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Final Environmental Impact Statement

GOTCHEN RISK REDUCTION AND RESTORATION PROJECT

Mt. Adams Ranger District, Gifford Pinchot N.F.
Skamania and Yakima Counties



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**Gotchen Risk Reduction and Restoration Project
Final Environmental Impact Statement
Mt. Adams Ranger District, Gifford Pinchot N.F
Skamania and Yakima Counties**

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Abstract:

Forest management actions over the past century within the 19,700-acre Gotchen Planning Area of the Gifford Pinchot National Forest, including wildfire suppression and selective logging, have dramatically changed the forested landscape from its historical condition. The resulting condition is a landscape that dominated by dense, multi-layered stands and concentrations of down wood. The action is needed, because of the present risk of losing late-successional function from large-scale ecological disturbances (ongoing defoliation caused by insect and disease activity), and the threat of losing habitat from large, stand-replacing fires. Three action alternatives were designed to address the significant issues:

- Efficacy of risk reduction activities to reduce the threat of a stand-replacing fire,
- Impacts to northern spotted owl habitat and designated critical habitat,
- Impacts to riparian areas, and
- Public road access and dispersed recreation

Shaded Fuelbreaks are the centerpiece of Alternative B. Under this alternative, risk reduction treatments would be implemented across 1,684 acres. The emphasis of Alternative C is to reduce fire risk and improve late-successional function and resiliency by *directly* treating fuels and reducing understory density in 2,220 acres within high-risk areas. Alternative D emphasizes treatment of ground and ladder fuels to minimize the spread of fire by treating a total of 1,645 acres. Alternative A represents the No Action alternative.



Large ponderosa pine
from the Gotchen
Planning Area, c. 1936.

SUMMARY

The Gifford Pinchot National Forest proposes to reduce the risk (threat) of large stand-replacing fire through preventive strategies. The area affected by the proposal includes a 19,700-acre portion of the Gifford Pinchot National Forest, known as the Gotchen Planning Area, which includes the Gotchen Late Successional Reserve (LSR) and Matrix lands to the south and east of the LSR. This area is located on the east slopes of the Cascade Range, within the White Salmon River watershed, south of Mt. Adams and east of the White Salmon River. The action is needed, because of the present risk of losing late-successional function from large-scale ecological disturbances (ongoing defoliation caused by insect and disease activity), and the threat of losing habitat from large, stand-replacing fires.

Forest management actions over the past century, including wildfire suppression and selective logging, have dramatically changed the forested landscape from its historical condition or reference condition to a landscape dominated by dense, multi-layered stands and concentrations of down wood. Defoliation from elevated insect and disease activity is impacting late successional habitat in two primary ways. First, the budworm defoliation and resultant tree mortality is affecting fuel loading. Second, within the Gotchen Planning Area approximately 76% of the forest currently provides suitable habitat for the northern spotted owl. The decline and loss of suitable habitat is directly affecting owl populations within the LSR. It is an indication that the late-successional forest stands within the Gotchen Planning Area have lost desired function as habitat for other late-successional dependent species.

These issues led the agency to develop alternatives to the originally proposed action including:

- Alternative A – No Action
- Alternative B (the Proposed Action) – Shaded Fuelbreaks are the centerpiece of this alternative. Risk reduction treatments would be implemented across 1,684 acres, including 1,139 acres within the LSR. Shaded Fuelbreaks are strategically located along existing roads to “compartmentalize” large blocks of forest that have heavy fuel loads. Additional Units that complement the Shaded Fuelbreaks are treated to reduce stand densities and fuel loads to break up the continuity and arrangement of the stands and fuel beds. In general, the Proposed Action takes a somewhat conservative approach in reducing the understory grand fir within the areas in the LSR hardest-hit by the spruce budworm. This alternative includes 7.5 miles of temporary road construction or reconstruction.
- Alternative C - The emphasis of this alternative is to reduce fire risk and improve late-successional function and resiliency by *directly* treating fuels and reducing understory density in high-risk areas. This alternative treats a total of 2,220 acres, of which 1,701 acres are within the LSR and 98 acres are within riparian habitat. From a fuels-management perspective, this alternative utilizes a more “traditionalist”

approach by directly modifying vegetation and fuel profiles in areas of high fire hazard and high stand densities. Alternative C includes 4.3 miles of temporary road construction or reconstruction.

- Alternative D – This alternative emphasizes treatment of ground and ladder fuels to minimize the spread of fire by treating a total of 1,645 acres, 1,100 within the LSR. Impacts to suitable owl habitat are minimized by restricting live tree removal within proposed fuelbreaks to 10” dbh, or less thereby maintaining overstory canopy cover near current levels. Treatment within riparian habitat is limited to removal of hazard-prone trees less than 6” dbh. Alternative D includes 4.1 miles of temporary road construction or reconstruction.

All action alternatives include 24.8 miles of road closure or decommissioning within the LSR and Matrix. Specifically, the road management proposals would reduce road density, decrease maintenance costs, reduce impacts to water quality, minimize conflicts with wildlife, and reduce vehicular access to roads not essential for fire suppression.

In addition, all of the action alternatives include a 10-acre quaking aspen restoration project at Gotchen Creek Guard Station. Quaking aspen historically occupied more of this landscape, but have been out-competed by conifers.

Based upon the effects of the alternatives, the responsible official will decide:

- Whether or not to remove the dead and dying timber from the Gotchen Matrix
- Whether or not to implement risk-reduction activities within the Gotchen LSR
- Whether or not to implement road-related actions—decommissioning, or closing
- Whether or not to implement the quaking aspen restoration project

If the District Ranger decides to implement any of the above, the decisions on the activity type, location, priority, timing and sequencing will be made and documented in the Record of Decision (ROD).

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CHAPTER 1. PURPOSE OF AND NEED FOR ACTION

DOCUMENT STRUCTURE

The Forest Service has prepared this Environmental Impact Statement in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Impact Statement discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives. The document is organized into five chapters:

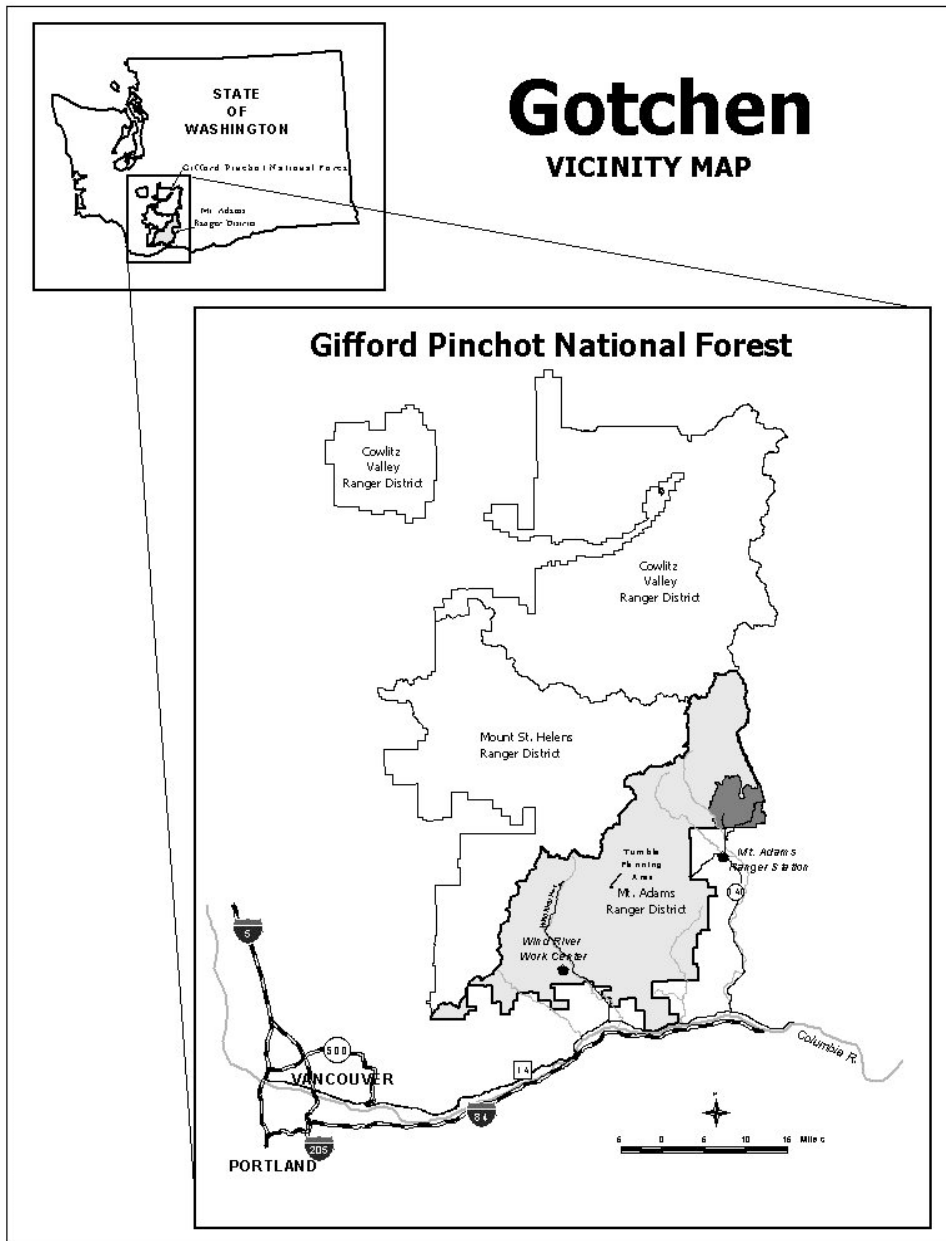
- *Chapter 1. Purpose and Need for Action:* The chapter includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Chapter 2. Alternatives, including the Preferred Alternative:* This chapter provides a detailed description of the agency's Preferred Alternative as well as other alternative methods for achieving the stated purpose. These alternatives were developed based on significant issues raised by the public and other agencies. This discussion also includes mitigation measures. Finally, this section provides a summary table of the environmental consequences associated with each alternative.
- *Chapter 3. Affected Environment:* This chapter describes the environment of the area affected by the proposed action (Alternative B) and the alternatives. It defines the baseline conditions against which the impacts of the proposed action and alternatives are compared to. This analysis is organized by resource area
- *Chapter 4. Environmental Consequences:* This chapter describes the environmental effects of implementing the proposed action (Alternative B) and other alternatives. This analysis is organized by [insert topic (i.e., resource area, significant issues, environmental component)].
- *Chapter 5. Consultation and Coordination:* This chapter provides a list of preparers and agencies consulted during the development of the environmental impact statement.
- *Appendices:* The appendices provide more detailed information to support the analyses presented in the environmental impact statement.
- *Index:* The index provides page numbers by document topic.
- *Map Packet:* This packet includes all of the full-page color maps and figures that are referenced throughout the FEIS and an errata sheet.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Mt. Adams Ranger District on the Gifford Pinchot National Forest.

BACKGROUND

The Gotchen Planning Area (or landscape) is a 19,700-acre portion of the Gifford Pinchot National Forest on the east slopes of the Cascade Range, within the White Salmon River watershed, south of Mt. Adams and east of the White Salmon River. The legal description for the Gotchen Planning Area is Sec 1 – 3, 10 – 16, 21 – 28, 33 – 36, T. 7 N, R. 10 E; Sec 6 – 9, 16 – 21, 28 – 33, T. 7 N, R. 11 E, Willamette Meridian. Map 1-1, below, shows the vicinity of the Gotchen Planning Area in relation to the Gifford Pinchot National Forest within the State of Washington.

Map 1-1. Gotchen Planning Area vicinity map.



The area includes late-successional forest that provides habitat for sustaining late-successional-dependent plant and animal communities. The area also provides a link between late successional forest within and outside of the National Forest boundary.

Forest management actions over the past century, including wildfire suppression and selective logging, have dramatically changed the forested landscape from its historical condition, or reference condition. Most of the old-growth trees that once dominated this landscape have been removed through selective timber harvest. Fire has been removed from the Gotchen landscape for decades through policies of effective fire exclusion. The “historical” fire cycles in this portion of the eastern Cascades varied, on average, from 10 – 22 years in the lower elevations, to every 150 years or more in the upper elevations. (Agee 2001).

The resulting condition is a landscape dominated by dense, multi-layered stands of grand fir and Douglas-fir, with a few remnant old-growth ponderosa pine and Douglas-fir, and concentrations of down wood. From a fire perspective, this results in a distribution of vegetation with increased surface and ladder fuel loadings that are considered far above historic levels. Fire intensity levels are increasing, and crown fires may now occur in forest types where they were once rare.

Spruce budworm was first detected at elevated levels in the eastern, drier side of the Gotchen landscape in the early 1990s. The Gotchen Planning Area represents the western tip of the budworm epidemic that affects 300,000 acres of non-federal land to the east. At this time, spruce budworm has caused some defoliation in nearly all of the Gotchen landscape. High levels of defoliation have been recorded in excess of 8,000 acres across the Gotchen landscape. While some insect and disease activity is endemic to forest ecosystems, the level of defoliation and mortality in portions of the Gotchen Planning Area exceeds normal levels due to the abundance and distribution of an understory of grand fir.

This defoliation is impacting late successional habitat in two primary ways. First, the budworm defoliation and resultant tree mortality is affecting fuel loading. As a tree dies, the fine branches and limbs fall off the trunks, causing a rapid build-up of fuel on the forest floor. Fuel loading has increased to the point there is concern that initial fire-fighting efforts (“initial attack”) would be unsuccessful in containing a large, high intensity wildfire. It is estimated that 25% of the Gotchen landscape has hazardous fuel conditions. Hazardous fuel conditions occur when the amount, arrangement, condition and location of vegetation (fuel) forms a threat of ignition or of suppression difficulty.

Second, within the Gotchen Planning Area approximately 76% of the forest currently provides suitable habitat for the spotted owl. The decline and loss of suitable habitat is expected to continue throughout the area as forest stands die from stresses related to insects and disease. There are six known historic spotted owl nesting areas within the Gotchen Planning Area, but occupancy at these sites has declined. Only two activity centers were confirmed occupied in 2003 (National Council for Air & Stream Improvement, Inc, or “NCASI”).

PURPOSE AND NEED FOR ACTION

Purpose for Action

The purpose for taking action within the Gotchen Planning Area is derived from a combination of Gifford Pinchot Forest Plan direction, the Late Successional Reserve Assessment, the Upper White Salmon River Watershed Analysis, and the “need” to manage the current vegetation and fuel conditions in the Gotchen Planning Area, as described in the following section. The purpose is seven-fold:

- Reduce abundance of spruce budworm host species (grand fir)
- Increase species diversity (ponderosa pine, western larch, Douglas-fir)
- Reduce inter-tree competition-related stress to scattered remnant old-growth trees
- Reduce fuel concentrations and reintroduce prescribed fire in areas within the Gotchen landscape that historically experienced a high frequency, low intensity fire regime
- Influence potential fire behavior through fuel and vegetation treatments to facilitate ground based suppression tactics
- Restore or enhance special habitats—for example groves of aspen, and mardon skipper habitat— where consistent with other objectives
- Limit non-essential motorized vehicle access to reduce conflicts with other resources while reducing the potential for accidental human-caused, road-side fire starts

Need For Action

This action is needed due to the current risk of losing late-successional function through large-scale ecological disturbances (insect and disease), and the threat of losing habitat from stand-replacing fires. This action responds to the goals and objectives outlined in the Gifford Pinchot National Forest Land and Resource Management Plan (referred to as the “Forest Plan”) as amended in 1994 by *The Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and Guidelines for Late-Successional and Old-growth Forest Related Species within the Range of the Northern Spotted Owl*, commonly known as the “Northwest Forest Plan.” The Forest Plan direction is provided in the following section.

Reduce the Risk of Losing Late-Successional Function and Resiliency

There is the need to reduce the risk of losing late-successional function and resiliency through large-scale ecological disturbances (insect and disease). Grand fir is highly susceptible to both insect and disease pathogens. The abundance and distribution of grand fir within the Gotchen Planning Area make the landscape vulnerable to spruce budworm and root disease, as evidenced by the current situation. Actions that reduce tree density, promote species diversity, and reintroduce fire are needed to increase ecological diversity and resiliency to large-scale disturbances, thereby reducing the risk of losing late successional function.

Over the last century, the majority of the old growth ponderosa pine and Douglas-fir trees that once dominated the Gotchen landscape were cut for their value as wood products. Today, relatively few of these large trees remain. Those that remain are a very important

component of ecological diversity that would be irreplaceable in the foreseeable future. These “legacy trees”, however, show signs of stress, caused by the intense competition from the dense understory of grand fir. If the competition is not reduced, these trees would continue to be stressed and could succumb to moisture and nutrient deficit.

Much of the forest within the Gotchen landscape is collapsing as large patches of trees die off from the inter-tree competition, stress of defoliation from spruce budworm, and root disease. While some natural mortality contributes needed snags and down logs to late-successional forests, the late-successional habitat in the Gotchen Planning Area has been compromised as tree mortality has progressed. Throughout the central portions of the Gotchen Planning Area, the dead and dying trees have reduced the canopy closure in several Units to below 40% cover, deemed the threshold for functioning suitable spotted owl habitat.

Need to Reduce the Risk (Threat) of Large Stand-replacing Fires

There is the need to reduce the risk (threat) of large stand-replacing fire through preventive strategies. The resulting widespread tree mortality associated with tree competition, defoliation and disease also contributes to the area’s vulnerability to fire. A large fire event could vastly reduce the amount of late successional habitat within the Gotchen LSR, as well as reduce or eliminate late successional/old growth structural components (remnant old growth trees, snags, down logs) important to the overall landscape. In order to reduce the vulnerability of the Gotchen Planning Area to stand-replacing fires, preventative strategies including manipulation of the vegetation, fuel loadings, and use of prescribed fire are proposed.

The fire regime in the Gotchen Planning Area tends to transition from low to high severity from south to north with increasing elevations (Agee 2001). Those areas have missed several fire cycles due to a successful fire prevention/suppression program and are now more susceptible to stand-replacing fires. Fire intensity and the potential for crown fire has increased substantially during the 20th century (Agee and Edmonds 1992). In similar forest types all through the West, forests that survived 20 to 30 low intensity burns historically are now burning with crown fires (Agee 1993, 1994).

A large, high-intensity fire would substantially impair the landscape’s ability to meet LSR and other forest management objectives, and could put threatened and sensitive wildlife species in the area at risk of destruction. A fire could also affect habitat and other values on adjacent National Forest lands, including the Mt. Adams Wilderness. In particular, such fires in the Matrix would impact regularly scheduled timber harvests, a key objective for that land allocation.

A high intensity wildfire on National Forest lands places adjacent lands at risk from fire spread. The Yakama Indian Reservation lands to the east; state and industrial timberlands to the south; and the Trout Lake community urban interface could all be directly impacted from this type of event. (Conversely, a fire, started off-Forest could spread to National Forest lands.) The nearest private residence is located approximately one and three quarter miles from the Gotchen Planning Area. Public safety is also at increased on-site risk due to the increase in snag hazards and wildfire potential.

FOREST PLAN DIRECTION

This action is planned under the direction of *The Land and Resource Management Plan for the Gifford Pinchot National Forest* (1990), commonly referred to as the “Forest Plan”. The Forest Plan was amended by the *Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* (ROD). This Amendment was signed May 20, 1994. Attachment A to the ROD, *S&Gs for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl* (S&Gs), sets forth the management direction intended to facilitate implementation of the ROD. Collectively, the ROD and Attachment A are referred to as the “Northwest Forest Plan”.

“Amendment 11” to the Forest Plan was published in February 1995. It is a compilation of the applicable portions of the Northwest Forest Plan and Chapter IV of the 1990 Forest Plan, published to serve as a convenient reference document. It is available on the Internet at www.fs.fed.us/gpnf/.

The Northwest Forest Plan added seven Land Allocations to the Forest Plan, each with its own set of standards and guidelines (Amendment 11, pg.1.1). S&Gs from the 1990 Forest Plan apply where they are more restrictive or provide greater benefits to late-successional forest-related species than the provisions of the Northwest Forest Plan; otherwise, the Northwest Forest Plan takes precedence.

Northwest Forest Plan Land Allocations

The Gotchen Planning Area is comprised of lands assigned to three of seven land allocations established by the Northwest Forest Plan: *Late Successional Reserves* (LSRs), *Riparian Reserves*, and *Matrix*. Approximately 15,200 acres (77%) in the Gotchen landscape are allocated as the Gotchen LSR interspersed with Riparian Reserves. In short, the LSRs were designated to provide late-successional and old growth forest habitat for viable, well-distributed populations of species including the spotted owl, and to help ensure that the full range of late successional biodiversity will be conserved (FEMAT IV-31). The remaining 4,500 acres of the Gotchen Planning Area (23%) are designated as Matrix with interspersed Riparian Reserves. Matrix lands provide for a variety of resource and forest product needs, including regularly scheduled timber harvest. Riparian Reserves are designed primarily to restore and maintain the health of aquatic systems and their dependent species.

More in-depth descriptions of the allocations, below, are derived from both ROD and the S&Gs for the Northwest Forest Plan in Map Packet – Map 1, displays the Northwest Forest Plan Land Allocations.

Late Successional Reserves

Late Successional Reserves have been established to maintain a functional, interactive, late-successional and old growth forest ecosystem. They are designed to serve as habitat for late successional and old growth related species including the northern spotted owl (ROD, p. 6). The standards and guidelines are designed to maintain late-successional forest ecosystems including protection from loss due to large-scale fire, insect and disease epidemics and major

human impacts. Active vegetation management is permitted within LSRs only to improve, maintain, or protect late successional forests, or to salvage and replace forests killed by large-scale disturbances such as fire or insect attacks (Northwest Forest Plan S&Gs, pp. B-1, B-5). Management may also be required to reintroduce natural disturbance, such as fire, or to minimize socially unacceptable impacts (*Basis for Standards*, p. B-7). Recreation, developments, and other non-silvicultural activities are generally permitted in LSRs if the primary late-successional forest habitat is not significantly compromised (Northwest Forest Plan S&Gs pp. C-16 – C-91).

Riparian Reserves

Riparian Reserves provide an area along all streams, wetlands, ponds, lakes, and unstable and potentially unstable areas where riparian-dependent resources receive primary emphasis. (*Northwest Forest Plan S&Gs*, p. A-5). They have been established to maintain healthy riparian zones, functioning aquatic habitat, and clean natural stream-flows. Riparian reserves also help conserve habitat for organisms dependent on the transition zone between riparian and upland areas and serve as connectivity corridors among the late successional reserves. Within the Gotchen Planning Area, they encompass areas adjacent to perennial and intermittent streams. Prescribed widths of the reserves apply to all watersheds until a site-specific analysis and appropriate decision-making process is utilized to change the reserve boundaries (*Northwest Forest Plan Basis for Standards*, p. B-13).

Riparian reserves are one of four components of the aquatic conservation strategy (ACS) designed to restore and maintain the ecological health of watersheds and aquatic ecosystems at the watershed and landscape scales (Northwest Forest Plan Basis for Standards, pp B-12, B-13).

Matrix

Matrix lands are those areas outside of the other six allocations (Late Successional Reserves, Managed Late-Successional Areas, Riparian Reserves, Congressionally Reserved Areas, Administratively Withdrawn Areas, and Adaptive Management) defined by the Northwest Forest Plan. It is the area where most timber harvest and other silvicultural activities will be conducted. Forest stands in the Matrix provide connectivity between LSRs and provide habitat for a variety of organisms associated with both late- successional and younger forests. Matrix standards and guidelines provide for maintenance of ecologically valuable structural components such as down logs, snags, and large trees, as well as add ecological diversity by providing early-successional habitat (*Northwest Forest Plan S&Gs*, pp. B-1 – B-2).

Gifford Pinchot Land Management Plan (Forest Plan)

The amended Forest Plan places lands within the Gotchen Planning Area into Management Areas described below. The goal for each Management Area is provided, along with the assigned Visual Quality Objective (VQO) and Recreation Opportunity Spectrum (ROS). (Refer to the Amendment 11 for a complete description of these land allocations.) The VQOs are categories of acceptable landscape alteration measured in degrees of deviation from the

natural-appearing landscape. The ROS is a framework for stratifying and defining classes of outdoor recreation environments, activities and experience opportunities.

Sixteen Management Areas — **LS, RL, VL, UD, UH, NA, Y8, IL, 9L, ES, TS, NA, VL, VM, 3W, 9L**—are within the Gotchen Planning Area. The management areas within the Late Successional Reserves and Matrix are described below. Map Packet -- Map 2, displays the Forest Plan Management Areas with the exception of Y8, IL, and 9Y.

Management Areas within the LSR

LS – General Late Successional Reserve. The allocation goal is to protect and enhance conditions of late-successional and old-growth forest ecosystems. The Visual Quality Objective (VQO) is Retention; Recreation Opportunity Spectrum (ROS) is Roded Natural (Amendment 11, pp. 5-3 – 5-32).

RL – Roded Recreation. The goal is to provide a variety of dispersed recreational opportunities in areas conveniently reached by auto. The VQO is Retention; the ROS Roded Natural (Amendment 11, pp. 5-36 – 5-38).

VL – Visual Emphasis within the Late Successional Reserve. The goal is to provide a visually natural or near-natural landscape as viewed from the designated travel route or use area. The VQO for this allocation is Retention; Recreation ROS is “Roded Natural” (Amendment 11, pp. 5-49 – 5-51).

UD and UH – Unroded Recreation without Timber Harvest. The goal is to provide a variety of dispersed recreation opportunities in a semi-primitive or undeveloped setting. VQOs are Retention for both UD and UH. Motorized recreation is allowed in UH allocation (ROS Semi-primitive Motorized), where lands allocated UD only allow non-motorized recreation (ROS Semi-primitive Non-Motorized (Amendment 11, pp. 5-44 – 5-46).

NA – Wild and Scenic Rivers. The goal is to protect Wild, Scenic, or Recreational River characteristics pending possible addition to the National Wild and Scenic Rivers System. This section of the White Salmon River is designated “Scenic”; its VQO is Retention; the ROS is Roded Natural (Amendment 11, pp. 5-44 – 5-46). The suitability study was completed in 1997 and forwarded to Congress to determine the river’s federal designation.

Y8 – Smith Butte Proposed Research Natural Area (RNA): Currently being evaluated for RNA status. The goal is to manage the RNA in a natural state for research and education, and/or to maintain biological diversity. Existing RNAs are classified under the Code of Federal Regulations, 36 CFR 251.23 (Amendment 11, p. 4-10). This direction applies to potential RNAs, such as Smith Butte, that are being/or will be actively evaluated for RNA status through the NEPA process. For Smith Butte, the VQO is preservation; the ROS is Roded Natural.

IL – Wildlife Special. The goal is to sustain or enhance a limited and significant habitat to support dependent wildlife. This is a great blue heron rookery, (field unit number 3078). The VQO is Retention and the ROS is Roded Natural. This allocation is not shown on the land allocation map.

9L – Special Interest (Wildlife, Historic, Botanical). The goal is to maintain the special features in a substantially natural condition while providing for an appropriate level of public access and enjoyment. The VQO is Retention and the ROS is Roaded Natural. The Wildlife Special Interest Area is a great blue heron rookery (3036). The two Historical are peeled cedar sites (3101; the second has not been assigned a field unit number) along Wicky Creek managed for long-term preservation under the Peeled Cedar Management Plan. The one Botanical Area is a fringed-pinesap (*Pleuriscospora fimbriata*) site (3114). None of the Special Interest Allocations are shown on the land allocation map.

Management Areas within the Matrix

ES – Deer and Elk Winter Range: The goal is to manage habitat in conjunction with all other management areas within the biological winter range to provide a mix of forage and cover that, over time, maintains a level of deer and elk commensurate with other resource management goals and objectives. The VQO is Modification; the ROS Roaded Natural (Amendment 11, pp. 6-21– 6-24).

TS – General Forest. The goal is to produce a predictable and sustainable level of timber sales and non-timber resources that will not degrade the environment. The VQO for General Forest is Modification; the ROS is Roaded Modified (Amendment 11, pp. 6-25 – 6-27).

NA – Scenic and Recreational Rivers. The goal is to maintain Scenic and Recreational river characteristics (Scenic for the White Salmon River) pending possible addition to the National Wild and Scenic Rivers System. The VQO is Retention and ROS is Roaded Natural (Amendment 11, pp. 4-28 – 4-29).

VL and VM – Visual Emphasis within the Forest Matrix. The goal is to provide a visually natural or near-natural landscape was viewed from the designated travel route or use area. The VQO for VL is Retention; the VM. VQO is partial Retention. The ROS is Roaded Natural for both prescriptions (Amendment 11, pp. 6-41– 6-44).

3W – Administrative Site. The goal is to provide for facilities required to accomplish the administration of the National Forest in an efficient manner. The Mt. Adams Seed Orchard occupies this site. The VQO is modification and the ROS is Rural (Amendment 11, pp. 4-3 – 4-5).

9L – Special Interest (Botanical). The goal is to maintain the special features in a substantially natural condition while providing for an appropriate level of public access and enjoyment. The VQO is Retention and the ROS is Roaded Natural rookery (3036). There is one Botanical Special Interest Area for the Trout Lake Big Tree (3047). This allocation is not shown on the land allocation map.

Late Successional Reserve Assessment

As required by the Northwest Forest Plan, a Late Successional Reserve Assessment was completed prior to planning for risk reduction activities within the Gotchen LSR. The Gifford Pinchot National Forest Late Successional Reserve Assessment (LSRA) was completed in 1997 and approved by the Regional Ecosystem Office. The LSRA was updated in 1999 to specifically address the fire threat in the Gotchen LSR.

The Record of Decision resulting from this FEIS may differ from the recommendations contained in the LSRA. In that case, the LSRA will be updated based on the more rigorous analysis of this FEIS. Such activities may also require approval from the Regional Ecosystem Office prior to the issuance of the Record of Decision. The LSRA is available on the Gifford Pinchot website (<http://www.fs.fed.us/gpnf/>).

Aquatic Conservation Strategy

In addition to the Land Allocations, the Northwest Forest Plan developed the Aquatic Conservation Strategy (ACS) to restore and maintain the ecological health of watersheds and aquatic ecosystems at the watershed and landscape scales. All actions must “meet ACS objectives”, or “must not retard or prevent attainment of the ACS objectives”, or “attain ACS objectives” (S&Gs, p. B-10). The Aquatic Conservation Strategy involves four components—Riparian Reserves, Key Watersheds, Watershed Analysis, and Watershed Restoration (S&Gs, p. B-12 – B-34). (Riparian Reserves were covered in the land allocation discussion, above, and are not repeated in this section.)

Key Watersheds are a system of large refugia crucial to at-risk fish species and stocks and provide high water quality (S&Gs p. B-12). *Tier 1* watersheds contribute to anadromous salmonid, bull trout and resident fish conservation (S&Gs p. B-18); *Tier 2* watersheds are sources of high quality water and may not contain at-risk fish stocks (S&Gs p. B-19). Portions of the Upper White Salmon River subwatershed are a Tier 2 Key Watershed. The majority of the Gotchen Planning Area (95%) is a non-key watershed.

Watershed Analysis procedures evaluate geomorphic and ecologic process occurring in specific watersheds “...to meet specific management and social objectives.” (S&G, p. B-21). The analysis is required in Key Watersheds, Roadless Areas, and Riparian Reserves and must be completed before initiating actions within a Key Watershed. (Watershed analysis is recommended in other watersheds (S&Gs, p. B-30). It is one of the principal analyses used in making decisions implementing the ACS. It is not a decision-making document. “Project-specific NEPA planning will use information developed from watershed analysis...if watershed analysis shows that restoring certain resources within a watershed could contribute to achieving landscape or ecosystem management objectives, then subsequent decisions will need to address that information.” (S&Gs, p. B-21) Watershed analysis also provides the basis for monitoring and restoration programs and is the foundation from which Riparian Reserves can be delineated (S&Gs, B-12). The Upper White Salmon River Watershed Analysis (September 1998) was prepared to implement the ACS.

Watershed Restoration recommendations, a third component of Watershed Analysis, were identified in the Upper White Salmon River Watershed Analysis. The recommendations pertinent to the Gotchen Planning Area, and *within the scope of this analysis*, are summarized below:

Gotchen LSR Treatments: Implement the numerous vegetative treatments per the Gifford Pinchot National Forest Late Successional Reserve Assessment, particularly the Units that are rapidly declining from western spruce budworm and other insects and disease (p. VI-1).

Prescribed Underburning: Re-introduce fire as a means of maintaining open, mature stands comprised of early seral conifer species. This would replicate historical conditions in the east half of the watershed within the grand fir ecological series. Previously thinned Units are good candidates because stocking and ladder fuels are reduced, and existing roads may serve as control lines (p. VI-2 – VI-3).

Early-Successional Thinning in Matrix and Riparian Reserves: Thin young stands (“pre-commercial” thinning) to maintain or accelerate stand growth and avoid stagnation (p. VI-2).

Meadow Maintenance: Reduce or eliminate the loss of dry meadow habitat to conifer succession and stabilize existing populations of quaking aspen within dry meadow habitat (p. V-3).

Road Decommissioning: Restore hydrologic function, reduce sediment production and reduce wildlife and human interaction by hydrologically obliterating or decommissioning roads that are causing resource damage and other roads that are not needed in the future (p. VI-5). The following roads within the Gotchen Planning Area were specifically listed in the Watershed Analysis (p. VI-6 – VI-7).

Forest Road 8200-170 Decommission

Forest Road 8225-150 Decommission and Stormproof

Native American Traditional Uses: Continue frequent and open dialogue with the Yakama Indian Nation regarding proposed projects on ceded land and other management actions affecting traditional uses (p. VI-9).

Commercial Timber Harvest: In addition to vegetation treatments recommended for the LSR, consider the need for timber harvest within the east-side grand fir zone affected by the western spruce budworm. Timber harvest should seek to improve conditions for...quaking aspen, and old-growth ponderosa pine. (p. VI-10 to VI-11).

Desired Conditions/ Desired Future Conditions

Desired Future Conditions (DFC) for all Forest Plan Management Areas are identified in Amendment 11 and the Desired Conditions for Late Successional Reserves are identified in the Late Successional Reserve Assessment. Any proposed activity should contribute to achieving the DFC for the Management Area/Land Allocations in which the activity is proposed.

The Desired Conditions for the LSRs and the Desired Future Conditions for the General Forest and Visual Emphasis allocations are provided here since the majority of the proposed activities fall within these allocations. These descriptions, particularly for the LSRs, provide a context for this project’s purpose and need, issues, and proposed activities. The complete description of the Forest-scale Desired Condition for LSRs and the description of the DFCs for the remaining allocations can be referenced in the LSRA and Amendment 11, respectively, both available on the Gifford Pinchot website (<http://www.fs.fed.us/gpnf/>).

A key challenge in managing the Gotchen landscape is finding the “right” balance between the Desired Conditions of the late successional *reserve*, and the overall health of a dynamic

landscape. A landscape that is outside of its historical range of variation is more vulnerable to large-scale disturbances. The exclusion of fire during the 20th century and the past logging activity within the Gotchen landscape have resulted in a forested landscape that is altered in composition and structure from what was present historically. Conversely, the desired conditions for the LSR, as described below, emphasize maintaining the current level of late successional habitat; habitat that resulted from twentieth century management activities and is thought to be outside of the historical range. “In the short term (e.g., 50 – 100 years,) it is likely that areas currently functioning as late-successional and old forest habitats will be maintained with only limited success. Risk of disturbance and uncertainty of outcomes will be high.... Patterns of structure and composition within the NWFP reserve network will continue to change as a result of uncontrolled fires, insect outbreaks, and other successional processes.” (Hessburg, et al. 1999).

The 1993 FEMAT report, *Forest Ecosystem Management: An Ecological, Economic and Social Assessment* acknowledges (pp. IV-7, 35-37, 187) the role wildlife played in shaping these eastern Cascade forests and states that, “Any plan to protect late successional/old-growth forests” must include considerable attention to fire management and to the stability of forest stands.” Treatments may include thinning, underburning, and creation of fuelbreaks.

A landscape evaluation of the Gotchen LSR by Hummel, et al. 2001, reveals that since the 1930’s, forest structures have become more homogeneous; area and average patch size of young, multistoried forest stands have decreased; and spatial patterns of late-successional forest have changed. These changes alter vegetation response to disturbances like fires, insects, and diseases, and suggest that different structures and patterns may better support LSR objectives over space and time, (Hummel, et al. 2001).

Late Successional Reserve Desired Conditions

The Late Successional Reserve Assessment for the GPNF identifies Desired Conditions for the LSRs at the Forest-wide scale, the Plant Zone scale, and the Reserve-scale. It’s important to review all three scales of reference to understand the expectations for the Gotchen LSR. The descriptions most pertinent to this analysis are provided here.

Forest-Wide Scale

The Desired Conditions for Late Successional Reserves are large patches of old-growth forest that provide habitat for the northern spotted owl and other old-growth dependent species. This condition may be outside the range of historical variability, at the LSR scale. Reconstruction of historical stand conditions indicates the LSRs would provide more large contiguous blocks of old-growth than was present before European settlement (LSRA, p. 3-1).

Where LSRs include eastside (grand fir zone) conditions, more structural heterogeneity may be introduced through management to reduce the risk of large-scale loss of habitat from wildfire (LSRA, p. 3-1).

Because we are directed to manage these areas to prevent large scale disturbances and to create late-successional forest conditions (ROD, p. C-12), the expected diversity of stand structure and landscape patterns is different than would occur under natural conditions at the

scale of the LSRs. However, by providing large blocks of late-successional and old-growth vegetation these reserves will contribute to bringing the stand composition at the river basin scale within the range of historic range of variability (LSRA, p. 3-2 – 3-3).

All threatened, endangered and sensitive species currently occurring in LSRs should be present in the future. Northern spotted owls and marbled murrelets will directly benefit from the expansion of late-successional habitat provided by LSRs (LSRA, p. 3-4).

The Matrix is designed to include small blocks of late-successional habitat to provide both “stepping stones” for species to move between LSRs and refugia for immobile species (LSRA, p. 3-5).

LSRs are priority areas for road decommissioning or obliteration. Because many of the LSRs overlap with key watersheds, road densities will decrease to meet aquatic conservation strategy objectives (LSRA, p. 3-7).

Plant Zone Scale

The Gotchen LSR is comprised of three plant zones: the Grand Fir Zone, Mountain Hemlock and the Subalpine Parklands. Plant zones are defined as areas where a particular tree species is expected to dominate in stable, mature stands approximating climax conditions (Topic, 1989) (LSRA, p. 3-10). Only the Grand Fir Zone desired condition is presented here, since the majority of the Gotchen LSR is comprised of the Grand Fir Zone, and all of the proposed activities occur within that plant zone.

- The Grand Fir Zone is the driest on the Gifford Pinchot NF. Because of the relatively higher fire risk in this zone, a lower percent (70% or more) is expected to be in a late-successional or old-growth condition.
- Historically, fire played the major disturbance role in these ecosystems, particularly in the drier sties. Fire tolerant, open, “park-like” stands, composed mainly of large diameter ponderosa pine and Douglas-fir dominated part of the landscape.
- The desired condition within the grand fir zone consists of stands comprised of large, old-growth ponderosa pine or Douglas-fir trees, with secondary canopies made up of younger, shade-tolerant grand fir, along with western hemlock, Douglas-fir, and ponderosa pine. This understory should be less than 100 years old. (LSRA, p. 3-13).

LSR Scale

- The Desired Condition for the Gotchen LSR is to maintain the current acreage of late-successional forest, and reduce the risk of insect and disease infestations and subsequent stand-replacing fire. This may be accomplished by increasing the amount of single-story large tree forests comprised of early seral tree species (e.g. ponderosa pine, western larch, Douglas-fir) that are maintained by under-burning. These units carry a lower hazard of stand disturbance, and their arrangement on the landscape can reduce the overall risk of the LSR to large stand-replacing fires.
- In the absence of a large, stand-replacing fire, grand fir-dominated stands will comprise the majority of forest in this LSR into the future, though they carry a high hazard for disturbance, they also provide dense, multi-layered canopies that are

desired by late-successional wildlife. In addition they currently serve the large province by providing large blocks of late-successional forest that are well connected to similar forests on Yakama Indian Nation land to the east. (LSRA, p. 3-15).

Desired Future Conditions

The Desired Future Condition for General Forest (TS), General Late Successional Reserve (LS), and Visual Emphasis (VL and VM) Management Areas (MAs) are provided here since all of the proposed activities fall within these MAs. The DFC descriptions for the remaining Forest Plan Management Areas can be referenced in Amendment 11, available on the Gifford Pinchot website, (<http://www.fs.fed.us/gpnf/>).

General Forest (TS)

Evidence of land managed for timber production and other commodities is apparent. All tree sizes and mixtures of native species from seedlings to mature sawtimber are well distributed. Recreational opportunities are available for hunters, anglers, off-road vehicle operators, and other motorists (Amendment 11, p. 6-25).

General Late Successional Reserve (LS)

Late-successional and old-growth forest ecosystems develop over time. Destructive fires seldom occur. Recreational opportunities are available for hunters, fishermen, off-road vehicle operators and other motorists (Amendment 11, p. 5-31).

Visual Emphasis (VL and VM)

These areas accommodate a variety of activities, which to the observer are either not evident or visually subordinate to the natural landscape. Management of the visual attributes of the corridor provides a continuing opportunity to appreciate scenic worth. Vegetation is diverse and includes a wide variety of tree species and sizes, living and dead. Stands exhibiting mature and old-growth characteristics may be common. Viewing scenery, hiking, and camping occur, and access to other recreational facilities is provided (Amendment 11, p.5-69; 6-41).

Forest Service Roads Analysis Policy

The Forest Service outlined details of the Agency's road analysis policy on March 2, 2000. The policy is designed to help the Forest Service determine how to best manage the roads in the National Forest Road system. A six-step analysis process was developed in August 1999 (Miscellaneous Report FW-643). This analysis must be completed prior to proposing site-specific proposals affecting the use of the Forest Roads; the Gifford Pinchot National Forest completed the Forest-level analysis in July 2002. A subset of the Gifford Pinchot Roads Analysis that displays the recommendations for the Forest Roads in the Gotchen Planning Area is located in Appendix A.

DECISION FRAMEWORK

This final environmental impact statement displays the analysis results of four alternatives, including no-action, that propose a range of risk-reduction and restoration activities. The analysis is sufficiently detailed to allow the Responsible Official—the Mt. Adams District Ranger—to identify a preferred alternative that represents the best balance of activities to meet the project needs and objectives, based on the physical, biological, economic and social impacts to the human environment. Given the purpose and need, the Responsible Official will determine:

Whether or not to remove the dead and dying timber from the Gotchen Matrix

Whether or not to implement risk-reduction activities within the Gotchen LSR

Whether or not to implement road-related actions—decommissioning, or closing

Whether or not to implement the quaking aspen restoration project

If the District Ranger decides to implement any of the above, the decisions on the activity type, location, priority, timing and sequencing will be made and documented in the Record of Decision (ROD).

MODIFICATION OF ACTION ALTERNATIVES

In response to comments received additional consideration was given to excluding cattle from portions of the meadow in the vicinity of the Gotchen Creek Guard Station. The change to the action alternatives between the DEIS and the FEIS is to include construction of a cattle enclosure around the perimeter of the Gotchen meadow, approximately 11 acres, to exclude cattle and big game. The enclosure will allow for the natural regeneration of aspen to occur and remove the direct impacts that grazing cattle have to mardon skippers and their habitat. The enclosure will be designed to not distract or reduce the historic character of the area. This modification was considered to have only beneficial affects so no additional analysis was required.

The models used for analysis of affects associated with the action alternatives are only considered to be reasonably certain if the treatments are implemented and reoccur as scheduled.

PUBLIC INVOLVEMENT

The Notice of Intent (NOI) was published in the Federal Register on November 6, 2001. The NOI asked for public comment on the proposal by November 30, 2001. A scoping letter was mailed on February 19, 2002 to 78 parties, including private citizens; government agencies at the federal, state, local level; Indian Tribes; environmental organizations; congressional offices; and other interested parties, asking for comments by March 25, 2002.

Eight scoping letters were received in response to the scoping effort and evaluated for issues (following section). Those parties indicating interest in a field trip met with the team

members and District Ranger on June 14, 2002 for a field review of several of the proposed activities.

An overview of the purpose and need, and proposal was given by Gotchen FEIS Team members on July 29, 2002 to the White Salmon River watershed Management Committee, in White Salmon, Washington. A discussion with Committee members followed the presentation.

On August 28, 2002, an overview of the purpose and need was presented at the Coordinated Resource Management field tour, in Klickitat County, Washington.

A copy of the original scoping “packet” (cover letter, proposed action narrative, tables and maps) is included in Appendix B. A summary of the public scoping “issues” derived from the comments received in response to the scoping packet is provided in Appendix C.

The Draft Environmental Impact Statement (DEIS) was issued for public comment. A notice was published in the *Federal Register* on July 25, 2003, which opened the 45-day comment period. The comment period closed September 8, 2003. Thirteen individuals, organizations, or agency representatives provided comments. Comments and responses are located in Appendix H. Public meetings to review the DEIS were held on July 31, 2003 and August 9, 2003.

ISSUES

The comments received during scoping were used to identify issues. The Forest Service separated the issues into two groups: significant and non-significant issues. Significant issues were defined as those directly or indirectly caused by implementing the Proposed Action, and were used in formulating the Alternatives to the Proposed Action. Indicators, or “Measurement Methods” for each issue are identified to measure and compare the effects of the Proposed Action and the Alternatives.

Non-significant issues were identified as those: 1) outside the scope of the proposed action; 2) already decided by law, 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 explain this delineation in Sec. 1501.7, “...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3).”

Significant Issues

ISSUE: Efficacy of risk reduction activities to reduce the threat of a stand-replacing fire

There is skepticism as to whether or not fuel reduction treatments are effective in reducing the threat of stand-replacing fires. “Evidence of fuel treatment efficacy for reducing wildfire damages is largely restricted to anecdotal observations and simulations, and easily dismissed by skeptics” (Omi and Martinson, Colorado State Univ. 2002). In addition, the risk reduction activities have the potential to increase the amount of dead and down material, adding to the

existing surface fuels, thus creating a more receptive fuel bed and increasing the potential of a fire ignition.

High levels of fire threat-reduction practices that include prescribed fire may also increase the risk of fire ignition (i.e. human-caused fire) and directly conflict with maintaining late-successional.

Measurement Methods

Hazardous fuel reduction- Acres of surface and created fuels treated. Surface fuel treated includes snags and down wood existing on the forest floor, ladder fuel (crown base height) and live understory vegetation (shrubs and trees up to 8 ft tall).

Continuous fuel breaks created -(fire risk reduction) Acres with modified surface fuel and/or canopy treatments that create altered fire behavior.

Fire regime restoration- Acres treated and maintained utilizing prescribed fire in high fire frequency/low intensity areas.

ISSUE: Impacts to Northern Spotted Owl Habitat and Designated Critical Habitat

The northern spotted owl (*Strix occidentalis*) is a federally listed threatened species. There are six known owl activity centers within the Gotchen Planning Area. Two were occupied as of the summer of 2002. Proposed treatments designated to reduce fuels and improve forest health in the Gotchen Planning Area may degrade or remove late-successional forest that provides habitat for northern spotted owls. Proposed activities could result in harm to spotted owls by removing or degrading habitat below the incidental take threshold¹ of 40% suitable habitat within a 1.8-mile radius and 50% suitable habitat within a 0.7-mile radius of a spotted owl activity center. One activity center within the Gotchen Planning Area is currently below this threshold at the 0.7-mile radius.

Approximately 89% (17,578 acres) of the Gotchen Planning Area is within the northern spotted owl Critical Habitat Unit WA-42. Critical habitat was designated for the spotted owl to provide nesting, roosting, and foraging (NRF) habitat essential for the northern spotted owl's continued survival. Proposed treatments that remove or degrade late-successional forest would be considered an adverse affect to spotted owl Critical Habitat.

Measurement Methods

Acres of NRF habitat treated

Acres of NRF habitat converted to dispersal habitat

Acres of NRF habitat converted to non-suitable habitat

Percent of NRF habitat treated in the Gotchen Planning Area

Post-action percentage of NRF habitat in the Gotchen Planning Area

¹ "Take of listed fish and wildlife species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by a federal agency" (50 CFR 402.02).

Post-action percentage of NFR habitat in CHU WA-42

Alternative results in incidental take of spotted owls?

ISSUE: Public Road Access and Dispersed Recreation

The Preferred Alternative includes several miles of road closures. Open roads facilitate dispersed recreation such as hunting, mushroom collection, and camping. Open roads can also detract from some recreational experiences. A reduction in road density reduces the access to areas with habitual use and reduces dispersed camping opportunities. Closure of Road 8225-150 eliminates existing vehicle access to the Snipes Trail, and would require relocation of the Snipes Trailhead.

Measurement Methods:

Mileage of roads closed or decommissioned within the Gotchen Planning Area

Availability of dispersed campsites

ISSUE: Impacts to Riparian Areas

Public scoping comments indicated a concern that activities within the riparian areas could retard or prevent attainment of the Aquatic Conservation Strategy objectives. Road construction and reconstruction were of particular concern. (There is no new road construction associated with this project.)

Measurement Method

Acres of riparian area treated

Non-Significant Issues

Some of the non-significant issues have been carried forward into analysis even though they did not influence the design of project alternatives. These may be legally required disclosures or issues that have been raised through scoping but not found to be significant. Non-significant issues are addressed in all of the alternatives, including the Preferred Alternative, through project design or application of mitigation measures, using existing standards and guideline, policies or law as a basis. Resolution of these issues typically does not vary between alternatives, and usually has little or no bearing on the decision to be made. The non-significant issues are identified and analyzed throughout Chapter 4 and are also compiled in Appendix D.