

Environmental Assessment

Environmental Assessment (EA) Number: OR-056-00-030
Title: West Butte Juniper Management
Serial Number or Project Number: 73-7116
Bureau of Land Management (BLM) Office: Prineville
Resource Area: Deschutes

I. Background

Research and historical records indicate that juniper now occupies Central Oregon lands which as late as the mid-1800's it did not. The change in this species' range has been variously attributed to fire exclusion, climatic change, and historic alteration of both vegetation and fuel structure (such as by early-settlement livestock grazing methods and practices).

A plethora of research has been done throughout the West regarding the effects of juniper and pinyon-juniper occupation on ecosystem health and functioning. Within this information pool can be found differing viewpoints, conclusions, and recommendations. Central Oregon research (as well as monitoring) has demonstrated some of the implications of post-settlement juniper occupation for vegetation, soil, wildlife habitats and related ecosystem components and their processes. These include alteration of soil temperature and freeze/thaw regimes; understory vegetation structure, diversity and biomass production changes; water infiltration, interception, and runoff alteration; and other changes that can cause decline in wildlife habitat and watershed health, hydrological and ecological functioning and other ecosystem attributes. Anecdotal information also suggests adverse consequences of juniper occupation for groundwater recharge; the timing, intensity and duration of stream runoff events; and total watershed water production and storage. Monitoring within this project area indicates that these kinds of effects are currently occurring in many juniper stands within this project area. It also has indicated that when post-settlement juniper cover/density is reduced (and post-cut management practices are proper), soil cover/stability, understory vegetation cover/density, and other desired attributes can increase in quality and quantity.

The area also includes juniper old growth woodlands on a variety of soil types. Preliminary findings of an ongoing Central Oregon study indicate that where these sites occur on pumice-type soils, juniper control activities can lead to a decline in climax/higher seral species (such as Idaho fescue), and an increase in lower seral species (such as cheatgrass and rabbitbrush).

Juniper has also been identified as having several values. These include visual aesthetics; wildlife habitat structural diversity; wildlife niches (such as bird roosts, nests and foraging; and large mammal hiding cover); fiber for wood products; firewood; boughs for Christmas wreaths; and berries (for such products as gin).

The above has led to juniper management in Central Oregon as being an activity of substantial public and intergovernmental interest.

II. Purpose and Need

A. Purpose

The purpose of this project is to meet goals and objectives contained in the following:

- Brothers/LaPine Resource Management Plan (hereinafter referred to as the "RMP")
- 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 (hereinafter referred to as the "S & G's")

Such goals and objectives include and/or allude to the following:

1. Maintain or improve sage grouse, deer, eagle, green-tinged paintbrush, lynx travel corridor and other habitats
2. Improve forage quantity and quality for livestock and wildlife
3. Improve soil stability and overall hydrological functioning and downstream water quality
4. Improve structural and plant community health and diversity
5. Contribute to the social and economic environment of local communities
6. Maintain or improve visual quality
7. Provide for a broad range of biological and socio-economic values
8. Develop more natural fuel beds so that fire can be more safely and effectively re-introduced into this area
9. Establish vegetation structures and patterns which more closely resemble that believed present during the pre-European settlement period
10. Improve the health and viability of old growth juniper stands

B. Need

The RMP (p. 81) lists 6,000 acres of juniper control within as being necessary in the West Butte area for the accomplishment of the following management goals: Maintain/improve ecological condition; stabilize/improve watershed condition; maintain/improve sage grouse habitat; increase availability/quality of wildlife/livestock forage; maintain/improve scenic/natural values; and/or maintain/improve mule deer and antelope habitat (RMP, Pages 78-79). Since the RMP was published, less than 200 acres of juniper has been cut on public lands here. There is a need to cut juniper to meet the physical, biological and socio-economic conditions sought by this planning direction.

Fire as a natural ecological process has been largely absent from this area. While estimates of natural fire frequency in the project area vary from 15 to 40 years, most sites have not burned during the time of record. Low fuel continuity and laddering in some of the area preclude natural fire or planned ignitions from effectively (and/or safely) accomplishing fire reintroduction. There is a need to manually cut juniper in order to re-establish more natural fuel beds capable and suitable for prescribed and natural fire.

The RMP (p. 35) also provides for an average annual harvest of approximately 2,000 cords of firewood from juniper woodlands within the Brothers portion of the RMP area. There is a need to provide firewood and other wood products (such as fence posts) to the public.

As discussed above, juniper can provide both biological and human socio-economic values. There is a need to maintain juniper presence to protect or enhance these values.

In 1997, based on the Code of Federal Regulations (43 CFR 4180), the "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" (the "S & G's") was published. This document set direction for promoting sustainable rangeland ecosystems, accelerating restoration and improvement of rangelands; and providing for the sustainability of the livestock industry and the communities that are dependent upon healthy public rangelands. A reduction in juniper density and cover in this area is needed in order to meet this direction.

III. Description of the Existing Environment

The project area lies about 5 miles northeast of Millican, Oregon, just southwest of Prineville Reservoir (see attached map). Within its boundary are about 7,810 acres of private and 17,530 acres of BLM-administered public land. No National Forest Land is present here.

Key environmental components of this area include a broad array of plant, wildlife, watershed and related resources. Dominant human uses include transportation/utility corridors, hunting, auto/OHV touring, mineral material gathering,

and livestock grazing.

A. Soils and Vegetation

Soils vary from shallow loams to moderately deep clayey loams (with some pumice pockets), and are derived from weathered basalt and/or ash and lava rocks. The area contains shrub/grass/forb (including mixes of sagebrush, bitterbrush, bluebunch wheatgrass, fescue and needlegrass as co-dominants), old growth juniper, ponderosa pine and riparian community types. Post-settlement juniper trees are present to varying degrees in all plant communities within this area.

As documented in the 1997 core area evaluation, there appears in many areas to be an inverse relationship between rangeland health/functioning and the degree of western juniper occupation within these communities. Within juniper-dominated sites (which are not normally preferred by livestock) are often found decadent or dead plants and high bare soil interspace; and have been rated as deteriorating (downward) trend. Sites with lower juniper densities typically have more prominent understory vegetation and stable soil.

B. Plant Species of Concern

Green-tinged paintbrush is present on West Butte proper. It is normally associated with healthy sagebrush plants, with which it may have a symbiotic relationship. Given its current status, it is necessary to protect those stands so occupied, as well as to promote sagebrush health in surrounding areas.

C. Recreation

Camping and hunting are the primary recreational uses within the area. Except in the easternmost portion of the project area, public vehicle access is constrained in most of the project area by very steep terrain, and by private lands (closed to public entry) in which some existing vehicle routes cross. Most public land access and recreation use is therefore gained via hiking or horseback riding in most of the area, and via vehicle in the eastern and southeastern portions of the project area. There is a need to maintain these access capabilities so that recreation opportunities can be sustained.

The project area lies adjacent to (but outside of) the Millican Off-Highway Vehicle Management Area, in which a number of trail, signing, rehabilitation and travel regulation activities are currently underway. However, there are no designated OHV trails within the West Butte Juniper Management Project area.

D. Woodland Products

Land managers, researchers and private individuals in Oregon are continuing to explore ways for achieving large-scale use and marketing of juniper wood products in order to reduce land health improvement costs and to provide products useful to and desired by the public. Wood quality and harvest and milling costs continue to be the primary limiting factor to completely achieving this.

Juniper firewood, posts, poles and boughs continue to be the most common use of these materials. The BLM continues to meet this local demand by establishing site-specific collection areas. The supply of standing juniper currently exceeds its demand.

The rugged terrain and intermingled private land precludes public vehicle access to most of the project area. Opportunities for public wood products gathering are limited and are present primarily in the southeastern project area portions.

E. Wildlife and Their Habitats

The project area contains habitat for a variety of species, including big game, upland birds, and Threatened and Sensitive species. Species of interest or concern which are known (or have the potential) to be present include the golden eagle, sage grouse, bald eagle, Canada lynx, western bluebird, northern goshawk, Lewis woodpecker, Townsend's big-eared bat, loggerhead shrike and ferruginous hawk. There is a need to protect key habitat components for these, including reproduction, rearing, feeding, and roosting/denning sites; and movement corridors. It is also necessary to maintain or improve foraging/prey base conditions.

Other habitats and species of particular interest include the following.

1. Big Game

The Oregon Department of Fish and Wildlife has identified the northern half of the project area as deer winter range and about six square miles in the southeastern project area as elk winter range. The RMP designates an area in the western/southwestern project area as crucial deer winter range; and an area just south of the project boundary as crucial antelope winter range. The project area is used by antelope during the summer.

A primary need is to improve grass, forb and shrub conditions to provide forage for deer, elk, and antelope (as well as small mammal habitat and for ground nesting bird habitat improvement). There is also a need to reduce risks for poaching, and to provide for animal bedding, winter survival, reproduction, and movement uninterrupted by human activities.

Juniper management actions (such as prescribed burning and manual cutting) taken since 1989 have altered the patterns of juniper-occupied vs. non-occupied sites. However, at least some degree of juniper occupation is present in all of the project areas. Juniper occupation in woodland, shrub steppe and riparian habitats has increased the amount of hiding cover for big game species, but has resulted in decreased forage quality and quantity.

2. Threatened/Sensitive Species

A detailed analysis of these species and their habitats and the effects of the alternatives is contained in the project's Biological Evaluation (on file at the Prineville BLM office).

The northern portion of the project area is within 2 miles of an active bald eagle nest, which is probably used for foraging. No known roosting occurs here.

There are two known sage grouse leks. The majority of the project area is designated as year-round grouse habitat, with approximately 16,000 acres being designated as spring, summer and fall habitat.

The project is located within a Key Linkage Area (KLA) for Canada Lynx.

There are two known golden eagle and one goshawk nest in the project area. And, as shown in the biological evaluation, several other sensitive species have potential habitat within the project area.

F. Visuals/Aesthetics

Much of the project area is readily visible from the Highway 20, State Route 27 and other well-traveled routes in the area. Vegetation management projects in the area need to avoid being visually obtrusive.

G. Livestock Grazing

The project area lies within portions of the West Butte, Millican, Scott and Williamson Creek allotments. Because of winter snow conditions, public lands in the core area are normally grazed spring, summer or fall.

H. Fire and Fuels

Pre-European settlement natural fire frequency has been estimated to be 15 to 40 years. Except for on the top of West Butte, fire has been largely absent from the area during the 20th Century.

The RMP (p. 81) lists 2,000 acres of prescribed burning as being planned for the West Butte area. Primarily north-facing slopes still retain the capability to carry fire under prescribed conditions. In remaining areas, fuel continuity and structure is often inadequate to carry fire under these same conditions.

I. Other

There have been instances of automobile abandonment, dumping, and other vandalism off small user-created vehicle trails in the area. There are also old, barren abandoned mining sites in the area. An inventory of these features has not yet been completed; it is possible there are more which have not yet been discovered.

IV. Proposed Action and Alternatives to the Proposed Action

A. Proposed Action

The proposed action is to manually cut not more than 5,000 acres of juniper within the project area over a 10-year period. Details of this proposal are included under Alternative C in paragraph IV.C below.

Based on information currently available (including public/other agency input), five alternatives were initially considered.

B. Alternatives Considered But Not Further Analyzed

Two of these five alternatives were not considered for further analysis, for the following reasons:

1. Alternative D (Firewood/Commercial Juniper Removal). This would have led to the reduction of juniper density exclusively by public firewood cutting and commercial harvest. Because of the steep terrain, limited public access, and the current juniper supply/demand and harvest economics situation, this was not deemed feasible. The providing of these opportunities in a portion of the project area where this is feasible is included in Alternative C.
2. Alternative E (Adjustment of Livestock Grazing Stocking). This would have led to a reduction in the amount of livestock grazing that occurred in the area. Since monitoring has revealed upward (improving) or stable trends in non-juniper occupied areas where livestock prefer, yet downward or no apparent trends in juniper-dominated sites where they do not, such action would have no rational basis for implementation.

C. Alternatives Considered And Further Analyzed

1. No Action (Alternative A)

No juniper cutting would be completed.

2. Uniform Juniper Mosaic Development (Alternative B)

This alternative would seek (through manual juniper cutting) to reduce juniper presence in scattered sites across not more 5,000 acres of land, or the equivalent of about 29% of the public lands in the area. Measures described in Appendix A would guide this activity. Cut openings would vary from 5 to 60 acres, and be uniformly distributed across the project area.

Additionally, whole trees and or slash would be laid down on barren and/or unhealthy sites such as eroding stream channel segments, and on any abandoned mining areas, dumping grounds, or vehicle-caused damage sites that are subsequently discovered during the course of this work.

Manual cutting would be accomplished primarily by BLM contractors and/or cooperators. Public firewood or other wood products collection would not be authorized. The amount of juniper annually cut would vary depending upon available funding; cooperator capability; results of annual evaluations and monitoring of areas cut to date; and other factors.

3. Integrated Juniper Mosaic Development (Alternative C)

This alternative would include all actions described above for Alternative B, except that it would not lead to a uniform distribution of juniper-occupied and cut areas. Rather, it would attempt to mimic (to the extent allowed by other management constraints) historically fire-induced vegetation patterns and distribution, and to establish vegetation patterns which address multiple resource and use needs.

This alternative would include the issuance of firewood, post and pole permits to the public for collecting these materials in designated units within the southeast portion of the project area that are currently accessible by motor vehicle, including those portions of the following that are located within the project boundary:

T 19 S, R 16 E: Sections 1, 12, 13, 14, 23, 24, 25

T 19 S, R 17 E: Sections 19, 30

All activities would be guided by the management measures specified in Appendix A.

V. Mitigation, Monitoring and Other Special Management Measures

No new mitigation measures or management requirements would be applied if Alternative A was implemented. Mitigation, monitoring, public participation and other special management requirements associated with Alternatives B and C are listed in Appendix A.

VI. Environmental Consequences

A. Direct and Indirect

1. Biological/Physical

Under Alternative B or C, soil and understory vegetation cover, vegetation health and diversity, and watershed functioning would be improved on about 29% of the project's public lands. Under Alternative A, areas currently deficient in soil/vegetation cover and/or having erosion and low soil cover would continue to either erode and/or present risks for site soil and vegetation losses and other rangeland and watershed health and functioning attributes.

It is projected that Alternative A would lead to a continued decline of sagebrush in some juniper sites. Green-tinged paintbrush is associated with sagebrush. Sagebrush populations and health would increase over time as a result of

either Alternative B or C implementation.

Alternative B or C (but not Alternative A) would lead to development of fuel bed structures better able to sustain natural fire than would Alternative A. This would increase the potential for re-introduction of fire similar to historical frequencies/intensities.

A reduction in the translocation of water and nutrients by young juniper trees would result from Alternatives B or C, making said elements available to benefit upland and riparian grasses, shrubs, forbs, uncut juniper (such as old growth) and ponderosa pine. No such effects would result from Alternative A.

Alternative B or C implementation would alter wildlife habitat structure on 29% of the project area, as well as habitat juxtaposition throughout the project area. Alternative A would have no such effect.

Sage grouse grass/shrub/forb habitat conditions would be improved under Alternative B or C implementation. Grouse nesting/early brood rearing habitats would be improved more under Alternative C than B; Alternative A implementation would lead to a continued decline in these conditions.

Alternative B or C implementation would reduce the number of roost trees for eagles, hawks and goshawks, and reduce juniper density in the established goshawk post-fledgling area (PFA). Either alternative would increase habitat niches for small mammal and birds upon which these species prey. No such effects would accrue from Alternative A.

Alternative A implementation would not lead to any changes in motorized vehicle use in the area. Alternative B, and more so, Alternative C would temporarily increase this during authorized juniper cutting activity periods each year, and pose increased risks for wildlife-vehicle encounters during these periods.

Alternative B and more so Alternative C would reduce hiding cover, and increase chances for hunter success and big game mortality. Alternative B would provide denser cover blocks, while Alternative C would provide more within-cutting unit cover.

Alternative B or C implementation would reduce risks for sagebrush mortality/loss, and increase forb production and diversity which would benefit sage grouse and other sagebrush/forb-dependent species. No such effects would result from Alternative A implementation.

Alternative B or C implementation would present greater risks for noxious weed importation and spread than Alternative A.

Riparian area development and stream channel improvement (to possibly include later season stream flows) would be expected to result from Alternative B or C implementation. Riparian health decline would be expected to continue to occur with Alternative A implementation.

2. Socio-Economic

Due to downed trees and slash, cross-country, off-trail vehicle and hiking travel would be made more difficult on 29% of the public lands in the project area under Alternative B or C actions. Alternative A would lead to no such effects.

Alternative C would help satisfy public wants for firewood and other wood products, as well as increase economic activity generation for such items as gasoline, chainsaw parts and related materials. No changes in these parameters would be expected to occur as a result of Alternative A implementation.

Alternative B and more so, C would move a portion of the area toward a visual condition believed more closely associated with the pre-European settlement period, when vegetation structure was more diverse. (However, Alternative B implementation would lead to more uniformly-spaced cutting patches across the landscape, thereby being less naturally-appearing than would result from Alternative C). Either action alternative would change some visual parameters (such as color tones and degree of landscape uniformity) across 29% of the project area. Because of visual management measures (see Appendix A), these changes would not be readily noticeable from key viewpoints (such as U.S. Highway 20, Oregon State Route 27, Prineville Reservoir, and the Millican County Road), but would be visible to people visiting the individual cutting area vicinities. Alternative A implementation would not lead to any such changes.

Because of downed trees and slash, livestock and wildlife access to forage (forage availability) would be temporarily diminished during the short-term (1-10 year period) under Alternatives B or C, but not A. Thereafter, both forage production and availability would increase under B or C (but not A) implementation.

B. Cumulative Effects

If at some point in time, the 2,000 acres of RMP-prescribed burning (this action not a part of this project) in the West Butte area was completed, the following juniper-prominent (“C” = Hiding Cover Area) versus not juniper-prominent (“F” = Forage Area) scenarios would result under each of the alternatives:

	<u>Alt A</u>	<u>Alt B or C</u>
Total public land acres in project area	17,530	17,530
Less:		
Prescribed Burning	2,000 (F)	2,000 (F)
Acres of existing public land juniper cuts	200 (F)	200 (F)
Acres of new public land juniper cuts	0 (C)	5000 (F)
Acres remaining with prominent juniper cover	15,330 (C)	7,700 (C)
Juniper/Non-Juniper Prominence (C/F) Ratio	87/13	44/56

The Bear Creek and Williamson Creek watersheds annually exhibit soil loss, ravel flows, reservoir sedimentation, road and private property damage, and other symptoms of watershed dysfunction following thunderstorm and other precipitation events. Alternative A implementation would cause the project area to continue to contribute to this watershed-level situation, whereas Alternative B or C actions would help correct it.

Juniper management activities are currently underway in the Taylor Butte area, which lies immediately northeast of this project area. Such activities will lead to a reduction in post-settlement juniper cover and density. When coupled with Alternative B or C actions, the amount of current juniper-occupied lands to be cut would not exceed the RMP removal limit of 60% for all the project areas. No such effects would result from Alternative A inaction.

The increase in forage quality and quantity expected under Alternative B or C would enhance the function of wildlife winter range areas located outside the of the project boundary. No such change would be expected to occur under Alternative A implementation.

The Millican Off-Highway Vehicle Management Area is located along the western portion of this project’s boundary. Because of downed trees and slash, it is expected that off-trail, cross-country (but not road) travel from the Management Area through the West Butte juniper project area would on average be made more difficult under Alternative B or C. No such effects would result from Alternative A implementation.

C. Residual Effects

Long-term rangeland health improvement would accrue from Alternative B or C implementation; no such effects would result from Alternative A.

VII. Components Not Affected

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

1. Agricultural Lands, Prime or Unique
2. Areas of Critical Environmental Concern
3. Cultural Resources
4. Environmental Justice
5. Floodplains
6. Native American Religious Concerns
8. Paleontological Resources
9. Wastes, Hazardous or Solid
10. Wild and Scenic Rivers
11. Wilderness (including Wilderness Study Areas)

VIII. Consultation and Coordination

A. Public/Other Agency Scoping

On August 15, 2000 a project scoping package was sent to three Tribal, three State/Crook County, and six private organizations, and to fifteen public individuals. This package provided information concerning the proposed project's location and area description; the decisions to be made and the need for them; proposed management requirements; and literature citations. A summary of the content of the three letter and three telephonic/other comments received is shown in Appendix E.

The alternatives (including mitigation/other measures) and the analysis focus described above were formulated in part based on past public/other agency comments, opinions, concerns and observations concerning the current resource and management situations and changes therein deemed desirable (or undesirable) within and/or adjacent to the project area. Such input was received during meetings, informal discussions, field tours, and through correspondence. Contributors of this information to date include representatives from Crook County Soil and Watershed District, Oregon Department of Fish and Wildlife, Oregon Hunters Association, the Izaak Walton League, Deschutes Provincial Advisory Committee, Oregon State University (OSU), Forest Service, Society for Range Management, OSU/Crook County Extension Service, and adjacent private land owners.

BLM Recreation/Visuals, Watershed, Wildlife, Botanical, Lands, Range, Heritage, and other specialists participated in the development of this environmental assessment.

B. List of Preparers

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

Steve Castillo, Forester

Monte Kuk, Wildlife Biologist
Berry Phelps, Recreation Management Specialist

John Swanson, Rangeland Management Specialist

IX. Appendix

- A Juniper Management Measures
- B References
- C Project Area Map
- D Summary of Public/Other Agency Comments Received

NEPA requirements met:

/s/ Marci Todd
Environmental Coordinator

03/16/01
Date

Appendix A

Juniper Management Measures Associated with Alternatives B and C West Butte Juniper Management Project

The desired effect would be to create diverse mosaics of pine, old-growth juniper, post-settlement juniper, riparian, shrub, and grass/forb complexes and patterns on stable soils across the area. Cutting would occur in juniper stands having the following characteristics:

- Riparian and upland areas showing indications of poor or declining soil or understory vegetation health (such as soil erosion or decadent sagebrush or bitterbrush stands)
- Areas incapable of carrying natural fire or unsuited/undesired for prescribed natural burning
- Key wildlife habitats where shrub cover improvement or propagation is an immediate priority
- Areas where thinning of smaller diameter trees would enhance juniper old growth or pine stand health or other attributes.

At the end of each year, areas cut to date would be evaluated to determine if objectives and requirements were met. At the same time, the next year's cuts would be identified to ensure that these were effectively integrated with any planned prescribed burns and other activities, to ensure that project, RMP rangeland health goals and objectives and other requirements would be met. Cutting area locations, designs, and sizes for the following year would be defined accordingly. Interested publics and other agency people would be invited to participate in these evaluation and integration activities.

BLM contract and cooperator cutting activities would be subject to the following requirements:

1. No old growth juniper, nor other trees in excess of 18 inches in dbh (diameter at breast height) would be cut. Trees narrower in diameter, but which display old growth characteristics (gnarled, twisted appearance; furrowed, reddish bark; rounded or flat tops; etc.) would not be cut.
2. Trees with particular value for visuals, wildlife, or other needs would not be cut.
3. Only juniper trees would be cut.
4. Unless otherwise authorized by the BLM Wildlife biologist, no dead or dying trees would be felled or girdled.
5. No trees showing obvious signs of wildlife habitation (cavities, nests etc.) would be cut. No trees within 600 feet of any raptor nest would be cut.
6. Cutting activities would be scheduled to avoid any negative consequences to road surfaces and wildlife.
7. No cutting would be permitted during the following time periods:
 - December 1- May 1: In big game winter range
 - March 1- April 30: In sage grouse strutting grounds
 - April 1 - June 30: In sage grouse early brood rearing areas
7. Cutting of individual patches would not proceed until such time as necessary clearances were developed by BLM archaeological, botanical, wildlife and other specialists.
8. To ensure that wildlife habitat goals, objectives, and management requirements were met, the BLM Wildlife

Biologist would have operational cognizance over the coordination, design and layout of all planned juniper cutting units.

9. BLM contractor or cooperator vehicles would be checked for noxious weed seeds/stems (and any found, removed) prior to entering the project area.

10. All fire regulations would be adhered to.

11. BLM contracts/cooperator agreements would include a provision for stump heights no greater than 10 inches (except as noted in Measure # 14 below).

12. Travel and access needs/prohibitions associated with any Oregon Department of Fish and Wildlife seasonal road closures would be met.

13. Under Alternative C, firewood cutting and other wood products brochures, maps and/or permits would advise the public of the following information and requirements:

- The location of private lands and advise the public not to trespass on them.
- Stump heights not to exceed 12 inches
- All wood down to 3 inches in diameter to be utilized
- No wood cutting authorized during those periods specified in #7 above
- Standing dead trees not to be cut
- Off-road vehicle travel permitted, provided that no damage to land resources occurs
- No old growth trees to be cut
- Trees with paint, signs, blazes, wildlife occupation, or fences attached not to be cut
- Only juniper trees to be cut
- No dumping allowed.

14. Special provisions would be applied for felling trees into intermittent or other stream channels. In order to reduce risks for damage to downstream private land and other features, an emphasis would be placed on avoiding or minimizing the presence of felled trees greater than 6 inches in diameter in stream channels prone to very high, flashy flows. Larger-diameter trees would be placed into channels not exhibiting this potential. Stump heights of 15-20 inches high would be prescribed along these channels to act as debris catches.

15. All openings would include leave trees and/or leave patches, designated in a way that contributes to the project objectives. No opening would have all juniper trees removed.

16. In selecting leave patches, emphasis would be placed on retaining juniper on those sites that currently show indicators of understory vegetation health, and lower bare soil interspace components.

17. An average minimum of three juniper leave trees per acre (including those in leave patches) would be retained in each opening. (This average would be computed by dividing the number of trees left into the acres of created opening. It would not mean that each opening acre would have a minimum of three trees left standing). Leave trees would be of varying ages, sizes and diameters to optimize structural diversity/habitat niches, provide for older juniper tree replacement/structure development, and to promote visual aesthetics.

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

19. Felled juniper bucking and limb scattering would be performed as time and funds permit.

20. Trees would not be felled in or near camping or other key recreation sites, nor on routes necessary for recreation user enjoyment of the same. If during the course of layout work, motorized vehicle-caused resource damage sites (such as mud-bogging or trash dumping sites, or user-created trails through critical habitats or other sensitive areas) were discovered, the BLM Recreation Specialist would be consulted concerning whether or not slash treatment should be applied on the site; and if so, actions taken accordingly.

21. A priority would be initially placed on cutting juniper on those public lands having a low probability for near-term exchange.

22. Per the RMP, cutting in areas designated as having high or sensitive visual quality would not attract the attention of the casual observer or leave long term adverse visual changes on the land. Cutting in other areas would be designed to mimic natural landscape openings.

23. Trees near any facility (such as fences and roads) would require directional felling to avoid damaging or interfering with the function of these facilities.

24. No cutting would occur in old growth-dominated juniper stands (particularly in pumice soil types) unless such old growth (or dependent wildlife species) would directly benefit from such cutting.
25. Juniper cutting would not occur in or adjacent to key permitted use areas, such as rock pits, powerline rights-of-way, County Roads, and related areas. Any planned activities near these would be coordinated in advance with BLM District lands specialists.
26. Vehicle access to cutting areas would be provided by existing roads. No new road or trail construction would be authorized in connection with this project. BLM contractor use of rubber-tired off-highway vehicles would be subject to BLM approval and restrictions. Slash treatments will be applied to any new vehicle trails created during the course of public firewood gathering and other cutting/thinning activities.
27. Cutting would be annually integrated and coordinated to ensure that this project was consistent with aesthetic landscape-level vegetation patterns, distribution and densities as might be determined through an analysis of alternatives in a new or revised resource management plan.
28. No changes in permitted livestock AUM's or grazing management would occur as a result of this action.
29. In the event of catastrophic alterations of existing juniper cover (such as could result from a large wildfire), planned cutting acreages would be reduced to a level necessary to meet project objectives and mitigation requirements.
30. Monitoring would include inspection and reporting of completed cutting areas; re-photography of existing photo points in the area; and recordation (via notes and photography) at five year intervals of apparent changes in vegetation cover, bare soil interspace, erosion and related parameters over time in cutting units and in adjacent areas where cutting was not performed.
31. Areas having potential for firewood and post collection would be selected only after careful consideration was made for slope and accessibility to reduce risks for soil displacement.
32. Unless otherwise authorized by the BLM Wildlife Biologist, no juniper cutting would occur within a ½ mile line-of-site distance around golden eagle nests.
33. No more than 29% of the designated goshawk post-fledgling area will have juniper cutting treatments.
34. Project activities would be canceled or modified as necessary if a new wildlife species is listed or found to utilize the project area.
35. In juniper cutting units, an average one cover pile per acre would be created by directionally falling three or more junipers to a common point.

Appendix B
Juniper Management References

- Allotment Evaluations. Prineville District, BLM. 1997-98.
- Barrett, J.W. Growth of Ponderosa Poles Thinned to Different Stocking Levels in Central Oregon. Research paper PNW-311, USFS Portland. 1983.
- Bedell, T.E.; Eddleman, L.E.; Deboodt, T.; Jacks, C.. Western Juniper - Its Impact and Management in Oregon Rangelands. 1993.
- Bear Creek Fire Use Plan. Prineville District, Bureau of Land Management. 1983.
- Bear Creek Watershed Management Plan. Prineville District, Bureau of Land Management. 1973.
- Bedell, T. E. Range Management Concerns in Juniper Woodlands. Pinyon-Juniper Conference Notes. 1986.
- Belsky, J. Are Junipers "Water Sucking Weeds?" No Way. Herald and News. Klamath Falls. 1996.
- Belsky, A. J. 1996. Viewpoint: Western Juniper Expansion: Is It a Threat to Western Ecosystems? Journal of Range Management 49:53-59. 1996.
- Bolton, S. M. and T. J. Ward. Hydrologic Processes in the Pinyon-Juniper Vegetation Zone of Arizona and New Mexico. New Mexico Water Resources Research Institute. 1991.
- Brothers/LaPine Resource Management Plan. Prineville District, Bureau of Land Management. 1989.
- Buckhouse, J.C. and J.L. Mattison. Potential Soil Erosion of Selected Habitat Types in the High Desert Region of Central Oregon. Journal of Range Management. 1980.
- Buckhouse, J. C. and R.E. Gaither. Potential Sediment Production within Vegetative Communities in Oregon's Blue Mountains. Journal of Soil and Water Conservation. 1982.
- Burkhardt, J. W. and E.W. Tisdale. Causes of Juniper Invasion in Southwestern Idaho. Ecology. 1976.
- Dealy, J. Edward. *Juniperus occidentalis*. Date/source unknown.
- Deboodt, T. The Drying of Oregon/Western Juniper's Growing Influence in Eastern Oregon. OSU/Crook County Extension Newsletter. August, 2000.

- Doescher, P.S., L. E. Eddleman and M.R. Vaitkus. Evaluation of Soil Nutrients, pH, and Organic Matter in Rangelands Dominated by Western Juniper. Northwest Science. 1987.
- Eddleman, L. A. Ecology of Western Juniper. Klamath Conference paper. 1989.
- Eddleman, L.E. Some Ecological Attributes of Western Juniper. And: Establishment and Stand Development of Western Juniper in Central Oregon. Pinyon-Juniper Conference. Reno. 1986.
- Eddleman, L. A. Biology and Ecology of Western Juniper. Lake County Natural Resources and Rangeland Management Conference. Lakeview. 1991.
- Eddleman, L. E. and P.M. Miller. Potential Impacts of Western Juniper on the Hydrologic Cycle. Symposium on Ecology and Management of Riparian Shrub Communities. Sun Valley, ID. 1991.
- Elmore, Wayne. Twenty One Years - The Ever-Changing Tale of Oregon's Bear Creek. Range Magazine. Spring, 1998.
- Environmental Impact Statement (EIS). Brothers Grazing Management Program. 1982.
- Environmental Assessment. High Desert Prescribed Burning. 1998.
- Evans, R.A. and J. A. Young. Control, Plant Succession and Revegetation in Western Juniper Woodlands. Pinyon-Juniper Conference, Reno, NV. 1986.
- Evans, R.A. and J. A. Young. Plant Succession Following Control of Western Juniper with Picloram. Journal of Weed Science. 1985.
- Gaither, R.E. and J.C. Buckhouse. Infiltration Rates of Various Vegetative Communities within the Blue Mountains of Oregon. Journal of Range Management. 1983.
- Jacks, C. A.. Western Juniper Demonstration and Research Project - Crook and Jefferson Counties. 1995.
- Jacks, C. Western Junipers Hurt Watershed. Central Oregonian. 1993.
- Juniper Woodlands of North America. Symposia, SRM. Boise, Idaho. 2000.
- KBND News Report. Bend, OR. 5/15/00.
- Larsen, R. E. Interception and Water Holding Capacity of Western Juniper. Ph. D. Thesis, Oregon State University. 1993.
- Leavengood, S. and L. Swan. Proceedings, Western Juniper Forum 97. Bend.. GTR-432. Forest Service.
- Leckenby, D. A. and A. W. Adams. Weather Severity Index on a Mule Deer Winter Range. Journal of Range Management. 1986.
- Long, D.E.. Habitat Projects: Juniper and Bitterbrush. President's Page, Oregon Hunter's Magazine. 1992.
- Miller, D.L. Conifer release in the Northwest - Effects. In Baumgartner, D.M. Weed Control for Forest Productivity in the Interior West. WSU Pub. 1986.
- Miller, R.F., L.F. Eddleman and R.A. Angell. Effects of Juniper Woodlands on Upland Hydrologic Cycles. Water

Use by Western Juniper. Pinyon-Juniper Conference Notes. Reno. 1986.

Miller, R. and J. Rose. The Pumice Sands Old Growth Woodlands in the Bend/Redmond Area. OSU Progress Report. 1999.

Miller, R.F. and L.L. Eddleman. Spatial and Temporal Changes of Sage Grouse Habitat in the Sagebrush Biome. Oregon State University AES Tech Bulletin 15. 2000.

Miller, Rick. Juniper Management More Complex Than It Appears. Herald and News. Klamath Falls. 1996.

Natural Resources and Conservation Service (NRCS). Range Site Descriptions. 1998.

Oliver, W.W. Early Response of Ponderosa Pine to Spacing and Brush. USDA FS Research Note PSW-341. 1979.

Oliver, W.W. Response of Eastside Pine to Precommercial Thinning. USDA, FS/PSW Station. 1982.

Parsell, Charles C.. History of the Prineville BLM District. 1938.

Powers, R.F. and W.W. Oliver. Ponderosa Pine Plantation Growth in Northern California. Proceedings, Western Forestry Conference. Potland. 1984.

Program Files. Prineville District, Bureau of Land Management.

Prineville Reservoir Resource Management Plan. Pacific Northwest Region, U. S. Bureau of Reclamation. 1989.

Pinyon-Juniper Ecosystem Management Strategy. Forest Service, Southwestern Region. 1990.

Rasmussen, Christine. Results and Review of a Riparian Survey Method Used in Eastern Oregon. M. Sc. Thesis, Oregon State University. 1996.

Rollins, M. B.. Interview of "Old Time" Residents of Bear Creek. 1973.

Soule, P.T. and P.A. Knapp. Juniperus occidentalis: Establishment History on Two Minimally Disturbed Research Natural Areas in Central Oregon. Georgia State University/Appalachian State University. 1998.

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. Oregon/Washington State Office, Bureau of Land Management. 1997.

Swanson, J. C. High Desert Team Meeting Notes. Prineville BLM. 1998.

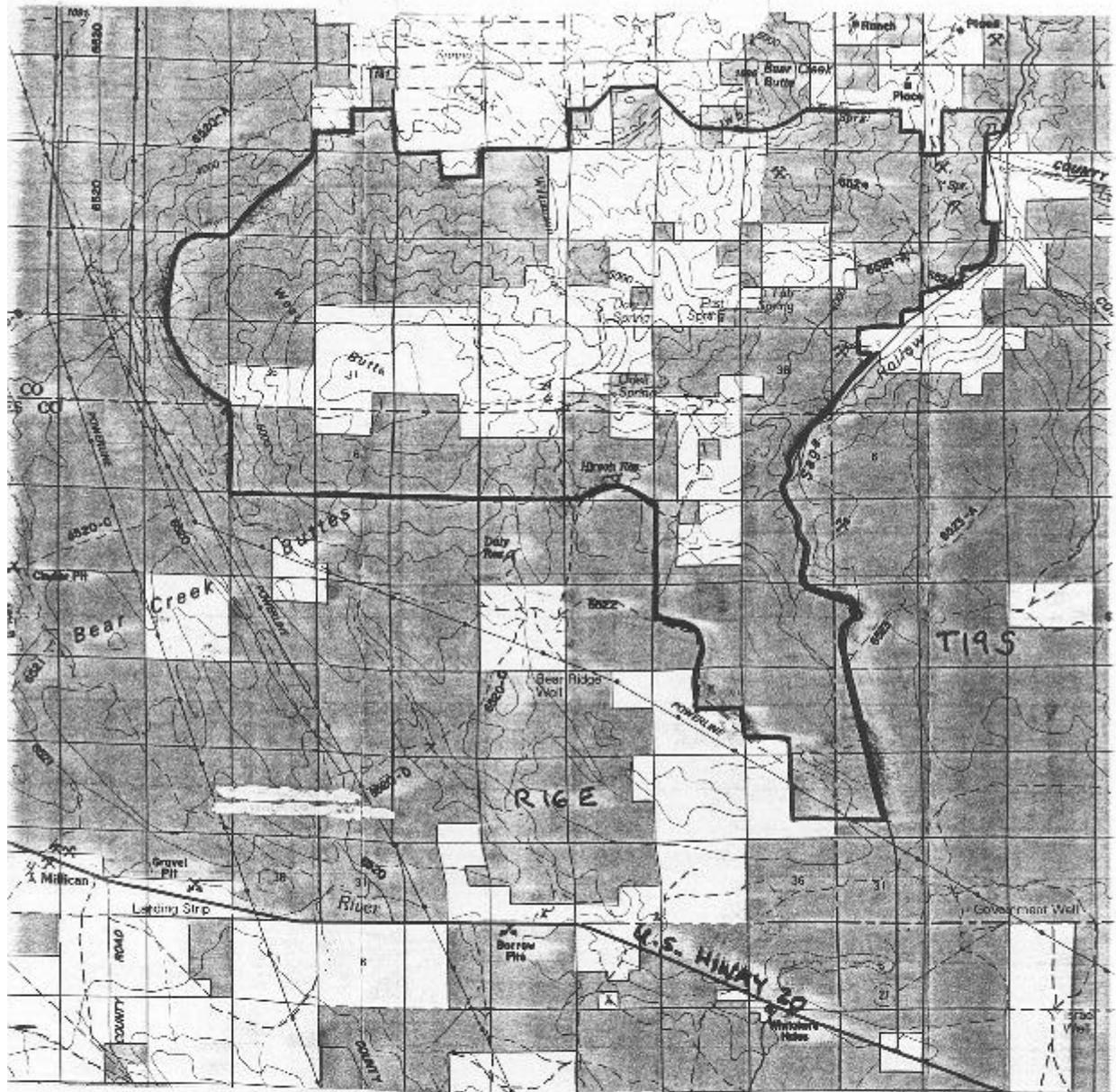
Swanson, J.C. Notes from Post-Flood and Post-Human Fatality Field Trip. 1991.

Tour Notes. Deschutes Provincial Advisory Committee. Bear Creek. 1999.

Tour Notes. Inter-Agency Tour. Bear Creek. 1999.

Vaitkus, M.R. and L.E. Eddleman. Understory Herbage Response to Western Juniper Removal in Central Oregon. And: Composition and Productivity of a Western Juniper Understory and its Response to Canopy Removal. Pinyon-Juniper Conference. Reno. 1986..

Wright, H.A., L.F. Neuenschwander and C. M. Britton. The Role and Use of Fire in Sagebrush-Grass and Pinyon-Juniper Plant Communities. GTR INT-58. IFRES, Forest Service. 1979.



Appendix C
 West Butte Juniper Management Project Area

(Private lands shown in white; BLM-Administered lands shown in gray)

Appendix D
Summary of Public/Other Government/Agency Comments

The following summarizes comments received in response to the scoping package distributed on August 15, 2000 to members of the general public, and to private, County, State and Tribal Governments/organizations. They are categorized by topic.

I. General

We support the proposal to the extent that it will improve wildlife habitat, water quality, visuals/aesthetics, provide economic/wood products benefits, and reduce risks for severe wildfire.

We wish to see an end to the commercial exploitation of public lands for corporate profit and a return to a priority being placed on wildlife and ecosystem protection, and on meeting low-impact local needs (such as providing firewood, fence posts and poles).

The specific list of management measures contained in the scoping package was helpful in understanding BLM's aims and intents.

The literature citation should recognize Joy Belsky's research, which indicates that:

- Current expansion of juniper may be within the historical range of variability
- Juniper is known to have various ecological benefits and is a natural part of the ecosystem

What is the BLM's evidence of pre-European settlement juniper conditions? That thinning of smaller diameter juniper enhances juniper old growth and pine stand health?

If this proposal goes forward, we would like an emphasis on restoring historic fire conditions while at the same time retaining the conservation-oriented constraints/management measures specified in the scoping summary.

What is the BLM's pre-European settlement data for fire frequency in this area, and for what year(s) are they based?

II. Recreation

We oppose the decommissioning of OHV trails without the EA including including an inventory of each trail earmarked for the same. The BLM should make every reasonable effort to avoid a net loss in OHV trails in the area.

Please note that the Forest Service has acknowledged that ground-disturbing trail closure methods require site-specific NEPA analysis.

III. Forest Service Direction

The Forest Service is required to meet certain direction relating to management of roads, roadless/Wilderness areas, Old Growth/late seral forests, threatened and endangered species and their habitats, and riparian/streamside areas.

IV. Water Quality/Watershed Health

The BLM should do what it can to promote water infiltration, reduce flashy runoff/flooding that occurs in the project area from time to time. It should also keep in mind that the summer thunderstorm and late winter-early spring periods is when these typically occur.

The rationale for not allowing trees larger than 6" diameter at breast height into flashy stream channels is not clear. BLM should look at putting bigger trees into the channel to better promote stream channel health improvement.

V. Private Lands

Whatever the BLM does should include measures that reduce risks for high water flow damage to the Sage Hollow road crossing, located on private land.

There is concern that if public firewood cutting is allowed next to private land, this would greatly increase risks for trespassing and dumping garbage on the adjacent private land.

VI. Economics

We strongly urge the BLM to allow the local community to harvest the felled juniper for firewood, wood products, or any other use.

We'd like to see juniper firewood provided to local people rather than through commercial contract and/or retail sale.

Public firewood cutting should be the method used to achieve the project objectives unless another method would allow the local community to reap equal or greater benefit from the felled junipers.

VII. Wildlife Habitats

In addition to specific localized needs and effects, the BLM should consider how the proposal fits into the broader management context and the watershed area in general. The BLM currently has OHV, prescribed burning and other vegetation management activities (or plans therein) near or adjacent to the project area. There needs to be a disclosure of cumulative effects.

Would the proposal cause an increase in vehicle use in the project area (particularly during critical big game winter survival, and sage grouse spring reproduction periods)? We are concerned that if new openings are created, and vehicle use increases, then this will pose increased risks for wildlife mortality in the area.

The analysis should disclose potential impacts to sage grouse, particularly during their key reproductive periods.

The project has the potential for improving wildlife habitats.

VIII. Livestock Grazing

The proposal to reduce juniper sounds suspiciously like an attempt to maintain unsustainably high levels of livestock grazing.

If forage quality and quantity is poor, then perhaps what is needed is a reduction of livestock grazing.

Poor and declining soil and vegetation health, soil erosion, and decadent sagebrush and bitterbrush stands are all indicative of livestock overgrazing.

The EA should disclose what modifications would be made to livestock grazing in order to achieve resource objectives. There is concern about post-treatment livestock grazing management treatments, particularly if such grazing occurs during critical big game wintering periods.

IX. Monitoring

Is monitoring guaranteed, or is it dependent upon some unknown source of funding?

The project should not go forward unless monitoring is guaranteed to occur.