

CHAPTER 1

PURPOSE AND NEED FOR ACTION

Document Organization

The Forest Service has prepared this Environmental Impact Statement (EIS) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EIS discloses the direct, indirect and cumulative environmental effects that would result from implementing the proposed action and alternatives to the proposed action. The Record of Decision, which is the decision document associated with this EIS, is a separate document and is written after public review of the Draft EIS and completion of the Final EIS.

This EIS is composed of five Chapters and Appendices:

Summary

Chapter 1. Purpose and Need for Action: This chapter includes information on the background of the project proposal, the planning framework that guides management of this portion of the National Forest, the purpose and need for the project and the agency's proposal (Proposed Action) for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded. Finally, this chapter lists the issues that were developed in response to the proposed action.

Chapter 2. Alternatives, including the Proposed Action: This chapter provides a more detailed description of the agency's proposed action as well as alternative methods for achieving the purpose and need. These alternatives were developed based on significant issues raised by the public. Mitigation measures and monitoring plans are also detailed. Finally, this chapter provides a summary table which compares the components and environmental consequences associated with each alternative.

Chapter 3. Affected Environment and Environmental Consequences: This chapter describes both the affected environment of area resources and the environmental effects of implementing the proposed action and other alternatives as described in Chapter 2. Relevant direction from the Okanogan National Forest Land and Resource Management Plan and applicable laws and regulations are also detailed.

Chapter 4. List of Preparers: This Chapter lists the individuals who helped prepare the Environmental Impact Statement, along with their qualifications.

Chapter 5. Public Involvement: This chapter lists the agencies, organizations and persons to who copies of the Final Environmental Impact Statement were sent.

Appendices: The appendices provide more detailed information to support the analysis presented in the EIS, including an index as required by the implementing regulations for NEPA.

Introduction to Chapter 1

Chapter 1 is divided into the following sections:

Background

Planning Framework

Desired Future Condition

Purpose and Need

Proposed Action

Public Involvement

Decision Framework

Environmental Issues

Changes between Draft EIS and Final EIS

Minor editorial changes to the text in all sections of the chapter.

Updated Public Involvement.

Addition of the key issue and decision factor, Salvage of trees greater than 21" DBH.

Changes in the methods of measuring effects which are displayed in Figure 2.3.

Background

Lightning storms on July 3 and 24, 2006 ignited the Spur and Tripod Fires that ultimately burned together and became the Tripod Complex (hereafter called the Tripod Fire), burning a total of 175,184 acres. Of that total, 163,669 acres burned on the Okanogan National Forest, 11,408 acres burned on Washington State Department of Fish and Wildlife and Department of Natural Resources lands and 107 acres was in other ownership. The National Forest burned area is located on the Methow Valley Ranger District on the east side of the Chewuch River drainage and on the Tonasket Ranger District in the Salmon Creek watershed. (Appendix A, Vicinity Map). The forest types that burned are dry forest, mixed conifer forest, montane forest and alpine (Figure 1-3). Approximately 70% of the burn occurred in the high-elevation montane and alpine habitat types. Elevations ranged from approximately 2,500 feet to over 7,000 feet. Burn severities ranged from very low to high, with 23% of the fire at a high severity (Figure 1-2 and Appendix A, Burn Severity Map). Active fire suppression activities continued into the fall. Suppression-related activities that were implemented on the Tripod Fire include; construction of dozer and hand fire-line, opening of closed roads, and establishment of drop points and safety zones. Rehabilitation of these suppression facilities includes; road closing, installing water bars on fire-lines, and pulling material back onto the fire-lines. The specific activities that occurred are listed in Appendix L. The fire was declared contained on October 31, 2006 and was declared out on December 1, 2006.

Public safety and emergency rehabilitation activities were conducted during the autumn of 2006, beginning before the fire was declared contained. A Forest Service Burned Area Emergency Response (BAER) team mapped burn severity and determined emergency stabilization needs created by the fires. BAER treatments included: erosion control measures such as seeding and mulching; danger tree removal along roads and trails; cleaning road ditches, culvert inlets, and catch basins; constructing diversion dips on roads; and upgrading culverts. These actions will continue in the summer and fall of 2007. Specific information on completed and planned BAER treatments is listed in Appendix J. In the following chapters, fire suppression and BAER activities are considered past actions and part of the existing condition, contributing to direct, indirect and cumulative effects.

The Tripod Fire burned within ten different land management allocations as defined in the *Final Environmental Impact Statement for the Okanogan National Forest Land and Resource Management Plan* (Forest Plan) (USDA Forest Service 1989b), as amended by *Revised Continuation of Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for timber Sales, Appendix B, Regional Forester Amendment #2* (USDA Forest Service 1995a). Figure 1-1 displays the percentage of the Tripod Fire in each management allocation. For example, 22% of the fire burned in Management Allocation 25 (MA-25, Timber and Range). Overlaying these allocations, Inventoried Roadless Areas (IRA) comprises 45% of the fire area, and adjacent areas with undeveloped characteristics comprise an additional 21% of the Tripod Fire area.

Figure 1-1: Management Allocations within the Tripod Fire

MA	Description	Goals	% of fire area on Nat. Forest
4	Unroaded Recreation	Provide semi-primitive non-motorized recreation opportunities during summer and fall seasons. Semi-primitive motorized recreation opportunities may be provided during the winter and spring seasons.	5
5	Roaded Recreation	Provide opportunities for recreation and viewing scenery in a roaded natural setting with a visual quality objective of retention or partial retention.	11
8	Research Natural Area (RNA)	Preserve naturally occurring physical and biological units as RNAs where natural conditions are maintained insofar as possible for the purpose of: 1) comparison with those lands altered by management for baseline monitoring; 2) education and research on plant and animal communities; and 3) preservation of gene pools for typical as well as threatened and endangered plants and animals.	3
12	Lynx Habitat	Provide habitat to support a stable lynx population over the long term while accessing the area for the purpose of growing and producing merchantable wood fiber.	35
14	Wildlife Habitat	Provide a diversity of wildlife habitat, including deer winter range, while growing and producing merchantable wood fiber.	8
15B	Designated Wilderness	Maintain a predominantly unmodified primitive environment within designated wilderness with a variety of trail opportunities	13
17	Developed Recreation	Provide a variety of developed recreation opportunities in a roaded setting.	<.01
18	Designated Botanical Area	Provide lands where unusual plant communities or associations occur to provide opportunities for botanical research and education	0.5
25	Timber and Range	Intensively manage the timber and range resources using both even-aged and uneven-aged silvicultural practices. Manage to achieve a high present net value and a high level of timber and range outputs while protecting the basic productivity of the land and providing for the production of wildlife, recreation opportunities and other resources.	22
26	Deer Winter Range	Manage deer winter range and fawning habitats to provide conditions which can sustain optimal numbers of deer indefinitely, without degrading habitat characteristics such as forage, cover and soil.	1
RHCAs	PACFISH	PACFISH establishes management direction designed to arrest and reverse declines in anadromous fish habitat.	8

Soil burn severity levels for the Tripod Fire area are shown in Figure 1-2. Soil burn severity describes fire-caused changes to soil in terms of the amount of surface fuel and duff consumption. The definitions are as follows (also see Glossary, Burn Severity):

High Severity – complete consumption of litter and duff; mineral soil surface may be visibly altered.

Moderate Severity – litter consumption with deeply charred or consumed duff, no visible alteration of mineral soil surface.

Low Severity – litter charred or consumption with duff largely intact.

Unburned to Very Low Severity – fire has not entered the area or has very lightly charred the litter and fine fuels on the ground.

Figure 1-2: Burn Severity Categories within the Tripod Fire on National Forest lands

Vegetation Burn Severity	Acres burned	Percent of total area burned	Description of Mortality
Unburned to very low	24,574	14%	
Low-	41,365	24%	<30% of the trees killed
Moderate	69,147	39%	30-80% of the trees killed
High	40,055	23%	>80% of the trees killed

Forest vegetation within the Tripod Fire was grouped into forest types (Figure 1-3), which are described in Chapter 3.5 Forest Vegetation and mapped in the Forest Type Map in Appendix A.

Figure 1-3: Forest Types within the Tripod Fire on National Forest lands

Forest Type	Percent of Tripod Fire Area
Dry Forest	4
Mixed Conifer	27
Montane Forest	59
Alpine	10

PROJECT AREA

The project area for the Tripod Fire Salvage Project includes portions of the Tripod Fire that lie on National Forest lands on the Methow Valley and Tonasket Ranger Districts within Okanogan County (38,278 acres). The project area (Vicinity Map, Appendix A) includes portions of the following townships: T34N, R23E; T34N, R24E; T35N, R22E; T35N, R23E; T35N, R24E; T36N, R22E; T36N, R23E; T36N, R24E; T37N, R22E; T37N, R23E; T38N, R23E and T39N, R23E, W.M. The project area is located within the Lower Chewuch River, Middle Methow River and Salmon Creek watersheds. Sub-watersheds included in the project area are listed in Figure 1-4. It also includes all land immediately adjacent to Roads 37 and 39 within the fire boundary.

Figure 1-4: Watersheds and Sub-watersheds within the Tripod Fire Salvage Project Area

Lower Chewuch River	Middle Methow River	Salmon Creek
Bernhardt	Beaver	Cabin
Boulder	Lightning	Cedar
Brevicomis	Twentymile	Granite
Bromas		McKay
Ramsey		Pelican

PLANNING FRAMEWORK

APPLICABLE LAWS AND EXECUTIVE ORDERS

The following laws and executive orders, with implementing regulations as appropriate, apply to the analysis and implementation of the Tripod Fire Salvage Project:

American Antiquities Act of 1906

This Act makes it illegal to appropriate, excavate, injure, or destroy any historic, prehistoric ruin or monument, or any object of antiquity, situated on lands owned by the Government of the United States, without permission of the Secretary of the Department of Government having jurisdiction over the lands on which said antiquities are located. Historic resources may occur within the project area and could be damaged by salvage operations.

Migratory Bird Treaty Act of 1918

The purpose of the Act is to establish an international framework for the protection and conservation of migratory birds. The Act makes it illegal, unless permitted by regulations to take any migratory bird, including any part, nest, egg of any such bird” (16 USC 703). Migratory birds utilize the Tripod project area and could be affected by salvage operations.

Multiple-Use Sustained Yield Act of 1960

This Act requires the Forest Service to manage National Forest System lands for multiple uses (including timber, recreation, fish and wildlife, range, and watershed). All renewable resources are to be managed in such a way that they are available for future generations. The harvesting and use of standing timber can be considered a short-term use of a renewable resource. As a renewable resource, trees can be re-established and grown again, if the productivity of the land has not been impaired.

National Historic Preservation Act of 1966 (as amended)

This Act requires Federal agencies to consult with American Indian Tribes, State and local groups before nonrenewable cultural resources, such as archaeological and historic structures, are damaged or destroyed. Section 106 of this Act requires Federal agencies to review the effects project proposals may have on the cultural resources in the analysis area.

National Environmental Policy Act (NEPA) of 1969 (as amended)

The Council on Environmental Quality implementing regulations at 40 CFR Parts 1500-1508 and Forest Service implementing policy and procedures issued in Forest Service Manual 1950 and Forest Service Handbook 1909.15 establish the basic process for conducting and documenting environmental analyses, including public participation. Before a salvage project can be implemented, a decision to authorize such a project must assess the site-specific impacts of the salvage and associated activities.

Endangered Species Act (ESA) of 1973 (as amended)

This Act requires the Forest Service to manage for the recovery of endangered and threatened species and the ecosystems on which they depend. Implementing regulations are found in 50 CFR Part 402. The policy and process for Forest Service compliance with the ESA are found in Forest Service Manual 2670.31. Section 7 of the ESA requires consultation with the USFWS and NOAA-Fisheries on federal projects that may affect listed species.

Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 (as amended) and National Forest Management Act (NFMA) of 1976 (as amended)

The Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976, as amended (16 USC 1600 et seq.). The National Forest Management Act of 1976 (NFMA) requires each National Forest System unit to have a land and resource management plan (LRMP). Section 6(i) of NFMA [16 USC 1604(i)] requires that resource plans for the use of National Forest System lands must be consistent with the LRMP for the National Forest System unit on which that use occurs. NFMA requirements are carried out through implementation of the Forest Land and Resource Management Plans. This analysis is guided by the Okanogan Land and Resource Management Plan.

Clean Water Act (CWA) of 1977 and 1982 (as amended)

This Act places primary responsibility for protecting water quality with the States. Section 313 of the Act (33 USC 1323) requires federal agencies to comply with all substantive and procedural State water quality requirements to the same extent as a non-governmental entity. This Act establishes a non-degradation policy for all federally proposed projects.

Clean Air Act, as amended in 1990

The purposes of this Act are “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare of the productive capacity of its population and to encourage and assist the development and operation of regional air pollution prevention and control programs. The Tripod project proposes to burn landing piles which will affect air quality.

Executive Order 13186 (migratory birds)

This executive order requires the “environmental analysis of Federal actions, required by NEPA or other established environmental review processes, evaluates the effects of actions and agency plans on migratory birds, with particular emphasis on species of concern.”

Executive Order 13112 (invasive species)

This 1999 order requires Federal agencies whose actions may affect the status of invasive species to identify those actions and within budgetary limits, “(i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species... (iii) Monitor invasive species populations... (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded;...(vi) promote public education on invasive species... and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction of spread of invasive species...unless, pursuant to guidelines that it has prescribed, the agency had determined and made public... that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and

that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

Other applicable laws and regulations include:

Bald and Golden Eagle Protection Act of 1940 (as amended)
Federal Noxious Weed Control Act of 1974 (as amended)
American Indian Religious Freedom Act of 1978
Archeological Resource Protection Act of 1980
Native American Graves Protection and Repatriation Act of 1990
Executive Order 11593 (cultural resources)
Executive Order 11988 (floodplains)
Executive Order 11990 (wetlands)
Executive Order 12898 (environmental justice)
Executive Order 13007 (Indian sacred sites)
Executive Order 13175 (Coordination with Indian Tribal Governments)

MANAGEMENT DIRECTION

Management direction for the Tripod Fire Salvage project area has been established by the following environmental documents to which this EIS is tiered:

FEIS for the Okanogan National Forest Land and Resource Management Plan

The *Final Environmental Impact Statement for the Okanogan National Forest Land and Resource Management Plan* (USDA Forest Service 1989b); as amended, provides management direction for the Okanogan National Forest. Amendments to the Okanogan National Forest Land and Resource Management Plan, hereinafter known as the Forest Plan, include:

Revised continuation of Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Timber Sales, Appendix B, Regional Forester's Forest Plan Amendment #2 (USDA Forest Service 1995a) hereinafter called the Eastside Screens or Amendment #2. The Eastside Screens focus on the potential impact of timber sales on riparian habitat, historical vegetation patterns, and wildlife fragmentation and connectivity.

Interim Strategies of Managing Anadromous Fish-Producing Watersheds on Federal Lands in Eastern Oregon and Washington, Idaho and portions of California (USDA and USDI 1995), hereinafter called PACFISH. PACFISH establishes management direction designed to arrest and reverse declines in anadromous fish habitat.

Final Environmental Impact Statement for the Pacific Northwest Region Invasive Plant Program (USDA Forest Service 2005), which culminated in a Record of Decision that amended the Forest Plan by adding management direction relative to invasive plants. (This decision replaces the 1988 "Managing Competing and Unwanted Vegetation" decision, although the Courts have not yet vacated the subsequent Mediated Agreement for the 1988 decision. A crosswalk describing how the Mediated Agreement is met by implementation of the new 2005 decision can be found in the project file.)

The Forest Plan established specific land allocations, using management areas, each of which emphasizes a particular Desired Future Condition (DFC). Forest Plan standards and guidelines provide direction for achieving the DFC.

Figures 1-5 and 1-6 list the Forest Plan goals and standards and guidelines (that are

particularly relevant to the proposed action) for management areas located within the Tripod Fire Salvage Project area. (Appendix A, Management Area Map). Figure 1-5 discusses the predominant management areas, in which salvage harvest, danger tree felling and associated actions are proposed. In Figure 1-6, Management Areas are identified that are mostly outside of the project area, but contain open roads that have danger tree felling proposed along the road corridor. The amount of treatment that is proposed within these management areas is consequently very low.

Figure 1-5: Management Areas (MA) within Tripod Fire Salvage Project Area in which salvage harvest, danger tree felling and associated actions are proposed

MA	Description	Goals and Standards and Guidelines	% of project area
5	Roaded Recreation	<p>Goal: Provide opportunities for recreation and viewing scenery in a roaded natural setting with a visual quality objective of retention or partial retention.</p> <p>Scheduled timber harvest occurs and activities are designed to meet visual quality objectives. Access to developed recreation sites is generally by high standard roads. Public access is discouraged during commercial hauling operations. Open road density is limited to 3 miles of open road per square mile of discrete MA to limit wildlife disturbance. On deer winter range, motorized access is prohibited December 1 through March 31. Winter haul may be permitted provided the goals of the MA are met.</p>	16.1
12	Lynx Habitat	<p>Provide habitat to support a stable lynx population over the long term while accessing the area for the purpose of growing and producing merchantable wood fiber.</p> <p>Roaded modified recreation opportunities are provided. The visual quality objectives are modification and maximum modification. High quality lynx habitat is provided. Scheduled timber harvest occurs. Roads are managed to limit wildlife disturbance. Open road density is limited to 1 mile of open road per square mile of discrete MA. Public access is discouraged or prohibited during periods of commercial hauling. From December through March motorized vehicles are restricted to areas and routes designated open.</p>	17
14	Wildlife Habitat	<p>Provide a diversity of wildlife habitat, including deer winter range, while growing and producing merchantable wood fiber.</p> <p>Roaded modified recreation opportunities are provided. The visual quality objectives are modification and maximum modification. Deer winter range is well-distributed. Scheduled timber harvest occurs. Roads are managed to limit wildlife disturbance. Open road density is limited to 2 miles of open road per square mile of discrete MA. Motorized access is prohibited on deer winter range December 1 through March 31 except for designated through routes. Winter haul may be permitted provided the goals of the MA are met.</p>	32
25	Timber and Range	<p>Intensively manage the timber and range resources using both even-aged and uneven-aged silvicultural practices. Manage to achieve a high present net value and a high level of timber and range outputs while protecting the basic productivity of the land and providing for the production of wildlife, recreation opportunities and other resources.</p> <p>The visual quality objectives are modification and maximum modification. A wide range of silvicultural practices take place. Fuel wood gathering opportunities are provided. Open road density is limited to 3 miles of open road per square mile of discrete MA</p>	31

26	Deer Winter Range	<p>Manage deer winter range and fawning habitats to provide conditions which can sustain optimal numbers of deer indefinitely, without degrading habitat characteristics such as forage, cover and soil.</p> <p>The visual quality objectives are modification and maximum modification. High quality deer winter range habitat is provided. Scheduled timber harvest occurs. Open road density is limited to 1 miles of open road per square mile of discrete MA. Motorized access is prohibited December 1 through March 31 except for designated through routes. Winter haul may be permitted provided the goals of the MA are met.</p>	3.3
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Figure 1-6: Management Areas within Tripod Fire Salvage Project Area in which only danger tree felling is proposed

MA	Description	Goals	% of project area
4	<p>Unroaded Recreation</p> <p>(only includes corridor along Rd. 39, overlapping edge of MA 4-03)</p>	<p>Goal: Provide semi-primitive non-motorized recreation opportunities during summer and fall seasons. Semi-primitive motorized recreation opportunities may be provided during the winter and spring seasons.</p> <p>The visual quality objective is retention. No scheduled timber harvest occurs. Salvage harvest may occur based on specific criteria related to recreation and scenic values and to prevent insect and disease spread.</p>	0.1
8	<p>Research Natural Area (RNA)</p> <p>(only includes corridor along Rd. 39, abutting Roger Lake RNA, MA 8-03)</p>	<p>Goal: Preserve naturally occurring physical and biological units as RNAs where natural conditions are maintained insofar as possible for the purpose of: 1) comparison with those lands altered by management for baseline monitoring; 2) education and research on plant and animal communities; and 3) preservation of gene pools for typical as well as threatened and endangered plants and animals.</p> <p>The visual quality objective is retention. No timber harvest is permitted. Hazard tree felling is permitted along trails or roads for safety, with felled trees remaining in place.</p>	<0.1
17	<p>Developed Recreation</p> <p>(only includes corridor along Rd. 39 within Tiffany Springs Campground)</p>	<p>Provide a variety of developed recreation opportunities in a roaded setting.</p> <p>The visual quality objectives range from retention to modification. No scheduled timber harvest occurs. Trees may be selectively removed to enhance scenic or recreation opportunities or to accomplish vegetative management goals. Treat fuels to meet visual and recreation objectives and to eliminate, to the extent possible, the probability of a wildfire that will damage the recreation resource.</p>	<0.1
RHCAs	<p>PACFISH</p> <p>(only where RHCAs intersect roads)</p>	<p>PACFISH establishes management direction designed to arrest and reverse declines in anadromous fish habitat.</p> <p>PACFISH identified Riparian Habitat Conservation Areas (RHCA), Riparian Management Objectives (RMO) and Standards and Guidelines that outline management direction for a variety of resources. RMOs and relevant Standards and Guidelines are discussed in Chapter 3, Aquatic Resources.</p>	8

PACFISH RHCAs are not mapped separately, so the “percent of area” value for PACFISH is also included in the percentages for other management allocations and the percentage values will sum to more than 100%. The percent of RHCA that would be affected by proposed project operations is much less than the 8% shown in the Figure above.

Inventoried Roadless Areas

There are three inventoried roadless areas (IRAs) within the Tripod Fire area and adjacent to the Tripod Fire Salvage project area; Granite Mountain (27,439 acres), Tiffany (22,055 acres) and Long Swamp (66,366 acres). The IRAs are based on areas allocated to Inventoried Roadless Areas under the 2001 Roadless Conservation Rule. These three IRA's make up 45% of the Tripod Fire Area on the National Forest.

Current Forest Service policy direction under the Roadless Conservation Rule (USDA Forest Service 2001a), prohibits new road construction and prohibits cutting, sale, and removal of timber in inventoried roadless areas, with some exceptions. None of the exceptions are applicable to the proposed actions for the Tripod Salvage Project and no trees would be felled or removed in any Inventoried Roadless Area.

OTHER POLICY AND ANALYSIS CONSIDERED AND INCORPORATED BY REFERENCE

Other policy and landscape level assessments developed were utilized in the analysis for the Tripod Fire Salvage project. These include the following, which are incorporated into this EIS by reference.

Grizzly Bear Core Habitat

The Forest Supervisor developed a policy in the August 12, 1997 "Grizzly Bear Recovery – North Cascades Ecosystem" letter (USDA Forest Service 1997c), signed jointly by Forest Supervisors for the Wenatchee, Okanogan, and Mt. Baker-Snoqualmie National Forests, required an interim standard of "no net loss of existing core habitat". The interim standard will be updated during the Forest Plan revision process. Grizzly bear core habitat was defined as the area greater than 0.3 miles from any motorized-access route or high-use non-motorized access route. The Grizzly Bear Core Habitat policy is incorporated by reference.

Reforestation of Burned Landscapes

Regional Forester policy letter (USDA Forest Service 2002b) required that salvage harvest on deforested, suitable (for timber production) lands that is driven by an objective to recover timber, should be reforested within five years. Where no salvage harvest is accomplished, these lands should be reforested as soon as practicable.

Chewuch River Watershed Analysis (USDA Forest Service 1994)

The western portion of the project area lies within the Chewuch River watershed which was analyzed in the 1994 Chewuch Watershed Analysis. The watershed analysis assesses the condition of the land and living organisms within the ecosystem, identifies key processes, disturbances and ecosystem components, determines changes that have taken place over time and provides guidance for future management activities. Objectives identified include: using a combination of tree removal and prescribed fire to maintain healthy park-like stands of large diameter ponderosa pine and Douglas-fir within the ponderosa pine zone, using tree removal combined with differing intensities of prescribed fire to protect merchantable timber

and create desirable wildlife habitat in the Douglas-fire zone; and provide disturbances by tree removal and prescribed fire to create mosaics of age and stand structure necessary to many boreal species, including lynx in the subalpine fir zone.

Middle Methow Watershed Assessment (USDA Forest Service 1997a)

The southern portion of the project area lies within the Middle Methow River watershed which was analyzed in the 1997 Middle Methow Watershed Assessment. The watershed analysis describes landscape attributes and how they have changed over time, identifies how changes in landscape attributes have affected resources and discusses criteria that would be used to make adjustments to riparian reserve widths. Objectives identified include managing timber stands to maintain vigorous trees that are resistant to insect and disease outbreaks and minimizing high-intensity fire risk; minimizing fire risk associated with urban-wildland interface; and maintaining or restoring aquatic refugia to insure habitat capability to support viable populations of bull trout, spring Chinook, and summer steelhead.

Salmon Watershed Assessment (USDA Forest Service 1997b)

The eastern portion of the project area lies within the Salmon Creek watershed which was analyzed in the 1997 Salmon Watershed Assessment. The goal of the watershed assessment is to characterize ecosystem conditions, processes and interactions within the watershed, determine the social, economic and ecological needs within the watershed and identify and prioritize projects. Recommendations include a need to: increase early seral lodgepole pine stands to decrease mountain pine beetle activity, create snowshoe hare habitat and increase lynx feeding habitat; restore single-storied ponderosa pine stands and create conditions favorable to fire-dependent species.

Tripod Project Area Travel Analysis (USDA Forest Service 2007b)

A project level travel analysis process was completed for specific Objective Maintenance Level 1 roads and unauthorized roads within the Tripod Fire Salvage project area, where management direction for the road was not clear. This analysis is titled Tripod Fire Salvage Travel Analysis and is incorporated into this EIS by reference. The objective of the analysis was to identify management direction for specific roads that: 1) were unauthorized roads that were not on the forest transportation system and did not have a maintenance level assigned, and 2) have been managed on the ground as open roads (Maintenance Level 2) but had an Objective (planned) Maintenance Level of 1 (closed road). The objective is to provide a forest transportation system that is safe and responsive to public needs and desires, is affordable and efficiently managed, has minimal ecological effects on the land, and is in balance with available funding for needed management actions. The analysis is a science-based interdisciplinary process, which addresses the effects of roads on biological, social, and economic factors. The Road Analysis identified opportunities and strategies to move toward the stated objectives.

A complete project level travel analysis was not completed for the Tripod Fire Salvage Project, although Maintenance Level 3-5 roads were analyzed in the Forest-wide Roads Analysis (USDA Forest Service 2004e) which is incorporated by reference. The roads that are covered in the Forest-wide analysis are:

3700-000 - Recommendation was no change from current Maintenance Levels.

3900-000 - Recommendation was no change from current Maintenance Levels.

- 4200-000 - Recommendation was no change from current Maintenance Levels.
- 4225-000 - Recommendation was no change from current Maintenance Levels.
- 4230-000 - Recommendation was to lower the Maintenance Level from a 3 to 2.
- 4235-000 - Recommendation was to lower the Maintenance Level from a 3 to 2.
- 5010-000 - Recommendation was no change from current Maintenance Levels.

The purpose and need of this project is not to manage roads differently. In most cases, “open roads” would remain open and “closed roads” would remain closed. Therefore, consistent with the Roads Analysis Rule, the Line Officer determined that a complete project level road analysis was not needed. Rather, a focused Project Travel Analysis made recommendations for those roads described above, where the current management direction for the road was not clear.

South Twentymile Timber Sale and Associated Activities Environmental Analysis

The South Twentymile and Associated Activities EA (USDA Forest Service 1997d) was a site-specific analysis of a vegetative management proposal to reduce fuels by thinning trees and the use of prescribed fire. As part of the South Twentymile EA, a transportation analysis was completed and recommendations for road management were made. The Decision Notice and Finding of No Significant Impact for the South Twentymile EA determined that four roads should be managed as closed roads (Maintenance Level 1). However, there has not been funding to actually close these roads on the ground. These four roads would be utilized under the Tripod Salvage Project. After salvage operations, these four roads would be closed, implementing the South Twentymile decision.

Desired Future Condition

Based on the above applicable laws and orders, Forest Plan goals, objectives and Standards and Guidelines, Chewuch River and Middle Methow Watershed Analyses and Salmon Watershed Assessment, Management Recommendations, and the existing condition of the project area the following are the specific desired future conditions for vegetation, fisheries, riparian, soil, water, plants, wildlife, heritage resources and recreation within the project area. For some resources, a distinction is made between short-term and long-term desired future condition. For other resources this distinction is not made. Given its focused purpose and need, the proposed project activities described in this EIS do not address all the desired conditions listed below in the project area.

WILDLIFE

Snags and down logs are retained at a density, size and distribution that are based on the best available science (DecAID (Mellen et al. 2006)) and are consistent with Forest Plan direction for cavity dependent species in post-fire environments.

Open road densities are consistent with Forest Plan Standards long-term.

Grizzly bear “core” habitat and wolf security habitat are maintained, thereby limiting an increase in disturbance to wildlife species sensitive to human interaction.

Actions are consistent with recovery plans, management strategies, conservation agreements, Memoranda of Understanding, and other guidance documents for species identified on the Regional Forester's list of Endangered, Threatened and Sensitive Species (USDA Forest Service 2004c).

Sustainable ecosystem processes and a representative range of habitat conditions are maintained to provide for the viability of management indicator species (MIS) and other key species such as songbirds and raptors in the forested habitats of the Okanogan National Forest.

HYDROLOGY AND AQUATIC RESOURCES

The Forest Plan (p. 4-5) desired condition includes:

- Riparian areas will continue to display riparian ecosystem values

- Habitat to support threatened and endangered species will be protected in accordance with recovery plans.

- Fisheries habitat for rearing, spawning and migration will be in an improved state.

- Habitat improvement projects will increase habitat diversity and stream bank stability will enhance the fisheries habitat.

- Forest soil productivity will be maintained. Water yield and quality will be substantially the same.

- Overall open road mileage will be lower than under 1989 conditions. [Because many unauthorized roads were on-the-ground, but not yet inventoried at the time the Forest Plan was signed, road mileage has increased in most management areas since 1989.

However, actual on-the-ground open road mileage has decreased in many management areas (USDA Forest Service 2005d)].

PACFISH Riparian Management Objectives describe good anadromous fish habitat which include: pool frequency, water temperature, large woody debris, and width/depth ratios.

Site-specific desired future conditions are:

Sediment from existing open roads is reduced by applying Best Management Practices (BMP). Self-maintaining drainage is installed on closed roads to improve hydrologic function.

The project area retains trees and snags that are available to fall into streams and ephemeral draws now and in the future, except when doing so would pose hazards on drive-able roads.

SOILS

Short-term Desired Soil Condition

15% detrimental soil condition is not exceeded within the activity area (Forest Plan Standard and Guideline 13-10).

Activities are planned and conducted so that soil loss from surface erosion and mass wasting will not result in unacceptable reduction in soil productivity.

Long-term Desired Soil Condition

Long-term soil productivity is maintained by retaining minimum percent effective ground cover after cessation of any soil-disturbing activity (Forest Service Manual, R6 Supplement 2500-98-1).

Activities are designed and mitigated to retain sufficient ground vegetation and organic matter to maintain long-term soil and site productivity. Coarse woody debris levels are consistent with soil properties and site conditions.

FOREST VEGETATION

Short Term (2-10 years) Desired Forest Structure

Areas deforested by the Tripod Fire are salvage harvested within three years of the fire and reforested within five years of the completion of harvest activities.

Unimpaired natural vegetation recovery is rapid, hosting the full complement of native species, particularly beneficial mycorrhiza that facilitates rapid recovery of plant communities. These mycorrhiza plant/root associations reduce plant competition for resources, promote forest recovery, and influence the pattern of plant succession.

Long Term (11-150+ years) Desired Forest Structure

Dry Forest

Open park-like stands comprised primarily of large diameter ponderosa pines (greater than 21 inches DBH) and, to a lesser extent, Douglas-fir trees would be the predominant forest structure on dry forest sites (which include the hot-dry, warm-dry, and warm-mesic plant association groups). Densely stocked stands would occupy considerably less area than open canopy stands and occur primarily on mesic sites within the dry forest. Ponderosa pine would be the prominent tree species following initial stand establishment, and Douglas-fir would become established following plant succession and disturbance patterns. Stands on mesic sites would contain a wide range of structural attributes including stand age, predominant tree size, canopy closure, and tree species composition. Susceptibility to insects and pathogens including bark beetles, defoliators, and dwarf mistletoe would be reduced in most dry forest stands due to low stand densities and high proportions of ponderosa pine stocking.

Mixed Conifer Forest

Open canopy and moderately open canopy stands of large and medium diameter overstory trees (greater than 14 inches DBH) with few understory trees would be the predominant forest structure on mixed conifer forest sites (which include the cool-dry Douglas-fir plant association group; and the cool-mesic Douglas-fir plant association group below 5,000 feet elevation). Overstory trees would be comprised primarily of a mix of ponderosa pine, western larch within its range, and Douglas-fir. Closed canopy stands and stands with high proportions of Douglas-fir or lodgepole pine stocking would occur primarily on sites that are more productive and favorable for supporting higher tree stocking levels such as riparian areas, drainage bottoms, and northerly aspects. Stands and patches of immature trees (seedlings, saplings, and small diameter trees) would occur on the landscape within the matrix of large and medium diameter stands.

Montane Forest

Even-aged stands of primarily early and mid seral tree species including lodgepole pine, western larch, Douglas-fir, Engelmann spruce, and ponderosa pine to a lesser extent would be prominent in the montane forest (which includes the cool-dry, cool-mesic, cold-mesic, and cold-dry subalpine fir plant association groups; and the cool-mesic Douglas-fir plant association group above 5,000 feet elevation). Individual stands would be stocked primarily with trees of the same size class ranging from seedlings and saplings to large diameter stems, depending on the length of time since stand initiation. Stands comprised primarily of subalpine fir stocking or with multiple canopy, age, and size classes would be less common and present at levels that are consistent with the magnitude and timing of stand altering disturbance events on the landscape (including fire, insects, diseases, weather, and timber harvest).

PLANT COMMUNITIES

Post-fire forests are a biologically rich combination of surviving and pioneering species of diverse life forms and structures. They provide habitat for many organisms dependent on a variety of micro-sites by providing a climate which supports a rich diversity of species that thrive on the increased light and moisture provided by the post-fire landscape.

Non-forested communities would have a full complement of species, sufficient cover and species composition similar to pre-burn levels within 10 years. Structural development of shrubs within these communities will be re-established within 20 to 25 years.

Aspen would expand beyond its pre-fire range through clone expansion and seedling establishment. Aspen seedlings and suckers would be free to grow. Coarse woody debris would be sufficient to provide structure to protect recovering aspen clones and new seedling stands of aspen.

INVASIVE PLANTS

Short-term Desired Future Invasive Plant Condition

The spread and introduction of invasive plant species would not increase due to preventative practices and unimpeded site recovery in the project area.

There would be no net increase of invasive species spread or establishment over pre-burn levels.

Long-term Desired Future Invasive Condition

A diverse community of healthy native vegetation is maintained that would restrict invasive plant establishment.

The establishment of trees, shrubs and forbs would provide the range of root depths needed to occupy the available niches for water and nutrient utilization. Natural plant recovery would establish vigorous communities that would out-compete invasive plant species.

There would be no net increase of invasive species spread or establishment over pre-burn levels.

RECREATION

Recreation opportunities within Management Area (MA) 5 are maintained and enhanced within this “roaded natural” Recreation Opportunity Spectrum setting by maintaining a predominately natural appearing landscape.

The project area outside of MA 5 provides a variety of recreational opportunities within the “roaded modified” Recreation Opportunity Spectrum setting.

Hazard trees are felled and open roads are safe to drive for recreational activities.

Area closures due to logging activities in areas and at times that are currently open are minimized.

Impacts to any existing system trails are minimized.

FUELS

Short Term (2 to 5 years) Desired Fuel Loadings

Fuel loadings in all vegetation types balance the fire hazard risk with the needs of wildlife, soil productivity, and soil protection. Total fuel loading is maintained between 5-20 tons per

acre in dry forest vegetation types, and 10-30 tons per acre in mixed conifer or montane forest vegetation types, allowing for maintenance of reduced fuel levels (and subsequent low risk for high intensity fire) through future low intensity burning.

Long Term (6 to 50+ years) Desired Fuel Loadings

In dry-forest vegetation types, fire behavior is consistent with Fire Regime I (low frequency, low severity fire; returning within 35 years). The landscape is primarily open canopy with few ladder fuels and some thickets of conifers maintained as refugia for mammals and birds. Grass is the primary ground vegetation with pockets of sage and bitterbrush located throughout.

Within mixed-conifer vegetation types, fire behavior is consistent with Fire Regime III (mixed severity, mixed mortality fire; returning within 35-100 years). The landscape has a complex patchwork of open to closed forest types. Both tree removal and prescribed fire replicate intensities and magnitudes of natural disturbance.

Within montane vegetation types, fire behavior is consistent with Fire Regime IV (high severity, high mortality fire; returning roughly every 35-100 years). The landscape has large patches of even-aged stands.

FIRE SUPPRESSION

Roaded access to fire suppression improvements (lookouts, water chances, and helispots) is maintained on open roads during salvage harvest operations.

The potential for extreme fire behavior over extensive areas is reduced. Defensible conditions prevail across the landscape, contributing to increased firefighter safety during wildland fire suppression and prescribed fire operations.

AIR QUALITY

No long-term degradation of air quality would occur. Air quality standards would be maintained with no violations of National Ambient Air Quality standards (NAAQS).

RANGE

Short-term Desired Range Condition

Recovery of desired vegetation, resistant to noxious weed invasion, is rapid.

Production, vigor, and quality of forage plants increase to relieve grazing pressure in riparian areas.

Down woody debris limiting access to foraging areas is minimized.

Long-term Desired Range Condition

Transitory range is increased.

Livestock distribution into previously densely forested plant communities is expanded. This has the potential to relieve livestock grazing pressure in historical pre-fire use areas, mainly non-forested plant communities.

Natural vegetation drift barriers recover.

Effective riparian shrub vegetation is re-established to limit access to stream-banks.

SENSITIVE PLANTS

Short-term Desired Future Landscape Condition

Sensitive plant populations, burned over in the fire, will be undisturbed to encourage rapid recovery. The fire would stimulate population growth and increase vigor in these populations.

Long-term Desired Future Landscape Condition

Sensitive plant populations would remain vigorous and free-to-grow.

SCENIC RESOURCES

Visual characteristics of high, moderate, and low intensity burned landscapes are maintained for viewing. In the burned landscape, a combination of uniform and mosaic landscapes is desirable to create variety. The preferred landscape character is mosaic for long term diversity.

Riparian and wildlife corridors, patches, and edges are visually linked by using irregularly spaced clumping and feathering. Variable, uneven spacing with leave clumps of overstory and understory or snags are used.

A landscape composed of a variety of textures and patterns is maintained, including the highly textured sky line, ridgelines and dominating patterns of the swales.

The foreground and middleground viewed from Chewuch Viewshed Forest Road 51 and the Middle Salmon-Boulder Viewshed Forest Road 37 is managed to retain natural-appearing landscape character and maintain high (appears unaltered) to moderate (slightly altered) scenic integrity.

The middleground viewed from Winthrop and Conconully viewsheds is managed to retain near-natural appearing landscape character and maintain moderate (slightly altered) scenic integrity.

HERITAGE RESOURCES

All important heritage resources in the project area will be identified and protected.

Purpose and Need

The Purpose and Need is the underlying purpose and need to which the Forest Service is responding in developing the Proposed Action. It is the Purpose and Need for Action. It can be thought of as objectives.

Field reconnaissance and post-fire satellite imagery were used to identify the type and extent of fire effects to vegetation on the lands burned by the Tripod Fire. For National Forest lands within the Tripod Fire area, about 40,055 acres experienced fire effects severe enough to kill 80% or more of the trees, and an additional 69,147 acres experienced fire effects severe enough to kill 30-80% of the trees. Fire caused injuries also predisposed trees to secondary effects from insects and disease and drought which may subsequently result in additional tree mortality (Reinhardt et al. 1997).

After a tree dies it begins to deteriorate and lose economic value. Wood deterioration varies by species and refers to changes in wood strength or appearance that render the wood unsuitable for traditional or general uses such as lumber products (Lowell et al. 1992). With time, deterioration increases rapidly with a commensurate reduction in value. Harvesting dead and dying trees in the Tripod Fire Salvage project area could provide direct and indirect benefits to the local and regional economy. There is a need to salvage harvest as rapidly as practicable before decay and other wood deterioration occurs to maximize potential economic benefits.

This action is proposed in order to move the project area toward meeting specific goals, desired future condition and objectives outlined in the Forest Plan following the loss of forest stands in the fire damaged areas of the Tripod Fire. These Forest plan goals include: 1) Manage vegetation to maximize total net public benefits compatible with management area objectives, and 2) Timber harvest would be designed to maximize net public benefit over the long term (p. 4-1). The Forest Plan Desired Future Condition envisions areas with harvest will be regenerated, and roads will be developed and improved in areas where compatible resource activities are planned (p. 4-5, 6). Forest-wide Standards and Guidelines specify that scheduled timber harvest should only occur on suitable lands, and that where adequate natural regeneration would not occur by the fifth year, trees should be planted (p. 4-54, 57). Additionally, Forestwide Standard and Guideline 20-11 requires the treatment of stands subject to imminent insect attack to be treated first. Road standards should be consistent with the goals and activities of the Management Areas (p. 4-50).

The purpose and needs are derived from the differences between existing and desired conditions in the project area.

The major purpose of this project is to recover the economic value of a proportion of dead trees and fire-injured trees expected to die within one year of project implementation in the Tripod Fire area. Removing fire-killed and damaged trees through salvage logging would provide sawtimber and other wood products to local and regional economies.

There are a large number of dead and dying trees located next to roads that are open for public use and are hazardous to road users. There is a need to improve safety along roads open to the public within the fire area.

Natural regeneration of conifers after a fire is dependent on seed dispersal from healthy trees. In many areas, particularly within high tree mortality areas of the fire, adjacent seed sources are not available for conifer species such as Douglas-fir and ponderosa pine. There is a need to accelerate reforestation by re-establishing trees in salvage harvest units where there is insufficient seed source. Replanting with the appropriate species would ensure timely establishment of species desirable for long-term objectives. Salvage harvest on deforested, suitable (for timber production) lands that is driven by an objective to recover timber should be reforested within five years of harvest completion (USDA Forest Service 2002b).

Forest Plan amendments are needed to:

- 1) Allow salvage harvest of those fire-injured trees greater than or equal to 21 inches diameter at breast height (DBH), with a low probability of survival within one year of project implementation. These trees are currently alive, but are expected to die from fire related effects. Currently, Amendment #2 (Eastside screens) directs maintenance of live trees greater than or equal to 21"DBH within stands subject to timber harvest.
- 2) Allow snowplowing and motorized use of designated, groomed snowmobile routes to facilitate winter salvage activities. Currently Forest Plan Forestwide Standard and Guideline 17-6 identifies roads that should not be snowplowed and should be closed to motorized wheel traffic from December 1 to April 1.
- 3) Allow timber salvage operations to take place in MA-26 deer winter range from December through March, in order to facilitate the recovery of deteriorating timber.
- 4) Allow timber salvage operations to occur in Management Area 12 from December through March, in order to facilitate the recovery of deteriorating timber. MA-12 has a management emphasis of providing habitat to support a stable lynx population while accessing the area for growing and producing merchantable wood fiber.

In summary, the purposes of and needs for action in the Tripod Fire Salvage Project area are to:

Recover a portion of the dead trees and fire-injured trees expected to die within one year of project implementation while the trees have economic value.

Improve safety within the fire area by reducing hazards associated with dead trees along open roads by cutting and/or removing these trees.

Re-establish trees in salvage harvest units where there is an insufficient residual seed source, to ensure regeneration within five years of harvest completion.

PROPOSED ACTION

The proposed action is a proposal developed early in the NEPA process to authorize, recommend, or implement an action to meet stated purposes, needs, and goals based on the best information at the time. It is used to generate issues for further study. Alternative B described below and in Chapter 2, is in large part, the proposed action that was mailed to interested parties during public scoping in January 2007.

The Interdisciplinary Team (ID Team) utilized information from site-specific reconnaissance in the project area, direction from the Forest Plan as amended, and recommendations from the *Chewuch River Watershed Analysis* (USDA Forest Service 1994), the *Middle Methow Watershed Analysis* (USDA Forest Service 1997a) and the *Salmon Watershed Assessment* (USDA Forest Service 1997b) to develop the proposed action. This proposed action salvage harvests a proportion of the dead trees and fire-injured trees expected to die within one year of project implementation. It also employs mitigation measures that would reduce detrimental soil conditions in the short-term (next ten years), move soil conditions towards a natural condition over the long-term, and mitigate potential impacts to Threatened and Endangered Species.

DESCRIPTION OF THE PROPOSED ACTION

Purpose and Design

Alternative B is the alternative that the Forest Service proposed at the beginning of the NEPA process to respond to the agency's purpose of and need for action. It was designed to maximize recovery of fire-injured trees that are expected to die within one year of project implementation, that have a positive net value (project implementation is defined as when the salvage harvest unit is marked and cruised). The volume recovered is part of the sustainable supply of sawtimber to local and regional economies. During development of this alternative, salvage harvest in Blue Buck Creek was considered, as the fire burned with high severity here in valuable timber stands. However, this area was deleted to avoid impacts to the following resources; threatened bull trout populations, highly-damaged soils and hydrological function. Alternative B provides for regeneration of harvest units. Public safety is improved by removal of danger trees along open road corridors. Maps in Appendix A and a chart in Appendix B identify the locations of roads to be used and salvage and reforestation units. The US Forest Service would administer all operations that would be carried out by agency personnel or private contractors. All actions would be carried out between 2007 and 2014 (Figure 2-1) with timber salvage occurring from 2007 to 2009.

Description

Maps showing the locations of actions included in Alternative B are located in Appendix A. A treatment table identifying specific treatments is located in Appendix B.

Salvage Harvest

An estimated 2,748 acres would be commercially salvage harvested, with an estimated recovery of 17.9 million board feet (MMBF) of wood fiber. Only dead trees and fire-injured

trees expected to die within one year of project implementation would be considered for harvest. The following areas would not be harvested: areas with high soil damage, inventoried roadless areas (IRA), areas adjacent to the IRAs with undeveloped characteristics, old-growth habitat as defined in the Forest Plan, recently regeneration-harvested areas, suitable lynx habitat and PACFISH Riparian Habitat Conservation Areas (RHCA).

Salvage logging would focus on removing dead trees and fire-injured trees expected to die within one year of project implementation with a positive net value (log value exceeds logging and haul costs). In general, dead and dying conifer trees from 10 inches diameter at breast height (DBH) up to and including 28 inches DBH would be commercially harvested.

Ground-based harvesting would occur on approximately 2,156 acres with current road access and a sustained slope of 35% or less. Skyline logging would occur on approximately 591 acres in areas with road access and a sustained slope greater than 35 percent and in areas with slopes of 35 percent or less where terrain and road location require the use of cable logging systems.

Reforestation

Native tree seedlings would be planted on approximately 1,659 acres within salvage harvest units that have insufficient residual seed source to ensure adequate and timely regeneration of conifer species. Approximately 1,089 acres within salvage units are expected to regenerate naturally. Natural regeneration would re-establish forest stands in areas where there is a residual seed source that is sufficient to ensure adequate regeneration of conifer species within five years of salvage harvest.

Roadside Danger Tree Removal

Roadside danger trees would be felled along 47 miles of open roads within the project area to improve safety for road users (Danger Tree Falling Roads Map, Appendix A).

Road Management

Approximately 155 miles of open system roads would be used for access to salvage units and for timber haul. Approximately 23 miles of closed system road would be opened for use and closed following harvest operations. About 7 miles of currently open road would be used and closed, implementing a past decision from the South Twentymile EA (USDA Forest Service 1997d). All other system roads would remain open. Temporary roads would be constructed to access landing sites or other key locations. No new permanent system roads or access routes would be constructed. There would be no long-term increase in open road density resulting from the salvage harvest.

Timing

Timber salvage harvest would occur from 2007 to 2009. Activity fuels treatment would occur from 2007 to 2010. Road opening and closing, tree planting, and monitoring would occur from 2007 to 2014.

Forest Plan Amendments

A project-specific non-significant amendment would be needed to allow live trees greater than or equal to 21 inches diameter at breast height (DBH) to be salvage harvested. This Forest Plan Amendment would allow salvage harvest of those fire-injured trees greater than

or equal to 21 inches DBH with a low probability of survival within one year of project implementation.

A project-specific non-significant amendment would be needed to allow snowplowing and motorized use of designated groomed snowmobile routes to facilitate winter salvage harvest activities.

A project-specific non-significant amendment would be needed to allow timber sale operations to take place in MA-26 deer winter range from December through March. Most of the deer winter range affected is currently not effective habitat because it was burned by the Tripod Fire.

A project-specific non-significant amendment would be needed to allow salvage operations in MA 12 from December through March. MA 12 has a management emphasis of providing habitat to support a stable lynx population while accessing the area for growing and producing merchantable wood fiber. Most of the habitat affected is currently in an unsuitable condition for lynx.

Public Involvement

On December 28, 2006 a Notice of Intent to prepare an Environmental Impact Statement for the Tripod Fire Salvage Project appeared in the Federal Register and a press release was sent to regional media. On January 5, 2007, scoping packages for the Tripod project were sent to 530 addresses, which consisted of the Methow Valley and Tonasket Ranger Districts planning mailing lists, adjacent landowners, and others who indicated an interest in the Tripod Fire Salvage Project. The scoping package included a background summary, described the purpose and need, existing condition and desired future condition, included a detailed proposed action and maps, listed preliminary issues and solicited public issues concerning the proposed action. The project was also listed in the Okanogan National Forest Schedule of Proposed Activities (SOPA) starting in the first quarter of 2007.

A public meeting was held in Winthrop, WA on January 16, 2007. An Open House was held for one hour, where maps and other planning materials were displayed. The entire ID Team was on hand to explain their resource objectives and answer any questions. Then a formal presentation reviewed the following subjects: Tripod Fire progression and suppression, BAER activities, the NEPA process, Forest Plan land management allocations, the Tripod project Purpose and Need, and the Proposed Action. Finally, there was a Question and Answer period during which the District Ranger and the ID Team responded to comments from persons that were attending. Sixteen people attended the meeting. Letters of public comment were received after the meeting. Articles about the project appeared in the *Methow Valley News* and *Omak Chronicle* newspapers. 208 written letters of input were received before the close of the public comment period on January 29, 2007.

The Notification of Availability of the Draft EIS appeared in the Federal Register on June 1, 2007. The DEIS or Summary was mailed or made available to those listed in the DEIS Chapter 5. 217 parties commented during the 45 day comment period which closed on July 16, 2007. The response to those comments is included in Appendix M of this Final EIS.

A public meeting was held in Winthrop, Washington on June 14, 2007. An Open House was held for one hour, where the DEIS, maps and other planning materials were displayed. The entire Interdisciplinary Team was on hand to answer questions. Then a formal presentation reviewed the following topics: the NEPA process, purpose and need, proposed action, alternatives and environmental effects on economics, fisheries and wildlife.

Persons, organizations, and agencies that this Final EIS has been sent to are listed in Chapter 5.

Decision Framework

The scope of the project and the decision to be made are limited to: commercial timber salvage, slash treatment, reforestation, danger tree felling and mitigation and monitoring for these activities within areas burned by the Tripod Fire in July to October 2006. The project is limited to National Forest System lands.

The Responsible Official for this proposal is the Forest Supervisor of the Okanogan and Wenatchee National Forests. Based on the analysis contained in this Final EIS and considering the public comments to the Draft EIS, the Responsible Official will make a decision and document it in a Record of Decision, which is a companion document to the Final EIS. The Responsible Official can decide to:

- Select the proposed action, or
- Select an action alternative that has been considered in detail, or
- Modify an action alternative, or
- Select the no-action alternative
- Identify what mitigation measures will apply

DECISION FACTORS

The Responsible Official will determine if the selected alternative is consistent with the management direction for the area. The decision regarding which combination of actions to implement will be determined by comparing how each factor of the project purpose and need is met by each of the alternatives and the manner in which each alternative responds to the key issues raised and public comments received during the analysis. Concerns of particular relevance to this decision are:

Salvage Sale Economics

Trees that were killed or damaged by the Tripod Fire represent a large economic value, if recovered through salvage harvest. The decision would consider the amount of fire damaged and killed timber and how it would be recovered. The proposed salvage of fire killed and damaged timber must be an economically viable project in order to be successful. The decision would consider how much value could be recovered and how much economic risk is inherent in each alternative.

Lynx Habitat

Salvage harvest disturbs soils, which could reduce the rate of forest establishment and growth. This in turn, could reduce the recovery rate for lynx habitat. In twenty years many trees killed by the Tripod Fire will have fallen over, creating good habitat for snowshoe hare and the lynx which prey upon them. Salvage harvest would remove a portion of these trees, which could remove components of lynx habitat in the future. In addition, creation of a linear open area in lynx habitat (such as construction of a temporary road) has the potential to attract snowmobile use during the winter season. This use hardens a path, which could allow cougars and other competitors to utilize lynx habitat. Tripod salvage harvest activities such as road or skid trail construction have the potential to increase undesirable recreational

access into lynx habitat and affect habitat recovery for lynx and their prey. The decision would consider how salvage operations would affect lynx habitat.

Salvage Harvest of Trees greater than or equal to 21”DBH

Salvage harvesting trees greater than or equal to 21” DBH would remove structure used for wildlife habitat, fisheries habitat and soil productivity at the stand scale. These trees also have a high economic value. The decision would consider both the ecologic and economic value of trees greater than or equal to 21” DBH.

Environmental Issues

INTRODUCTION

Issues are points of concern about environmental effects that may occur as a result of implementing the proposed action. They are generated by the public and are in response to the proposed action. Issues provide focus for the analysis of environmental effects and influence alternative development, including development of mitigation measures.

Key issues (also known as significant issues) are used to formulate alternatives, prescribe mitigation measures, and analyze environmental effects. They are used to compare the alternatives in the Comparison of Alternatives Table in Chapter 2. Key issues are referred to by the Council on Environmental Quality (CEQ) as significant because of the potential extent of their geographic distribution, duration of their effects, or intensity of interest or resource conflict, if not mitigated or otherwise addressed. Key issues were identified by the ID Team and approved by the Responsible Official.

In addition to “key issues,” “other” issues were raised by the public. They were considered as this project was developed, analyzed and may have generated design criteria. However, they are less focused on the elements of the Purpose and Need and did not influence the formulation of alternatives. They are addressed in the effects analysis (Chapter 3).

Finally some issues were; 1) outside the scope of the proposed action, 2) already decided by law or regulation, Forest Plan, or other higher level decision, 3) irrelevant to the decision to be made, or 4) conjectural and not supported by scientific or factual evidence. The Council on Environmental Quality (CEQ) NEPA regulations require identification and elimination from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3). A summary of all public issues and their disposition is available in the project file.

The following is a listing of the issues:

KEY ISSUES

Economic Recovery

The Proposed Action would economically recover material on less than 2% of the National Forest area that burned in the Tripod Fire. There was a concern that more acres should be harvested, especially in The Okanogan Forest Plan Management Area 25, where the goal is to intensively manage the timber resource to achieve a high present net value and a high level of timber outputs. There was a concern that helicopter logging was not included in the Proposed Action. The general concern was that these items could result in the Proposed Action not achieving economic recovery objectives.

Methods of Measuring Effects

- Acres of salvage timber harvested by logging system
- Acres harvested

Volume of commercial harvest (millions of board feet or MMBF)
Total value of the commercial harvest

Wildlife - Lynx

Salvage harvest has the potential to reduce the amount of tree establishment and growth, which could affect the recovery of lynx habitat. In twenty years many trees killed by the Tripod Fire will have fallen over, improving habitat for snowshoe hares and the lynx that prey upon them. Salvage harvest would remove a portion of these trees, which could remove components of lynx habitat in the future. In addition, creation of linear open areas in lynx habitat (such as construction of a temporary road) has the potential to attract snowmobile use during the winter season. This use could improve access for cougars and other predators to utilize lynx habitat and compete with or prey directly upon lynx.

Methods of Measuring Effects

Length of temporary road in lynx habitat remaining open
Acres harvested in capable (see Glossary) lynx habitat

Salvage Harvest of Trees greater than or equal to 21"DBH

There was a concern about salvage harvesting trees greater than or equal to 21" DBH. These trees have value for wildlife, fisheries, and soil productivity at the stand scale. Modeling for the Methow Valley Ranger District showed a current shortage of snags over 20" DBH. The concern was that there was an ecologic need to maintain legacy structures for current and future habitat and structural purposes.

Methods of Measuring Effects

Acres of salvage harvest where all trees greater than or equal to 21" DBH would be retained
Number per acre of dead and high probability of dying trees greater than or equal to 21" DBH that would be retained in salvage harvest units
Number per acre of green and low to moderate probability of dying trees greater than or equal to 21" DBH that would be retained in salvage harvest units

OTHER ISSUES

Fisheries and Hydrology

Salvage harvest activities within the project area such as removal of trees, log yarding by ground-based and skyline systems, and temporary road construction or road reconstruction have the potential to interfere with aquatic and riparian habitat recovery by changing the way water is stored and routed through the project area to riparian areas, stream channels, and wetlands.

Method of Measuring Effects

Qualitative measure of stream temperature, large wood deposition in streams, water yield and effects to RHCAs.

The Tripod Fire consumed ground cover thereby exposing soils directly to rain events and runoff. This will result in accelerated erosion on hill slopes. Proposed log yarding operations and road construction and re-opening have the potential to increase soil disturbance and subsequent soil erosion. This could increase the delivery of sediment to water-bodies (especially 303(d) listed waterbodies), affecting water quality and native and threatened, endangered and sensitive fish.

Method of Measuring Effects

Estimate of background sediment production and sediment production from salvage harvest activities through the application of the Water Erosion Prediction Program.

Soils

Detrimental soil disturbance from salvage harvest can increase soil compaction, decrease site productivity, and accelerate erosion. The loss of ground cover and surface organics as a result of the Tripod Fire may have elevated the sensitivity of soils to additional impacts from proposed salvage activities. Ground disturbance from log yarding or road work may affect soil productivity by increasing detrimental soil disturbance caused by soil compaction, displacement, and erosion. It may also affect micro-habitats for soil microbes. Removal of dead trees may affect the amount of coarse woody debris available for soil formation. On some areas, past activities may have already impacted soils.

Methods of Measuring Effects

Net increase (acres) of detrimental soil condition in salvage harvest units after active restoration activities.

Acres of salvage harvest in areas more susceptible to soil movement.

Wildlife

Burned Forest Habitat

Salvage logging activities would remove dead trees and fire-injured trees expected to die within one year from 10 DBH up to and including 28 inches DBH. Removal of these trees could adversely affect wildlife species that depend on burned forest and snags by reducing habitat effectiveness. Removal of dead trees could cause a loss of foraging and nesting habitat for cavity-nesting species.

Methods of Measuring Effects

Minimum percent area retained within harvest units.

Minimum percent stand replacing burn retained within 100 acre 'neighborhoods'.

Acres and percent harvested by forest type within 5th order watersheds.

Forest Vegetation

There is a concern that large areas, particularly in the dry forest/ponderosa pine stands, would not be allowed to recover because of human intervention following the Tripod Fire.

Method of Measuring Effects

Acres/percent of each vegetative type proposed for salvage harvest within the fire area.

Tree mortality levels are high in many of the proposed salvage harvest units in the Tripod Fire and will require reforestation to restore forest vegetation. In some areas, a seed source is located within or adjacent to units, and other areas this is not the case. Reforestation is required on deforested, suitable (for timber production) lands where salvage harvest activities are conducted (USDA Forest Service 2002b). Reforestation of these deforested areas should be completed within five years of completion of harvest activities.

Method of Measuring Effects

Acres anticipated to be planted and naturally reforested

Salvage harvest activities such as log yarding can compact the ground, which could reduce the success of natural tree regeneration and reduce growth rates. Log yarding can also kill young trees that have regenerated if the logging is delayed too long.

Method of Measuring Effects

Percent soil disturbance in salvage harvest units proposed for natural reforestation.

Plant Communities

Salvage harvest activities such as ground-based and skyline yarding, have the potential to slow the natural rate of vegetative recovery by stressing residual live root crowns and below-ground plant parts through site alteration, soil compaction, and/or soil displacement. This disturbance could also affect the micro-habitat for soil microbes necessary for vegetative recovery.

The Tripod fire burned over 175,000 acres of which 30% is considered high severity. A high severity burn produces a condition where the litter layer, soil organic horizons, and much of the coarse woody debris are consumed by fire. Root crowns and other below ground tissues may be damaged or killed via heating of plant parts in the upper soil layers. On high severity burn areas vegetative recovery is dependent on off-site species colonization and from residual species that re-sprout from deeply buried plant parts that were not damaged in the fire. With increasing fuel consumption there could be a decrease in the rate of natural vegetative recovery. Salvage harvest could further alter the site potential for native plant recovery, particularly on high severity sites, by increasing the time it takes for full post-burn plant recovery.

Method of Measuring Effects

Acres of ground-based and skyline logging in high burn severity areas

Invasive Plants

Post-fire salvage activities such as ground-based, helicopter and skyline logging could contribute to the spread of invasive plants by further disturbing soil and shade and removing remaining cover provided by dead and dying trees. The soil disturbance caused by the Tripod fire could facilitate the introduction, spread, and establishment of invasive plant species. Since roads are the primary vector for weed dispersal, new and existing invasive plant species could be introduced to the area by equipment and vehicles from other locations.

The Tripod fire burned with a mosaic of low, moderate and high burn severities. Low severity burns often invigorate desirable vegetation by providing favorable conditions for growth and recovery. Moderate and high severity burned areas can reduce community complexity, expose ground surfaces, increase nutrient levels, and increase light conditions by reducing canopy cover, and disturbing soils. These conditions are favorable to invasive plant species and have the potential for invasive plants to out-compete desirable vegetation. Salvage activities could further disturb soils and potentially introduce, spread and contribute to the establishment of invasive plants.

Methods of Measuring Effects

- Miles of closed roads that would be re-opened, then closed
- Miles of temporary road construction
- Acres of detrimental soil disturbance by type of logging systems
- Acres of current known weed infestation that intersect proposed project activities
- Acres of moderate and high burn severity by logging systems

Recreation

The project area is used for dispersed recreation activities such as camping, hiking, hunting, driving for pleasure, mountain biking, horseback riding, motorcycling and snowmobiling. All these activities occur both on and off roads and trails throughout the project area. System trails located within salvage harvest units could be damaged by log yarding. Salvage harvest operations such as tree falling, log yarding, and timber haul may make it unsafe for the recreating public to be in the area. To provide for safety, salvage harvest activities could restrict public access in and to portions of the project area. In addition, if salvage occurs in the winter, portions of roads that are normally groomed for snowmobile travel may be plowed for timber haul. This snowplowing and log haul may restrict routes that are normally used for snowmobiling, affecting snowmobile access to large areas outside as well as within the project area. Creation of temporary roads and skid trails may provide OHV access to areas not currently used by OHV recreationists.

Salvage harvest-related traffic is comprised of logging truck hauling logs, heavy equipment transport, and contractor and administrative pickups and crew carriers. This salvage harvest-generated traffic produces noise, dust and congestion that could affect rural residences along haul routes.

Methods of Measuring Effects

- Amount of area where public access may be restricted for safety during salvage operations
- Estimate of vehicle trips/duration along roads with recreation residences
- Miles of open road along which danger trees would be felled
- Potential miles of groomed snowmobile route restriction

Inventoried Roadless Areas and adjacent Areas with Undeveloped Characteristics

In the middle portion of the fire area there are three Inventoried Roadless Areas (IRAs): Granite Mountain, Tiffany, and Long Swamp. Adjacent to these areas are additional areas that have an undeveloped character. The IRAs cover 115,860 acres and the undeveloped areas cover 27,701 acres, for a total area of 143,561 acres. Within the fire area, the IRAs

comprise 73,342 acres and the adjacent undeveloped areas comprise 23,177 acres for a total area of 96,519 acres. Salvage activities such as road opening (increased access) and timber harvest (noise, dust and smoke) have the potential to affect the undeveloped character of these areas.

Method of Measuring Effects

Acres of Inventoried Roadless Areas and undeveloped areas that have some type of activity or access during project implementation

Fuels

In fuels analysis coarse woody debris (CWD) is defined as dead standing and downed pieces larger than or equal to 3 inches in diameter. Salvage harvest could reduce CWD loadings by varying amounts throughout the Tripod Fire Salvage project area. An acceptable quantity of CWD that provides desired biological benefits, without creating an unacceptable fire hazard or potential for high burn severity is defined by Brown et al. (2003) as amended for the Okanogan National Forest by Harrod (2007). Salvage harvest could also affect the amount of small woody fuels on the landscape which might increase short-term fire risk.

Methods of Measuring Effects

Coarse woody debris loadings in thirty years
Changes in resistance-to-control rating in five, fifteen and thirty years

Air Quality

Post-salvage fuels treatment activities such as landing-pile burning could temporarily decrease air quality in communities down wind of the project area.

Methods of Measuring Effects

Expected total particulate emissions (PM10 and PM2.5)
Approximate number of landing piles to be burned.

Transportation

There was a public concern about developing any further roads within the project area. Additional roads could reduce wildlife habitat effectiveness and cause additional erosion and sedimentation. There was also a public concern about management of existing roads; that no roads that were closed before the fire should be opened, nor that any roads that were opened before the fire should be closed.

Method of Measuring Effects

Miles of road that would be used for salvage harvest operations
Open road miles that would be closed post-project
Currently closed roads that would be open post-project

Range

Salvage logging activities could retard post fire forage vegetation recovery and increase the time needed to rest the pasture from livestock grazing by mechanical damage to regenerating plants and by creating additional soil disturbance with the potential for soil erosion and soil compaction.

Dense vegetation creates natural barriers that livestock do not ordinarily drift through. Grazing allotment and pasture division boundaries have been established along natural drift barriers. These drift barriers that have been opened by the fire could be further disturbed by salvage logging and result in increasing livestock drift.

Salvage logging activities could change livestock distribution patterns that increase the use of riparian areas. There is a potential that an increase in transitory range within watering distance (the distance livestock would typically travel to drink) of riparian areas would result in an increase in the occurrence of livestock using the stream, which could limit riparian vegetation recovery.

Methods of Measuring Effects

- Number of salvage harvest acres within each pasture
- Number of acres of salvage harvest soil disturbance within affected grazing allotments
- Number of acres of capable/suitable rangeland within salvage units for each pasture
- Miles of natural livestock drift barriers modified by salvage harvest operations
- Acres of salvage harvest units within 1/4 mile of perennial RHCAs

Scenic Viewsheds and Landscape Character

Local residents, recreation users and tourists all value the scenery within the Tripod Fire Salvage Project area. Prior to the Tripod fire, the vegetative patterns ranged from a mostly open, coarsely textured pattern to a multi-storied highly textured mosaic pattern. The area now appears as a burned landscape with the vegetation burn severities a mosaic of low to moderate to high in the foreground and middleground views from the main recreational travel routes. Areas of unburned mosaic patterns are intermixed in the landscape. Salvage harvest operations such as tree removal, establishment of skid trails and skyline corridors and road establishment could affect the scenic resource by altering the naturally established form, line, color and texture in the foreground and middleground of a given viewshed. There are four main areas that are analyzed in the context of viewsheds; the Chewuch Viewshed, the Middle Salmon-Boulder Viewshed, Methow Valley Viewshed, and the Conconully Viewshed.

Methods of Measuring Effects

- Acres of skyline and ground-based salvage harvest units within the foreground visible from given viewsheds and viewpoints
- Acres of skyline and ground-based salvage harvest units within middleground visible from given viewsheds and viewpoints

Heritage Resources

Heritage resources include any sites, buildings, structures, features, deposits and objects that contain evidence of past human activities and that are greater than 50 years old. Heritage resources also include sites that are associated with a continuing tradition of spirituality or are of cultural importance to a local community.

Seven heritage resource sites lie within the project area. Some of these sites have been determined to be eligible for listing in the National Register. These heritage resources are nonrenewable resources that can be vulnerable to ground disturbing activity and in some instances, to increased public access or alterations in the surrounding landscape. Proposed project activities could physically disturb known or undiscovered cultural sites.

Method of Measuring Effects

Quantity of inventoried heritage resources and traditional cultural properties within or directly adjacent to harvest units or roads

Issues Eliminated From Detailed Study

Timing of Economic Recovery of Fire-killed and Damaged Trees

Trees that are killed by fire deteriorate over time and lose economic value. Dead and dying ponderosa pines in the project area are infected by a fungus, which is introduced by insects burrowing into the tree bole. The infection is called “blue stain” because it discolors the wood and devalues the timber by approximately one-half its value. The infection does not spread over-winter because most insects are inactive. However, the infection will spread to more trees when insects become active again in the spring and early summer. Therefore, in order to recover more timber economic value, it is important to harvest dead and dying trees from the project area as soon as possible.

The issue of “timing of recovery” is relevant if one alternative could harvest dead and dying trees quicker than others. The action alternatives differ mainly in where salvage harvest would occur and what trees would be harvested. The action alternatives do not differ in the Forest Service’s ability to bring timber sale offerings to the market. There are two factors that affect the Forest Service’s ability to put salvage harvested timber on the market; 1) Time needed to work through the environmental analysis process, and 2) Time needed to layout, mark, cruise, appraise salvage timber and prepare timber sale contracts. These are both items that are inherent in implementing each alternative and do not differ between action alternatives. Therefore, this issue will not be analyzed in further detail.

Forest Stewardship Certification Standards

Forest certification is a voluntary process, intended for privately owned timberland, that allows consumers to know that the wood products they buy were grown and harvested in a way that protects forests for the long term. Certifiers assess the on-the-ground forest practices of a given operation against a set of environmental and social criteria. A public issue was raised questioning whether the Tripod Fire Salvage Project met these standards. The US Forest Service is not a part of this certification system. This issue will not be analyzed further.

Old Growth/Late Old Structure

Old growth forests often contain several canopy layers, variety in tree sizes and species, decadent old trees, and standing and dead woody material. They are defined in the Okanogan Forest Plan as, a stand of trees, 30 acres or larger, that has the presence of large pine trees with 15 or more trees per acre greater than 18 inches DBH; presence of large snags with two or more snags per acre greater than 12 inches DBH; presence of large down logs with three or more per acre 12 inches diameter; presence of a multi-storied canopy; and the presence of 50 percent overhead crown closure (20-5--percent crown closure on ponderosa pine dominated stands or dry site Douglas-fir). The Eastside Screens (USDA Forest Service 1995a) define Late-Old Structure as multi-strata (multi-level canopy) with large trees or single strata (single canopy stratum) with large trees. In both these cases, large trees are common, and medium or large trees dominate the overstory. These stands are valued because of the unique habitat that they provide for wildlife and plants, as well as for long term soil supplementation. Salvage harvest which removes dead and fire injured trees expected to die within one year of project implementation, would eliminate some of the components of these stands. However, the Forest Plan Standards and Guidelines direct that there should be no timber harvest in mixed conifer old growth stands.

By design, none of the proposed Tripod salvage units are located in old growth habitat, or in stands with late old structure. No trees over 28 inches DBH nor trees greater than or equal to 21 inches DBH that have a moderate or high survival potential would be salvaged. Because project activities will not enter old growth habitat or stands with late old structure, this issue will not be analyzed further.

Northwest Forest Plan

In a comment about retaining snags on the landscape, requirements from the *Record of Decision for Amendments to the Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl and the Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl* (Northwest Forest Plan, USDA and USDI 1994) were proposed for application to the Tripod Fire Salvage project. No part of the Tripod Fire Salvage Project is within the area covered by the Northwest Forest Plan. This issue will not be analyzed further.

Mass Wasting and Channel Maintaining Processes

Salvage harvest operations such as tree removal and yarding operations that remove the large structural woody components have the potential to change mass wasting and channel maintaining processes that result from mass wasting in undisturbed landscapes. Monitoring has indicated that aquatic habitat and fish populations have responded favorably to habitat changes following the nearby Farewell Fire because of the delivery of large wood, rock, cobble, gravel and fines in very large and sudden pulses. Salvage activities could change the outcome of these events by removing the large structural woody component of these events. However, areas that are prone to these events were removed from the project proposal during the design phase. None of the action alternatives propose activities in areas prone to mass wasting or channel changing events. Therefore, this issue will not be analyzed further.

Timber Haul on Bear Creek Road

There was a public concern about timber haul on the Bear Creek Road causing noise and dust adjacent to residences. There is no timber haul proposed for the Bear Creek Road in any of the action alternatives. Therefore, this issue will not be analyzed further.