Decision Notice

Eden Timber Sale and Fire Reintroduction Project

Forest Plan Amendment 25

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Wallowa County, Oregon

USDA Forest Service
Umatilla National Forest
Walla Walla Ranger District

This Decision Notice documents the Forest Service decision to implement a modified version of Alternative E, described and analyzed in the *Eden Timber Sale and Fire Reintroduction Project Environmental Assessment* (the EA) and a Forest Plan Amendment to replace and relocate Dedicated Old Growth. Alternative E was modified to respond to a discrepancy between the written and mapped boundary of the W-T Three Roadless Area. The preferred alternative excludes harvest in Units 72, 73, and 76, 107 acres. This reduces the total area proposed for harvest to 2,262 acres, harvesting 15,047 mbf of timber. A cut-to-length logging system would be used on 2,043 acres and a helicopter on 219 acres. Harvest-generated slash would be treated on 2,684 acres using jackpot burning and underburning techniques. In addition to the slash treatment, landscape prescribed fire would occur on an additional 3,350 acres outside of harvest units, approximately 1,285 acres of the planned burn would be grasslands. There would be a total of 6,034 treatment acres designed to reduce fuel loads, restore habitat, and increase stand vigor using a combination of mechanical removal and prescribed fire. This alternative would also reconstruct 13 miles of existing road and improve 45 miles of existing system roads through road maintenance. There would be approximately 231 acres of planting using western white pine and western larch and some interplanting of ponderosa pine. Units 18. 40, 42, 66, and 67 will be evaluated for the need of subsoiling to reduce the impacts from past harvest. The timber volume will be sold using multiple Timber Sale Contracts; one will be the Elmo Timber Sale (890 acres, 6,809 mbf) and the other the Eden Timber Sale (1,372 acres, 8,238 mbf). The preferred alternative would obliterate approximately 33.2 miles of road and allow the treatment of 50 acres of knapweed not covered by the Forest's Noxious Weed EA with the use of herbicide. Since knapweed is found along the road system, this treatment is needed as part of the prevention strategy to reduce the risk of spreading the weeds to other locations. Noxious weed treatments would occur prior to using the infested roads.

The selected alternative will noncommercially thin 48 acres and commercially thin 47 acres of marginal size timber in Unit 61. Improvement harvest and prescribed fire will be used to increase stand vigor and resilience to insects and wildfire. Improvement harvest, consisting of understory thinning, would occur on 1,963 acres. Shelterwood harvest will occur on 144 acres accomplishing multiple objectives. Shelterwood harvest would be used to restore western white pine on 29 acres; restore lodgepole pine on 37 acres; restore ponderosa pine open stand conditions to 31 acres; regenerate grand fir on 23 acres; and salvage dead and dying Douglas-fir from 24 acres of catastrophic bark beetle conditions. Overstory removal would be used on 46 acres to allow existing natural regeneration to grow freely; 5 overstory trees per acre for future snags will be left after harvest. There would be 84 acres of group selections 1/2 to 2 acres in size to regenerate western larch.

The purpose of the proposed action is to:

- Maintain or improve stand vigor by lowering the risk of damage from insects and drought.
- Increase stand resilience to natural fires and epidemic insects by increasing the stand composition of seral species and developing fuels levels and stand structure reflective of historical fire return intervals.
- Return to the landscape the structure and diversity of the fire regime associated with the biophysical environment by using past fire disturbance and history in shaping the forest cover across the landscape.
- Remove fuels and alter crown structure so the area would have low intensity fires by using landscape fires and/or timber harvest in stands with ponderosa pine.
- Reduce sediment yields and increase public safety by improving important public travel routes.
- Improve water quality by decommissioning unneeded, substandard roads.

Information summarized in this document is described in more detail in the EA and the analysis file. These documents are available for public review in the Forest Supervisor's Office in Pendleton, Oregon and the Walla Walla District Office in

Walla Walla, Washington. The EA documents the site-specific analysis conducted by an interdisciplinary team to determine the potential environmental effects connected to the proposed timber sale and other habitat restoration projects.

The planning area is approximately 13,500 acres within the Wenaha (43 percent of the area) and Middle Grande Ronde (57 percent of the area) Watersheds. Forest Road 6200 passes through the northern portion of the planning area. Major streams within or on the planning boundary include: the Wenaha River and Dry Gulch and Burnt Canyon Creeks in the north, Elbow Creek on the west and the Grande Ronde River on the south. Long Meadow and Round Meadow are within the northern boundary and there are several parcels of the Wenaha State Wildlife Area along Eden Bench. The legal location is T. 6 N. R. 42 E. sections 26, 27, 33 to 36; T. 5 N. R. 41 E. sections 1, 12, 13, 24, and 25; T. 5 N. R. 42 E. sections 1 to 12 and 17 to 19.

The Environmental Assessment is tiered to the ***Umatilla National Forest Land and Resource Management Plan FEIS*** and ***Record of Decision*** approved June 11, 1990 and the accompanying ***Land and Resource Management Plan*** (**Forest Plan**). This includes clarifying direction of Plan Amendment #10 ***Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California*** (**PACFISH**), dated February 24, 1995 and Forest Plan Amendment 11 ***Continuation of Interim Management Direction Establishing Riparian, Ecosystem, and Wildlife Standards for Timber Sales*** (**ECOSCREENS**), dated June 12, 1995. Clarifying direction provided in the **National Marine Fisheries Biological Opinion** for the Umatilla Land and Resource Plan (for portions of the Forest within the Snake River Drainage) is also included. It is also tiered to the ***Managing Competing and Unwanted Vegetation FEIS (Veg FEIS),*** its **Mediated Agreement, and Record of Decision** (December 8, 1988). This EA also incorporates by reference the ***Environmental Assessment for the Management of Noxious Weeds*** (Noxious Weed EA) and its **Decision Notice** (May 24, 1995).

Key Issues

Through discussions involving Forest Service resource specialists in response to comments received during public scoping , the following key issues were identified within the project area:

Key Issue 1: Conflict between meeting wildlife standards and guidelines and achieving Forest health, sustainability and biodiversity.

There is conflict between achieving forest health goals and restoring single stratum conditions across the landscape with elk habitat needs for dense forest cover. Thinning for growth and vigor to increase resilience to insect activity conflicts with maintaining forest functions that develop suppressed and stressed tree character from inter-tree competition. There is concern about snag levels left after harvest.

Key Issue 2: Late Old Structure Forest

Some publics voiced concern about fragmenting old forest habitat and cutting trees larger than 21 inches. A finding from the Columbia Basin study indicates that large diameter trees have been drastically reduced over the Basin and should be protected. The proposed harvest and prescribed fire would open canopy, changing the old growth structure and tree species composition. Species dependent on closed canopy forest would be impacted.

Key Issue 3: Harvest as the Method to Accomplish Landscape Resource Objectives

Historic fire regimes would have maintained single structure in the Dry Forest, western larch, and western white pine stands. Fire played an integral part in maintaining landscape diversity. There is conflict in using harvest-only prescriptions to restore habitat that is fire maintained.

Decision

Based on the results of the analysis documented in the EA, it is my decision to implement the harvest, prescribed fire, road obliteration, noxious weed treatment, and associated mitigation and monitoring at this time. I am modifying Alternative E to respond to a discrepancy between the written and mapped boundary of the W-T Three Roadless Area. Harvest will occur on 2,262 acres removing approximately 15,047 mbf of timber. A cut-to-length logging system would be used on 2,043 acres and a helicopter on 219 acres. Harvest-generated slash would be treated on 2,684 acres using jackpot burning and underburning techniques. In addition to the slash treatment, landscape prescribed fire would occur on an additional 3,350 acres outside of harvest units; of which approximately 1,285 acres would be grasslands. There would be a total of 6,034 acres of fuel reduction, habitat restoration, and increase of stand vigor using a combination of mechanical removal and prescribed fire. There will be approximately 231 acres of tree planting and approximately 30 acres of soil restoration to reduce the effects of compaction.

Not all the road obliteration will be implemented at this time. I have decided to implement only the obliteration that occurs outside of the RHCAs, totaling approximately 26 miles. Consultation with the Fish and Wildlife Service and National Marine Fisheries Service will take longer than expected to implement the road obliteration inside RHCAs this fiscal year. The agencies have concurred with the "may effect, not likely to adversely effect" determination in the Wenaha and middle Grande Ronde Watersheds for road obliteration outside the RHCAs.

I have decided to adjust Management Area C1 in the Eden Planning Area through a minor, non-significant, Forest Plan amendment. The center of the C1, Dedicated Old Growth, area in T. 5 N. R. 42 E. section 9 had been cut before the Forest Plan was adopted. The area was under a timber sale contract and overlooked during Forest Planning. The C1 boundary would be moved 100 feet from Forest Road 6200 and a portion of Forest Road 6209100 to the west of the State Land in section 9. To replace these acres, the C1 boundary would be extended to the south and west to within 100 feet of Forest Road 6209200. This change is needed to provide Forest Plan protection to the old growth forest that can be added to the existing C1 area, while keeping the acres the same as currently designated in the Forest Plan. There will be no change in the net old growth acreage. The old C1 area would become C4. The change would allow hazard trees to be removed along Forest Road 6200 and make the C1 a functional old growth block. Approximately 40 acres would be exchanged between C4 and C1.

Description of the Modified Alternative E

An estimated 15,047 thousand board feet (mbf) of timber would be harvested from 2,262 acres. A cut to length logging system would be used on 2,043 acres for 13,516 mbf, while a helicopter would be used on 219 acres for 1,531 mbf. Harvest prescriptions include group selection, shelterwood, and improvement cuts. Higher stocking levels would be retained in Management Area C4 (the Eden portion) to better meet Forest Plan standards for wildlife. Stocking would be managed at the upper recommended stocking levels and the stands allowed to grow above the recommended levels. This would permit inter-tree stress to occur; develop suppressed character, and allow self thinning mortality. Forest processes, leading to the development of decadence and old forest structure, would be allowed to continue. In addition to the higher stocking levels, overstocked areas .5 to 2 acres in size would be left for bedding areas and provide habitat components that develop within holes in the canopy. The volume would be sold as two sales; the Elmo Timber Sale and the Eden Timber Sale.

Harvest residues would be treated using a variety of methods to reduce post harvest fuel loads in preparation for landscape prescribed fire or increasing seral tree species composition. Jackpot burning (622 acres) would be utilized in stands where group selections are being created to regenerate seral species. Jackpot burning uses spot ignitions to remove only heavier fuel concentrations. Most of this occurs in Moist Forest Stands where it is important to retain stand structure and increase seral tree species. Both jackpot and underburning (220 acres) would be utilized in stands where surface fuels are not expected to be uniform. Concentrations of slash would be burned and the fire allowed to creep through the rest of the unit to develop stands with greater representation of ponderosa pine. Underburning (1,949 acres) would be used in stands where fire can play a larger role in shaping the species composition and structure by reducing surface and ladder fuels. In harvest units where commercial or noncommercial thinning occurs, lop and scatter (95 acres) in combination with jackpot burning would be used to reduce post-harvest fuel loadings. No burning would occur in Units 30 and 55. In the Moist Forest, burning would occur in the spring or fall to reduce slash loads, while burning would occur in the fall for stands managed for ponderosa pine.

Improvement Projects: There would be approximately 231 acres of planting for western white pine and western larch and some interplanting of ponderosa pine. Units 18, 40, 42, 66, and 67 will be evaluated for the need of subsoiling to reduce the impacts from past harvest in combination with this action. There is a potential to subsoil approximately 30 acres.

Underburning would also occur in stands not proposed for harvest to reduce fuels and restore fire effects to portions of the landscape reflective of frequent, low intensity wildfires.

Landscape Prescribed Fire

Fire would be re-introduced incrementally, utilizing a multi-staged approach over several burning seasons. Burning would occur in the fall for stands managed for ponderosa pine. Fuel moisture levels and weather conditions would constrain fire intensity to be within prescribed bounds. As fuel levels are lowered, burning would occur under drier conditions, consuming additional fuels and modifying vegetative structure and composition, reducing grand fir and Douglas-fir in the understory. It is estimated to take 2 to 4 burning entries over a period of ten to fifteen years to achieve the desired result. The resulting stand condition would have thinned canopy, reduced ground and ladder fuels, be more resistant to a late summer wildfire, and help to isolate areas of heavy fuels by creating areas of lower fire intensity.

Landscape prescribed fire is proposed in Areas A, B, C, D, and E. Of the 9,288 total acres in the areas, 4,698 acres will be treated with landscape fire. Landscape fire is proposed in the Dry Forest (DF) and grassland (GR) biophysical environments. The table below is a summary of the landscape prescribed fire areas. MF is Moist Forest.

Fire Area	Total Acres in Prescribed Fire Units				Landscape Prescribed Fire Inside Harvest Units			Landscape Prescribed Fire Outside Harvest Units		
	Total	DF	MF	GR	Total Acres	DF Proposed to burn	GR Proposed to Burn	Total Acres	DF Proposed to Burn	GR proposed to Burn
A	620	120	520	21	155	51		515	69	21
B	2,104	1,132	471	481	670	513		1,433	619	481
C	1,407	628	582	45	344	104		1,063	523	45
D	3,012	1,174	1,424	76	1,129	622	4	1,884	553	72
E	2,095	358	291	663	186	55		1,909	304	662
Total	9,288	3,412	3,288	1,286	2,484	1,345		6,804	2,068	1,281

After the slash treatment, approximately 1,345 acres of the harvest units would be included for additional landscape prescribed fire. This will be combined with 3,350 acres outside of harvest units to total 4,698 acres of landscape prescribed fire. There are 1,272 acres of private and State of Oregon lands within the prescribed fire boundary. The other land owners have not indicated they would burn their lands at this time.

Silvicultural Prescriptions and Objectives:

To develop this alternative, landscape level forest vegetation patterns were identified. The vegetation patterns included past fire disturbance, areas with high levels of mortality caused by insects, disease or stand age, areas of high stocking, and stands with relics indicating a past composition of ponderosa pine and/or western larch. The patterns help to define the silvicultural objectives for the landscape. Stand level prescriptions were based on landscape objectives. Old growth connectivity, foraging areas for pileated woodpeckers, and unique habitat components such as mistletoe infected trees were some of the landscape needs that modified stand prescriptions.

Past fire disturbance shaped the stand structure and composition across the landscape. Stands of lodgepole pine, open ponderosa pine, or western larch, as well as low elevation mixed conifer and high elevation grand fir stands have their unique set of fire disturbance processes. These processes and features were used to determine landscape and stand level prescription objectives.

Stand Prescriptions

HIIM, Improvement Harvest: These units have multiple objectives for reducing the stand's stocking levels. The basal area reduction is based on the plant association and tree species managed. Stands in Management Area C4 would be managed at the upper end of recommended stocking levels. Stand objectives include increased growth and vigor to reduce the risk of epidemic insect infestations; removal of shade tolerant and fire intolerant species; shift in stand composition to a greater representation of seral tree species, mostly ponderosa pine; and the retention of large diameter trees (greater than 21 inches) in stands managed for ponderosa pine.

HITH, Intermediate Thinning: This is commercial thinning of plantations. These small diameter trees would be thinned to 16 to 20 foot spacing.

HROS, Overstory Removal: Overstory trees in past harvest units would be removed to allow existing natural regeneration to grow freely and develop stands with a greater representation of seral tree species. Overstory trees greater than 8 inches would be removed leaving 5 overstory trees per acre for snag replacement. Healthy, large diameter trees would be left for snag replacement, as there are few current snags in these units.

HSEG, Group Selection: Group selection ranging from 0.5 to 2 acres would create small openings emulating natural forest stand developments where groups or individual trees are killed by pathogens, insects, or lightning fires. These group disturbances create a multistory stand with a mosaic of age classes. Group selections would be placed in areas of dead, diseased or dying trees or where understory fir is increasing. Seral tree species would be favored.

HSSW, Shelterwood Harvest: Approximately 15 trees per acre would be left to begin the process of regeneration in mature stands of mixed conifer species that are experiencing deterioration due to heavy stocking, diseases and/or insect population increases. Unit 37 has high levels of mortality caused by Douglas-fir bark beetles. Units 1 and 71 have high levels of mortality in the lodgepole pine. Unit 32 is a western white pine stand that filled in with grand fir. Shelterwood harvest would occur to begin the regeneration in this unique habitat and western white pine would be planted to ensure the future forest structure.

Units 1 and 71 are adjacent and would total 49 acres. This created opening is the result of natural catastrophic conditions and is excepted by the Forest Plan. See page 4-73 of the Forest Plan.

PCT, non-commercial Thinning: Pole size plantations would be thinned to 14 to 16 foot spacing.

UB, Underburning: Prescribed underburning would be used to open patches in the stand, favoring seral tree species regeneration or to remove small, fire intolerant species from under ponderosa pine. No harvest is needed to restore seral tree species or to remove larger diameter trees of shade tolerant species that would not be killed by the expected fire intensity. The stand can be returned to a moderate-frequency, low fire-intensity regime without harvesting trees.

Summary of Prescriptions

Prescription	Number of Units	Unit Acres	Treatment Acres	Volume MBF
HIIM	46	2,022	1,963	10,247
HITH	1	47	25	50
HROS	3	46	46	541
HSEG	8	407	84	1,426
HSSW	6	144	144	2,783
PCT	2	48	48	
UB	2	98	85	
Total	68	2,812	2,395	15,047

Transportation system and Access Management

Road reconstruction: Elmo Timber Sale: There would be 20.4 kilometers (12.7 miles) of reconstruction. Improving drainage and replacing surface rock is necessary to protect the existing surface structure and reduce the risk to future damage. Reconstruction includes removing wooden and old metal culverts; constructing of turnouts and cross-drains; relocating of the approach of FR 6213 with 6200 to provide a safer "T" intersection; replacing of cattle guards, surface rock; and travelway hardening/improvement. No road reconstruction is needed for the Eden Sale; road maintenance will be able to take care of any problem areas.

There would be approximately 45 miles of road maintenance. Most maintenance consists of: removing down material, brushing for safety, drainage structure cleanout and shaping of drainage dips to protect the road surface from damage caused by standing water or rutting, and surface blading. This maintenance ensures the proper functioning of drainage structures both during and after the sale, protecting the road surface during the next cycle of road inactivity. Open roads would be maintained at a higher standard because of the mixed use that includes recreation, grazing allotment access, and other commercial uses along with the log haul.

Rock would come from four existing rock sources. Three would be located on National Forest lands; Forest Roads 6217035 (crushed rock), 6213020 (pit run), and 6209215 (pit run) and another on State of Oregon Department of Fish and Wildlife lands on Forest Road 6212041, in NW 1/4 of section 29, T5N. R42E. east of the Forest Boundary, also pit run. Water for dust abatement and other uses would come from existing spring developments on Forest Roads 6214036, 6212, 6200045, and 6208. The pond located near the junction of Forest Road 6200 and 6212 would be deepened by about 3 feet.

Temporary road construction totals 1.4 kilometers (0.86 miles). These roads would be obliterated when logging is complete. There would be 0.2 kilometers (0.15 miles) of temporary road to access Unit 6, 0.6 kilometers (0.36 miles) to access Unit 15, and 0.6 kilometers (0.35 miles) to access Unit 11.

It is proposed to obliterate or decommission approximately 33.2 miles of road; 1.1 miles are within Class III Riparian Habitat Conservation Areas (RHCAs) and 5.4 miles are within Class IV RHCAs. Approximately 31.8 miles are designated as closed, 0.7 miles are restricted, and 0.7 miles are open in the current Access and Travel Management Plan. The open road is a portion of Forest Road 6209 in section 9 and 10, to the north of the Wenaha State Wildlife Area. Forest Roads 6200027, 6209250, 6209275, and 6213034 will be decommissioned, totaling 2.6 miles. Decommissioned roads would be used again in the future. The surface would be stablized to reduce sediment, sloped to drain, and drainage structures removed. Obliterated roads will not be used again.

Area Improvement Projects

Planting is proposed on 231 acres to assure regeneration of western white pine, western larch, and ponderosa pine.

Subsoiling of old skid trails and landings would occur where needed to reduce the effects of past tractor skidding and where the use of forwarders increased detrimental soil compaction beyond standards. Revegetation will be with native seed or certified "weed free" non native, non persistent seed. Once harvest is completed in Units 18, 40, 42, 66, and 67 there is a need to review 247 acres for detrimental soil impacts. Approximately 30 acres may need subsoiling.

Treatment of Noxious Weeds. Herbicide treatment followed by seeding for cover is proposed to occur for those sites with species listed as a very high priority for treatment. These species are diffuse knapweed, spotted knapweed, tansy ragwort, and leafy spurge. Leafy spurge is located along the Grande Ronde River and the Umatilla Noxious Weed EA will not allow the use of herbicide within a 100 feet of streams or standing water. The Grande Ronde corridor needs its own noxious weed analysis and will not be included this decision. There are 938 gross acres, 263 net acres, covered by the Forest's Noxious Weed EA of 1995 and 383 gross acres, 50 net acres, not covered by the Noxious Weed EA. All sites are along roads. The sites not covered they the 95 Noxious Weed EA are interspersed with covered sites. Prevention measures are most effective when all road sites are treated.

Noxious Weeds Species Proposed for Treatment

Species	Covered by the Forest Noxious Weed EA			Not covered by Noxious Weed EA		
	Number of Sites	Gross Acres	Net Acres	Number of Sites	Gross Acres	Net Acres
diffuse knapweed	13	878	246	19	383	39
spotted knapweed	(2) included	included	16	(13) included	included	11
tansy ragwort	6	60	1		none	none
Totals	19	938	263	19	383	50

Rationale for the Decision

The criteria I used in arriving at my decision were:

1. The action needs to maintain or improve water quality.
2. The action needs to increase landscape resilience to wildfire and epidemic insect infestations.
3. The action needs to provide for public safety.
4. The action needs to have little to no effect on listed threatened, endangered, or sensitive species.

The modified, selected alternative, which includes the Forest Plan Amendment and improvement projects, meets these criteria well. The cut to length logging system reduces impacts to soil and water quality. The past four years of monitoring cut to length systems on the Walla Walla District indicates that soil displacement occurs on less then 2 percent of the area. This compares well with the results from the Limber Jim study that indicated 4.3 percent displacement occurred in the study units, along with 1.7 percent compaction. The proposed helicopter logging has low impacts to soil and water quality. Prescribed fire creates a mosaic of blackened and exposed soil areas where duff and unburned portions would filter erosion and reduce sediment transport. Impacts to water quality are not expected to be measurable because of the low impact logging systems, the nature of prescribed fire, PACFISH buffers, and the Best Management Practices (BMPs) implemented with this action. Non-point source impacts to water quality will be reduced by obliterating 26 miles of road and 45 miles of road maintenance. The 12.7 miles of reconstruction is included in the miles of maintenance. These actions would improve drainage and construct cross drains on portions of roads when use is finished.

Roads are the largest non-point source of sediment delivered to the streams, particularly where they cross streams or enter RHCAs. Road obliteration would reduce the total road miles by a third, reduce the number of stream crossing by 51 percent, and reduce the miles of native surfaced roads by 55 percent. The subsoiling will not restore infiltration values to those of lightly disturbed forest soils, but for most storm and snowmelt conditions, the restored value would be adequate for preventing overland flow and erosion. The proposed obliteration would reduce sediment delivery into the streams.

Forest landscapes and stand structure would become more resilient to disturbance events, such as wildfire and insects. Treatments would increase tree vigor by thinning, increase seral tree species (western larch, ponderosa pine, and western white pine) composition, and restore a mosaic of single stratum Dry Forest stands reflective of fuel levels and stand structure

produced by frequent low intensity wildfire. The lower fuel levels and removal of ladder fuels would lower the intensity of wildfire. It would increase the possibility of controlling wildfires. Seral species are fire climax tree species that have lower mortality rates from wildfires and are more resistant to insect and diseases. The landscape mosaic of single stratum Dry Forest and closed canopy Moist Forest would lower the intensity of wildfire moving through the area, leaving larger patches of live trees than a wildfire burning under current stand conditions. The action is preventative, modifying the amount and placement of high risk fuel conditions.

Increased stand vigor would help to keep insects under control. Faster growth rates allow trees to respond to insects and disease infestations. It would take several years for the increased growth rates to be achieved, but when they are, faster growth rates would be a defense against the affects of insect and disease. This alternative would reduce stocking levels to within recommended levels for reducing risks to insect epidemics. Management Area E2 would have stocking levels managed at the lower end of recommended levels. Management Area C4 would be managed at the upper level. This retains the function of suppression-induced mortality and the development of suppressed tree character in C4.

Public safety would be increased along Forest Road 62 by replacing surface rock and allowing hazard trees to be removed in the area that is currently C1. Replacing surface rock hardens the road surface, decreasing sediment yields and surface wear while increasing traction, driver control, better braking, and user safety. Maintenance provides a smoother road surface and increased sight distance from brushing.

Past experience has shown that significant air quality declines are limited in scope to the general burn area and are of short duration. When slash is being burned in Units 36, 37, 54, 55 and 77 Forest Road 62 may have to be closed when smoke drifts across the road. Burning would not occur unless weather conditions are expected to disperse particulate matter to levels not exceeding EPA air quality standards in Troy, Asotin, or Clarkston and Lewiston.

The reduced fuel conditions and structure would increase safety for fire fighters when future wildfires occur. Surface fuels would be reduced, allowing easier line construction. The single stratum stands would provide safer line location because of the reduced crown structure and lowered risk of fire moving into the crown.

The proposed herbicide application does have some potential to affect human health through drift or contamination. Picloram and Glyphosate, the herbicides proposed for use, are degraded by soil microorganisms. The herbicides proposed for use were among those listed in the Regional FEIS that could be used with acceptable risk as long as certain precautions and restrictions were applied. They are incorporated in the mitigations for application in Appendix C of the Forest Noxious Weed EA. Of the total 313 acres needing treatment for knapweed, only 50 acres or 16 percent, are not covered by the Forest Noxious Weed EA. Total treatment acres comprise 2.3 percent of the planning area; the additional 50 acres represents 0.4 percent of the planning area. The application of herbicide fits with the conservative trend on National Forest Lands nationally where it is used on only 0.1 percent of the lands, compared with 58 percent of farmlands. The treatment is needed to lower the risk of spreading weeds when road use begins and to make prevention measures successful.

No impacts are expected to water beneficial uses within or downstream of the planning area because of the type of logging systems proposed, the mosaic of burned and unburned areas created when using prescribed fire, the restoration of hydrologic function and reduction of sediment transport by road obliteration, implementation of Best Management Practices, no harvesting or igniting fires within RHCAs, and mitigation measures dealing with the use of herbicides.

Biological evaluations indicate that implementation "may affect, but is not likely to adversely affect" Snake River fall and spring chinook salmon, Snake River steelhead trout, and bull trout. National Marine Fisheries Service and the Fish and Wildlife Service concur with this determination with the additional mitigation and monitoring listed on page 11 of this document. The area does not contain critical winter habitat for North American lynx and determined to have "no effect". *Silene spaldingii*, a plant species proposed for Federal listing, is likely found in the planning area; the action is "not likely to jeopardize the continued existence of the species or result in destruction or adverse modification of proposed critical habitat." The project meets all the Ecoscreens direction of the Forest Plan; it does not lead to fragmentation of the LOS stands and provides for connectivity between LOS stands.

The modified Alternative E also provides a good mix of multiple-use objectives. Areas of low fire intensity would be intertwined across the landscape, creating conditions of increased resilience and lower resource impacts should a wildfire occur. Forest habitat would become more diverse when single stratum forests are returned to the landscape. Range conditions would improve over the next ten years to replace transitory range lost as plantations become young forest. Thinning the stands would improve stand vigor, growth, and resilience to insect attack, also protecting multiple resource values. Alternative E would provide better wildlife habitat because of higher stocking levels that maintains a degree of suppression and protects big game bedding areas in Management Area C4.

Special management objectives are met through various management requirements and project design. Forwarders and helicopters have low impacts to soil and water quality and the lack of harvest or ignitions within RHCAs provides additional

protection. RHCAs would be allowed to continue developing under the current conditions. Those with high mortality from insects would be at risk for catastrophic wildfire, but effects would be buffered by the fuel reductions occurring adjacent to them. Management requirements for Fish and Water Quality, Wildlife, Control of Logging, Noxious Weeds, Road Obliteration, and Prescribed Fire are expected to be effective in reducing impacts to these resources.

How Issues are Resolved in the Decision

Key Issue 1: Conflict between meeting wildlife standards and guidelines and achieving Forest health, sustainability and biodiversity.

The Forest Plan Standards and Guides for wildlife emphasizes big game and dead and down tree habitat. Some indicator species (pileated woodpecker, pine marten, and three-toed woodpeckers) are associated with closed forest, multistructural stands. The same stands are important cover for big game, providing both hiding and thermal cover. The Forest Plan's focus on multistructural, closed canopy stands plus the perception that old forest is closed canopy, conflicts with the stocking level control objectives to reduce the risk of epidemic insect population levels (for forest health and sustainability) and returning portions of the landscape to open structural stand conditions comprised of early seral species (biodiversity). Stocking level control would maintain marginal cover (40 to 70 percent crown closure) while reducing satisfactory cover. Satisfactory cover would not be found in Dry Forest managed for single stratum conditions because canopy closure would be managed below 70 percent. Since cover was important to maintain, the Moist Forest stands had prescriptions that would retain areas of high crown closures and reduce evenaged shelterwood prescriptions. Only 23 acres of the 2,262 acres proposed for harvest is for regenerating a Moist Forest stand. Satisfactory cover would be reduced by 4.6 percent in the planning area while total cover would be reduced only 1.8 percent. Management Area C4 is also being managed at the upper end of recommended stocking levels and would retain bedding areas. This will leave higher crown closures than Alternative B. Alternative E blends the cover needs with thinning needs for insects and single stratum objectives while leaving the landscape well above Forest Plan Standards and Guidelines for satisfactory and total cover.

Returning open structural stages increases landscape habitat diversity that will benefit those species dependent on open forest structure, such as white-headed woodpeckers. Open structure would create a more simplified stand in both structural layers and regeneration patterns. Stand structure would appear open with large age differences between layers. Regeneration would occur as a mosaic of same age classes rather than having a uniform spread of age and size classes throughout the stand. This Alternative would return single stratum structure, reflective of frequent low intensity wildfires, to the landscape.

Standing dead trees would be left above the 100 percent population levels recommended by the ecoscreens. Monitoring of the marking crew indicates they leave higher levels than prescriptions call for and the underburning would produce stressed trees that would become future snags.

Alternative E represents a trade off between big game cover and changes in habitat structure that help protect the forest from catastrophic events caused by fire or insects. I have decided to make this trade off because:

- Protection from epidemic insect populations can be achieved while allowing forest functions that develop suppressed tree character to continue.
- The 1.8 percent reduction in total cover to 71.9 is minor.
- Big game would move into the area earlier in the spring.
- Species use will change when the mixed conifer stands become ponderosa pine dominated stands. White-headed woodpeckers and several neotropical migrants of concern including; Cooper's hawk, American kestrel, western wood peewee, Swanson's thrush, and chipping sparrow would benefit from the change of closed multistructural stands to open single stratum.
- Open forest habitat that is below HRV will be restored.
- The action alternatives would provide greater diversity of habitat across the landscape by reducing the multistructural conditions in the Dry Forest.

Key Issue 2: Late Old Structure Forest

Trees larger than 21 inches would be removed in the Moist Forest biophysical type. I have decided to include the harvest of trees larger than 21 inches because:

- These trees would be removed as part of the stand prescription. Large trees will be removed for forest health reasons. They are infested with insects or disease, or are decadent. Their removed would increase the stand composition of seral species and salvage dead and dying trees.
- Unit location and the need to retain dense cover for elk habitat limited the amount of large trees cut.

- Shelterwood units would leave the largest, healthiest, trees at the rate of 15 to 20 per acre.
- Group selections, 1/2 to 2 acres in size, were located in areas of highest mortality, risk of mortality, insect activity, mistletoe, and decadence. All trees within the group selection would be cut to regenerate western larch.
- Unit 32 would have western white pine restored using a shelterwood harvest, large trees would be cut in the unit.
- Large trees would make up 7 percent of the trees harvested in Moist Forest. This would represent less than 2 percent of the total trees proposed for harvest.
- The proposed removal of large trees is within the Forest Plan standards for ecoscreens and are included to meet silvicultural objectives. The HRV analysis determined the Moist Forest to be within historical ranges for Late Old Structure.
- There is only a 0.2 percent reduction in Moist Forest Late Old Structure and no reduction in Dry Forest Late Old Structure.

Dry Forest Late Old Structure would be restored to the Historic Range of Variability (HRV) for both multistructure (5 to 15 percent) and single structure (15 to 55 percent). Currently multistructure is above HRV (31 percent). After implementation, Single structure would become 18.8 percent and multstructure, 12.2 percent of Dry Forest within the 31, 660 acre HRV analysis area. Within the Planning Area, approximately 82 percent of the Dry Forest Late Old Structure is shifted from multistructure to single structure. This is compatible with low elevation fire return intervals.

Helicopter yarding is being used to save large trees that would have been cut in the skyline units proposed in Alternative B and C. Alternative E does not cut large trees that would have been removed in skyline corridors and at landings for guy anchors. Helicopter yarding is expensive and reduced the expected timber sale revenue by $393,000, saving approximately 240 large trees. Using helicopter logging better meets the intent of the ecoscreens by preserving large trees in the Dry Forest and providing greater flexibility to future management.

Forest Plan Amendment adjusting the boundary of Management Area C1 with C4.

The proposed Forest Plan amendment to adjust the location of Dedicated Old Growth, C1, boundary would improve public safety by allowing hazard trees to be removed along Forest Road 62, a major use road between Troy and Elgin. It would make the designated area functional by replacing an area that was cut prior to Forest Plan implementation and replacing it with stands of old growth character before they are lost by harvest.

Key Issue 3: Harvest as the Method to Accomplish Landscape Resource Objectives

Some stakeholders believe that timber should not be harvested in National Forests. Alternative D was developed to address this issue. I selected Alternative E because I believe timber harvest is necessary to meet management objectives in this area.

- The uniform stocking developed by harvest best keeps forest structure intact. Alternative D would accomplish stocking level objectives by causing group mortality, many acres in size. Crown closure would be more uniform with harvest.
- Harvest is being proposed in Management Areas E2 and C4, both allow scheduled harvest under the Forest Plan.
- Not all the acres proposed for treatment would involve harvest. It is proposed to reduce fuels on 6,140 acres, blackening approximately 4,375 acres. Harvest would occur on 2,662 acres or 43 percent of the treated acres. Grasslands represent 1,280 acres of the treatment.
- Using prescribed fire without harvest would leave high levels of mortality within the treatment areas. The high levels of mortality would cause unacceptable fuel loading and increase the risk of safely containing a wildfire.
- Future risk to catastrophic wildfire and adverse effects are higher with the prescribed fire only methods.
- It would take longer and higher burn intensities to reach desired fuel and vegetation conditions using prescribed fire only.
- Using higher burn intensities would cause higher amounts of detrimental exposed soil than if harvesting would occur prior to the burn.

Other Alternatives Considered

There were four other alternatives analyzed in the Environmental Assessment. Alternative A - No Action; Alternative B - Modified Proposed Action, Forest Health; Alternative C - Forest Health and Wildlife Habitat; and Alternative D - Landscape Prescribed Fire.

Alternative A - No Action: Represents the continuation of current management actions and existing conditions. No new management actions would take place. Current biological and physical processes, creating stand disturbance and change, would be allowed to continue.

Alternative B - Modified Proposed Action, Forest Health: Harvest is proposed on 2,164 acres, harvesting 15,492 mbf of timber. A cut-to-length logging system would be used on 2,003 acres and skyline yarding on 161 acres. Harvest generated slash would be treated on 2,520 acres using jackpot burning and underburning techniques. Stocking levels would be reduced to the lower end of recommended stocking levels. In addition to the slash treatment, landscape prescribed fire would occur on an additional 2,383 acres outside of harvest units, approximately 620 acres would be grasslands. There would be a total of 4,903 acres of fuel reduction, habitat restoration, and increase of stand vigor using a combination of mechanical removal and prescribed fire. This alternative would also reconstruct 14 miles of road and improve 45 miles through road maintenance. It would obliterate 33 miles of road, roughly a third of the total miles.

Alternative C - Forest Health and Wildlife Habitat: Harvest is proposed on 2,109 acres, harvesting 13,975 mbf of timber. A cut-to-length logging system would be used on 1,948 acres and skyline yarding on 161 acres. Harvest generated slash would be treated on 2,520 acres using jackpot burning and underburning techniques. Higher stocking levels would be retained in Management Area C4 and big game bedding areas protected. In addition to the slash treatment, landscape prescribed fire would occur on an additional 2,383 acres outside of harvest units, approximately 620 acres would be grasslands. There would be a total of 4,903 acres of fuel reduction, habitat restoration, and increase of stand vigor using a combination of mechanical removal and prescribed fire. This alternative would also reconstruct 14 miles of road and improve 45 miles through road maintenance. It would obliterate 33 miles of road, roughly a third of the total miles in the planning area.

Alternative D - Landscape Prescribed Fire: This alternative would reduce stocking levels using prescribed fire without timber harvest. Approximately 3,375 acres of Dry Forest and grasslands would be treated and 985 acres of Moist Forest. There would be a total of 4,360 acres of fuel reduction, habitat restoration, and increase of stand vigor using prescribed fire.

Other alternatives considered but not developed include:

Evenaged Management: The Forest Plan encourages the use of evenaged silvicultural systems in Management Areas C4 and E2. An alternative using predominantly shelterwood harvests was discussed but not fully developed because this approach would not retain stand components reflective of fire return intervals in the Dry Forest. Even aged management prescriptions would not meet the Forest Plan's EcoScreen constraints for Dry Forests because large trees would have to be removed and Late Old Structure would be lost. Relying on even aged management would not retain forest cover needs for big game management. Though shelterwood prescriptions provide a single stratum structure, it would not contain the age group mosaic developed by short return fire interval. The stands would have the appearance of a stand replacement event, not in character with Dry Forest. Using predominately evenaged management would not meet the purpose and need.

Not Harvesting any Large Trees: Stand conditions in the Moist Forest would make it necessary to include large trees in the prescriptions. Only those stands with high mortality and decadence had prescriptions calling for shelterwood harvests. There was a need to shelterwood harvest a total of 101 acres. High stand mortality accounted for 49 acres, white pine restoration for 29 acres, and stand decadence and mortality for 23 acres. In a shelterwood harvest, the best trees are left to produce natural regeneration. Large trees that have advanced root rot, insect, or dwarf mistletoe infestations (those that would not be the best to leave because of their high risk to infecting the developing stand) would be removed. To protect big game cover values, group selections were proposed in the majority of Moist Forest units to regenerate to western larch. Group selections were located in areas of highest mortality, risk of mortality, insect activity, mistletoe, or decadence. Large trees were included when they fell within the group selections. These trees had the lowest crown ratios and highest risk to mortality over the next ten years. Leaving large trees within the groups would interfere with restoring larch, be a potential source of infection, or be stressed enough from disease they would draw insects into the stand. Large trees need to be included when they contribute to stand mortality or increase the risk of causing catastrophic damage by attracting insects.

Public Involvement

There were multiple opportunities for public input into this project as the depth and scope of the analysis changed. Originally the Elbow Creek area was proposed for analysis. Field review indicated the need to expand the area to include active Douglas-fir bark beetle infestations and to apply the landscape restoration objectives for Dry Forest over its area of influence. The original scoping for this project occurred in July of 1997 under the name of Elmo Timber Sale located in Elbow Creek. Later that fall the Eden Timber Sale was proposed and a decision was made to combine the analysis for both of the projects in one Environmental Assessment because the projects were adjacent. The Eden Timber Sale and Fire Reintroduction Project began scoping in February of 1998. The District received eight written responses and one phone call about the project from two mailings: Elmo to 137 individuals, organizations and governments, and Eden to 156 individuals, organizations and governments.

Additional Scoping occurred in March, 2000 to get public comments about the proposal to include 50 treatment acres of knapweeds not included in the Forest's Noxious Weed EA of 1995. This would allow the use of herbicide to control the spread and density of the weeds while developing conditions that allow prevention measures to be effective. The mailing included 172 individuals, organizations, and government agencies, only one organization responded.

The Notice and Comment Period began on May 8, 2000 with a public notice in the East Oregonian and a mailing of 103 letters stating that the EA was available. Thirteen copies of the EA were sent along with the letters to individuals or organizations that participated in scoping or expressed an interest in the project after scoping was completed. One government agency and an individual asked for a copy of the EA. Several phone calls about the project were received. One from the La Grande Observer to place an article in their newspaper and another from EPA asking about the size of the project and why an EIS was not prepared. EPA was satisfied with our rationale. The Notice and Comment period ended June 7. The District received three written comments as of June 12.

Mitigation Measures

The mitigation measures that were developed reflect the existing direction found in the Umatilla National Forest land and Resource Management Plan, program direction, and responses to site specific needs determined by the Interdisciplinary Team. Alternative specific mitigation is found on page 22 of the EA and Management Requirements Common to Alternates B, C, and E are on pages 22 to 26.

Additional Mitigation

For Road Obliteration

- Logs, brush, and other organic material will be placed on the road surface where opportunities exist.

For Temporary Road Construction

- Temporary roads will be constructed, used, and obliterated within the same operating season.

For Prescribed Fire

- Aerial application will allow adequate buffers to ensure no ignitions will occur within RHCAs.

Monitoring

Activities and their effects, including effectiveness measures, would be monitored. In addition to the Forest level monitoring, the specific monitoring activities that would be performed for the Eden Timber Sale and Fire Reintroduction Project are listed on page 27 of the EA.

Additional Monitoring

For Road Obliteration

- Newly obliterated roads will be monitored for evidence of rilling, concentrated flow, and other erosion after the first runoff season.
- Effectiveness of road obliteration will be monitored for discouraging use.

For Water Quality

- Monitor BMP implementation and its effectiveness during and after proposed activities.
- Intermittent stream channels will be re-assessed for unstable channel and bank conditions and large woody debris amounts after timber sale and prescribed burning activities.

NFMA Consistency

Any Project proposed for implementation must meet the requirements of the National Forest Management Act (NFMA). In accordance with these requirements, I conclude from the results of site specific analysis documented in the Environmental Assessment and Analysis File that:

The alternative documented in this Decision Notice is consistent with the Umatilla National Forest Land and Resource Management Plan and Record of Decision dated June 11, 1990, including amendments 8, PACFISH, and 11, Revised Screens, and is in compliance with the requirements of 36 CFR 219.27.

Administrative Appeal Rights

This decision is subject to appeal pursuant to Forest Service regulations at 36 CFR 215.7. Any written appeal must be postmarked or received by the Appeal Deciding Officer, Harv Forsgren, Regional Forester, ATTN: 1570 APPEALS, P.O. BOX 3623 Portland, OR 97208-3623 within 45 days of the date of publication of the legal notice announcing this decision in the East Oregonian Newspaper. Appeal must meet the content requirements of 36 CFR 215.14.

For further information, contact Mary Gibson, District Ranger, at the Walla Walla Ranger District, 1415 West Rose Street, Walla Walla, WA 99362 or call 509-522-6290.

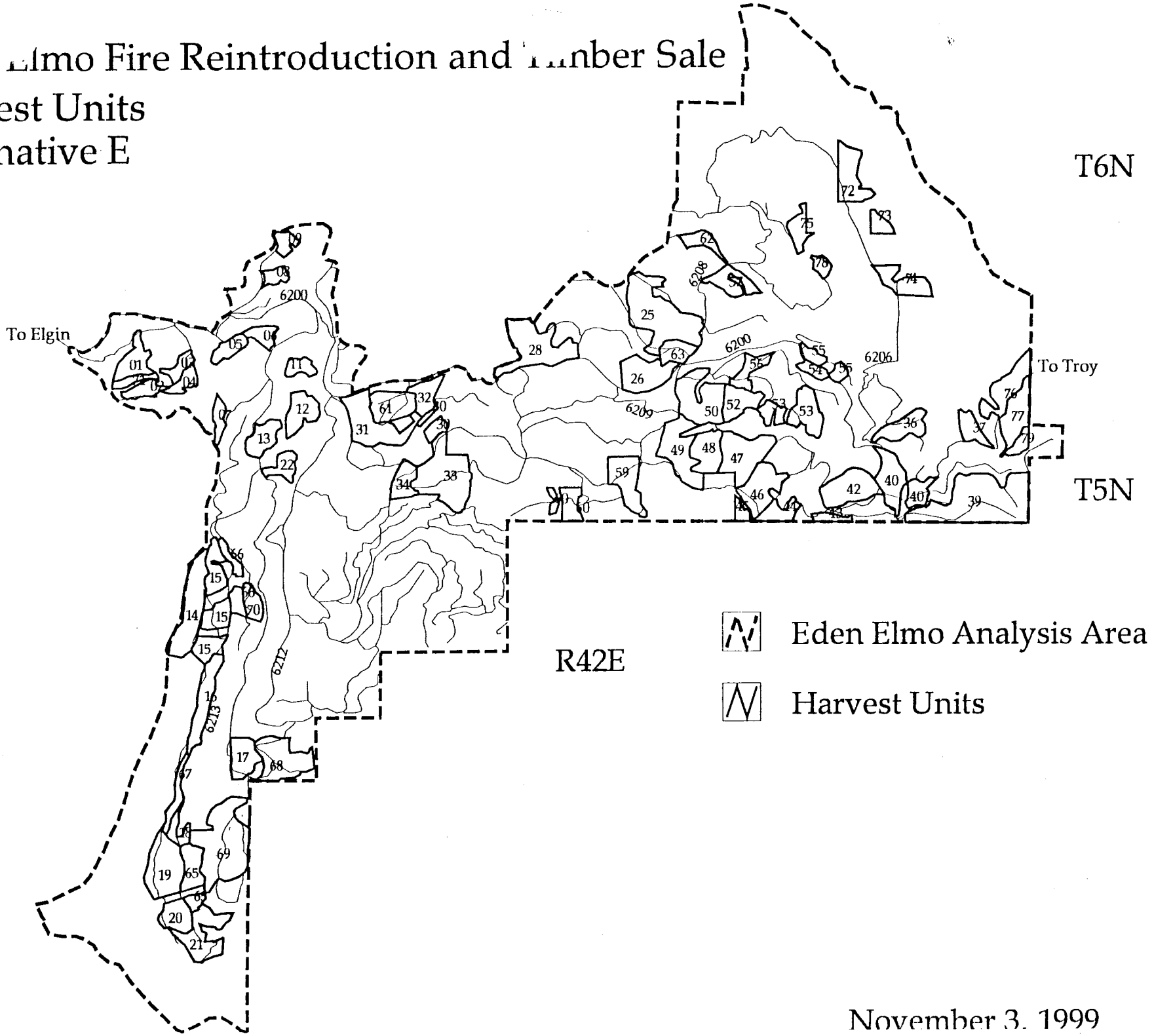
Jeff D. Blackwood
Forest Supervisor

June 12, 2000
Date

Enclosures (1)

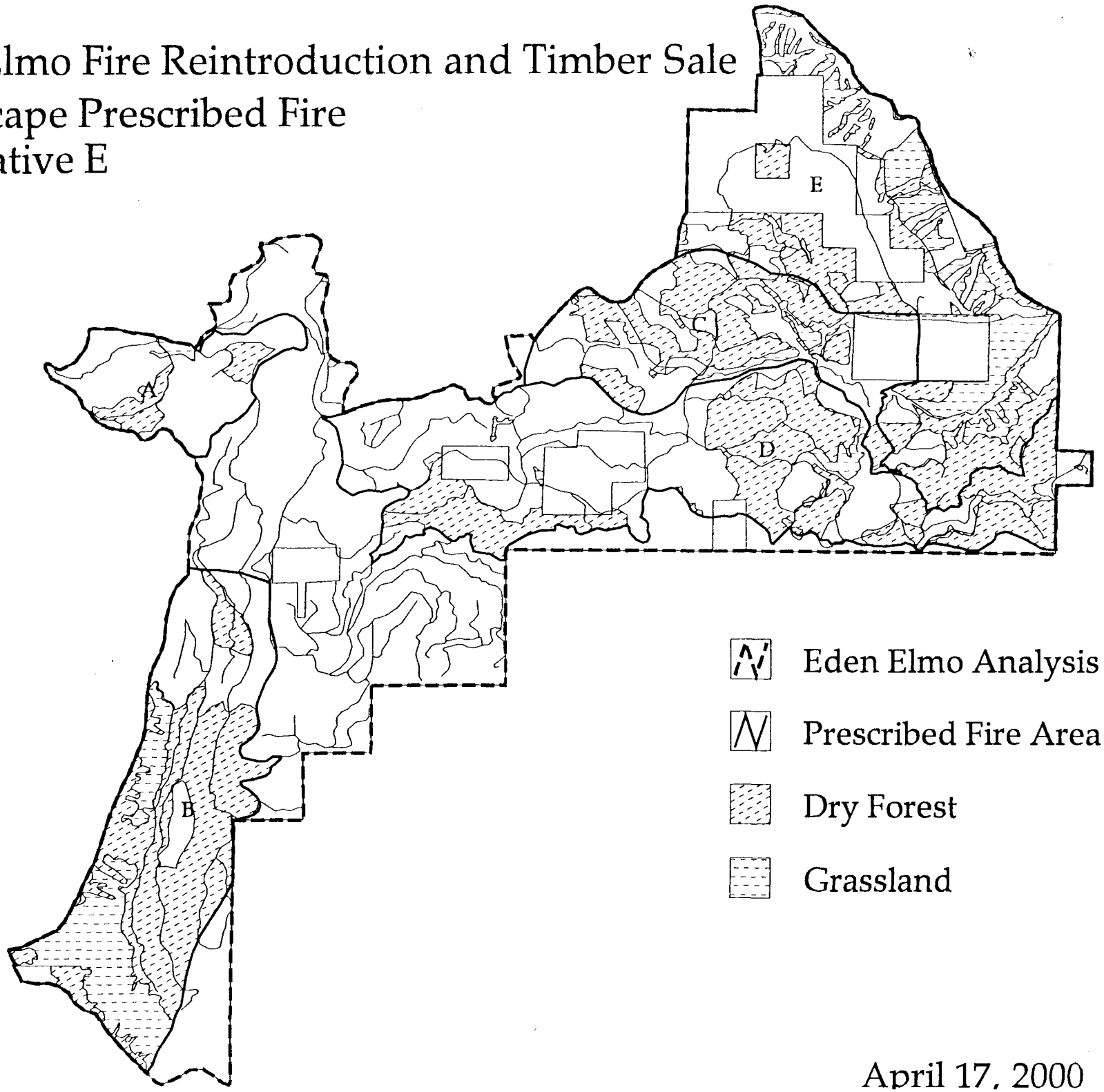
Project Area Map

Eden Elmo Fire Reintroduction and Timber Sale
Harvest Units
Alternative E



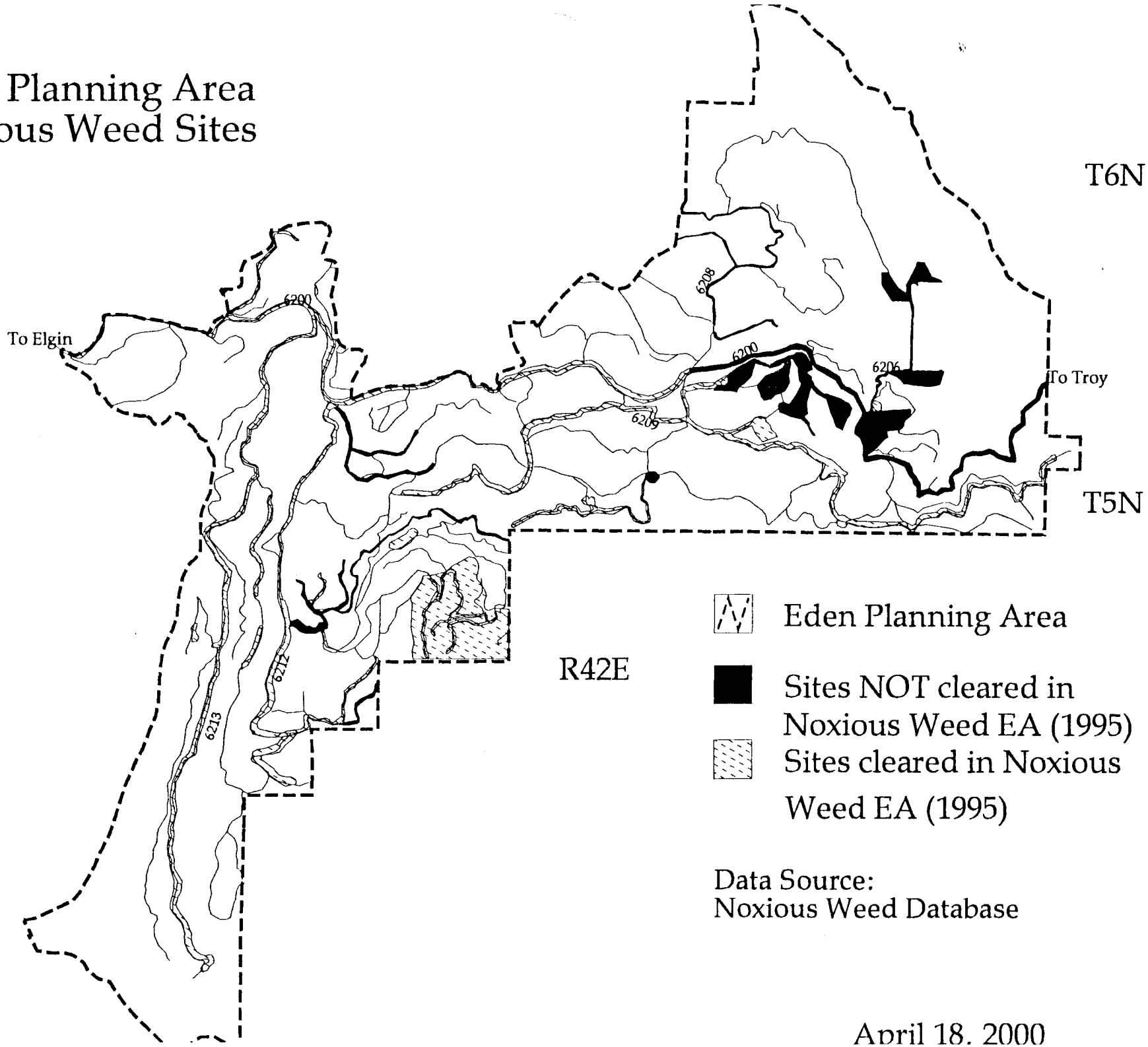
November 3, 1999

Eden Elmo Fire Reintroduction and Timber Sale
Landscape Prescribed Fire
Alternative E



April 17, 2000

Eden Planning Area
Noxious Weed Sites

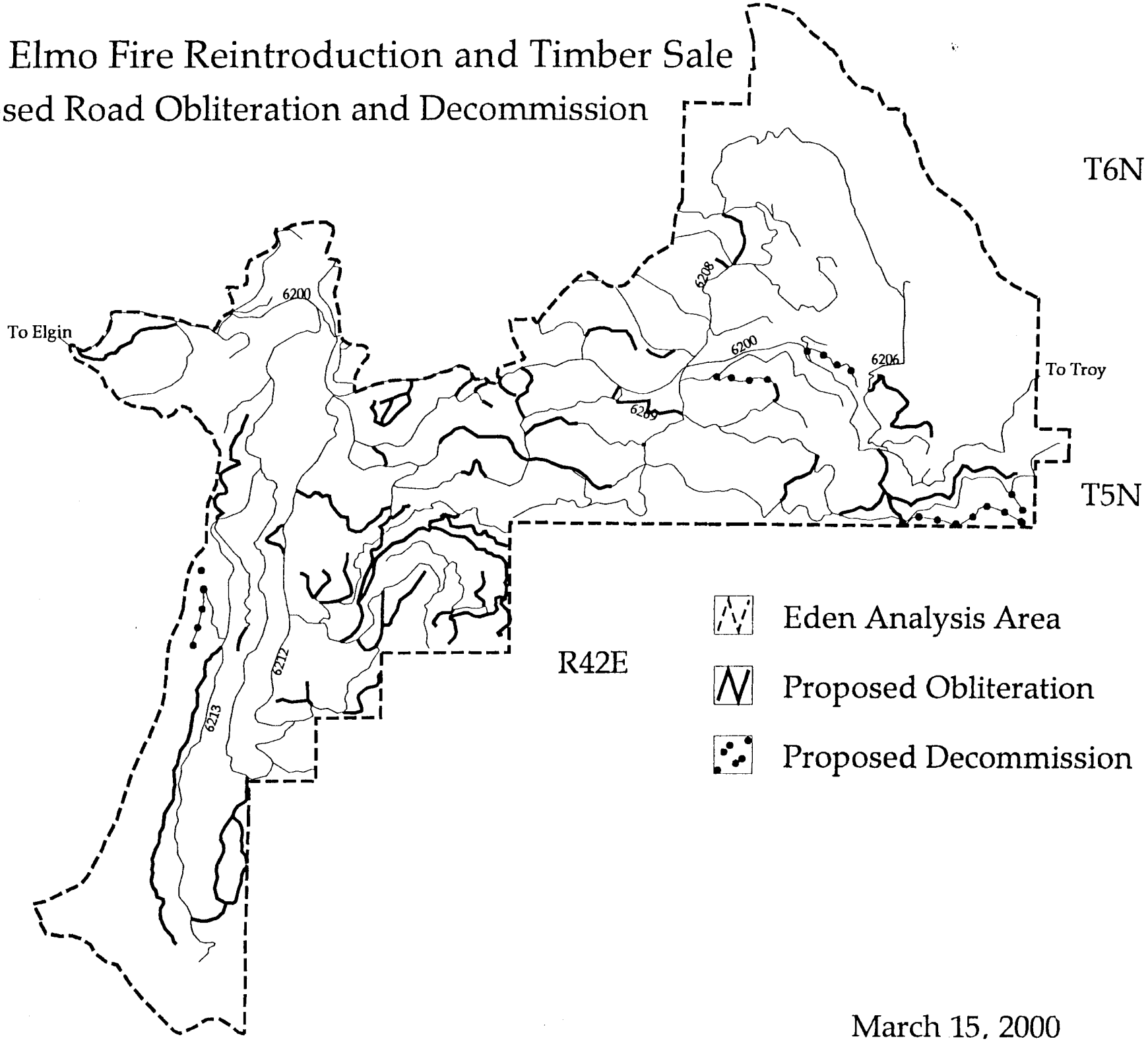


Data Source:
Noxious Weed Database

April 18, 2000

Eden Elmo Fire Reintroduction and Timber Sale

Proposed Road Obliteration and Decommission



March 15, 2000

Finding of No Significant Impacts

Eden Timber Sale and Fire Reintroduction Project

USDA Forest Service
Umatilla National Forest
Walla Walla Ranger District

The Finding of No Significant Impacts (FONSI) documents the reasons why the proposed action and alternatives will not have a significant effect on the human environment and an environmental impact statement (EIS) would not be prepared. Documents supporting this reasoning include: the *Eden Timber Sale and Fire Reintroduction Project Environmental Assessment* dated April 2000; the *Umatilla National Forest Land and Resource Management Plan* and Record of Decision approved June 11, 1990 and the accompanying *Land and Resource Management Plan* (Forest Plan); the *Managing Competing and Unwanted Vegetation FEIS,* it's Mediated Agreement, and Record of Decision (December 8, 1988); and the *Environmental Assessment for the Management of Noxious Weeds* (Noxious Weed EA) and it's Decision Notice (May 24, 1995).

A modified version of Alternative E, described in the *Eden Timber Sale and Fire Reintroduction Project Environmental Assessment* (the EA), is the preferred alternative. Alternative E was modified to respond to a discrepancy between the written and mapped boundary of the W-T Three Roadless Area. The preferred alternative excludes harvest in Units 72, 73, and 76, reducing harvest by 107 acres. This reduces the total area proposed for harvest to 2,262 acres, harvesting 15,047 mbf of timber. A cut-to-length logging system would be used on 2,043 acres and a helicopter on 219 acres. Higher stocking levels would be retained in Management Area C4 and big game bedding areas protected. Harvest-generated slash would be treated on 2,684 acres using jackpot burning and underburning techniques. In addition to the slash treatment, landscape prescribed fire would occur on an additional 3,350 acres outside of harvest units, including approximately 1,285 acres of grasslands. There would be a total of 6,034 acres of fuel reduction and habitat restoration using mechanical removal and prescribed fire to increase of stand vigor. This alternative would also reconstruct 14 miles of road and improve 45 miles through road maintenance. It would obliterate 33 miles of road (roughly a third of the total miles in the planning area), fence three aspen clones, and treat noxious weeds. These projects would be implemented using multiple decision documents.

Fire suppression has created a uniform appearance in the forest, a result of white fir entering the understory of ponderosa pine, lodgepole pine, white pine and Douglas-fir stands. The forest landscape has developed a multistructure condition, even in stands that were maintained in single stratum conditions by wildfire. Less than one percent of the Dry Forest Late Old Structure is single structure. Approximately a third of the planning area has active mountain pine beetle and Douglas-fir bark beetle, with many stands reaching epidemic conditions. Tussock moth populations have been building over the past three years. Though the current fuel conditions do not pose a high risk for a catastrophic wildfire, the stands are transitioning to higher risk because of high stocking levels and increasing surface fuels. Approximately 45 percent of the planning area, or 58 percent of the forested area, is transitioning to high risk conditions.

Determination of Significance

Context of Action: Multiple scales and levels of analysis were used to determine the significance of the action. Actions can be significant at the local level while losing significance at district or regional levels. Some issues become significant as impacts are felt by more people. The proposed action occurs in the northwest portion of Wallowa County, above Troy Oregon. Modifying forest management actions are proposed on 6,034 acres from a 13,500 acre Planning Area. Past forest management occurred on 5,926 acres. This action would leave approximately 2,870 acres without forest management activity within the Planning Area. Approximately 1,330 acres of the proposed 2,262 harvest acres have had prior harvest entries. Air currents could carry smoke to multiple counties to the east. Impacts on water quality were reviewed within the context of the planning area and on a scale that included the Lower Grande Ronde subbasin because habitat for Snake River spring and fall chinook salmon, Snake River steelhead trout, and bull trout is located adjacent to the planning area. Long and short term impacts are relevant to the determination of significance.

Severity of impacts: The following actions are documented in the effects analysis included in the *Eden Timber Sale and Fire Reintroduction Project Environmental Assessment*: Forest Management Actions prescribing stocking level control and regeneration using mechanical and prescribed fire methods; Road Obliteration; Aspen Fencing; Noxious Weed Treatments; Subsoiling; and Tree planting. The beneficial and adverse direct, indirect, and cumulative impacts discussed in the EA have been disclosed within the appropriate context. Impacts are expected to be low intensity, even with the large acres proposed for vegetation management. Project design and timing of implementation lowers impacts. Significant effects to the human environment are not expected. The rationale for the determination of significance is based on the environmental assessment, in light of the factors listed in 40 CFR 1508.27 plus others that could not be grouped under one of the factors.

1. Impacts that may be both beneficial and adverse

Shift from multi to single storied stands. Both beneficial and adverse effects have been taken into consideration when making this determination of significance. Beneficial effects have not been used to offset the consideration of adverse effects. Beneficial and adverse effects often involve trade-offs in resource uses. In the case of the actions proposed in this EA, the objective to restore landscape biodiversity and resilience counter the habitat needs of elk and other closed-canopy species. Within the planning area, the restoration of open stands can be achieved without significant impact to closed canopy species. There would be a 4.6 percent reduction in satisfactory cover with only a 1.8 percent change in total cover. The shift to open canopy conditions would change how elk use the area. Elk would move into the area earlier in spring and fewer would spend the summer months in the open stands due to the reduced thermal protection (EA page 43). Elk tend to pass through lower elevations quickly in the spring to reach the high elevation summer range. The landscape benefits by having forest structure within the historic range of variability (HRV). Currently open forest conditions are below HRV. The existing single stratum Late Old Structure (LOS) makes up less than one percent of the Dry Forest compared with an HRV between 15 to 55 percent (EA page 36). Single stratum Late Old Structure would become 18.8 percent of the HRV analysis area (EA page 49). Alternative E would leave higher stocking levels and protect bedding areas (EA pages 13, and 19). Though 74.3 percent of the Dry Forest (EA page 44), or 26.5 percent of the planning area, becomes open structure, there is only a 1.8 percent reduction in total cover. Alternative E is least impactive of the harvest alternatives to total cover but highest in changes in satisfactory cover. There would be no significant effect on cover values. There would be a shift from multistructure to single structure in the Dry Forest. The open structural conditions in Dry Forest would restore landscape diversity. Thinning the Moist Forest stands would return to closed canopy conditions within 20 years. The change in total cover is not significant, as cover would remain 71.9 percent of the planning area.

Large Trees. Another trade-off occurs with the cutting of large diameter trees to meet prescription objectives in the Moist Forest and because of catastrophic levels of Douglas-fir bark beetle in Dry Forest in some stands. For forest health reasons, large trees infested with insects, disease, or because of decadence would be removed to increase the stand composition of seral species and salvage dead and dying trees. Large trees will be a small portion of the total trees removed. Large trees would remain common in the stands proposed for treatment. Less than 3 percent of the total trees designated for removal would be larger than 21 inches. This does not represent significant numbers. Cover objectives in the Moist Forest limited the placement and use of evenaged prescriptions. The largest, healthiest trees would be left in sheterwoods at the rate of 15 to 18 trees per acre. Overstory removal units would leave 5 trees per acre for future snags. Old growth definitions require 10 large trees per acre greater than 21 inches. Since it is proposed to leave the shelterwood trees for future snags, these stands would have enough large trees to become late old structure in 40 to 60 years. There would be no loss of late old structure in Dry Forest and only a 0.2 percent loss in Moist Forest (EA page 49). The removal of large trees does not significantly effect late old structure or large snag replacement.

The adverse effects do not represent any significant effects to the human environment.

Beneficial impacts:

- Growth and Vigor: Stocking level control, designed to reduce the risk of insect epidemics while increasing stand vigor and resilience, represents 90 percent of the proposed treatment acres using commercial thinning that would retain forest structure. (EA pages 2, 8, 13, 20, 51-52)
- Elk Use: The open stand conditions would provide more plentiful spring forage, available earlier in the year for a longer duration. It would draw animals away from farming activities and may mean less supplemental feeding by the Oregon State Department of Fish and Wildlife. (EA page 43)
- Biodiversity: Creates open forest conditions in the Dry Forest biophysical type by thinning the understory trees and leaving the large diameter trees. Open structure would be returned to 74.3 percent of the Dry Forest in the planning area (existing condition of less than 5 percent). The HRV analysis indicates single stratum late old structure would become 18.8 percent of the Dry Forest compared with an existing condition of less than one percent. The historic range for single stratum, Late Old Structure is 15 to 55 percent. The preferred alternative would restore the landscape to within historical ranges except early successional. Landscape biodiversity is increased by opening the stands, however the more structurally diverse multistructural stage is reduced. The fuel and stand structure would be returned to historical levels reflective of short return interval, low intensity wildfire and lower the risk of catastrophic damage. (EA pages 44-45, 48-50, and 60-64)
- Snags: Standing dead trees would be above the 100 percent population levels recommended by the ecoscreens. Monitoring of the marking crew indicates they leave higher levels than prescriptions call for and the underburning would produce stressed trees that would become future snags within five years. (EA pages 44 and 63-64)
- Control of Wildfire: The landscape would become more sustainable by creating areas of low intensity fire between areas of longer return intervals without reducing forest cover. This would help to reduce the risk of crown fires and create a broader mosaic of vegetation conditions. (EA page 45)

- Range: Development of open structure would replace transitory range lost as plantations age, without the reduction of canopy cover of evenaged prescriptions (EA page 47).
- Sediment Reduction: Road obliteration would reduce 57 stream crossings, or about 51 percent of the total road crossings in the planning area. There would be a reduction of 1.1 miles of road in Class III streams and 5.4 miles in the Class IV, for a total of 6.5 miles. This represents an 83 percent reduction in the total roads within RHCAs in the planning area. The proposed obliteration will also reduce the amount of native surfaced road by 55 percent to 22.5 miles. Soil infiltration for road surfaces typically ranges from 0-4 mm/hr. Ripping or subsoiling restores infiltration values to 15 to 30 mm/hr. Rainfall intensities for the planning area are about 8 mm/hr and snowmelt rates seldom exceed 15 mm/hr. Subsoiling will not restore infiltration values to those of lightly disturbed forest soils. For most storm and snowmelt conditions, the restored value would be adequate for preventing overland flow and erosion. There would be a short term increase in sediment transport from the subsoiling, however, the reduction in native surfaced roads, stream crossings, and miles of roads within RHCAs will reduce of sediment delivery in the long term. (EA pages 54 and 59)

Adverse Impacts:

- Loss of Satisfactory Cover for elk. There would be a 4.6 percent reduction in satisfactory cover, down from an existing 32.4 percent. This would change the use elk currently mark of the area. Wintering elk would move from lower elevations, off forest, earlier (beneficial) to utilize grazing opportunities created by the open stands. This benefit would be offset by fewer elk spending summer months in the open forest condition. Open stand conditions would provide drier, warmer, summer habitat. Thinned stand densities would be a mosaic with Moist Forest having higher density than Dry Forest. The reduction of satisfactory cover in Moist Forest would be short term and would return when trees grow and crowns increase in size. Although there would be a loss of satisfactory cover, total cover would be nearly unchanged: there would be a 1.8 percent reduction in total cover, down from an existing 73.7 percent. This is well within the Forest Plan Standards and Guidelines of 15 percent satisfactory cover and 30 percent total cover. (EA page 43)

- Cutting of Large Trees. Trees larger than 21 inches would be removed in the Moist Forest biophysical type. These trees would be removed as part of the stand prescription. The HRV analysis determined the area to be within historical ranges for Late Old Structure, allowing the removal of large diameter trees. Unit location and the need to retain dense cover for elk habitat, limited the amount of large trees cut. Shelterwood units would leave the largest, healthiest, trees at the rate of 15 to 20 per acre. Group selections, 1/2 to 2 acres in size, were located in areas of highest mortality, risk of mortality, insect activity, mistletoe, and/or decadence. All trees within the group selection would be cut to regenerate western larch. Unit 32 would have western white pine restored using a shelterwood harvest, and large trees would be cut in the unit. Large trees would make up 7 percent of the trees harvested in Moist Forest. This would represent less than 3 percent of the total trees proposed for harvest. The proposed removal of large trees meets the Forest Plan standards in the ecoscreens and are included to meet silvicultural objectives. There is a 0.2 percent reduction in Moist Forest Late Old Structure. Removal of large diameter trees is not significant. Large trees represent a small percent of the total harvest, and removal is needed to meet prescription objectives. Impacts to total Late Old Structure would be low. (EA pages 7, 11, 44, 49 and 50)

- Increase in Early Successional Stages. There would be a slight increase in early successional stages (0.8 percent of Moist Forest and 0.6 percent of Dry Forest) to the existing 17.4 percent of Moist Forest and 16.9 percent of Dry Forest. This is above HRV, 1 to 15 percent of Moist Forest and 5 to 15 percent of Dry Forest would be in early stages. Within 5 to 10 years the planning area would contribute to a 5.5 percent reduction in early successional stages within the 31,658 acre HRV analysis area when plantations age. Other plantations outside of the planning area will also move to young forest during this time. The planning area would contribute to a 0.5 percent reduction within 5 years, almost half the early stages created by action alternatives. Early successional stages would return to HRV levels in a short time. The small increase in early successional stages is not significant and will be short lived. (EA pages 36, 39, 47 to 50)

Changes in Early Successional Stages

Forest Type	Change in Percent of HRV Analysis Area	Existing Percent of HRV Analysis Area	HRV Range
Moist Forest	0.6	17.4	1 to 15 %
Dry Forest	0.8	16.9	5 to 15 %

- Reviewing the irreversible and irretrievable effects listed in the EA, pages 72 and 73, impacts are projected to be insignificant. Project design, management requirements and Best Management Practices and the absence of irreversible resource impacts or uses indicates no significant impacts.

2. Degree to which public health and safety may be affected

Public health and safety would not be adversely affected. Mitigation measures and project design are expected to prevent adverse effects to water quality and air quality. Public safety on Forest roads would increase.

Road reconstruction and Maintenance: Replacing surface rock hardens the road surface, decreasing sediment yields and surface wear while increasing traction, driver control, better braking, and user safety. Maintenance provides a smoother road surface and brushing will increase sight distance. There will be a total of 45 miles of road maintenance of which surface rock replacement would occur on 9.7 miles. There is an existing 103 miles of road, of which 33 miles would be obliterated, leaving 67 miles. Sixty-six percent of the remaining roads would have maintenance, almost all of the 39 miles of open and seasonal roads. (EA pages 38, 58 and 59)

Air Quality: Past experience has shown that significant air quality declines are limited in scope to the general burn area and are of short duration. Burning occurs during times when the air is unstable and smoke can mix in the upper atmosphere. Weather conditions are expected to disperse particulate matter to levels that would not exceed standards in Troy, Asotin, or Lewiston. EPA data for PM 10 levels in Lewis, Union, and Asotin Counties shows they have not exceeded standards at any time during the past five years. This includes summer stable air conditions during some major fire years. (EA pages 32, 33, 64, and 65)

Water beneficial uses: No impacts are expected to beneficial uses, within and downstream of the planning area, because of the type of logging systems proposed, the mosaic of burned area from prescribed fire, the restoration of hydrologic function and reduction of sediment transport by road obliteration, implementation of Best Management Practices, not harvesting or igniting within RHCAs, and mitigation and restrictions of herbicide use within RHCAs. (EA pages 45 - 47 and 52 - 55)

Herbicide application: The proposed herbicide application does have some potential to affect human health through drift or contamination. Picloram and Glyphosate, the herbicides proposed for use, are degraded by soil microorganisms. The herbicides proposed for use are among those listed in the Regional FEIS that could be used with acceptable risk as long as certain precautions and restrictions were applied. The restrictions are incorporated in the mitigations for application in Appendix C of the Forest Noxious Weed EA. There are a total of 313 acres needing treatment for knapweed; 50 acres or 16 percent, are not covered by the Forest Noxious Weed EA. Total treatment acres (including what is already approved) comprise 2.3 percent of the planning area; the addition of 50 acres represents 0.4 percent of the planning area. The 50 acres of treatment does not represent a significant increase in acres treated. The application of herbicide fits with the conservative trend on National Forest Lands nationally where herbicides are used on only 0.1 percent of the lands compared with 58 percent of farmlands. (EA pages 67, 97, 100, 101, 114, and 117)

3. Effects to unique characteristics of geographic area

Distant views into the Grande Ronde and Wenaha Canyon and view of the canyon walls from the rivers along with unique wildlife habitat, are characteristics of the area that would not be impacted by the action. Past experience with proposed harvest prescriptions indicates the stand changes would not be visible in the distant view. The area where harvest and burning would occur, near the break in slopes, is predominately ponderosa pine stands that would retain their large tree component and be visually pleasing foreground when viewing the river from above, along the break in slope.

Aspen, There are a total of 12 clones ranging in size from .25 to 3 acres in the planning area. Most sites are less than a half acre. Aspen clones offer a unique habitat that is not regenerating. Browsing occurs by elk and cattle. There will be no adverse impact to these sites. Fencing will help to protect the sites and allow them to expand. (EA page 52)

W-T Three Roadless Area. No harvest is being proposed in this inventoried roadless area. (Modification when implementing Alternative E)

Wild and Scenic Rivers. No harvest will occur within the corridor. Landscape prescribed fire will occur within the corridor, 85 percent of it would be non-forested grasslands that would green the next spring. The burning in Dry Forest would remove understory regeneration and be visible for approximately three years. Harvest would be a half mile from the river user. Partial cutting, topography, and riparian vegetation would make the harvest activities not evident to the casual observer. (EA page 71)

4. Degree to which effects are likely to be highly controversial

Although there is controversy and disagreement among the public over the potential for significant effects from a project of this size, the professional experts and scientific research consulted agree that the activities can be implemented without significant adverse effects on the environment. Vegetation management and fuel reductions would occur on 6,034 acres of which 4,375 acres would be blackened by fire. Harvest is proposed from 2,262 acres. Harvest would make up 37 percent of

the total acres treated. The low level of harvest and prescribed fire has no significant impacts to total forest cover. Past experience with the proposed logging systems indicates low impacts to soils (EA pages 55-58) and sediment delivery (EA pages 52-55). The reduced crown closure would not cause changes in channel morphology or riparian stream shading. No impacts are expected to instream riparian objectives described in PACFISH and sediment delivery is expected to be slight and unmeasureable (EA pages 45-47). Impacts would be spread over time as different portions of the action are implemented. The timing of project implementation will disperse impacts. Actions would be sequenced to allow escapement areas for wildlife. The analysis indicates no significant effects from implementing of the preferred alternative.

Effects of Timber Harvest: The controversy surrounding this issue is normally generated by the amount of clearcut or evenaged management shelterwood harvests. Very little shelterwood harvest is proposed and no clearcutting. The amount of created openings and loss of forest cover is a good indication of the degree of impacts. Openings in forest cover would come from shelterwood, group selection harvests or to accomplish burning objectives. Stocking control by thinning is the major prescription objective and retains forest cover. Existing forest cover would be reduced on 1.8 percent of the planning area, from 73.7 percent (EA page 43). There would be 243 acres of created forage (EA page 43). Most of the loss in forest canopy is the result of insect or stand age mortality. Only 23 acres of the total 144 acres of shelterwood harvest is being done because stand conditions fit the need for regeneration (EA page 52). The other 121 acres of shelterwood are being proposed for western white pine restoration or because insect mortality is so high the salvage harvest would look like a shelterwood. The purpose and need to increase stand resilience to natural fires and epidemic insects, developing fuels reflective of historical fire return intervals and returning to the landscape the structure and diversity associated with historical fire regimes necessitated large landscape treatments over multiple years (EA pages 2, 8, and 9). These treatments have no significant impacts to total forest cover.

Effects of harvest on soil: Research and Forest monitoring indicate that impacts to soils by using cut to length (forwarder), skyline, or helicopter logging systems would be light. Compacted soils range from 1.7 percent for forwarders, 0.2 percent for skyline, to less than 1 percent (near none) for helicopter yarding. Exposed soil ranged from 2 to 4.4 percent for forwarders, 7 percent for skyline, to less than 1 percent for helicopter. There would be 540 acres of exposed soil, most of it from landscape prescribed fire. The varied fire intensity would leave duff, unburned areas, and areas of varied fuel consumption that would filter erosion. Approximately 88 percent of the burned area would retain material that would help reduce or eliminate erosion. The mosaic of exposed soil would be small; less than 2 percent of the blackened area would have detrimental conditions. There would be 114 acres of detrimental exposed soil from harvest and prescribed fire combined (EA page 56-57); this is small when compared with the activity occurring over 6,140 acres. Expected detrimental soil impacts would occur on 2.5 percent of the activity area, well below the Forest Plan Standard and Guideline of 15 percent. There would be no significant impacts to soils.

Effects of harvest on Water Quality and Fisheries: Direct impacts to water quality and fisheries habitat have been reduced by management requirements (EA pages 22 and 23). Other than road obliteration and road maintenance, no activities are proposed within Riparian Habitat Conservation Areas (RHCAs). Non fish bearing streams and intermittent streams are protected by 150 foot buffers. Fish bearing streams are protected by 300 foot buffers. Fish bearing and perennial streams are distant to any proposed harvest, approximately a quarter mile. No harvest would occur within RHCA buffers and no fire ignitions would be allowed. Stream shading would remain at existing levels, the source of large and small woody debris would remain unchanged and stream channels and pool frequency would not be impacted. Sediment produced by harvest, prescribed fire, road maintenance, and road obliteration is expected to be slight and unmeasurable, and should decrease over time. Hydrologic function will be improved by obliterating roads. In the planning area, approximately 85 percent of the road miles that are within RHCAs would be restored (EA page 46 and 53-54).

Project design that includes RHCA protection, low ground disturbance logging systems, and the mosaic nature of prescribed fire would not deteriorate conditions that perpetuate the reasons for listing streams as water quality limited for temperature (Wenaha and Grande Ronde) or for habitat modification or sediment (Grande Ronde) (EA page 53). Sediment delivery resulting from soil disturbances caused by burning, harvest, road obliteration, and temporary road construction would be modified or eliminated by the RHCA buffers and Best Management practices (EA page 54). Impacts to fisheries and water quality are not expected to be significant.

Effects of harvest on Wildlife: The action alternatives shift forest structure from multistructure to single stratum in stands that normally would have been maintained as ponderosa pine or in open conditions by frequent, low intensity, wildfire. The action restores a structural stage to the landscape that is currently below the historical range variability. It creates horizontal diversity (landscape) while sacrificing vertical diversity (stand structure). It represents a trade-off between species use and creating habitat that is currently limited. A high percent of the Dry Forest within the planning area would become single stratum; 74.3 percent of the total Dry Forest or 48 percent of the HRV analysis area. The historical range of single stratum is 15 to 70 percent of the Dry Forest. The preferred alternative will move the planning area to within the historical range for single stratum. (EA pages 44, 45, 48-50)

5. Degree to which effects are highly uncertain or involve unique or unknown risks

Both local research comparing the hydrological effects of harvest between cut and uncut watersheds and observations that knapweeds do not enter planations with good herbaceous cover, indicate that the project design will not involve unique or unknown risks.

Changes in peak flows and channel morphology: The Equivalent Clearcut Acres model was used to display the commutative effects of past harvest and vegetation management with the action alternative. National Marine Fisheries Service (NMFS) directed the Umatilla National Forest to use this model to determine watershed conditions (Biological Opinion for the Forest Plan). NMFS established an ECA threshold of concern of 15 percent in priority watersheds. The Wenaha Watershed is a priority watershed with an ECA well under 15 percent because of the amount of wilderness. Research indicates that an ECA over 20 percent can cause channel changes. Two subwatersheds in the Wenaha would have ECAs greater than 20, Dry Gulch would attain 38 percent ECA and Lower Wenaha, 28 percent. Research at the High Ridge Barometer Watershed on the Walla Walla District indicates that peak flow and channel changes were not observed with ECAs over 50 percent. (EA page 54)

Though the Eden planning area receives less total precipitation than High Ridge, rain on snow events may be more common due to Eden's lower elevation. Catastrophic rain on snow events would continue, along with shallow rotational slope failures on the steep, grassy, slopes. At this time, intermittent channels show little evidence of channel adjusting changes to peak flows or annual yields. Watershed effects are expected, however effects would probably be immeasurable due to implementation of riparian protection measures, such as streamside buffers and low levels of direct and indirect effects to water yield, peak flows, and erosion. Most of the ECA generated in Dry Gulch Creek comes from prescribed fire with the vegetation having a high recovery rate. Local research and field observations indicate the risk to changes in peak flows and channel morphology are low. There will be no significant effects to changes in channel morphology, peak flows, or sediment yields. (EA pages 45-47 and 52-55)

Noxious Weed Prevention Measures: The EA has a twelve part noxious weed plan designed to reduce the risk of spreading noxious weeds to new sites, particularly off the roads. Cleaning equipment prior to moving it on Forest, keeping it clean between units, avoiding sites, keeping ground cover, and seeding exposed areas with native seed would help reduce the likelihood of additional infestations. Retaining canopy closure on 94 percent of the harvested units and using logging systems that would retain 98 percent of the ground cover will significantly reduce the risk of noxious weeds becoming established in harvested stands. To reduce the risk of weeds infesting new areas, the road system would be treated prior to a harvest entry. These measures are expected to be effective and monitoring after harvest would occur. (EA pages 24-27 and 65-68)

6. Degree to which action may set precedent for future actions with significant effects

Restoring single stratum ponderosa pine stands would require periodic prescribed fire to maintain stand fuel and structural conditions. This would be a low impact activity. As stands age and canopies close, there may be a future need to use mechanical measures to reduce stocking levels. The commitment to maintaining single stratum conditions on the Dry Forest would require future actions, although at a smaller scale than the current proposal. Maintenance of single stratum conditions would be less impactive than the current action. Significant effects are not expected should future prescribed fire or harvest occur. Harvest is not expected to occur for another 20 to 30 years while prescribed fire may occur at 15 year intervals.

7. Relationship to other actions with individually insignificant but cumulative significant impacts.

This action does not represent potential cumulative adverse impacts when considered in combination with other past or reasonably foreseeable actions. Current management activities include grazing, fuelwood cutting, and noxious weed control. In 1997 and 1998 prescribed fire was used west of the planning area to increase browse species for big game along the slopes to the Grande Ronde River. Future actions include continual noxious weed control and aspen protection. (EA pages 29 and 30)

Fuelwood cutting is local and occurs near roads. The area is remote and lightly used; only 10 permits a year are sold in Troy. Grazing is confined to the bench areas with control fencing to protect riparian and perennial stream courses. The area of proposed timber harvest and prescribed fire is primarily located in two spring pastures that alternate years of use. Water developments are away from stream courses. Reasonably foreseeable future projects are low ground or vegetation disturbance actions. The low impacts to water quality, wildlife, fisheries, and other resources expected from the preferred alternative will not become significant when combined with other resource actions. All actions, past, present, and future, incorporate BMPs and project design measures that reduce impacts. Cumulative impacts are expected to be insignificant.

Elk would tend to be displaced more easily from open forest conditions, even with road closures. There would be a loss in hiding cover from the reduction in boles due to harvest and regeneration from prescribed fire. There would likely be

increased human contact during the spring mushroom season, impacting calving and causing the elk to move to higher elevations sooner. Based on current use and the remote location, the combined effects are considered an insignificant impact to wildlife. (EA page 45)

Habitat Effectiveness Index (H.E.I.) and ECA are models that look at past management actions and proposed actions to determine a "cumulative effect" over time. They factor growth and changes in vegetation and forest structure to give a comparison index that can be compared to a standard. In another aspect of time, how often ground based skidding equipment has been used gives an indication of soil impacts.

- There is little difference between action and non-action alternatives on effects to big game. Habitat Effectiveness Index (H.E.I.) is a relative value of habitat conditions for Rocky Mountain elk based on the potential of the habitat to provide cover, the quality of existing cover, forage, and the miles of road open to vehicular traffic based on natural conditions, past management, and proposed actions. H.E.I. is nearly unchanged between all alternatives. HEI would be reduced by 0.6 from an existing 72.1. This is within the Forest Plan Standards and Guidelines of 60 for Management Area C4 and 45 for Management Area E2. (EA page 43)

- Actions occur within portions of 7 subwatersheds located in the Wenaha and Grande Ronde-Rondowa Watersheds. Impacts to peak flows and water quality are not expected even though 2 subwatersheds will have an ECA above 20 percent. Research on the High Ridges Barometer Watershed on the Walla Walla District indicates that flow increases are not detected at relatively high harvest levels, ECAs greater than 50 percent. The combined effects with other activities are not expected to cause significant impacts. (EA page 54)

- Portions of Units 18, 40, 42, 66, and 67 have been harvested using tractor yarding twice in the past. This entry would be a third time ground skidding would occur. There is a risk that portions of these units would reach detrimental compaction levels. The forwarder has low ground pressure and operates over a slash mat. The forwarder should not contribute to further compaction beyond Forest Plan Standards and Guidelines. These units total 247 acres. The units would be monitored after harvest to determine if subsoiling is needed. It is estimated that 30 acres could need subsoiling, or 1.4 percent of the total forwarder units. Detrimental soil impacts are expected to be low, only 1.8 percent of the activity area, which is well below the Forest Plan Standard of 15 percent. Cumulative impacts to soils will be insignificant. (EA pages 26 and 55-58)

8. Degree the action may adversely affect historic places or loss of scientific, cultural, or historic resources.

The project area has been inventoried for cultural resources. Known sites will be avoided. There are three exclosures for a long term study on the effects of big game and cattle grazing on forest development. These exclosures will also be avoided. No adverse effects are expected to the historic and cultural sites; to the long term research plots, nor to cultural uses under treaty rights. (EA pages 29, 68, 73, and 74)

9. Degree the action may affect endangered or threatened species or critical habitat.

The action will have no adverse effects on endangered or threatened species or critical habitat under the Endangered Species Act of 1973. The biologist preparing the Biological Evaluations for Aquatic species indicated implementation of any of the action alternatives "may affect, but is not likely to adversely affect" Snake River fall and spring chinook salmon, Snake River steelhead trout, or bull trout. Sediment delivery resulting from soil disturbances caused by burning, harvest, road obliteration, and temporary road construction is expected to be slight but unmeasurable and would be modified or eliminated by the RHCA buffers and Best Management Practices (EA page 54). National Marine Fisheries Service and the Fish and Wildlife Service concur with this determination. The area does not contain critical winter habitat for North American lynx and the action is determined to have "no effect". *Silene spaldingii*, a species proposed for Federal listing, is likely found in the planning area, the action alternatives are "not likely to jeopardize the continued existence of the species or result in destruction or adverse modification of proposed critical habitat." (EA pages 68 - 70)

10. Violation of Federal, State, or local laws for protection of the environment

This action does not threaten a violation of any federal, state, or local environmental protection law.

The action alternatives would not further deteriorate conditions that perpetuate the reasons for listing the Wenaha or Grande Ronde Rivers as water quality limited for stream temperature, habitat modification, or sedimentation. (EA pages 71 and 72)

11. Other rationale I have considered in making my determination of significance

Dedicated Old Growth: The proposed Forest Plan amendment to adjust the location of Dedicated Old Growth, C1, boundary would improve public safety by allowing hazard trees to be removed along Forest Road 62, a major use road between Troy and Elgin. It would make the designated area functional by replacing an area that was cut prior to Forest Plan implementation with stands of old growth character. The amendment is not controversial and increases the acres of old growth character so that the designated old growth becomes a functional unit, protected from future harvest. (EA pages 7 and 68)

Herbicide treatments: The sites are located along roads and represent a high risk to spread once access is established for harvest and prescribed fire. Treatment is needed to quickly reduce the population to controllable levels so that prevention measures can be used in the future. Infested sites would be restored with native plants to aid in the control of the weed. The May 1995 Decision Notice for the Noxious Weed EA discusses the use of herbicides to gain control over new and established infestations with the emphasis on the reduced reliance of herbicides, once the infestation is reduced in size and density. The addition of 50 treatment acres not covered by the Forest Noxious Weed EA is within the scope of the analysis. Protection measures from implementing the Noxious Weed EA have been effective. Treatment of these additional acres will not have any significant effects to the human environment. (EA pages 24-27, 65-68 and 85 to 117)

Road Obliteration. It is proposed to obliterate 33 miles of road from an existing 103 miles. The roads proposed for obliteration are parallel system roads that are no longer needed because of changes in logging systems that allow longer skidding distances. Road density would be reduced from 4.9 miles per square mile to 3.2 miles per square mile. There would be 0.7 miles of open road obliterated from 30.3 miles, or a 2.3 percent reduction. The road obliteration will not cause a significant change in access to the Forest. The remaining 67 miles of road still provides reasonable access, even with the distance between roads increased. (EA pages 21, 38, 53-55, and 58-59)

Changes to Late Old Structure: There would be little change in late old structure over the HRV analysis area. Dry Forest LOS would remain at 31 percent, although 60 percent of it would change from multistructure to single stratum. Moist Forest LOS would be nearly unchanged; only a 0.2 percent reduction is expected. (EA pages 44, and 48-50)

Protection of RHCAs: Other than road obliteration, there are no actions being proposed within RHCAs. Harvest would not occur and there would be no ignitions of fire. Prescribed fire would be allowed to back into RHCAs when local conditions show a rising humidity. Riparian functions would be preserved with no direct impacts to shade, large woody debris, channel stability, pools, or fisheries habitat. Harvest actions would be distant to perennial streams while prescribed fire ignitions could come as close as 400 feet from the streams. The proposed action should not impact RHCAs, their valu or function.

Summary of findings: The effects displayed in the EA are not significant. Though the proposed vegetation management actions are large in size, covering up to 45 percent of the planning area, removal rates and the project design do not indicate significant effects. There is no appreciable change in the amount of forest cover. The analysis indicates that beneficial uses of water would not be impacted. The proposal would not contribute to degradation of water quality limited streams because RHCAs would remain intact, unentered by harvest, providing a functioning riparian area protecting stream temperatures and the source of large woody debris. The RHCA buffer would be an additional filter of the expected low rates of sediment transport. The use of forwarders and helicopters for logging cause low ground disturbance and the landscape prescribed fire would also have a mosaic of exposed soil with retained duff and cover that would filter erosion and reduce sediment transport. Road obliteration would further reduce sediment discharge into streams. Though the road obliteration would cause a short term increase in sediment delivery, over the long term it would return hydrologic functions and reduce non-point source delivery of sediment. PM10 levels from prescribed fire are expected to be within standards in the communities of concern. Implementation of any action alternative may affect, but is not likely to adversely affect listed species of fish, there would be a slight but unmeasurable increase in sediment.

Determination

On the basis of the information and analysis contained in the EA and all other information available as summarized above, it is my determination that adoption of any alternative or action listed in the *Eden Timber Sale and Fire Reintroduction Project Environmental Assessment* dated April 2000, does not constitute a major Federal action significantly affecting the quality of the human environment. Therefore, an Environmental Impact Statement is not needed.

JEFF D. BLACKWOOD
Forest Supervisor

June 12, 2000
Date

Roadless Concerns: Impacts to roadless values; Units 74, 77, 37, 79, 21, 20, and 19 are concern for possible roadless impacts; areas greater than 1,000 acres.

Grande Ronde and W-T Three are inventoried roadless areas within the planning area. The roadless areas and values are being protected in the project design. Prescribed fire is the only action proposed within the roadless areas, no harvest will occur. There are no unroaded areas larger than 1,000 acres. (EA pages 38 and 39 describe the roadless areas) There are high road densities outside of the roadless areas. EA page 38 describes a road density of 4.9 miles per square mile for the planning area. Management Area C4 has a road density of 7.4 and E2 has 5.8 miles per square mile. Units 37, 74, 77, and 79 are within Management Area C4 and Units 19, 20, and 21 are between roads in Management Area E2. Roads run through or are adjacent to all the listed units.

Internal values such as "healthy soils; fish and wildlife refugia; centers for dispersal, recolonization, and restoration of disturbed sites, reference sites for research; non-motorized, low impact recreation; carbon sequestration; refugia that are relatively less at-risk from noxious weeds..." would not be impacted by timber harvest. Burning would occur to reduce fuels and allow the areas to respond to wildfire fires under historic fuel conditions that would protect the roadless values.

The proposed activities from outside the roadless areas may impact water quality. EA pages 52 to 58 discusses impacts to water quality and soils. Since actions would not occur within RHCAs, riparian objectives related to temperature, shading, pools, and large woody debris would not be impacted. Some sediment, an increase over natural undisturbed amounts, is expected from existing roads, harvest, prescribed fire, and road obliteration. Project design, using forwarders; BMPs; no disturbance within RHCAs; and the mosaic of burning, cause the expected sediment yield to be immeasurable. Water quality impacts are not expected within the roadless areas.

Concerns about Snags and Cavity Dependent Species: Not leaving enough snags

It is beyond the scope of this EA to change the snag and down wood standard for the Forest. Monitoring of snags left after harvest indicates that down wood and snag levels exceed forest standards after harvest.

The Forest Plan was amended (Amendment 11 - Ecoscreens) to increase snag levels from minimum snag densities for viable populations to 100 percent potential population levels. These standards are listed on EA page 23 under wildlife. Forest Plan snag densities calls for a total of 1.80 snags per acre. Marking prescriptions called for 3 snags per acre. Forest Plan monitoring for snags and down wood indicates that higher levels are being retained. The monitoring reports for 1997 and 1998 display post harvest levels for the Walla Walla District. Total snag density after harvest ranged from 5.1 to 49.5 trees per acre. Large snags, greater than 20 inches, ranged from 0 to 4.5 trees per acre in harvest units. The unit without large snags does not mean that no snags are found within the unit, but that no large snags were measured in the transect. Snag levels after harvest are well above the 100 percent levels recommended by the Forest Plan.

Down wood standards are described on EA page 23. In Moist Forest there would be 100 to 140 linear feet left and in Dry Forest, 20 to 40 linear feet. Piece length would be at least 16 feet. Forest Plan monitoring indicates 11.4 to 32.5 pieces of down wood per acre were left after harvest. Down wood is not being included as timber for removal in this project. Past experience and not removing down wood outside of forwarder routes indicates that down wood is expected to exceed standards.

EA page 44 discusses impacts to snag levels. Any losses of snags would be replaced when prescribed fire is used to reduce fuels. The fire would stress trees and mortality would occur over time. Page 63 displays expected basal area of mortality from prescribed fire.

Concern about grazing and Forest Health: Livestock grazing is a threat to forest health, causing overstocked conditions and reducing fine fuels that aid in the spread of low intensity fires. The EA failed to address alternative ways of avoiding ecological impacts of harvest, prescribed fire, and grazing by not grazing.

The decision to graze or not to graze is beyond the scope of this EA. The Allotment Management Plan is the environmental analysis that determines the amount and timing of grazing. Grazing has its own set of issues that would be considered at the time an allotment plan is prepared. Grazing, being an ongoing activity from a previous decision, is considered in the cumulative effects analysis.

The Eden Cattle and Horse Allotment is described on pages 29 and 39 of the EA. The allotment covers 41,790 acres of which 12,440 are suitable for grazing. The allotment allows 2,250 AUMs. The permitted seasonal use allows 339 cow/calf pairs. Transitory range provides 70 percent of the forage and is split between livestock and big game on a 40 to 60 basis. Portions of the Eden and Hoodoo grazing units fall within the planning area. They are used alternating years for about 45 days from June 1 to July 15. Allowable use is determined in the yearly operating plan. Utilization standards are 30 percent in riparian areas and 55 percent of the grass and 45 percent of the shrubs in transitory and upland range. These are not extreme levels of use. Forest monitoring indicates that the range is in satisfactory condition. The alternating spring usage maintains grass vigor and a composition of fine fuels. Water quality is protected by water developments away from riparian area and by fencing to control the drift of cattle (EA page 57).

The moist conditions of the Pacific Northwest are not the same as those found in the interior west, southwest and inland juniper. Grazing in the dry inland conditions can cause increased stocking, particularly in juniper. In the mixed conifer forests of the Pacific Northwest, native grass and herbaceous species are not strong competitors with a developing forest. Grazing would not impact stocking levels to the degree it does in the dry interior west. Fire is the major disturbance factor in thinning or regenerating the forest. Many tree species form dense canopy stands in the Moist Forest while fire rejuvenates grasses under open Dry Forest conditions.

Cumulatively, the harvest and prescribed fire would improve range conditions in open forest, without creating plantations. To keep open stand conditions, periodic prescribed fire would be used in the future. This would reduce stocking levels and create a mosaic of regeneration thickets. Grass production would be stimulated, increasing fine fuels (EA pages 47 - 48). The harvest is not expected to increase grazing opportunity. Big game would move through the area earlier in the spring and not compete for forage during range use periods (EA page 43).

Concern for Water Quality: Concern about sediment, degrading water quality, increasing stream temperature, nutrients, or sediment and that grazing would further retard the attainment of riparian objectives.

Potential sediment produced by harvest, prescribed fire, road maintenance, and road obliteration is expected to be small and would decrease over time (EA page 46). The proposed road obliteration would reduce 85 percent of the road miles within RHCAs in the planning area and 55 percent of the stream crossings. This reduces non-point source sediment delivery into streams. Fencing to control cattle from entering riparian areas and the fact that most perennial streams are distant from suitable grazing reduce impacts to streamside area by cattle. The topography of the area with suitable grazin on the flat benches and perennial streams in the canyons forms natural barriers that keep cattle away from streams. The estimate of exposed soil by harvest and prescribed fire do not indicate a measurable increase in sediment delivery to streams. Low levels of impacts are expected, exposed soil would be under 10 percent of the activity area (page 57). Exposed soil is expected to be patchy with adequate cover to filter erosion. Additional protection is gained by no activities within RHCAs that provide additional filtering. Even with increased risk to sediment delivery to streams the expected impact are low because of using forwarder and helicopter logging systems; the mosaic of burned and unburned areas that leaves most of the duff layer intact; BMPs; and RHCA protection. Expected sediment yields are immeasurable. (pages 53-58)

Other than some road obliteration, no activities are proposed within RHCAs (EA pages 22, 23, 25 and 26). Most streams near an activity are intermittent streams. The activity is not expected to increase stream temperatures because shading would not be reduced. Expected nutrient delivery to streams from burning would be light because the herbaceous vegetation and grasses resprout quickly and enough residual debris is expected to remain that would reduce nutrient transport. Nutrients released by prescribed fire are expected to be utilized by the terrestrial plants. Burning would occur over a period of time and rotated through the area. There would be no more than 2,500 acres burned in any one year. Impacts would be dispersed over the landscape and watersheds.

Concern for Soils: Loss of soil productivity by compaction and associated impacts; the effect of spring burning, soil disturbance by logging caused erosion and whether forest plan standards are being met.

Research and Forest monitoring of forwarder logging and helicopter logging indicate low impacts to soils. Compaction would occur on less than 2 percent of the soils using a forwarder (page 56). No compaction is expected with the helicopter outside of a landing. Landings would be subsoiled. Exposed soil is also low with these systems. Forwarder logging caused less than 4.3 percent exposed soil in studies at Limber Jim. Less than 2 percent of the exposed soil would be detrimental, as defined by the Forest Plan (pages 56 and 57). Research and past monitoring indicate that Forest standards will be met.

Prescribed fire would be used in the spring to treat slash in Moist Forest units. Spring provides high duff moisture levels and reduces the heat transferred to the soil thereby protecting soil organisms. Moist Forests typically have higher fuel loads and would burn too hot in the fall. Soil damage would be expected. Spring burning reduces impacts and allows the vegetation to re-sprout, providing additional cover. Spring burns tend to be incomplete, leaving more of the larger fuel classes.

Prescribed fire would occur in the fall for Dry Forest stands because it would be closer to natural conditions. Many plant species are favored by post growing season burning (EA page 63). Many grasses, shrubs, and *Silene spaldingi*, a plant proposed for Federal listing, are favored by early fall burning (page 69).

Concerns about fire ecology and fuels management: Logging increases fine fuels and removes large logs less likely to burn; logging is not likely reduce the severity or controllability of large intense wildfires; not having a controlled prescribed fire alternative.

Logging does increase the fine fuels, however, post harvest slash treatments and additional landscape prescribed fire are expected to reduce fuels to acceptable levels to allow low intensity wildfires to play their role on the landscape. Expected post treatment fuel loading are displayed on page 62. Harvest will reduce ladder fuels so that the risk of effects from a severe crown fire is reduced. Under severe weather conditions, wildfire will burn at intensities fuel structure will allow. Removing crown closure and returning open stand structure returns to the landscape open stand structure that historically burned with lower intensity. The mosaic of open structure on the landscape would allow crown fires to return to the ground. Logging develops open structure by leaving a spacing of trees while fire would do it by killing groups of small to large trees 3 to 10 acres in size. Logging is a mechanical means of removing ladder fuel structure, leaving a forested condition. (pages 44, 60-64) Down wood is not proposed for removal, however, prescribed fire would burn a portion of what remains. Prescribed fire induced mortality will occur (page 63) that will replace snags that fall from fire to the base of the snags.

Alternative D is a prescribed fire only alternative.

Concern about road obliteration: Road obliteration should occur where necessary.

There are a hundred miles of road within the planning area. The road system developed provided short skidding distances for tractor logging, mainly for the tussock moth salvage in the 1970s. The harvest entry created multiple parallel roads. Using forwarders to reduce impacts to water quality, allows for longer skidding distances. There is an opportunity to reduce the road system by a third without impacting access. The distance between roads would increase. (page 59)

The proposed road obliteration would reduce the total road miles within RHCAs by 83 percent in the planning area. The obliteration represents a short term increase in sediment, however, it would reduce a direct delivery source of non-point source sediment into stream channels. The road reduction is necessary to reduce potential sediment delivery and reduce the miles of road maintenance while still providing access for forest management and other uses. (pages 46, 53, 54, and 59)

Other Concerns:

- Surveys for *Carex crawfordii* and *Carex interior* will occur in the summer prior to advertising the sale. These species were recently added to the Regional Forester's sensitive species list. There has not been an optimal time to survey for the species since being placed on the list. *Carex interior* is known to occur on the Walla Walla, determined from past surveys. Their locations were not recorded because they were not sensitive at the time. These species are located in or near water and is not expected to occur in the forested uplands. Activities are not proposed within RHCAs and perennial streams are located within the canyon bottoms, away from ground disturbing activities. Surveys will be completed before implementation so that adjustments can be made if necessary. (BE for listed plant species and EA page 38)

- Road obliteration and decommissioning: Road obliteration removes the road from the system by subsoiling the surface where soils are deep enough, shaping the surface to drain, construct waterbars, recontouring in places of fills, and making the road unusable for future use. Forest vegetation would be allowed to recover the site.

  Decommissioned roads will be used again in the future. The surface would be stabilized to reduce sediment, sloped to drain, and drainage structures removed.

- There was a question about how open road density was determined. Open road density is a summary of roads listed as open in the Access and Travel Management Plan. Closed roads is another term used in the Access and Travel Management Plan that should not be confused with road obliteratiion. Closed roads are listed in the Access and Travel Management Plan to reduce motorized travel impacts to wildlife. Closed road systems provide escapement areas for wildlife. Closed roads will be used for future forest management activities.

- Impacts to Late Old Structure is displayed on page 49. Harvest in Dry Forest stands will not reduce Late Old Structure; it will change the structure from multistructure to open structure. Single stratum makes up less than 5 percent of the HRV analysis area, Single Stratum Late Old Structure is less than one percent (page 36).

There would be a 0.2 percent reduction in Moist Forest Late Old Structure in the 31,796 acre HRV analysis area (page 49).

- Large green trees would make up less than 10 percent of the sale volume. Prescription objectives in the Dry Forest would be to retain the large trees in the canopy, thinning occurs to the understory. Improvement harvest in the Moist Forest is also focussed on the understory. Less than 6 percent of the harvested area would have prescriptions that could include the removal of large trees. Large ponderosa pine will not be included for harvest whether they are in the Moist or Dry Forest.

- Marking guides for successful Douglas-fir beetle attack:

Trees that have been successfully attacked but are not flagging (red needles) may have the following characteristics:

- 1. frass evident on the bole in crevices (reddish material pushed from the bore holes).
- 2. Pitching out evidenced by streams of pitch in the bole.
- 3. Top of crown thinning out and turning yellow.
- 4. woodpecker feeding evident.