

MEMORANDUM

To: State Director, 932
From: District Manager, Spokane
Subject: Emergency Fire Rehabilitation, Deer Point Fire

Attached is the Environmental Assessment and emergency fire rehabilitation funding request for the Deer Point Fire, P449.

Also included is the Deer Point Fire Burned Area Emergency Rehabilitation report that this Environmental Assessment is tiered to. We would appreciate early approval so we can begin the rehabilitation work prior to the onset of inclement weather.

If you have any questions, please contact Dana Peterson or Jim Rees at the Wenatchee Resource Area office (509/665-2100).

Attachments (as stated)

Environmental Assessment #OR134-02-EA-017

for

Deer Point Emergency Fire Rehabilitation

Chelan County, Washington

Prepared by:

Emergency Response Team
U.S. Department of Interior
Bureau of Land Management
Wenatchee Resource Area
Wenatchee, Washington

August 2002

Finding of No Significant Impact (FONSI) and Decision Record/Rationale

Finding of No Significant Impact (FONSI)

Based on the attached environmental assessment, the Deer Point Fire Burned Area Emergency Rehabilitation Team report, and other available information, I have determined that the selected alternative does not constitute a major Federal action affecting the quality of the human environment, constituting a Finding of No Significant Action (FONSI). Therefore, an EIS is not necessary and will not be prepared.

Decision/Rationale

It is my decision to implement the proposed action to rehabilitate public lands managed by the Bureau of Land Management (BLM). The proposed rehabilitation is in accordance with the Spokane District Resource Management Plan, as well as the Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook (version 1.0, dated 6/14/01). Implementing this action will prevent significant loss of site productivity and damage to other resources on BLM-administered lands, as well as private lands. In addition, the action will reduce the potential for the spread of noxious weeds, which in turn will help recover wildlife habitat to preburn condition. Establishing perennial vegetation will increase management options and maintain nutrient and energy cycling in accordance with the Standards and Guidelines for Rangeland Health.

James F. Fisher, Field Manager
Wenatchee Resource Area

Date

DEER POINT FIRE

Environmental Assessment

Introduction

This environmental assessment describes the rehabilitation actions proposed for the area burned by the Deer Point Fire, which burned about 837 acres Bureau of Land Management lands in Chelan County, Washington.

Fire suppression damages that were repaired include 25 miles of constructed fireline that were waterbarred and 10 acres of spike camps, base camps, and safety zones that were repaired. A burned area emergency rehabilitation team (**BAER Team**) was formed consisting of natural resource specialists from the following agencies:

- 1) Natural Resources Conservation Service
- 2) Farm Service Agency
- 3) Bureau of Land Management
- 4) Washington State University County Extension
- 5) Chelan County Weed Board
- 6) U.S. Fish and Wildlife Service
- 7) U.S. Forest Service

This team was formed to analyze the effects of the fire and recommend further actions to complete the long term rehabilitation of the burned area. This team prepared a report titled “Deer Point Fire, Draft Burned-Area Report August 15, 2002 (Davis et.al.2002).” This environmental assessment accepts the BAER Team report in its entirety and tiers to the conclusions and recommendations presented in that analysis.

Need for the Proposal

Personnel from the BAER Team worked on the burned area to:

- determine the overall intensity of the fire (Map 1)
- locate any fire damage to facilities
- evaluate erosion and sediment potential
- assess rehabilitation potential

Mapped areas show that the majority of the burned area (about 62%) had incurred low burn intensity, roughly 18 percent had moderate burn intensity, and only about 10 percent burned with high intensity (Table 1). Less than 1 percent of the lands within the fire perimeter was totally unburned and was not specifically mapped due to small patch size. Lands managed by the BLM burned with a slightly higher percentage of high severity burned area (17 percent) as well as a slightly higher percentage (77 percent) of low intensity than the overall fire (Figure 2).

Areas subjected to moderate or high burn intensity were primarily located in areas with tree cover or dense shrub cover, where fuel loads had accumulated over time. Prior to the fire, much of the area was vegetated with high and moderate amounts of grasses and shrubs. The fire consumed most vegetation and organic litter, but a variable percentage of bunch grass root crowns and shrub root crowns survived in most areas.

The resource specialists concluded that bare and disturbed soils resulting from the wildfire and wildfire control activities present the potential for weed establishment and expansion, as well as erosion related impacts. The proposed fire rehabilitation presented in this document, responds to the need to revegetate the burned area, for the purpose of preventing soil erosion, re-establishing wildlife habitat, and protecting values on adjacent private lands, which include some homesites and orchards.

The purpose of the proposed action is to complete treatments to reduce sediment delivery, protect water quality of fire-affected tributaries and Lake Chelan and to minimize the threat to life and property from post-fire events. In addition, the treatment would reduce noxious weed effects to site productivity in the area and enhance natural vegetative recovery.

Table 1. Deer Point Fire, the acres and percent of burn intensity on BLM lands and for all ownerships within the burned area.

Burn Severity Class	Acres of BLM Ownership Burned	Percentage of BLM Land Burned	Acres of All Ownerships Burned	Percentage of All Ownerships Burned
High	160	17	4105	10
Moderate	51	05	7293	18
Low	710	77	25633	62
Unburned	1	01	4105	10
Totals	922	100	41136	100

Description of Alternatives

Alternative 1 No action

Under this alternative, no rehabilitation activities would be implemented on the BLM-managed public lands burned in the Deer Point Fire. The burned areas would be allowed to rehabilitate naturally, without management intervention.

Alternative 2 Moderate level of treatment (proposed alternative)

Under this alternative, high and moderate burn intensity areas would be aerial seeded by helicopter, using the recommended vegetation seeding mixture recommended by the BAER team.

Weed spraying or biological controls would be done as described under the BLM weed treatment EA (#OR 130-00-04) if serious weed invasions occur on BLM lands within the next 3 years.

Alternative 3 High level of treatment

Under this alternative, high and moderate burn intensity areas would be aerial seeded by helicopter, using the recommended vegetation seeding mixture recommended by the BAER team.

Weed spraying or biological controls would be done as described under the BLM weed treatment EA (#OR 130-00-04) if serious weed invasions occur on BLM lands within the next 3 years.

Erosion control structures would be constructed to reduce surface erosion on high intensity burned hillsides and the bottom of Joe Creek.

Roads in the burned areas of Cooper Ridge and Joe Creek would be improved through grading and surface drainage improvements.

Alternatives Considered But Not Analyzed In Detail – Alternative 4 (Tree Salvage and Planting)

There are no major stands of mature trees on burned BLM lands that were killed by the fire and yet have timber values. Trees in the high intensity burned area were completely consumed by fire and not enough trees in the moderate intensity areas were burned to economically justify a salvage action.

Tree planting may be an option in the severely burned stands, but the BAER team believes that success potential would be low and most planted trees would not survive. Natural regeneration is considered likely. Those portions where mortality was high will probably not come back to ponderosa pine and may best be reseeded with grasses. The costs of hand replanting are high and benefits to the resource over time are likely to be similar to natural regeneration.

Log terracing was considered as an option. This option would include installing log terraces on sensitive, high intensity burn areas in Joe Creek. Typical sites for this option have slopes less than 60% with no surface rock or bedrock exposed. Log terraces are installed in strategic areas--where the potential to disperse concentrated runoff is greatest in order to minimize down slope sediment delivery to sensitive stream reaches. This option was dropped because no trees remain on site following the burn, and slopes are too steep for these structures.

Management Actions Common to Action Alternatives

- Appropriate resource inventories (including cultural, botanical and wildlife) will be conducted prior to implementing specific projects on the proposed rehabilitation area. If important resources are identified or located, the project would be redesigned to reduce or eliminate impacts to those resources. Actions

requiring rare plant surveys would be delayed to allow surveys to be conducted at the appropriate time of year during seeding, herbicide application, or placement of structures.

- If cultural properties cannot be avoided, consultation will be conducted with the Office of Archaeology and Historic Preservation, tribal governments or historical societies, as appropriate, and in some cases the Advisory Council of Historic Preservation
- Weed treatments will be applied in accordance with the Spokane District Weed Treatment EA (#OR 130-00-04). The proposed weed control is consistent with the Spokane District Noxious Weed Control Program (1996) and is tiered to the Final Environmental Impact Statement (FEIS) for Vegetation Treatment on Bureau of Land Management Lands in Thirteen Western States (May 1991) and its Record of Decision (July 1991), which are incorporated herein by this reference.
- Optimum control of Dalmatian toadflax is realized when its treated after the first killing frost. Dalmatian toadflax will be treated with a tank mix of Tordon 22K (Picloram) at a rate of 1.0 quart (0.50 pounds active ingredient per acre) and Escort (Metsulfuron Methyl) at a rate of 1.0 ounce (0.375 pounds active ingredient per acre.) A silicone surfactant i.e., R-900 will be added to each 100 gallon tank mix. To insure adequate coverage of Dalmatian toadflax, the herbicide and surfactant tank mix will be applied at a rate of 30 gallons per acre.
- Diffuse knapweed which is actively growing away from trees and water will be treated with Tordon 22K (Picloram) at a rate of 1.5 pints (0.38 pounds active ingredient per acre). Diffuse knapweed growing within trees will be treated with Transline (Clopyralid) at a rate of 1.0 to 1.25 pints (0.38 to 0.47 pounds active ingredient per acre.) Diffuse knapweed occurring farther than 1 foot from water will be treated with Weedar-64 (2,4-D Amine) at a rate of 2.0 quarts (1.9 pounds active ingredient per acre.) Diffuse knapweed within 1 foot of water will be treated with Rodeo (Glyphosate) at a rate of 2.0 quarts (2.7 pounds active ingredient per acre.) Rodeo (Glyphosate) can be applied full strength when wicking or wiping on to the target weed. Rodeo (Glyphosate) is a non-selective herbicide that will be applied directly to the plant to avoid off-target damage

Affected Environment and Environmental Impacts

The following affected environment and environmental impacts discussion is excerpted primarily from the BAER Team report (Davis et.al. 2002). Refer to that report for additional details of the following information.

Fire History

The Deer Point Fire is mostly a re-burn of areas burned in the 1970 Fires. Most of the 1970 fires were low to moderate burn intensities. Most of the standing dead timber in the Mitchell, Johnson, and Joe Creek watersheds were salvaged; with exception of the Gold and Poison Creek watersheds. Most of the burn intensity in the watersheds that were salvaged experienced low with some moderate burn intensity. The down large fuel loading in Gold and Poison Creek ranged from 50 to 100 tons/acre. Lodgepole pine reproduction grew up through this accumulation of large fuels. Lodgepole stand density ranged from 20-50 thousand stems per acre in the .5-3" diameter class with heights of 5-15'. Resulting burn intensity was mostly high in Gold and Poison Creek and soil surfaces were discolored with severe hydrophobic soil conditions. One block of 160 acres of BLM lands in Joe Creek also burned with high intensity.

Soils and Impacts to Soil Resources

Description - The soils in the Deer Point Fire burned area are primarily variable depths of volcanic ash/pumice over coarse textured subsoils. North facing slopes have deep ash/pumice soils (Andisols) while South facing slopes have thin-cobbly-ashy soils (Inceptisols). Soils on South facing slopes have more than 25% profile rock

larger than 2 inches in diameter. Some deep coarse textured stony soils on debris fans and lateral glacial till deposits. Bedrock outcropping comprises more than 25 percent of soil units in headlands and on some south facing slopes.

Geologic Types consist of igneous units (Granidiorite) and metamorphic units (Gneiss), and landforms are oversteepened glacial troughs developed from continental and alpine glaciation. Debris fans at stream mouths extend out into Lake Chelan.

Loss of Site Productivity – The inherent soil productivity is low for most of the area within the Deer Point Fire although some of the lands in orchard near the lower, southern border are highly productive. Soils are derived from hard crystalline igneous and metamorphic bedrock units (granitic and gneiss). These rock units typically weather into very coarse “sandy soils” with a low nutrient capital. A layer of volcanic ash forms the surface of most soils as well as varying thickness of pumice in some locations. The areas with significant accumulations of volcanic ash are the most productive sites in the fire area (eg. toe slopes, valley bottoms, and North facing slopes). Continental climatic conditions often limit available soil moisture. Soil moisture (except in valley bottoms) is often a limiting factor on the southern exposures that predominate in the fire area.

Fire effects can directly influence the long and short-term accumulation of organic matter. Most of the Deer Point Fire experienced low intensity burns. This level of burn intensity is not expected to have an adverse effect on organic matter input in the short term or long term (Everett and others, 1996). However, the areas with high burn intensity within the Deer Point fire will have a significant adverse on nutrient availability in the short and long term.

The Deer Point Fire likely had a profound effect in volatilization of residual nutrient capital of nitrogen (N), phosphorus (P) and sulfur (S) in portions of Poison and Gold Creek watersheds. These areas had high and moderate intensity burns due to excessive fuel loading from the 1970 fires. The Deer Point fire basically burned hot enough to totally consume the duff/litter layer, foliage, woody material less than 6 inches, and severely charred larger down woody debris. Mineral soils were super heated creating discoloration. This level of burn intensity could severely reduce the nutrient capital of these soils (Hungerford and others, 1990—p. 32; Baird, 1998). Furthermore, since little of the fine coniferous canopy remains (twigs, cones, and needles), there will be a long-term reduction in nutrient and organic matter input on these sites. This loss of future input of fine coniferous litter combined with the loss of the soil litter/duff layer will have a severe impact on the natural soils nutrient capital (Page-Dumroese and Harvey, 1990).

Water-Repellent Soil - The degree of hydrophobic conditions ranges from moderate to severe in high burn intensities. Hydrophobic soil conditions likely linked to excessive fuel loading (50-100 tons/acre coarse woody debris) and early seral organic matter accumulation.

Soil Erosion Hazard - Much of the private lands are located on alluvial fans that have slopes less than 20% with relatively low surface erosion rates. The upper watersheds are generally extremely steep with approximately 50% of the watersheds exceeding 60 percent slopes. These upper watersheds have high erosion rates. All subwatersheds are lands administered by the Okanogan and Wenatchee NFs. The erosion and sediment figures listed above reflect the contribution from reoccurring debris slides that deposit relatively fine to coarse sediment directly into stream channels. Shallow rapid slides are a natural hydrologic process in the watersheds within the Deer Point Fire. Sediment delivery from these slides has been and continues to be transported and deposited into Lake Chelan forming alluvial fans at the mouth of each subwatershed.

These types of slides trigger pulses of sediment delivery that are episodic in nature. Normally these slides occur in response to dramatic changes in vegetation due to landscape level fires or from intense early summer thunder storms and rain-on-snow events that occur in late fall and early winter. Based upon local fire history, fire induced watershed impairments will substantially elevate the risk of debris slides for at least the next 5 years. The Deer Point Fire will have a significant effect of increasing the frequency of debris slides.

The fire area occurs predominately on over-steepened slopes due to glacial or glacial fluvial erosion. Consequently drainages are very steep and rocky. Natural landform sediment delivery and routing efficiency (90%) is considered very high but episodic. Runoff is routed rapidly into a series of first order ephemeral channels that form a relatively dense network of tributary streams. Runoff from these tributaries can be flashy. The major source of sediment delivery is in the form of debris slides in these tributary streams. These slides deposit debris directly into the main channels of Camas Creek, Grade Creek, Poison Creek, Gold Creek, Mitchell Creek, Antilon Creek, and Joe Creek. This delivered sediment has and continues to form alluvial fans at the mouth of each sub watershed. Over the centuries, a considerable amount of suspended and bedload sediment has been deposited into Lake Chelan. Due to the depth of the lake this debris continues to be submerged and has not formed deltas

Alternative Assessment – Under all alternatives soils will erode at a slightly greater rate than before the fire. The vegetative litter and woody debris burned by the fire provided a blanket against the effects of wind and rain. No alternative will prevent this from occurring in the short term.

Alternative 1 (No Action) would result in high and unchecked rates of erosion in high and moderate severity burned areas. Soil productivity could be reduced in these areas resulting in an extended time for recovery of soil stability.

Most low severity areas should return to preburn erosion levels within 3 to 5 years without treatment.

Alternative 2 (Proposed Action) would reduce erosion by providing vegetation protection at a faster than natural rate. These hillsides are at a greater risk of erosion because there are few grasses to hold soil in place. The native grasses seeded under this alternative will reduce erosion over the next few years as grass cover increases on high and moderate severity areas.

Alternative 3 (Additional Treatments) would have effects similar to alternative 2, but could have the additional effect of decreasing short term erosion on the most intensively burned hillsides if structures are effective. Because the high intensity burned area in Joe Creek is on a very steep slope, it is also possible that placing structures on such a steep slope could result in more disturbance than would occur from no action.

Native Vegetation and Impacts to Native Vegetation

Noxious Weeds - Noxious weeds are a major concern in the fire area—particularly diffuse knapweed and Dalmation toadflax. Noxious weeds inhibit natural stand development and reduce natural biological diversity. Noxious weeds can reduce the diversity and abundance of native vegetation, forage, diversity and quality of wildlife habitat, increase erosion and decrease water quality (ICEBMP 1997). Weeds may also inhibit re-establishment of native plants including trees. Both knapweed and toadflax are well established in the area and will increase as a result of the open stand conditions. Seeding the known and potential habitat nearby will help to reduce both weed re-establishment and invasion into new areas.

It is well documented that vegetated sites are more resistant to weed invasion than sites devoid of vegetal cover. Sheley and others (1999) note that establishing perennial grasses to fill open niches can minimize re-invasion by rangeland weeds. Plant competition, grazing and fertilization can favor desirable species. Thill and others (1999) found that competitive grasses can suppress weeds and that the selection of grasses should be appropriate to the site. Larson and McInnes (1989) noted that certain grasses were particularly effective at inhibiting encroachment of diffuse knapweed including sheep fescue, thickspike wheatgrass and big bluegrass. Another very unique threat to site productivity and forest values in the lower elevations is the presence of several noxious weeds within the burned area. The primary species of concern include diffuse knapweed (*Centaurea diffusa*), dalmation toadflax (*Linaria dalmatica*) and Hoary Cress (*Cardaria draba*). There is grave

concern that the additional open niches provided by the fire will allow these plants to significantly expand their range within the burned area; both on National Forest System Lands and lands in other ownership. The Natural Resources Conservation Service and the Forest Service will be working with private landowners to address this issue. Weed management on private lands is critical to protect the integrity of weed treatments on National Forest System lands. The proposed multi-year regimen of weed management is critical to help preserve the site productivity and character of this area.

Noxious Weed Competition Seeding Criteria - Much of the same logic and criteria for the upland erosion control seeding were used for selecting plant materials (kind and amount) for competing with weeds on the Deer Point Fire. However, some other criteria were important as well. It was felt that annual seeded species would be unacceptable due to the need for long-term competition with weeds. ***Also, fertilization was avoided due to the likelihood that weeds would be favored more than the seeded species.*** As a result, the prescription for aerial and ground-based seeding for weed competition used perennial grasses without any fertilization (fertilization could occur in future once seeding is viable). The higher seeding rate of about 100 seeds/sq. ft. was chosen to improve likelihood of success--especially given the small size of these seeds when compared to wheat. The seeding along roads and in Johnson and Joe Creeks uses an aggressive primarily perennial mix to better compete with weeds.

Aerial Upland Seeding Criteria - There are many grass and herbaceous plants that could be used to provide soil protection. However, criteria used for seed selection to best meet both BAER objectives and land allocation concerns for the Deer Point Fire included:

- Native or relatively short-lived introduced species preferred (so natives would come back)
- Use persistent plants only when native; or where competition with weeds an overriding concern
- Rapid developing
- Good ground cover
- High energy seeds
- Non-weedy
- Known to have been successful elsewhere
- Available in sufficient quantities
- Adapted to the sites
- Low cost--when compared to other equally effective plants

Past restoration work has sometimes used long-lived exotic pasture grasses for rehabilitation seeding. Often this seeding was successful in providing soil cover to thereby reduce erosion--but the seeded species commonly persisted for many years longer than required for short-term erosion reduction and sometimes inhibited re-vegetation by native plants. For the Deer Point Fire, natives or short-lived ephemeral plants are preferred; non-native plants will be used only when short-lived or when it is deemed critical to provide competition due to the significant weed populations in the area.

Based upon the above criteria, Forest Service plant materials specialists met and consulted with a number of individuals from various agencies to help discuss seeding and fertilization options for the Deer Point fire. Seed suppliers were also quizzed concerning their ideas related to the use of various potential plants species. Forest Service staff also used literature review and previous experience (particularly from the 1988 Dinkelman fire, 1994 Tye Complex Fires, 1998 N25 Fire, 2000 Hash Rock Fires and 2001 Rex Creek Fire) to develop the seed and fertilizer recommendations for the Deer Point Fire. The process of prescription development involved several iterations with numerous points of review before the final recommendations were developed. The seed mix developed for fall upland erosion control seeding in Gold and Poison Creeks uses cereal grains to provide two to three years of coverage (an appropriate variety of annual soft white winter wheat).

Upland Perennial Seed Mix Specifications—Erosion and Competition for Noxious Weeds

The seed mix listed below is for use to compete with weeds along roads, firelines, safety zones and in the portions of the fire selected for erosion control seeding where weeds are also a concern (primarily the southeast portion of the fire [Johnson and Joe Creeks] and in the degraded area along Lake Chelan).

<u>Species</u>	<u>PLS Rate</u>	<u>Seeds/sq.ft.</u>	<u>Cost/lb</u>	<u>Total Cost/ac</u>	<u>Acres Treated</u>	<u>Total all Cost/ac.</u>
Thickspike wheatgrass 'Schwendimar'	10 lbs/ac	36	\$4.00/lb	\$40.00		
big bluegrass 'Sherman'	1.5 lbs/ac	32	\$5.50/lb	\$8.25		
sheep fescue 'Covar'	2 lbs/ac	32	\$3.50/lb	\$7.00		
Soft White winter wheat 'Madsen'	16 lbs/ac	5	\$.19/lb	\$3.00		
Western Yarrow	.125 lbs/ac	7	\$9.50/lb	\$1.20		
Application Cost				\$20		
Total	29 lbs/ac	112 seeds/sq.ft.		\$79.45/ac Use \$80		

All seeding rates are for certified seed. If certified seed is not available and you MUST use non-certified seed only if it is at least 90% pure and has 90% germination. ACCEPT NO SEED WITH ANY NOXIOUS WEED CONTENT

Alternative Assessment

Under all alternatives, native vegetation will recover at variable degrees depending on plant species and habitats. Dry habitats that burned with high or moderate severity will recover more slowly than moist habitats, although many dry habitat types burned with only low severity due to a lack of fuel build up in those areas. Under all alternatives, the majority of the shrub component in the shrub-steppe vegetation will be slow to recover (*Purshia tridentata* and *Artemisia tridentata*).

Under all alternatives, cheatgrass will likely increase in all burned areas. This increase in an annual grass that dries out early in the summer and easily burns could result in a more frequent fire cycle.

Alternative 1 (No Action) could result in large patches of weeds throughout the burned area that out compete native plants for resources and greatly reduce native plant species in some areas. Erosion in the high and moderate burn severity areas could reduce soil productivity and change plant species composition of eroded areas.

Alternative 2 (Proposed Action) would result in natural recovery of most plant habitats over low intensity burned areas. The high and moderate burned areas would receive increased amounts of native grasses. These grasses could compete with native seed sources and plants that escaped the fire and could increase the recovery time for some native species that are poor competitors. On the other hand, the risk of erosion causing a long term reduction in the long term productivity of the soils without seeding could prevent or extend recovery times for some species. Also, the unchecked spread of weeds could greatly reduce the recovery of some native plant species.

Alternative 3 (Additional Treatments) could reduce erosion and maintain soil productivity on some high burn severity areas, which could result in better native plant recovery if the structures were fully functional.

Water Quality

Water quality in the Lake Chelan sub-basin is critical for many uses including municipal/domestic supply, agricultural uses, aquatic habitat, recreation and aesthetics. Lake Chelan is a major recreation destination of national significance. In the Deer Point fire area, several drainages support small, domestic water supply systems servicing private lands along the lakeshore. Tributaries in the burned area also contain important populations of rainbow and westslope cutthroat trout. Implementation of the Lake Chelan Water Quality Management Plan is an on-going, cooperative effort (Beck, and others, 1991).

Water quality parameters most affected by this fire are sediment loading, nutrient loading and water temperature. Stream sediment loading in fire-affected tributaries is expected to increase as a result of increased surface erosion (via accelerated dry raveling and rill erosion) and as a result of increased debris slide activity. Ash, fine sediment and woody debris delivery and transport will increase during snowmelt runoff and in response to storm events. Episodic delivery of larger bed materials and woody debris will be associated with the event driven debris slide-debris torrents discussed in more detail in the section on Life and Property. Increased sediment loading is expected to persist for at least the next two to three years after the fire and then decline.

Research has documented that wildfire exerts pronounced effects on the nutrient status of ecosystems (Tiedemann and others, 1978). Nutrient loss via volatilization and solution is described in the section on site productivity. For example, both nitrogen and phosphorus have been drastically reduced from the system. However, these losses begin to be offset by other processes such as N input from precipitation. Elevated nutrient concentrations in stream flow will persist for a relatively short period of time until the chemical retention capacity of the burned area is reestablished. The rapid development of native plant (and seeded grass cover) in the burned area is critical to the re-establishment of the tight nutrient cycle in these forested watersheds. This nutrient cycling alteration and re-establishment is a natural process associated with the wildfire disturbance.

Water temperatures may increase significantly in many of the fire-affected stream reaches as a result of riparian canopy loss. Even in areas identified as having been subject to low intensity burn, denser riparian vegetation burned at a higher intensity. However, experience suggests that riparian shrubs and herbaceous plants will rapidly re-sprout in those areas as long as root systems have not been damaged. This fire-influenced shift in temperature regime will persist until sufficient riparian canopy is re-established to provide shade during the critical summer months. The planting of woody vegetation in selected riparian areas that burned at moderate-high intensities would accelerate canopy recovery.

Wildfire influences all of the above water quality parameters. At issue, are the identification and treatment of those areas that may have burned at a greater than normal intensity due to human-caused influences (e.g., elevated fuel loading from past fire suppression activities) and concern for human developments that are now part of the system (e.g., private homes on alluvial fans, recreation sites). The proposed Deer Point BAER treatments have targeted both of these issues.

Alternative Assessment

Alternative 1 (No Action) would result in reduced water quality in Joe Creek during a natural recovery period. Weed spread and erosion would not be reduced, and since disturbed areas would recover dense stands of perennial grasses and native vegetation very slowly, water quality may also take a long time to recover to a preburn condition.

Alternative 2 (Proposed Action) provides for a mostly natural recovery of water quality where low burn severity occurred. Seeding and selective herbicide treatments allow for faster than natural recovery of grass cover in high and moderate burn severity areas. Shrub and tree cover in high and moderate severity areas will come back

very slowly but will eventually return in the absence of future fires. Water quality will be related to the recovery of native vegetation.

Alternative 3 (Additional Treatment) would have the approximately the same effects on water quality as alternative 2. The additional erosion control structures in this alternative would have a positive short term effect on water quality.

Wildlife Species, Habitats and Impacts to Wildlife

Wildlife habitat on BLM lands in the burned area is comprised of three basic types:

- ❑ Forested stands occur primarily on north-facing hillsides.
- ❑ Riparian stringers of deciduous trees and shrubs occur primarily on drainage bottoms.
- ❑ Shrub steppe habitats comprised of grasses and shrubs occur on south and east-facing slopes.

No threatened, endangered, or sensitive species are known to occur on BLM lands in the project area. Potential habitat probably did occur in the area before the fire for the western gray squirrel, ferruginous hawk, and sharp-tailed grouse - all Washington State species of concern.

Potential habitat for the gray squirrel was probably reduced by 40 to 60 percent when stands of trees were burned. Remaining habitat may be sufficient to sustain populations at reduced numbers. Potential habitat for ferruginous hawks and sharp-tailed grouse was reduced by about 60 to 80 percent as many patches of grasses and shrubs were burned. In most areas, these habitats will return gradually over the next 10 years to preburn condition.

Game species in the area likely included mule deer, ruffed grouse, blue grouse, chukar and California quail. The bird species used the area year around. The mule deer, although present year around, become more abundant in the area during late fall and spring. Lower elevations along the southern edge of the area are also used as winter range throughout the winter. Much mule deer winter range was burned in this fire and in other recent fires in the area, creating a possible shortage of winter habitat for this herd and likely reduced populations in the short term.

All of these game species that were displaced by the fire may avoid parts of the burned area during the first year following the burn, but will return to the area in subsequent years as the vegetation begins to recover.

Migratory birds occur in all habitat types of the burned area. Most of the burned lands were shrub-steppe habitats, which are considered critical to several species of migratory bird species. The conservation strategy for land birds in this area (Altman and Holmes 2000) includes a couple of strategies applicable to burned area rehabilitation including 1) encourage biological weed controls where possible, and 2) limit herbicide application to invasive non-native plants and use in conjunction with habitat enhancement projects.

Other migratory bird habitats will recover naturally.

No habitats have been identified in the area that could be classified as unique or critical other than the big game winter range.

Alternative Assessment

Under all action alternatives, revegetating bare and exposed soils would enhance wildlife habitat values by reducing the spread of weeds, reducing erosion, and advancing the recovery of wildlife cover and forage. Under all action alternatives, no salvage of burned trees is proposed, which will leave abundant snags for migratory birds, especially woodpeckers.

Alternative 1 (No Action) would allow all areas to recover naturally. However, since weed spread and erosion will not be reduced, wildlife habitats in high and moderate severity areas and disturbed areas will recover very slowly, and may never return to preburn conditions if long lived invasive species such as cheatgrass become established. Also, with additional weed sources in the area, low burn severity areas may be invaded by weeds to a greater degree than before the burn and may be reduced in habitat quality from preburn conditions.

Taking no action to control the spread of noxious weeds would allow incremental loss or degradation of existing native plant communities and wildlife habitat. According to data compiled for the Interior Columbia Basin Ecosystem Management Project, non-native, or exotic, vegetation dominates at least 11 % of federal land in the Columbia Basin. Exotic vegetation alters fire regimes and natural vegetation patterns, affects biological soil crusts, increases soil erosion, diminishes forage quantity and quality, degrades breeding, nesting, and rearing habitat for many shrub-steppe wildlife, and inhibits or creates physical barriers to animal movement. If eaten by wildlife, some noxious weeds may poison, impair microbial activity in ruminants, or cause averse post-ingestive feedback. These adverse effects can directly impact wildlife or can have indirect effects that reduce reproductive success or interfere with rearing and survival of young animals.

Alternative 2 (Proposed Action) provides for a mostly natural recovery of wildlife habitats where low burn severity occurred. Seeding and selective herbicide treatments allow for faster than natural recovery of grass cover in high and moderate burn severity areas. Shrub and tree cover in high and moderate severity areas will come back very slowly but will eventually return in the absence of future fires.

Alternative 3 (Additional Treatment) would have the approximately the same effects on wildlife as alternative 2. The additional erosion control structures in this alternative would probably not greatly affect wildlife habitat; although some reduction in surface soil erosion could speed the vegetative development of some small areas of habitat.

Cultural Resources Impacts to Cultural Resources

The initial Cultural Resources investigation was conducted along constructed dozer lines following containment of the fire, on July 29, 2002, but prior to waterbarring and rehabilitation of those lines. A search of the database for existing Cultural Resources sites was conducted to allow protection of those sites from further disturbance during rehabilitation operations.

The rough terrain, poor quality soil, and lack of water within the burned area contribute to a low probability assessment for prehistoric cultural resources. Findings from the BLM Archeologist support the finding of low cultural values on BLM lands within the fire perimeter.

Alternative Assessment

Since no sensitive cultural sites were located in this area, none of the alternatives is anticipated to impact cultural resources. Cultural resource surveys will be conducted prior to implementing specific projects on the proposed rehabilitation area. Should any cultural resource sites be encountered during rehabilitation actions in alternatives 2 or 3, all work in the area will cease until a qualified archaeologist surveys the area and provides a report allowing activities to continue.

Cumulative Impacts

Many other fires have occurred in the surrounding vicinity of the Deer Point fire in the past few years. Rehabilitation of most of these burned areas has included and will include seeding, weed control and erosion control measures similar to those proposed in this Environmental Assessment. For example, the Chelan Butte, Tye, Dinkelman, and Rex Creek burns occurred in areas around the city of Chelan within the past several years and were rehabilitated by grass seeding, weed control and erosion control measures. Where fires have burned

hot in the past, private lands have been rehabilitated through assistance from the U.S. Natural Resources and Conservation Service.

The reasonably foreseeable future is likely to see many other fires in the Lake Chelan area and surrounding watersheds. The cumulative effects of these fires on all resources is increasingly wide spread impacts on resources from wildfire related disturbances such as additional miles of fireline, additional weed spread, and additional erosion. Agencies will continue to rehabilitate public lands to the extent practical, but a small percent of the area will be adversely affected and take many years to recover.

A high percentage of these fires are natural events, and will improve ecological conditions over the long term by providing new growth of trees and shrubs and providing a diversity of early successional stage habitat over the landscape. Animal communities, for example frequently undergo a “reorganization” following a fire, with increases in some species accompanied by decreases in others.

Other Resource Values Considered in the Analysis (but not discussed in detail because no impacts were found):

- Air Quality
- Wild and Scenic Rivers
- Floodplains and Wetlands
- Special Area Designations
- Hazardous Materials
- Energy Resources and Production
- Environmental Justice

Threats to Human Life and Property

The values at risk include houses, roads, orchards, campgrounds, trails, and cultural sites. Due to the national attraction of Lake Chelan, homeowners and recreationists will continue to use these facilities following the Deer Point Fire. Even with temporary campground closures to reduce the threat to recreationists, people will continue to use the alluvial fans that are at risk of severe flooding. Some of the private lands and most of the campgrounds are located on alluvial fans.

As previously described, the upper watersheds (managed by the Wenatchee and Okanogan National Forests) are comprised of extremely steep conditions that are at severe risk for debris slides. Due to impaired watershed conditions, a tremendous amount of wind throw is expected in some areas. Increased amounts of large woody material, in upper debris tracks and stream channels, will become incorporated in the debris slides which is likely to substantially increase the scouring energy of each slide. Hence post fire debris slides are expected to accelerate the rate of scour in upper watershed channels that will deliver additional debris into lower stream reaches. This additional debris can trigger debris jams that can cause a surge of flood material onto the fans or can cause streams to divert and form new channels on the fans.

These types of flood events occurred on Lake Chelan following the 1970 fires. A surge of flood debris washed out two dock facilities and a campground. A recreationist narrowly escaped this flood event. Unfortunately, four (4) fatalities occurred in the adjoining drainage (Entiat Valley) following the same type of flood event. The campground and dock facilities at Mitchell Creek are all in jeopardy from debris flows and hence pose a serious hazard to recreationists. The campgrounds are accessible by boat on Lake Chelan. The campgrounds and dock facilities are at serious risk of being destroyed by flood debris. The Mitchell Creek Campground and Dock was destroyed by debris flows after the 1970 fires and private boats were also destroyed or damaged

The Gold Creek and Antilon Creek alluvial fans pose the greatest threat to homeowner safety and property values. Other areas that pose a risk are the old flood plains of upper Johnson and Joe Creek. Channels within

these flood plains have been reworked and houses have been built over the old channel. Both channels have subterranean flows with some areas of surface flow.

The Natural Resources Conservation Service is working with the private landowners on the Camas, Poison, Gold and Antilon Creek to identify treatments to divert anticipated storm and debris flows away from dwellings. Channel treatments are not appropriate for these perennial stream systems. Hence, the only BAER treatments that will have some level of success at reducing the threat to life and property are upland aerial seeding and fertilization and log terracing. Upland seeding will help provide some ground cover and reduce surface erosion and concentrated runoff beginning in the summer of 2003.

Floating woody debris in the Lake poses a public safety hazard. Following the 1972 storm events, log booms were installed at the mouths of several drainages to control input of floating debris. Following the period of record peak flow in November 1995, public outcry resulted in the emergency expense of approximately \$400,000 to collect and dispose of woody debris that had been flushed into the lake. Three log booms were installed in the 2001 Rex Creek Fires BAER project. If booms are need for the Deer Point fire, one or more of these booms could be moved and installed.

The high intensity burned area of BLM land in Joe Creek could contribute to such a flood event, but the 160 acre area is only a small percentage of the drainage, most of which burned with low intensity; therefore, while the BLM area may contribute to such a flood it is not likely to substantially influence such an event.

Coordination and Consultation

The proposed Deer Point Fire Rehabilitation project has been coordinated with local fire districts, and interested State and Federal Agencies as well as adjoining landowners.

The proposed project was coordinated with the following BLM specialists:

- Jim Rees - Wildlife Biologist
- Gene Wehmeyer -
- Anne Boyd - Archaeologist
- Kathy Helm - Planning and Environmental Coordinator
- Scott Boyd – Fire Management Officer
- Ron Fritsch – Fire and Fuels Technician

- Dana Peterson – Range Specialist

The proposed project was coordinated with the following Agency specialists through the BAER planning process:

- Natural Resources Conservation Service- Gary Mitchell and Joe Lange
- Farm Service Agency- Michel Ruud
- Washington State University County Extension-Tom Brannon
- Chelan County Weed Board-Terry Nowka
- U.S. Fish and Wildlife Service-Jeff Krupa
- U.S. Forest Service- Carl Davis(team leader), Terry Lillibridge, Rick Edwards

Outreach

The EA will be placed on the Spokane District Webpage at www.or.blm.gov/spokane for public review with a 2-week comment period, to end September 16, 2002.

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