DECISION RECORD

EA LOG NO.:	OR-010-2001-05	
PROJECT NAME:	Long Canyon Prescribed Burn	
Applicant:	Bureau of Land Management	
Address:	H.C.60 Box 337	
	Lakeview Or. 97630	County: Lake
BLM Office:	Lakeview Resource Area	Phone: (541) 947 2177

DECISION RECORD

Decision: The following is the decision of the Bureau:

To conduct a prescribed burn, with additional fuel pretreatment, on approximately 2600-3600 acres of public land and 900 acres of private land in Long Canyon, following the prescription in the Long Canyon Burn Plan and as described in Alternative 2 in the EA. The burn area will include the West Pasture in the Round Mountain Allotment. Terrain barriers, rocky slopes, headwalls, existing roads and mowed lines will serve as burn boundaries. No structures are present in the area. Following the burn the pasture will be rested for a minimum of two growing seasons.

Rationale:

Implementation of Alternative 2, will provide the best opportunity to reinstate fire as an ecological process within the sagebrush mosaic/juniper woodland vegetation in the Long Canyon (West Round Mountain pasture) area. A reduction in the relatively high coverage of juniper and sagebrush is anticipated to result in a relative increase in native forbs, grasses and aspen. The increase in native forbs, combined with the expected mosaic burn pattern, should result in more productivity and greater biodiversity in the canyon.

Vegetation studies have been established to monitor the vegetation response to prescribed fire. These studies include photo plot series, and on the ground inventory.

The other 2 alternatives considered were the "no action" or no prescribed burn alternative, and an alternative proposing burning only, without fuel preparation.

Identified mitigating measures which are included as a part of this decision include keeping the fire away from known cultural sites, leaving buffer zones around cheat grass and mahogany sites.

Scott R. Florence 10/12/01

Scott R Florence, Manager — Date
Lakeview Resource Area

Finding of No significant Impact (FONSI)

Long Canyon Prescribed Burn Project

Environmental Assessment (EA) Number OR-010-2001-05
Lakeview District, Bureau Of Land Management

Summary of Proposed Action and Alternatives

The Bureau of Land Management proposes to conduct a prescribed burn called Long Canyon, in allotment 211 (Round Mountain), of the Lakeview Resource Area. Burning would be preceded by felling Juniper trees in select patterns to create fuel lanes (jackpots), to promote fire spread and intensities as needed, or conversely, separate adjacent fuels to impede fire growth in selected areas and retard its intensity. The objective of this proposal is to reintroduce fire into 3500 to 4500 acres in the ecosystem and recreate the natural process of vegetative succession in the 6900 acre project area within the sagebrush/juniper/aspen communities. This action would help maintain and improve the health and diversity of the vegetation, control the spread of western juniper, reduce hazardous fuels, and improve habitat conditions for wildlife. This project is in conformance with the Warner Basin Management Framework Plan (1983), the Oregon and Washington Record of Decision for Vegetation Treatment on Bureau of Land Management Lands in the Thirteen Western States (1991), and Standards for Rangeland Health and Guidelines for Livestock Grazing Management (1997).

There are no ACECs/RNAs, wetlands, riparian areas, wilderness, aquatic resources, mineral resources, paleontological resources, floodplains, wild and scenic rivers, known hazardous waste areas, areas of religious concern, prime or unique farmlands in the project area. There would be no impact to low income or minority populations. The project area does not qualify for potential wilderness designation. No adverse or beneficial significant impact is anticipated to fisheries, lands, and minerals. Surveys found no threatened or endangered plants or animals in the area. Impacts to other resource values are discussed in the EA

On the basis of the analysis contained in the attached EA and all other available information, it is my determination that none of the alternatives analyzed constitute a major federal action that would adversely impact the quality of the human environment. Therefore, an Environmental Impact Statement (EIS) is unnecessary and will not be prepared.

Scott R. Florence

Scott R. Florence,
Field Manager
Lakeview Resource Area

8/29/01

Date

ENVIRONMENTAL ASSESSMENT

LONG CANYON PRESCRIBED BURN

EA# OR-010-2001-05

SECTION 1. PURPOSE AND NEED FOR ACTION

1.1 Introduction

This Environmental Assessment (EA) analyzes the impacts of implementing prescribed burning options within BLM administered grazing allotment #0211, Round Mountain, 8 miles southwest of Adel, Oregon (Appendix-A, Map 1). The BLM is responsible for land management and use such that biological, physical and cultural resources are protected or improved over time (Taylor Grazing Act of 1934, The Federal Land Policy and Management Act of 1976, and the Public Range Lands Improvement Act of 1978).

This Environmental Assessment will cover the following described area: Township 41 S., Range 22 E. Sections 1, 12, 13, and 24. Township 41 S., Range 23 E. Sections 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 19, 20, 21. Township 40 S., Range 22 E. Section 36. Township 40 S. Range 23 E. Sections 31, 32, 33.

1.2 Purpose and Need

The purpose of the proposed action is to reintroduce fire as an ecological process within the sagebrush/juniper/aspen communities in approximately 6900 acres of the area described above. Decades of fire suppression, coupled with historic overgrazing (1870-1934) have significantly altered the pre-settlement fire regimes of most High Desert plant communities over the past 100 years (Kauffman and Sapsis 1989). The current abundance of shrubs and invasion of western juniper (Juniperus occidentalis) within this area represents a local expression of this general trend. Due to a lack of fire, juniper has encroached into the aspen pockets in Long Canyon. Consequently, aspen stands are in a state of decline resulting in a loss of diversity. In addition, decadent sagebrush has limited browse and forage productivity in the area. A combination of the increase in junipers and stagnation of sagebrush has resulted in a relatively heavy fuel loading for this fuel type. With this hazardous fuel load, a wildfire in the area may cause catastrophic consequences to the biotic community, and threaten the neighboring forest and adjacent private land. A prescribed fire plan would be developed and implemented to pre-treat and/or burn 3500 to 4500 acres of the aforementioned 6900 acre project area

This Environmental Assessment will revise EA #OR-010-98-10 and decision record (DR) dated April 20,1999, which will remain in effect until EA #OR-010-2001-05 is enacted. Changes to the proposed project boundary warrant this revision.

Research supports the importance of the role of fire as a natural disturbance process within sagebrush (Artemisia spp.) and juniper ecosystems (Kauffman and Sapsis 1989, Agee 1993, Miller and Svejcar 1994, Miller et al. 1995). Reintroducing fire into the aspen communities is needed to reduce juniper competition for available moisture and to rejuvenate the aspen clones. (Fire Effects Information System -FEIS).

1.3 Decision To Be Made

The decision to be made is whether to use pretreatment and prescribed fire to reduce hazardous fuel loadings and reduce the encroachment of juniper in aspen within West Pasture in Allotment #0211, or to continue with current management of no burning.

1.4 Scoping

This proposal was initiated by the BLM. Subsequently, the proposal was subjected to internal scoping by an interdisciplinary team along with adjacent landowners. The scoping process identified four issues: archaeological (e.g., rock art), botanical (e.g., federally listed or candidate species, or plants of special concern), livestock grazing (e.g., the need for a substantial period of post-fire rest), wildlife (e.g., retention of adequate thermal cover for big game).

SECTION 2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 This section describes the alternatives (potential actions) considered and summarizes the environmental consequences of those alternatives. The development of the alternatives was an interdisciplinary effort to provide a range of management options that would, with the exception of No Action, improve, or at least not further contribute to the decline of biological diversity and the ecological processes (e.g., fire) which maintain them.

2.2 Alternatives Considered in Detail

Alternative No. 1: Conduct Prescribed Burn in West Pasture of Round Mountain Allotment.

This alternative would result in applying prescribed fire in the West Pasture of the Round Mountain Allotment. The prescribed fire would be applied following current BLM policy and this E.A. Techniques for applying fire would include modifying ignition patterns to achieve a mosaic effect. Burning in a mosaic pattern would increase vegetative diversity, increasing both annual and perennial forb content while reducing the quantity of juniper. In addition, the West Pasture would not be grazed for a minimum of two years, to allow natural vegetative succession.

Alternative No. 2: Thin juniper and conduct prescribed fire in West Pasture. (Preferred)

This alternative would include cutting of juniper and conducting a prescribed fire to eliminate biomass. Cutting would allow managers to manipulate onsite fuels, ensure juniper mortality,

create favorable fuel conditions by allowing junipers to cure. Juniper would be cut selectively to facilitate meeting objectives. In addition, the West Pasture would not be grazed for a minimum of two years, to allow natural vegetative succession. The prescribed fire would be applied following current BLM policy and this EA.

Alternative No. 3: No Action.

This alternative would result in no change in current management activities. This pasture would continue to be managed for livestock grazing and other uses, and no prescribed burn would be conducted.

SECTION 3. AFFECTED ENVIRONMENT

This section presents a brief description of the existing environment to serve as a baseline from which the impacts associated with the alternatives can be measured.

3.1 Cultural Resources

Archaeological surveys were conducted during the summer of 1995. The Long Canyon Burn Unit is an area which contains numerous and significant cultural resources. These consist of both archaeological sites and cultural use areas.

The record of occupation in this region would cover the full time period for which we know that the Northern Great Basin was occupied by Native Americans. This record begins about 10,000 years ago and lasts up to today. Important past uses of this area are indicated by the presence of rock art, large occupation sites, stone tool quarries and house structures. Because of the presence of obsidian sources, this area appears to have been of great importance for past use.

While there are no known present cultural use areas within the area described in this EA., this is an area where several plant species of important to Native Americans occur. These include bitterroot, biscuit root, yampa, currants, wild plums, and choke cherry. Persons from the Fort Bidwell Tribal Community have indicated an interest in collecting these plants within this region.

3.2 Vegetation and Soils.

Currently, low sagebrush (Artemisia arbuscula) predominates in the shrub layer where soils are shallow and/or rocky. Low sagebrush canopy cover varies between 15-30%. Exotic species, such as cheatgrass (Bromus tectorum) occur very sparingly within this community. Low sagebrush communities occupy about 60% of the proposed burn unit.

The Wyoming big sagebrush (Artemisia tridentata var. wyomingensis) and antelope bitterbrush (Purshia tridentata) community dominate on deeper soils or slightly cooler microsites, where insulation is reduced. Wyoming big sagebrush and antelope bitterbrush communities occupy

approximately 25% and 15% of the proposed burn unit respectively, within this community, western juniper coverage varies between 10-35%. The higher percentages occur within the aspen (Populas tremuloides) stands in the west pasture. The lower percentages occur on the south and southwestern slopes. Aspen stands are present along the head walls of the canyon. These aspen stands are being invaded by juniper, which is causing the stands to decline. About 5-10% of the land has been typed as "rock land", supporting sparse vegetation.

3.3 Fuel

The fuel conditions in the project area vary with the vegetation present. Fuel loading within the project area are moderate to moderately high for this vegetation classification (fuel type), due to the density of shrubs and juniper.

3.4 Wildlife and Fish

Long Canyon supports a wide diversity of terrestrial wildlife, including resident, migratory, and sensitive species. The described allotment provides habitat for a variety of common sagebrush/steppe non-game mammals, reptiles, and songbirds as well as numerous game species. The allotment lies within crucial mule deer winter range and pronghorn antelope, upland game bird species and elk are also present. Numerous raptor species use the project area to nest and winter, including American kestrels, golden eagle, red-tailed hawk, prairie falcon, and rough-legged hawk There is one known greater sage- grouse lek within the allotment and sage grouse have been seen occasionally throughout the allotment.

Past fire suppression and management have altered this habitat as evidenced by the expansion of juniper canopy coverage and a high seral stage of decadent antelope bitterbrush The result of this expansion is a general decline in understory vegetation(grasses forbs and shrubs) that provides forage and cover. The juniper dominated habitat has subsequently lead to a decline in relative species richness.

There are no fish bearing streams in the Long Canyon area. However, Long Canyon is an ephemeral tributary to Fifteenmile Creek ½ mile below the area and then into Twelvemile Creek 3/4 mile below the area. The confluence with Twelvemile Creek and Fifteenmile creek is the upper reach of occupied habitat of the threatened Warner sucker. Red band trout occupy Fifteen and Twelvemile Creeks.

3.5 Visual Resources and Recreation

Visual Resource Management (VRM) classes are determined after combining scenic quality, sensitivity level, and distance zones of an area, as seen from a travel route. The majority of the burn area was originally inventoried as Class B background and seldom seen scenery, with low to medium viewer sensitivity; it is managed as VRM Class IV. A small portion was inventoried as Class B foreground scenery, with medium viewer sensitivity, and is managed as VRM Class III.

Under Class III, the objective is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view by the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Under Class IV, management activities, which make major modification of the existing character of the landscape, are allowable. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt would be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

Long Canyon generally receives low visitor use, except during fall hunting season, when the area receives moderate use by deer hunters. The area is easily accessible from a maintained county road.

3.6 Range Administration

Two permittees are authorized to graze livestock in the allotment..

Long Canyon lies in the West Pasture of the Round Mountain allotment and is currently grazed two out of three years with one year in April-May and one year in May-June.

3.7 Threatened and Endangered Plant Species

A field survey for federally-listed threatened and endangered species, candidate species, and BLM-listed sensitive plant species was conducted in 1995. No threatened and endangered or BLM candidate sensitive species were discovered in the survey work. See Appendix A for a list of vascular plant species encountered during the survey.

3.8 Noxious Weeds

The area was inventoried for noxious weeds, and the only noxious weed species found in the project area was Canada thistle and will be monitored post treatment.

SECTION 4. ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

The following elements have been considered and are either not present, or would not be significantly affected by any of the alternatives considered. They are: Areas of Critical Environmental Concern, Research Natural Areas, prime and unique farmlands, floodplains, solid or hazardous waste, drinking and ground water quality, wetlands or riparian areas, wild or scenic rivers, wilderness values, lands, minerals, aquatic communities, or wild horses. There would be no impact to low income or minority populations.

A field survey for federally-listed threatened and endangered species, candidate species, and BLM-listed sensitive plant species was conducted in 1995. No species were discovered in the survey work. See Appendix A for a list of vascular plant species encountered during the survey.

4.2 Alternative No. 1: Conduct Prescribed Burn in the West Pasture of the Round Mountain Allotment.

4.2.1 Cultural Resources

Due to the nature of prescribed fire and the conditions to which they are set, cultural resources are not exposed to the excessive heat common with wildfires, thus, cultural resources are generally not adversely affected by controlled burns. The reduction of fuel loads would prevent the occurrence of fires of high temperature, which can, and do alter site materials such as obsidian artifacts. To prevent spalling of rock art, destruction of wooden structures or making sites visible to artifact collectors, specific sites would be protected and not allowed to burn.

4.2.2 Vegetation and Soils

Reduction of woody fuels would result in an increase in the relative abundance of forbs and grasses in these sites (Kauffman and Sapsis 1989). Evans (1988) observed that the release of understory forbs and grasses is not always accomplished with management treatment of over story shrubs. Vegetative response is dependent on the existing diversity within the treatment area, the amount, and type of precipitation that follows the burn. With existing floristic diversity typical of mid to late seral stands of both the Wyoming big sagebrush and the low sagebrush communities found on site, an increase in the production and vigor of grasses and forbs is the most likely scenario post-burn. In addition, re-sprouting of the brush communities, such as antelope bitterbrush and sagebrush, would improve the deer browse in the area (FEIS). Due to the relatively light component of cheatgrass, spread would be minimal.

Kauffman and Sapsis (1989) note that the native flora has evolved in a fire environment. Although variability exists in fire return intervals, fuel loading, and potential fire behavior, most species are dependent on fire to maintain health and vigor.

There might be some localized soil erosion on steeper slopes directly following the burn, however, with an increase in the vigor of forbs and grasses post-burn, long term erosion will be minimal compared to the potential for erosion resulting from the effects of wildfire occurrence.

4.2.3 Fuel

Burning within prescribed weather conditions should result in a mosaic burn pattern with 30-60% percent reduction of sagebrush and 40-80% reduction of small junipers. Fuel loading would be reduced by 3-5 tons/acre, restoring the fuels to a more naturally occurring level, greatly reducing the probability of a catastrophic wildfire in the future.

4.2.4 Wildlife

A mosaic burn pattern would provide increased edge effect for all wildlife and would provide additional forage for mule deer, pronghorn antelope and greater sage grouse through the release of under story forbs and grasses.

There would be minimal short-term negative impact to mule deer wintering in Long Canyon from the loss of thermal cover in the form of western juniper and big sagebrush, as well as, a minimal loss of antelope bitterbrush winter forage. However, with the mosaic burn pattern prescribed there would be adequate thermal cover remaining for the number of mule deer wintering there. The proposed project would lessen the impact of a wildfire, and allow management to exploit the variables associated with prescribed fire. The release of understory cool-season grasses and forbs would provide wintering deer with needed early green forage. Consultation was completed with the Oregon Department of Fish and Wildlife to minimize negative impacts to wintering mule deer and sage-grouse. The prescribed burn would occur in the fall and or late winter, which would avoid affecting nesting birds.

The prescribed fire is likely to adversely effect the Warner sucker in the short term as increased sediments from the exposed soils move down Long Canyon and into Twelvemile Creek. This effect would be minimal. In the long term, the fire would have beneficial effects by increasing ground cover and reducing erosion below current levels. A Sec 7 consultation with the USFW has been completed and on 8/2/99 issued a letter of concurrence and completion of informal consultation.

4.2.5 Recreation and Visual Resources

The burn would produce a more varied mosaic in the visual landscape, with fingers of burned areas intermixed with unburned juniper, sagebrush and aspen stands. The essence and form of the landscape would be modified, color and texture contrasts would be more distinct following completion of the proposed burn project. This would be anticipated to duplicate a more natural appearance within a fire associated ecosystem. These changes would be in keeping with the objectives for VRM Classes III and IV.

Although visitation to the area is generally low, there would be short-term impacts to a small number of visitors as the burn is being conducted. Smoke in the area and fire suppression vehicle traffic related to the burning effort would discourage people from entering the area, or cause them to leave early. The introduction of a fire regime would not be anticipated to affect visitor use over the long term.
The potential impacts to recreation and visual resources would be much more controlled, than would occur under wildfire conditions, which would be more likely under the No Action Alternative.

4.2.6 Range Administration

The pasture would be rested, post-burn, for at least the next two growing seasons to allow the perennial plants to regain vigor and establish new seedlings. Following the rest period, the West Pasture would be grazed according to the existing Allotment Management Plan (AMP) (BLM 1997). Both permittees understand the temporary change in the grazing system would be counter balanced by the potential for increased vigor and production in the mid-term. Both permittees have agreed to work around the short-term changes in the grazing management. There would be no increase in grazing preference as a result of the burn.

4.2.7 Noxious Weeds

There is a moderate threat of noxious weed invasion, especially from Canada thistle, which is found in the burn area, and constraints to avoid spread would be incorporated into the burn plan, for example: The vehicles used during the prescribed fire would washed before arriving at burned ares to minimize introduction of new weeds in a fertile avoid these areas where the Canada thistle is located to avoid spreading the propagules within the burn area.

4.3 Alternative No. 2: Thin juniper and conduct prescribed fire in West Pasture. (Preferred)

The impacts would be the same as alternative 1 except objectives may be easier met by manipulating fuels. Wildlife impacts could be minimized through the manipulation of fuels (e.g. downing juniper to facilitate fire spread), and lighting techniques.

4.4 Alternative No. 3: Take No Action, Continue Current Management

4.4.1 Cultural Resources

Not burning the areas proposed would leave the area prone for hot burning wildfires, which could alter cultural site materials and expose large areas of sites to artifact collectors.

4.4.2 Vegetation and Soils

No action would allow continued encroachment of juniper into the aspen stand, and an increase in hazard fuel loading. Aspen stands would eventually become non-existent due to juniper invasion. Current brush densities and coverage could be expected to maintain their current levels or increase slightly. A decline in forb diversity, and forb and grass production could also be expected.

Soils would not immediately be affected by no action. The potential for a landscape altering fire would continue to exist and its subsequent effects, increased soil erosion, soil sterilization due to severe temperature exposure and impeded vegetation regeneration would continue to be present.

4.4.3 Fuel

Fuel loading would increase with a continued change from fine 1hr –10hr fuels to more woody 100hr –1000hr fuels as juniper and brush component crowd out the grass and forb component, increasing suppression and control problems in a natural occurring wildfire.

4.4.4 Wildlife

No action would lead to a gradual decline in understory forbs and grasses and an increase of juniper and sagebrush cover. Quality of winter browse for mule deer would decline as bitter brush quality declines due to decadency.

4.4.5 Recreation and Visual Resources

There would be no impact to visual resources or air quality unless a wildfire occurred. A wildfire event would leave a fire scar of unknown proportions and evidence of ground disturbing suppression activities, resulting in a landscape devoid of vegetation, standing and/or fallen skeletons of juniper trees, and exposure of barren soil. These impacts would be visible until vegetative regeneration takes place. There would be no long term impacts to recreation other than the area's visual appearance.

4.4.6 Range Administration

Grazing would continue under the current Allotment Management Plan (AMP), however a loss of forage would persist with continued juniper encroachment. Wildfire occurrence would result in temporary changes in grazing management to allow for re-establishment of forage species.

4.4.7 Noxious Weeds

There would be the same moderate threat of the noxious weed invasion and spread that currently exists.

4.5 Secondary, Indirect, and Cumulative Impacts

Reintroduction of fire, as a management tool, will have a positive affect to the area and the surrounding ecosystem/watershed. Success of the proposed activity could lead to similar projects to be implemented in the future, the cumulative effect would continue to diversify the ecological diversity and habitat richness of the area.

SECTION 5. CONSULTATION AND PUBLIC INPUT

5.1 Public/Interagency Involvement

The Nature Conservancy
Oregon Department of Fish and Wildlife
United States Fish and Wildlife Service
Cahill Ranch (landowner and permittee)

5.2 List Of Recipients

Approximately 35 agencies, organizations, individuals and tribal governments will be sent a notice of the EA/FONSI availability along with a request for comments on the proposal. This list will be located in the project file.

SECTION 6. PARTICIPATING INTERDISCIPLINARY STAFF

Les Boothe	Rangeland Management Specialist
Bill Cannon	Archaeologist
Bob Hopper	Supv. Rangeland Mgt. Specialist
Lucille Housley	Botanist
Ken Kestner	Supv. Natural Resource Specialist
Trish Lindaman	Recreation Specialist
Erin McConnell	Weed Specialist
Alan Munhall	Aquatic Biologist
Vern Stofleth	Wildlife Biologist
Paul Whitman	Planning and Environmental Coordinator
Mike Evans	Interagency Fire Management Officer
Matt Webb	Prescribed Fire & Fuels
Philip Blythe	Prescribed Fire & Fuels
Paul Lenmark	Prescribed Fire & Fuels (Detail-AFS)

LITERATURE REFERENCED/CITED

Agee, J.K. 1993. Fire ecology of Pacific Northwest forests. Island Press, Washington, D.C. 493p.

BLM. 1997. Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington. USDI, BLM, Washington DC. 22pp.

Evans, R.A. 1988. Management of pinyon-juniper woodlands. Gen. Tech. Rep. INT-249. Ogden, UT: U.S.D.A. For. Serv., Intermountain Research Station. 34p.

FEIS
U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory
(2001, February). Fire Effects Information System, [Online]. Available: http://www.fs.fed.us/database/feis/
Populas tremuloides and Pershia tridentata

Kauffman, J.B., and D.B. Sapsis. 1989. The natural role of fire in Oregon's High Desert. In: Oregon's High Desert: the last 100 years. OR Agr. Exp. Stn. Spec. Rep. 841. 31p.

Laycock, W.A. 1994. Implications of grazing vs. no grazing on today's rangelands. In: M. Vavra, W.A. Laycock, and R.D. Pieper (eds.) Ecological Implications of livestock herbivory in the West. Society for Range Management, Denver, Colorado. pp. 250-280.

Miller, R.F., and J.A. Rose. 1995. Historic expansion of Juniperus occidentalis (western juniper) in southwestern Oregon. Great Basin Naturalist 55(1);37-45.

Miller, R., J. Rose, T. Svejcar, J. Bates, and K. Paintner. 1995. Western juniper woodlands: 100 years of plant succession. In: D.W. Shaw, E.F. Aldon, and C. LoSapio (tech. coords.), Desired future conditions for pinyon-juniper ecosystems. Gen. Tech. Report RM-258. U.S.D.A. For. Serv. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado. pp. 5-8.

Miller, R., and T. Svejcar. 1994. Succession in western juniper woodlands: soils, woodland structure and understory response. 1994 Annual Report - Preliminary findings submitted to the Bureau of Land Management, Burns, Oregon. Unpub. mss. 84p.

APPENDIX A

Major Woody Plant Species
Long Canyon Proposed Project Area
Lake County, Oregon

Artemesia tridentata var.wyomingensis	Wyoming Big Sagebrush
Artemesia arbuscula	low Sagebrush
Pursia tridentata	antelope bitterbrush
Chrysothamnus viscidiflorus	green rabbitbrush
Chrysothamnus nauseosus	gray rabbitbrush
Rosa woodsii	wildrose
Tetradymia canescens	horsebrush
Symphoricarpos oreophilus	snowberry
Juniperus occidetalis	western juniper
Amelanchier alnifolia	serviceberry
Populus tremuloides	quaking aspen
Pinus ponderosa	ponderosa pine

APPENDIX A

Plant List
Long Canyon Prescribed Burn Project Area
Lake County, Oregon

Apiaceae

- Lomatium canbyi
- Lomatium macrocarpum
- Lomatium nevadense
- Lomatium vaginatum
- Lomatium sp.

Asteraceae

- Agoseris glauca
- Antennaria dimorpha
- Antennaria microphylla
- Artemisia arbuscula
- Artemisia cana
- Artemisia tridentata var. wyomingensis
- Aster scopulorum
- Balsamorhiza serrata
- Chrysothamnus viscidiflorus
- Crepis acuminatum
- Crepis atrabarba
- Erigeron linearis
- Erigeron ?lonchophyllus?
- Eriophyllum lanatum
- Iva axillaris
- Layia glandulosa
- Microseris troximoides
- Taraxacum officinale

Boraginaceae

- Amsinckia lycopsoides
- Amsinckia retrorsa
- Cryptantha sp.
- Plagiobothrys ?leptocladus?
- Plagiobothrys mollis

Brassicaceae

Descurania pinnata
Sisymbrium altissium

Chenopodiaceae

Chenopodium sp.

Fabaceae

Astragalus filipes
Astragalus lentiginosus
Astragalus malacus
Astragalus obscurus
Astragalus purshii
Astragalus sp.
Lupinus polyphyllus var. burkei
Trifolium longipes

Grossulariaceae

Ribes cereum

Hydrophyllaceae

Phacelia adenophora
Phacelia linearis

Liliaceae

Calochortus macrocarpus
Leucocrinum montanum
Zigadenus venenosus

Onagraceae

Camissonia tanacetifolia

Papaveraceae

Canbya aurea

Poaceae

- Agropyron spicatum
- Alopecurus sp.
- Bromus tectorum
- Elymus cinereus
- Muhlenbergia ?richardsonii?
- Poa ?scabrella?
- Poa secunda
- Poa sp.
- Stipa thurberiana

Polemoniaceae

- Gilia sinuata
- Leptodactylon pungens
- Microsteris gracilis
- Phlox hoodii
- Phlox longifolia

Polygonaceae

- Eriogonum ovalifolium
- Eriogonum stricta
- Rumex sp.

Portulacaceae

- Lewisia rediviva
- Montia perfoliata

Primulaceae

- Dodecatheon sp.

Ranunculaceae

- Delphinium burkei
- Ranunculus glaberrimus
- Ranunculus testiculatus

Rubiaceae

Galium aparine
Galium sp.

Scrophulariaceae

Castilleja chromosa
Castilleja pilosa
Collinsia parviflora
Mimulus cusickii
?Mimulus latidens? (historical - Wool Lake)
Mimulus suksdorfii
Penstemon rydbergii

Valerianaceae

Plectritis macrocera

Nomenclature follows Hitchcock and Cronquist, 1973, Flora of the Pacific Northwest

Compiled by Lucille Housley, BLM Botanist and Reid Schuller, The Nature Conservancy, May & June, 1995

misc info:

Laycock (1994) has observed that once sagebrush becomes dense with a reduced understory, a stable state exists where vegetative composition and structure exhibit little change over extended time periods.

LITERATURE REFERENCED/CITED

Agee, J.K. 1993. Fire ecology of Pacific Northwest forests. Island Press, Washington, D.C. 493p.

Belsky, A.J. 1994. Viewpoint on western juniper range expansion: is it a threat to western ecosystems? J. Range Management (submitted 29 July 1994). 11p.

BLM. 1997. Standards for Rangeland Health and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the States of Oregon and Washington. USDI, BLM, Washington DC. 22pp.

Evans, R.A. 1988. Management of pinyon-juniper woodlands. Gen. Tech. Rep. INT-249. Ogden, UT: U.S.D.A. For. Serv., Intermountain Research Station. 34p.

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(2001, February). Fire Effects Information System, [Online]. Available: http://www.fs.fed.us/database/feis/
Populas tremuloides and Pershia tridentata

Kauffman, J.B., and D.B. Sapsis. 1989. The natural role of fire in Oregon's High Desert. In: Oregon's High Desert: the last 100 years. OR Agr. Exp. Stn. Spec. Rep. 841. 31p.

Laycock, W.A. 1994. Implications of grazing vs. no grazing on today's rangelands. In: M. Vavra, W.A. Laycock, and R.D. Pieper (eds.) Ecological Implications of livestock herbivory in the West. Society for Range Management, Denver, Colorado. pp. 250-280.

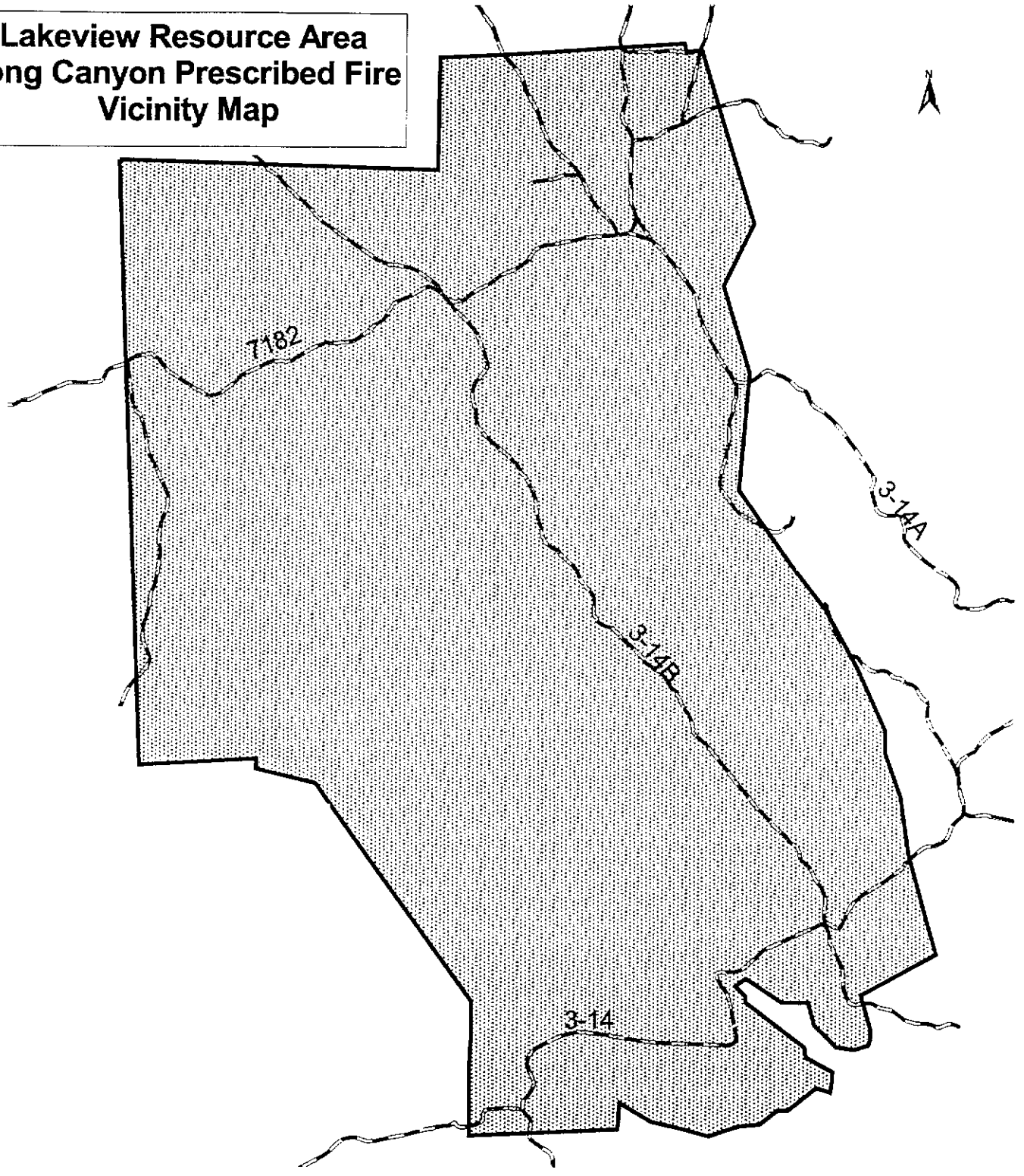
Miller, R.F., and J.A. Rose. 1995. Historic expansion of Juniperus occidentalis (western juniper) in southwestern Oregon. Great Basin Naturalist 55(1);37-45.

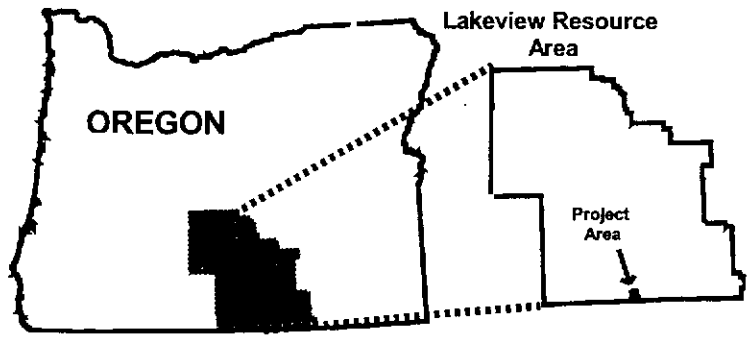
Miller, R., J. Rose, T. Svejcar, J. Bates, and K. Paintner. 1995. Western juniper woodlands: 100 years of plant succession. In: D.W. Shaw, E.F. Aldon, and C. LoSapio (tech. coords.), Desired future conditions for pinyon-juniper ecosystems. Gen. Tech. Report RM-258. U.S.D.A. For. Serv. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado. pp. 5-8.

Miller, R., and T. Svejcar. 1994. Succession in western juniper woodlands: soils, woodland structure and understory response. 1994 Annual Report - Preliminary findings submitted to the Bureau of Land Management, Burns, Oregon. Unpub. mss. 84p.

Miller, R., and P. Wigand. 1994. Holocene changes in semiarid pinyon-juniper woodlands. Bioscience 44:465-474.

Lakeview Resource Area
Long Canyon Prescribed Fire
Vicinity Map





0.5 0 0.5 Miles

Roads

Project Area

PNB 8/2001