WEST SILVIES VALLEY
PRESCRIBED BURN

ENVIRONMENTAL ASSESSMENT

EA OR-025-01-25

Bureau of Land Management
Burns District Office
28910 Hwy 20 West
Hines, Oregon 97738

JULY 2002

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CHAPTER I. INTRODUCTION: PURPOSE OF AND NEED FOR ACTION

The Burns District of the Bureau of Land Management (BLM) proposes to implement prescribed fire activities on the Three Rivers Resource Area. The area to be covered by this assessment is located in Harney County on the west side of Silvies Valley (T. 19 S., R. 31 E., Sections 2, 11, 13, 14, 24, and 25; T. 18 S., R. 31 E., Section 35; see map). The project is expected to be completed over a 3-year period.

A. Purpose and Need

Due to past fire suppression, conifers (Douglas-fir in particular) have encroached in large numbers, reducing the health and vigor of larger trees and making them susceptible to insects and disease.

This project is being proposed for the following reasons:

- Reduce surface fuel loading.
- Reduce overstocking and encroachment of Douglas-fir in ponderosa pine stands to improve forest health by increasing the growth and vigor of retained trees.
- Reduce the risk of stand replacement fires.
- Protect areas of high resource value from catastrophic wildfire, insects, and disease.
- Stimulate growth of grasses, forbs, and shrubs.
- Begin reintroducing fire into the area to mimic natural processes.
- Reduce the fire hazard to adjacent landowners.
- Maintain the health and vigor of the area's larger trees.

B. Conformance with Applicable Land Use Plans

This Environmental Assessment (EA) is in compliance with management direction established in the Record of Decision for the Three Rivers Resource Management Plan/Final Environmental Impact Statement (RMP/FEIS) (Chapter 2, Fire Management Plan Decisions, August 1992), and the Silvies River Bald Eagle Nest Site Management Plan (Chapter 4, Management Strategies, November 1994). The EA is also in compliance with State and local laws, regulations, and land use plans.

CHAPTER II. ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. Proposed Action

Reducing fuel loading and improving forest health are the focus of the proposed action with prescribed fire being introduced on approximately 1,721 acres.

Acreage burned in the spring would total 1,474, while 247 acres would be burned in the fall (see attached maps). Fire intensity would be such that mortality would occur in up to 90 percent of the Douglas-fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*) less than 4 inches diameter at breast height (dbh), 50 percent mortality of trees 4 to 8 inches dbh, and 50 percent of the litter layer would be consumed. Areas consisting of miscellaneous concentrations of fuel would be pretreated through thinning, piling, and/or jackpot burning.

Project Design Features as Part of the Proposed Action

Although no new roads would be constructed, existing roads along with construction of 3.9 miles of 18 to 24-inch width handline would be used for fire breaks. Western juniper (*Juniperus occidentalis*) would be cut in sagebrush (*Artemsia* sp.) and meadow areas.

Blacklining or other ways to protect existing large snags (>21 inches dbh) would be implemented to maintain existing cavity-nesting habitat. To protect wildlife resource values, protection of stands of curlleaf mountain mahogany (*Cercocarpus ledifolius*) and bitterbrush (*Purshia tridentata*) would also be implemented.

Following the last treatment, monitoring for noxious weeds would occur for 3 years and appropriate treatments would be undertaken pursuant to the Burns District Weed Management Plan, if necessary.

Impacts to significant cultural resources would be mitigated by one or more of the following methods: site avoidance, site padding, photographic recording, surface collection and mapping, or testing and excavation.

Scalping of all vegetation a minimum of 5 feet (depending on fuel densities), blacklining and wetlining around each Oregon Trail Electric Cooperative (OTEC) power pole would be implemented to protect these structures. Hand or mechanical thinning would be undertaken in areas where high fuel densities exist in close proximity to power line towers or conductors. OTEC would be contacted just prior to project implementation to provide additional power line protection recommendations.

B. No Action

Under this alternative no fuel reduction treatments would take place.

C. Alternative Considered but not Developed Further - Mechanical Treatment

This alternative would involve utilizing noncommercial thinning to reduce stocking and to remove diseased trees. The resulting slash would be hand or machine piled when soils are dry or frozen. Slash piles would be burned in late fall or winter. While mechanical treatment would accomplish many of the project objectives identified in the purpose and need section, it would not decrease the fine fuels or litter component nor would it be cost-effective.

CHAPTER III. AFFECTED ENVIRONMENT

A general description of the existing environment for the area can be found in the Three Rivers RMP/FEIS. The terrain in the West Silvies Valley project area is generally east aspect with moderate slopes and an elevation ranging from 4,600 to 5,200 feet.

The following elements are not known to exist within or adjacent to the project area: Wilderness, Wilderness Study Areas, Areas of Critical Environmental Concern, Wild and Scenic Rivers, minority or economically depressed populations, paleontological or American Indian traditional use areas, flood plains, farmlands, adverse energy impacts, and hazardous materials.

This section describes site-specific affected environmental components not adequately described in the Three Rivers RMP/FEIS. The discussion is divided into critical and noncritical elements.

A. Critical Elements

1. Water Quality

Silvies River and Lost Creek are within the proposed project area. The Silvies River bisects the project area although no treatments are proposed within the riparian corridor (within 200 meters of stream channel). The ownership of the Silvies River is private and, therefore, the condition of the stream has not been assessed. Lost Creek is located in the southern extreme of the project area. A 2001 Proper Functioning Condition Assessment conducted by Three Rivers Resource Area staff rated Lost Creek as functional at-risk with a downward trend.

2. Air Quality

Air quality of the project area is typical of the Blue Mountains. Due to the long distance from large metropolitan areas, ambient air quality is generally good with few particulates or other pollutants.

3. Migratory Birds

Surveys have been completed for migratory birds noting a variety of species which are commonly associated with sagebrush, riparian, and ponderosa pine eco-types found in the project area. Table 1 lists the species found from breeding bird surveys and by site visits to the project area.

Table 1. Migratory Birds Observed Within and Near Proposed Project Site		
Turkey vulture	Sharp-shinned hawk	Red-tailed hawk
Killdeer	Mourning dove	Common nighthawk
William's sapsucker	Downy woodpecker	Hairy woodpecker
Red-shafted flicker	Willow flycatcher	Hammond's flycatcher
Gray flycatcher	Dusky flycatcher	Say's phoebe
Cassin's vireo	Warbling vireo	Steller's jay
Clark's nutcracker	American crow	Common raven
Mountain chickadee	Red-breasted nuthatch	White-breasted nuthatch
Pygmy nuthatch	Western bluebird	Mountain bluebird
Townsend's solitare	American robin	Yellow warbler
Audubon's warbler	Common yellowthroat	Western tanager
Green-tailed towhee	Chipping sparrow	Oregon junco
Red-winged blackbird	Brewer's blackbird	Brown-headed cowbird
Bullock's oriole	Red crossbill	Pine siskin

4. Threatened, Endangered, and Special Status Species

a. Plants

Although no Special Status plant sites are known in the project area, several are suspected to occur or potential for habitat may exist in the project area. Twincrest onion (*Allium bisceptrum*) is a Bureau Tracking species on the Oregon Natural Heritage Program List 4. Bastard milkvetch (*Astragalus tegetariodes*) is a Federal Species of Concern and a Candidate for listing by the State of Oregon, as well as a Bureau Sensitive Species and on the Heritage Program List 1 which is for species threatened or endangered throughout their range.

Raven's biscuitroot (*Lomatium ravenii*) is a Bureau Assessment species on the Heritage Program List 2 for species threatened or endangered in Oregon. Dwarf lousewort (*Pedicularis centranthera*) and Desert combleaf *(Polyctenium fremontii* var. *bisulcatum*) are Bureau Tracking species on the Heritage Program List 3.

b. Wildlife

A bald eagle (*Haliaeetus leucocephalus*) nest is located about 1-mile west of the project area on Forest Service managed land. Eagles frequently fly in the vicinity of this site during the summer and may be present year-round. The Silvies River Bald Eagle Nest Site Management Plan (1994) was developed to provide management strategies for secure habitat for a breeding pair of bald eagles. No other Threatened, Endangered, or Special Status species are known or expected to occur in the project area.

5. Noxious Weeds

Noxious weed infestations are known to occur along roads in the project area, on nearby private, and National Forest land. There are several patches of diffuse knapweed (*Centaurea diffusa*) in the Lower Badger Pasture and several old logging landings with bull thistle (*Cirsium vulgare*). Noxious weed treatments have been applied almost annually.

6. Cultural Resources

Limited cultural resource surveys have been completed in the project area and cultural resource inventory would be completed before the project is implemented. Undiscovered properties are believed to exist. Six previously recorded cultural properties exist within the proposed project area.

B. Noncritical Elements

1. Soils

The soil types are generally a well-drained gravelly loam with moderate potential for erosion.

2. Vegetation

a. Stand Structure and Forest Health

The vegetation within the project area includes managed stands where timber sales occurred in 1957, 1968, and 1990, and precommercial thinning in the 1980's and 1990's. The stands are predominantly ponderosa pine (90 percent) and Douglas-fir (10 percent). Stand character varies from pockets of large diameter pines in the overstory with a small pine reproduction understory to pole timber (5 to 11 inches dbh) and small sawtimber (11 to 21 inches dbh) with minimal understory. The southern portion of the project area is predominantly pine with the exception of the south side of Lost Creek which includes a north facing slope with a high proportion of Douglas-fir, and a few pure Douglas-fir stands. About half of the northern portion is thinned stands of pine with a new understory of 1 to 8-foot tall Douglas-fir. A couple of quaking aspen (*Populus tremuloides*) stands occur within the project area.

The number of snags is generally low including a few areas with pockets of insect-killed pole sized snags. There are areas with jackpots of old logging slash and partially burned machine piled thinning slash. Generally, duff is moderately deep (1 to 4 inches) in the areas thinned and machine piled in the past. The majority of the project area has deep duff (4 to 8 inches).

Adjacent vegetation is best described as a mountain sagebrush /Idaho fescue (*Festuca idahoensis*)/bitterbrush range site with stands of healthy, reproducing mountain mahogany.

b. Other Vegetation

Predominant species are those typical of the ponderosa pine/bluebunch wheatgrass and ponderosa pine/mountain mahogany/elk sedge (*Carex geyeri*) plant associations. Other common species include Idaho fescue and Ross sedge and less common are western juniper, bitterbrush, mountain brome, and numerous forbs.

3. Wildlife

The proposed project is within year-round Rocky Mountain elk (*Cervus elaphus*) range and mule deer (*Odocoileus hemionus*) summer range. Many other species that inhabit the ponderosa pine habitats of eastern Oregon are found in the project area.

4. Fisheries

Watershed surveys were completed (Proper Functional Condition, November 2001) for Lost Creek in the southern portion of the proposed project area. Although this area is not anadromous fish habitat; it does contain habitat for other fish species.

5. Rangeland Management

The project area is in several grazing allotments. On the southern end of the project area is the Lost Creek Pasture of the Trout Creek Allotment (#4097). This pasture is grazed as early as possible each spring, generally April 15 to May 15, but possibly as early as April 1 and as late as May 31, depending on the climate conditions of the year.

The rest of the pastures are part of the Silvies Allotment (#4143). From south to north, the pastures are Schetkey, Lower Badger, and Upper Badger. These pastures are generally grazed early in the spring but sometimes late summer or early fall.

6. Recreation

The primary recreation activities in the proposed project area are deer and elk hunting.

7. Visual Resource Management

The treatment sites are located within Visual Resource Management (VRM) Class 2. Management direction from the Three Rivers RMP is for retention of the landscape character. The project area is visible from Highway 395.

8. Economic and Social

Ranching and lumber industries are the primary sources of employment in eastern Oregon communities. Forest management programs on Federal and private lands have a long-term, stabilizing influence on local employment and standards of living.

9. Fire Management

None of the areas proposed for treatment have been affected by a recent fire occurrence and are at high risk for stand replacement type fires.

With fire being absent for 30 plus years in the area proposed for treatment, the stands are overstocked and have both excessive ladder and ground fuels. The only known prescribed burning was a small fall underburn south of Loco Spring in 1982.

10. Realty

Oregon Trail Electric Cooperative operates a 138 kV line crossing through portions of the project area in Sections 24 and 25, T. 19 S., R. 31 E. The line is authorized under BLM right-of-way ORE-016812. The power line is an important transmission line from the north supplying power to the Burns/Hines area and surrounding region. The towers on the line are constructed from double wooden poles treated with pentachlorophenol, a highly flammable wood treatment product.

CHAPTER IV. ENVIRONMENTAL IMPACTS

A. Proposed Action Critical Elements

1. Water Quality

No measurable changes in water quality are anticipated. Reduction of the understory canopy would reduce interception and transpiration, allowing more water to enter the soil and move downslope to stream channels. Any increase in sediment would be minimal due to the topography, soils, and project design.

2. Air Quality

The proposed project would have minimal impacts on air quality. Burning the stand understory would temporarily reduce air quality for approximately 1-week until the gases and particulates dissipate. The landowners in Silvies Valley would be affected by smoke at night for approximately a week after ignition and Highway 395 would be affected during project implementation.

3. Migratory Birds

Impacts to migratory birds would be minimized by burning as early in the spring as possible to reduce disturbance during the incubation period. Snag and decadent wood availability would increase because some mortality is likely in larger trees (>14-inch dbh), and small diameter trees (<8-inch dbh) are targeted in the prescription. In the long term as the trees get larger, animal species such as cavity nesters that prefer large trees would also have improved habitat quality. Species utilizing aspen habitat would benefit with the regeneration of aspen.

There would be a reduction in habitat quality for birds that prefer dense understories and those that forage in low branches of trees and shrubs.

4. Threatened, Endangered, and Special Status Species

a. Plants

The available information indicates that bastard milkvetch and dwarf lousewort have both shown tolerance to fire in the summer or fall, but their tolerance to spring burns has not been documented. Twincrest onion grows in the forest duff and is actively growing in the spring. Although a spring burn could kill the plants, a fall burn during the dormant phase would likely have minimal impact. Raven's biscuitroot should have some tolerance to fire, but the mechanical disturbances from fire operations pose the largest threat to this species. Vehicular traffic is probably the source of the greatest concern for impacting Special Status plant sites.

b. Wildlife

There would be no effect to bald eagles or their habitat.

5. Noxious Weeds

A risk does exist for spread of invasive species from established weed populations on adjacent land and contaminated equipment prior to revegetation of bare ground. However if the proposed action is fully implemented noxious weeds should be controlled.

6. Cultural Resources

When soil containing cultural materials is exposed by fire, prehistoric and historic artifacts are susceptible to collection by artifact hunters. Fire line constructed by hand can cause damage to cultural resources but is preferable to mechanical fire line construction. Impacts to historic structures such as cabins or corrals that exist in the treatment area can be mitigated by black lining or by hand line construction. These methods are also preferable for protecting scribed aspen and blazed trees. Any prehistoric lithic scatters within easy access or readily visible to the public would be avoided or burned at a low intensity level. Any American Indian rock art would be avoided entirely. Surface collection of artifacts during inventory and immediately after project implementation would be mitigation for impacts to significant sites.

B. Proposed Action Noncritical Elements

1. Soils

Minor erosion or soil movement may occur if rains fall on the project area shortly (1-month) after burning operations are completed.

2. Vegetation

a. Stand Structure and Forest Health

Implementation of the proposed action would not substantially alter the general character of the overstory. These stands would consist of ponderosa pine with a moderately stocked overstory of 11 to 21 inches plus dbh trees. The trees would become healthier, more vigorous, and faster growing; tree mortality from insects and diseases would decline and susceptibility to fire, and drought would be reduced. The residual larger diameter ponderosa pine would be better able to survive into the foreseeable future.

b. Other Vegetation

In the aspen stands, vigorous sprouting would occur in the first 2 years following treatment. Aspen clones would be invigorated and in 10 to 20 years develop into high quality aspen habitat.

Mountain-mahogany and bitterbrush stands would be maintained. Other species that prefer full sunlight, such as Idaho fescue would benefit from a less dense canopy cover. Those species preferring more shade, such as elk sedge, would exhibit a decrease in abundance while overall herbaceous understory production would increase and juniper abundance would approximate historic population levels.

3. Wildlife

In the ponderosa pine stands, a reduction in hiding cover for big game animals would occur and would be partially mitigated by the retention of unburned areas. Habitat for species preferring more open pine stands and greater herbaceous cover would improve. Some animals would be disturbed during the implementation of the proposed project; however, this would be of short duration.

4. Fisheries

About 50 percent of the litter layer would remain after the burn. The remaining litter would be sufficient to trap sediment and increase infiltration of runoff while decreasing the fuel loads.

5. Rangeland Management

Some increased forage and palatability would result from the proposed treatments.

6. Recreation

The project area has low to moderate hunting pressure and the proposed project could disturb the hunter if burning were to overlap a deer or elk hunting season.

7. Visual Resource Management

The proposed project would create a short-term visual detraction with smoke from the proposed burning creating a short-term visual detraction (approximately 1-week). The visual character of the area, as seen from Highway 395, would not be noticeably different. At the project site, the burning effects would be noticeable with the lower one-third to one-half of the overall tree canopy appearing orange in color from scorching of the needles on the trees.

8. Economic and Social

There may be a minor positive impact to local economies with the purchase of supplies to implement the project.

9. Fire Management

The lowered wildfire danger would create positive impacts on fire management with wildfire suppression efforts becoming easier and safer for firefighters. The risk of crown fire would be reduced due to the lack of ladder fuels from ground level to 30 feet in height.

10. Realty

The wooden poles on OTEC's 138 kV line may be vulnerable to accidental ignition potentially damaging or destroying the towers causing interruption in service and costly repair or replacement of damaged facilities. Depending upon the flame length and fire intensity, the conductors themselves could be damaged even if the towers were protected.

In the long term, the proposed action would reduce the power lines' vulnerability to catastrophic wildfires by reducing fuel loads. It would also reduce OTEC's vegetative maintenance costs by minimizing the number and density of trees OTEC would have to remove to protect their line.

11. Cumulative Impacts

Fuel continuity would be reduced in the subwatershed. Overstocking and encroachment of Douglas-fir, wildland fire hazard, and risk of stand replacement fire would decrease and there would be no known cumulative impacts as a result of implementing the proposed action.

C. No Action Alternative Critical Elements

1. Water Quality

When left unburned, the riparian vegetation would grow taller, more plants would grow and more shade would be over the creek. There would be no additional solar input to increase water temperatures.

2. Air Quality

This alternative would cause no change to air quality although significant quantities of particulate and gas would be released into the air in the event of a catastrophic fire.

3. Migratory Birds

Habitat quality would be reduced for species which utilize more open pine stands and habitat would be improved for species foraging and nesting in habitats with dense stand characteristics. No disturbance of migratory birds would occur due to human activity.

4. Threatened, Endangered, and Special Status Species

No impact would occur to threatened, endangered, and Special Status species or habitat utilized by these species under the no action alternative.

5. Noxious Weeds

There would be no change in the risk for introduction of new weed populations or the expansion of existing populations.

6. Cultural Resources

In areas of high fuel loading, wildfire can have a devastating affect on cultural resources. In general, it is preferable these areas be burned under controlled conditions to reduce fuel loading and affects to cultural resources be mitigated. Under this alternative no inventory would occur. High fuel loadings and any resulting stand replacement fire could result in partial or total destruction of cultural resources at risk.

D. No Action Alternative Noncritical Elements

1. Soils

Under the no action alternative, no additional soil compaction, disturbance or erosion would occur from human activity. The risk of soil damage and heavy erosion following a catastrophic wildfire would increase.

2. Vegetation

a. Stand Structure and Forest Health

Implementation of the no action alternative would have a continued negative impact on the stand with mortality continuing in all tree sizes, especially in the large overstory trees. The understory would remain stagnant and be very slow to replace the dying overstory trees. Overall, tree vigor would remain low and the risk of a stand replacing fire would be increased.

b. Other Vegetation

Without a major disturbance, the aspen stands would continue to decline and could ultimately die out altogether by being crowded out and replaced by ponderosa pine. Species that prefer less sunlight, such as elk sedge, would benefit from a continued dense canopy cover. Overall, herbaceous understory production would decrease and juniper expansion would increase.

3. Wildlife

No disturbance of wildlife would occur due to human activities in project area and habitat quality for species which prefer dense stand characteristics would increase.

Thermal and hiding cover would increase under this alternative if a catastrophic fire does not occur. Habitat quality for species preferring greater herbaceous cover and more open pine stands would decrease. Species utilizing large diameter trees would be negatively impacted as the vigor and rate of growth of large trees continued to decrease due to overstocking.

4. Fisheries

Most likely the downward trend of the Proper Functioning Condition would continue. Juniper encroachment into the flood plain would continue and recruitment of riparian woody species would decline. Areas of high fuel loading can have devastating impacts for fisheries resources if a catastrophic fire should occur which would likely increase sediment into the stream channel and leave areas vulnerable to increased erosion.

5. Rangeland Management

Minor impacts to cattle grazing could occur because herbaceous cover production would remain low with dense tree canopy cover.

6. Recreation

There would be no impacts to any ongoing recreational activities.

7. Visual Resource Management

Although the area's visual character would not be affected under this alternative, it could be changed drastically if a major wildfire event occurred.

8. Economic and Social

No purchase of additional supplies would have a minor impact to local economies.

9. Fire Management

Fuel loading and arrangement would remain above natural levels and surface fuel loadings would increase as snags fall to the ground increasing wildland fire intensity. The areas would continue to be at risk to major wildfire events. Wildfire suppression efforts would become increasingly difficult and hazardous in the project area and the risk of a crown wildfire would be greatly increased as the overstory canopy closes and ladder fuels increase.

10. Realty

There would be no immediate fire threat to OTEC's power line from prescribed burning activities. However, there may be a greater long-term threat to the line if the no action alternative is implemented.

11. Cumulative Impacts

No reduction or modification of the fuel continuity would occur in the subwatershed. Overstocking and encroachment of Douglas-fir, wildland fire hazard, and risk of stand replacement fire would increase.

CHAPTER V. CONSULTATION AND COORDINATION

A. Individuals, Corporations, and Agencies Consulted

1. Adjacent Landowners, Corporations, and Livestock Leasees Consulted

Gay and Joe Cronin
Benjamin and Geneva Fleming Trust, and Izzy Oren
D.R. Johnson, Rudio Mt. Partnership
Garth Johnson, Ponderosa Ranch
Oregon Trail Electric Cooperative
William Pon
Clinton Purdy
Wayne and Carol Purdy

2. Agencies Consulted

Burns Paiute Tribe
Harney County Court
Oregon Department of Fish and Wildlife
State of Oregon: Division of State Lands
U.S. Forest Service: Malheur National Forest, Emigrant Creek Ranger District

B. Participating BLM Employees

David Draheim - Wildlife Biologist, Lead Preparer
Gary Foulkes - Planning and Environmental Coordinator
Eric Haakenson - Range Management Specialist
Doug Linn - Botanist
Fred McDonald - Natural Resource Specialist
Lance Okeson - Fuels Planner
George Orr - Archaeologist
Skip Renchler- Lands and Realty Specialist
Jon Reponen - Forester
Lesley Richman - Weeds
Fred Taylor - Wildlife Biologist
Michael Weston - Watershed Specialist