Williams Ranch Juniper Removal

DOI-BLM-CA-N020-2011-0015-EA

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Date prepared: February 2012

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CHAPTER 1: INTRODUCTION

The purpose of the Environmental Assessment (EA) is to disclose and analyze the environmental consequences of authorizing the Williams Ranch Juniper Removal. The EA is a site-specific analysis of potential impacts that could result with the implementation of one of the alternatives. The EA assists the Bureau of Land Management (BLM) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and with other laws and policies affecting the alternatives. If the decision maker determines that this project has "significant" impacts following the analysis in the EA, then an Environmental Impact Statement (EIS) will be prepared for the project. If not, a Finding of No Significant Impact (FONSI) statement will be prepared, documenting the reasons why implementation of the selected alternative would not result in "significant" environmental impacts.

Background

The BLM Alturas Field Office (AFO) is proposing approximately 550 acres of hazardous fuels reduction and habitat restoration treatments on public land in the Williams Allotment. The project would reduce hazardous fuels and treat western juniper in sage steppe plant communities which are decadent or declining in vigor as a result of juniper competition to improve biodiversity and habitat for sagebrush obligate species.

Under the categorical exclusion CA320-NEPA05-16 approximately 200 acres of non old growth juniper was hand felled with chainsaws and left on site during the 2010 field season. During the 2011 field season another 200 acres were cut and left on site. The felled juniper is a greater fuel hazard and wildlife obstacle than when it was standing. Some of the felled juniper has been removed for firewood.

Location

The proposed project is located approximately 2 miles west of Madeline, CA in Lassen County. Legal location is T.37 N., R.12 E., Sections: 1, 2, 11 and 12 MDB&M (See Map #1).

Purpose and Need for the Action

The purpose of this restoration effort is to reduce hazardous fuels and restore the sage steppe ecosystem processes and vegetation conditions that resemble historic mosaic plant communities, so that historic fire return intervals in the sage steppe ecosystems can be sustained. The proposed restoration project would also restore habitat for sagebrush obligate species, improve hydrologic conditions and enhance the forage base for wildlife and domestic animals.

Within the project boundary extreme fire behavior could be expected with the conditions that exist. By removing the down juniper chance of extreme fire behavior created from excessive quantities of down material would be eliminated.

Western juniper (*Juniperus occidentalis*) has been actively invading the shrub steppe community for the past 120 to 130 years (Miller et al 1999; Miller et al. 2005). Active fire suppression, the introduction of extensive livestock grazing in the late 1800's and early 1900's, along with a wetter than normal period in the latter half of the 20th century, has allowed juniper to encroach into areas where it was formally excluded by periodic fire (Miller et al. 1995). Invasive western juniper communities are continuing to reduce and replace the shrub steppe communities and thus reducing habitat and suitable forage for wildlife and livestock production on public rangelands. Juniper can act as effective perches for raptor predators but also reduce the amount and quality of sagebrush and forbs that are critical to the diet of sage-grouse. Removal of the downed juniper will be beneficial for sage-grouse as well as other sage-steppe obligate species.

Land managers are concerned about steadily increasing fuel loads in juniper woodlands, prolonged drought effects, and changes in fire behavior. Research funded by the Joint Fire Science Program indicates that fuel loads in areas of woodland expansion increased two to three-times over the last 100 years and are expected to double again within the next 50 years (JFSP 2003). In addition, areas of woodland expansion dominated by trees are expected to increase from about 25% today to over 75% over the same 50 years (Chambers et al. 2000a, 2000b). In many areas, fire-resistant communities are essentially replacing fire-dependent communities (Miller and Tausch 2001).

References

Chambers, J.C., Miller, R.R., Tausch, R.J., B. Blank, S.E. Meyer, E.D. McArthur, B.A. Roundy, N.L. Shaw, S.C. Bunting, S.C. Walker, P. Fosse, and M. Pellant. 2000a. Changing fire regimes, increased fuel loads, and invasive species: Effects on sagebrush steppe and pinyon-juniper ecosystems. Joint Fire Sciences Program funded project.

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EA # OR-014-01-10. 2002. Environmental Assessment for the Short Lake Juniper Treatment and Prescribed Burn. Bureau of Land Management Klamath Falls Resource Area – Lakeview District. Klamath Falls, Oregon.

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Miller R. F., T. Svejcar, and J.R. Rose, 1999. The impacts of juniper encroachment on understory cover and diversity. Range Field Day 1999. Progress Report. Juniper Woodlands: History, Ecology, and Management.

Miller, R.F., and J.R. Rose. 1995. Historic expansion of *Juniperus occidentalis* in southeastern Oregon. Great Basin Naturalist 55:37-45.

Miller R.F. and R.J. Tausch. 2001. The role of fire in pinyon and juniper woodlands: a descriptive analysis. Pages 15-30 in K.E.M. Galley and T.P. Wilson (eds.). Proceedings of the Invasive Species Workshop: the Role of Fire in the Control and Spread of Invasive Species. Fire Conference 2000: the First National Congress on Fire Ecology, Prevention, and Management. Miscellaneous Publication No. 11, Tall Timbers Research Station, Tallahassee, FL.

Miller, R.F., J.D. Bates, T.J. Svejcar, F.B. Pierson, and L.E. Eddleman. 2005. Biology Ecology and Management of Western Juniper. Oregon State University Agric. Expt. Sta. Tech. Bull. 152.

<u>Decision to be Made</u>

This EA discloses the environmental consequences of implementing the Proposed Action or an alternative to that action. The FONSI describes the finding of the analysis in this EA. The BLM, Alturas Field Office Manager is the Authorized Officer. His decision and the rationale for that decision will be stated

in Decision Record (DR). Based on the information provided in this EA, the Authorized Officer will decide whether to approve the Williams Ranch Juniper Project with appropriate mitigation measure, or whether to reject it.

Scoping

The BLM Alturas Field Office conducted internal scoping with and interdisciplinary team of specialists (IDT). In addition, the EA will be available for a 30 day public comment period.

Tiering to Existing Land Use Plan/Environmental Impact Statements

The Williams Ranch Juniper Removal Environmental Assessment (EA) references and is tiered to the Record of Decision for the Alturas Resource Management Plan and Final Environmental Impact Statement (RMP/ROD/FEIS), April 2008, the Record of Decision for the Sage Steppe Ecosystem Restoration Strategy Final Environmental Impact Statement (FEIS), December 2008 and the 2005 Categorical Exclusion, Williams Allotment – Mahogany Enhancement Project CA320 – NEPA05-16.

Plan Conformance

The Proposed Action is in accordance with the Alturas Resource Management Plan and Record of Decision 2008 and as required by regulation (43 CFR '1610.5-3(a)).

Fuels Management

2.6.2 Goal

Prioritize and conduct effective fuel reduction programs throughout the management area, but especially within the Wildland Urban Interface (WUI). A variety of fuel treatment methods would be utilized including fire which would be reintroduced and promoted as a natural ecosystem component. Specifically developed fuel treatments would restore important wildlife habitats and protect vulnerable archaeological or historic sites.

2.6.3 Objectives

Fuel treatment projects would specifically target juniper-invaded sagebrush-steppe, important wildlife habitats, the WUI and sensitive archaeological or historic sites.

Long-term (fuel treatment) projects would restore and maintain fire-dependent ecosystems, increase forage for wildlife and livestock, minimize fuel accumulation, and protect vulnerable communities. These projects would also improve recreational opportunity and enhance traditional gathering areas for Native Americans.

Native Plant Communities

2.17.2.2 Goal

Protect and enhance native plants and plant communities and provide for their continued existence, natural functioning, and successful reproduction. Restore degraded landscapes and decadent shrublands. Manage shrub communities to maintain or improve ecological conditions so as to make significant progress toward the desired future condition by fulfilling resource management objectives.

2.17.2.3 Objectives

Rehabilitate or restore shrub and shrub/grassland communities that are not meeting desired future condition due to invasion by western juniper, other decadent woody species, and exotic annual grasses or noxious weeds/undesirable species.

Rehabilitate juniper woodlands (in contrast to sagebrush communities being invaded by western juniper) to maintain a mixed age class with a cover of no more than 25%.

Relationship to Statues, Regulations, and Plans

Cultural Resources

In December 2008, the State Director, California Bureau of Land Management (BLM), the California State Historic Preservation Officer (SHPO), and the Nevada SHPO addressed the issue of the National Historic Preservation Act (NHPA) Section 106 compliance procedures and restoring the sage steppe ecosystem in northeastern California and northwestern Nevada. The State Director and the SHPOs amended the 2007 State Protocol Agreement between California BLM and the California and Nevada SHPOs with the Supplemental Procedures for Sage Steppe Ecosystem Restoration (SPSSER). This amendment provides for restoration of the Sage Steppe Ecosystems prior to completing all NHPA compliance. This compliance includes direction found in the 2007 State Protocol and the BLM 8100 Manual Guidelines.

Threatened or Endangered Species

The Endangered Species Act of 1973 (ESA) requires federal agencies to complete formal consultation with the U.S. Fish and Wildlife Service (FWS) for any action that "may affect" federally listed species or critical habitat. The ESA also requires federal agencies to use their authorities to carry out programs for the conservation of endangered, threatened and candidate species. The BLM has conducted formal and informal Section 7 consultations and submitted biological assessments (BA) for the following;

Adoption of the Alturas Field Office Resource Management Plan 2007 Revision on Lost River (Deltistes luxatus), shortnose (Chasmistes brevirostris) and Modoc (Catostomus microps) suckers and their proposed critical habitat, Shasta crayfish (Pacifastacus fortis), northern spotted owl (Strix occidentalis caurina), slender Orcutt grass (Orcuttia tenuis), soldier meadow cinquefoil (Potentilla basaltica), Oregon spotted frog (Rana pretiosa) and Western yellow-billed cuckoo (Coccyzus americanus) in 2007 and received Reply 1-10-07-I0055.
Sage Steppe Ecosystem Restoration Strategy Final Environmental Impact Statement BA as it relates to Modoc, Lost River, shortnose, and Warner (Catostomus warnerensis) suckers, Shasta crayfish, northern spotted owl, Carson wandering skipper (Pseudocopaeodes eunus obscures), slender Orcutt grass and greater sage-grouse (Centrocercus urophasianus).

Master MOU between BLM and the California Department of Fish and Game (applicable for State listed Species): Some BLM Lands may also provide habitat for State listed fish, wildlife, and plant species. In a Master MOU between BLM and the California Department of Fish and Game (CDFG), BLM agrees to notify the Department of all projects involving impacts to, or manipulation of, State-listed rare and endangered fish, wildlife, and plants and to obtain State recommendations for the project-specific management of such populations.

Sage Steppe Ecosystem Restoration Strategy Record of Decision (ROD) and Final Environmental Impact Statement, *Modoc, Lassen, Shasta and Siskiyou counties, California and Washoe County, Nevada.* Record of Decision signed December 2008.

The Sage Steppe Ecosystem Restoration Strategy focuses on the restoration of sage steppe ecosystems that have come to be dominated by juniper, as the density of western juniper has increased over the landscape. The management strategy would broadly identify appropriate restoration methodologies by ecological conditions; provide guidelines for design and implementation of effective restoration treatments for restoration areas to be analyzed site specifically over a 50-year horizon.

The Healthy Forest Restoration Act (HFRA) was signed into law on December 3, 2003 by United States President, George W. Bush. It is designed to improve the capacity of the Departments of Interior and Agriculture to implement the National Fire Plan, and conduct hazardous fuels reduction projects to protect communities, watersheds, and other at-risk lands from catastrophic wildfire. The project analyzed in this EA meets the criteria of an Authorized Hazardous Fuels Reduction Project.

A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment, 10-Year Comprehensive Strategy was a policy developed in 2001 that placed emphasis on reducing risk to communities and the environment by managing wildland fire, hazardous fuels, and ecosystem restoration and rehabilitation on forest and rangelands. Three of the four goals of this policy are to: 1) Improve prevention and suppression, 2) Reduce hazardous fuels, and 3) Restore fire adapted ecosystems. The project proposed in this EA would facilitate the goals listed above.

National Fire Plan of August 2000, establishes goals for federal land agencies to combat the buildup of forest and rangeland fuels, "In response to the risks posed by heavy fuels loads -- the result of decades of fire suppression activities, sustained drought, and increasing insect, disease, and invasive plant infestations the National Fire Plan established an intensive, long-term hazardous fuels reduction program. Hazardous fuels reduction treatments are designed to reduce the risks of catastrophic wildland fire to people, communities, and natural resources while restoring forest and rangeland ecosystems to closely match their historical structure, function, diversity, and dynamics".

Buffalo Skedaddle Sage Grouse Conservation Plan, 2006, The Northeast California Sage-Grouse Working Group is an organization comprised of local government and non-government agencies and private entities who developed a Conservation Strategy for Sage-Grouse and Sagebrush Ecosystems within the Buffalo-Skedaddle Population Management Unit. This document is a product related to sage-grouse conservation and sagebrush restoration, and states that among its top priorities are retention of leks in public ownership and acquisition of leks occurring on private lands. Pursuing this project demonstrates to partners and the public that BLM is continuing to move forward with actions to conserve sage-grouse, sage-grouse habitat and the health of watersheds within the Sierra Nevada region.

Wilderness

For allotments within Wilderness Study Areas, use must be consistent with the direction found in the Interim Management Policy for Lands Under Wilderness Review (H-8550.1)

Section 603(c) of Federal Land Policy Management Act (FLPMA) directs the BLM how to manage lands under wilderness review, in these words:

During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness…

Section (H-8550.1) the "Interim Management Policy for Lands Under Wilderness Review" (IMP), provides BLM the guidance for implementing this portion of FLPMA.

CHAPTER 2: PROPOSED ACTION AND ALTERNATIVES

Proposed Action

The proposed action is to utilize mechanical operations to reduce hazardous fuels and to restore fire adapted ecosystems on approximately 550 acres of sage steppe ecosystem within the Williams Ranch Juniper Removal Project Area. The Proposed Action consists of mechanically removing the downed juniper utilizing rubber tired and tracked equipment. Following the completion of the project, the area would be rested from livestock grazing for a minimum of two growing seasons. The two growing seasons of rest would be accomplished by close coordination and cooperation between the BLM and the Williams Allotment grazing permittee.

Approximately 2 miles of existing roads may need to be improved and maintained within the project area. Road improvements and maintenance would be accomplished using heavy equipment such as dozers, excavators and graders. Road improvements and maintenance may include activities such as grading, rocking, culvert cleaning, brushing, and water barring. Roads improved or maintained will average 12 – 14 feet wide with areas such as sharp corners or turnouts up to 30 feet in width.

No new permanent roads would be constructed to complete this project work. Approximately 1 mile of temporary roads may be used to access and remove the cut junipers. These temporary roads would involve minimal ground disturbance and would be reclaimed following use (one to four years) and decommissioned following the completion of the project. Roads improved, built or maintained will average 12 – 14 feet wide with areas such as sharp corners or turnouts up to 30 feet in width. Road rehabilitation/decommission would include such actions as spreading the natural rock and vegetation displaced during road construction and pulling berms back onto the disturbed areas to discourage use from recreationist, hunters and wood cutters. The rehabilitation work would also promote natural re-vegetation, where natural re-vegetation is not expected to be successful; seeding of temporary roads would be required.

Approximately 4 landings, each less than 2 acres in size would be strategically located throughout the project area to mitigate impacts to resource values. The exact locations have not been identified, but where possible areas with existing ground disturbance will be utilized. Landings would be used to stage, chip, and load material prior to the removal from the cutting unit. Slash and residual material at the landings would be burned or scattered upon completion of the project.

Areas identified within the project area as having important resource values such as cultural, botanical, hydrological, riparian/wetlands, water quality, recreational, and wildlife will be excluded from removal operations if it is concluded that the removal efforts will harm the affected resource.

Restoration (treatment) methods as described and analyzed in the Sage Steppe Ecosystem Restoration Strategy FEIS 2008 are outlined below.

Mechanical treatment restoration involves the use of heavy machinery to physically remove felled western juniper. This treatment method would be the primary treatment method used on approximately 400 acres within the project area. There are several different kinds of mechanical restoration approaches and all can achieve similar results on the landscape. Mechanical restoration techniques that have previously been employed in the area, and are expected to be used in implementing the proposed action, include the following:

- Machines would transport the juniper trees to a landing area or pile them for skidding to the landing. Tracked or rubber tired skidders may also be used. Rubber tired skidders can then be used to transport the juniper to the landing areas, as needed. Cut junipers may also be transported in rubber tired trailers to landings. At the landings, the juniper trees are processed into chips and hauled away or limbed and just the boles hauled away, depending on the intended use for the material.

- Some trees may be left on the ground instead of transported off-site depending on the ground conditions in certain areas.

- The above methods can be combined and tailored specifically for site conditions, availability of machinery, economic conditions, and other factors.

In mechanical treatments, biomass material would either be chipped or made available for woodcutting; any remaining material may be piled and burned.

Minimizing the development of skid trails would be accomplished by attempting to "skid" across the entire project area. This type of treatment results in the maximum retention of shrubs and perennial grasses and less concentrated soil compaction. This would ultimately result in a decrease in soil erosion.

Hand Treatment is the most labor intensive method of restoration and would generally be accomplished by crews with chainsaws limbing and bucking down juniper. This treatment method would be the secondary treatment method used to clean up some of what the mechanical treatments leave behind. This method would be used in the most environmentally sensitive areas or in areas where it is not feasible to use mechanical means. The benefit of hand restoration is that sensitive areas, such as those that include riparian/wetland areas, aspen trees, etc. or areas inaccessible with mechanical equipment can be treated with beneficial results. The disposal of the juniper trees and associated slash is a challenge for hand restoration because, once cut down, they cannot be moved easily by hand. In all hand treatments areas, firewood cutting/collection would be considered.

Monitoring

Vegetation

Vegetation monitoring will comply with the Sage Steppe Ecosystem Restoration Strategy Vegetation Monitoring Protocols (2009) and include:

- Noxious Weed Monitoring

- Old Growth Tree Retention Monitoring

- Dense Juniper Retention Monitoring

- Vegetation Composition Monitoring

    1. Photos Points

2. Line Point Intercept Transects

Wildlife

Raptors

- Raptor surveys will be conducted throughout the project area during the breeding season (April 1-June 15) annually, prior to the commencement of project activities.

No Action Alternative

The No Action Alternative is the current management situation for the project area. Under this alternative, there would be no mechanical removal of the downed juniper utilizing rubber tired and tracked equipment within the project area. The fuel conditions would continue to be excessive within the project area increasing the chances for a catastrophic wildfire.

Alternatives Considered but Eliminated from Detailed Analysis

One alternative considered was prescribed burning the 550 acre project area to remove the downed western juniper within the project area. This alternative was eliminated from detailed analysis because of the difficulty in keeping fire within the project area and the inability to prevent the burning of the existing native shrub and perennial grass understory. The goal is to maintain a healthy shrub and grass component and remove enough juniper trees in order to allow the native shrub and grass component to reach a desired plant community. Cheatgrass invasion could also occur with prescribed burning in the lower elevations of the project area and was another factor considered with eliminating this alternative.

CHAPTER 3: ENVIRONMENTAL ANALYSIS

The interdisciplinary review has concluded that the following resources and other potential concerns were considered but were determined not to be affected nor impacted any of the alternatives and will not be discussed further in this EA.

- Areas of Critical Environmental Concern
- Environmental Justice
- Paleontological Resources
- Farmlands, Prime or Unique
- Unusual Plant Assemblages
- Waste, Hazardous and Solid
- Wild and Scenic Rivers
- Wilderness
- Wild Horse and Burros

AIR QUALITY

A. Affected Environment

The restoration Project area is located in northeastern corner of Lassen County, California. Lassen County is part of the Northeast Plateau Air Basin (NPAB), which includes Siskiyou, Modoc, and Lassen

Counties. The Lassen County Air Pollution Control District (LCAPCD) has jurisdiction over air quality issues throughout Lassen County and administers air quality regulations developed at the federal, state, and local levels.

Weather in northern California is dominated by the position of the Eastern Pacific high pressure cell that is normally located off the coast of North America. Due to the positioning of this cell, an almost unbroken chain of winter storms occurs in the study area, and a bulk of the precipitation in the study area occurs during this winter storm period. Weather systems in the region usually result in strong winds and unstable air masses, providing for good dispersion conditions. During fair weather periods, stable air conditions prevail throughout the region.

Air quality for the project area is generally good due to the remoteness and the limited amount of development/activity taking place within the project area. Air pollution in the project area can come from a variety of sources including OHV, windblown dust, and smoke from prescribed burns and wildfires. Pollution from these sources would result in localized increases in fugitive dust that would be temporary and is not expected to exceed air quality standards. The area has not been classified as a federal non-attainment - maintenance area by the EPA, therefore Federal actions is not subject to conformity determinations under 40 CFR 93.

B. Environmental Consequences

1. Impacts of Proposed Action

The Proposed Action would produce dust from mechanical treatments and fuel wood cutting. Impacts to air quality from the proposed action would be negligible. Impacts to air quality from mechanical treatments and wood cutting would be airborne dust generated during the operation of mechanical equipment and transport vehicles that would reduce visibility in the immediate project area, ceasing quickly when such operations are completed.

The areas of greatest impact from juniper removal would be the immediate project area and unimproved, dirt/gravel roads, used in association with the project.

There would be a temporary short term increase in local air pollution associated with heavy equipment operation, and to a lesser extent chainsaws and vehicles used in manual treatment during the next 2 – 3 years. No significant adverse or cumulative impacts are anticipated from the proposed action.

2. Impacts of No Action Alternative

Under the no action alternative no juniper removal would occur within the project area. The potential for wildfires to occur are greater where fuel treatments do not occur. The impact to air quality would be greater from a wildfire occurring in the area as wildfires typically have a longer ignition phase, or burn longer, consume more biomass and produce more smoke and particulate matter than pile burning. The Williams Ranch Juniper Removal Project area would continue to amass woody debris in the absence of treatment increasing the risk of catastrophic wild fires to occur.

C. Maps

N/A

D. References

http://www.arb.ca.gov/drdb/dismap.htm

CULTURAL RESOURCES

A. Affected Environment

An Intensive Class III Cultural Resource Inventory of the proposed Williams Ranch Juniper Removal project was conducted in May of 2010. No prehistoric or historic sites were discovered during the inventory. There will be no impacts to any known cultural resources if the proposed Williams Ranch Juniper Removal project proceeds.

INVASIVE, NON-NATIVE SPECIES

Weeds are defined in this EA as plants that are exotic or non-native plants. Non-native weeds have the ability to out-compete and replace native plants, often creating their own monotypic plant community. Uncontrolled noxious weed infestations result in decreases of native vegetation diversity, reductions in forage and wildlife habitat, and declines in agricultural crop values. Once exotic weeds become established it is extremely difficult to eradicate them and bring back the native communities that have been displaced.

A. Affected Environment

The project area falls within the Lassen County Noxious Weeds Project Area and is managed under the BLM's Alturas Integrated Weed Management Program. A portion of the project area and the areas to the south and west were surveyed in 2008, 2009, 2010 and 2011 by the BLM's weeds crew. The crew found several Scotch thistle sites and Hoary cress sites adjacent too and within ½ miles west and south of the project boundary. A few Bull thistle plants were observed by other resource specialist along the meadows within the project area. Removal of juniper trees would be beneficial to ecosystem health and biodiversity, cutting juniper trees has proven to be effective in increasing total understory biomass, cover, and diversity (Bates, et al. 2000). The proposed action is not expected to increase the establishment or spread of noxious weeds within the project area. The project area will be inventoried prior, during and after the project is completed for the detection and treatment of noxious weeds.

B. Environmental Consequences

1. Impacts of Proposed Action

Under the proposed action, noxious and non-native invasive weeds could become established within the project area. In areas where perennial grasses and forbs are absence, cheatgrass could be expected to increase prior to desirable, perennial grasses, forbs and shrubs become established. Also, many thistle species are aggressive during wet spring seasons and could become established before desirable vegetation becomes established especially in areas such as temporary roads and landings.

New species could be introduced to the area as a result of vehicles, heavy equipment and activities associated with the use of the vehicles and equipment from out of the area. However, conformance with the Alturas Field Office Noxious Weed Prevention Schedule would reduce this risk. If sufficient,

desirable, perennial understory vegetation exists, then these desirable species should become established and out-compete any potential noxious weeds or invasive species.

2. Impacts of No Action Alternative

Under the no action alternative, invasive and noxious weeds may eventually increase into the treatment area, particularly along traveled roads. Declining understory species in sagebrush and juniper woodland sites would increase the risk of noxious weeds and invasive species establishment following a natural disturbance (e.g., wildfire) due to the lack of competition from desirable, perennial grasses, forbs and shrubs. Increasing the density of woodlands would also increase the size and effect of a potential wildfire, which indirectly would provide large areas for noxious weeds and invasive species to establish following a wildfire event.

C. Maps

See Williams Ranch Weeds Map

D. References

BLM's Alturas Field Office Noxious Weeds GIS/database.

Bates, J. D., R.F. Miller, and T.J Svejcar. 2000. Understory dynamics in cut and uncut western juniper woodlands. Journal of Range Management. 53:119-126

LIVESTOCK GRAZING

A. Affected Environment

The Williams Ranch Juniper Removal Project area falls within the Williams Ranch Allotment #00321. This 2,644 acre allotment is authorized as a single unit with a single permittee; Mendiboure Ranch. Since juniper hand treatments began in 2005, Mendiboure Ranch has chosen not to graze the allotment.

Williams Allotment #00328 Authorized Use:

Permittee Name	Livestock		Grazing Period		% PL	AUMs		
	Number	Class	Begin	End		Active	Susp	Total
Mendiboure Ranch	41	Cattle	5/1	7/1	100%	81	0	81

This allotment was assessed for Rangeland Health Assessment in 2003 as a one (1) "areas where one or more standards are not being met or significant progress is not being made toward meeting the standards, and livestock grazing is a significant contributor to the problem" and, (4) "standards not being met or significant progress not being made toward meeting the standards due to causes other than (or in addition to) livestock grazing activities". Fire suppression has resulted in late succession sagebrush and juniper community all of which has significantly contributed to a reduction in livestock forage.

B. Environmental Consequences

1. Impacts of Proposed Action

The Proposed Action affects approximately fifteen percent of the Williams Allotment #00328. Impacts of juniper treatments and reducing juniper dominance on the sage steppe ecosystem will increase ground cover and biodiversity, decrease erosion and loss of top soil, and change the surface and subsurface water flow dynamics. This proposed project is designed as both a sage steppe ecosystem restoration and fuels reduction project that will help restore vegetative composition and structure to the sage steppe ecosystem.

In the short-term, juniper removal would affect the permittees livestock operation by having to rest the Williams Allotment for a minimum of two growing seasons after the completion of the project. Grazing closures would be accomplished by close coordination and cooperation between the BLM and the permittee.

In the long-term, the proposed treatments will have a beneficial effect to livestock grazing as the treatment areas previously occupied by western juniper with very little herbaceous understory is restored to a healthy vigorous sagebrush/perennial grass plant community.

As Barrett (2007) points out, removing juniper encourages the reoccupation of the site by native grasses, forbs, and shrubs where juniper competition for space, sunlight, soil water, and soil nutrients has diminished native plant community diversity, cover, density, and productivity. A site visit in June and September of 2011 by the field office botanist revealed a diverse composition of native grasses (see Vegetation) in the interspaces and adjacent to the down juniper trees.

2. Impacts of No Action Alternative

The No Action Alternative will continue to affect overall livestock performance and the economic stability of the permittee due to a reduction in the quantity and quality of grasses and other herbaceous forage which are important to cattle grazing the allotment. The existing down juniper will prevent livestock from utilizing forage species that are released as a result of the cutting that occurred. The boles of down juniper can physically prevent forage species from growing. With a continued decline production and vigor of sage steppe plant community, the forage base would not adequately support the existing authorized use and would adversely affect livestock performance (e.g. decreased cattle weights, decreased calving crops, decreased weaning weights, etc.). Bates et.al (2007) found that perennial grasses had a lower cover and density in the interspaces than in the debris (where down trees were) or canopy (where the uncut tree canopy was with juniper duff) areas. Removal of the trees will encourage the key perennial plants such as Thurber's needlegrass to reoccupy the site.

C. Maps

See Map #1

D. References

Barrett, Hugh. 2007. Western Juniper Management: A field Guide. The Oregon Watershed Enhancement Board.

Bates, J.D., R.F. Miller, and T.J. Svejcar. 2007. Long-term vegetation dynamics in a cut western juniper woodland. Great Basin Naturalist 67:549-561.

Williams Allotment – Mahogany Enhancement Project, Categorical Exclusion, BLM Alturas Field Office, 2005.

NATIVE AMERICAN CONCERNS

Tribal consultation with the Pit River Tribe was conducted on October 1, 2009. No concerns have been voiced by any of the tribal bands.

RECREATION

A. Affected Environment

The Williams Ranch was private land at the time of the 1979 wilderness inventory (CA-020-210) and was not included in that effort. The 2010 wilderness characteristics inventory (CA-NO-02-210) addressed the Williams Ranch in an updated inventory, and no wilderness characteristics were found in the area. This topic will not be discussed further in this document, but for additional details see the 2010 wilderness characteristics inventory (CA-NO-02-210) located in the wilderness files.

Recreation activities in the project area include; hunting, driving for pleasure with four-wheel drive vehicles, and watchable wildlife opportunities. This area has limited public access, with one of the primary access points passing through private land. The primary access is available from U.S. Highway 395 via the Ash Valley Road.

Vegetation is critical for many aspects of recreation management. With the heavy encroachment of juniper, much of the wildlife habitat on the landscape has been impacted in some way. Where vegetation loss has occurred that is important to wildlife, this loss has affected wildlife numbers and health, which in turn is directly related to recreational hunting and wildlife observation. The amount of juniper on the landscape has also reduced the amount of forage for livestock and has led to additional livestock impacts in the uplands and on riparian areas. As such, the amount and quality of vegetation is generally marginal at the end of the grazing season, as livestock tend to concentrate in and near water and riparian areas. Due to this concentration of livestock, little high quality forage is left for pronghorn, mule deer, and other wildlife species. Severe utilization from concentrated livestock use occurs on some creeks and drainages. Visual aesthetics suffer due to the loss of texture and diversity of vegetation.

The number of permits issued for big game hunting from California Department of Fish and Game has declined due to poor habitat conditions, which is partially due to the heavy encroachment of juniper, and has moderate adverse effects on hunting and tourism. This area in the past was one of the more popular mule deer hunting areas in the vicinity, but with the implementation of the “X” zones, juniper encroachment, and loss of quality habitat, permits have been severally reduced, which also corresponds to substantially less recreation and hunting in the area.

B. Environmental Consequences

1. Impacts of the Proposed Action

Impacts to recreation resources as a result of juniper encroachment are associated with vegetation loss which relates to concerns in; visual quality, aesthetics, hunting and watchable wildlife opportunities. With dense juniper, a large part of the available ground cover vegetation is lost to wildlife, this reduced wildlife use corresponds to declining recreation opportunities. Plants utilized by a variety of wildlife in the allotment have changed over the years, and this change negatively impacts the habitats and numbers of various game and non-game terrestrial species. In turn watchable wildlife suffers due to the loss of

riparian vegetation, which provides forage and cover. But with juniper removal wildlife habitat is restored and enhanced, species diversity and numbers increase. In general, hunting and watchable wildlife would benefit from juniper removal.

Effects to visual quality are positive when juniper is removed, as the landscape gains diversity and texture rather than having a homogenous look. When juniper is removed a variety of; old growth trees, single trees, small groves, and irregular and ragged cut lines are needed to obtain the diverse and enhanced visual look. If too much cutting occurs without regard for aesthetics, the "clear cut/straight line" look occurs.

Generally, juniper reduction projects would benefit recreation related resources, and would reverse the continued slight downward trend with the present and increasing levels of juniper. With a few simple practices, juniper reduction projects can benefit recreation and visual resources.

2. Impacts of No Action

The impacts of no juniper reduction would provide a continual decline in vegetation which relates to the loss of recreational opportunities. Game species associated with these special habitats would continue to decline. No beneficial effects to visual quality would occur with juniper left in place, and the landscape would continue to be fairly homogenous with little diversity, structure, or texture. Aesthetics and visual quality of riparian areas would continue to diminish with further encroachment of juniper and provide less and less habitat for game and other wildlife species and related recreational experiences.

SOCIAL AND ECONOMIC VALUES

A. Affected Environment

The Williams Ranch Juniper removal and Sage Steppe Restoration Project area is located approximately 30 miles south of the city of Alturas, CA (population approximately 2,800; http://www.bestplaces.net/city/california/alturas and http://en.wikipedia.org/wiki/Alturas, California). Alturas is the largest community in Modoc County and the economy is based on agriculture.

B. Environmental Consequences

1. Impacts of Proposed Action

When mechanical methods are used for either juniper removal or fuels reduction a beneficial economic impact may be seen in the form of contracts and employment to independent operators that are qualified to complete the desired work.

Juniper removal for biomass utilization may prove economically beneficial due to possible state and federal policy changes that are highly likely to change in the near future because of more aggressive implementation of Executive Order 13123 and Obama administration initiatives to improve incentives to use biomass for energy production. Policy and legislative changes could include state-level Renewable Portfolio Standards which, based on past experience in California, could rapidly increase demand for waste products associated with fuels treatments. (Berry and Jaccard 2001; EIA 2002).

2. Impacts of No Action Alternative

No juniper would be removed. No beneficial economic activities would occur.

C. Maps

N/A

D. References

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SOILS

The size and identification of soil crusts is very difficult for landscape scale assessment. While the BLM recognizes the importance of biological soil crust, we have focused our efforts on the stabilization of native perennial plant communities on a larger scale. As the native plant communities improve and stabilize there is opportunity for reestablishment and or maintenance of existing biological soil crust organisms.

The soil classification for the Williams Ranch Juniper removal Project area is contained in the Susanville Area, Parts of Lassen and Plumas Counties, California Soil Survey, CA #608. The soil survey was updated (tabular data) December 13, 2007 by the Natural Resources Conservation Service (NRCS) California State Office to meet current standards. The Alturas Field Office has a copy for review or it is available on the NRCS web site (Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture (Web Soil Survey). Available online at: http://websoilsurvey.nrcs.usda.gov/app/.

Soils in the project area are becoming increasingly vulnerable to surface erosion as understory vegetation beneath the canopies of western juniper stands is replaced by bare ground (Bates et al. 1998; Miller et al. 1994). Unvegetated soil surfaces are especially at risk of erosion during high intensity convective storms and during periods when the soil is frozen.

Approximately 98% of the project area consists of the Buckbay-Orhood-Fredonyer Association, 5-30% slopes, soil mapping unit (SMU) 134; 2% is comprised of the Devada-Petescreek-Fiddler Association, 2-30% slopes, SMU 178.

Based on soil mapping by the NRCS, the major soil mapping units (SMU) for the Williams Ranch Juniper Removal Project area includes the following:

SMU # 134 - Buckbay-Orhood-Fredonyer association, 5 to 30 percent slopes
Elevation: 5,200 to 6,200 feet
Mean annual precipitation: 12 to 16 inches

Buckbay soils (gravelly loam) 40% of SMU
Landform: Mountains
Parent material: Colluvium derived from andesite and residuum weathered from andesite
Slope: 5 to 30%
1% of the surface area covered with cobbles, stones or boulders
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Ecological site: Loam 12-16" (R021XE176CA)
Typical vegetation: bluebunch wheatgrass, Idaho fescue, needlegrass, antelope bitterbrush, mountain big sagebrush
Typical profile:
0 to 11 inches: Gravelly loam
11 to 19 inches: Gravelly loam
19 to 29 inches: Cobbly loam
29 to 33 inches: Weathered bedrock

Orhood soils (Very stony loam) 25% of the SMU
Landform: Ridges, mountains
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Slope: 5 to 30%
15% of the surface area covered with cobbles, stones or boulders
Depth to restrictive feature: 14 to 20 inches to paralithic bedrock
Drainage class: Well drained
Ecological site: Stony Loam 12-16" (R021XE174CA)
Typical vegetation: bluebunch wheatgrass, Idaho fescue, Thurber needlegrass, antelope bitterbrush, arrowleaf balsamroot, Lemmon needlegrass, mountain big sagebrush, rabbitbrush, Sandberg bluegrass
Typical profile:
0 to 4 inches: Very stony loam
4 to 9 inches: Very cobbly loam
9 to 19 inches: Very cobbly clay loam
19 to 23 inches: Unweathered bedrock

Fredonyer soils (Very stony loam) 20% of the SMU
Landform: Ridges
Parent material: Colluvium derived from volcanic rock and residuum weathered from volcanic rock
Slope 5 to 30%
15% of the surface area covered with cobbles, stones or boulders
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage class: Well drained
Ecological site: Very Stony Loam 12-16" (R021XE178CA)
Typical vegetation: Idaho fescue, curl-leaf mountain mahogany, mountain big sagebrush
Typical profile
0 to 4 inches: Very stony loam
4 to 12 inches: Very gravelly loam
12 to 28 inches: Very cobbly loam

28 to 38 inches: Unweathered bedrock

SMU # 178 - Devada-Petescreek-Fiddler association, 2 to 30 percent slopes
Elevation: 5,000 to 7,600 feet
Mean annual precipitation: 10 to 20 inches

Devada soils (Very Stony Loam) 40 % of the SMU
Landform: Ridges, Mountains
Slope 2 to 15%
Depth to restrictive feature: 12 to 20 inches to lithic bedrock
Drainage Class: Well drained
Ecological Site: R021XE173CA – Shallow Stony Loam 12 – 16" P.Z.
Typical Vegetation: bluebunch wheatgrass, low sagebrush, Thurber needlegrass, bluegrass, antelope bitterbrush and Idaho fescue
Typical profile:
0 to 7 inches; very stony loam
7 to 15 inches: Gravelly loam
15 to 19 inches: Unweathered bedrock

Petescreek soils (Very Stony Loam) 25 % of the SMU
Landform: Mountains
Slope: 15 to 30%
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock
Drainage Class: Well drained
Ecological Site: R021XE044CA – Cool Loam 12 – 16" P.Z.
Typical Vegetation: Idaho fescue, bluegrass, needlegrass, antelope bitterbrush and mountain big sagebrush
Typical profile
0 to 10 inches: Very gravelly loam
10 to 17 inches: Gravelly loam
17 to 27 inches: Cobbly loam
27 to 60 inches: Weathered bedrock

Fiddler soils (Very Stony Loam) 20 % of the SMU
Landform: Mountains
Slope: 5 to 30%
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage Class: Well drained
Ecological Site: R021XE174CA – Stony Loam 12 – 16" P.Z.
Typical Vegetation: Idaho fescue, bluebunch wheatgrass, mountain big sagebrush, Nevada bluegrass, antelope bitterbrush, arrowleaf balsamroot, bottlebrush squirreltail, rabbitbrush, Sandberg bluegrass and Thurber needlegrass
Typical profile
0 to 8 inches: Very stony loam
8 to 14 inches: Very cobbly clay loam
14 to 23 inches: Very cobbly clay
23 to 28 inches: Unweathered bedrock

The construction limitations for log landings and haul roads are severe for both soil associations. The Buckbay and Petescreek components (SMU 134 and 178 respectively) are rated as moderate.

Most of the soils are moderately suited for harvest operability (traditional logging operations); the Devada component of SMU 178 (40% of the SMU) and the Fredonyer component of SMU 134 (20% of the MU) are both well suited for use of harvesting equipment. All the soils are poorly suited for log landings with the exception of the Devada soils moderately suited. Soil rutting ratings for both soils are slight. The erosion hazard for roads (natural surface) is severe for both associations; the Fredonyer soil of SMU 134 and the Fiddler soil of SMU 178 have a moderate rating. The erosion hazard for off-road or off-trail areas after disturbance activities is moderate for both soils; the Devada component has a slight rating.

Onsite investigation may be needed to validate the interpretations and ratings given above to confirm the identity of the soil on a given site. As suggested by the NRCS (2010) overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. However, the ratings are given for traditional timber harvesting practices, not juniper woodland harvesting/removal.

As reported by Bates (2000) erosion rates were found to be higher in the interspaces of semiarid ecosystems and erosion potential was higher in juniper woodlands than in sagebrush grasslands.

B. Environmental Consequences

1. Impacts of Proposed Action

Impacts from tree removal will occur primarily as temporary soil disturbance associated with equipment operation and may be prevalent in small localized areas i.e. log landings, skid trails, staging areas, etc. during and immediately after the project implementation and completion. Hand cutting and pile burning of juniper would have a minimal impact on soils. Soil disturbances are anticipated to be offset by a positive increase in vegetation cover, which would thereby decrease the potential for soil erosion.

Negative impacts are anticipated to be minimal and short-duration (less than 2 years) from the treatment proposed. Scheduling activities during dry weather, or frozen conditions will mitigate major surface disturbance associated with equipment and or skidding, any appropriate stabilization or post-treatment practices will be implemented (JSPS2003).

Positive impacts would be an increase in herbaceous density, cover, and biomass. Bates et.al (2007) found that perennial grasses made up the highest proportion of herbaceous cover over annual grasses, annual forbs, and perennial forbs over a period of 12 years. Accordingly herbaceous cover and litter also increased over time. The Williams Ranch project area is in good ecological condition (site visits in 2010 and 2011 by the Botanist), with a diverse composition of native perennial grasses and forbs. It is anticipated that perennial grass and herbaceous litter and cover will increase over time, helping to reduce surface runoff and soil erosion.

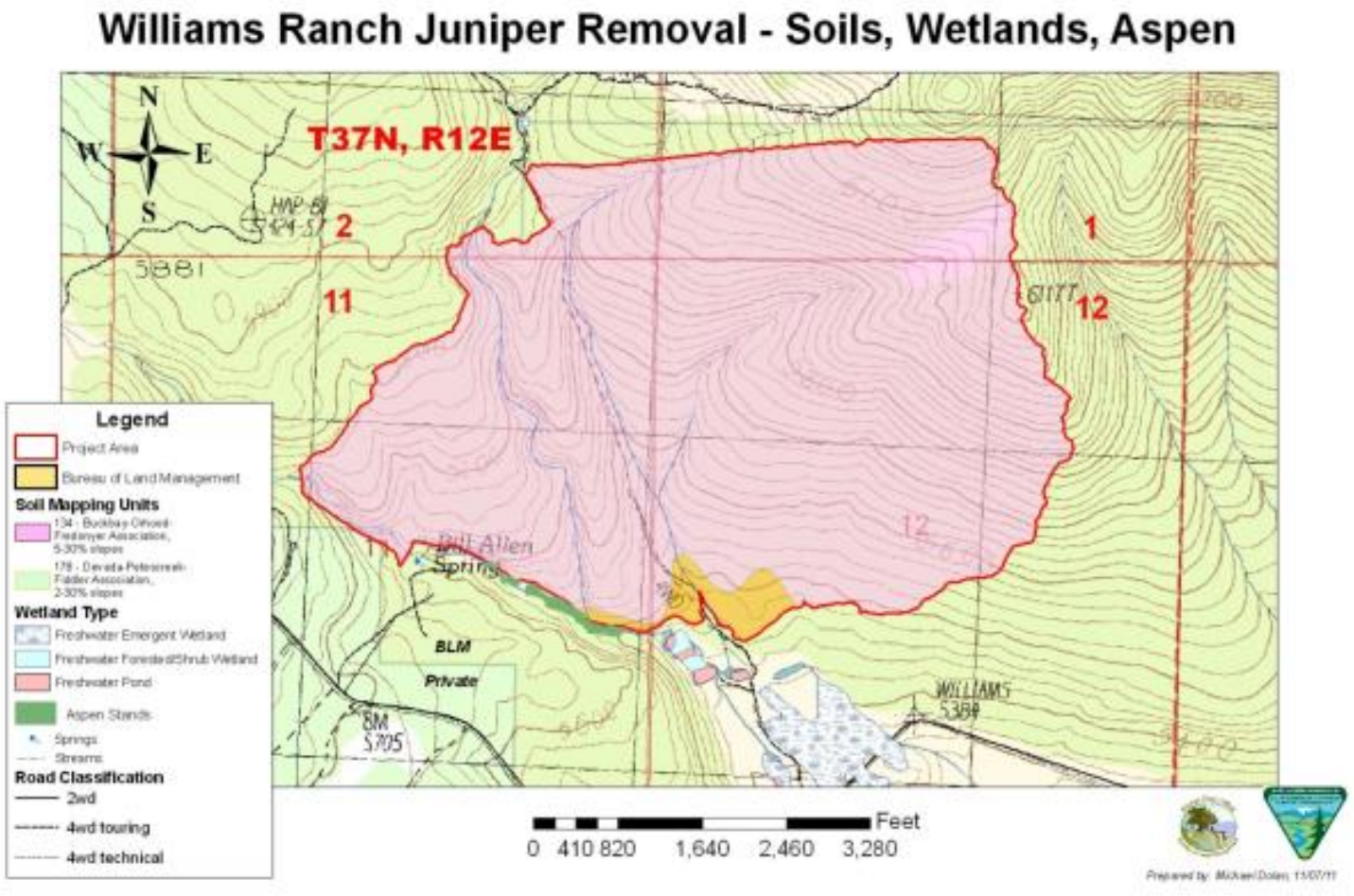
2. Impacts of No Action Alternative

No juniper removal would occur and this could result in increased erosion potential and a decrease in plant available water associated with juniper litter and debris dominance. Bates et. al (2007) indicated that leaving juniper debris on site (not removing cut junipers) did not benefit establishment and growth of perennial grasses. Furthermore, juniper debris provided a favorable environment for establishment of annual grasses and weedy species. Less ground cover is provided by annual species than native perennial

species and this could result in long-term negative impacts such as less soil infiltration and increased runoff and surface erosion.

Western juniper canopies affect the amount of effective precipitation available for plant growth. Effective precipitation is the amount of precipitation that enters the soil and is stored with the soil profile at a given point within a watershed. Studies suggest that the amount of precipitation reaching the soil surface can be significantly reduced by the juniper canopy (Miller et al. 2005). While the canopies of cut trees are presently gone, the duff remaining will have similar effects on water infiltration. The activities of equipment removing cut trees and the duff layers now exposed to local weather events will speed up the break down of the duff layers, thereby improving the infiltration rates into the soil profile. The potential for interception from juniper foliage is greater in juniper woodland than in a shrub-steppe community (Eddleman et al. 1994).

C. Maps



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VEGETATION

Threatened and Endangered Species

There are no federally listed threatened or endangered species territories or areas of critical habitat in the proposed project area. There are no known BLM special status plant species found in the project area.

A. Affected Environment

The flora of the project area is in the area known as the Modoc Plateau, which is a subdivision of the Great Basin geographical province, as described in the Jepson Manual (Hickman, 1993; Oswald, 2002). The broad plant alliances present include western juniper woodland (*Juniperus occidentalis* ssp. *occidentalis*), mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), curlleaf mountain mahogany (*Cercocarpus ledifolius*), aspen (*Populus tremuloides*), and mixed mountain big sagebrush/mountain shrub. The aspen stands have been mapped and can be found on the Soils Map, Figure 4.

The project area has the following plant associations: mountain big sagebrush/tailcup lupine-wooly mulesear/Idaho fescue; western juniper/mountain big sagebrush/Thurber's needlegrass, curlleaf mountain mahogany/lupine/bluebunch wheatgrass-cheatgrass, aspen/snowberry/yarrow/mountain brome, low sagebrush/phlox/Thurber's needlegrass, and low sagebrush/squirreltail-Sandberg's bluegrass. Other common species include desert gooseberry, gray rabbitbrush, Hood's phlox, hawksbeard, bluebunch wheatgrass, onion grass, squirreltail, Idaho fescue, bluegrasses, and mountain brome.

B. Environmental Consequences

1. Impacts of Proposed Action

Cheatgrass, a frequently present weed species, could invade areas where pile burning is utilized. Annual grasses were found to invade sites with mesic soil temperature regimes and areas of juniper litter accumulations (Bates et al. 2007). Bates et al. (2007) suggested that removal of the juniper debris after treatment will help to reduce establishment of annual grasses; in their study they stated that on areas with dry soils burning in the winter or early spring had little impact on understory composition and the perennial herbaceous vegetation increased rapidly. Mechanical removal of juniper debris as a part of the juniper removal contract will benefit perennial grass establishment on the dryer sites.

Overall the impacts of the proposed action are anticipated to be positive. Based on the research from authors such as Bates (2000), removing western juniper in areas in which understory species have been extirpated can potentially restore understory productivity and diversity. Early seral grass species including Sandberg's bluegrass and bottlebrush squirreltail (both of which are found in the project area), should re-occupy the areas within a year after juniper removal. Bates et.al. (2007) found that Sandberg's bluegrass comprised a major portion of the herbaceous cover 2 years after cutting and removal of juniper on a site in the Steen's Mountains, Oregon. Cover reduced thereafter as the cover of other perennial species increased. Squirreltail also increased from2 to 6 years post cut, especially in the canopy and debris locations.

2. Impacts of No Action Alternative

Leaving all the juniper limbs and branches from the cut trees could increase the overall fire hazard. The Soil Survey of the Susanville area (internet, Soil Survey Staff, 2010) rates the soils as having a moderate potential for damage by fire.

Perennial grass species would be slow to return but plant succession will follow multiple pathways dependent on location which is influenced by factors such as litter dynamics, soil nutrient availability, pretreatment floristics, length of time the area has been subjected to juniper occupation, weather patterns, and site potential. It has been found that herbaceous cover does increase in cut versus uncut juniper-sagebrush woodlands (Miller et. al. 2005, Bates et.al. 2007, and Barrett 2007).

3. Mitigation

Where natural revegetation is not successful, broadcast seeding or planting of native grasses and shrub species would be implemented to restore the shrub and grassland communities. If this was implemented broadcast seeding would occur within a month of juniper removal; the action of dragging/moving juniper trees will aid in creating a suitable seedbed and incorporating the seed into the soil.

If BLM special status species are located in the project area mitigation measures will be implemented to either avoid them or reduce impacts so as not to cause a decline in the reproductive viability of those species. The Botanist will coordinate with the Forester/COR on the locations of landings and roads.

C. Maps

N/A

D. References

Barrett, Hugh. 2007. Western Juniper Management: A Field Guide. The Oregon Watershed Enhancement Board.

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WATER QUALITY, SURFACE AND GROUND WATER

A. Affected Environment

The southeast portion of the Alturas Field Office lies within the North Lahonton Basin. The basin is under the jurisdiction of the Lahontan Regional Water Quality Control Board (Region 6).

The Williams Ranch Juniper Removal Project area lies within the Madeline Plains Subbasin 4th Level HUC #18080002. The watershed is located south west of the South Warner Mountain Range, on the north east edge of the Madeline Plains and southeast of the town of Madeline in Lassen County.

B. Environmental Consequences

1. Impacts of Proposed Action

Miller et al. (2005) however, do note that it is difficult to generalize the hydrological response from one watershed to another due to the variability in soils, geology, slopes, and spatial and temporal variations in climate and precipitation that occur across the range of western juniper. There is anticipated to be positive impacts from the removal of the down juniper trees. Barrett (2007) states: "Reducing the interception of precipitation can occur over varying periods of time depending on the treatment. Falling whole trees and leaving them on site may increase the interception of precipitation until leaf-fall and stem degradation occur (in about 3 years). Removing the tree boles and leaving a light to moderate scattering of branches (slash) will minimize this loss of interception. In addition, placing limbs in contact with the soil and providing retention/detention of overland flow increases the time available for infiltration to occur. Slash also moderates soil temperature and other microclimatic variables (humidity, air flow, etc.), improving conditions for seed germination and seedling establishment, and protection from grazing use".

Initial impacts to water quality will be minimal following the treatment guidelines. Drainages within the project area will be of special concern if flowing water is present. Sediment loading into flowing water bodies is of critical concern to aquatic life and will be avoided wherever possible. Immediate surface water quality impacts may result if a storm occurs, however effects will be temporary. Storm-water runoff may carry loose sediments from the treated areas, but grasses and shrubs should quickly establish themselves eliminating damage from erosion. Moreover, treatment will likely occur during dry or frozen conditions when all flowing or standing water has ceased.

2. Impacts of No Action Alternative

With no juniper removal herbaceous vegetation in 5 to 10 years will not form a uniform groundcover across the project area, bare ground will not be reduced, and increased infiltration and decreased erosion will not be evident. There will be less likelihood of improved hydrologic function in the project area watersheds there would not be a trend towards the project areas ability to capture, store and safely release water. This determination is based on studies from and cited in Miller et al. 2005. No Impacts are similar to Vegetation above.

3. Mitigation

Crossing riparian/wetland areas or drainages with surface water will only be allowed with prior authorization from the riparian lead, forester and the COR.

C. Maps

N/A

D. References

Barrett, Hugh. 2007. Western Juniper Management: A Field Guide. The Oregon Watershed Enhancement Board.

Miller, R.F., J.D. Bates, T.J. Svejcar, F.B. Pierson, and L.E. Eddleman. 2005. Biology Ecology and Management of Western Juniper. Oregon State University Agric. Expt. Sta. Tech. Bull. 152.

WETLANDS AND RIPARIAN ZONES

A. Affected Environment

The project area contains unnamed intermittent streams that support riparian vegetation. One perennial intermittent stream, Bill Allen Spring Creek, originates in the SW portion of the project area and flows into the Williams Ranch ponds, which are outside the project area. This drainage is the boundary for the unit cut in 2010; it is outside but adjacent to the unit. Another intermittent stream runs through the project area; this unnamed creek is parallel to the road that runs north-south through the middle of the project area. Riparian vegetation does occur along the unnamed creek at the SE or bottom end of the unit (primarily in SMU 178). Riparian vegetation also occurs along Bill Allen Spring Creek.

There are some unnamed ephemeral drainages running through the treatment area that temporarily transmit water, but do not support noteworthy riparian vegetation. Ephemeral streams do not have true riparian area characteristics but are hydrologically connected to perennial and intermittent streams (Proposed Revised Land and Resource Management Plan, 2003). Due to the temporary ability of these areas to transmit water, they are not considered to express the necessary components of true riparian or wetland areas. Any negative impacts due to juniper removal would, therefore, be insignificant.

Wetlands occur outside the project area, as identified and mapped by the U.S. Fish and Wildlife Service National Wetlands database. These wetlands include freshwater emergent wetland, freshwater forested/shrub wetland, and freshwater pond—the latter two wetland types are the Williams ranch ponds and the emergent wetlands are between the Madeline-Adin road and the project area. The AFO staff has identified these wetlands on the ground and one of these riparian areas is delineated on the riparian/wetlands (Figures 3 & 4).

B. Environmental Consequences

1. Impacts of Proposed Action

Positive impacts to wetlands and riparian areas are similar to those described above in water quality, surface and ground water. Because increased western juniper dominance has been found to result in

increased rill formation, surface runoff, and sediment yields (soils and water quality above, Pierson et al. 2003, and Miller et al. 2005), removing the down juniper trees will enhance riparian areas by preventing excess siltation (sediment loads) and allowing for rhizomatous and sod forming grasses and sedges to expand into and/or re-colonize them.

2. Impacts of No Action Alternative

There would be no impacts from the juniper removal. In the short term, there would be no effect on existing wetlands and riparian areas from the alternative. Long-term impacts could result in increased wetland/riparian area degradation, as watershed health, function and stability would decrease causing erosion potential to increase. Runoff would last longer as rehabilitation would take longer due to decreased vegetation diversity. Future wildfires would be larger and hotter, resulting in larger more continuous areas without vegetation cover, thus increasing erosion potential (Pierson et al. 2007; Miller et al. 2005).

3. Mitigation

Riparian areas will be avoided by heavy equipment. If inundated or saturated conditions exist during scheduled treatment events the resource specialist will decide if a buffer zone is necessary. Crossing riparian/wetland areas or drainages with surface water will only be allowed with prior authorization from the riparian lead, forester and the COR.

C. Maps

See map under Soils.

D. References

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http://www.southernregion.fs.fed.us/planning/sa_plans/Jefferson/lrmp_pdf%5CAppC_ riparian.pdf

U.S. Fish and Wildlife Service web site - http://www.fws.gov/wetlands

WILDLIFE

Threatened and Endangered Species

The BLM determined that implementation of the Strategy would have ***no effect*** on Modoc suckers, Lost River suckers, shortnose suckers, Warner suckers and their applicable designated critical habitat. The Strategy would also have ***no effect*** on Shasta crayfish, northern spotted owl or Carson wandering skipper. These species will not be discussed further in this document.

A. Affected Environment

Candidate, BLM Sensitive and Sate Listed Species

Greater Sage-grouse

Sage-grouse are currently considered a federal candidate, BLM sensitive and California State listed species. Greater sage-grouse are heavily dependent on sagebrush habitats and are considered a sagebrush obligate species. Historical and active breeding grounds (leks) on BLM-administered lands are located primarily in low sagebrush habitats. Sage-grouse use sagebrush stands as both winter and nesting habitat. Leks are often located in open areas surrounded by sagebrush (Connely et al. 2000). Sage-grouse most often nest under sagebrush shrubs; successful habitat contains tall grass cover (Gregg et al. 1994). Brood-rearing habitat includes wet meadow and riparian habitats where insects are abundant.

No critical habitat has been designated for sage-grouse by FWS. However, conservation strategies for sage-grouse have been developed along with population management units covering several hundred thousand acres of potential sagebrush habitat in Lassen County. The project area is located within the Buffalo-Skedaddle Sage-Grouse Population Management Unit (PMU). The BLM lands that are within this PMU are managed with recommendations from the associated conservation strategy. The objectives and goals of the Conservation Strategy for Sage-Grouse and sagebrush within the Buffalo-Skedaddle Sage-Grouse PMU include protecting, conserving, restoring, maintaining and minimizing disturbance to sage-grouse and their habitats.

The project area lies between two sage-grouse lek complexes; Madeline Plains and Ash Valley. Individual lek sites are located between two and five miles of the project boundaries. No leks or sage-grouse use has been documented within the project area.

Migratory Birds

A wide variety of migratory birds may be found in the project area at some point throughout the year. Migratory birds are those that migrate for the purpose of breeding and foraging at some point in the calendar year. Migratory birds may utilize the project area for food, cover and nesting throughout the year.

Raptors

Raptors species which may occur within the project area include northern harrier *(Circus cyaneus)*, golden eagle (*Aquila chrysaetos*), red-tailed hawk *(Buteo jamaicensis)*, Swainson's hawk (*Buteo swainsoni*), ferruginous hawk (*Buteo regalis*), American kestrel (*Falco sparverius)*, short-eared owl *(Asio flammeus)*, great horned owl *(Bubo virginianus)*, bald eagle (*Haliaeetus leucocephalus*), rough-legged hawk *(Buteo lagopus)*, merlin *(Falco columbarius)*, Cooper's hawk *(Accipiter cooperii)*, northern goshawk *(Accipiter gentilis)* and long-eared owl *(Asio otus)*. Most raptor species nest in a variety of habitats including but not limited to; native and non-native grasslands, agricultural lands, live and dead trees, cliff faces, rock outcrops and tree cavities.

One red-tailed hawk nest has been documented adjacent to the project area. The nest was documented as active in 2009 and 2010.

Greater Sandhill Crane
The greater sandhill crane *(Grus canadensis tabida)* is state listed as threatened. It is commonly found in wetlands, especially along the margins of shallow water where they assemble nests of floating material. Nesting has also been documented on islands. Cranes commonly feed in wet meadows and croplands.

The project area does contain suitable greater sandhill crane nesting and foraging habitat. Sandhill crane adults have been documented utilizing the project area in recent years.

Ungulates

Mule Deer
Mule deer utilizing the project area are part of the East Lassen Herd Unit. This herd unit is composed of Rocky Mountain mule deer (*Odocoileus hemionus hemionus*) with some intermingling of Columbian black-tailed deer (*Odocoileus hemionus columbianus*).

The project area does not contain designated critical deer habitat, migration corridors or fawning grounds. However, critical winter range is documented 2 miles east of the project area and deer can be found within the project area throughout the year.

Pronghorn Antelope
The project area falls within the Lassen pronghorn antelope (*Antilocapra americana*) Herd and Management Unit 4. This management unit contains approximately 1.2 million acres of range utilized by antelope. BLM lands encompass 57 percent, private lands 36 percent and Forest Service lands seven percent.

The Lassen herd was the largest of the California herds in the 1940's. A severe winter in the 1950's resulted in the loss of over half of the herd population. The herd declined from an average of 3,000 to about 400 animals. Since the 1950's, the herd has increased gradually to approximately 1,500 animals in 1981. Current population estimates are not available.

The Lassen herd migrates to and from seasonal ranges in excess of 70 miles; the longest migration known in California. There is some interchange between animals from the Lassen Herd and the adjoining Likely Tables Herd.

A migration corridor has been identified by California Department of Fish and Game on the south west boundary of the allotment. Antelope can be found within the project area throughout the year.

B. Environmental Consequences

1. Impacts of Proposed Action

Greater Sage-grouse
No negative short or long-term impacts to sage-grouse are anticipated from project activities as there are no lek sites within 2 miles of the project area.

Long-term benefits for sage-grouse and other sagebrush obligate species would occur under the Proposed Action once junipers are controlled and the site is restored. Benefits include: increasing the availability of

forage (grasses and forbs), establishment of sage-grouse nesting and wintering habitats and a reduction in predator perches.

Migratory Birds

Human activities likely displace migratory birds farther than simply the physical habitat disturbance. Noise generated from vehicles and machinery can be troublesome for songbirds by interfering with the males' ability to attract mates and defend territory, and the ability to recognize calls from conspecifics during the breeding season (BLM 2003). Additionally, junipers and sagebrush serve as food, shelter and nesting habitat for many migratory birds. Project activities would result in direct habitat loss.

Raptors

Some impacts to nesting and or foraging birds are anticipated during project activities. Human activities in close proximity to active raptor nests may interfere with nest productivity. Romin and Muck (1999) indicate that activities within 0.5 miles of a nest are prone to cause adverse impacts to nesting raptors. If activities occur during nesting, they could be sufficient to cause adult birds to remain away from the nest and their chicks for the duration of the activities. This absence can lead to over heating or chilling of eggs or chicks. The prolonged disturbance can also lead to the abandonment of the nest by the adults. Both actions can result in egg or chick mortality. In addition, human activities near nests can draw increased predator activity to the area and increase nest predation.

Ungulates

The Proposed Action would result in short and long-term impacts to mule deer and pronghorn within the project area. Short-term impacts include increases in noise from machinery and equipment and human presence within the project area. Pronghorn and mule deer may be temporarily displaced during project activities and impacts will be greatest if activities occur during winter months. Winter ungulate diets are "sub-maintenance", meaning they lose weight and body condition as the winter progresses. Survival below the maintenance level requires behavior that emphasizes energy conservation. Canfield et al. (1999) pointed out that forced activity caused by human disturbance exacts an energetic disadvantage, while inactivity provides an energetic advantage for animals. Geist (1978) further defined effects of human disturbance in terms of increased metabolism, which could result in illness, decreased reproduction, and even death.

Improvements to existing roads and construction of temporary roads and skid trails throughout the project area would allow vehicles to travel at faster speeds and provide access into areas that were not accessible previously. Increased vehicular traffic may result in higher rates of collisions with deer and pronghorn in both the short and long-term. Temporary roads and skid trails would be blocked with natural materials after completion of the project in order to prohibit vehicle access.

2. Impacts of No Action Alternative

The No Action alternative would result in 400 acres of downed junipers left on the ground. This would increase the risk for catastrophic wildland fires within the project area and further degrade the quality of wildlife habitat for many species. There would be no increase in the availability of grasses or forbs or enhancement of sage-grouse habitats. Under the No Action alternative there would be short-term and long-term negative impacts and only long-term beneficial impacts to sage-grouse, pronghorn, mule deer, raptors or other wildlife species.

3. Mitigation

Sage-grouse

a. Construction of temporary roads, skid trails and landings will be placed outside of sagebrush communities where ever possible. In areas where sagebrush cannot be avoided and in place of flat blading (clearing all vegetation to bare soil), alternate methods such as mowing and minimizing the development of skid trails and landings will be used.

Sandhill Cranes

a. Raptor surveys will be conducted within 0.25 miles of the project area during the breeding season annually, prior to the commencement of project activities. If active sandhill crane nests are identified within the project area buffers will be applied in accordance with the Alturas RMP, Table 2.24-3, "Seasonal Restrictions and Distance Buffers for Wildlife" (page 2-133), in order to reduce the risk of decreased productivity or nest failure.

Raptors

a. Raptor surveys will be conducted throughout the project area during the breeding season (April 1-June 15) annually, prior to the commencement of project activities.

b. If active raptor nests are identified within the project area buffers will be applied in accordance with the Alturas RMP, Table 2.24-3, "Seasonal Restrictions and Distance Buffers for Wildlife" (page 2-133), in order to reduce the risk of decreased productivity or nest failure.

C. Maps

N/A

D. References

Canfield, J. E., L. J. Lyon, J. M. Hillis, and M. J. Thompson. 1999. Effects of Recreation on Rocky Mountain Wildlife: A Review for Montana, coordinated by G. Joslin and H. Youmans. Ch. 6. Committee on Effects of Recreation on Wildlife, Montana Chapter of The Wildlife Society.

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USDI Bureau of Land Management. 2003. Record of Decision and Resource Management Plan Amendments for the Powder River Oil and Gas Project, Buffalo Field Office. Buffalo, WY.

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CHAPTER 4: OVERALL CUMULATIVE IMPACTS

The Council on Environmental Quality (CEQ) regulations that implement NEPA defines a cumulative impact as: "The impact on the environment which results from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions, regardless of which agency or person undertakes them." Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

For the purpose of this analysis, the cumulative impact assessment area was determined based on three areas of consideration: vegetation, watershed and geomorphology. To the north, the assessment area will not extend beyond the Jess Valley Road. To the east, the assessment area is where the BLM border the Modoc National Forest and the Warner Mountains which is the headwaters of the North Fork and South Fork of the Pit River. To the west, highway 395 which runs along the eastern edge of the Madeline Plains.

For Social Values and Economics the cumulative assessment area would be Alturas since it is the largest city located near the project area. However, no cumulative impacts are expected to Social Values and Economics and therefore these elements of the human environment will not be analyzed in this chapter.

Activities that could add cumulatively to the effects of the proposed action include other juniper removal and fuel reduction projects. These types of projects are proposed and/or are occurring on both public and private lands. The removal of juniper in other areas would cumulatively improve vegetation diversity, improve and restore shrub steppe communities and improve wildlife habitat. Mechanical and manual treatment projects cumulatively have positive impacts by reducing heavy fuel loads, reducing risk of catastrophic wildfire, restoring natural fire regimes, and restoring the sage steppe ecosystem.

Cumulative Impacts to Affected Resources

Cultural Resources

Juniper treatment on federal lands would have minor to major cumulative effects to cultural and paleontological resources as a result of: increased erosion which acts to move surface artifacts and cultural soils from their depositional context; improved access to previously remote areas which acts to increase illegal artifact collection; the flag-and-avoid approach used as mitigation which through the lack of evaluation of potentially significant sites and districts, as well as the identification of cultural sites within untreated areas, results in the failure to collect additional data about resources that are necessary for relating them to larger regional and thematic districts or landscapes.

Livestock Management

Grazing systems and livestock exclusion necessary to manage for desired sage brush steppe conditions could potentially result in changes in one or a combination in frequency, intensity and season of livestock

use and/or changes in forage availability for livestock. Depending on the desired condition, forage available to livestock could increase or decrease. Potential impacts could include changes to current livestock grazing intensity, frequency, and season of use.

The removal of juniper trees would allow more water into springs, seeps, and ephemeral streams. The prolonged effect is more water would be available longer into the summer for livestock as well as wildlife. Resting the allotment for two growing seasons could possibly have a short-term adverse effect on the economic income to the Mendiboure Ranch but potentially provide more forage in the future. The implementation of a five inch stubble-height in the riparian and 40% use of the current year's forage as required in the 1998 Rangeland Standards And Guidelines for California and Northwestern Nevada would require livestock to be moved more frequently which would be an additional expense to the permittee.

Recreation

Cumulative effects from juniper removal will reverse the trend of juniper encroachment and reduced recreation activities. As more juniper is removed overtime on the landscape, wildlife use will increase, which in turn will provide more recreational hunting, watchable wildlife opportunities, and enhanced visual quality. More back country roads may be drivable for recreational driving, as some roads now have been closed off naturally by too much juniper in the roadway or overhanging branches.

Soils

Cumulative impacts would be positive for ecosystem diversity and rangeland health removing Western juniper in areas in which understory species have been extirpated can potentially restore understory productivity and diversity (Bates, et al. 2000). This in turn would reduce the erosion potential because of the highly competitive nature of juniper with interspace grasses; an increase in juniper cover often leads to increased exposure of bare soils. Any time bare soils are exposed, the potential for erosion is increased (Thurow and Hester). Negative cumulative impacts are not foreseen or anticipated.

Vegetation

Removal of juniper trees would be beneficial to ecosystem health and biodiversity. Cutting juniper trees has proven effective in increasing total understory biomass, cover, and diversity (Bates, et al. 2000; Miller et al. 2005). Removal of juniper trees will reduce the potential for a catastrophic wildfire allowing more fire tolerant species to compete reducing wildfire potential.

Water Quality

Cumulative impacts would be positive for improved hydrologic function from improved water quality and improved surface and ground water (recharged, stored and deliverable). Deep soil moisture would be available for shrubs and herbaceous vegetation. The improved vegetation cover and structure in the uplands and riparian areas would also prevent excess moisture in the soil profile from becoming ground water in the form of overland flow and subsequent surface erosion.

Little information exists related to similar actions on private lands. Private landowners do not have the same restrictions placed on them as federal or state agencies. Juniper reduction projects on private lands would be expected to increase sediment loads into creeks and springs from similar activities albeit only in the short term.

CHAPTER 5: CONSULTATION AND COORDINATION/PREPARERS

Consultation

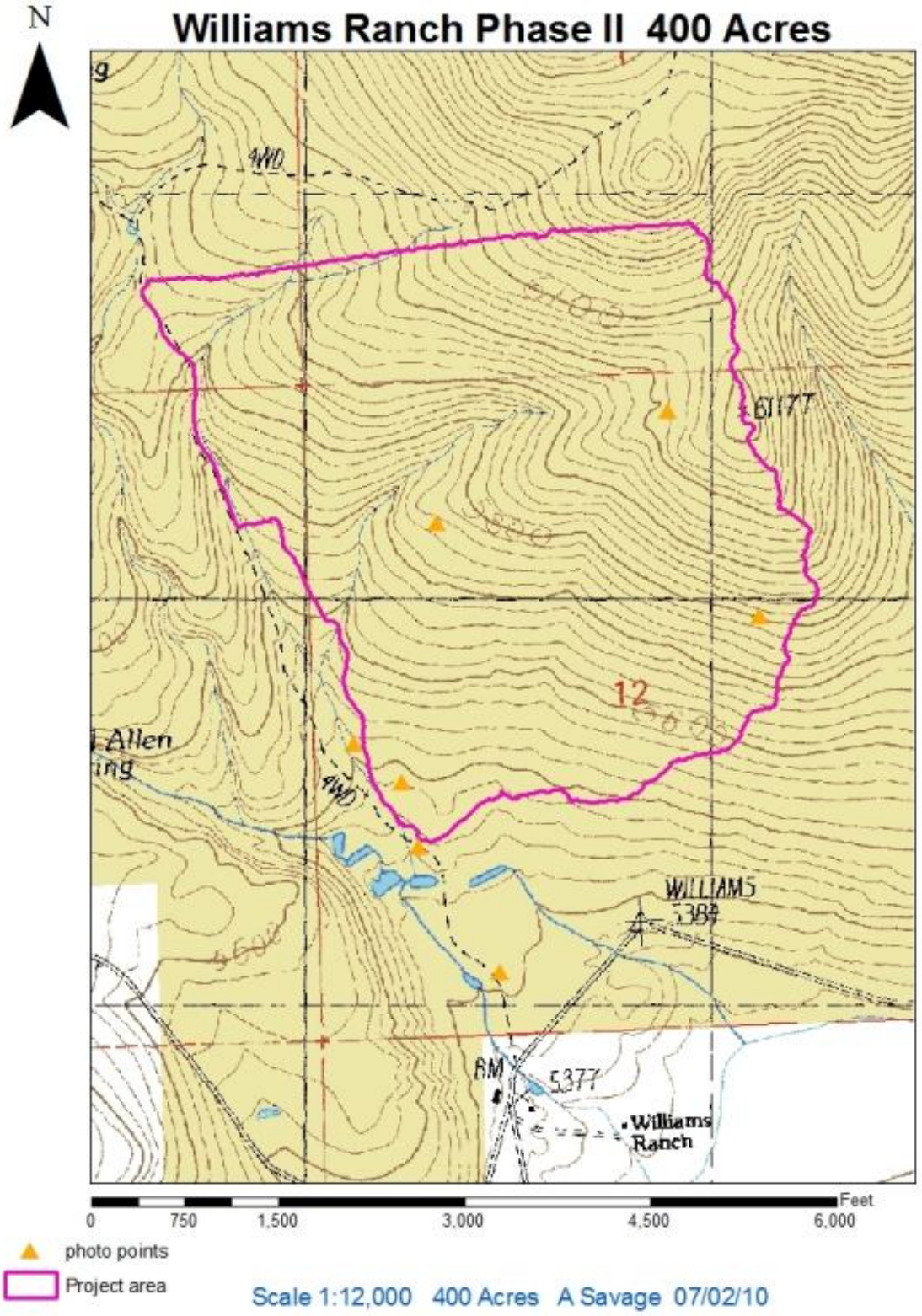
Tribal consultation with the Pit River Tribe was conducted on October 1, 2009. No concerns have been voiced by any of the tribal bands.

Coordination

California Department of Fish & Game (Alturas & Redding, CA offices)
Center for Biological Diversity
Mendiboure Ranch, Permittee
Pit River Tribe
Western Watershed Project

List of Preparers

Name	Resource/Activities	Project Role
Emily S. Jennings	Environmental Coordinator	Interdisciplinary Team
Arlene D. Kosic	Wildlife Biologist - Wildlife T&E	EA Preparer Interdisciplinary Team
David J. Scott	Archeologist - Cultural/Historical Resources	EA Preparer Interdisciplinary Team
Claude F. Singleton	Outdoor Planner - ACEC/Recreation/ Wilderness/Travel, VRM and OHV	EA Preparer Interdisciplinary Team
Marti E. Butow	Rangeland Management Specialist - Range	EA Preparer Interdisciplinary Team
Michael P. Dolan	Botanist - T&E Plants/SWA	EA Preparer Interdisciplinary Team
Peter W. Hall	Forester – Forestry	EA Preparer/Project Lead Interdisciplinary Team
Albert R. Savage	Fuels Technician - Fuels Program	EA Preparer Interdisciplinary Team
Alan M. Uchida	Rangeland Management Specialist - Range/Noxious Weeds	EA Preparer Interdisciplinary Team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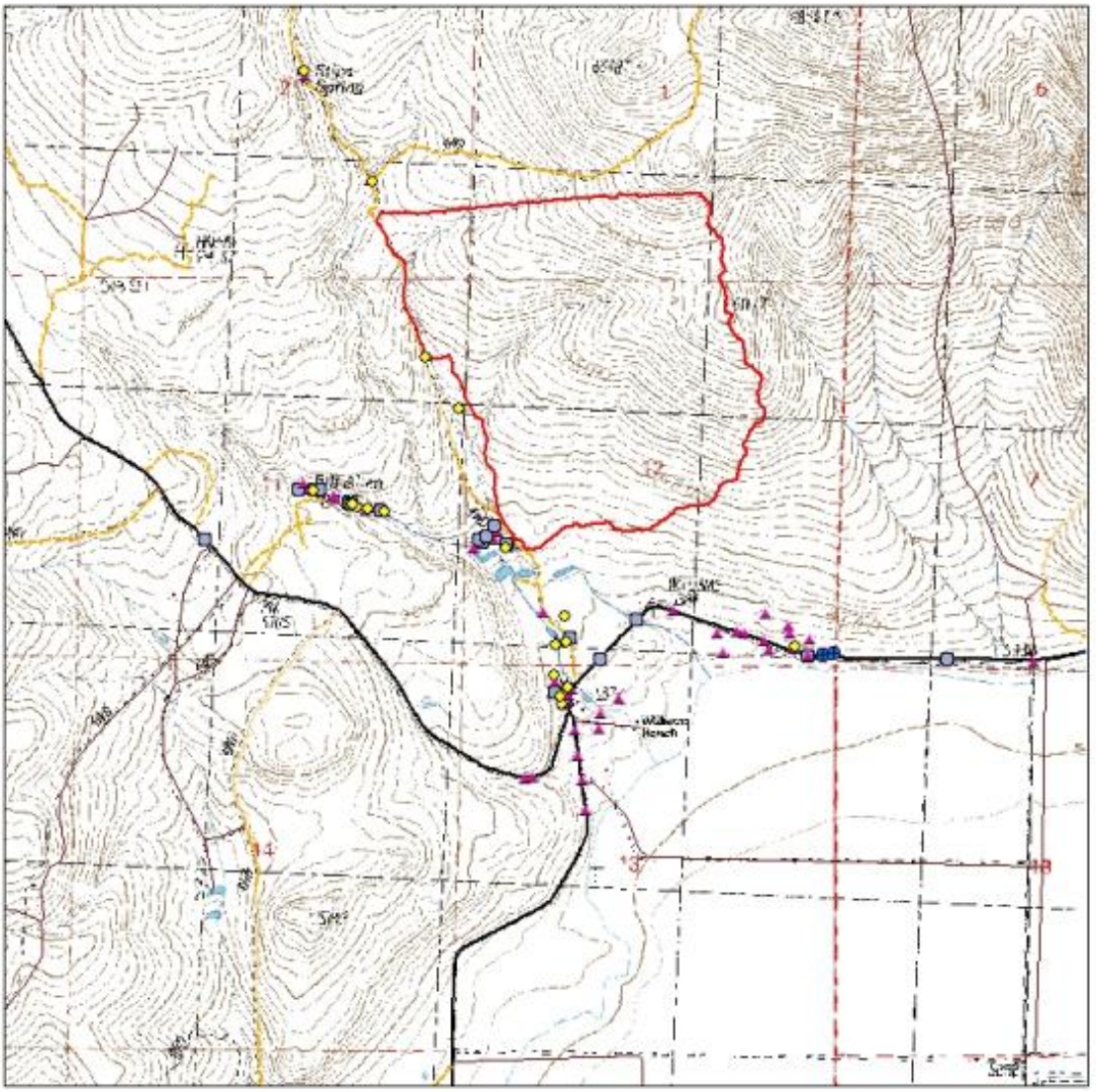

Legend

Williams Ranch Project Boundary

Noxious_Weeds_Points_2011

Noxious Weed Points 2010

WEED_NAME

Hoary Cress

Russian Knapweed

Scotch Thistle

Noxious Weeds Points 2009

WEED_NAME

Hoary Cress

Russian Knapweed

Scotch Thistle

Noxious Weeds Points

WEED_NAME

Hoary Cress

Russian Knapweed

Scotch Thistle

Williams Ranch
Hazardous Fuels/Sage Steppe Restoration Project
Noxious Weeds Map

Scale

1:24,000

0 0.125 0.25 0.5 0.75 1 Miles

N W E S

Prepared By: Alan M. Uchida
BLM - Alturas Field Office
October 22, 2011