; infiltration would increase in treated areas. Untreated areas would continue to have sheet erosion, overland flow and increased peak flows.</i>	<i>Sheet erosion, overland flow, and peak flows would decrease; infiltration would increase in treated areas. Untreated areas would continue to have sheet erosion, overland flow and increased peak flows.</i>
Maintenance of large structure (number of trees remaining per acre and cover patterns)	<i>No change from current distribution and pattern</i>	<i>Within the cut units plot data indicates that 2 – 13 trees per acre greater than 18” dbh would remain. Additional trees with special values would be left also. These trees would then have the potential to grow into large structure.</i>	<i>Within the cut units a minimal number of trees would be retained based on wildlife use or other special circumstances, all others removed. Large diameter trees would still remain in the no cut areas.</i>

**Table 1: Comparison of Alternatives For Objectives (Continued)**

Objectives	Alternatives		
	No Action	Flexible Pattern (2.2)	Unit Treatment (2.3)
Maintenance of site (# of trees left for seeding/ percent difference between where the site might be and the site's potential)	<i>Juniper expansion would continue due to the number of seed bearing trees remaining on site.</i>	<i>Within the cut units there would be fewer seed producing trees than currently exist, but more than alternative 2.2. Felled juniper trees would increase the number of nursery sites available for young juniper to become established. Expected increases in grass cover could limit future establishment of juniper seedlings.</i>	<i>Within the cut units there would be a lower number of seed bearing trees remaining. Seed distribution by animals would still occur; however travel distances would be greater, reducing the potential rate and extent of distribution. Felled juniper trees would increase the number of nursery sites available for young juniper to become established. Expected increases in grass cover could limit future establishment of juniper seedlings.</i>
Maintenance or enhancement of visual quality through project design and layout. (contrast between cut areas and adjacent areas; retention of form, line, color, and features of the landscape)	<i>No change in visual quality of public lands within the project areas.</i>	<i>Short-term visual contrasts between cut and live juniper. There would be less contrast between cut and live juniper due to less juniper trees being cut and less trees being cut than the Unit Treatment Alternative. Slight increase in visual quality over the long term resulting from an incremental increase in vegetative diversity in the project areas.</i>	<i>Same as the other action alternative, however there would be higher visual contrasts both in the short and long term due to large areas having cut juniper and more juniper trees being cut. The result of this alternative would be high contrasts between the cut and the uncut juniper landscapes, especially on the southeast slopes of Sheep Mountain.</i>

**2.6 Alternatives Considered, but Eliminated from Detailed Study**

The following alternatives were considered, but were eliminated from detailed study because they did not fit with the objectives of the proposed action as described in the Purpose and Need (Sections 1.2 and 1.3).

**2.6.1 Public Firewood Cutting Alternative**

Under this alternative the areas would be opened to public firewood cutting and juniper would be removed only through permits obtained by firewood cutters. This alternative was considered, but eliminated from detailed study because the remoteness, lack of roads, and steepness of the terrain would make it impractical for a woodcutter to supply his/her needs in the project area when there closer and more accessible areas. If the necessary amount of juniper to substantially reduce juniper presence in the project areas was not accomplished, the objectives of the Purpose

and Need for the proposal would not be met, therefore this alternative was eliminated from detailed study.

2.6.2 Prescribed Burning Alternative

Under this alternative all areas that did not burn in the previous prescribed burns in the allotments would be burned again. This alternative was considered, but eliminated from detailed study because the project areas, particularly the Sheep Mountain project area, have limited ground fuels to properly carry fire to the juniper trees. Fire would not spread and subsequently reduce juniper presence and accomplish the objectives found in the Purpose and Need for the proposal, therefore this alternative was eliminated from detailed study.

2.6.3 Mechanical Removal

Under this alternative juniper would be removed from the project through the use of a machine/tractor. The steep terrain of the project areas would limit the areas that could be treated and the amount of juniper that could be removed. In addition, soil productivity and erosion may be negatively affected through rutting and compaction of soils that are currently not rutted or compacted. Therefore, this alternative would not meet the objectives of the Purpose and Need and was eliminated from detailed study.

### **3.0 AFFECTED ENVIRONMENT**

The Sheep Mountain project area lies about 14 miles southwest of Paulina, Oregon (See Map A). Within its boundary are about 6332 acres of BLM-administered public land. No National Forest land is present here.

The Owens Water Community project area lies about 25 miles southwest of Paulina, Oregon (See Map A). Within the proposed project boundary are about 4389 acres of BLM-administered public land. No National Forest Land is present here. The Owens Water Community project area contains approximately 4389 acres.

#### **3.1 Soils and Vegetation**

##### **3.1.1 Soils**

Sheep Mountain: Soils in the Sheep Mountain area formed over Columbia River basalt above elevations of 4500 feet and over the John Day volcanic and sedimentary formations below 4500 feet. In this project area, soils have formed on predominately south, southwest, and west aspects, which produce lower effective soil moistures, and thinner soil surface horizons that are lower in organic matter content. Soil depths range from 12 to 45 inches to a hardpan or bedrock. Surface textures are mostly loams with gravel sized rock fragment content on the lower slopes and coarser stone and cobble sized fragments on the steeper slopes above. Subsoil textures are mostly clay loams with rock fragment content ranging from 5 to 55 percent.

North aspects have higher effective soil moisture and are cooler with higher organic matter content. Soil depths range from 40 to 60 inches to bedrock. Rock fragment content ranges from 10 to 45 percent through out the soil profile. There are about 30 acres of north aspect sites on Sheep Mountain.

Owens Water Community: Soils in the Owens Water Community area are formed in volcanic rocks similar to the Clarno and John Day geologic formations although slightly less weathered. Soils associated with the shallow pumice hills ecological site have sandy loam surface textures with 5 to 20 percent cobble and gravel sized rock fragments. Subsoil textures are Sandy clay loams and clay loams and are mostly from 10 to 20 inches deep to hardpan or bedrock. There are about 449 acres of shallow pumice hill sites in the Owens Water Community area.

Soils associated with the stony loam site have loam surface textures and clay loam subsoil textures mostly from 20 to 40 inches to bedrock. There are about 583 acres of stony loam sites in the Owens Water Community area. There are small bands of inter-layered clay deposits associated with the Owens Water sites, which develop wide cracks to the soil surface when dry and have a low sage shrub cover.

Soils on the north and south aspects are similar to the aspect sites in the sheep mountain project area.

Soils in this area are formed over Columbia River basalt above elevations of 4500 feet and over the John Day volcanic and sedimentary formations below 4500 feet. In this project area, soils have formed on predominately south, southwest, and west aspects, which produce thin soil surface horizons that are lower in organic matter content. Soil depths range from 12 to 45 inches to a hardpan or bedrock. Shallow soils predominate. Soil surface textures are composed of ash-influenced loams and sandy loams with a stone and cobble sized rock fragment content ranging from 5 to 55 percent. Subsoil textures are clay-loams or clays. Due to the dry aspects, shallow soil depths, and lower organic matter content, these soils would be more sensitive to overstocked juniper stands. Protective grass cover would be reduced in the overstocked stands; soil erosion would increase, further reducing overall soil productivity for these areas.

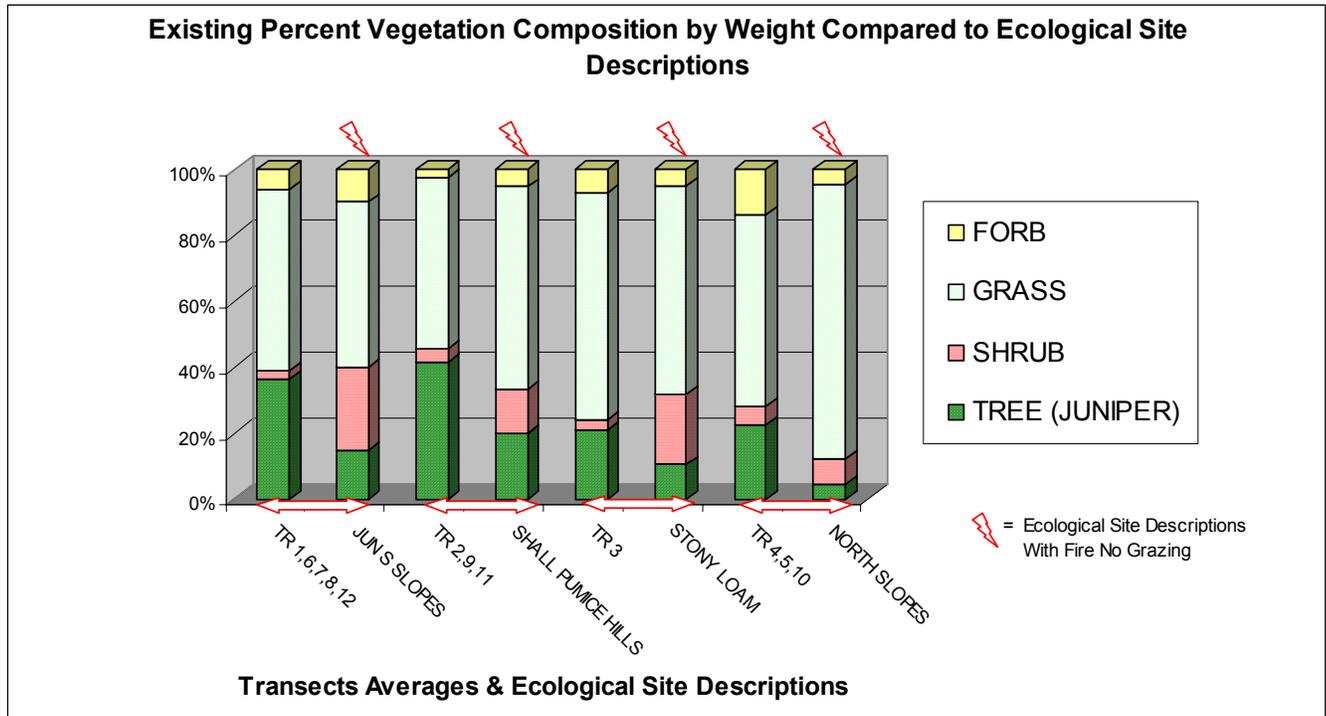
### **3.1.2 Vegetation**

The vegetation in both project areas is dominated by a grass/forb/shrub mix with large areas of juniper overstory of varying density and age class. Grasses include bluebunch wheatgrass, Thurbers needle grass, Idaho fescue, Sandburg bluegrass, prairie junegrass, and bottlebrush squirreltail. Shrubs include mountain and basin big sagebrush, low sagebrush and rabbitbrush. The dominant tree is juniper. Ponderosa pine, aspen and riparian community types occur in small pockets outside of the project area particularly near Sweet Marie Spring in the northeast part of the Sheep Mountain project area.

Step-point transects were run in the project area to correlate the current vegetative condition to the Natural Resources Conservation Service Ecological Sites Descriptions ESD's (Franzen 1996). The transect summaries and notes are referenced and identified on maps in the soil and vegetation report, which is a part of the administrative record for this EA and available for review at the BLM Prineville District Office.

In summary, the step-point transects show that Juniper is present in slightly more than twice the amount that is typical for the selected ecological sites and that shrub amounts are 2 to 8 times less than what is usual (Chart 1).

**Chart 1 Comparison of Existing Condition Step Point Transects with NRCS Ecological Sites Descriptions**



Special Status Plants: Green-tinged paintbrush is suspected to be in the project area. It is normally associated with healthy sagebrush plants, with which it may have a symbiotic relationship. Given its current status, it is necessary to protect these plant populations, as well as to promote sagebrush health in surrounding areas.

Noxious Weeds: A botanical examination has been done on the project area and no noxious weeds were found to exist in or near the project area.

### 3.2 Streams and Riparian Areas

Within the Sheep Mountain portion of the project area, there is one stream segment of interrupted perennial stream approximately 0.3 miles in length, and several miles of intermittent and ephemeral streams. In general, these channels are characterized by two basic channel types: steep, V-shaped channels that are entrenched (Rosgen type A), and less entrenched and lower gradient channels more typical of Rosgen type B (Rosgen, 1996). Gradients generally range from 8-14 percent, up to 25 percent in the headwaters. Stream channels are currently stable. Alluvial deposits ranging in size from 20-50 yd<sup>3</sup> consisting of cobble, rubble, and small boulders have deposited in the channel bottom following transport during high flow events. The channel bottom of the interrupted perennial stream channel segment is thickly vegetated with rushes and sedges and is vegetated with small, scrawny juniper encroaching into the channel sideslopes. There are several large diameter, old trees

within the channel bottom that appear to have escaped previous fires due to the moist conditions.

Within the Owens Water Community portion of the project area, there is approximately 1 mile of intermittent stream, and several miles of ephemeral streams. In general, these streams are characterized by two channel types: entrenched, trough shaped channels with wide channel bottoms typical of Rosgen type F, and entrenched V-shaped channels typical of Rosgen type G channels. Both range in gradient from 2-6 percent in the lower reaches, up to 10 percent in the headwaters. These stream channels are very unstable, with non-cohesive channel banks and bottoms consisting predominantly of sand. They have downcut 2-5 ft. and are currently vertically stable. However, they are laterally unstable, with continued cutting of the channels into the surrounding side slopes.

### **3.3 Wildlife**

The project area contains habitat for a variety of species, including big game, upland birds, and special status species. Within the High Lava Plains province, there are four basic plant community types that provide habitat for potentially 136 bird species, 54 mammals, and 19 herptiles. These include the sagebrush steppe, juniper steppe, aspen groves, and riparian communities. It is well known that these community types are used for the various life processes of feeding, reproduction, and cover, and that structural diversity is very important within these community types.

Rocky Mountain elk and mule deer are species of special interest to public land users and, as such, are species with emphases in the Brothers/La Pine RMP. The deer and elk populations for the ODFW-designated Maury Unit, of which this project is a part, is currently slightly below its deer and elk population Management Objective (Eden, 2000). The project area is not with BLM designated big game winter range; however, ODF&W has designated the Sheep Mountain area as deer and elk winter range and the Owens area as elk winter range.

A lack of natural fire has allowed conifer encroachment (including juniper invasion), which has out competed the grass, forbs, shrub communities. Many plants in the analysis area are adapted to natural fire and require burning to stimulate seed sprouting or to remove decadent portions of the plant.

Many of the low-elevation habitats in the analysis area are declining primarily due to increased conifer competition. Higher densities of conifer trees had been providing increased hiding cover and habitat security.

Open road densities in the analysis area are low in the project areas because surrounding private lands and the steep ground are not accessible by pickup trucks. The majority of the analysis area has less than 2 miles per square mile of open road.

Special Status Species: A Biological Evaluation was prepared to address the expected effects to Threatened, Endangered, and Sensitive Wildlife Species. This evaluation is included in the administrative record for the project and is available for review at the BLM Prineville District office. The following is a summary of the findings:

The project area contains no habitat designated ``critical" or ``essential" for federally listed species.

The Northern Bald Eagle is the only federally listed species with habitat potential in the project area.

- *Northern Bald Eagle (Haliaeetus leucocephalus): Threatened (USFWS), Threatened (BLM OR & WA), Threatened (State):* Bald Eagles are usually associated with rivers, lakes and marshes. They require nearby tall trees or cliffs for nesting (Csuti et al., 1997). The project area has been surveyed extensively, the closest known bald eagle nests is more than 5 miles north of the planning area. The project area has no potential nesting habitat and the highest probability foraging habitat is associated with the Crooked River, small lakes, and calving areas on private lands greater than 1 mile from the project area.

The Northern Goshawk and Ferruginous Hawk are the only two sensitive species that have habitat potential in the project area.

- *Northern Goshawk (Accipiter gentilis): Sensitive (BLM OR & WA):* Goshawk nesting home ranges cover approximately 420 acres (Reynolds et al. 1991). Goshawks prefer open stands for foraging activities; however, for nesting they require canopy closures for protection from the weather and other raptors. Goshawk nesting habitat is generally found within ¼ mile of a spring or small order stream. These sites provide higher canopy closure for nesting due to higher growth potential. The analysis area contains potential reproductive and foraging habitat. No sightings have been recorded in the analysis area. Formal surveys have not been conducted. Riparian associated habitats within the project area would have the highest probability for nesting.
- *Ferruginous Hawk (Buteo regalis): Sensitive (BLM OR), Former Candidate (Federal), Critical (State):* Ferruginous hawks soar over grassland, desert steppe, and juniper woodlands. They require ledges, cliffs, isolated trees, or riparian woodlands for nesting. Home ranges for males are up to three miles (Csuti et al., 1997). No formal survey has been conducted. There are rock cliff formations north of Sheep Mountain and south of Owens with potential for nesting habitat. The entire project area has potential for foraging activity.

Based on an evaluation of existing and expected habitat and proposed human activities it was determined that both action alternatives have the potential for minimal disturbance but would not lead toward listing of a species or create a take situation under Endangered Species Act (ESA). Project activities would occur outside of critical reproductive periods. Any nest or species use that is detected during layout would result in project modifications designed by the wildlife biologist to meet the species needs.

### **3.4 Livestock Grazing**

The project areas are within two grazing allotments in the Prineville District. The Sheep Mountain project is within the Sheep Mountain Community Allotment (#0013) and the Owens Water Community project is within the Owens Water Community Allotment (#0042).

The Sheep Mountain Community Allotment contains 6,332 public acres and 383 active Animal Unit Months (AUMs). There are six pastures within the allotment. Two of these pastures are crested wheatgrass seedings and four are native range. These pastures are grazed either in rest rotation, deferred rotation or spring (riparian) grazing systems. The season of use for the allotment is from April 16, to November 15. One permittee grazes the allotment. Management objectives for this allotment from the 1989 Brothers/La Pine RMP/ROD are; improve ecological condition, maintain ecological condition, stabilize or improve watershed condition, and improve riparian habitat.

The Owens Water Community Allotment contains 4,389 acres and 241 AUMs. The two pastures within the allotment are both native range. One pasture is grazed in a rest rotation grazing system and the other is treated as a federal range. Fenced federal range is federal land fenced within and used in conjunction with private lands. In this case there are 360 acres of BLM land fenced within approximately 2,480 acres of private land. The season of use for this allotment is from April 15 to November 15 and the grazing system for the BLM managed pasture is rest rotation. Two permittees graze this allotment. Management objectives for this allotment from the 1989 Brothers/La Pine RMP/ROD are; improve ecological condition, maintain ecological condition, and stabilize or improve watershed condition.

### **3.5 Wood Products**

Land managers, researchers and private individuals in Oregon are exploring methods for large-scale use and marketing of juniper wood products in order to reduce land health improvement costs and to provide products useful to and desired by the public. Wood quality and harvest and milling costs are the primary limiting factors.

Juniper firewood, posts, poles and boughs are the most common use of juniper. The BLM meets this demand by establishing site-specific collection areas. The supply of standing juniper currently exceeds its demand.

### **3.6 Recreation/Visual Resources**

Camping and big game hunting are the primary recreational activities within the project areas. Some recreational rock collecting for green petrified wood occurs in the Owens Water – South Pole Creek area. Several primitive and four-wheel-drive roads exist throughout the areas, but there are no designated OHV routes or trails. Visual quality in the Sheep Mountain and Owens Water Community areas is moderate but is higher on Sheep Mountain on the steep upper elevation areas, with southeast to southwest facing slopes.

### **3.7 Fire and Fuels**

Pre-European settlement natural fire frequency has been estimated to be 15 to 40 years. A prescribed burn was performed in the Sheep Mountain area in September of 1999. Results of the burn were a mosaic pattern with 80 percent juniper kill covering 55 percent of the designated burn area. As demonstrated by that prescribed burn, primarily north-facing slopes still retain the capability to carry fire under prescribed conditions. In remaining areas, fuel continuity and structure is inadequate to carry fire under these same conditions.

In the Owens Water Community project area approximately 200 acres of downed juniper were burned in 1991. In the Owens Water Community project area, where

juniper cover is greater than 30 percent, there is generally so little understory vegetation that it is difficult to sustain a prescribed burn.

### **3.8 Cultural Resources**

No formal inventories have been conducted within the proposed project areas. A number of spot and linear inventories have been conducted in the vicinity and along the margins of the proposed activity areas. As a result of these inventories a variety of large and small lithic scatters with and without formal tools were recorded. Other lithic scatters not yet recorded are known to exist along the eastern margin of the proposed project areas. More lithic scatters are likely to be located within the project boundary. A historic site (collapsed structure and associated debris) is known to exist around Sweet Marie Spring, which is next to the Sheep Mountain project area.

A few inventories have been completed outside the Owens Water Community project area. The results of these inventories reported prehistoric lithic scatters determine to be not of significance. A sample inventory of high potential areas has been completed within the boundaries of the project areas. The results involved the recording of one possible lithic scatter. This prehistoric site would not be adversely impacted by the proposed project.

The BLM has no knowledge of any Native American religious sites or traditional use areas occurring within either of the proposed project boundaries.

Several paleontological localities are known to occur within the project areas. These localities are associated with the John Day Formation, though later formations also exist. Vertebrate fossils can be found in these formations.

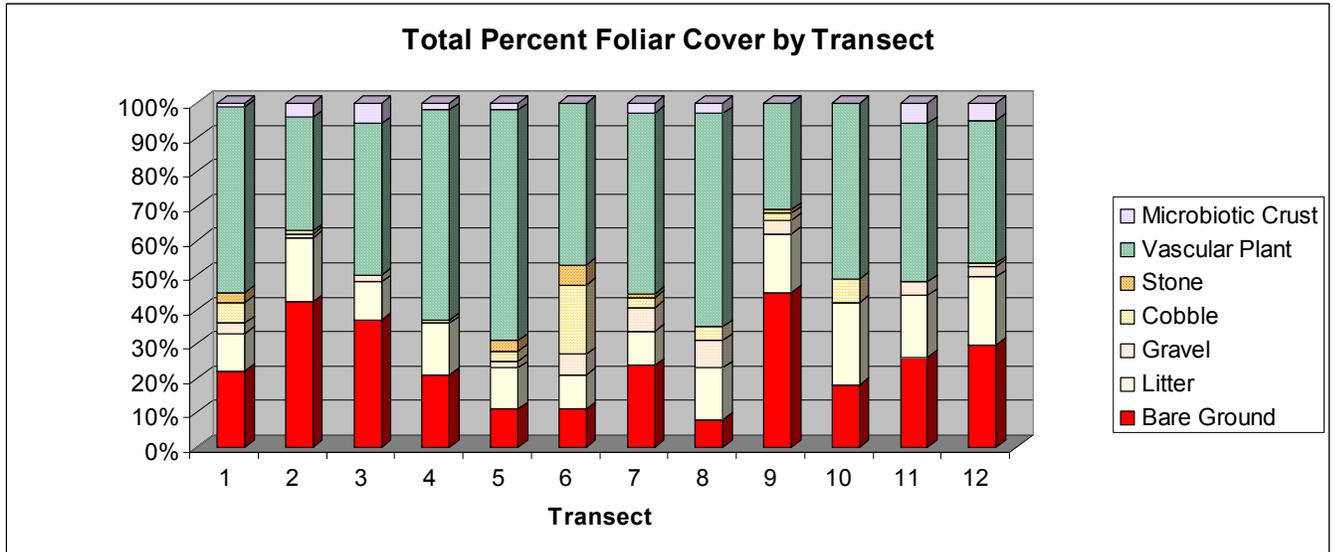
## **4.0 ENVIRONMENTAL EFFECTS**

### **4.1 Soil and Vegetation**

Grass cover under the present condition for the Sheep Mountain and Owens Water Community project areas is adequate to protect soil from excessive erosion and to reestablish grass cover in bare areas. Shrub cover is in decline and is unable to compete with the well-adapted juniper. As the number and canopy cover of juniper increase in the area vegetative changes would be expected to occur. Shrub cover would begin to decline. The deeper-rooted bunch grasses may eventually decline causing increased water run-off resulting in increased erosion. This would occur because the conditions for the shallower rooted, early season Sandburgs bluegrass would become more favorable and those shallower roots do not hold the soil as well as the more fibrous deeper rooted bunch grasses. Sandburgs bluegrass, adapted to using early season moisture from snow melt at shallow surface depths, would be less affected by juniper competition for water than the deeper rooted bunch grasses and greater runoff can be expected to occur with lower water infiltration rates and increased water erosion.

The soil resources over time would continue to decline. Reducing the juniper cover under either the flexible pattern or unit treatment would maintain or improve the soil resource function by insuring adequate moisture for the deeper-rooted shrubs and grasses. This allows for more water infiltration to occur, increasing the effective moisture of the site and decreasing the runoff and erosion.

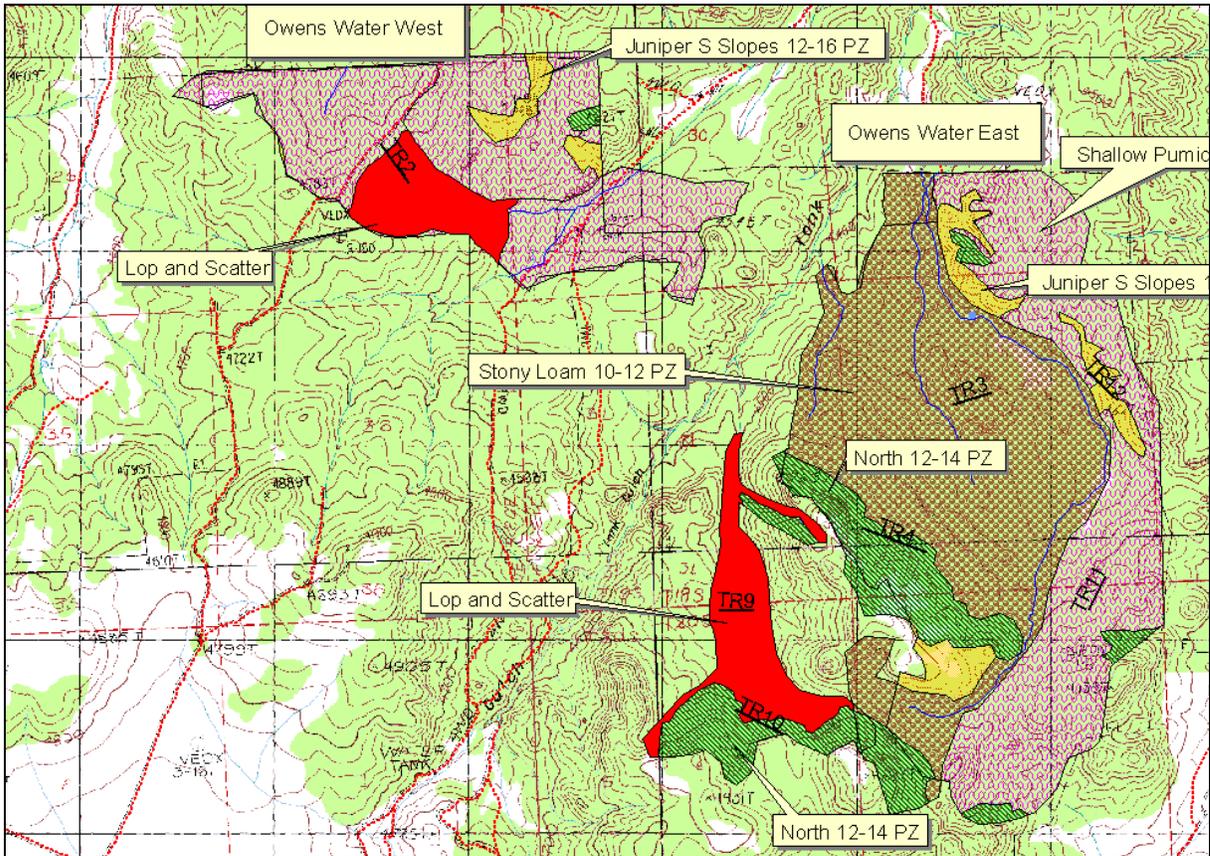
**Chart 2 Percent Total Canopy Cover by Transect**



Transects 2 and 9 (Chart 2) have the greatest amount of bare ground subject to erosion and sediment delivery. The soils for these two transects were shallow less than 18 inches to bedrock. Rilling and terracett formation are present for these areas.

To achieve the maximum bare ground coverage for these areas, a possible mitigation would be to lop and scatter the branches of cut trees. Possible lop and scatter areas are identified in Map F. The Owens Water West Lop and Scatter area is 68 acres and the Owens Water East area is 100 acres.

**Map F: Possible Lop and Scatter Areas (red) within the Owens Water Project Area**



**Special Status Species:** Green-tinged paintbrush is a Bureau sensitive species and with the nearest known population to the area found near Bear Creek Buttes, 25 miles West. If it were to be found in the area it would likely be in the upper elevations on steeper slopes away from the lower elevations where large concentrations of juniper trees are to be targeted. Paintbrush is also not likely to grow in areas of active erosion, and it is unlikely that the act of cutting a juniper tree down would have any long-term impact to paintbrush.

**Noxious Weeds:** Juniper cutting generally increases the amount of available soil moisture for other plant species to use. This increase in available soil moisture would help increase the vigor and number of key perennial grass species such as Idaho fescue (*Festuca idahoensis*), Bluebunch wheatgrass (*Pseudoroegneria spicata* ssp. *spicata*), Thurbers needlegrass (*Stipa thurberiana*), and Prairie junegrass (*Koeleria cristata*). The increase in these key species would improve the ecological condition within the project area. If noxious weeds were to show up later in the area, improved ecological condition would make it harder for most weed species to establish. Juniper cutting would be expected to limit the growth of noxious weeds in the project area.

During the cutting of the juniper under the action alternatives there would be the potential for weed seeds to be brought into the area. However, contractors would be required to clean equipment prior to conducting work in the project areas, which would mitigate the potential for weeds being brought into the area.

## 4.2 Streams and Riparian Areas

- 4.2.1 No Action: Continued occupation by high densities of juniper trees would maintain and reduce the current amounts of groundcover. Low and reduced groundcover in the form of herbs, forbs, grasses, microbial crusts, and shrubs, would result in overland flow, reduced infiltration, and increased peak flows. In the long term, these processes would cause increased erosion of riparian vegetation, stream channel bottom and bank erosion, and reductions in water quality.
- 4.2.2 Flexible Pattern Manual Removal Action Alternative: Implementation of this alternative would treat and improve 0.3 miles of riparian vegetation along the interrupted perennial stream, 0.1 miles of intermittent stream, and 1.6 miles of ephemeral stream in the Sheep Mountain portion of the project area. Within the Owens Water Community area, 2.0 miles of intermittent and 10.3 miles of ephemeral channels would be treated and improved. Improvement would include increased vegetation into the slopes and banks of the channels, enhancing channel stability. Vegetation established in the intermittent and ephemeral channel areas would likely be upland type grasses, not riparian types of vegetation. In all stream channels within the project area stability and water quality would improve through reduced overland flow, increased infiltration, decreased peak streamflows and increased vegetation on stream channel slopes and banks.
- 4.2.3 Unit Treatment Manual Removal Action Alternative: Implementation of this alternative would not improve riparian vegetation conditions on any portion of the interrupted perennial stream or along any intermittent stream within the Sheep Mt units. A no-cut corridor along the interrupted perennial segment would continue the occupation by high densities of young juniper into the channel and the channel banks. The only treatment within stream channels in the Sheep Mt units would occur along 0.5 miles of ephemeral stream, resulting in increased vegetation into the slopes and banks of the channel, improving stability. Within the Owens Water Community area, 0.7 miles of intermittent stream channel, and 7.5 miles of ephemeral channel would be treated and improved. Vegetation establishment along the slopes and banks within the treated segments would enhance channel stability. Overall reductions in upland juniper would reduce overland flow, increase infiltration, and decrease peak streamflows.

## 4.3 Wildlife

- 4.3.1 No Action: The project area falls within the Camp Creek Watershed. In 2000-2001 the Forest Service completed a watershed analysis for this area. An analysis of species habitats in the area had the following associations: 44 percent had habitats within the historic range of variability (HRV), 7 percent had habitats above HRV, and 49 percent had habitats below HRV. Based on modeling predictions of future habitats without management intervention the trend over the next 50 – 100 years is expected to increase the number of species with habitat below HRV (Maury Watershed Analysis – 2001). The Maury Watershed Analysis area as a whole was 10,233 acres. below the mid point of HRV for grass forb conditions and 5,072 acres dominated with juniper above the mid point of HRV. Managing within the HRV is estimated to provide for wildlife populations' viability, while reducing the occurrence

of extreme habitat fluctuations and associated risks throughout the Maury Mountains watershed. Wildlife habitats that are balanced, not to the reduction of any one species, allows flexibility to the wildlife species that use them in the advent of a partial habitat reductions due to wildfires, windstorms, human activities, drought, and flood.

4.3.2 Action Alternatives (2.2 Flexible Pattern and 2.3 Unit Treatment)

4.3.2.1 Big Game: Direct/Indirect Effects: The Brothers La Pine RMP states, “Juniper control projects would be restricted to no more than 60 percent removal of juniper trees with leave areas concentrated on sites providing optimum thermal cover. Areas within the 40 percent leave zone should constitute a minimum of 5 acres each and be evenly distributed.”

Removing juniper would reduce the amount of hiding cover and would be expected to increase the amount of herbaceous vegetation available for forage. Neither of the alternatives propose constructing or closing any roads. Of road vehicle use areas w be closed with juniper debris in both alternatives. Alternative 2.2 Flexible Pattern would treat slightly more acres, but would have a higher residual cover on the treated acres with smaller leave areas. This would result in higher levels of security cover within the units while the leave areas would be smaller than in Alt. 2.3. Unit Treatment. Alternative 2.3 would remove more of the juniper in the designated cutting areas but would retain larger areas of high-density juniper. Both action alternatives layouts would be designed to take advantage of natural features to provide hiding cover. With low road densities and ample hiding cover remaining both alternatives would be expected to have positive effects to big game.

	Existing	Alternative 2.2*	Alternative 2.3
Cover/Forage	63% / 37%	62% / 38%	62% / 38%
Cover/Forage**	75% / 25%	74% / 26%	74% / 26%

\*Alt. 2.2 would leave up to 13 trees per acre in the treated units. This level would not provide optimal cover but would have increased thermal and hiding cover values.

\*\* Vegetative cover values including those acres with light sage cover and light to moderate juniper cover

*Cumulative Effects:* Big game numbers in the Maury Unit are still recovering from the winter of 1992. Elk numbers have been declining in the last few years primarily due to high cow elk harvest tags. Habitat security would be reduced slightly in both action alternatives. However, the increased forage in the area would benefit animals year round and the number of tags issued primarily controls population levels.

Several other planned projects may reduce the amount of juniper and increase the amount of forage within the Maury Unit. Increased forage would increase the potential distribution of big game in the Unit. Reducing the amount of juniper cover may have the potential to increase the amount of water available in riparian habitats.

Increasing the amount of riparian association would have a direct benefit to big game habitat effectiveness and increase distribution.

4.3.2.2 Snags and Down Logs: *Direct/Indirect Effects:* Both action alternatives would retain all dead trees and trees with visible signs of wildlife use. Alternative 2.2 would retain higher numbers of larger diameter trees within the units, which can become snags in the future. Alternative 2.3 would provide snags in areas with higher densities of juniper trees surrounding them. After the cutting both alternatives would have down log levels drastically above those that historically occurred. Habitats surrounding the project area would continue to provide higher than normal live and dead juniper concentrations.

*Cumulative Effects:* Cutting the trees would reduce the amount of standing trees that could potentially become snags in the future; however, current levels exceed HRV.

4.3.2.3 Riparian, Neotropical Migratory Birds, and Amphibians: *Direct and Indirect Effects:* The project area contains two springs and a few small ephemeral drainages. Juniper cutting would not occur in either alternative within 50 feet of the springs. Juniper cutting in upland areas would reduce the amount of conifer competition and is expected to increase the amount of water available for small springs or riparian vegetation. Outside of the riparian habitats there is little potential for amphibian habitat. The cutting activities would occur outside of reproductive periods for migratory birds.

Reduction of standing live juniper would reduce the amount of perch potential for the redtail hawks; however in Alternative 2.2 Flexible Pattern there would be numerous standing trees remaining in the units and in Alternative 2.3 Unit Treatment would have numerous standing trees within the leave strips. Both alternatives would protect the nest stand, would not cut standing dead trees, and would have operational restrictions in place during the reproductive period. Cutting activities are expected to increase the amount of ground prey species. Alternative 2.2 is expected to retain a slightly higher diversity of bird prey species due to the retention of large diameter trees throughout the project area.

*Cumulative Effects:* Many neotropical migrants are being adversely effected on other portions of their yearly range. Conversion of southern forest lands and the use of pesticides in southern latitudes has caused drastic effects on many populations.

4.3.2.4 Special Status Species: There would be no affect on any special status species because the project area contains no habitat designated as “critical” or “essential” for any federally listed species.

#### **4.4 Livestock Grazing**

- 4.4.1 No Action: Under the no action alternative, as juniper increases and the range site declines in productivity and stability, key perennial grass species would decline which would result in a reduction in the amount and quality of livestock forage available. Grazing pressure would increase on key grass species and grass plants would increasingly decline as they are out competed for soil moisture and nutrients by the increasing juniper. Eventually a reduction of the livestock carrying capacity would be required for the pasture/allotment. Until this reduction was made the key perennial grass plants could be eliminated as effects of increased grazing pressure and competition from juniper are combined. This loss would continue until the juniper community is reduced to a stable density that the range site is capable of supporting.
- 4.4.2 Action Alternatives (2.2 Flexible Pattern and 2.3 Unit Treatment): Livestock grazing opportunity would remain static or improve under the either the flexible pattern or unit treatment alternatives. The amount and distribution of key perennial grass species would at worst remain static but would be expected to increase as the productivity and stability of the range site improves from the removal of juniper. Perennial grass plant health should improve because there would be more soil nutrients and moisture available for the plants.

#### **4.5 Wood Products**

Demand for juniper materials in these project areas would be limited by rugged terrain that limits public vehicle access, wood supplies closer to populated areas, and distance to the project areas.

#### **4.6 Recreation and Visual Resources**

- 4.6.1 No Action: There would be no effects to recreation under the No Action Alternative.
- 4.6.2 Action Alternatives (2.2 Flexible Pattern and 2.3 Unit Treatment): Under the Alternative 2.2 Flexible Pattern and Alternative 2.3 Unit Treatment, closing multiple routes with scattered juniper limbs and trees may reduce motorized recreation opportunities. These closures may have minor adverse effects on rock collectors wanting to continue to drive to rock collecting sites in the Owens Water and South Pole Creek area. However, public access to these rock-collecting areas would be maintained. Public access to other public lands would not be adversely affected because only routes that duplicate access to the same location would be closed.

Under the No Action Alternative there would be no change in visual quality of public lands within the project areas. Under Alternative 2.2 Flexible Pattern, short-term visual contrasts between cut and live juniper. There would be less contrast between cut and live juniper due to less juniper trees being cut and less trees being cut than in Alternative 2.3 Unit Treatment. There would be a slight increase in visual quality over the long term resulting from an incremental increase in vegetative diversity in the project areas. Under Alternative 2.3 Unit Treatment, the effect would be similar to Alternative 2.2 Flexible Pattern, however there would be higher visual contrasts both in the short and long term due to large areas having cut juniper

and more juniper trees being cut. The result of this Alternative 2.2 Unit Treatment would be high contrasts between the cut and the uncut juniper landscapes, especially on the southeast slopes of Sheep Mountain.

#### **4.7 Fire and Fuels**

- 4.7.1 No Action: Under the no action alternative, as juniper increases and the range site declines in productivity and stability, key perennial grass species would decline which would result in a high departure from the historic regime and predispose the system to high risk of loss of key ecosystem components. Juniper cover will continue to increase over time and understory vegetation will continue to diminish to a point that it is difficult to sustain a prescribed burn or a wildfire which would be the natural process.
- 4.7.2 Action Alternatives (2.2 Flexible Pattern and 2.3 Unit Treatment): This site has been classified as a Fire Regime II that is in a Condition Class 3. The only way to treat this site is by a mechanical treatment, since fire will not carry through this area to perform its natural role. Both alternative treatments will return this site to a Condition Class 1 and the vegetation composition; structure and fuels will be similar to those of the historic regime and do not predispose the system to risk of loss of key ecosystem components. These action alternatives are only a precursor to the introduction of fire, which may occur in five to 20 years depending on the vegetation response after the mechanical treatment.

#### **4.8 Cultural Resources**

Cultural surveys of the project areas found no significant artifacts or cultural features. Though prehistoric lithic isolates were observed throughout the project areas, these isolates would not be adversely affected by the proposed action alternatives and in no way affected by the No Action alternative. No protective recommendations for cultural resources would be needed for the project areas under either of the action alternatives.

#### **4.9 No Impact Items**

The following critical elements were considered, but will not be addressed because they would either not be affected or do not exist in the project area:

1. Agricultural Lands, Prime or Unique
2. Air Quality
3. Areas of Critical Environmental Concern
4. Energy Resources and Transmission (Executive Order 13212)
5. Environmental Justice (Executive Order 12898)
6. Floodplains
7. Native American Religious Concerns
8. Noxious Weeds
9. Wastes, Hazardous or Solid
10. Wetlands/Riparian Areas
11. Wild and Scenic Rivers
12. Wilderness (Including Wilderness Study Areas)

## **5.0 Consultation and Coordination**

### **5.1 Consultation**

The following governments, agencies, and organizations have been contacted about this EA or will be notified of this EA and FONSI:

Burns/Paiute Tribe  
Confederated Tribes of the Warm Springs  
U.S. Fish and Wildlife Service  
Oregon Department of Fish and Wildlife  
State Historic Preservation Office

### **5.2 Preparers**

The following BLM personnel performed lead roles in the development, design, and coordination of this environmental assessment:

Dax Borgaard, Range Technician (Fire)  
Steve Castillo, Forester  
Guy Chamness, Fuels Specialist  
Scott Cooke, Wildlife Biologist  
Ron Halvorson, Botanist  
Ed Horn, Soils Specialist  
Lindon Hylton, Archaeological Technician  
Monte Kuk, Wildlife Biologist  
Michelle McSwain, Hydrologist  
Jean Nelson-Dean, Planning and Environmental Coordinator  
Kate Peterson, Soils Technician  
Berry Phelps, Recreation Management Specialist  
Don Zalunardo, Rangeland Management Specialist  
John Zancanella, Archaeologist

## **6.0 Maps**

Project Area Maps (B, C, D, E)

NEPA requirements met:

\_\_\_\_\_  
Mary D'Aversa  
Acting Central Oregon Resource Area Environmental Coordinator

\_\_\_\_\_  
Date

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