

Land and Resource Management Plan

Amendment 11

Gifford Pinchot National Forest

Update #2

June 2, 1995

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This replaces pages IV-45 to IV-150 of the *Land and Resource Management Plan*,
Gifford Pinchot National Forest (1990).

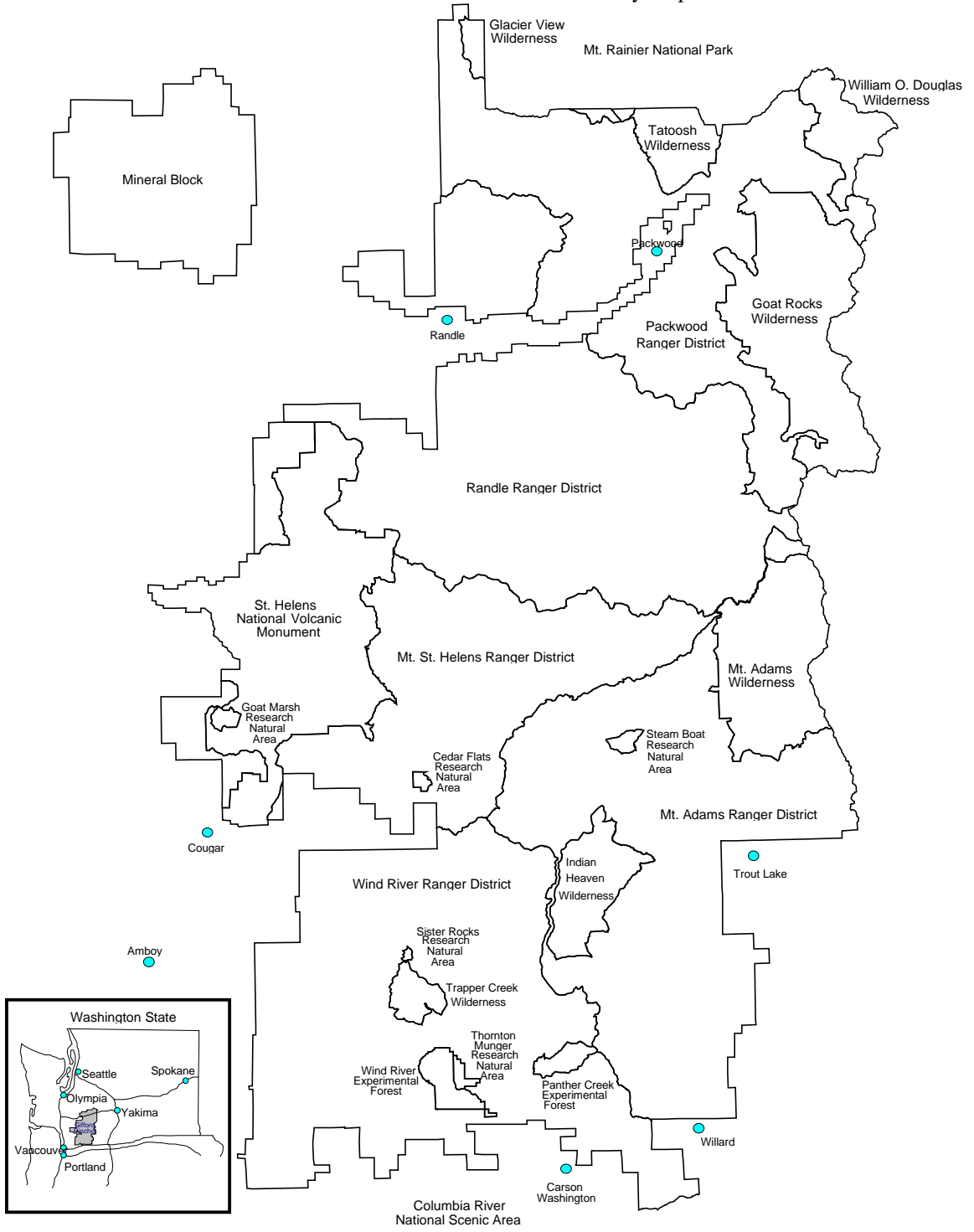
Chapter 1

Introduction

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Gifford Pinchot National Forest Vicinity Map



Introduction

The Need for this Document

Forest plans are required by the National Forest Management Act (NFMA) for each National Forest. These plans establish land allocations, goals and objectives, and standards and guidelines used by land managers, other government agencies, private organizations and individuals.

In 1990, the Gifford Pinchot National Forest published its first *Land and Resource Management Plan* (Forest Plan) developed under the NFMA and the National Environmental Policy Act (NEPA). Since then the Forest has made several amendments.

In April 1993, President Clinton convened a Forest Conference in Portland, Oregon to address the human and environmental needs served by the federal forests of the Pacific Northwest and Northern California. President Clinton directed his cabinet to craft a balanced, comprehensive and long-term policy for the management of Forest Service and BLM lands within the range of the northern spotted owl. This proposal for change ultimately led to a regional analysis and assessment through NEPA. A set of standards and guidelines was selected in the Record of Decision (ROD) from a range of alternative management strategies. The selected set of standards and guidelines has incorporated the latest information designed to meet the requirements of the Endangered Species Act and the National Forest Management Act for fish and wildlife habitat on those National Forests within the range of the northern spotted owl.

In the Record of Decision (ROD) for the document, formally titled the *Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl* (FSEIS), the Secretaries of Agriculture and Interior jointly amended the Gifford Pinchot Forest Plan and other forest plans within the range of the northern spotted owl. The amendment became effective on May 20, 1994.

This amendment provided new goals, objectives, standards, and guidelines for resource management. It added several major land allocations, each with its own set of standards and guidelines. These land allocations overlay the allocations from the 1990 Gifford Pinchot *Land and Resource Management Plan*.

The Purpose of this Document

The purpose is to convey the changes in the Gifford Pinchot 1990 Forest Plan brought about by the ROD, as described above. This amendment is an amalgam of the prevailing direction and standards and guidelines from the ROD and the Gifford Pinchot Forest Plan. The Forest Plan is intended primarily to serve the needs of Forest Service program management and operations. It also provides a useful reference to anyone interested in the management of the Forest. This amendment was compiled by comparing direction from the Forest Plan with the ROD. The direction in the ROD supersedes the Forest Plan where it is more restrictive or provides greater benefits to late-successional ecosystems. Direction from the Forest Plan is retained where it is more restrictive or unaffected by the ROD. This amendment replaces Gifford Pinchot Forest Plan, pages IV-45 through

IV-150, Forest-wide and Management Area Standards and Guidelines.

This is not a decision document; it contains no new decisions. All decisions were made in the Record of Decisions for the Forest Plan EIS and FSEIS.

Conventions Used in this Document

The ROD refers to the *Record of Decision for the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted Owl*, abbreviated as FSEIS.

The Forest Plan refers to the *Gifford Pinchot Land and Resource Management Plan* (1990).

Designated Areas refer to the six land allocations described in the ROD.

Matrix is the term used in the ROD to describe areas outside the Designated Areas.

Management areas refer to land allocations from the Forest Plan. Forest Plan management areas are areas with similar objectives and direction.

Management area categories or MACs are groups of management areas with similar goals and management direction.

Citations to source material are provided by marginal notations. For example, the notation [FP 101> indicates the text which follows came from the Forest Plan, beginning on page 101. The notation <ROD C-11] indicates the previous text came from the ROD, ending on page C-11 in that document.

This document was compiled from the Gifford Pinchot Forest Plan Chapter IV, Forest-wide and Management Area Standards and Guidelines; and the Record of Decision, primarily Attachment A. Included from the latter document are Aquatic Conservation Strategy from Chapter B, all of Chapter C, and Chapter D up to page D-13.

Readers will recognize a difference in perspective between the two sources of direction. Direction from the ROD was written to apply to the entire spotted owl region and is therefore less site specific.

Those unfamiliar with the principles of ecosystem management are encouraged to review portions of the ROD not reproduced here, especially Chapter B which provides the ecological basis for the standards and guidelines.

Amendment Map

This document is accompanied by a map which is needed to identify direction that applies to any particular area of the Forest. The map was compiled by overlaying the Designated Areas and Key Watersheds over the map of Forest Plan management areas.

Congressional Reserves and Administratively Withdrawn designated areas coincide with Forest Plan management areas; their boundaries are identical. There is not the same one to one correlation between other designated areas and other Forest Plan management areas.

A particular area may lie in two designated areas. It is possible for overlap between Administratively Withdrawn Areas and either Late-Successional Reserve, Managed Late-Successional Area, or the Adaptive Management Area. Where such overlap occurs, the standards and guidelines from both designated areas may apply. For mapping purposes, Late-successional Reserves or the Adaptive Management Area are given precedence where there is an overlap between these designated areas and Administratively Withdrawn Areas. In other words, if an area is both Adaptive Management Area and Administratively Withdrawn, it is mapped as Adaptive Management Area. There is no overlap on the Gifford Pinchot between mapped Late-successional Reserves and Managed Late-successional Areas, the Adaptive Management Area or Congressional Reserves.

The Amendment Map is intended primarily for display purposes. A higher resolution version intended for project planning and analysis is maintained in the Forest GIS system. Riparian Reserves, unmapped Late-Successional Reserves, protection buffers and small special sites are not shown on the Amendment Map.

How to Use this Document

Organization

This document is organized according to the land allocations in the ROD. Chapter 2 describes direction which applies Forest-wide. Chapters 3 through 7 describe direction for each designated area and the Matrix. For example, direction specific to the Congressional Reserve is in Chapter 3, the Matrix is in Chapter 6. Because the Aquatic Conservation Strategy and Riparian Reserves apply to all land allocations they are included in Chapter 2. Direction for Forest Plan management areas underlying each designation is included with the respective designated area in Chapters 3 through 7. For example, Forest Plan direction for the Wilderness management area is included in Chapter 3, Congressionally Reserved Areas. Some management areas occur in several designated areas. Different versions of the management area direction, reconciled to each designated area, appear in each chapter.

Finding Applicable Direction

To determine applicable direction we need four items of information (see Figure 1-1.)

Which designated area or Matrix?

Which management area?

Are we in a Key Watershed?

Are we in a Riparian Reserve?

The answers to the first three questions are on the Amendment Map. Riparian Reserves are not mapped. An example might best illustrate the process of locating all applicable direction for a particular area. [FP IV-46>

Let's assume you are interested in an area near Chain of Lakes, north of the Mt. Adams Wilderness. When you find the area on the Amendment Map you see it is shaded brown and the underlying management area is coded "**RM.**" The shading tells you this area is in the Cispus Adaptive Management Area. You also see that it is free of any cross-hatch, indicating the area is not in a key watershed.

The first letter in the management area code, "**R**," indicates it is a Roaded Recreation Management Area without timber harvest. This prohibition of scheduled timber harvest accounts for its dual designation as Administratively Withdrawn. This area is both Adaptive Management Area and Administratively Withdrawn.

The second letter in the management area code, "**M**" denotes the unique combination of recreation opportunity spectrum (ROS) class and visual quality objective (VQO) for the area. Every management area ending in the letter "**M**" has the same combination of VQO and ROS, in this case Partial Retention VQO and Roaded Natural ROS.

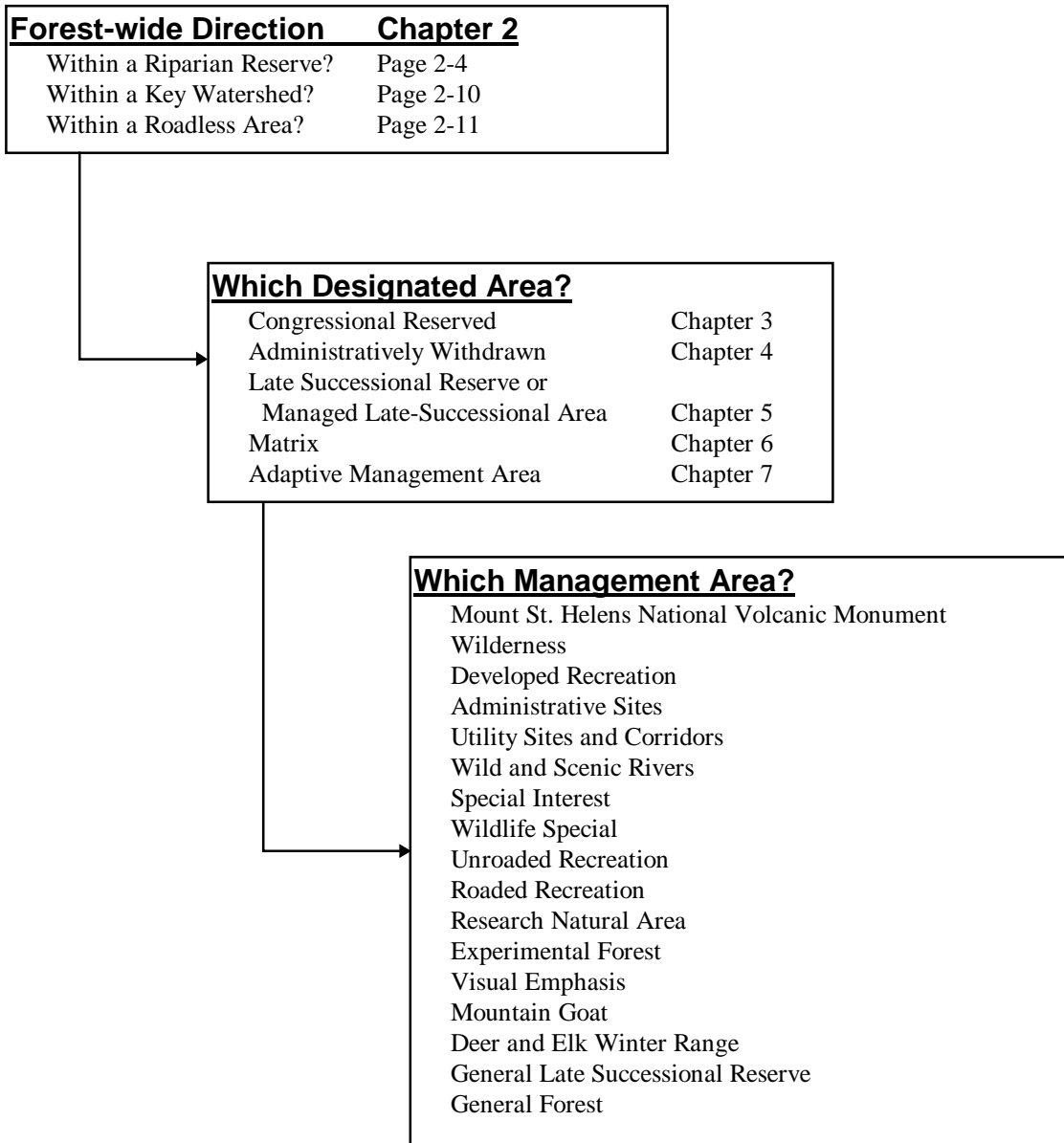
Direction for the Adaptive Management Area is contained in Chapter 7. Chapter 7 tells us that, as a point of departure, we should refer to the Administratively Withdrawn standards and guidelines for the “**RM**” management area in Chapter 4 of this document. This is an example of an overlap between the Administratively Withdrawn and Adaptive Management Areas; applicable standard and guidelines from both must be met. In this example, therefore, we must read Chapter 7 which describes direction for the adaptive management area as well as the beginning portion of Chapter 4 which describes direction for the Administratively Withdrawn Area. Direction which precedes the management areas in each chapter is intended to apply to all management areas in that chapter and may not be repeated in each management area. For example on page 4-1 we learn that scheduled timber harvest is not permitted in Administratively Withdrawn Areas. This applies to all management areas within this designated area. Direction for each management area is more site specific. For example in Chapter 4 in Roaded Recreation Without Timber Harvest management area direction, you find *fuelwood gathering is not permitted except for campfires*. You also find that livestock grazing may be permitted, but that *animals should be kept away from fields being managed for berry picking during the harvest season*. No restrictions are mentioned in this section for riparian areas. Because riparian areas and their associated Riparian Reserves overlap other designated areas and management areas, direction for their management is included in Chapter 2, “Forest-wide Management Direction.” To understand riparian management, the entire section titled “Aquatic Conservation Strategy” beginning on page 2-1, must be studied carefully.

An important component of the “Aquatic Conservation Strategy” section, “Riparian Reserve Widths” are described under “Riparian Reserve Descriptions” in Chapter 2. If we had been in a key watershed, we would have paid special attention to the direction for Key Watersheds in Chapter 2. The remainder of Chapter 2 is organized by resource or program area. Within each subsection are standards and guidelines addressing the Riparian Reserves. For example, under “Range” we find GM-2 which tells us to *locate new livestock handling and/or management facilities outside Riparian Reserves*. On the next page we see that *bedding grounds will not be permitted* in riparian areas. The glossary, on page G-28, explains the relationship of Riparian Reserves to riparian areas.

This exercise illustrated the importance of becoming familiar with the interrelationships of the designated areas and management areas. It shows that acquiring all the applicable direction requires reference to as many as four chapters.

<FP IV-47]

Figure 1-1. Finding Applicable Direction



Hierarchy of Standards and Guidelines

All land allocations have specific management direction regarding how those lands are to be managed, including actions that are prohibited and descriptions of the conditions that should occur there. This management direction for specific lands is known as “standards and guidelines”— the rules and limits governing actions, and the principles specifying the environmental conditions or levels to be achieved and maintained.

As portrayed in Figure 1-2, there is some overlap of designated areas. The ROD provided a hierarchy for addressing the overlap among designated areas. Standards and guidelines for Congressionally Reserved Areas must be met first. Second, Riparian Reserve standards and guidelines apply and are added to the standards and guidelines of other designated areas. For overlap among other designated areas, both sets of standards of guidelines must be met. For example, where Riparian Reserves occur within Late-Successional Reserves, the standards and guidelines of both designations apply.

Key Watersheds may overlay any of the allocations. In this case, the standards and guidelines for the allocations apply, and the key watershed adds additional requirements. In all designations, standards and guidelines from the Forest Plan apply where they are more restrictive or provide greater benefits to late-successional forest related species. For example, thinning in a Late-Successional Reserve would be permitted only if it is consistent with the standards and guidelines in the ROD and also is consistent with the standards and guidelines of the underlying Forest Plan management area. <ROD C-1]

[FP IV-46]

The degree of flexibility in applying management direction is identified by the terminology in the standards and guidelines. To understand the intent of the direction, the interpretations of the terms are critical. The first intent is conveyed by the words “will” and “shall.” With this degree of restriction, the action is mandatory in all cases. The second is conveyed by the word “should”. With this degree of restriction, action is required unless a justifiable reason exists for not taking action. This direction is intended to require a practice unless it entails unacceptable hardship or expense. Exceptions to “should” restrictions are expected to occur infrequently.

The third type of direction uses the words “practical” or “practicable” and acknowledges that a given practice is not always feasible and practical in every situation. It is intended to encourage, but not require, a practice.

The fourth uses the word “may” and has to do with activities which may or may not be appropriate, depending on circumstances. For example, livestock grazing may be consistent with the objectives of certain management areas, but specific sites may or may not contain suitable forage. This direction is intended to allow for taking advantage of compatible opportunities or to provide for exceptions when objectives of a particular standard can be met through alternate methods.

The standard and guidelines describe what will, should, or may occur in a particular area to achieve the desired future condition or goal. Projects implementing the Forest Plan should document how the Forest Plan standard and guidelines are to be met. Where standard and guidelines permit alternative actions, reasons for selecting a proposed action will be documented through the NEPA process. If a proposed project cannot meet the required standards, then the project should be modified or dropped, or the Forest Plan may be amended to permit implementation of the project.

Some standard and guidelines require end results. For example, “number of snags of a certain size to remain after harvesting,” or “at least 50 percent of the suitable timberland should be in mature or old-growth timber.” It is understood that if such conditions do not exist at the time a management activity occurs, the next best, or closest possible solutions, will be substituted.

Standard and guidelines take priority over targets and will not change simply to permit achievement of the timber, recreation, or other resource objectives or targets estimated by the Forest Plan. <FP IV-46]

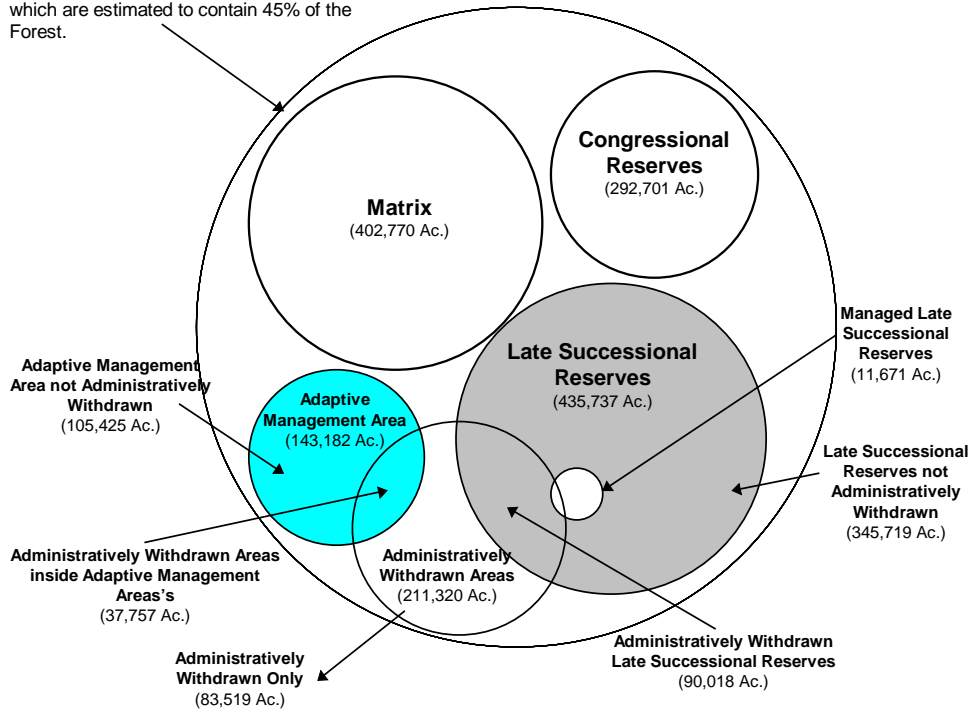
Existing Laws and Regulations

[ROD C-1]

Additional direction to management agencies includes, but is not limited to directives, policy, handbooks, manuals, as well as other plans, regulations, laws and treaties. The standards and guidelines presented in the ROD supersede other direction except treaties, laws, and regulations unless that direction is more restrictive or provides greater benefits to late-successional forest related species. None of these standards and guidelines applies where they would be contrary to existing law or regulation, or where they would require the agencies to take actions for which they do not have authority.

Figure 1-2. Land Allocation Relationships.

Note: These acres include Riparian Reserves which are estimated to contain 45% of the Forest.



Total National Forest Land = 1,368,579 Acres (2,138.4 Sq. Miles)

Relationship to Other Plans [ROD C-2]

Except as specifically excepted below, the 1990 Forest Plan standards and guidelines, including Administratively Withdrawn Areas, apply where they are more restrictive or provide greater benefits to late-successional forest related species than the standards and guidelines from the ROD.

Related approved plans such as those for National Scenic Areas or Wild and Scenic Rivers apply where they are more restrictive or provide greater benefits for late-successional forest-related species.

Exceptions to the above rule consists of those provisions of the ROD standards and guidelines that are specifically designed to replace direction in the 1990 Forest Plan. These exceptions are:

1. Direction specific to management for the northern spotted owl and its habitat. Because of protection provided by ROD standards and guidelines, the Forest Service direction adopting elements of *A Conservation Strategy for the Northern Spotted Owl* has been dropped.
2. Administratively Withdrawn Areas that are specified in the 1990 Forest Plan to benefit American martens, pileated woodpeckers, and other late-successional species are returned to the Matrix unless local knowledge indicates that other allocations and these standards and guidelines will not meet management objectives for these species.
3. As described for Adaptive Management Areas in Chapter 7, standards and guidelines need to be considered during planning and implementation of activities within Adaptive Management Areas, and they may be modified in Adaptive Management Area plans based on site-specific analysis. Coordination with the Regional Ecosystem Office is required. [ROD C-3]

Transition Standards and Guidelines 1994-1996 [ROD A-7]

As described in the ROD, the following direction is adopted to provide for implementation of certain interim procedures in order to realize the goals and objectives of the management strategy while making project decisions with reasonable promptness that do not preclude long-term options or impair resources sought to be protected.

1. **Watershed Analysis** - In the initial years of implementation, the process for watershed analysis is expected to evolve to meet long-term goals described in these standards and guidelines. However, some projects proposed for the first few years of implementation are in areas that require watershed analysis prior to approval of the projects (i.e., Key Watersheds, Riparian Reserves, and inventoried roadless areas). In fiscal years 1994 through 1996, watershed analysis done for these projects may be less detailed than analyses that are completed in later years. Regardless, analysis done during the initial years (fiscal years 1994-96) will comply with the following guidance:
 - The goal of the analysis is to determine whether the proposed actions are consistent with the objectives of the standards and guidelines.
 - Existing information will be used to the greatest extent possible, with new information collected, to the maximum extent practicable, to fill crucial data gaps.
 - Analysis will address the entire watershed, even though some areas may be analyzed at a lower level of precision, and the analysis of issues may be prioritized.
 - Information from the analysis will flow into the NEPA documentation for specific projects, and will be used where practicable to facilitate Endangered Species Act and Clean Water Act compliance.
 - Restoration opportunities will be identified.

As described in Chapter 2, watershed analysis is an ongoing, iterative process. Watershed analyses will expand as appropriate to consider additional available information, changing conditions and potential effects associated with long-term management issues and needed actions.

2. **Green Tree Retention Requirements** - National forest timber sales already laid out at the time of the Record of Decision may use green tree retention requirements in the *Draft Supplemental Environmental Impact Statement* (SEIS) if this eliminates the need to rework, redesign, or recruse a sale. All sales laid out after the date of the Record of Decision will comply with green tree retention requirements in these standards and guidelines.

3. **Assessments for Late-Successional Reserves** - Projects and activities within Late-Successional Reserves (including restoration, recreation, projects for public safety, thinning and salvage) may proceed in fiscal years 1994-96 using initial Late-Successional Reserve assessments done at a level of detail sufficient to assess whether the activities are consistent with the objectives of the Late-Successional Reserves. < ROD A-7]

Interagency Coordination [ROD E-15>

These standards and guidelines call for a high level of coordination and cooperation among agencies during implementation. Issues will be discussed, objectives clarified, and problems solved in collaboration. The Memorandum of Understanding for Forest Ecosystem Management established a framework for coordinated implementation of these standards and guidelines. The parties to this memorandum of understanding are the Director of the White House Office on Environmental Policy, the Secretary of the Interior, the Secretary of Agriculture, the Administrator of the Environmental Protection Agency, and the Undersecretary of Commerce for Oceans and Atmosphere.

Interagency Groups

The following interagency groups have been established to develop, monitor, and oversee the implementation of these standards and guidelines. These interagency groups are identified in the Memorandum of Understanding for Forest Ecosystem Management. They do not substitute or alter the line of authority of individual agencies. (See Figure 1-3.)

Interagency Steering Committee

The Interagency Steering Committee will establish overall policies governing the prompt, coordinated and effective implementation of this plan by all relevant federal agencies, and address and resolve issues referred to it by the Regional Interagency Executive Committee. The committee consists of representatives from the offices of the Secretary of the Interior, Secretary of Agriculture, Administrator of the Environmental Protection Agency, Undersecretary of Commerce for Oceans and Atmosphere, and is chaired by the Director of the White House Office on Environmental Policy or the director's designee. A White House appointed representative of the Interagency Steering Committee serves as interagency coordinator to provide general oversight and guidance of regional activities.

Regional Interagency Executive Committee (RIEC)

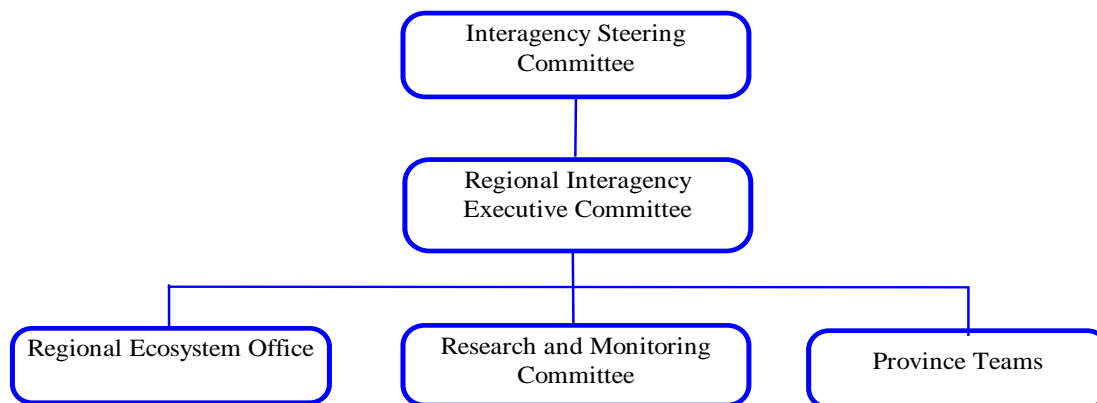
This group consists of the Pacific Northwest federal agency heads of the Forest Service, Bureau of Land Management, Fish and Wildlife Service, National Marine Fisheries Service, Bureau of Indian Affairs, and Environmental Protection Agency. Other participants on this committee include: the National Park Service; Soil Conservation Service; the States of Washington, Oregon, and California; and three tribal organizations. The RIEC will serve as the senior regional entity to assure the prompt, coordinated, and successful implementation of these standards and guidelines. It serves as the principal conduit for communications between the Interagency Steering Committee and the agencies in the planning area. It will be responsible for implementing the directives of the Interagency Steering Committee, reporting regularly on implementation progress, and referring issues relating to the policies or procedures for implementing these standards and guidelines to the Interagency Steering Committee. The RIEC's policy and planning decisions and recommendations will be made collaboratively, and will be consistent with federal and state laws, federal trust responsibilities, and government-to-government relationships with American Indian tribes. The RIEC provides direction to the Regional Ecosystem Office, province teams, and the Research and Monitoring Committee (see below). The RIEC also works with the Regional Community Economic Revitalization Team (RCERT) to develop criteria and priorities for ecosystem investment opportunities.

Regional Ecosystem Office (REO)

This office provides staff work and support to facilitate RIEC decision making and prompt interagency issue resolution in support of implementation of these standards and guidelines. It will also be responsible for evaluation of major modifications arising from the adaptive management process and will coordinate the formulation and implementation of data standards. This office reports to the RIEC and will be responsible for developing, evaluating, and resolving consistency and implementation issues with respect to specific topics including, but not limited to, Geographic Information Systems (GIS), pilot watershed analyses, restoration guidelines, Endangered Species Act requirements, adaptive management guidelines, monitoring and research.

Although the standards and guidelines variously refer to the Regional Ecosystem Office for reviews and other actions, it is understood that the Regional Ecosystem Office recommends to the Regional Interagency Executive Committee who has responsibility for the decisions. The decision-making responsibility of the Regional Interagency Executive Committee described in these standards and guidelines is generally limited to interpretation of standards and guidelines. Individual land management and consultation agencies retain the decision-making authority that is vested in them by statute.

Figure 1-3. Relationship of interagency groups.



Research and Monitoring Committee

This committee, comprised of full-time scientists in the Regional Ecosystem Office and a standing group of agency liaisons provides recommendations to the RIEC on implementation of these standards and guidelines through monitoring and research plans. The Research and Monitoring Committee will review and evaluate ongoing research; develop a research plan to address critical natural resource issues; address biological, social, economic, and adaptive management research topics; and develop and review scientifically credible, cost efficient monitoring plans; and facilitate scientific review of proposed changes to the standards and guidelines. The Research and Monitoring Committee is under the direction of, and is responsible to, the Regional Interagency Executive Committee, and reports to the RIEC through the Regional Ecosystem Office.

Province Teams

These teams consist of representatives of federal agencies, states, American Indian tribes, and others. These teams will provide or coordinate analyses at the province level that can provide the basis for

amendments to Forest and District Plans and will provide monitoring reports for provinces. Province teams will also encourage and facilitate information exchange and complementary ecosystem management among federal and nonfederal land managers. The Interagency Steering Committee and the Regional Interagency Executive Committee will continue to develop and refine the appropriate role for these teams at the level of physiographic provinces, Adaptive Management Areas, or specific watershed.<ROD E-17]

Highlights of Changes in this Amendment

Table 1-1. Highlights of Changes in this Amendment.

Topic	Reference
Late-Successional Reserves and Managed Late-Successional Areas comprising 447,000 acres withdrawn from programmed timber harvest.	Chapter 5
Timber harvest in Late-Successional Reserves is limited to thinning stands under 80 years old to accelerate development of late-successional characteristics and catastrophic salvage, after review by the Regional Ecosystem Office.	Page 5-5
A management assessment is required for Late-Successional Reserves prior to habitat manipulation activities.	Page 5-4
Establishment of an Aquatic Conservation Strategy.	Page 2-1
Interim Riparian Reserves comprising 611,000 acres, withdrawn from programmed timber harvest. Interim Riparian Reserves are established as two site tree heights on either side of fish bearing and one site tree height on either side of non-fish bearing streams, including intermittent streams.	Page 2-3
Identification of ten key watersheds for protection of at risk fish stocks and high quality water sources.	Page 2-10
No new roads will be built in Roadless Areas in Key Watersheds.	Page 2-11
There will be no net increase in roads in Key Watersheds.	Page 2-11
Watershed Analysis is required prior to projects in a Riparian Reserve, Roadless Area, or a Key Watershed.	Page 2-13
Habitats for species identified in Table 2-10 are to be surveyed or managed to benefit dependent species.	Page 2-66
Cispus Adaptive Management Area is established as 143,000 acres for exploring innovative management methods and public involvement processes.	Chapter 7
Protection buffers are established by standard and guidelines for Late-Successional Reserves, Managed Late-Successional Areas and the Matrix to assure viability of rare and locally endemic species.	Page 2-78 Page 6-7

Chapter 2

Forest-wide Management Direction

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Forest-wide Management Direction

As explained in Chapter 1, direction contained in this document applies at three scales— Forest-wide, designated area and management area. This chapter describes direction which applies Forest-wide, in all designated areas and management areas. It begins with the Aquatic Conservation Strategy which includes direction for Riparian Reserves.

This chapter begins with an overview of the Aquatic Conservation Strategy. Following this overview is a description of Forest-wide programs and resource areas. Each program area addresses the Aquatic Conservation Strategy using standards and guidelines for Riparian Reserves, where applicable.

Aquatic Conservation Strategy [ROD B-9>

The Aquatic Conservation Strategy was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The strategy will protect salmon and steelhead habitat on federal lands managed by the Forest Service and Bureau of Land Management within the range of Pacific Ocean anadromy.

This conservation strategy uses several methods to further the goal of maintaining a “natural” disturbance regime. Land use activities need to be limited or excluded in those parts of the watershed prone to instability. The distribution of land use activities, such as timber harvest or roads, must minimize increases in peak streamflows. Headwater riparian areas need to be protected, so that when debris slides and flows occur, they contain coarse woody debris and boulders necessary for creating habitat farther downstream. Riparian areas along larger channels need protection to limit bank erosion, insure an adequate and continuous supply of coarse woody debris to channels, and provide shade and microclimate protection. Watersheds currently containing the best habitat or those with the greatest potential for recovery should receive increased protection and receive highest priority for restoration programs.

Any species-specific strategy aimed at defining explicit standards for habitat elements would be insufficient for protecting even the targeted species. The Aquatic Conservation Strategy must strive to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources and restore currently degraded habitats. This approach seeks to prevent further degradation and restore habitat over broad landscapes as opposed to individual projects or small watersheds. Because it is based on natural disturbance processes, it may take decades, possibly more than a century, to accomplish all of its objectives. Some improvements in aquatic ecosystems, however, can be expected in 10 to 20 years.

The important phrases in these standards and guidelines are:

“meet Aquatic Conservation Strategy objectives”

“does not retard or prevent attainment of Aquatic Conservation Strategy objectives”

“attain Aquatic Conservation Strategy objectives.”

These phrases, coupled with the phrase *“maintain and restore”* within each of the Aquatic Conservation Strategy objectives, define the context for agency review and implementation of management activities. Complying with the Aquatic Conservation Strategy objectives means that an agency must manage the riparian-dependent resources to maintain the existing condition or implement actions to restore conditions. The base line from which to assess maintaining or restoring the condition is developed through a watershed analysis. Improvement relates to restoring biological and physical processes within their ranges of natural variability.

The standards and guidelines are designed to focus the review of proposed and certain existing projects to determine compatibility with the Aquatic Conservation Strategy objectives. The standards and guidelines focus on *“meeting”* and *“not preventing attainment”* of Aquatic Conservation Strategy objectives. The intent is to assure that a decision maker must find that the proposed management activity is consistent with the Aquatic Conservation Strategy objectives. The decision maker will use the results of watershed analysis to support their finding. In order to make the finding that a project or management action *“meets”* or *“does not prevent attainment”* of the Aquatic Conservation Strategy objectives, the analysis must include:

- a description of the existing condition
- a description of the range of natural variability of the important physical and biological components of a given watershed
- how the proposed project or management action maintains the existing condition or moves it within the range of natural variability.

Management actions that do not maintain the existing condition or do not lead to improved conditions in the long term would not *“meet”* the intent of the Aquatic Conservation Strategy and thus, should not be implemented.

Aquatic Conservation Strategy Objectives

National Forest lands within the range of the northern spotted owl will be managed to:

1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.
2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include flood plains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.
3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.
4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.
5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.
6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.
7. Maintain and restore the timing, variability, and duration of flood plain inundation and water table elevation in meadows and wetlands.
8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate

rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

9. Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.

Components of the Aquatic Conservation Strategy

1. *Riparian Reserves*: Lands along streams and unstable and potentially unstable areas where special standards and guidelines direct land use.
2. *Key Watersheds*: A system of large refugia comprising watersheds that are crucial to at-risk fish species and stocks and provide high quality water.
3. *Watershed Analysis*: Procedures for conducting analysis that evaluate geomorphic and ecologic processes operating in specific watersheds. This analysis should enable watershed planning that achieves Aquatic Conservation Strategy objectives. Watershed analysis provides the basis for monitoring and restoration programs and the foundation from which Riparian Reserves can be delineated.
4. *Watershed Restoration*: A comprehensive, long-term program of watershed restoration to restore watershed health and aquatic ecosystems, including the habitats supporting fish and other aquatic and riparian-dependent organisms.

These components are designed to operate together to maintain and restore the productivity and resiliency of riparian and aquatic ecosystems. Late-Successional Reserves are also an important component of the Aquatic Conservation Strategy. The standards and guidelines within which Late-Successional Reserves are managed provide increased protection for all stream types. Because these reserves possess late-successional characteristics, they offer core areas of high quality stream habitat that will act as refugia and centers from which degraded areas can be recolonized as they recover. Streams in these reserves may be particularly important for endemic or locally distributed fish species and stocks. <ROD B-12]

Riparian Reserves [ROD B-17]

Summary of Aquatic Conservation Strategy for Riparian Reserves:

- Involves portions of the landscape where riparian-dependent and stream resources receive primary emphasis.
- Riparian Reserves are designated for all permanently-flowing streams, lakes, wetlands, and intermittent streams.
- Riparian Reserves include the body of water, inner gorges, all riparian vegetation, 100-year flood plain, landslides and landslide prone areas.
- Reserve widths are based on some multiple of a site-potential tree or a prescribed slope distance, whichever is greater. Reserve widths may be adjusted based on watershed analysis to meet Aquatic Conservation Strategy objectives.
- Standards and guidelines prohibit programmed timber harvest, and manage roads, grazing, mining and recreation to achieve objectives of the Aquatic Conservation Strategy. <ROD B-17]

[ROD B-12]

Riparian Reserves are portions of watersheds where riparian-dependent resources receive primary emphasis and where special standards and guidelines apply. Standards and guidelines prohibit and regulate activities in Riparian Reserves that retard or prevent attainment of the Aquatic Conservation Strategy objectives. Riparian Reserves include those portions of a watershed directly coupled to streams and rivers. Riparian Reserves are required for maintaining hydrologic, geomorphic, and ecological processes that directly affect standing and flowing water such as lakes and ponds, wetlands, streams, stream processes, and fish habitats. Riparian Reserves include primary source areas for wood and sediment such as unstable and potentially unstable areas in headwater areas and along streams. Riparian Reserves occur at the margins of standing

and flowing water, intermittent stream channels, ephemeral ponds and wetlands. Riparian Reserves generally parallel the stream network but also include other areas necessary for maintaining hydrologic, geomorphic, and ecological processes.

Under the Aquatic Conservation Strategy, Riparian Reserves are used to maintain and restore riparian structures and functions of intermittent streams, confer benefits to riparian-dependent and associated species other than fish, enhance habitat conservation for organisms that are dependent on the transition zone between upslope and riparian areas, improve travel and dispersal corridors for many terrestrial animals and plants, and provide for greater connectivity of the watershed. The Riparian Reserves will also serve as connectivity corridors among the Late-Successional Reserves.

Interim widths for Riparian Reserves necessary to meet Aquatic Conservation Strategy objectives for different water bodies are established based on ecologic and geomorphic factors. These widths are designed to provide a high level of fish habitat and riparian protection until watershed and site analysis can be completed. Watershed analysis will identify critical hillslope, riparian, and channel processes that must be evaluated in order to delineate Riparian Reserves that assure protection of riparian and aquatic functions. Riparian Reserves are delineated during implementation of site-specific projects based on analysis of the critical hillslope, riparian, and channel processes and features. Although Riparian Reserve boundaries may be adjusted on permanently-flowing streams, the prescribed widths are considered to approximate those necessary for attaining Aquatic Conservation Strategy objectives. Post-watershed analysis Riparian Reserve boundaries for permanently-flowing streams should approximate the boundaries prescribed in these standards and guidelines. Post-watershed analysis Riparian Reserve boundaries for intermittent streams, however, may be different from the existing boundaries. The reason for the difference is the high variability of hydrologic, geomorphic and ecologic processes in a watershed affecting intermittent streams. At the same time, any analysis of Riparian Reserve widths must also consider the contribution of these reserves to other, including terrestrial, species.

Watershed analysis should take into account all species that were intended to be benefited by the prescribed Riparian Reserve widths. Those species include fish, mollusks, amphibians, lichens, fungi, bryophytes, vascular plants, American marten, red tree voles, bats, marbled murrelets, and northern spotted owls. The specific issue for spotted owls is retention of adequate habitat conditions for dispersal.

The prescribed widths of Riparian Reserves apply to all watersheds until watershed analysis is completed, a site-specific analysis is conducted and described, and the rationale for final Riparian Reserve boundaries is presented through the appropriate NEPA decision-making process. <ROD B-13]

Riparian Reserve Descriptions [ROD C-30]

Riparian Reserve Widths

Riparian Reserves are specified for five categories of streams or water bodies as follows:

1. *Fish-bearing streams* - Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the

100-year flood plain, or to the outer edges of riparian vegetation, or to a slope distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet total, including both sides of the stream channel), whichever is greatest. (See Tables 2-1 and 2-2.)

2. *Permanently flowing nonfish-bearing streams* - Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year flood plain, or to the outer edges of riparian vegetation, or to a slope distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet total, including both sides of the stream channel), whichever is greatest.
3. *Constructed ponds and reservoirs, and wetlands greater than one acre* - Riparian Reserves consist of the body of water or wetland and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or the extent of unstable and potentially unstable areas, or to a slope distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the wetland greater than one acre or the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest.
4. *Lakes and natural ponds* - Riparian Reserves consist of the body of water and: the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of unstable and potentially unstable areas, or to a slope distance equal to the height of two site-potential trees, or 300 feet slope distance, whichever is greatest.
5. *Seasonally flowing or intermittent streams, wetlands less than one acre, and unstable and potentially unstable areas* - This category applies to features with high variability in size and site-specific characteristics. At a minimum, the Riparian Reserves must include:
 - The extent of unstable and potentially unstable areas (including earthflows),
 - The stream channel and extend to the top of the inner gorge,
 - The stream channel or wetland and the area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation, and
 - Extension from the edges of the stream channel to a distance equal to the height of one

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- site-potential tree, or 100 feet slope distance, whichever is greatest. (See Table 2-1.) [FP IV-65>
6. *Wetlands and meadows less than 1 acre in size*. On slopes 20 percent and less, marshes, wet meadows (ecoclasses MS, MT, MW), moist meadows (MM), wet shrublands (SW, SS) and forblands (F) are withdrawn from scheduled timber harvest. An influence area, typically 300 feet beyond the extent of riparian vegetation, shall be managed such that 85 percent of timber stands are in pole size or larger and 50 percent of the entire influence area, is in mature and older age classes to provide hiding cover.
On slopes greater than 20 percent, moist shrublands (SM, SS) wet shrublands (SW), moist meadows (MM) and forblands (F) are withdrawn from scheduled timber harvest. An influence areas, typically 300 feet beyond the extent of riparian vegetation, shall be managed to provide hiding cover such that no more than 10 percent of suitable timberland within the influence area is regeneration harvested in any decade.<FP-IV-72]

Note: A site-potential tree height is the average maximum height of the tallest dominant trees (200 years or older) for a given site class. (See Table 2-2 Site-potential tree heights by tree species and riparian area site index.) <ROD C-31]

Table 2-1. Interim Riparian Reserve widths (slope distance each side) by site tree height and distance for riparian types. Widths are the larger of the two measures. See text for other geomorphic and vegetative considerations.

Riparian Type	Site Tree Slope Widths (Tree Heights)	Slope Widths (feet)
Fish-bearing streams	2	300
Lakes and natural ponds	2	300
Perennial, nonfish-bearing streams	1	150
Constructed ponds, reservoirs and wetlands greater than 1 acre in size*	1	150
Wetlands less than 1 acre in size	N/A	See Text
Intermittent streams	1	100

Earlier version may be applied to projects initiated prior to April 1, 1995.

*See LSR protection buffers for great gray owls on page 2-79.

Table 2-2. Site-potential tree heights by tree species and riparian area site index. (100-year base, use local site index)

	SITE TREE HEIGHT IN FEET FOR BUFFER WIDTH CALCULATIONS								
	100	120	140	160	180	200	220	240	260
Dominant /Codominant Tree species	Site index:	Site index:	Site index:	Site index:	Site index:	Site index:	Site index:	Site index:	Site index:
Douglas-fir Site	< 78	79-94	95-110	111-126	127-142	143-159	160-175	176-191	192-208
Lodgepole pine Site	< 89	90-109	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mountain hemlock Site	< 64	65-78	79-92	93-106	107-120	121-134	135-148	149 162	163-175
Noble fir Site	< 70	71-86	87-102	103-117	118-131	132-145	146-159	160-171	172 183
Western hemlock Western redcedar Site	< 76	77-92	93-106	107-121	122-137	138-151	152-167	168-183	184-198
White/grand fir Site	< 64	65-80	81-96	97-112	N/A	N/A	N/A	N/A	N/A

Intermittent Streams [ROD B-14>

Intermittent streams are defined as any nonpermanently flowing drainage feature having a definable channel and evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two physical criteria.

Including intermittent streams and wetlands within Riparian Reserves is important for successful implementation of the Aquatic Conservation Strategy. Accurate identification of these features is critical to the correct implementation of the strategy and protection of the intermittent stream and wetland functions and processes. Identification of these features is difficult at times due to the lack of

surface water or wet soils during dry periods. The following discussion provides guidance on steps to identify these features for inclusion within Riparian Reserves.

Fish-bearing streams are distinguished from intermittent streams by the presence of any species of fish for any duration. Many intermittent streams may be used as spawning and rearing streams, refuge areas during flood events in larger rivers and streams or travel routes for fish emigrating from lakes. In these instances, the standards and guidelines for fish-bearing streams would apply to those sections of the intermittent stream used by the fish.

The following discussion pertains to Riparian Reserve widths on intermittent streams and wetlands necessary to meet Aquatic Conservation Strategy objectives. Other Riparian Reserve objectives, such as providing wildlife dispersal corridors, could lead to Riparian Reserve widths different than those necessary to protect the ecological integrity of the intermittent stream or wetland. These other objectives could yield wider Riparian Reserves than those necessary to meet Aquatic Conservation Strategy objectives. There can never be instances where Riparian Reserves would be narrower than the widths necessary to meet Aquatic Conservation Strategy objectives.

The width of Riparian Reserves necessary to protect the ecological integrity of intermittent streams varies with slope and rock type.

Watershed analysis provides the ecological and geomorphic basis for changing the size and location of Riparian Reserves.

The prescribed widths for Riparian Reserves apply to all streams, lakes, ponds and wetlands on lands administered by the Forest Service and BLM within the range of the northern spotted owl until a watershed analysis is completed. Watershed analysis is expected to yield the contextual information needed to define ecologically and geomorphically appropriate Riparian Reserves. Analysis of site-specific characteristics may warrant Riparian Reserves that are narrower or wider than the prescribed widths. Thus, it is possible to meet the objectives of at least the Aquatic Conservation Strategy portion of these standards and guidelines with post-watershed analysis reserve boundaries for intermittent streams that are quite different from those conforming to the prescribed widths. Regardless of stream type, changes to Riparian Reserves must be based on scientifically sound reasoning, and be fully justified and documented.

Wetlands

The combinations of hydrology, soils, and vegetative characteristics are the primary factors influencing the development of wetland habitats. There must be the presence of surface water or saturated soils to significantly reduce the oxygen content in the soils to zero or near zero concentrations. These low or zero soil oxygen conditions must persist for sufficient duration to promote development of plant communities that have a dominance of species adapted to survive and grow under zero oxygen conditions. These wetland characteristics apply when defining wetlands for regulatory jurisdiction or for technical analysis when conducting inventories or functional assessments. Seeps and springs can be classified as streams if they have sufficient flow in a channel or as seasonal or perennial wetlands under the criteria defined in the 1987 Corps of Engineers "Wetlands Manual". The standards and guidelines for wetlands, which are based on the hydrologic, physical and biologic characteristics described in the manual, apply to seeps and springs regardless of their size.

The formal definition for implementing section 404 of the Clean Water Act, adopted by the Environmental Protection Agency is:

The term wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

Detailed technical methods have been developed to assist in identification of wetlands that meet the above definition. Currently, the field manual being used for implementing the Clean Water Act is the 1987 Corps of Engineers "Wetlands Manual."

For purposes of conducting the National Wetland Inventory, the Fish and Wildlife Service has broadly defined both vegetated and nonvegetated wetlands as:

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this classification wetlands must have one or

more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes, (2) the substrate is predominantly undrained hydric soil, and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.

Wetlands typically occur within and adjacent to riparian zones. It is frequently difficult to differentiate wetlands from riparian areas based on the definitions. Most typically, and particularly in forested landscapes, the riparian zone is defined by its spatial relation to adjacent streams or rivers. However, riparian zones are also commonly considered to be lands integrally related to other aquatic habitats such as lakes, reservoirs, intermittent streams, springs, seeps, and wetlands.

Because of such conceptual and definitional vagaries, there is spatial overlap between wetlands and riparian zones. This then results in only a portion of the riparian zone associated with rivers and streams being considered as wetlands. The extent of that portion will depend on the specifics of hydrologic, vegetation, and soil features. The functions of the wetland portion may also be distinct from the nonwetlands. For example, wetlands may provide habitat for specialized plant species or reproductive habitat for amphibians or other organisms that would not be provided by riparian areas.

Once the Riparian Reserve width is established, either based on existing widths or watershed analysis, then land management activities allowed in the Riparian Reserve will be directed by standards and guidelines for managing Riparian Reserves. The standards and guidelines for Riparian Reserves prohibit or regulate activities in Riparian Reserves that retard or prevent attainment of the Aquatic Conservation Strategy objectives. <ROD B-17]

Standards and Guidelines for Riparian Reserves [ROD C-31]

As a general rule, standards and guidelines for Riparian Reserves prohibit or regulate activities in Riparian Reserves that retard or prevent attainment of the Aquatic Conservation Strategy objectives. Watershed analysis and appropriate NEPA compliance is required to change Riparian Reserve boundaries in all watersheds. Standards and guidelines for Riparian Reserves are included as a sub topic in the standards and guidelines for each resource or program area, where applicable. <ROD C-31]

Key Watersheds [ROD C-7]

Key Watersheds are not a designated area or Matrix, but overlay all of these allocations. All national forest lands within the range of the northern spotted owl are allocated to one of three watershed categories: Tier 1 Key Watersheds, Tier 2 Key Watersheds, or non-Key Watersheds (all others). Key Watersheds overlay portions of all six categories of designated areas and Matrix. Key Watersheds place the following additional management requirements: <ROD C-7]

[ROD B-19]

- Tier 1 Key Watersheds were selected for directly contributing to anadromous salmonid and bull trout conservation.
- Tier 2 Key Watersheds were selected as sources of high quality water and may not contain at-risk fish stocks
- No new roads will be built in roadless areas in Key Watersheds.
- Reduce existing system and nonsystem road mileage outside roadless areas. If funding is insufficient to implement reductions, there will be no net increase in the amount of roads in Key Watersheds.
- Key Watersheds are highest priority for watershed restoration.
- Watershed analysis is required prior to management activities, except minor activities such as those Categorically Excluded under NEPA (and not including timber harvest).

- Timber harvest cannot occur in Key Watersheds prior to completing a watershed analysis. <ROD B-20]

[ROD B-18]

Refugia are a cornerstone of most species conservation strategies. They are designated areas that either provide, or are expected to provide, high quality habitat. A system of Key Watersheds that serve as refugia is crucial for maintaining and recovering habitat for at-risk stocks of anadromous salmonids and resident fish species. These refugia include areas of high quality habitat as well as areas of degraded habitat. Key Watersheds with high quality conditions will serve as anchors for the potential recovery of depressed stocks. Those of lower quality habitat have a high potential for restoration and will become future sources of high quality habitat with the implementation of a comprehensive restoration program (see “Watershed Restoration” later in this chapter).

The Aquatic Conservation Strategy includes two designations for Key Watersheds. Tier 1 (Aquatic Conservation Emphasis) Key Watersheds contribute directly to conservation of at-risk anadromous salmonids, bull trout, and resident fish species. They also have a high potential of being restored as part of a watershed restoration program. Tier 1 Key Watersheds consist primarily of watersheds identified previously by the Scientific Panel on Late-Successional Forest Ecosystems (1991), and in the Scientific Analysis Team Report (1993). The network of Tier 1 Key Watersheds ensures that refugia are widely distributed across the landscape. While Tier 2 (other) Key Watersheds may not contain at-risk fish stocks, they are important sources of high quality water. <ROD B-18]

Long-term management within Key Watersheds requires watershed analysis prior to further resource management activity. In the short term, until watershed analysis can be completed, minor activities such as those that would be Categorical Excluded under National Environmental Policy Act regulations (except timber harvest) may proceed if they are consistent with Aquatic Conservation Strategy objectives and apply Riparian Reserves and standards and guidelines. Timber harvest, including salvage, can not occur in Key Watersheds without a watershed analysis. Key Watersheds that currently contain poor quality habitat are believed to have the best opportunity for successful restoration and will receive priority in any watershed restoration program (see “Watershed Restoration” on page 2-12).

Roadless Areas and Key Watersheds

Management activities in inventoried roadless areas with unstable land will increase the risk to aquatic and riparian habitat, impair the capacity of Key Watersheds to function as intended, and limit the potential to achieve Aquatic Conservation Strategy objectives. Standards and guidelines that refer to inventoried roadless areas (or simply “roadless areas”) apply only to those portions of such areas that would still qualify as roadless under the guidelines used to originally designate the areas under the second Forest Service Roadless Area Review and Evaluation (RARE II). Roadless areas on the Gifford Pinchot National Forest are described in Appendix C of the *Forest Plan Final Environmental Impact Statement*.

To protect the remaining high quality habitats, no new roads will be constructed in inventoried roadless areas in Key Watersheds. Watershed analysis must be conducted in all non-Key Watersheds that contain roadless areas before any management activities can occur within those roadless areas. (see Figure 6-1, “Steps to a Programmed Timber Sale.”)

The amount of existing system and nonsystem roads within Key Watersheds should be reduced through decommissioning of roads. Road closures with gates or barriers do not qualify as decommissioning or a reduction in road mileage. If funding is insufficient to implement reductions, there will be no net increase in the amount of roads in Key Watersheds. That is, for each mile of new road constructed, at least one mile of road should be decommissioned, and priority given to roads that pose the greatest risks to riparian and aquatic ecosystems.

<ROD B-19]

Standards and Guidelines for Key Watersheds [ROD C-7]

Inside Roadless Areas - No new roads will be built in remaining unroaded portions of inventoried roadless areas.

Outside Roadless Areas - Reduce existing system and non-system road mileage. If funding is insufficient to implement reductions, there will be no net increase in the amount of roads in Key Watersheds.

Key Watersheds are highest priority for watershed restoration.

Watershed analysis is required prior to management activities, except minor activities such as those Categorical Excluded under NEPA (and not including timber harvest).

Watershed analysis is required prior to timber harvest. <ROD C-7]

Watershed Analysis [ROD B-20>

Watershed analysis, as described here, focuses on implementing the Aquatic Conservation Strategy. Watershed analysis is required in:

- Key Watersheds
- Roadless areas in non-Key Watersheds
- Riparian Reserves.

Decision makers require watershed analysis to determine how proposed land management activities will meet Aquatic Conservation Strategy objectives. Watershed analyses must be completed before initiating actions within a Key Watershed. There is a short term exception to this requirement for activities other than timber harvest. Minor activities that would be categorically excluded under National Environmental Policy Act regulations may proceed if they are consistent with Aquatic Conservation Strategy objectives, Riparian Reserves, and standards and guidelines.

Timber harvest, including salvage, cannot occur in Key Watersheds without a watershed analysis. Ultimately, watershed analyses should be conducted in all watersheds on federal lands as a basis for ecosystem planning and management.

Watershed analysis has a critical role in providing for aquatic and riparian habitat protection. Watershed analysis is important for planning ecosystem management and establishing Riparian Reserves. Watershed analysis considers the overall watershed condition including the protection and restoration of riparian and aquatic habitat. Watershed analysis considers an array of processes that include:

- the condition of the uplands
- the distribution and type of seral classes of vegetation
- the effects of previous natural and land-use related disturbances
- the distribution and abundance of species and populations
- the land use history.

These factors strongly influence the structure and functioning of aquatic and riparian habitat. Effective protection strategies for riparian and aquatic habitat on federal lands must accommodate the wide variability in landscape conditions present across the Pacific Northwest. Watershed analysis plays a key role in the Aquatic Conservation Strategy, insuring that aquatic system protection is fitted to specific landscapes.

Watershed analysis will focus on collecting and compiling information within the watershed that is essential for making sound management decisions. It will be an analytical process, not a decision-making process proposing an action requiring NEPA documentation. It will serve as the basis for developing project-specific proposals, and monitoring and restoration needs for a watershed. Some analysis of issues or resources may be included in broader scale analyses because of their scope. The information from the watershed analyses will contribute to decision making at all levels. Project-specific NEPA planning will use information developed from watershed analysis. For example, 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. Watershed analysis is described in further detail in *A Federal Agency Guide for Pilot Watershed Analysis*. <ROD B-21]

[ROD B-30>

Summary of Aquatic Conservation Strategy for Watershed Analysis:

Watershed analysis is a systematic procedure to characterize watersheds. The information is used to guide management prescription and monitoring programs, set and refine Riparian Reserve boundaries, and develop watershed restoration projects.

- Required in Key Watersheds prior to resource management.
- Required in all roadless areas prior to resource management.

- Recommended in all other watersheds.
- Required prior to activities in Riparian Reserves.
- Required to change Riparian Reserve widths in all watersheds.
- Analyze earthflows, unstable and potentially unstable areas for inclusion within Riparian Reserves.
- Important in developing monitoring strategies.

Table 2-3. Watershed Analysis (WSA) Requirements Matrix

Roadless Area	Riparian Reserve	Key Watershed	WSA Required	Exceptions
Yes	Yes or No	Yes or No	Yes	None
No	Yes	Yes or No	Yes	1909.15, 31.1
No	No	Yes	Yes	1909.15, 31.1 1909.15, 31.2
No	No	No	No	NA
*Exceptions do not apply to any form of commercial timber harvest, including salvage. FSH 1909.15, 31.1 Categorically excludable without a project file or decision memo. FSH 1909.15, 31.2 Categorically excludable, but project file and decision memo required				

Watershed Restoration

Watershed restoration will be an integral part of a program to aid recovery of fish habitat, riparian habitat, and water quality. Restoration will be based on watershed analysis and planning. Watershed analysis is essential to identify areas of greatest benefit-to-cost relationships for restoration opportunities and greatest likelihood of success. Watershed analysis can also be used as a medium to develop cooperative projects involving various landowners. In many watersheds the most critical restoration needs occur on private lands downstream from federally managed lands. Decisions to apply a given treatment depend on the value and sensitivity of downstream uses, transportation needs, social expectations, risk assessment of probable outcomes for success at correcting problems, costs, and other factors. Watershed analysis, including the use of sediment budgets, provides a framework for considering benefit-to-cost relations in a watershed context. Thus, the magnitude of restoration needs within the planning area will be based on watershed analysis. The most important components of a watershed restoration program are control and prevention of road-related runoff and sediment production, restoration of the condition of riparian vegetation, and restoration of in-stream habitat complexity. Other restoration opportunities exist, such as meadow and wetland restoration and mine reclamation, and these may be quite important in some areas. Regionally however, these opportunities are much less extensive than the three components listed above.

Roads

Road treatments range from full decommissioning (closing and stabilizing a road to eliminate potential for storm damage and the need for maintenance) to simple road upgrading, which leaves the road open. Upgrading can involve practices such as removing soil from locations where there is a high potential of triggering landslides, modifying road drainage systems to reduce the extent to which the road functions as an extension of the stream network, and reconstructing stream crossings to reduce the risk and consequences of road failure or washing out at the crossings.

Riparian Vegetation

Active silvicultural programs will be necessary to restore large conifers in Riparian Reserves. Appropriate practices may include planting unstable areas such as landslides along streams and flood terraces, thinning

densely-stocked young stands to encourage development of large conifers, releasing young conifers from overtopping hardwoods, and reforesting shrub and hardwood-dominated stands with conifers. These practices can be implemented along with silvicultural treatments in upland areas, although the practices will differ in objective and, consequently, design.

In-Stream Habitat Structures

In-stream restoration, based on the interpretation of physical and biological processes and deficiencies during watershed analysis, can be an important component of an overall program for restoring fish and riparian habitat. In-stream restoration measures are inherently short term and must be accompanied by riparian and upslope restoration to achieve long-term watershed restoration. Maintaining desired levels of channel habitat complexity, for example, may best be achieved in the short term by introducing structures. However, a riparian area with the complete array of functions and processes should provide coarse woody debris to the channel in the long term.

In-stream restoration will be accompanied by riparian and upslope restoration if watershed restoration is to be successful. In-stream restoration, including in-channel structures, will not be used to mitigate for management actions that degrade existing habitat, as a substitute for habitat protection, or to justify risky land management activities and practices. Priority must be given to protecting existing high quality habitat.

Summary of Aquatic Conservation Strategy for Watershed Restoration:

- Watershed restoration restores watershed processes to recover degraded habitat.
- Watershed restoration should focus on removing and upgrading roads.
- Silvicultural treatments may be used to restore large conifers in Riparian Reserves.
- Watershed restoration should restore channel complexity. In-stream structures should only be used in the short term and not as a mitigation for poor land management practices.

Monitoring

The following monitoring section is specific to achieving the stated objectives of the Aquatic Conservation Strategy.

Watershed analysis will support decisions for a variety of planned ecosystem management actions within watersheds. Specific actions may include habitat restoration, sediment reduction programs, road removal and management, timber harvesting, development of a recreation facility, or any of a multitude of activities. Monitoring will be an essential component of these management actions and will be guided by the results of watershed analysis.

General objectives of monitoring will be to: (1) determine if Best Management Practices have been implemented, (2) determine the effectiveness of management practices at multiple scales, ranging from individual sites to watersheds, and (3) validate whether ecosystem functions and processes have been maintained as predicted. In addition, monitoring will provide feedback to fuel the adaptive management process.

Monitoring plans must be tailored for each watershed. Significant differences in type and intensity of monitoring will occur based on watershed characteristics and management actions. For example, carefully targeted restoration activities may only require effectiveness monitoring of single activities, whereas watershed-scale restoration would be accompanied by extensive riparian and in-stream monitoring. The specific design of monitoring programs can best be accomplished by the local interdisciplinary teams working in cooperation with state programs. Pooling the monitoring resources of federal and state agencies is a necessity to provide interagency consistency and to increase available resources.

Monitoring will be conducted and results will be documented, analyzed and reported by the agency or agencies responsible for land management in any particular watershed. Reports will be reviewed by local interdisciplinary teams. In addition, water resource regulatory agencies may review results to determine compliance with appropriate standards and province and river basin-level strategies. A cross-section of

team members that includes participants from states and regulatory agencies should assess monitoring results and recommend changes in Best Management Practices or the mechanisms for Best Management Practice implementation. <ROD B-34]

Resource and Program Area Direction

The remainder of this chapter contains standards and guidelines which apply to all land allocations. Direction is organized by resource areas such as wildlife or fish, or program area such as the Facilities. Standards and guidelines specific to Riparian Reserves are included in each section, where applicable.

Facilities [FP IV-65>

Facilities include roads, buildings, and related structures required for management of National Forest Lands.

Transportation Planning and Inventory

1. In determining road density and design standards, the goal should be to design and construct or decommission roads appropriate to the intended uses, considering safety, cost of transportation, innovative logging systems, and impacts on other resources.
The development, maintenance, and management of the Forest development road system is to continue as needed to respond to resource management objectives.
2. All new roads constructed which are planned for closure should be designed with a turnaround/parking area as a standard road design criteria. Turnaround/parking areas, gates, barriers, and signs should be funded as part of the initial road package. Gates should be installed and closures put into effect upon completion of construction whenever possible.

Road, Bridge, and Culvert Construction and Reconstruction

1. All crossing projects affecting streams used for spawning, rearing, or migration on a year-round or permanent basis stream will be coordinated with Washington State Department of Fish and Wildlife. The streams crossed by such projects will be evaluated prior to project work to determine impact upon fisheries. (Refer to “Riparian Reserve Standards and Guidelines for Road Management” on page 2-18.)
2. Construction or maintenance work crossing fishbearing streams will be located and timed to protect spawning and egg incubation.
3. Following construction work, erosion control and restoration will be completed during the same season, or as soon as possible.

Road Operation

1. Traffic service levels should be established with consideration of resource management objectives, economics, traffic volumes, traffic mix, and safety.
2. Arterial and major collector roads should be managed for a mix of passenger cars and/or high-clearance vehicles and commercial traffic and should meet the standards set for roads subject to the Highway Safety Act (PL89-564).
3. Minor collector and local roads should be managed for standard passenger cars and/or high-clearance vehicles use only if there is a specific recreation access requirement, such as some campgrounds and major trailheads. Otherwise, they should be managed for other resources and should not be maintained for public travel. (Refer to the Access and Travel Management Plan for more specific direction).
4. The assigned traffic service level for minor collector and local roads should be consistent with the road management objectives for the area. The intent is to manage roads in a manner consistent with the resource objectives for each management area, while maintaining a reasonably uniform service level for the entire route as it passes through several management areas.
5. The “Access and Travel Management Plan” provides guidelines for the proper mix of development, road management, and maintenance of the road system. This Plan incorporates management programs such as the Commercial Road Rules, Road Maintenance Plan, Road Share-Cost Agreements, Forest Sign Guide, Forest Travel Plan, and Road Management Objectives.

6. The "Forest Travel Plan" will provide information on where public travel is permitted or limited. The Travel Plan should be reviewed annually and revised, if necessary, to reflect Forest Plan objectives.
7. The Flood Emergency Road Maintenance Plan (FERM) should be updated annually.
8. Roads not required for resource use, protection, or some other demonstrated access need should be closed or decommissioned. Access needs and road closures should be addressed in the Road Management Objectives for the road and in the Access and Travel Management Plan.
9. Road closures should use the fewest barriers to reduce traffic over the largest possible area. For wildlife purposes, closure priorities should consider the location of important wildlife habitat, the amount of forest cover present, the proximity of riparian habitat, and the existing degree of visibility. Effective enforcement capability is essential in the design of road closures. Area closures should be considered where off-road vehicle (ORV) use of primitive roads, or "wheel tracks," are disturbing or displacing wildlife.
10. Management activities within one-half mile of Wilderness or Semi-Primitive areas should be sensitive to the need for a feeling of remoteness or isolation within those areas. Timing of activities and access limitations may be considered in management areas adjacent to those areas.
11. Road closures designated in the Road Management Objective process should be accomplished within one year after the resource activity concludes when applying

12. the Eliminate or Prohibit traffic management schemes. When resource conflicts are minimal, the Discourage traffic scheme may be used to allow a road to close itself.
13. Forest Roads 25 and 99 should be open for public travel, providing access to the National Volcanic Monument from Memorial Day until closed by winter snows.
14. All nonsystem roads constructed in the planning period must be obliterated and revegetated using native species when possible when no longer needed for resource management.
15. Roads not needed for access to an active project or providing access to a specific recreation destination should be closed or decommissioned either permanently or seasonally closed.
16. Major through routes and roads providing access to a specific recreation destination should be managed to accommodate passenger car traffic. <FP IV-67]

Road Management Schemes [FP IV-85]

The following is the summary of the Road Management System applicable to all management areas with road access.

Roads Subject to Highway Safety Act

Major Forest roads, such as arterials and major collectors, are managed to accommodate general public travel in standard four-wheel passenger cars. They are subject to the requirements of the Highway Safety Act (PL89-564). These roads are operated at traffic service Levels A and B and, infrequently, at Level C. Maintenance will be at Levels 3, 4, and 5. These roads, by definition, should be open to the general public without restriction except for seasonal or intermittent closures.

1. *Encourage Passenger Cars:* This management scheme invites and encourages standard four-wheel passenger car use. Destination, directional, regulatory, and warning signs should be installed and well maintained. Other forms of traffic control devices such as pavement striping will also invite public use. These routes are generally arterial and major collector routes and are portrayed as primary Forest roads on the Forest recreation map.
2. *Accept Passenger Cars:* This management scheme is to allow passenger car use on collector roads that generally have gravel surfacing and may not be open year-round. These are indicated as secondary Forest development roads on the recreation map. Warning, regulatory, and route markers are the only necessary roadside signing.
3. *Discourage Passenger Cars:* This scheme is used on an intermittent or seasonal basis to discourage public use. It is most often applied when a road is temporarily not suitable for travel, such as during times of deep snow. Warning signs are posted to dissuade the public from using the road.
4. *Prohibit Passenger Cars:* Main roads can be closed to provide for public safety or for the protection of resource values by issuing a CFR closure order prohibiting public use. This management scheme may be applied during volcanic activity, floods, avalanche hazard periods, or when there is structural damage to bridges or roads.

Roads not Subject to the Highway Safety Act

Forest development roads not intended to be operated or maintained for standard passenger car use are exempt from the requirements of the Highway Safety Act. These are generally maintained for traffic only during commercial activities such as timber management, mineral exploration and extraction, and range management.

These minor collector and local roads are generally operated at traffic service level C or D and maintained at levels 1 or 2 when not being used for timber haul. During timber haul the surface maintenance frequently appears to be upgraded to a maintenance level 3. Surface maintenance is not required to be consistent with the assigned maintenance level for the road since the objective is to discourage or to limit passenger car use.

1. *Encourage High Clearance Vehicles:* The objective is to encourage high clearance vehicles, such as pickup trucks or jeeps, and to discourage passenger cars. These roads are maintained at level 2 and are indicated on the recreation map. Destination or guide signs, such as to some trailheads or special features, are posted at their entrances. The emphasis for accomplishing this traffic scheme is through road entrance management.

These roads will have one or two cross ditches across the road, or the main road's roadside ditch might continue across the junction of the lesser road. Signs discouraging passenger cars are sometimes used if more emphasis is needed beyond the cross ditches. When Encourage High Clearance Vehicle roads intersect with paved main roads, the edge line stripe along the main road will continue through the intersection.

2. *Accept High Clearance Vehicles:* The objective is to accept high clearance vehicles and to discourage passenger cars. These roads are maintained at Level 2 and are available and adequate for administrative use. Some public use may occur until passage becomes unsafe or resource damage becomes unacceptable. At that time the road management scheme usually changes to Prohibit or Eliminate.
In addition to the cross ditches at the entrances of these roads, all directional or guide signs will be removed to further discourage recognition and use of the road.
3. *Discourage High Clearance Vehicles:* The objective is to discourage all public use. The road entrances are designed to discourage four-wheel vehicle users with advisory signs, warning signs, or barriers. The maintenance level may vary depending on what permitted project use is occurring. Generally, the long-term maintenance level will be at the low tolerance of level 2. The maintenance emphasis allows roadside vegetation to encroach to the minimum width required for passage and allows naturally deposited materials such as rocks, limbs, and logs to remain on the roadway. Installation of closed unlocked gates or other removable barriers is permissible if a proper message is posted explaining why public use is discouraged.
4. *Eliminate High Clearance Vehicles:* The objective is to eliminate all use of four-wheel vehicles over 40 inches in width. This is accomplished by physically blocking the road rather than relying on regulations. These roads are maintained at level 1 and only to prevent resource damage. Some methods of blocking entrances include guard rail-type barriers, logs, stumps, concrete barriers, false road cuts, boulders, earthen mounds, deep trenches, and a combination of these barriers. Camouflaging with brush or trees is sometimes used to conceal the entrance of these roads. Gates are not included within this management scheme.
Trail vehicles of less than 40 inches in width can still use these roads unless a CFR order is issued prohibiting such use.
5. *Prohibit High Clearance Vehicles:* The Prohibit management scheme removes all or some of the road users by force of law if the road restriction is posted on the road and a CFR order is issued. Some users can be denied use while others are permitted depending on the management objectives for a road and how the CFR order is written. Locked gates may be used in this traffic management scheme.

The maintenance level for these roads can vary between levels 2 and 1. Roads having this scheme will be displayed on the Forest Travel Plan Map. <FP IV-86]

Riparian Reserve Standards and Guidelines for Roads Management

[ROD C-32]

1. Federal, state and county agencies should cooperate to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy objectives.
2. For each existing or planned road, meet Aquatic Conservation Strategy objectives by:
 - a) minimizing road and landing locations in Riparian Reserves.
 - b) completing watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in Riparian Reserves.
 - c) preparing road design criteria, elements, and standards that govern construction and reconstruction.
 - d) preparing operation and maintenance criteria that govern road operation, maintenance, and management.
 - e) minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.
 - f) restricting sidecasting as necessary to prevent the introduction of sediment to streams.
 - g) avoiding wetlands entirely when constructing new roads.
3. Determine the influence of each road on the Aquatic Conservation Strategy objectives through watershed analysis. Meet Aquatic Conservation Strategy objectives by:
 - a) reconstructing roads and associated drainage features that pose a substantial risk.

- b) prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected.
 - c) closing and stabilizing or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short-term and long-term transportation needs.
4. New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.
 5. Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hill slopes.
 6. Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.
 7. Develop and implement a Road Management Plan or a Transportation Management Plan that will meet the Aquatic Conservation Strategy objectives. As a minimum, this plan shall include provisions for the following activities:
 - a) inspections and maintenance during storm events.
 - b) inspections and maintenance after storm events.
 - c) road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources.
 - d) traffic regulation during wet periods to prevent damage to riparian resources.
 - e) establish the purpose of each road by developing the Road Management Objective. < ROD C-

33]

Construction and Facility Maintenance [FP IV-67>

1. Construction or maintenance work crossing fishbearing streams will be located and timed to protect spawning and egg incubation.
2. Following construction work, erosion control using native species when possible and restoration will be completed during the same season, or as soon as possible.
3. Alteration or maintenance of designated historic structures requires a site development plan and must be performed in consultation with the State Historic Preservation Office.
4. Buildings, utility systems and related facilities should be planned, developed, maintained and operated for safe use, support of Forest resource programs, and cost effectiveness.
The construction of new buildings or additions to existing buildings and utility systems shall comply with the approved site development plan. <FP IV-67

Heritage Resources Program [FP IV-20>

The ultimate goal of the heritage resources program will be the protection use and/or interpretation of appropriate heritage resource properties for the benefit of the general public.

All heritage resource sites will be evaluated prior to any potential project impact. Monitoring for other impacts, such as erosion and vandalism, will occur.

Depending on available funding, priorities for nonproject-related heritage site inventory will be:

1. Areas which are being impacted by natural processes or intensive public use.
2. Areas with reported but unverified sites.
3. Areas where heritage resources are highly probable as determined by known land use patterns, terrain features, resource distributions, and the nature and extent of previous landscape modifications.
All sites located during a project-related survey will be documented in accordance with Regional standards.
The heritage site inventory will serve to:

1. Aid in the development of a database which can reliably contribute to statewide efforts in preservation planning.
2. Facilitate the development of appropriate research strategies.
3. Provide the basis for evaluations of significance.
4. Aid in the formulation of informed management decisions.

Sites will be treated as individual properties, thematic groups, or historic districts. The major emphasis, however, will be away from the evaluation of single sites. No property can be viewed in isolation when assessing its importance. Efforts will be made to look at the local or regional context of the heritage resource and to determine the relationship of the property to others within the same historic context and/or specific geographic area.

In the case of archaeological sites on the Forest, some test excavations will be necessary to determine the boundaries, depth of deposits, and/or basic nature and condition of the properties. This information is vital to determining the extent and significance of these sites.

Preferred management of heritage resources is protection in place through avoidance, stabilization, and maintenance of the environmental setting.

All inventoried sites will be assessed as to suitability for interpretation or appropriateness for scientific research. Coordination with the American Indian community may be necessary. Involvement of interested volunteer groups and appropriate educational institutions will be encouraged.

Native American traditional uses will be considered, and traditional cultural properties inventoried as a class of heritage resources.

The Handshake Agreement between Chief Yallup and Forest Supervisor Bruckert granting Native Americans exclusive berrypicking rights to a 700 acre portion of the Sawtooth Berryfield east of Forest Road 24 will continue to be honored. <FP-IV-21]

[FP-IV-49>

The following Cultural Resource Management standards and guidelines will be used to ensure that the necessary planning, inventory, evaluation, assessment, and protection (or mitigation of effects) is carried out for all cultural resources.

Heritage Resource Planning

1. A heritage resource management plan will be written for each Federally-owned site listed on, or determined eligible for, the National Register of Historic Places, including those under special use or Granger-Thye permit.
2. A management plan should be written for the Forest heritage resource program. The plan should include recommendations for enhancement and interpretation of heritage resources, as well as recommendations for generating use fees.

Heritage Resource Inventory

1. Prior to any ground-disturbing activity, proposed project areas will be examined for heritage resources by a heritage resource specialist or technician under the direction of a specialist. Included are: (1) those projects which are permitted, but not performed by the Forest Service, and (2) Forest Service projects on other than National Forest lands. The inventory will be conducted as early as feasible in the project planning stage, and results will be documented in the Environmental Analysis for the project.
2. A heritage resource inventory will be conducted prior to the routine maintenance, rehabilitation, movement, or removal of any structure which may have cultural value. Included are those privately owned on National Forest lands under special use permits.
3. An inventory to identify all reasonably locatable heritage resources on National Forest lands should be completed within ten years after approval of this Forest Plan.
4. Heritage resource inventory work will be coordinated with the State Historic Preservation Officer through the Forest Cultural Resource Specialist.
5. The Forest "Cultural Resource Overview" should be updated as needed.
6. Caves, rock shelters, lava tubes, and talus slopes will be inventoried when they are within project areas or are subject to recreational use. Refer to standards and guidelines for caves under "Caves and Geologic Features" later in this chapter.
7. An inventory will be kept of sites identified by Native Americans under the American Indian Religious Freedom Act.

Cultural Resource Evaluation and Assessments

1. All cultural resources, including sites and structures, will be evaluated to determine eligibility for the National Register of Historic Places. If determined eligible, they will be managed as if listed on the Register. The State Historic Preservation Officer will be consulted when determining eligibility, with the Keeper of the National Register consulted as needed. Sites or structures determined to be eligible for the Register will be nominated.
2. The potential effects of proposed activities on any cultural resource will be assessed prior to any disturbances. Assessment will be performed in consultation with the State Historic Preservation Officer (SHPO) and the Federal Advisory Council on Historic Preservation.

Cultural Resource Management, Protection, and Enhancement

1. Cultural resources eligible for the National Register will be protected from potential effects of project activities or their historic values conserved through appropriate mitigation.
2. Cultural resources eligible for the Register will be protected from depredation due to public use and natural deterioration.
3. Measures to avoid or mitigate project effects and to protect cultural sites and structures will be developed in consultation with the State Historic Preservation Officer and the Federal Advisory Council on Historic Preservation.
4. Federally-owned historic buildings not in use should be considered for special use permits or Granger-Thye permits.
5. Suitable cultural resources should be developed and interpreted for recreational use when adequate provisions are available to protect the resource.
6. Information gathered in the evaluation of sites and structures should be used in the Forest interpretation program. Displays, brochures, interpretive trails, or signing may be employed.
7. Specific cultural resource site locations are exempt from disclosure to the general public.

8. All cultural resource inventories and excavations by non-Forest Service personnel will require a permit.
9. Rights and privileges provided by the Medicine Creek Treaty of 1854 for the Nisqually, Puyallup, Squaxin Island, and Steilacoom Indian Tribes (including (1) the right of taking fish at usual and accustomed grounds and stations in common with all citizens, and erecting temporary houses for curing, (2) the privilege of hunting and gathering roots and berries on lands under U.S. administration, and (3) the privilege of pasturing their horses on lands under U.S. administration) and the Yakima Treaty of 1855 for the Yakima Indian Nation will be reserved for those groups. Within Treaty areas, resource management plans will be coordinated with these Tribes.
10. Outside of Treaty areas, resource management plans should be coordinated with local Tribes where appropriate.
11. Outside and within Treaty areas, traditional food and plant material gathering sites used by Native Americans may be managed for continued production of native roots, berries, nuts, herbs, beargrass, and other plant materials typically gathered from the land. <FP-IV-50> [ROD - 54]
It is conceivable, however, that subsequent implementation of standards and guidelines could directly affect American Indian practices and activities—for example, a prohibition against the collection of certain plant material or trees in Late-Successional Reserves that are subject to tribal treaty off-reservation gathering rights. Under such circumstances, the exercise of these tribal rights will not be restricted unless the Regional Interagency Executive Committee determines that the restriction is (1) reasonable and necessary for preservation of the species at issue, (2) the conservation purpose of the restriction cannot be achieved solely by regulation on non-Indian activities, (3) the restriction is the least restrictive alternative available to achieve the required conservation purpose, (4) the restriction does not discriminate against Indian activities either as stated or as applied, and (5) voluntary tribal conservation measures are not adequate to achieve the necessary conservation purpose.

Consultation with the recognized tribal government with jurisdiction over the trust property that the proposal may affect, the Bureau of Indian Affairs, and the Office of the Solicitor will be conducted early in the planning process. The consultation with affected tribes will occur on a government-to-government basis. Conflicts will be resolved collaboratively with affected tribes involved in the planning process, consistent with the federal government's trust responsibilities. <ROD - 55> [FP IV-50]

12. Religious sites and resources identified under the American Indian Religious Freedom Act will be managed in consultation with Native Americans.
13. Existing and potential historic structure maintenance will be identified and reviewed annually.
14. Newly identified peeled cedar sites will be protected with a 200-foot buffer until placed in one of the following categories:
 - a) Preservation - The site will be protected with a 200-foot buffer.
 - b) Available for harvest - Mitigation will occur before the site is released for harvest.

Continuing management of peeled cedar sites will be done under the Peeled Cedar Management Plan and Programmatic Memorandum of Agreement with the State Historic Preservation Office and Advisory Council on Historic Preservation.

15. The “1932 Handshake Agreement” between Chief Yallup and Forest Supervisor Bruckert granting Native Americans exclusive berrypicking rights to a portion of the Sawtooth Berryfields east of Forest Road 24 will continue. <FP IV-50]

Lands and Minerals

Special Use Permits (Nonrecreation) and Right-of-Way Grants for Roads and Trails [FP IV-64>

The standards and guidelines under this heading are in response to requests for permits, or other approval, from persons, organizations, or agencies outside the Forest Service.

1. Uses without permits should be inventoried and terminated if found to be inconsistent with the objectives of the management area. New permits should be limited to those which do not conflict with management area objectives.
2. Utility Corridors are excluded from consideration in Wildernesses, the National Volcanic Monument, and Wild Rivers upon Congressional designation under the Wild and Scenic Rivers Act. Corridors should be avoided in the following areas:
 - a) Rivers proposed for designation as Wild Rivers
 - b) Scenic and proposed Scenic Rivers
 - c) Research Natural Areas
 - d) Riparian Reserves
 - e) Threatened, Endangered, and Sensitive Species Habitats
 - f) Special Interest Areas
 - g) Developed Recreation Sites
 - h) Unroaded Recreation
 - i) Wildlife Special Areas
 - j) Mountain Goat Habitat
 - k) Experimental Forest.
3. Permits, leases, and rights-of-way not consistent with the objectives of the management area should not be recommended. Nonconforming uses should be terminated when opportunity permits.
4. New utility proposals should be accommodated within existing designated utility sites or corridors to the maximum extent feasible. <FP IV-64]

Property Boundary Location

Property and Congressionally designated area boundaries will be located prior to any management activity which may affect these areas. For timber sales, the boundary should be located and marked at least two years before the sale.

Landownership Planning

All lands within the Forest boundary, public and private, are assigned to one of five landownership categories, depending upon their location and mix of resource values. These assignments are intended to serve as a guide for the Forest's ongoing land exchange/ownership adjustment program. The five categories are:

- Category I Retention of public lands or acquisition of lands in other ownerships is essential.
- Category II Retention or acquisition as opportunity occurs, needed to benefit special areas or needs. Public ownership is beneficial.
- Category III Neutral lands available for acquisition or disposal. Public ownership not essential.
- Category IV Lands to be disposed of, or lands not expected to be acquired such as homes, lands. Public ownership is not beneficial.
- Category V More study is needed to determine proper category.

Rights-of-Way Acquisitions and Cost-Share Agreements

(R/Ws In-service generated, Cost-Share Agreements normally In-service)

1. Rights-of-way and cost-share agreements required for timber sales projects will be:
 - a) Identified in the position statement or project initiation letter for the proposed sale.
 - b) Completed through the preliminary title search in the Environmental Assessment.
 - c) Approved, with rights-of-way package in the Timber Sale Report or prior to project implementation.
2. General rights-of-way should:
 - a) Be identified early to allow choice of location with least impact on Forest and involved landowner.
 - b) Be complete through preliminary title search before design engineering commences.
 - c) Secure approval of rights-of-way package before easement is used.
3. Existing Rights-of-way:
 - a) Review each case to determine the adequacy of rights received in the deed.
 - b) Acquire necessary additional interests in existing road and trail rights-of-way to meet Forest objectives.
 - c) Aggressively pursue the resolution of access rights on roads and trails which are presently on the National Forest Transportation System. <FP IV-65]

Riparian Reserve Standards and Guidelines for Lands [ROD C-37]

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| LH-1 | Identify in-stream flows needed to maintain riparian resources, channel conditions, and fish passage. |
| LH-2 | Tier 1 Key Watersheds: For hydroelectric and other surface water development proposals, require in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate state agencies. During relicensing of hydroelectric projects, provide written and timely license conditions to the Federal Energy Regulatory Commission (FERC) that require flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies.
For all other watersheds non-Tier 1: For hydroelectric and other surface water development proposals, give priority emphasis to in-stream flows and habitat conditions that maintain or restore riparian resources, favorable channel conditions, and fish passage. Coordinate this process with the appropriate state agencies. During relicensing of hydroelectric projects, provide written and timely license conditions to FERC that emphasize in-stream flows and habitat conditions that maintain or restore riparian resources and channel integrity. Coordinate relicensing projects with the appropriate state agencies. |
| LH-3 | Locate new support facilities outside Riparian Reserves. For existing support facilities inside Riparian Reserves that are essential to proper management, provide recommendations to FERC that ensure Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, provide recommendations to FERC that such support facilities should be relocated. Existing support facilities that must be located in the Riparian Reserves will be located, operated, and maintained with an emphasis to eliminate adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives. |
| LH-4 | Issue leases, permits, rights-of-way, and easements to avoid adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives. Adjust existing leases, permits, rights-of-way, and easements to eliminate adverse effects that retard or prevent the attainment of Aquatic Conservation Strategy objectives. If adjustments are not effective, eliminate the activity. Priority for modifying existing |

leases, permits, rights-of-way and easements will be based on the actual or potential impact and the ecological value of the riparian resources affected.

- LH-5 Use land acquisition, exchange, and conservation easements to meet Aquatic Conservation Strategy objectives and facilitate restoration of fish stocks and other species at risk of extinction. <ROD C-37]

[FP IV-74>

Activities requiring special use permits should be located outside the Riparian Reserve. Necessary activities in Riparian Reserves may be allowed, providing their impact on riparian values is not significant or permanent. <FP IV-74]

Minerals Management [FP IV-64>

Areas with mineral potential should be recommended for mineral entry withdrawal only when mitigation measures would not adequately protect other resources and when such resources are determined to have greater public values. In most cases, PL 84-167 (Multiple Use of Surface of Public Land), 36 CFR 228 and 36 CFR 261 will provide adequate protection of surface resources. Subject to valid existing rights, withdrawals from entry under the general mining law will be in conformance with Section 204 of PL 94-579 (Federal Land Policy and Management Act). <FP IV-64]

Riparian Reserve Standards and Guidelines for Minerals Management [ROD C-34>

- MM-1 Require a reclamation plan, approved Plan of Operations, and reclamation bond for all minerals operations that include Riparian Reserves. Such plans and bonds must address the costs of removing facilities, equipment, and materials; recontouring disturbed areas to near pre-mining topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvage and replacement of topsoil; and seedbed preparation and revegetation to meet Aquatic Conservation Strategy objectives.
- MM-2 Locate structures, support facilities, and roads outside Riparian Reserves. Where no alternative to siting facilities in Riparian Reserves exists, locate them in a way compatible with Aquatic Conservation Strategy objectives. Miles of road construction will be kept to the minimum necessary for the approved mineral activity. Such roads will be constructed and maintained to meet roads management standards and to minimize damage to resources in the Riparian Reserve. When a road is no longer required for mineral or land management activities, it will be closed, obliterated, and stabilized.
- MM-3 Prohibit solid and sanitary waste facilities in Riparian Reserves. If no alternative to locating mine waste (waste rock, spent ore, tailings) facilities in Riparian Reserves exists, and releases can be prevented, and stability can be ensured, then:
- a) analyze the waste material using the best conventional sampling methods and analytic techniques to determine its chemical and physical stability characteristics.
 - b) locate and design the waste facilities using best conventional techniques to ensure mass stability and prevent the release of acid or toxic materials. If the best conventional technology is not sufficient to prevent such releases and ensure stability over the long term, prohibit such facilities in Riparian Reserves.
 - c) monitor waste and waste facilities after operations to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.

- d) reclaim waste facilities after operations to ensure chemical and physical stability and to meet Aquatic Conservation Strategy objectives.
- e) require reclamation bonds adequate to ensure long-term chemical and physical stability of mine waste facilities.

- MM-4 For leasable minerals, prohibit surface occupancy within Riparian Reserves for oil, gas, and geothermal exploration and development activities where leases do not already exist. Where possible, adjust the operating plans of existing contracts to eliminate impacts that retard or prevent the attainment of Aquatic Conservation Strategy objectives.
- MM-5 Salable mineral activities such as sand and gravel mining and extraction within Riparian Reserves will occur only if Aquatic Conservation Strategy objectives can be met.
- MM-6 Include inspection and monitoring requirements in mineral plans, leases or permits. Evaluate the results of inspection and monitoring to effect the modification of mineral plans, leases and permits as needed to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives. <ROD C-36]

Caves and Geologic Features [FP IV-62]

1. The Forest's "Geologic Resource Inventory" and "Geologic Resources and Condition Map" will be used to assess the impact of those management activities affecting the geologic resource.
2. Inventories and investigations should be conducted for mineral potential to minimize conflicts with possible future mineral development and other Forest activities. The Mineral Potential Map will be used to assess the impacts of management activities. Mineral resources will be considered in proposals for planning, withdrawals, exchanges, and any development project.
3. Caves will be evaluated as required by the Federal Cave Resources Protection Act of 1988. Caves determined to be significant under the Act will be considered for listing on the National Significant Caves List. Specific locations of Significant Caves are exempt from disclosure to the general public.
4. A Forest-wide, comprehensive cave management analysis should be completed within ten years after approval of the Forest Plan. Management plans should be prepared for caves with high resource, educational, or recreational values, hazardous conditions, or heavy use. If the analysis determines that cave management or protection is required, the cave should be placed in one of the following classes. Caves determined through analysis to have no significant values, and documented as such, will no longer be protected.
 - a) Class 1: Sensitive Caves
Caves considered unsuitable for exploration by the general public either because of their pristine condition, unique resources, or extreme safety hazards. They may contain resources that would be impacted by low levels of visitation. These caves are not shown on maps or discussed in publications intended for general public use such as guides, brochures, and magazines.
 - b) Class 2: Directed Access Caves
Caves with directed public access and developed for public use. These caves are shown on maps or have signs directing visitor access; they frequently have guided tours and artificial lighting. Regardless of the level of development, public visitation is encouraged. The caves may have sensitive resources that are protected.
 - c) Class 3: Undeveloped Caves
Caves that are undeveloped or contain unmaintained or minimal developments that are suitable for exploration by persons who are properly prepared. In general, these caves contain resources that resist degradation by recreational use. However, public use will not be directed toward them.
5. Prior to a determination of significance under the 1988 Cave Act, or Forest-wide comprehensive cave management analysis, the following direction is applicable:

Prior to ground-disturbing activities which may adversely affect them, an analysis should be prepared for caves and similar unique geological features. The analysis should document any biological, hydrological, cultural, recreational, geological, mineralogical, paleontological, educational, or scientific values. The following measures may be used to protect caves and similar geologic features:

 - a) Limitation of logging, road construction, and other uses of heavy equipment above or in the vicinity of a cave with a thin roof, or the course of such a cave, if there is a potential for damage.

- b) Retention of vegetation in the vicinity of a cave or cave course, if it is required, to protect the cave's micro environment.
- c) If timber harvesting is permitted in the vicinity of a cave, trees may be directionally felled away from the cave and its course.
- d) Avoidance of the alteration of cave entrances, or their use as disposal sites for slash, spoils, or other refuse.
- e) Limitation of management activities within any area draining into a cave if they may affect the cave ecosystem with sedimentation, soil sterilization, the addition of nutrients or other chemicals, including pesticides, herbicides, and fertilizers, or change the cave's natural hydrology.
- f) Avoidance of diversion of surface drainage into caves.
- g) Limitation of public access, if required to prevent damage to the cave resources or if there are unusual safety hazards.
- h) Avoid advertising the location of caves to the general public in printed documents or by signing.
- i) Scientific or educational use of caves may be permitted by the Forest Supervisor.
- j) Also see "Habitat Management Objectives for Bats," later in this chapter.

Processing of Exploration Proposals, Lease Applications, and Site Development Proposals

(The standards and guidelines under this heading are in response to requests for permits, or other approval, from persons, organizations, or agencies outside the Forest Service).

1. Under the mining law, claimants are entitled to access to their mining claims. Access for exploration and development of locatable mineral resources will be analyzed in response to a proposed operating plan. A decision on approval of reasonable access will be made as a result to appropriate environmental analysis.
2. Operating plans will include reasonable and operationally feasible requirements for timely and effective coordination with other resources.
3. Reclamation plans should describe final management objectives for specific mined areas and detail reasonable procedures and time frames to accomplish those objectives. Reclamation bonds will be based on actual reclamation costs and formulated using appropriate technical and other resource input.
4. Mining claimants should be notified of impending Forest Service actions that may affect their claims. Reasonable efforts should be made to protect claim corners and mine workings from disturbance as a result of Forest Service activities.
5. Mineral lease applications will be reviewed in a timely fashion and conditions and appropriate special stipulations necessary to protect surface resources will be applied.
6. A "No Surface Occupancy" stipulation will be applied to leases only (a) when surface occupancy would cause significant resource disturbance which cannot be mitigated by any other means, (b) where resource impacts would be irreversible or irretrievable, or (c) when the activity is incompatible with the surface management objectives.
7. The development of common variety mineral material sources will be evaluated and administered according to the Forest's "Rock Resource Management Plan."

<FP IV-64]

Protection [FP IV-67>

Fire Management Planning and Analysis

Forest-wide planning will utilize the National Forest Management Analysis System to determine the most cost-efficient fire protection organization. As conditions change and better information is developed, the fire organization will be re-evaluated with this system.

Cost-effective plans for the prevention of human-caused fires will be aimed at specific risks determined by ongoing monitoring of current and recent fire reports.

The mix of aerial and ground detection activities will be reviewed periodically to maintain the most cost-efficient combination.

Escaped Fire Suppression

1. Suppression decisions will be based on an Escaped Fire Situation Analysis (FS-5100-Z). This analysis will be made for all escaped fires when:
 - a) A fire has escaped initial attack or has been determined to exceed the protection objectives of the area.
 - b) Alternative suppression strategies can be identified before large expenditures in time or money are incurred.
 - c) The fire will extend into the next burning period.
2. Alternative Suppression Strategies which should be considered are:
 - a) *Confine*: To restrict the fire within boundaries established either prior to the fire, during the fire, or in an escaped fire situation analysis. In most cases this will be restricted to Fire Intensity Level (FIL) 1 or 2.
 - b) *Contain*: To surround a fire and any spot fires it produces with a control line which can reasonably be expected to check the fire's spread under prevailing and predicted conditions. It is restricted to FIL 1-2 and, in isolated cases, 3-4.
 - c) *Control*: To complete the control line around a fire and any interior islands to be saved, burn out any unburned areas adjacent to the fire side of the control line, and cool all hot spots that are immediate threats to the control line. The suppression strategy to be used will depend on the standards and guidelines for the given management area. The Control strategy may be used whenever the fire hazard is severe.

Fuels Treatment

1. Fuel treatment priorities will be:
Priority 1: Fuel treatment adjacent to communities where life and property are threatened by wildfire.
Priority 2: Fuel management support to functional and project planning.
Priority 3: The treatment of prior activity fuels.
Priority 4: The treatment of natural fuels where suppression capability alone cannot reasonably assure the cost-efficient attainment of resource management goals and objectives.
2. All slash-creating projects will be analyzed to determine whether slash must be treated.
3. A fuel treatment plan will be prepared for all projects which do not meet acceptable fuel levels.
4. Management activities will not be undertaken if slash cannot be reduced to an acceptable level.
5. Subject to meeting coarse woody debris requirements, the following fire hazard reduction applications should be considered:
 - a) *Utilization*: Harvest techniques such as top yarding, improved utilization methods identified in mill operation and log manufacturing studies, and residue treatment methods that optimize firewood use.
 - b) *Rearrangement*: Fuels may be redistributed on-site to a less hazardous condition or one which produces faster deterioration or removal.
 - c) *Removal*: Fuels may be moved off-site for use, storage, or disposal.
 - d) *Disposal*: The reduction or elimination of fuels by prescribed burning or manual, mechanical, chemical, or biological means.
 - e) *Conversion*: Replacing flammable vegetation with less flammable material.
 - f) *No reduction*. <FP IV-68]

Riparian Reserve Standards and Guidelines for Fire/Fuels Management [ROD C-35]

- | | |
|-------|--|
| FM-1 | Design fuel treatment and fire suppression strategies, practices, and activities to meet Aquatic Conservation Strategy objectives, and to minimize disturbance of riparian ground cover and vegetation. Strategies should recognize the role of fire in ecosystem function and identify those instances where fire suppression or fuels management activities could be damaging to long-term ecosystem function. |
| FM-2 | Locate incident bases, camps, helibases, staging areas, helispots and other centers for incident activities outside Riparian Reserves. If the only suitable location for such activities is within the Riparian Reserve, an exemption may be granted following review and recommendation by a resource advisor. The advisor will prescribe the location, use conditions, and rehabilitation requirements. Use an interdisciplinary team to predetermine suitable incident base and helibase locations if in Riparian Reserves. |
| FM-3 | Minimize delivery of chemical retardant, foam, or additives to surface waters. An exception may be warranted in situations where overriding immediate safety imperatives exist, or, following review and recommendation by a resource advisor, when an escape would cause more long-term damage. |
| FM-4 | Design prescribed burn projects and prescriptions to contribute to attainment of Aquatic Conservation Strategy objectives. |
| FM-5 | Immediately establish an emergency team to develop a rehabilitation treatment plan needed to attain Aquatic Conservation Strategy objectives whenever Riparian Reserves are significantly damaged by wildfire or a prescribed fire burning outside prescribed parameters. |
| Other | In Riparian Reserves, the goal of wildfire suppression is to limit the size of all fires. When watershed and/or landscape analysis, or province-level plans are completed and approved, some natural fires may be allowed to burn under prescribed conditions. Rapidly extinguishing smoldering coarse woody debris and duff should be considered to |

preserve these ecosystem elements. In Riparian Reserves, water drafting sites should be located and managed to minimize adverse effects on riparian habitat and water quality, as consistent with Aquatic Conservation Strategy objectives. <ROD C-36]

Pest Suppression and Prevention [FP IV-68>

To meet Forest objectives, Integrated Pest Management Prescriptions will be utilized to manage pests within the standards and guidelines for each Management Area. They may include manual, mechanical, cultural, biological, chemical, prescribed fire, and regulatory methods. Private landowners and other public agencies should be consulted and a cooperative effort made to control or minimize pest infestations when appropriate. <FP IV-68]

[FP IV-68a>

Noxious weeds and all unwanted vegetation will be treated by one or more of the following strategies, depending on the degree to which the infestation has progressed: prevention, early treatment, maintenance, correction, or deferred action. Prevention is the preferred treatment. Integrated Vegetation Management (IVM) methods available for use are: education, preventative measures, physical or mechanical methods, cultural methods (including prescribed fire), biological agents and herbicides.

If treatment is needed, it must be designed to lead toward a long-term prevention strategy. Economic, environmental, sociopolitical effects, and human health, especially with use of fire or herbicides, will be analyzed. <FP IV-68a]

Riparian Reserve Standards and Guidelines for Pest Management [FP IV-75>

Pests which adversely affect riparian vegetation should be suppressed or prevented using techniques which do not degrade water quality. Cultural and biological methods will be favored. <FP IV-75]

Range [FP IV-55>

Planning, Inventory and Permit Administration

1. A range inventory and analysis should be completed for each active allotment at least once every 10 years.
2. An allotment management plan should be developed for each active allotment.
3. Allotment periodical evaluation and monitoring should be conducted throughout the grazing season. The analysis should assess the condition of soils, water, stream channel condition, botanical areas, and wildlife habitats to determine if the Aquatic Conservation Strategy objectives are met. Also assessed should be native plant vigor and production, composition, and utilization. Protection may include such measures as range rotation and curtailment in critical areas; e.g., natural openings and riparian areas with the use of salting, fencing, and other methods.
4. Structural and nonstructural range improvements will be maintained in working condition by the parties designated in the term grazing permit.
5. When management activities remove natural barriers, fences will be constructed or extended as needed to maintain livestock control.
6. In watersheds which supply domestic water, livestock grazing may be permitted if an analysis of potential effects determines that degradation of that supply will not occur.
7. Conflicts between domestic livestock and big game deer and elk should be resolved in favor of big game deer and elk <FP IV-56] [FP IV-70>
8. Rehabilitation projects on areas degraded by livestock grazing and associated management activities should be done as soon as possible. <FP IV-70]

Riparian Reserve Standards and Guidelines for Grazing Management [ROD C-33>

- GM-1 Adjust grazing practices to eliminate impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives. If adjusting practices is not effective, eliminate grazing.
Locate new livestock handling and/or management facilities outside Riparian Reserves. For existing livestock handling facilities inside the Riparian Reserve, ensure that Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, require relocation or removal of such facilities.
- GM-2 Limit livestock trailing, bedding, watering, loading, and other handling efforts to those areas and times that will ensure Aquatic Conservation Strategy objectives are met. <ROD C-34]
1. Livestock grazing may be permitted if riparian values are protected. Of particular concern are: [FP IV-70>
 - a) Water quality
 - b) Stability of stream and lake banks
 - c) Soil compaction
 - d) Riparian vegetation
 - e) Fish and wildlife habitat
 - f) Sensitive plants
 2. Bedding grounds will not be permitted in riparian areas.
 3. Water developments (stock tanks), salting, fencing, driving enclosures, and seasonal use should be placed or timed to disperse grazing stock away from Riparian Reserves, Sensitive Botanical Areas, and Research Natural areas.

Recreation [FP IV-48>

Visual Quality Objectives (VQOs)

These standards and guidelines are designed to protect or enhance scenic and recreational values. Visual Quality Objectives should be considered for viewsheds seen from campgrounds, viewpoints, picnic areas, and other developed sites, as well as those seen from designated travel routes such as roads and rivers.

The Visual Quality Objectives assigned in each management area should be the minimum level acceptable and should be met by all activities. Standards and guidelines for Visual Quality Objectives are described below in Table 2-4 and Table 2-5.

Locations where rehabilitation may be required to meet established visual quality standards should be inventoried for accomplishment in all management areas permitting vegetative manipulation.

The Recreation Opportunity Spectrum (ROS) class assigned in each management area (except Wilderness) is the minimum level acceptable and should be met by all activities. See “Wilderness” Management Area for WROS direction in Chapter 3.

Opportunities to provide sites for wildlife viewing should be evaluated.

Geological and botanical features, waterfalls, cultural sites not eligible for the National Register, and similar items should be evaluated for their interpretive or recreational value. Where determined to be significant, these values should be protected. Actual boundaries and measures of protection will be determined in the Environmental Analysis for any project which may adversely affect the item.

Refer to the standards and guidelines for caves and geologic features on page 2-33.

Trails are assigned one of three management levels and should be managed according to the standards and guidelines applicable to that level, unless other applicable standards and guidelines are more restrictive. Standards and guidelines for trail management begin on page 2-39 <FP 2-48]

Table 2-4. Visual Quality Objectives [FP IV-79>

	Foreground Retention	Middleground Retention Foreground Partial Retention	Middleground Partial Retention	Modification
Ground disturbance by any activity should be rehabilitated within one year to natural appearance.	X	X	—	—
Stumps resulting from any activity should, where they are visible (within 100 feet of the travelway), be flush-cut or otherwise concealed.	X	X (Foreground only)	—	—
A fully stocked timber harvest area will no longer be considered an opening when average tree height is in excess of:	20'	20'	20'	4 1/2'
Buildings should be located and designed to blend with the natural character of the land.	X	X	X	—
Harvest units may not dominate natural form, line, color, and texture.	X	X	X	—
Harvest units may dominate natural form, line, color, and texture, but must blend with the natural character of the land.	—	—	—	X
Retain diversity in undergrowth.	X	X (Retention only)	—	—
Maintain diversity of species and/or age classes.	X	X	—	—
Revegetation for visual quality and erosion control should be completed within one season after construction.	X	X	X	X
All quarry/stockpile sites should be located out of sight or rehabilitated.	X	X	X	—
Roads may not dominate the natural form, line, color, and texture.	X	X	X	—
All utility rights-of-way should be located and designed to blend with natural appearances.	X	X	X	—
Transmission towers will be screened or designed to blend with their surroundings.	X	X	X	—
Whenever it is practical, fire and fuel management activities will be designed to enhance visual quality.	X	X	X	—
			3/	3/

Table 2-5. Timber harvest standards and guidelines required to meet visual quality objectives 1/

	Entry Cycle	2/ Target Tree Size	Max. Harvest Per Entry Cycle	4/ Unit Size (visible)	Max. Opening at Any Time (Percent)
Preservation	Ecological Change Only No Harvest				
Retention Foreground	10 year	36" DBH	6.6%	Roads: 1/2-3 acres within 500 ft. Trails: 1/4-1 acres within 500 ft. Both: 3-5 acres beyond 500 ft.	10
Retention Middle ground Partial Retention Foreground	10 year	N/A 30" DBH	10%	Roads and Trails to: 5 acres within 500 ft. 5-10 acres beyond 500 ft.	14
Partial Retention Middle ground	10 year	N/A	12%	To 15 acres	20
Modification	As needed	N/A	No Restriction	Emulates natural features	N/A
<p>1/ For additional criteria to be used in applying the Visual Management System, refer to Forest Service Handbook No. 559. These standards and guidelines are intended to apply where timber harvesting is done for the purpose of stand regeneration, including clearcutting, shelterwood, and seed tree harvests. If otherwise appropriate, unevenaged cutting methods may be a viable option in meeting the assigned Visual Quality Objective.</p> <p>2/ May vary on less productive growing sites.</p> <p>3/ Percentage of suitable timberland in the specific viewshed.</p> <p>4/ Unit size means that portion of the unit visible from the designated viewing positions. Unit sizes may be increased where adequate vegetative screening exists. This does not change the assigned Visual Quality Objective. <FP IV-80></p>					

Recreation Opportunity Spectrum (ROS) [FP IV-75]

These standards and guidelines apply to all management areas except Wilderness. Wilderness is classified according to the Wilderness Recreation Opportunity System which is described in Chapter 3.

Primitive

Access

Primitive ROS is defined by an absence of roads. Recreational off-road vehicles will not be permitted. Power equipment and off-road vehicles (ORVs) may be permitted for trail construction and maintenance during periods of low visitation.

The creation of trails by visitors will be discouraged in trailless areas.

Trails should be constructed and maintained for the safety of visitors, to minimize or prevent resource damage, to distribute use, and when required by law, not for visitor convenience. They should be built to the Difficult or Most Difficult Standard and maintained at the minimum level. *Local native materials should be used.

Facilities

Facilities should not be provided for the convenience of visitors. They should be limited to those required to protect resources. Camp units should not be designated in trailless areas; they may be designated in trailed areas, but not developed.

Visitor Contact, Direction, and Interpretation

The control of visitors is minimal. Visitor direction necessary to protect the ecological and social values of primitive areas will be provided by personal contact and information conveyed outside the area (at trailheads and administrative sites).

The area should be managed to limit encounters between visitors to one per day in trailless areas and six per day on trails. Combinations of persons and recreation livestock

in excess of 12 should require written permission. Parties traveling cross-country should be no larger than six persons. No more than one designated camp unit should be visible from any other.

Recreation sites should be placed and recreation stock tethered away from the foreground view of lakeshores, streams, and key interest features, and at least 100 feet from main or through trails.

Open campfires may be limited to designated sites in trailed areas.

Semi-Primitive Non-Motorized

Access

There will be no roads and off-road vehicles are not permitted. Existing primitive roads will be decommissioned and revegetated with native species.

Trail standards may range from Very Difficult to Least Difficult.

Some trails may be provided for the exclusive use of hikers.

Trails will be designed to disperse use and take advantage of scenic views and other points of interest whenever possible.

Trails will not be constructed or maintained to a standard higher than that designated.

Native, local, or natural-appearing materials will be used in trail construction and maintenance, including culverts and bridges.

Power equipment and ORVs may be permitted for trail construction and maintenance during periods of low visitation.

Facilities

Recreation facilities will be provided to protect resource values or distribute visitation rather than for the comfort of the users.

Visitor Contact, Direction, and Interpretation

Manage these areas so that no more than 15 trail encounters between visiting parties occur each day. Groups should not be larger than 20 persons.

The location of camps and management of recreation stock will be the same as in Primitive areas.

Natural barriers and obstacles may be used to direct visitation.

Visitor contact may occur through the news media, at administrative headquarters, and at entry points to Wildernesses and other destinations. There will be no on-site informational facilities.

Visitors will be primarily responsible for their own health and safety; there will be little regimentation.

Fire

Prescribed fire will be limited to areas where ground vegetation can recover in one year. Islands of unburned areas will be left and no more than 100 feet per mile will be burned adjacent to trails.

Semi-Primitive Motorized

Access

Off-road vehicle use is usually limited to trails which are typically difficult and challenging.

Portions of the area or trails may be closed seasonally or year-round to prevent resource damage and conflicts between different users and to accomplish management goals for adjacent areas.

Trails will be designed to disperse use and take advantage of scenic views and other points of interest whenever possible. Existing primitive roads may be designated for ORV use.

Trails will be constructed and maintained to a standard no higher than that designated. Native, local, or natural-appearing materials will be used in trail construction and maintenance, including culverts and bridges.

Facilities

Facilities are predominantly those required to distribute users.

Visitor Contact, Direction, and Interpretation

The area will be managed to produce no more than 15 encounters between visitors per day. Groups should be no larger than 25 persons. Larger groups may be accommodated by permit.

Campsites should be located away from lakeshores, streamsides, and trails. No more than three other campsites should be visible from a given site and ORVs will avoid lakeshore and streamside areas.

There will be no on-site informational facilities.

Fire

Prescribed fire is limited to areas where ground vegetation will recover in two years. Burned trailside frontage will be limited to 200 feet/mile.

Roaded Natural

Access

Access should:

1. Be provided to developed sites, trailheads, and other recreation areas.
 2. Be managed to provide for low to moderate concentrations of recreation users.
 3. Provide opportunities for dispersed motorized or non-motorized activities.
 4. Emphasize scenic values associated with driving for pleasure.
- Signs should be posted on all recreation roads and trail junctions, and at all trailheads. They will indicate route numbers, distances, and destinations.

Facilities

Facilities will be provided equally for protection of the site and comfort of users. Parking facilities will be designed to accommodate the number of visitors appropriate to a given trail or recreation site.

Adequate and safe loading facilities for recreation livestock, boats, oversnow vehicles, and other ORVs may be provided.

Facilities should be designed to accommodate handicapped persons whenever practicable.

Camp units should be placed outside the foreground view from lakes, streams, trails, and key interest features.

Visitor Contact, Direction, and Interpretation

Simple wayside exhibits may provide information about features of the area. Information may also be conveyed via the news media and maps, brochures, and contacts at administrative headquarters and entry points.

Roaded Modified

Access

Access for a variety of vehicles, automobiles, and ORVs, and a broad range of travel experiences. Challenge/risk levels may be provided.

Skid trails or other low-standard roads may be used by motorcycles and other ORVs when this does not conflict with management objectives.

Road, trail, and area closures may be used to protect resource values, for safety, and to achieve recreational objectives.
Trails may be of any difficulty level.

Facilities

In general, no recreation facilities will be provided unless clearly needed for resource protection and user health and safety. Some pit or vault toilets and solid waste disposal units may be provided at frequently used sites.
Dispersed campsites are informal and will usually be chosen by the user.

Visitor Contact, Direction, and Interpretation

There will be few formal controls on visitor use. Maps and other recreational information will be available at administrative headquarters or other user contact points. On-site interpretative facilities will generally not be provided.

Other Activities

1. Informal campsites, hunter camps, or other areas where concentrated recreation use has occurred in the past should be retained whenever this is compatible with the resource objectives.
2. Roads and timber harvest areas should avoid crossing recreation trails whenever possible. <FP IV-78]

Trails [FP IV-82]

Trails are classified in one of three management levels depending on use levels and sensitivity. Standards and guidelines for each management level are described in Table 2-6. The following applies to all management levels:

1. Trail planning will determine the optimum long-term location for system trails. Planning should also minimize existing and future road crossings as well as other trail/road conflicts.
2. Trail relocation should occur only to move the trail to the optimum long-term location considering the recreation and other resource management objectives for the area.
3. When trails are interrupted by management activities, detours should be provided, or temporary trail closures declared and publicized. Detours of closures should be signed at trailheads and trail junctions. When a closure would remain in effect for longer than one season, a detour must be provided. When the activity is completed, trails should be reconstructed to prescribed locations and standards as soon as possible.
4. A road remains a trail crossing so long as it is generally recognizable as a road to the casual trail user.
5. For trail management purposes a created opening is defined as having an average tree height of less than 20 feet. This applies to Level III trails only when necessary to meet underlying management area standards and guidelines.
6. Protection of proposed trail locations will be addressed in the project environmental assessment on a case-by-case basis.
7. When a trail passes through a management area with more restrictive standards and guidelines, those more restrictive standards and guidelines will prevail.
8. When planning trail location or road decommissioning consider converting roads to trails. <FP IV-82]

Table 2-6. Trail Management standards and guidelines Forest Trail System-Management Levels
[FP IV-81>

Trail Mgmt Level	VQO		Corridor Width	Road Crossing	Timber Mgmt.
	Fore-ground	Middle ground			
I	R	M	Foreground up to 500 feet each side depending on topography	No new roads, close existing local roads.	No scheduled timber harvest. Harvest permitted to meet recreation objectives.
II	PR	M	Foreground up to 500 feet each side depending on topography	<ol style="list-style-type: none"> 1. For Wilderness or semi-primitive area access trails; new road crossings within 1/2 mile of the boundary or between the nearest trailhead and the boundary, whichever distance is shortest. 2. No new road crossings within 2 miles of existing road crossings. 	Created openings not to exceed 500 feet per each lineal mile per decade, either one or both sides of trail. Timber harvest may be scheduled.
III	Same as the management area		N/A	Permanent road crossings should be minimized. Temporary roads should be obliterated after the activity is completed.	Same as the management area <FP IV-81]

Recreation Facility Management [FP IV-48>

1. Recreation facilities, including buildings, campsites, roads, utility systems, and signing should be planned, developed, maintained, and operated for safe public use, to current standards, in a cost-effective manner. Construction or reconstruction of facilities will comply with the approved site development plan.
2. No new sites for recreation residences will be developed on National Forest land.
3. Facilities will be designed to accommodate the disabled wherever practicable.
4. Industrial operations should not infringe upon public use of established recreation sites or the roads which access the sites. Infringements include such things as competing for campsites or piling culverts or other materials on sites or along roads. This direction is not intended to preclude any needed contract work. <FP IV-48]

Manage Recreation Areas to Minimize Disturbance to Species

[ROD C-6]

This standard and guideline applies throughout all land allocations. This standard and guideline will benefit a number of fungi and lichen species whose known locations are predominantly within established recreation sites. This standard and guideline falls within the category of the survey and manage standard and guideline above, and species to be protected through this standard and guideline are among those shown in Table 2-10. Species known to exist in recreation areas and additional information on the habitat requirements of these species are discussed in Appendix J of the Final SEIS. <ROD C-6]

Recreational Use Administration [FP IV-48]

1. Unless otherwise noted, off-road vehicle (ORV) direction found in the management areas does not apply to oversnow machines. Snow machines are generally excluded from such areas as Wilderness, Wild Rivers, RNAs, the Experimental Forest, and areas to which the Semi-Primitive Non-Motorized ROS class is assigned. They are generally acceptable elsewhere on the Forest where adequate snow protects soil and vegetative resources. Designated areas such as cross-country ski areas may be closed to snowmobiles.
2. "The Forest Travel Plan" will provide information on where travel, including the use of ORVs, is permitted or limited. The Travel Plan should be reviewed annually and revised, if necessary, to meet Forest Plan objectives.
3. During the first ten years of plan implementation, no mile of trail open to motorized use can be closed to such use unless a replacement mile is made available elsewhere on the Forest. <FP-IV-49]

Wild and Scenic Rivers [FP IV-19]

The following four river segments are recommended to Congress for designation as part of the National Wild and Scenic River System (see Table 2-7). Until Congress has taken action, values which make them eligible and suitable for Wild and Scenic Rivers designation will be protected on National Forest lands (except for approximately one mile of the Cispus River crossing private land).

Table 2-7. Rivers recommended for designation.

Stream	Classification	Miles Within N.F.	Total Miles
Lewis River	Wild	4.0	4.0
	Scenic	20.0	29.0
	Recreational	0.0	1.5
Cispus River	Wild	6.8	6.8
	Scenic	39.7	*45.2
Muddy Fork Cowlitz River	Wild	5.0	10.0
	Scenic	1.0	1.5
Clear Fork Cowlitz River	Wild	5.0	5.0
	Scenic	10.0	10.0
TOTAL		100.5	113.0
* Does not include approximately 1½ miles within the project boundary of the Cowlitz Falls Hydroelectric Project (FERC Project No. 2833), as licensed by the Federal Energy Regulatory Commission. <FP IV-19a]			

Additional river segments will require further study in order to determine suitability (see Table 2-8). This will require a separate environmental analysis, including documentation, for each river, and coordination

with state and local governments and adjacent private landowners. Until these analyses are completed, the values contributing to their particular classification will be protected on National Forest lands.

Table 2-8. Eligible rivers for further study. [FP IV-20>

Stream	Classification	Miles Within N.F.
Clear Creek	Wild	6.3
	Scenic	4.2
Green River	Wild	6.1
	Scenic	4.0
Ohanapecosh River	Scenic	3.0
Quartz Creek	Wild	7.7
	Scenic	1.8
Siouxon Creek	Wild	11.3
Smith/Muddy	Wild	13.4
	Scenic	12.5
Toutle River	Wild	11.3
White Salmon	Wild	7.4
	Scenic	13.3
Yellowjacket Creek	Wild	7.0
	Scenic	1.3
Cowlitz River	Recreational	1.0
East Fork Lewis River	Scenic	10.9
	Recreational	0.0
Wind River	Scenic	9.5
TOTAL		132.0

<FP IV-20]

Riparian Reserves Standards and Guidelines for Recreation [FP IV-70>

1. The Visual Quality Objectives and Recreation Opportunity Spectrum classes will be those of the Management Area in which the Riparian Reserve is found.
2. Neither newly developed recreation sites nor expansions to existing sites will be located on the riparian influence area of perennial and intermittent streams or flood plains. Developed and dispersed recreation sites should be located at least 100 feet from the edges of lakes, streams, ponds, wet meadows, marshes, and springs. Existing sites will be made to comply with Executive Orders 11988 and 11990. Water oriented facilities may be developed providing the riparian values can be protected.
3. Trails should not be located within the riparian influence area (up to 300 feet) of lakes, ponds, marshes, wet meadows, moist meadows, wet shrubs lands, and forb lands.
4. Dispersed recreational activities which degrade the quality of riparian areas should be regulated or eliminated, e.g., the trampling of streambanks and lakeshores.

Facility and Site Reconstruction and Construction

Facilities will be designed to minimize adverse impacts on all Riparian Areas and to protect investments.

Facility and Site Management and Use Administration

1. Whenever damage occurs due to recreational activities, streambanks and other riparian areas should be promptly restored by revegetation and stabilization.
2. Off-road vehicles will be limited to designated trails and stream crossings. Oversnow machine use may be permitted if snow is of sufficient depth to protect riparian values. <FP IV-70]

[ROD C-34>

- RM-1 New recreational facilities within Riparian Reserves, including trails and dispersed sites, should be designed to not prevent meeting Aquatic Conservation Strategy objectives. Construction of these facilities should not prevent future attainment of these objectives. For existing recreation facilities within Riparian Reserves, evaluate and mitigate impact to ensure that these do not prevent, and to the extent practicable contribute to, attainment of Aquatic Conservation Strategy objectives. Where this standard cannot be met, require relocation or closure of recreation facilities.
- RM-2 Adjust dispersed and developed recreation practices that retard or prevent attainment of Aquatic Conservation Strategy objectives. Where adjustment measures such as education, use limitations, traffic control devices, increased maintenance, relocation of facilities, and/or specific site closures are not effective, eliminate the practice or occupancy.
- RM-3 Wild and Scenic Rivers and Wilderness management plans will address attainment of Aquatic Conservation Strategy objectives. <ROD C-34]

Research

A variety of wildlife and other research activities may be ongoing and proposed in all land allocations. These activities must be assessed to determine if they are consistent with the objectives of these standards and guidelines. Some activities (including those within experimental forests) not otherwise consistent with the objectives may be appropriate, particularly if the activities will test critical assumptions of these standards and guidelines, will produce results important for habitat development, or if the activities represent continuation of long-term research. Every effort should be made to locate non-conforming activities in land allocations where they will have the least adverse effect upon the objectives of these standards and guidelines. <ROD C-4> [FP IV-58]

Representatives from the Forest and Pacific Northwest Research Station (PNW) will meet annually to coordinate research activities on the Forest. On lands outside the Experimental Forest and RNAs, coordination should include:

The location of existing and proposed research sites. All sites should be located on maps and photos and installed in the Districts' GIS system. Research in Wildernesses requires Regional Forester approval.

Opportunities to consolidate research sites.

The termination of sites no longer required for research.

The Subunit Manager should notify PNW of any proposed activities adjacent to the Experimental Forest, RNAs, or any research study plot.

The accomplishment of specific research needs identified by the Forest Supervisor.

Timber harvesting within 250 feet of the Thornton T. Munger Research Natural Area should occur only when trees in adjacent harvest areas have reached a height that will prevent serious windthrow in the RNA. <FP IV-59]

Riparian Reserves Standards and Guidelines for Research

[ROD C-38]

- RS-1 A variety of research activities may be ongoing and proposed in Key Watersheds and Riparian Reserves. These activities must be analyzed to ensure that significant risk to the watershed values does not exist. If significant risk is present and cannot be mitigated, study sites must be relocated. Some activities not otherwise consistent with the objectives may be appropriate, particularly if the activities will test critical assumptions of this plan; will produce results important for establishing or accelerating vegetation and structural characteristics for maintaining or restoring aquatic and riparian ecosystems; or the activities represent continuation of long-term research. These activities should be considered only if there are no equivalent opportunities outside of Key Watersheds and Riparian Reserves.

- RS-2 Current, funded, agency-approved research, which meets the above criteria of RS-1, is assumed to continue if analysis ensures that a significant risk to Aquatic Conservation Strategy objectives does not exist. The Regional Ecosystem Office may choose to more formally review specific projects, and may require modification, up to and including cancellation, of those projects having an unacceptable risk to Key Watersheds and Riparian Reserves. Risk will be considered within the context of the Aquatic Conservation Strategy objectives. <ROD C-38]

Rural Community and Human Resources [FP IV-64>

1. Meaningful job opportunities should be provided for senior citizens.
2. Volunteers should be recruited and utilized in maintenance, construction, and administration activities. Opportunities to engage volunteers in activities such as wildlife inventories, trail work, and other recreational projects will be sought.
3. Job opportunities will be made available to minorities, women, and the handicapped in accordance with the Forest's Affirmative Action Program for Civil Rights. <FP IV-64]

Timber [FP IV-56>

Timber removal may be necessary in the event of catastrophic fires, volcanic eruption, windthrow, disease or insect infestation. If such removal is needed in management areas which do not call for scheduled timber harvest, it must be authorized by the Forest Supervisor. Such decisions should include consultation with appropriate federal and state agencies to minimize adverse impacts on fish and wildlife values.

Future timber inventories will include riparian areas. <FP IV-56]

[FP IV-58>

Tree removal in management areas with no scheduled timber harvest will be limited to that specified in individual management area standards and guidelines (except in the case of catastrophic events).

Tree removal in management areas with no scheduled timber harvest will be limited to that specified in individual management prescriptions (except in the case of catastrophic events). <FP IV-58]

[FP IV-56

Future timber inventories will include riparian areas. <FP IV-56]

Ecosystem Description and Inventories [FP IV-56>

The Forest's "Plant Association and Management Guide(s)" should be consulted prior to management activities that may alter vegetative types. <FP IV-56]

Vegetative Management [FP IV-34>

The Forest Plan incorporates the Pacific Northwest Region's FEIS for Managing Competing and Unwanted Vegetation (1986). In addition upon implementing the Forest Plan through project activities, the Forest will comply with the Record of Decision issued by the Regional Forester dated December 8, 1988, and the Mediated Agreement of May 1989. Use of vegetation treatment methods (biological, mechanical, prescribed burning, or herbicides) is allowed only when other methods (i.e., prevention) are ineffective or will unreasonably increase project costs. Emphasis must be on prevention and early treatment of unwanted vegetation and full public involvement in all aspects of project planning and implementation. Information about the vegetation management FEIS, ROD, and Mediated Agreement are available at the Forest Supervisor's Office. <FP IV-34]

[FP IV-34a>

Noxious weed management is in cooperation with the Washington Department of Agriculture as documented in the Memorandum of Understanding signed by the Regional Office, for the Gifford Pinchot National Forest, in February 1991. The Forest also cooperates with the Weed Control Extension Agents of Lewis, Skamania, Klickitat, and Pierce counties, and with farmers, ranchers, and neighboring landowners on the management of noxious weeds.

There are 37 noxious weeds listed by the State which could or do occur on the Forest. These are listed below according to priority of treatment. Class A weeds pose the most serious threat and the management goal is to eradicate the species and prevent all seed production. Class B are also serious threats, but more widespread and the goal is containment and eventual eradication (Class B weeds, which comprise the majority, are further broken down into sub-categories of higher and lower priorities). Class C weeds are any other noxious weeds and the level of control is at the counties' discretion.

In addition to the State lists, management responsibility includes problem weeds of Federal designation. Two separate but related documents, the *Final Environmental Impact Statement for Managing Competing and Unwanted Vegetation* (1986) and the *Mediated Agreement on Vegetation Management* (1989), provide further detailed management requirements.

Table 2-9. Noxious weeds listed by the State of Washington <FP IV-34a]

Class A	Class B (Higher Priority)	Class C (Lower Priority)
giant hogweed knapweed, vochin Scotch broom oxeye daisy perennial pepperweed tansy ragwort knapweed, diffuse knapweed, meadow knapweed, spotted oxtongue hawkweed yellow starthistle	knapweed, meadow knapweed, diffuse knapweed, spotted tansy ragwort dalmation toadflax purple loosestrife gorse	blueweed bryony, white bugloss, common camelthorn* catsear, spotted* cordgrass, smooth deadnettle, hybrid foxtail, slender goatgrass, jointed* hawkweed, orange* hawkweed, yellow knapweed, black knapweed, brown knapweed, Russian nutsedge, yellow oxtongue hawkweed* pepperweed, perennial*

		<p>sandbur, longspine* Scotchbroom* skeletonweed, rush sowthistle, perennial* spurge, leafy starthistle, yellow swainsonpea* thistle, musk thistle, plumeless thistle, Scotch watermilfoil, Eurasian</p> <p>*designated in a portion of the Forest</p>
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Riparian Reserves Standards and Guidelines for Timber [ROD C-31>

TM-1. Prohibit timber harvest, including fuelwood cutting, in Riparian Reserves, except as described below. Riparian Reserve acres shall not be included in calculations of the timber base.

- a) Where catastrophic events such as fire, flooding, volcanic, wind, or insect damage result in degraded riparian conditions, allow salvage and fuelwood cutting if required to attain Aquatic Conservation Strategy objectives.
- b) Remove salvage trees only when watershed analysis determines that present and future coarse woody debris needs are met and other Aquatic Conservation Strategy objectives are not adversely affected.
- c) Apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain Aquatic Conservation Strategy objectives. <ROD C-32]

[FP IV-73>

1. Riparian wetlands, which are in close proximity and function, both hydrologically and biologically in an interconnected manner, may be managed as a single riparian complex.
2. There should be no disturbance of lakes, pond, marshes, shrublands, or forblands. Logging and other equipment should not be operated within these natural openings. Trees should be felled away from them.
3. Herbicides and other pesticides will not be applied in Riparian Reserves.

Nursery Management

Water quality standards and protection of the fishery and other riparian values should be met in Nursery operations. <FP IV-73]

Water, Soil, and Air [FP IV-59]

Planning and Inventory

All management activities will meet Forest Service Region 6 Streamside Management Goals, FSM 2520, R6 Supplement 2500-90-1, 8/1/90, to protect or enhance water quality, fish, riparian vegetation, and other aquatic resources.

1. Air quality will comply with the Washington State Smoke Implementation Plan. Class I Airshed standards will be met as required by the Clean Air Act of 1977. The Act defines a Class I Airshed as:
 - a) An international park.
 - b) Wildernesses and national memorial parks exceeding 5,000 acres in size.
 - c) National parks which exceed 5,000 acres in size, all of which were in existence when the Clean Air Act Amendments of 1977 were enacted.

Currently, Mount Rainier National Park and the Mount Adams and Goat Rocks Wildernesses are the only Class I Airsheds within or adjacent to the Forest.

2. To realize clean air objectives, the following measures may be taken:
 - a) Prohibit burning on visibility sensitive days (holidays) and on weekends from July 1 to Labor Day.
 - b) Burning will be monitored to ensure that smoke intrusion in the designated Class I areas does not occur on visibility sensitive days.
 - c) Better utilization methods may be explored and used to reduce emissions.
 - d) Select site treatment practices to minimize soil and litter disturbance. To avoid burning on sensitive days, slash may be piled when possible.
 - e) The spread, location, and size of prescribed fires in Wildernesses and adjacent management areas will be monitored to determine visibility impacts on Class I areas. When it is determined that impairment of air quality from such fires is or may become major, the fire may be classified as a wildfire and appropriate suppression measures taken.
 - f) Refinement of burning techniques to reduce the smoldering of prescribed burns should continue, subject to meeting coarse wood debris standards and guidelines (see page 6-1). For example, this can be accomplished through PUM (piling unutilized material), use of mass ignition systems, burning with increased fuel moisture in the large fuels, or use of logging systems and techniques that allow an increased use of large residue (slash) for firewood removal and other wood products (chips, etc.).
3. Proposals by other agencies and the private sector which have a potential to degrade the quality of air over National Forest lands will be analyzed. A report of the findings will be provided to the Washington State Department of Ecology.
4. The Watershed Improvement Needs Inventory, an ongoing list of projects needed to protect or enhance watershed values, should be updated annually (priorities and costs included) and supported by watershed analysis.
5. The Washington State Shoreline Management Act will be consulted whenever activities on National Forest lands may affect adjacent or downstream landowners.
6. "Soil Management Guidelines, Gifford Pinchot National Forest" (Dec. 17, 1977), as amended, will apply unless on-the-ground assessment indicates a change in the guidelines is necessary.
7. Geologic conditions will be considered in the location and design of roads and other construction projects; unstable areas identified in the Forest's "Geologic Resources and Condition Maps" will be avoided unless a thorough economic analysis justifies an exception or unless on-the-ground investigation indicates a change in the assessment is necessary. Apparent conflicts which may arise between these Geologic Conditions and the "Soil Management Guidelines" (above) will be resolved by the Forest Geologist and Soil Scientist.
<FP IV-60]

Water and Soil

Best Management Practices [FP IV-60]

State requirements shall be complied with in accordance with the Clean Water Act for protection of waters of the State of Washington (Washington Administrative Code [Chapter 173-201 and 202], Department of Ecology, which contains water requirements for protection of various classes of surface waters) through planning, application, and monitoring of Best Management Practices (BMPs) in conformance with the Clean Water Act, regulations, and Federal guidance issued thereto.

In cooperation with the State of Washington, the Forest shall use the following process:

- a) Select and design BMPs based on site-specific conditions, technical, economic, and institutional feasibility, and the water quality standards for those waters potentially impacted.
- b) Implement and enforce BMPs.
- c) Monitor to ensure that practices are correctly applied as designed.
- d) Monitor to determine the effectiveness of practices in meeting design expectations and in attaining water quality standards.
- e) Evaluate monitoring results and mitigate where necessary to minimize impacts from activities where BMPs do not perform as expected.
- f) Adjust BMP design standards and application when it is found that beneficial uses are not being protected and water quality standards are not being achieved to the desired level. Evaluate the appropriateness of water quality criteria for reasonably assuring protection of beneficial uses. Consider recommending adjustment of water quality standards.

The process agreed to in the following Memorandum of Understanding (MOU) shall be used to implement the State Water Quality Management Plan on lands administered by the USDA Forest Service:

The Washington Department of Ecology and U.S. Department of Agriculture, Forest Service (7/79), and "Attachment A" referred to in this MOU (Implementation Plan for Water Quality Planning on National Forest Lands in the Pacific Northwest) 12/78).

General Best Management Practices are described in "General Water Quality Best Management Practices," Pacific Northwest Region, November, 1988. This provides guidance but is not a direction document. Also included in this document is a description of the process and limitations and use of these BMPs. Each BMP listed includes the title, "Objectives, Explanation, Implementation and Responsibility, and Monitoring." Evaluations of ability to implement and estimated effectiveness are made at the project level.

Not all of the general BMPs listed will normally apply to a given project, and there may be specific BMPs which are not represented by a general BMP in this document.

The sensitivity and significance of the project determines whether the site-specific BMP prescriptions are documented in an EA, EIS, sale plan, project plan, or in analysis files.

Best Management Practices relating to protection of water quality shall be followed for any chemical application projects. In the event of an accidental spill of hazardous materials, procedures shall be followed as set forth in the Oil and Hazardous Substances Pollution Contingency Plan (FSM 7443).

Inventories

Inventories of water quality and quantity information collected by State and other Federal agencies should be obtained for project planning, design, and implementation.

Minimum in-stream flow requirements will be established for all hydroelectric projects in cooperation with the appropriate State agencies. <FP IV-61]

Ongoing watershed condition inventories should be conducted to provide a current information base for use in planning activities. <FP IV-74]

Cumulative Impact

In watersheds or other areas where project scoping or watershed analysis identifies an issue or concern regarding the cumulative effects of activities on water quality, stream channels, wildlife, soils, vegetation, other resources, or on secondary effects such as social and economic impacts, a cumulative effects assessment will be made. This will include land in all ownerships in the area. Activities on National Forest System lands in these areas should be dispersed in time and space to the extent practicable and, at least to

the extent necessary to meet Management Requirements (MRs) on intermingled ownerships, scheduling of activities should be coordinated.

Administration/Management

1. When streamflow is temporarily diverted to accommodate construction or other activities, it will be restored to the natural course as soon as is practical.
2. A Ranger District liaison officer will be designated to provide coordination on all hydroelectric projects.
3. Activities involving sources of domestic and municipal water, especially those in which pesticides and fertilizer are used, will be given monitoring priority.
4. Significant capital investment projects will not be cited within Federal Energy Regulatory Commission (FERC) power withdrawals unless it would be practical to relocate them if the hydroelectric site is developed. (Applications for permit and license automatically establish a withdrawal on the described lands; lands included in an application for exemption, however, are not withdrawn.)
5. No more than a total of 20 percent of an activity area may be compacted, puddled, displaced, or subjected to a severe burn as a result of the activity. This standard is further qualified as follows:
 - a) Prescribed burning activities must result in less than 10 percent of the activity area burned rated as a severe intensity.
 - b) Any mass failures are to be included in the displaced soil category.
 - c) An activity area is the total area for which a ground-impacting activity is planned. It may be the units of a timber sale, a slash disposal project, site preparation project, or grazing allotment, and includes the transportation system (including landings) in and directly adjacent to the activity area.
6. The Bear Creek Watershed will continue to be the major source of municipal water for residents in the area of Carson, Washington, and will be managed under terms of the "Management Policy Statement for Bear Creek Watershed." This agreement with the Public Utility District of Skamania County was signed by the Forest Supervisor May 1, 1967.
- 7a. Protect established snow courses and related hydrometeorological data sites including a 400-foot buffer zone in all directions from the sampling points, or a mutually-agreed-upon buffer zone as specified on data site sketch maps, from any disturbing influence such as road building, timber harvest, or vegetative disturbance which will affect snow accumulation or measurement. Snow courses and related data sites will be noted in Ranger District GIS or other data management systems to remind Forest managers of the need to protect these sites.
- 7b. Make no change in management or use of a data site which would impair its value for data collection unless there is no other alternative; in such a case, Regional Forester approval of the change will be made only after the State Conservationist has been notified in writing. Such notice should be given sufficiently far in advance that an alternative data site can be selected and a correlation between the two established. A five-year minimum is desirable. Compatible uses of the site will be continued.

Rights/Use Management

1. The Water Rights-Use-Needs Inventory should be kept current.
2. A State water right will be required for each use of water, with the exception of activities covered by the Reservation Principle (on this Forest, Watershed Protection and Timber Management). <FP IV-62]

Riparian Reserve Standards and Guidelines for Management and Restoration [ROD C-37>

- RA-1 Identify and attempt to secure in-stream flows needed to maintain riparian resources, channel conditions, and aquatic habitat.
- RA-2 Fell trees in Riparian Reserves when they pose a safety risk. Keep felled trees on-site when needed to meet coarse woody debris objectives.
- RA-3 Herbicides, insecticides, and other toxicants, and other chemicals shall be applied only in a manner that avoids impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.

- RA-4 Locate water drafting sites to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows needed to maintain riparian resources, channel conditions, and fish habitat.

Watershed and Habitat Restoration

- WR-1 Design and implement watershed restoration projects in a manner that promotes long-term ecological integrity of ecosystems, conserves the integrity of native species, and attains Aquatic Conservation Strategy objectives.
- WR-2 Cooperate with federal, state, local, and tribal agencies, and private landowners to develop watershed-based Coordinated Resource Management Plans or other cooperative agreements to meet Aquatic Conservation Strategy objectives.
- WR-3 Do not use mitigation or planned restoration as a substitute for preventing habitat degradation. [ROD C-37]

Wildlife, Fish, Plants, and Fungi

Planning and Administration [FP IV-50>

The wildlife management standards and guidelines in this section address the following areas: Sensitive, Threatened, and Endangered species; snags, reserve trees, and down logs; cooperation with other agencies; and special habitat not covered elsewhere in the Forest Plan. Any project which could affect wildlife or fishery habitats will be reviewed. Review will consist of at least an inventory of fish and wildlife habitat and associated significant species, and will identify limited and important habitats and/or species. <FP-IV-50]

Survey and Manage [ROD C-4>

These measures may apply within any land allocations. The survey and manage provision for each species, however, will be directed to the range of that species and the particular habitats that it is known to occupy. The “survey and manage” standard and guideline will provide benefits to amphibians, mammals, bryophytes, mollusks, vascular plants, fungi, lichens, and arthropods.

Table 2-10, “Species Documented or Suspected to Occur on the Gifford Pinchot National Forest,” on page 2-56, shows what species are covered by the survey and manage provision, and which of the following four categories is to be applied to each. Table 2-10 is a subset of species from the updated ROD Table C-3 which are known or suspected to occur on the Gifford Pinchot National Forest. This list was prepared as a guide to aid in screening the localized species that have little likelihood of occurring on the Forest. The complete list should be consulted during planning and Table 2-10 amended as new information becomes available.

The standard and guideline contains four components, and priorities differ among them.

Manage known sites. Management of known species sites should receive the highest priority of these four categories. Efforts must be undertaken to acquire information on these known sites and to manage this information so that it is available to all project planners. An effective way to accomplish this is to compile the information in a GIS data base. Those efforts should be coordinated by the Regional Ecosystem Office, and should be completed expeditiously. As soon as the information becomes available, it should be used in the design or modification of activities. Activities that are implemented in 1994 should use this information to the greatest degree possible. Activities implemented in 1995 and later must include provisions for these known sites. In most cases, the appropriate action will be protection of relatively small sites, on the order of tens of acres. For some species, including some vascular plants, the appropriate action will include the use of specific management treatments such as prescribed fire. For rare and endemic fungus species, areas of 160 acres should be temporarily withdrawn from ground-disturbing activities around known sites until those sites can be thoroughly surveyed and site-specific measures prescribed. For one fungus species, *Oxyporous nobilissimus*, there are only six known sites and two of these do not currently have a protected status. Management areas of all useable habitat up to 600 acres are to be established around these two sites for the protection of those populations until the sites can be thoroughly surveyed and site-specific measures prescribed. The actions to protect *Oxyporous* must be undertaken immediately.

Survey prior to ground-disturbing activities. Measures to survey for species and manage newly discovered sites are to be phased-in over a somewhat longer time frame than the measures specified for currently known sites (see above). For some species, these efforts have been ongoing through rare and sensitive species programs. Where such efforts have been ongoing, they should continue.

Protocols, however, have not been developed for surveys for all of these species and the expertise needed to conduct them is not readily available in some cases. Efforts to design protocols and implement surveys should be started immediately. Where surveys are completed, the information gathered from them should be used to establish managed sites for species.

Surveys must precede the design of all ground-disturbing activities (that will be implemented in 1997 or later) within the known or suspected ranges of (and within the habitat types or vegetation communities associated with) the following species:

- Larch Mountain salamander
- Van Dyke's salamander

Surveys for lynx are also required, see Chapter 6, "Protection Buffers," page 6-9.

Development of survey protocols by the REO for the other species listed in Table 2-10, must begin in 1994 and proceed as soon as possible. Additional information concerning the biology and management implications for these species is contained in FSEIS Appendix J2. These surveys must be completed prior to ground disturbing activities that will be implemented in F.Y. 1999 or later. Work to establish habitat requirements and survey protocols may be prioritized relative to the estimated threats to the species as reflected in the SEIS. Management standards will be developed to manage habitat for the species on sites where they are located. These surveys may be conducted at a scale most appropriate to the species. For most species, this survey would start at the watershed analysis level with identification of likely species locations based on habitat. Those likely locations would then be thoroughly searched prior to implementation of activities. For other species, the identification of likely sites may be most appropriately done at the scale of individual projects. Surveys should be designed for maximum efficiency, focusing on the likely range and habitats of the target species. Multispecies surveys should be used wherever they would be most efficient. To the degree possible, surveys should be designed to minimize the number of site visits needed to acquire credible information. Survey protocols and proposed site management should be incorporated into interagency conservation strategies developed as part of ongoing planning efforts coordinated by the Regional Ecosystem Office.

Extensive surveys. Conduct extensive surveys for the species to find high-priority sites for species management. Specific surveys prior to ground-disturbing activities are not a requirement. Rather, the surveys will be done according to a schedule that is most efficient, and sites will be identified for protection at that time. This strategy entails some risk because some species sites may be disturbed prior to completion of surveys. It is recommended primarily for species whose characteristics make site and time-specific surveys difficult. For example, some fungi only produce fruiting bodies under specific climatic conditions, so finding their location may take several to many years. It would be most efficient to do broad surveys for these species during times of appropriate conditions rather than attempting annual, site-specific surveys. Surveys under this strategy must be

underway by 1996. As with surveys described in item 2 above, surveys should be designed for efficiency and standardized protocols should be developed.

General regional surveys. The objective is to survey for the species to acquire additional information and to determine necessary levels of protection. Species intended to benefit from this standard and guideline are the arthropods, the fungi species that were not classed as rare and endemic, bryophytes, and lichens. These groups of species are particularly poorly known. Many species have likely not yet been identified, and there is only general information available on the abundance and distribution of known species. The information gathered through these efforts may be useful in refining these standards and guidelines to better provide for these species as part of the adaptive management process. These surveys are expected to be both extensive and expensive, but the information from them is critical to successful implementation of ecosystem management. They will be initiated no later than F.Y. 1996 and are to be completed within ten years.

Annual status reports are to be submitted to the Regional Ecosystem Office for review beginning at the end of F.Y. 1995. As experience is acquired with these requirements, agencies may propose changes to the Regional Ecosystem Office for analysis. These changes could include changing the schedule, moving a species from one survey strategy to another, or dropping this mitigation requirement for any species whose status is determined to be more secure than originally projected. The Regional Ecosystem Office will forward such proposals, along with recommendations, to the Regional Interagency Executive Committee for action as appropriate. <ROD C-6J

Status: D - Documented to Occur on the Gifford Pinchot National Forest
 S - Suspected to Occur on the Gifford Pinchot National Forest

Table 2-10. Species Documented or Suspected to Occur on the Gifford Pinchot National Forest from Table C3 of the ROD. [ROD C-49>

Blank - Status is unknown					Species	Common Name/Subgroup	Group
Status	1	2	3	4			
D	√	√			<i>Plethodon vandykei</i>	Van Dyke's salamander (riparian)	amphibians
D	√	√			<i>Plethodon larselli</i>	Larch Mountain salamander(terrestrial)	amphibians
D				√		understory and forest gap herbivores	arthropods
D	√	√			<i>Lasionycteris noctivagans</i>	silver-haired bat	bats
D	√	√			<i>Myotis evotis</i>	long-eared myotis	bats
D	√	√			<i>Myotis thysanodes</i>	fringed myotis	bats
D	√	√			<i>Myotis volans</i>	long-legged myotis	bats
D	√	√			<i>Strix nebulosa</i>	great grey owl	birds
D				√	<i>Antitrichia curtipendula</i>	moss	bryophytes
S	√		√		<i>Brotherella roelli</i>	moss	bryophytes
D	√		√		<i>Buxbaumia piperi</i>	moss	bryophytes
S	√	√			<i>Diplophyllum plicatum</i>	liverwort	bryophytes
S				√	<i>Douinia ovata</i>	liverwort	bryophytes
S	√	√			<i>Kurzia makinoana</i>	liverwort	bryophytes
S	√		√		<i>Racomitrium aquaticum</i>	moss	bryophytes
S	√		√		<i>Schistostega pennata</i>	moss	bryophytes
S				√	<i>Scouleria marginata</i>	moss	bryophytes
S	√	√			<i>Tritomaria exsectiformis</i>	liverwort	bryophytes
S			√		<i>Albatrellus ellisii</i>	uncommon ecto-polypore	fungi
D			√		<i>Albatrellus flettii</i>	uncommon ecto-polypore	fungi
S	√		√		<i>Aleuria rhenana</i>	rare cup fungi/stalked orange peel fungus	fungi
	√		√		<i>Aleurodiscus farlowii</i>	rare resupinates/polypores	fungi
S	√		√		<i>Alpava alexsmithii</i>	rare false truffle	fungi
D			√		<i>Asterophora lycoperdoides</i>	parasitic fungi	fungi
S			√		<i>Asterophora parasitica</i>	parasitic fungi	fungi
			√		<i>Baeospora myriadophylla</i>	uncommon gilled mushroom	fungi
S	√		√		<i>Balsamia nigra</i>	rare truffle	fungi
	√		√		<i>Boletus haematinus</i>	rare bolete	fungi
D			√		<i>Boletus piperatus</i>	low elevation bolete	fungi
	√		√		<i>Boletus pulcherrimus</i>	rare bolete	fungi
D	√	√	√		<i>Bondarzewia montana (mezentarica)</i>	Bondarzewia polypore	fungi
S	√		√		<i>Bryoglossum gracile</i>	rare cup fungi	fungi
D			√	√	<i>Cantharellus cibarius</i>	chanterelles	fungi
S	√		√		<i>Cantharellus formosus</i>	rare chanterelle	fungi
D			√	√	<i>Cantharellus subalbidus</i>	chanterelles	fungi
D			√	√	<i>Cantharellus tubaeformis</i>	chanterelles	fungi
D			√		<i>Catathelasma ventricosa</i>	uncommon gilled mushroom	fungi
S	√		√		<i>Chamonixia pacifica</i> sp. nov. Trappe 12768	undescribed taxa, rare truffles/false truffles	fungi
S	√		√		<i>Choiromyces alveolatus</i>	rare truffle	fungi
S	√		√		<i>Choiromyces venosus</i>	rare truffle	fungi
			√		<i>Chrysomphalina grossula</i>	uncommon gilled mushroom	fungi
			√	√	<i>Clavariadelphus borealis</i>	club coral fungi	fungi
D			√	√	<i>Clavariadelphus ligula</i>	club coral fungi	fungi
			√	√	<i>Clavariadelphus lovejoyae</i>	club coral fungi	fungi
D			√	√	<i>Clavariadelphus pistilaris</i>	club coral fungi	fungi
			√	√	<i>Clavariadelphus sachalinensis</i>	club coral fungi	fungi
			√	√	<i>Clavariadelphus subfastigiatus</i>	club coral fungi	fungi
D			√	√	<i>Clavariadelphus truncatus</i>	club coral fungi	fungi
			√		<i>Clavicornia avellanea</i>	coral fungi	fungi
D			√	√	<i>Clavulina cinerea</i>	branched coral fungi	fungi
D			√	√	<i>Clavulina cristata</i>	branched coral fungi	fungi
S			√	√	<i>Clavulina ornatipes</i>	branched coral fungi	fungi
	√		√		<i>Clitocybe senilis</i>	rare gilled mushroom	fungi

Status	1	2	3	4	Species	Common Name/Subgroup	Group
	√		√		<i>Clitocybe subditopoda</i>	rare gilled mushroom	fungi
	√		√		<i>Collybia bakerensis</i>	uncommon gilled mushroom	fungi
S			√		<i>Collybia racemosa</i>	parasitic fungi	fungi
D			√		<i>Cordyceps capitata</i>	parasitic fungi	fungi
S			√		<i>Cordyceps ophioglossoides</i>	parasitic fungi	fungi
			√		<i>Cortinarius azureus</i>	uncommon gilled mushrooms	fungi
	√		√		<i>Cortinarius boulderensis</i>	uncommon gilled mushrooms	fungi
	√		√		<i>Cortinarius canabarba</i>	rare gilled mushrooms	fungi
			√		<i>Cortinarius cyanites</i>	uncommon gilled mushrooms	fungi
	√		√		<i>Cortinarius magnivelatus</i>	uncommon gilled mushrooms	fungi
	√		√		<i>Cortinarius olympianus</i>	uncommon gilled mushrooms	fungi
			√		<i>Cortinarius rainierensis</i>	uncommon gilled mushrooms	fungi
			√		<i>Cortinarius spilomius</i>	uncommon gilled mushrooms	fungi
			√		<i>Cortinarius tabularis</i>	uncommon gilled mushrooms	fungi
			√		<i>Cortinarius valgus</i>	uncommon gilled mushrooms	fungi
	√		√		<i>Cortinarius variipes</i>	uncommon gilled mushrooms	fungi
	√		√		<i>Cortinarius verrucisporus</i>	uncommon gilled mushrooms	fungi
			√		<i>Cudonia monticola</i>	uncommon cup fungi	fungi
			√		<i>Cyphellostereum laeve</i>	moss dwelling mushroom	fungi
S	√		√		<i>Destuntzia fusca</i>	rare false truffle	fungi
S	√		√		<i>Destuntzia rubra</i>	rare false truffle	fungi
	√		√		<i>Dichostereum granulosum</i>	rare resupinates/polypores	fungi
S	√		√		<i>Elaphomyces subviscidus</i>	rare truffle	fungi
S	√		√		<i>Endogone acrogena</i>	rare zygomycete	fungi
			√		<i>Fayodia gracilipes (rainierensis)</i>	uncommon gilled mushrooms	fungi
			√		<i>Galerina atkinsoniana</i>	moss dwelling mushroom	fungi
			√		<i>Galerina cerina</i>	moss dwelling mushroom	fungi
			√		<i>Galerina heterocystis</i>	moss dwelling mushroom	fungi
			√		<i>Galerina sphagnicola</i>	moss dwelling mushroom	fungi
			√		<i>Galerina vittaeformis</i>	moss dwelling mushroom	fungi
S	√		√		<i>Gastroboletus imbellus</i>	rare bolete	fungi
S	√		√		<i>Gastroboletus ruber</i>	rare bolete	fungi
D	√		√		<i>Gastroboletus subalpinus</i>	boletes	fungi
D			√		<i>Gastroboletus turbinatus</i>	bolete	fungi
S	√		√		<i>Gautieria magnicellaris</i>	rare false truffle	fungi
S	√		√		<i>Gautieria otthii</i>	rare false truffle	fungi
S	√		√		<i>Gelatinodiscus flavidus</i>	rare cup fungi	fungi
S	√		√		<i>Glomus radiatum</i>	rare zygomycetes	fungi
D			√		<i>Gomphus bonarii</i>	chanterelle/gomphus	fungi
D			√		<i>Gomphus clavatus</i>	chanterelle/gomphus	fungi
D			√		<i>Gomphus floccosus</i>	chanterelle/gomphus	fungi
D			√		<i>Gomphus kauffmanii</i>	chanterelle/gomphus	fungi
S	√		√		<i>Gymnomyces</i> sp. nov. Trappe 1690, 1706, 1710	undescribed taxa, rare truffles/false truffles	fungi
S	√		√		<i>Gymnomyces</i> sp. nov. Trappe 4703, 5576	undescribed taxa, rare truffles/false truffles	fungi
S	√		√		<i>Gymnomyces</i> sp. nov. Trappe 5052	undescribed taxa, rare truffles/false truffles	fungi
	√		√		<i>Gymnopilus puntifolius</i>	uncommon gilled mushrooms	fungi
D			√	√	<i>Gyromitra californica</i>	uncommon cup fungi	fungi
D			√	√	<i>Gyromitra esculenta</i>	uncommon cup fungi	fungi
D			√	√	<i>Gyromitra infula</i>	uncommon cup fungi	fungi
			√	√	<i>Gyromitra melaleucoides</i>	uncommon cup fungi	fungi
D			√	√	<i>Gyromitra montana (= gigas)</i>	uncommon cup fungi	fungi
	√		√		<i>Hebeloma olympiana</i>	uncommon gilled mushrooms	fungi
S	√		√		<i>Helvella compressa</i>	rare cup fungi/elphin saddle	fungi
S	√		√		<i>Helvella crassitunicata</i>	rare cup fungi	fungi
S	√		√		<i>Helvella elastica</i>	rare cup fungi/elphin saddle	fungi
S	√		√		<i>Helvella maculata</i>	rare cup fungi/elphin saddle	fungi
S	√		√		<i>Hydnotrya</i> sp. nov. Trappe 787, 792	undescribed taxa, rare truffles/false truffles	fungi
D	√		√		<i>Hydnotrya subnix</i> sp. nov. Trappe 1861	undescribed taxa, rare truffles/false truffles	fungi

Status	1	2	3	4	Species	Common Name/Subgroup	Group
D			√		<i>Hydnum repandum</i>	tooth fungi	fungi
S			√		<i>Hydnum umbilicatum</i>	tooth fungi	fungi
	√		√		<i>Hygophorus vernalis</i>	rare gilled mushrooms	fungi
	√		√		<i>Hygrophorus caeruleus</i>	uncommon gilled mushrooms	fungi
			√		<i>Hygrophorus karstenii</i>	uncommon gilled mushrooms	fungi
D			√		<i>Hypomyces luteovirens</i>	parasitic fungi	fungi
D	√		√		<i>Leucogaster microsporus</i>	rare false truffle	fungi
S	√		√		<i>Macowanites lymanensis</i>	rare false truffle	fungi
S	√		√		<i>Macowanites mollis</i>	rare false truffle	fungi
S	√		√		<i>Martellia fragrans</i>	rare false truffle	fungi
S	√		√		<i>Martellia idahoensis</i>	rare false truffle	fungi
S	√		√		<i>Martellia monticola</i>	rare false truffle	fungi
S	√		√		<i>Martellia</i> sp. nov. Trappe 1700	undescribed taxa, rare truffles/false truffles	fungi
S	√		√		<i>Martellia</i> sp. nov. Trappe 311	undescribed taxa, rare truffles/false truffles	fungi
S	√		√		<i>Martellia</i> sp. nov. Trappe 5903	undescribed taxa, rare truffles/false truffles	fungi
S	√		√		<i>Martellia</i> sp. nov. Trappe 649	undescribed taxa, rare truffles/false truffles	fungi
	√		√		<i>Mycena hudsoniana</i>	uncommon gilled mushrooms	fungi
			√		<i>Mycena lilacifolia</i>	uncommon gilled mushrooms	fungi
			√		<i>Mycena marginella</i>	uncommon gilled mushrooms	fungi
	√		√		<i>Mycena monticola</i>	uncommon gilled mushrooms	fungi
D	√		√		<i>Mycena overholtsii</i>	uncommon gilled mushrooms	fungi
	√		√		<i>Mycena quinaultensis</i>	uncommon gilled mushrooms	fungi
			√		<i>Mycena tenax</i>	uncommon gilled mushrooms	fungi
			√		<i>Mythicomycetes corneipes</i>	uncommon gilled mushrooms	fungi
	√		√		<i>Neolentinus adherens</i>	rare gilled mushrooms	fungi
	√		√		<i>Neolentinus kauffmanii</i>	uncommon gilled mushrooms	fungi
S	√		√		<i>Neomurula pouchetii</i>	rare cup fungi/western urnula	fungi
D	√		√		<i>Nivatogastrium nubigenum</i>	false truffle	fungi
S	√		√		<i>Octavianina macrospora</i>	rare false truffle	fungi
S	√		√		<i>Octavianina</i> sp. nov. Trappe 7502	undescribed taxa, rare truffles/false truffles	fungi
	√		√		<i>Otidea leporina</i>	uncommon cup fungi	fungi
	√		√		<i>Otidea onotica</i>	uncommon cup fungi	fungi
	√		√		<i>Otidea smithii</i>	uncommon cup fungi	fungi
D	√	√	√		<i>Oxyporus nobilissimus</i>	noble polypore	fungi
	√		√		<i>Phaeocollybia attenuata</i>	Phaeocollybia	fungi
	√		√		<i>Phaeocollybia californica</i>	Phaeocollybia	fungi
	√		√		<i>Phaeocollybia carmanahensis</i>	Phaeocollybia	fungi
	√		√		<i>Phaeocollybia dissiliens</i>	Phaeocollybia	fungi
	√		√		<i>Phaeocollybia fallax</i>	Phaeocollybia	fungi
	√		√		<i>Phaeocollybia gregaria</i>	Phaeocollybia	fungi
	√		√		<i>Phaeocollybia kauffmanii</i>	Phaeocollybia	fungi
			√		<i>Phaeocollybia olivacea</i>	Phaeocollybia	fungi
	√		√		<i>Phaeocollybia oregonensis</i>	Phaeocollybia	fungi
	√		√		<i>Phaeocollybia piceae</i>	Phaeocollybia	fungi
	√		√		<i>Phaeocollybia scatesiae</i>	Phaeocollybia	fungi
	√		√		<i>Phaeocollybia sipei</i>	Phaeocollybia	fungi
			√		<i>Phaeocollybia spadicea</i>	Phaeocollybia	fungi
			√		<i>Phellodon atratum</i>	tooth fungi	fungi
S			√	√	<i>Phlogotitis helvelloides</i>	jelly mushroom	fungi
	√		√		<i>Pholiota albivelata</i>	uncommon gilled mushrooms	fungi
S			√	√	<i>Phytoconis ericetorum</i>	mushroom lichen	fungi
S	√		√		<i>Pithya vulgaris</i>	rare cup fungi	fungi
S	√		√		<i>Plectania latahensis</i>	rare cup fungi	fungi
D			√		<i>Plectania melastoma</i>	uncommon cup fungi	fungi
S	√		√		<i>Plectania milleri</i>	rare cup fungi	fungi
			√		<i>Podostroma alutaceum</i>	uncommon cup fungi	fungi
D	√		√		<i>Polyozellus multiplex</i>	black chanterelle	fungi
S	√		√		<i>Pseudaleuria quinaultiana</i>	rare cup fungi	fungi
			√		<i>Ramaria abietina</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria amyloidea</i>	rare coral fungi	fungi

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D	√		√		<i>Ramaria araiospora</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria aurantiiscescens</i>	rare coral fungi	fungi
	√		√		<i>Ramaria botryis</i> var. <i>aurantiiramosa</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria celerivirescens</i>	rare coral fungi	fungi
	√		√		<i>Ramaria claviramulata</i>	rare coral fungi	fungi
	√		√		<i>Ramaria concolor</i> f. <i>marri</i>	rare coral fungi	fungi
			√		<i>Ramaria concolor</i> f. <i>tsugina</i>	uncommon coral fungi	fungi
			√		<i>Ramaria coulterae</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria cyaneigranosa</i>	rare coral fungi	fungi
	√		√		<i>Ramaria fasciculata</i> var. <i>sparsiramosa</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria gelatiniauranti</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria gracilis</i>	rare coral fungi	fungi
	√		√		<i>Ramaria hilaris</i> var. <i>olympiana</i>	rare coral fungi	fungi
	√		√		<i>Ramaria largentii</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria lorithamnus</i>	rare coral fungi	fungi
	√		√		<i>Ramaria maculatipes</i>	rare coral fungi	fungi
	√		√		<i>Ramaria rainierensis</i>	rare coral fungi	fungi
	√		√		<i>Ramaria rubella</i> var. <i>blanda</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria rubribrunnescens</i>	rare coral fungi	fungi
	√		√		<i>Ramaria rubrievanescens</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria rubripermanens</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria spinulosa</i>	rare coral fungi	fungi
D	√		√		<i>Ramaria stuntzii</i>	rare coral fungi	fungi
			√		<i>Ramaria suecica</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria thiersii</i>	uncommon coral fungi	fungi
	√		√		<i>Ramaria verlotensis</i>	rare coral fungi	fungi
S			√		<i>Rhizopogon abietis</i>	false truffle	fungi
S			√		<i>Rhizopogon atroviolaceus</i>	false truffle	fungi
S	√		√		<i>Rhizopogon brunneiniger</i>	rare false truffle	fungi
D	√		√		<i>Rhizopogon evadens</i> var. <i>subalpinus</i>	rare false truffle	fungi
S	√		√		<i>Rhizopogon exiguus</i>	rare false truffle	fungi
S	√		√		<i>Rhizopogon flavofibrillosus</i>	rare false truffle	fungi
S	√		√		<i>Rhizopogon inquinatus</i>	rare false truffle	fungi
S	√		√		<i>Rhizopogon</i> sp. nov. Trappe 1692	undescribed taxa, rare truffles/false truffles	fungi
S	√		√		<i>Rhizopogon</i> sp. nov. Trappe 1698	undescribed taxa, rare truffles/false truffles	fungi
S			√		<i>Rhizopogon truncatus</i>	false truffle	fungi
	√		√		<i>Rhodocybe nitida</i>	rare gilled mushrooms	fungi
	√		√		<i>Rhodocybe speciosa</i>	rare gilled mushrooms	fungi
			√		<i>Rickenella setipes</i>	moss dwelling mushroom	fungi
			√		<i>Russula mustelina</i>	uncommon gilled mushrooms	fungi
S			√		<i>Sarcodon fuscoindicum</i>	tooth fungi	fungi
D			√		<i>Sarcodon imbricatus</i>	tooth fungi	fungi
D			√		<i>Sarcosoma mexicana</i>	uncommon cup fungi	fungi
D			√		<i>Sarcosphaera eximia</i>	uncommon cup fungi	fungi
S	√		√		<i>Sedecula pulvinata</i>	rare false truffle	fungi
D			√		<i>Sparassis crispa</i>	cauliflower mushroom	fungi
			√		<i>Spathularia flavida</i>	uncommon cup fungi	fungi
			√		<i>Stagnicola perplexa</i>	uncommon gilled mushrooms	fungi
D			√		<i>Thaxterogaster pingue</i>	false truffle	fungi
S	√		√		<i>Tricholoma venenatum</i>	rare gilled mushrooms	fungi
	√		√		<i>Tricholomopsis fulvescens</i>	rare gilled mushrooms	fungi
S	√		√		<i>Tylopilus pseudoscaber</i>	bolete	fungi
	√		√		<i>Bryoria tortuosa</i>	rare forage lichen	lichens
			√		<i>Calicium abietinum</i>	pin lichens	lichens
			√		<i>Calicium adaequatum</i>	pin lichens	lichens
			√		<i>Calicium adpersum</i>	pin lichens	lichens
			√		<i>Calicium glaucellum</i>	pin lichens	lichens
			√		<i>Calicium viride</i>	pin lichens	lichens
D			√		<i>Cetrelia cetrarioides</i>	riparian lichens	lichens
			√		<i>Chaenotheca brunneola</i>	pin lichens	lichens

Status	1	2	3	4	Species	Common Name/Subgroup	Group
				√	<i>Chaenotheca chrysocephala</i>	pin lichens	lichens
				√	<i>Chaenotheca ferruginea</i>	pin lichens	lichens
				√	<i>Chaenotheca furfuracea</i>	pin lichens	lichens
				√	<i>Chaenotheca subroscida</i>	pin lichens	lichens
				√	<i>Chaenothecopsis pusilla</i>	pin lichens	lichens
			√		<i>Cladonia norvegica</i>	additional lichens	lichens
D				√	<i>Collema nigrescens</i>	riparian lichens	lichens
				√	<i>Cyphelium inquinans</i>	pin lichens	lichens
	√		√		<i>Dendrisocaulon intricatum</i>	rare nitrogen-fixing lichen	lichens
	√		√		<i>Dermatocarpon luridum</i>	aquatic lichens	lichens
			√		<i>Heterodermia sitchensis</i>	additional lichens	lichens
	√		√		<i>Hydrothyria venosa</i>	aquatic lichens	lichens
			√		<i>Hygomnia vittata</i>	additional lichens	lichens
	√	√	√		<i>Hypogymnia duplicata</i>	rare leafy lichen	lichens
			√		<i>Hypotrachyna revoluta</i>	additional lichens	lichens
				√	<i>Leptogium burnetiae</i> var. <i>hirsutum</i>	riparian lichens	lichens
				√	<i>Leptogium cyanescens</i>	riparian lichens	lichens
	√		√		<i>Leptogium rivale</i>	aquatic lichens	lichens
D				√	<i>Leptogium saturninum</i>	riparian lichens	lichens
				√	<i>Leptogium teretiusculum</i>	riparian lichens	lichens
D	√		√		<i>Lobaria hallii</i>	rare nitrogen-fixing lichen	lichens
D	√	√	√		<i>Lobaria linata</i>	rare nitrogen-fixing lichen	lichens
D				√	<i>Lobaria oregana</i>	nitrogen-fixing lichens	lichens
D				√	<i>Lobaria pulmonaria</i>	nitrogen-fixing lichens	lichens
D				√	<i>Lobaria scrobiculata</i>	nitrogen-fixing lichens	lichens
				√	<i>Microcalicium arenarium</i>	pin lichens	lichens
				√	<i>Mycocalicium subtile</i>	pin lichens	lichens
				√	<i>Nephroma bellum</i>	nitrogen-fixing lichens	lichens
D				√	<i>Nephroma helveticum</i>	nitrogen-fixing lichens	lichens
			√		<i>Nephroma isidiosum</i>	additional lichens	lichens
D			√		<i>Nephroma laevigatum</i>	nitrogen-fixing lichens	lichens
	√		√		<i>Nephroma occultum</i>	rare nitrogen-fixing lichen	lichens
				√	<i>Nephroma parile</i>	nitrogen-fixing lichens	lichens
D				√	<i>Nephroma resupinatum</i>	nitrogen-fixing lichens	lichens
				√	<i>Pannaria leucostictoides</i>	nitrogen-fixing lichens	lichens
				√	<i>Pannaria mediterranea</i>	nitrogen-fixing lichens	lichens
	√		√		<i>Pannaria rubiginosa</i>	rare nitrogen-fixing lichen	lichens
				√	<i>Pannaria saubinetii</i>	nitrogen-fixing lichens	lichens
D				√	<i>Peltigera collina</i>	nitrogen-fixing lichens	lichens
				√	<i>Peltigera neckeri</i>	nitrogen-fixing lichens	lichens
				√	<i>Peltigera pacifica</i>	nitrogen-fixing lichens	lichens
D		√		√	<i>Pilophorus nigricaulis</i>	rare rock lichen	lichens
				√	<i>Platismatia lacunosa</i>	riparian lichens	lichens
D				√	<i>Pseudocyphellaria anthraspis</i>	nitrogen-fixing lichens	lichens
D				√	<i>Pseudocyphellaria crocata</i>	nitrogen-fixing lichens	lichens
D	√	√	√		<i>Pseudocyphellaria rainierensis</i>	rare nitrogen-fixing lichen	lichens
			√		<i>Ramalina pollinaria</i>	additional lichens	lichens
				√	<i>Ramalina thrusta</i>	riparian lichens	lichens
				√	<i>Stenocybe clavata</i>	pin lichens	lichens
				√	<i>Stenocybe major</i>	pin lichens	lichens
		√		√	<i>Sticta arctica</i>	rare rock lichen	lichens
				√	<i>Sticta beauvoisii</i>	nitrogen-fixing lichens	lichens
D				√	<i>Sticta fuliginosa</i>	nitrogen-fixing lichens	lichens
D				√	<i>Sticta limbata</i>	nitrogen-fixing lichens	lichens
D	√		√		<i>Tholarna dissimilis</i>	rare leafy lichen	lichens
D				√	<i>Usnea longissima</i>	riparian lichens	lichens
D			√		<i>Felis lynx canadensis</i>	lynx	mammals
S	√	√			<i>Cryptomastix devia</i>	land snail/Puget devia	molluscs
S	√	√			<i>Cryptomastix hendersonii</i>	land snail/Columbia oregonian	molluscs
S	√	√			<i>Deroceras herperium</i>	slug/evening fieldslug	molluscs

Status	1	2	3	4	Species	Common Name/Subgroup	Group
S	√	√			<i>Hemphillia malonei</i>	slug/Malone jumping-slug	molluscs
S	√	√			<i>Hemphillia glandulosa</i>	slug/warty jumping-slug	molluscs
D	√	√			<i>Hemphillia pantherina</i>	slug/panther jumping-slug	molluscs
S	√	√			<i>Juga n. sp. 3</i>	freshwater snail/tall juga	molluscs
D	√	√			<i>Lyogyrus n. sp. 1</i>	freshwater snail/Columbia duskysnail	molluscs
S	√	√			<i>Monadenia fidelis minor</i>	land snail/Dalles sideband	molluscs
S	√	√			<i>Prophysaon dubium</i>	slug/papillose tail-dropper	molluscs
S	√	√			<i>Vespericola depressa</i>	land snail/Dalles hesperian	molluscs
D	√	√			<i>Allotropia virgata</i>	sugar stick	vascular plants
D	√	√			<i>Arceuthobium tsugense</i>	dwarf mistletoe	vascular plants
	√	√			<i>Botrychium minganense</i>	mingan moonwort	vascular plants
	√	√			<i>Botrychium montanum</i>	mountain grapefern	vascular plants
S	√	√			<i>Coptis asplenifolia</i>	spleenwort-leaved goldthread	vascular plants
S	√	√			<i>Coptis trifolia</i>	threeleaf goldthread	vascular plants
D	√	√			<i>Corydalis aquae-gelidae</i>	cold-water corydalis	vascular plants
D	√	√			<i>Cypripedium fasciculatum</i>	clustered lady's slipper	vascular plants
S	√	√			<i>Cypripedium montanum</i>	mountain lady's slipper	vascular plants
S	√	√			<i>Habenaria orbiculata</i>	round-leaved orchid	vascular plants
Σ	169	51	227	77			

<ROD C-61]

Total Suspected	83
Total Documented	78
Total Unknown	145
Total Species	306

Threatened, Endangered, and Sensitive Species [FP IV-51]

1. All project areas affected by management activities will be reviewed for Sensitive, Threatened, or Endangered plant and animal species.
2. A biological evaluation will be conducted before any ground disturbing activities occur which may adversely affect sensitive species.
3. Plant and Wildlife Conservation Strategies will be prepared for each sensitive species, guild or habitat.
4. When eagles are found, a survey and habitat inventory will be conducted in the Cowlitz, Nisqually, and Lewis Rivers, and other drainages to identify active bald eagle nests and potential habitat.
5. Consultation with the U.S. Fish and Wildlife Service will be required for each program activity or project that the Fish and Wildlife Service determines may affect threatened or endangered species and will be completed before any decision is made on the proposed project. Management activities must be conducted in such a manner that they will not impair recovery of any threatened or endangered species. <FP IV-51]

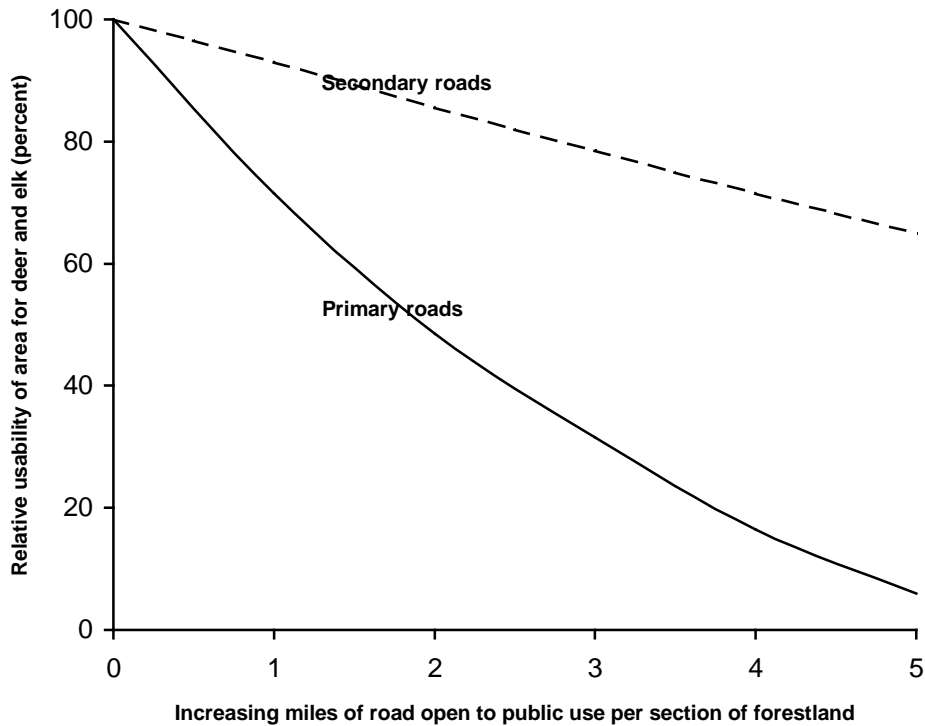
Deer and Elk [FP IV-53]

The following direction should be applied in all management areas within the biological deer/elk winter range, regardless of the assigned management area prescription:

1. In management areas with scheduled timber harvest, up to 75 percent of existing and future regeneration harvest areas should be fertilized and seeded with native forage species palatable to deer and/or elk. The need for fertilization and seeding will be determined on a case-by-case, interdisciplinary basis, before any on-the-ground application occurs. These treatments will utilize forage species appropriate to the area and consider reforestation difficulties which may be present. Forage seeding and fertilization should be considered within Biological Winter Range consistent with other objectives.
2. Road management objectives which are applicable if more restrictive than those in the assigned designated area or management area: Roads not needed for through traffic, access to an active project, or access to a specific recreation destination should be closed either permanently or seasonally, from December 1 to April 1, or decommissioned to reduce wildlife harassment. Through roads, and those to recreation destinations, should be managed to accommodate passenger car traffic. <FP IV-53 [FP IV-26]

Roads which are open to vehicular traffic can significantly reduce the habitat capability for deer and elk. Achievement of the deer/elk management goal will require that the applicable road management standards and guidelines be met within the biological winter range. The intent is to move from the current average of about 3.0 miles of open road per square mile to an average of about 1.7 miles per square mile. The current mileage includes 1.2 miles of primary or through roads, and 1.8 miles of secondary roads. The Forest Service has no jurisdiction over primary roads, most of which are federal, state or county highways. The current 1.8 miles of secondary roads could be reduced to about 0.5 miles per square mile, leaving enough flexibility to manage for recreation, timber, and other resources (see Figure 2-1. Generalized influence of increasing open road density on otherwise usable deer and elk habitat (derived from Willms 1971, Witmer 1981). <FP IV-26]

Figure 2-1. Generalized influence of increasing open road density on otherwise usable deer and elk habitat (derived from Willms 1971, Witmer 1981).



State game harvest regulations may also have a considerable effect on the degree to which habitat capability levels projected correspond with actual population levels. The period of this Forest Plan will provide an opportunity for the Forest and the State to refine mutual, quantified deer and elk population and habitat objectives. <FP IV-27]

Cooperation With Washington Department of Fish and Wildlife

[FP IV-53>

1. Projects, programs, policies, and other activities affecting fish and wildlife should receive advice and review of the Washington State Department of Fish and Wildlife.
2. To provide quality big game hunting, and to prevent over harvesting wildlife and the imposition of even more restrictive measures, seasonal access may be limited on portions of the Forest, in cooperation with the Washington State Department of Fish and Wildlife.
3. A deer and elk population survey should be taken at least every 5 years in cooperation with the Washington State Department of Fish and Wildlife.
4. A mountain goat population survey should be completed at least every 5 years in cooperation with the Washington State Department of Fish and Wildlife.

Special Habitat Management Objectives

1. Special habitats such as caves, cliffs, mineral licks, and talus slopes will be evaluated during project planning to determine biological significance, habitat value, and any necessary protection measures. Refer to standards and guidelines for caves under "Caves and Geologic Features," page 2-28.
2. Hardwoods should be managed to provide mature and older stands for wildlife habitat.
3. Dry meadows one acre or larger in size (Ecoclass MD), oak patches, and dry shrublands meeting the criteria for Ecoclasses HO and SD should be evaluated during project planning to determine habitat value and necessary protection measures. Dry meadows include an influence area of typically 300 feet in width. Fifty percent of the suitable timberland within the 300-foot influence area should be in mature or old-growth trees. Eighty-five percent of the

stands should be maintained in pole-size or larger trees for big game hiding cover. For management direction concerning moist or wet natural openings, refer to “Wetlands,” page 2-7.

The total area of created openings contiguous to 30-acre or larger natural openings should normally not exceed one-third the size of the natural opening and not occupy more than one-third of the natural opening perimeter. Openings should not be created adjacent to any natural openings (regardless of size), unless adequate vegetation along the edge can be developed or retained in sufficient density to protect wildlife and visual management objectives. The determination of adequate vegetation will be made by an appropriate ID Team.

4. Activities in calving, fawning, and kidding areas should be timed to minimize disturbance and displacement of elk, deer, and mountain goats. Access and operations should be restricted between May 15 and July 1 in calving/fawning areas, and April 15 and July 1 in kidding areas.
5. Project planning should consider the need for direct habitat improvements such as forage seeding, fertilization, and prescribed burning, e.g., to benefit mountain goat, deer and elk .
6. Road, trail, and area closures may be employed to reduce wildlife harassment and disturbance to sensitive plants and fungi populations. Examples include but are not restricted to seasonal big game ranges, rutting and calving areas, nesting sites, fish spawning/holding areas, and other reproduction sites. Also included are places where unique, uncommon, or vulnerable habitats for wildlife, plants and fungi are found.

The objective of road closures is to mitigate negative effects of the roads on wildlife. For wildlife purposes, road closure priorities will be based on the location of important wildlife habitat, the amount of forest cover present, the proximity of riparian habitat, and the existing degree of visibility. Effective enforcement capability is essential in the design of road closures. Area closures should be implemented in areas where “wheel-track,” off-road-driving-created roads are causing wildlife disturbance and displacement.

Habitat Management Objectives for Raptors and Herons

Bald Eagle

1. Picnicking, camping, blasting, firearm use, timber harvest, and low level aircraft operations should not be allowed within 1,300 feet of nests and roosts during periods of eagle use. These activities should also be regulated up to 2,600 feet from nests and roosts where eagles have line-of-sight vision. Critical nesting periods vary throughout the recovery area but generally fall between January 1 and August 31. Key wintering areas need protection from disturbance from approximately November 15 to March 15.
2. Site-specific conservation strategies should be prepared for each nest site, roost site, and feeding area.
3. Known nesting territories should be surveyed annually to determine occupancy, activity, success, and productivity of sites.
4. Additional management information may be found in the Pacific Bald Eagle Recovery Plan.

Peregrine Falcon

1. A survey of historic and potential nest sites should be completed within five years after approval of the Forest Plan.
2. Cooperate with the Washington Department of Fish and Wildlife to enhance opportunities to establish peregrine falcon populations on the Forest.
3. Site-specific management plans will be prepared for nest sites, foraging areas, and roost sites, if falcon use occurs. Management activities and human intrusion should be excluded from April 1 to August 1. Road and trail closures may be required when a nest site is active or occupied.
4. Additional management information may be found in the Peregrine Falcon Recovery Plan.

Golden Eagle

1. A survey of historic and potential nest sites should be completed within five years after approval of the Forest Plan.
2. Site-specific management plans should be prepared for nest sites, roost sites, and foraging areas, if eagle use occurs. Management activities and human intrusion should be excluded from March 1 to August 1. Road and trail closures may be required when a nest site is actually occupied by birds, or is in use for nesting purposes.

Osprey, Swainson's Hawk, Goshawk, Ferruginous Hawk, and Great Gray Owl

A protective area with a radius of approximately 660 feet should be established around each identified nest site. A management plan should be prepared for each nest site. Plans should describe specific requirements for each site, as well as for major feeding areas. The plans should be based on known reactions of birds to human intrusion, and include the following direction as a minimum:

Even-aged silvicultural practices, including clearcutting, shelterwood, and seed tree cutting, should not be permitted within the protective area. Other management activities, including intermediate timber harvesting, which do not significantly change the vegetative character may be permitted.

Management activities and human intrusion should not occur within the protective area when the nest is actually occupied by birds, or in use for nesting purposes. Road and trail closures may also be required.

See "Late-Successional Reserve Protection Buffers" later in this chapter for additional protection of the great gray owl.

Great-Blue Heron

A protective area with a radius of approximately 660 feet should be established around each heron rookery.

1. Management activities and human intrusion should not occur within the protective area from March 1 to August 31.
2. When the colony is no longer active or occupied, all restrictions on management activities may be removed. <FP IV-55]

Habitat Management Objectives for Mountain Goats [FP IV-27]

Habitat capability for mountain goats will be managed to provide a forage/cover ratio that maintains the present carrying capacity of 230 animals. This will be done by providing 50 percent of the area in optimal cover. The amount of timber harvest in mountain goat winter range will vary depending on the existing condition of the area. It will be minor, not exceeding four percent, and it will be performed in a manner which enhances the habitat.

Road management will be crucial to success in increasing goat habitat capability. Logging systems which do not require roads should be used unless no reasonable alternative exists. Most local and many collector roads should be closed (0.63 mile of open roads per square mile is the management direction). Timber harvest and road building should be precluded November 1 to June 15 in goat winter range, and all local and minor collector roads should be closed to traffic during the same period. <FP IV-27]

Habitat Management Objectives for Bats [ROD C-43]

Provide additional protection for caves, mines, and abandoned wooden bridges and buildings that are used as roost sites for bats.

Most bat species occurring in the Pacific Northwest roost and hibernate in crevices in protected sites. Suitable roost sites and hibernacula, however, fall within a narrow range of temperature and moisture conditions. Sites commonly used by bats include caves, mines, snags and decadent trees, wooden bridges, and old buildings. Additional provisions for the retention of large snags and decadent trees are included in the standard and guideline for green tree patches in the Matrix. Caves, mines, and abandoned wooden

bridges and buildings, however, are extremely important roost and hibernation sites, and require additional protection to ensure that their value as habitat is maintained.

This provision is intended to apply in Matrix forests and Adaptive Management Areas, and elements such as protection of known occupied caves should be considered for other land allocations. Conduct surveys of crevices in caves, mines, and abandoned wooden bridges and buildings for the presence of roosting bats, including fringed myotis, silver-haired bats, long-eared myotis, long-legged myotis, and pallid bats. For the purposes of this standard and guideline, caves are defined as in the Federal Cave Resources Protection Act of 1988 as “any naturally occurring void, cavity, recess, or system of interconnected passages which occur beneath the surface of the earth or within a cliff or ledge (. . . but not including any . . . man-made excavation) and which is large enough to permit an individual to enter, whether or not the entrance is naturally formed or man-made.” Searches should be conducted during the day in the summer (to locate day roosts and maternity colonies), at night during the late summer and fall (to locate night roosts, which are important for reproduction), and during the day in the winter (to locate hibernacula). If bats are found, identify the species using the site and determine for what purpose it is being used by bats. As an interim measure, timber harvest is prohibited within 250 feet of sites containing bats. Management standards and guidelines that may be included as mitigation measures in project or activity plans will be developed for the site. These standards will be developed following an inventory and mapping of resources. The purpose of the standards and guidelines will be protection of the site from destruction, vandalism, disturbance from road construction or blasting, or any other activity that could change cave or mine temperatures or drainage patterns. The size of the buffer, and types of activities allowed within the buffer, may be modified through the standards developed for the specific site. Retention of abandoned bridges or buildings must be made contingent on safety concerns.

Townsend’s big-eared bats are of concern to state wildlife agencies in both Washington and Oregon. These bats are strongly associated with caves, and are extremely sensitive to disturbance, especially from recreational cavers. When Townsend’s big-eared bats are found occupying caves or mines on federal land, the appropriate agency should be notified, and management prescriptions for that site should include special consideration for potential impacts on this species.

<ROD C-44]

Riparian Reserve Standards and Guidelines for Wildlife [ROD C-37<

- FW-1 Design and implement fish and wildlife habitat restoration and enhancement activities in a manner that contributes to attainment of Aquatic Conservation Strategy objectives.
- FW-2 Design, construct and operate fish and wildlife interpretive and other user-enhancement facilities in a manner that does not retard or prevent attainment of Aquatic Conservation Strategy objectives. For existing fish and wildlife interpretive and other user-enhancement facilities inside Riparian Reserves, ensure that Aquatic Conservation Strategy objectives are met. Where Aquatic Conservation Strategy objectives cannot be met, relocate or close such facilities.
- FW-3 Cooperate with federal, tribal, and state wildlife management agencies to identify and eliminate wild ungulate impacts that are inconsistent with attainment of Aquatic Conservation Strategy objectives.
- FW-4 Cooperate with federal, tribal, and state fish management agencies to identify and eliminate impacts associated with habitat manipulation, fish stocking, harvest and poaching that threaten the continued existence and distribution of native fish stocks occurring on federal lands. <ROD C-38] [FP IV-70<
 1. Stream and lake surveys should be conducted prior to management activities which could adversely affect wildlife or fish habitat. Ongoing stream and lake habitat surveys should identify opportunities for habitat and fish passage improvement.
 2. In marshes and wet meadows where vegetative encroachment is undesirable based on watershed analysis, trees, and other competing vegetation may be removed. <FP IV-70]

Late-Successional Reserve Protection Buffers[ROD C-19<

Protection Buffers are additional standards and guidelines from the Scientific Analysis Team Report for specific rare and locally endemic species, and other specific species in the upland forest matrix. The

following rare and locally endemic species are likely to be assured viability if they occur within reserves. There might be occupied locations outside these areas, however, that will be important to protect as well. Protocols for surveys will be developed that will ensure a high likelihood of locating these occupied sites, and such surveys will be conducted prior to ground-disturbing activities within the known or suspected ranges and within the habitat types or vegetation communities occupied by these species, according to the implementation schedule for Survey and Manage components 1 and 2.

Nonvascular Plants:

Aleuria rhenana (Fungus) - This mushroom is widely distributed but rare and little known throughout its range, known from one collection from Mt. Rainier National Park. It is a conifer litter decomposer. Mitigation activities include conducting ecological studies and surveys to determine localities. Protect known populations if surveys continue to indicate that the population is rare. Defer ground-disturbing activities.

Otidea leporina, *O. onotica*, and *O. smithii* (Fungi) - These mushrooms occur in conifer duff, and are widespread in distribution but uncommon. They are dependent on older-age forests. Specific mitigation options include protecting older forests from ground disturbance where the species are located.

For the plants listed above, it is recommended that Regional or state office-level ecologists or botanists should:

1. Maintain a spatially explicit data base of all known sites in National Forests, and
2. Develop species or area management plans, to be implemented under the guidance of the regional botany programs.

Birds:

Great Gray Owl - Within the range of the northern spotted owl, the great gray owl is most common in lodgepole pine forests adjacent to meadows. It is also, however, found in other coniferous forest types. In some locations, such as on the Willamette National Forest west of the crest of the Cascade Range, at least some shelterwood harvesting seems to be beneficial for the species by opening up otherwise closed canopy cover for foraging. In doing so, consequences to species such as northern goshawk and American marten must be evaluated. Specific mitigation measures for the great gray owl, within the range of the northern spotted owl, include the following: provide a no-harvest buffer of 300 feet around meadows and natural openings one acre and larger in size and establish 1/4-mile protection zones around known nest sites. Encroaching trees may be cut within meadows for habitat enhancement after watershed analysis. Within one year of the signing of the Record of Decision for these standards and guidelines, develop and implement a standardized protocol for surveys; survey for nest locations using the protocol. Protect all future discovered nest sites as previously described. <ROD C-21]

Managed Late-Successional Areas Protection Buffers

[ROD C-26]

The following standards and guidelines incorporated from the Scientific Analysis Team Report will result in adding unmapped areas to Managed Late-Successional Areas that should be managed as indicated below. These standards and guidelines are to be applied wherever the species occurs outside of designated areas.

The following rare and locally endemic species are likely to be assured viability if they occur within designated areas. There might be occupied locations outside these areas, however, that will be important to protect as well. Protocols for surveys will be developed that will ensure a high likelihood of locating these occupied sites, and such surveys will be conducted prior to ground-disturbing activities within the known or suspected ranges and within the habitat types or vegetation communities occupied by these species, according to the implementation schedule for Survey and Manage components 1, 2, 3, and/or 4. (See Table 2-10.) When located, the occupied sites need to be protected as follows.

Nonvascular Plants:

Brotherella roellii (Moss) - This very rare species is endemic to the Washington Cascades north of Snoqualmie Pass and suspected to occur on the Gifford Pinchot National Forest. It occupies rotting logs in low-to-mid elevation old-growth stands having dense shade, closed canopies, and high humidity. Mitigation options include locating specific populations and protection of large decay class 3, 4, and 5 logs and canopy closure greater than 70 percent. Defer management activities that conflict with maintaining suitable habitat characteristics and known populations levels. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Buxbaumia piperi, *B. viridis*, *Rhizomnium nudum*, *Schistostega pennata*, and *Tetraphis geniculata* (Mosses) - Most of these species are fairly rare (the exception is *B. piperi*). They occur on rotten logs and some organic soil, and are shade dependent, occurring in old-growth forests. *S. pennata* occurs only in mature western red cedar forests in the Olympic National Forest and in the Washington Cascades. Mitigation activities include surveying to determine presence and distribution; and, where located, maintaining decay class 3, 4, and 5 logs and greater than 70 percent closed-canopy forest habitats for shade. Shelterwood and thinning prescriptions for timber harvest will cause their demise, as logs dry out. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Polyozellus multiplex (Fungus) - Ecologically, this mushroom was considered in the same species group as *Albatrellus caeryliopus* and others, listed earlier in the SAT Report under species aided by marbled murrelet mitigation measures. *P. multiplex*, however, occurs in higher elevations of the Cascades in silver fir and mixed conifer (and is thus outside the range of marbled murrelet mitigations). It can be locally abundant and is a mycorrhizal species important to forest health. Like its group associates, it is a good indicator of old-growth forests. Mitigation activities for this species include conducting surveys to define its distribution, and studies to assess its habitat requirements. The implementation schedule for this species is the same as for survey and manage components 1 and 3.

Sarcosoma mexicana (Fungus) - This mushroom occurs in deep conifer litter layers in older forests. It is uncommon to rare and is found in the Oregon and Washington Coast Range into British Columbia and is known to occur on the Gifford Pinchot National Forest. Mitigation activities include surveying for locations and protecting deep litter layers of older forests where found. Defer prescribed burning of understory or other activities which would not retain a deep litter layer. The implementation schedule for this species is the same as for survey and manage component 3.

For the plants listed above, it is recommended that regional and state ecologists or botanists should: (1) maintain a spatially explicit data base of all known sites in National Forests and (2) develop species or area management plans, to be implemented under the guidance of the regional botany programs.

Amphibians:

Larch Mountain Salamander - Because of the narrow distribution of this species, mostly within the Columbia River Gorge, primary emphasis should be to survey and protect all known sites. Sites must be identified based on fall surveys conducted using a standardized protocol. Known sites are included within boundaries of conservation areas and under these guidelines, are not to be disturbed. Surveys are needed at additional sites in the forest matrix along the Columbia River Gorge. Key habitat is mossy talus protected by overstory canopy. Avoiding any ground-disturbing activity that would disrupt the talus layer where this species occurs is the primary means of protection. Once sites are identified, maintain 40 percent canopy closure of trees within the site and within a buffer of at least the height of one site-potential tree or 100 feet horizontal distance, whichever is greater, surrounding the site. Larger buffer widths are appropriate upslope from protected sites on steep slopes. Partial harvest may be possible if canopy closure can be retained; in

such cases logging must be conducted using helicopters or high-lead cable systems to avoid disturbance of the talus layer. The implementation schedule for this species is the same as for survey and manage components 1 and 2. <ROD -C-28]

Chapter 3

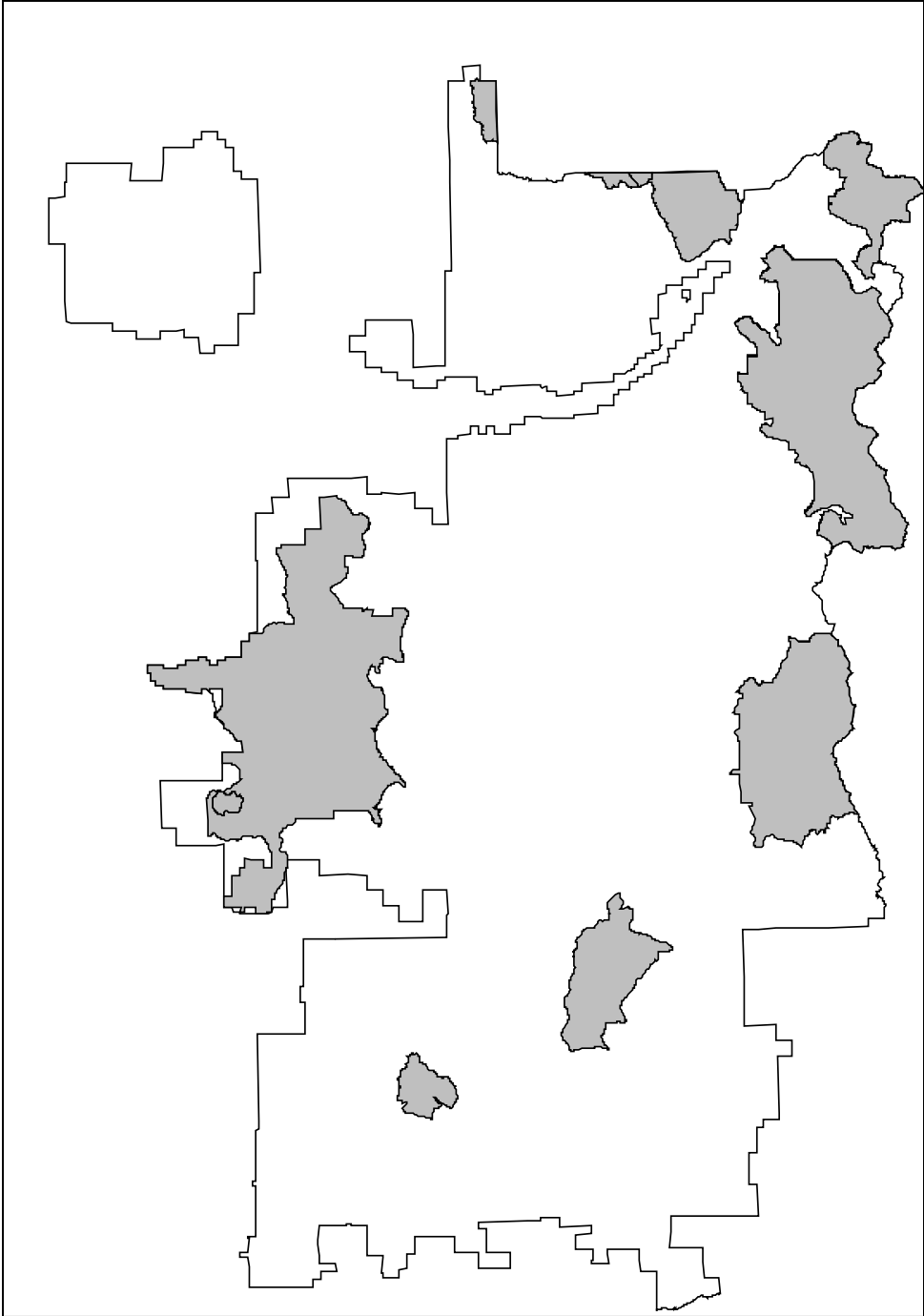
Congressionally Reserved Areas

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Congressionally Reserved Areas

Gifford Pinchot National Forest



Congressionally Reserved Areas [ROD C-8]

Key and non-Key Watersheds are specified for all areas, and therefore overlay all other land allocations. Where Key Watersheds occur within Congressionally Reserved Areas, standards and guidelines for Key Watersheds apply to the extent they are consistent with the legislated direction for the Congressionally Reserved Area.

See “Hierarchy of Standards and Guidelines” in Chapter 1, and “Key Watersheds” in Chapter 2.

These standards and guidelines retain initial land allocations for Congressionally Reserved Areas. These include lands with congressional designations that normally preclude timber harvest.

Management of these lands follows the direction written in the applicable legislation or plans. Direction from these standards and guidelines also applies where it is more restrictive or provides greater benefits to late-successional forest related species, unless the application of these standards and guidelines would be contrary to legislative or regulatory language or intent. <ROD C-8]

Management Area Category Standards and Guides

[FP IV-91]

National Forest land within the Gifford Pinchot National Forest is assigned to various Management Area Categories (MACs). Each Management Area Category has a goal, or management emphasis. Each Management Area Category includes one or more management areas. Each management area has a set of standards and guidelines and other management practices designed to achieve multiple use goals and objectives. The direction given in this section applies only to the management areas that are Congressionally reserved. The Management Area Categories are shown on the Amendment Map. <FP IV-91]

Table 3-1. Management Area Categories within Congressionally Reserved Areas.

Management Area Category	Code	Acres*
Mount St. Helens National Volcanic Monument	AA	111,845
Goat Marsh RNA & Mount St. Helens NVM	A8	1,306
Wilderness Area	WW	179,018
Butter Creek RNA in Tatoosh Wilderness	W6	532
Total Congressionally Reserved Area		292,701

* Includes Riparian Reserves

Mount St. Helens National Volcanic Monument

Management Area Category A

Includes Management Areas AB, AD, AL,
A8 (Goat Marsh RNA), and A7 (Wild River) [FP IV-113>

Goal

Manage the Mount St. Helens National Volcanic Monument to protect the geologic, ecologic, and cultural resources, allowing geologic forces and ecological succession to continue substantially unimpeded. Permit scientific study, research, recreation, and interpretation, consistent with the provisions of the Act.

Description of Lands Where This MAC is Applied

This MAC applies to all lands within the boundaries of the National Volcanic Monument as identified in Public Law 97-243. Management areas AB, AD, AL and A7 are shown on the Amendment Map as “AA.” The purpose of this MAC is to link the direction found in Public Law 97-243 to the Forest Plan. This Act calls for the protection of the natural and cultural resources, while allowing the geologic forces and ecological succession to continue substantially unimpeded. The Comprehensive Management Plan (CMP) provides the basic direction for this area; where direction is absent, however, these prescriptions and the Forest-wide standards and guidelines will apply. See Chapter 4, “Research Natural Area,” prescription A8, for additional direction concerning the Goat Marsh Research Natural Area. See Chapter 4, “Wild and Scenic Rivers,” prescription A7 and the Forest Plan *Final Environmental Impact Statement*, Appendix E, for additional direction on Wild Rivers.

Desired Future Condition

Emphasis is given to allowing the natural geologic and ecologic processes to occur for study and research. The blast zone provides the general public with a very dramatic picture of the effects of the 1980 eruption; these will become less notable as time passes. Facilities such as roads and viewpoints will be constructed to facilitate appreciation of the area.

Standards and Guidelines

Recreation

Planning and Inventory

1. Recreational and interpretive facilities shall be provided for public use.
2. The Visual Quality Objectives and Recreation Opportunity Spectrum classes assigned to these Management Areas are:

Management Prescription	VQO	ROS
AB	Retention	Primitive
AD	Retention	Semi-primitive Non-Motorized
A7	Retention	Semi-primitive Non-Motorized
AL	Retention	Roaded Natural
A8	Preservation	Roaded Natural

Prescription A8 is applicable only to the Goat Marsh Research Natural Area

Prescription A7 is applied only to Wild River corridors within the Monument.

During the winter, approximately 30,000 acres of the area assigned Prescription AD is assigned the Semi-Primitive Motorized ROS class. This assignment is made so that oversnow machines may be allowed if snow depth and other considerations permit.

3. All new developments should be located in areas of low risk from volcanic activity.

Facility and Site Preconstruction and Construction

Facilities should be developed according to direction found in the Comprehensive Management Plan (CMP).

Use Administration

1. Where appropriate, access within the Monument may be prohibited or limited to protect the significant features of the Monument. These are identified in the CMP.
2. Motorized vehicles are permitted for emergency use, essential administration, and authorized scientific research. Off-road vehicles are not permitted away from roads during the summer. With adequate snow to protect soil and vegetation, oversnow vehicles may be permitted during the winter in designated areas.
3. Mountain bicycles are permitted on trails, unless specifically prohibited to protect selected research and interpretive opportunities, or to eliminate user conflicts.
4. Recreational use will be limited in special, unique, and high value habitats such as cliffs, caves, talus, wetlands, deer and elk winter range, riparian corridors, calving areas, and ptarmigan habitat.
5. Management of recreational use will be coordinated with research activity. Use must not substantially affect natural features or impede natural recovery processes.
6. Hunting and fishing are allowed within the Monument. Any restrictions are found in the Monument Fish and Wildlife Management Plan (a cooperative plan with the Washington Department of Fish and Wildlife).

Wildlife And Fish

Planning and Administration

1. Management requirements for indicator species will also be maintained. Development and management which concentrates recreational activity in these areas should not be permitted. Dispersed recreational use is acceptable.
2. Fish stocking may occur as provided for in the Monument Fish and Wildlife Plan.
3. All snags and down logs will be retained except for those instances where removal is required for human safety or to protect property.

Range

Planning and Inventory

Livestock grazing should not be permitted.

Timber

Administration

Timber harvest will not be scheduled. Harvesting is not permitted except for that necessary to prevent fire, disease, and other agents which endanger irreplaceable features within the Monument. Harvest may also be permitted to prevent damage to significant resources adjacent to the Monument or for public safety. Ordinary timber salvage is not permitted.

Lands

Special Use Management and Withdrawals

1. Subject to valid existing rights, all Federal lands are withdrawn from all forms of entry or appropriations.
2. Nonconforming uses should be discontinued when opportunities arise.
3. Except for valid existing rights, Federal lands within the Monument are withdrawn from location, entry, and patent under the United States mining laws and from disposition under all laws pertaining to mineral and geothermal leasing.
4. Research projects will be by special use permit.

Landownership Planning

Lands should be retained or acquired, Landownership Category I, in accordance with Public Law 97-243.

Facilities

Road Operation

1. Open roads will be limited to those specifically designated as open in the Comprehensive Management Plan (CMP). Other existing roads will be closed or decommissioned .
2. Roads in Deer and Elk Winter Range will be closed from December 1 to April 1, except for the plowing of Road 83 to access the Swift Creek Sno-Park and Highway 504 to Johnston Ridge, to provide recreation access. Parking for winter sports will be located outside of inventoried winter range.
3. Off-road vehicle use on Deer and Elk Winter Range is prohibited from December 1 to April 1, except for a minor portion of Road 81 (on the edge of winter range) where on-trail use is allowed to access higher elevation winter sports areas.

Protection

Fire Management

1. Open campfires are prohibited in all areas of blowdown, standing dead fringe and newly created mudflows year-around.
2. The Suppression Strategy, Confine or Contain, should be used depending on the surrounding values. Suppression Strategy, Control, will be used in the blowdown areas.
3. Modified fire suppression tactics which would minimize surface disturbance in sensitive areas should be considered.

Law Enforcement

Closure to public use necessitated by volcanic activity will continue to be jointly established by the Forest Service, State of Washington, and other appropriate agencies.

Pest Suppression and Prevention

Catastrophic infestation control actions will be determined by an interdisciplinary process to ensure that methods used are within the intent of the Monument Act.

<FP IV 115]

Wilderness

Management Area Category W

Includes Management Areas W2, W3, W4, W5, W6 (Butter Creek RNA), and W7 (Wild Rivers) [FP IV 116>

Goal

Preserve the wilderness character. Allow for natural processes and provide opportunities for solitude, challenge, and inspiration. Within these objectives, and following a policy of nondegradation management, provide for appropriate levels of recreational, scenic, educational, scientific, and in some cases, historical uses.

Description of Lands Where This MAC is Applied

This MAC is applied to wildernesses classified under the Wilderness Act of 1964 and the Washington State Wilderness Act of 1984. Management Areas W2, W3, W4, W5 and W7 are shown on the Amendment map as "WW."

Desired Future Condition

The area retains its primeval character without permanent alterations or human habitation. It appears to have been affected primarily by forces of nature; evidence of human intrusion is substantially unnoticeable. Vegetation is the result of natural succession, and may vary from none to natural openings to stands of mature and old-growth trees. Wildlife habitat and interactions among species are the result of natural processes. The area contributes to the protection of both natural plant and animal gene pools. No roads are present except as required to serve valid mineral or energy projects initiated prior to December 31, 1983. The area provides outstanding opportunities for solitude and primitive-type recreation without motorized activities. Isolation from the sights and sounds of others is likely, as is the experience of independence, closeness to nature, tranquility, and self-reliance. Subtle differences in the environment may be apparent, depending on which of the following Wilderness Recreation Opportunity Spectrum (WROS) class the visitor is in:

PRISTINE - The area is characterized as an extensive, unmodified, natural environment. Natural processes and conditions dominate. This area provides the most outstanding opportunities for isolation, solitude, risk, and challenge. Encounters with other visitors will usually be infrequent. There are no system trails in this class. Areas in this class are of sufficient size to assure a remote experience away from sights and sounds of human activity. (A minimum of 5,000 acres can be used as a starting point for establishing whether or not an area is of sufficient size to be considered pristine).

PRIMITIVE - The area is characterized by an essentially unmodified, natural environment. Concentrations of visitors are low and evidence of human use is minimal. Trail density is low. The area has a high opportunity for isolation, solitude, exploration, risk, and challenge. A high degree of outdoor skill is often needed.

SEMI-PRIMITIVE - The area is characterized by a predominantly unmodified environment. System trails and campsites are present and there is evidence of human use. A moderate to high degree of opportunity exists for exploring and experiencing isolation, independence, and self-reliance in a natural environment.

TRANSITION - This area is characterized by a predominantly unmodified environment, however, the concentrations of visitors may be moderate to high at various times. The highest number of encounters with other users and the most evidence of human use is in these areas. "Day Use" activities are typically a large component of total use in these areas. Opportunities for exploration and experiencing isolation are reduced and there is a reduced challenge and risk as compared to other WROS classes.

SPECIAL AREA - *These include such areas as those congressionally acknowledged as having significant cultural or historic value, and those with special wildlife values. recreational use is not encouraged in these areas.*

Standards and Guidelines

The following direction applies to all management areas in MAC W unless otherwise indicated. See Chapter 4, “Research Natural Area,” MAC Y, for additional direction concerning the Butter Creek Research Natural Area in the Tatoosh Wilderness, prescription W6.

Recreation

Planning , Inventory, and Use Administration

The Visual Quality Objectives and Wilderness Recreation Opportunity Spectrum classes assigned to these management areas are:

Management Prescription	VQO	WROS
W2	Preservation	Pristine
W3	Preservation	Primitive
W4	Preservation	Semi-Primitive
W5	Preservation	Transition
W6 and W7	Preservation	Special Area

Prescription W6 is applicable only to the Butter Creek RNA. Prescription W7 applies only to wild river corridors within wilderness.

1. The following standards and guidelines summarize the Limits of Acceptable Change, and apply to specific WROS classes. Refer to Figure B-1 in Appendix B of the Forest Plan for a more complete display of the Limits of Acceptable Change:
 - a) *Pristine* (Prescription W2): The maximum number of Recreation Visitor Days use (RVDs) permitted should not exceed 0.25/acre/year. Encounters between parties should be limited to an average of one per day. Party size, including stock animals, should not exceed six. Livestock are not encouraged in Pristine areas. Party size may be increased to a combination of 10 by written permit. There should be no vegetation loss at campsites, and no mineral soil exposed by visitor use.
 - b) *Primitive* (Prescription W3): RVDs permitted should not exceed 0.001/acre/year. Encounters between parties should be limited to an average of two per day. Party size, visitors, and stock should not exceed 12, but can be up to 30 by written permit. Vegetation loss at campsites should not exceed 200 square feet, or less than one percent of any acre. Mineral soil exposed should be less than 20 square feet.
 - c) *Semi-Primitive* (Prescription W4): RVDs permitted should not exceed 5/acre/year. Encounters between parties should be limited to an average of five per day. Party size, visitors, and stock should not exceed 12, but can be up to 30 by written permit. Vegetation loss at campsites should not exceed 400 square feet, or one percent of any acre. Mineral soil exposed should be less than 50 square feet.
 - d) *Transition* (Prescription W5): RVDs permitted should not exceed 15/acre/year. Encounters between parties should be limited to an average of eight per day. Party size, visitors and stock, should not exceed 12, but can be up to 30 by written permit. Vegetation loss at campsites should not exceed 600 square feet, or one percent of any acre. Mineral soil exposed should be less than 75 square feet.

- e) *Special Area* (Prescriptions W6 and W7): Each of the areas is assigned a secondary management prescription which is fully compatible with the wilderness classification. Example, the Butter Creek Research Natural Area is a Special Area within the Tatoosh Wilderness. In addition to the secondary standards and guidelines applicable to Special Areas, visitor use capacities and standards for protection of resources such as soil and vegetation will be established for each area. Refer to Appendix B of the Forest Plan for the capacities and standards established for the Butter Creek RNA and wild rivers within wilderness.
2. An Annual Implementation Schedule will be prepared for each wilderness to ensure that Forest Plan direction and objectives are met.
 3. If user impacts exceed standards such as those for vegetation loss or soil exposed, limitations on use may be applied to specific use areas.
 4. If active measures are required to meet the WROS standards, measures such as: pulling back vehicle access points, lowering standards of access roads, trailheads, and trails, or diverting use should be considered prior to implementing a use permit system.
 5. If it becomes necessary to establish priorities for wilderness visitation, highest priority should be given to uses which (1) least alter the wilderness environment, and (2) are dependent upon the wilderness environment. Other use should be encouraged outside wilderness.
 6. Improvements such as primitive toilets must be necessary for the protection of the wilderness resource and not for the convenience of users. Improvements should be constructed of natural materials and designed to harmonize with the environment.
 7. Commercial outfitting and guide services may be authorized where compatible with general public use and wilderness management objectives.
 8. Install and maintain the minimum number of signs. These should be located only where necessary for protection of the wilderness resource and for basic visitor orientation.
 9. Semi-Primitive and Primitive WROS areas should provide for varying levels of difficulty for foot and/or horse travel while minimizing physical and visual impacts on the land. Semi-Primitive and Primitive areas may be designated for use only by hikers or horses where necessary e to reduce user conflicts, prevent resource damage, or to provide a variety of recreation experiences.
 10. Recreation stock is prohibited on lakeshores, streambanks, and other wet areas except for watering. Such use may not be permitted on particularly sensitive wet areas. Stock should be held overnight out of view outside riparian reserves, and at least 200 feet from water, trails, or camp areas.
 11. Motorized and mechanized equipment, including off-road vehicles, bicycles, wagons and carts, is not permitted.
 12. Private and commercial aircraft shall be discouraged below 2,000 feet above ground level; military aircraft shall be discouraged from overflight training missions.
 13. The landing of aircraft or dropping of supplies within the wilderness is prohibited. Exceptions may be granted for emergencies or administrative purposes.
 14. Project work crews, contractors, and other administrative users should abide by the same group size limitation as the public. Work should be scheduled during the low-use season.
 15. Party campsites should be separated and be at least 200 feet from trails, lakes, streams, and meadows and outside Riparian Reserves.

Resource Protection and Enhancement

1. Structures eligible for the National Register of Historic Places, or approaching 50 years of age, may be retained if they are:
 - a) Necessary for wilderness purposes or administrative needs as provided in Sections 4(b) and (c) of the Wilderness Act.
 - b) Of national, regional, or local significance and are not directly or indirectly resulting in significant degradation of wilderness values.

- c) Structures not meeting at least one of these criteria may be removed or allowed to deteriorate naturally.
2. Structures ineligible for the National Register, or less than 50 years of age, should be removed or allowed to deteriorate naturally if they are not considered necessary for wilderness purposes or administrative needs as provided for in Sections 4(a) and (b) of the Act.
3. Cultural resources, or other features of interest, may be interpreted, provided it is done outside the wilderness. Informal verbal interpretation may be permitted in the wilderness. Cultural resources in wilderness will not be signed on the ground for the general public.

Wildlife and Fish

Planning and Administration

Wildlife and fish management will be conducted in accordance with FSM 2323.3 and “Policies and Guidelines for Fish and Wildlife Management.” in the Forest Service Wilderness Management Handbook, FSH 2323.1.

1. Fish stocking may continue at lakes and streams where it historically occurred. Barren waters may be considered for stocking, if there is mutual agreement that no appreciable loss of scientific values or adverse effects on wilderness resources will occur.
2. Native fish species will be used in the stocking program.
3. Aircraft stocking will be permitted only on those lakes stocked by aircraft prior to wilderness classification. No landing of aircraft is permitted. Stocking should be done before or after the visitor season, if possible.
4. Chemical treatment of waters is permitted for the re-establishment of native species, establishment of Threatened or Endangered aquatic species, or to correct undesirable conditions resulting from the influence of human activity.
5. Management activities and decisions will emphasize maintaining native species, with particular emphasis on the habitat requirements of Threatened and Endangered Species. Manage to protect known populations of Threatened and Endangered Species where necessary for their perpetuation and aid in their recovery in areas of previous habitation. Actions taken to protect or recover Threatened and Endangered Species may include habitat manipulation and special protection measures within wilderness. When alternate areas outside wilderness offer equal or better protection, action should be taken outside of wilderness first. Indigenous species may be re-established. Threatened and Endangered Species may be established to correct the undesirable influences of human activities.
6. Visitor activity may be regulated on a seasonal basis to minimize the impact on natural population levels or distribution of native plant and animal species.
7. Where appropriate, fire should be allowed to play a natural role in maintaining plant and animal diversity to ensure a natural abundance and distribution of native species.
8. Exotic plants and nonnative animal species will not be introduced.
9. Trails and camping areas should avoid area such as critical mountain goat habitat, critical fish spawning habitat, marmot concentrations, and other areas where significant concentrations occur, to reduce harassment of the animals. Existing facilities should be relocated.

Range

Administration and Management

1. Permanent corrals shall not be permitted.
2. Commercial livestock grazing may be permitted where it occurred prior to passage of the Wilderness Act.
3. Livestock use shall be managed so that native plant and animal species are maintained. Nonnative plant species shall not be introduced. The possibility of accidental

introduction will be minimized by prohibiting the use of hay, straw and unprocessed grain as supplemental feed.

4. Pack and saddle stock shall use supplemental feed (certified weed-free) in areas where native forage is not able to recover and maintain its composition and vigor into the next growing season, or where grazing would result in degradation of visual quality.

Timber

Administration

No scheduled harvest, reforestation, or timber stand improvement activities will occur. Ordinary timber salvage is not permitted.

No physical encroachment into Wilderness will be allowed to facilitate logging, e.g. locating tailholds within wilderness is forbidden.

Firewood gathering

Firewood gathering, except for campfires, will not be permitted.

Genetic Forest Tree Improvement Program

Genetic improvement activities will be limited to cone collection for genetic sampling. All pickers will adhere to the following as a minimum:

1. Trees or areas designated for picking will not be conspicuously marked or cultured.
2. Natural processes must be allowed to continue, i.e., no more than 50 percent of the cones from any tree or area will be removed in any one year.
3. Caution is required in removing cones, i.e., do not unnecessarily damage trees and avoid shooting in areas of popular public use, as during hunting seasons.
4. Pickers will conform to all established wilderness standards, including use capacities.

Water, Soil, and Air

Rights/Use Management

1. Except as provided for in the Wilderness Act, watersheds shall not be altered or managed to provide increased water quantity, quality, or timing of discharge.
2. Livestock and human use shall be regulated to maintain all water bodies at the Streamside Management Unit Class I standard (nondegradation). Any water body found to be below standard should be restored to the prescribed quality.

Minerals And Geology

Inventory and Development

Common variety mineral sources will not be inventoried or developed.

Processing of Exploration, Lease Applications, and Site Specific Development Proposals, and Administration

1. No new mineral or energy leases will be issued.
2. Exploration and development of valid existing claims for locatable minerals or oil/natural gas and geothermal leases will be conducted in a manner which minimizes degradation of wilderness values.

Lands

Special Use Management

Permits, licenses, easements, and rights-of-way should not be recommended.

Withdrawals, Modification, and Revocation

All lands are withdrawn from mineral entry at the time the area is designated as wilderness, except for claims which are valid at the time of designation.

Landownership Planning

All lands will be placed in Ownership Category I (Retain or Acquire).

Facilities

Transportation Planning

Forest Service roads and other administrative facilities will not be permitted. Any existing road will be returned to a natural condition unless it serves a valid mining claim or lease. Such roads would not be open to the public and all maintenance would be the responsibility of the claimant or lessee.

Protection

Fire Management

1. Use suppression techniques which result in the least possible evidence of human activity.
2. Naturally-occurring fires shall be permitted to burn in specific areas if they meet the prescription parameters for the zone. All naturally-occurring ignitions are considered prescribed until declared wildfire, in which case the appropriate suppression strategies will be used.
3. Under specific conditions as described in the prescribed natural fire plan, prescribed fires may be ignited by forest managers to meet specific Wilderness objectives as described in FSM 2324.22 and the approved prescription parameters for the zone.
4. Detection flights should avoid over-flight of the wilderness.
5. Fuelbreaks will not be constructed.

Pest Management and Suppression

Insects and disease will be controlled only if a significant threat is posed to resources outside the area. Biological methods will be favored. <FP IV-121]

Chapter Four

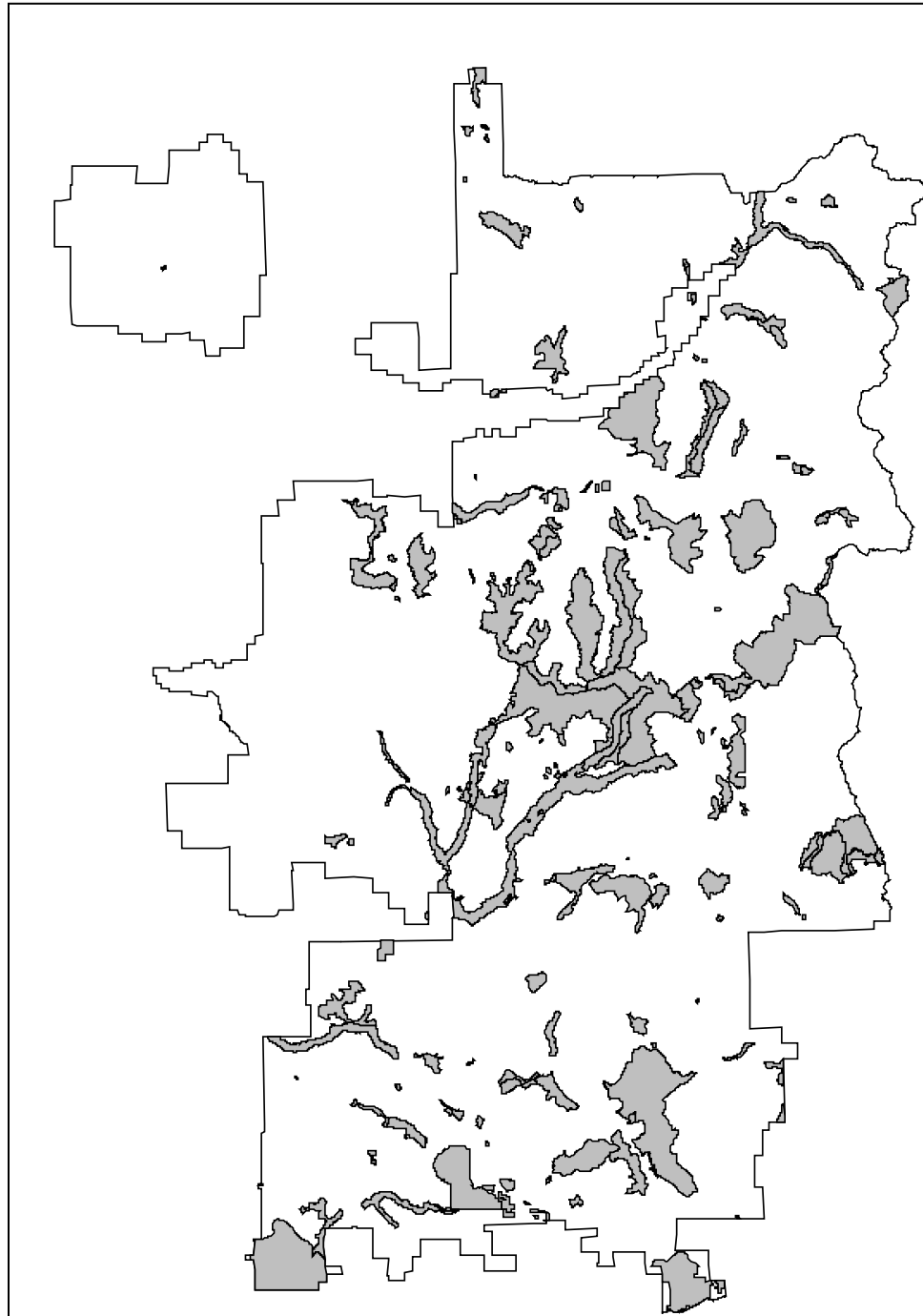
Administratively Withdrawn Areas

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Administratively Withdrawn Areas

Gifford Pinchot National Forest



Administratively Withdrawn Areas [ROD C-29>

Key and non-Key Watersheds are specified for all areas and, therefore, overlay all other land allocations. For the portion of Administratively Withdrawn Areas located within Key Watersheds, standards and guidelines for Key Watersheds as well as standards and guidelines for Administratively Withdrawn Areas apply.

See “Hierarchy of Standards and Guidelines” in Chapter 1 and “Key Watersheds” in Chapter 2.

Description

Administratively Withdrawn Areas include wildlife, recreation, visual, and other areas not managed to provide timber outputs.

On the Amendment Map, these areas are shaded green, except where they overlap with Late-Successional Reserves or the Adaptive Management Area. Where such overlap exists, direction from both designated areas must be considered.

Standards and Guidelines

While it is recognized that changes in administrative withdrawals may occur in future plan amendments, many assumptions within this plan are based in part on existing administrative withdrawals. Plan amendments that propose to significantly reduce protection for late-successional or old-growth forest related species, or reduce protection for aquatic ecosystems, are subject to review by the Regional Ecosystem Office to determine if the objectives of this plan are significantly adversely affected. <ROD C-29] There will be no scheduled timber harvest; these lands do not contribute to allowable sale quantity (ASQ).

Management Area Categories

National Forest land within the Gifford Pinchot National Forest is assigned to various Management Area Categories (MACs). Each Management Area Category has a goal or management emphasis. Each Management Area Category includes one or more management areas. Each management area has a set of standards and guidelines and other management practices designed to achieve multiple use goals and objectives. The direction given in this section applies only to the management areas Administratively Withdrawn and not overlapping other designated areas. The management areas are shown on the Amendment Map.

Table 4-1. Management Area Categories within the Administratively Withdrawn Area.

Management Area Category	Code	Acres*
Administrative Sites	3W	365
Developed Recreation	2L	2,444
Research Natural Areas	F8	1,140
	Y8	2,051
	YC	261
Roaded Recreation	RL	148
	RM	15,671
Special Interest	9L	3,705
	GD	14,290
	GL	780

	SD	9,559
Unroaded Recreation without Timber Harvest	UD	8,742
	UH	11,729
	UL	5,224
Wild and Scenic Rivers	8D	418
Wildlife Special	IL	1,090
	IM	1,345
	IX	3,557
Total Administratively Withdrawn Area		82,519

* Includes Riparian Reserves. Does not include Administratively Withdrawn Areas within other designated areas.

Administrative Sites

Management Area Category 3

Includes Management Area 3W FP IV-146>

Goal

Provide for facilities required to accomplish the administration of the National Forest in an efficient manner.

Description of Lands Where This MAC is Applied

Existing sites such as ranger stations, engineering zone compounds, road maintenance shops and compounds, scale stations, lookouts, the Wind River Nursery, seed orchards, the Cispus Center, the Mount St. Helens National Volcanic Monument Headquarters, work centers, guard stations, and additional lands required for these and other activities which must be performed in order to administer National Forest System lands.

Desired Future Condition

Buildings, roads, and other structures are quite evident; most have required the creation of openings. Since most of the activities are ongoing, structures are generally permanent. They are well kept, neat, and orderly in appearance. Vegetation varies widely from ornamental trees and shrubs to stands of old-growth timber.

Standards and Guidelines

The following direction applies to all management areas in MAC 3.

Recreation

Planning and Inventory

1. Cultural, biological and other features of interest should be inventoried. Public access may be provided when it does not conflict with the functions of the administrative site.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these management areas are:

Management Prescription	VQO	ROS
3W	Modification	Rural

Recreational facilities should be few or absent.

Use Administration

Recreational off-road vehicles should not be permitted.

Range

Planning

Livestock grazing should not be permitted.

Timber

Hazard Trees

Trees should be removed to protect life and property or as necessary for insect attack or disease control. Ordinary timber salvage should not be permitted.

Water, Soil and Air

Rights/Use Management

Water rights should be acquired for all sources supplying water for domestic use or irrigation at the site, unless the Reservation Principal (see Glossary) applies.

Minerals and Geology

Inventory and Development Proposals

1. Common mineral material sources should not be inventoried or developed.
2. Potential aquifers should be evaluated prior to well location and drilling.

Lands

Special Use Management

Permits, leases, rights-of-way, or easements inconsistent with the purposes of the administrative site should not be permitted.

Federal Energy Regulatory Commission (FERC) License and Permits

Feasibility studies should be conducted in a manner which does not interfere with operation of the administrative site.

Withdrawals, Modifications, and Revocations

Subject to the determination of values, including mineral values, portions of the area should be recommended for withdrawal under the public land laws if required to protect special values.

Landownership Planning

All lands should be placed in Ownership Category II, Retain or Acquire. Sites outside the Forest boundary operating with leases or other temporary permits are exceptions.

Facilities

Road Operation

Access roads and parking lots should be managed to encourage or accept general public use. Some storage areas may require gates or fences to protect government property.

Fire, Administrative, and Other (FA&O) Construction/Reconstruction

1. Boundaries of administrative sites adjacent to private lands should be surveyed and posted prior to site planning and construction. Existing sites should be surveyed and posted prior to further development.
2. Temporary buildings should be limited to temporary activities or circumstances. They should not be built in lieu of permanent structures. Plans should be developed for the removal or replacement of temporary structures.
3. Plans should be developed to blend new construction with architectural and landscape themes of the existing compound facilities.
4. A site development plan will be prepared for all administrative sites to increase operating efficiency. It should include consideration of the direction above.

Protection

Fire Management

Fire plans will adhere to state, county, and local fire ordinances and laws.

Fire Suppression

Fire Suppression Strategy, Control, should be used.

Fire Suppression Priority 1, protect life and property, should apply and all fuels will be disposed or removed.

Pest Suppression and Prevention

The protection of developments and existing vegetation should be emphasized in pest suppression and prevention activities. <FP IV 148]

Developed Recreation

Management Area Category 2

Includes Management Area 2L [FP IV-101>

Goal

Readily-accessible, appropriately-designed facilities will provide for concentrated visitation by people seeking a convenient recreational experience.

Description of Lands Where This MAC is Applied

Developed recreation sites are usually close to water bodies, berryfields, and other areas of scenic or special interest. Except for winter recreation areas, they are usually located on relatively flat land with slopes of less than ten percent. Soils and vegetation must be able to absorb heavy use. Camp and picnic grounds, ski areas, recreation residences, viewpoints, boat launches, and other facilities may be accommodated.

Desired Future Condition

Roads, buildings, ski lifts, tables, docks, and other physical facilities are evident, but design and construction will repeat the color, shapes and lines of the surroundings. Openings usually exist to accommodate facilities and provide scenic views; trees and other vegetation will vary widely in type and size.

Standards and Guidelines

Recreation

Planning and Inventory

1. The location of unusual geologic forms, cultural features, wildlife and scenic viewing opportunities, and other features of interest should be evaluated for interpretation and development.
2. On selected sites, special facilities needed for the convenience of visitors, including the elderly, young, and handicapped, should be provided.
3. The Visual Quality Objective and Recreation Opportunity Spectrum classes assigned to these management areas are:

Management Prescription	VQO	ROS
2L	Retention	Roaded Natural

Facility and Site Management

1. Site development and management should be guided by these considerations:
 - a) Public safety and sanitation.
 - b) Long-term protection of site and facilities.
 - c) Accommodation for groups and for the handicapped.
 - d) Information services.
 - e) Aquatic Conservation Strategy.
2. Operation and maintenance plans should be prepared.
3. New camp units should be located away from the immediate foreground of lakes and streams. Those which are now in these locations should be moved whenever practicable. See "Riparian Reserve Standards and Guidelines for Recreation," Chapter 2.

4. Every site will be surveyed for hazard trees annually.

Use Administration

Off-road vehicle use on roads should be limited to ingress and egress. ORV use may be permitted on designated trails with the same limitation.

Range

Administration

Livestock grazing should not be permitted.

Timber

Administration

Trees should be felled when they may be a hazard to life or property. Methods least likely to produce lasting visual impacts should be employed. Trees may be removed to improve a ski area, provide a scenic view, or accomplish other recreational enhancements. Ordinary timber salvage should not be permitted. Firewood cutting should not be permitted unless a blowdown or other unusual circumstance makes that a practical option for clearing the area.

In the foreground of areas adjacent to concentrated use:

1. Remove portions of downed trees which are not needed to meet recreation and Aquatic Conservation Strategy objectives.
2. Flush-cut or remove stumps.
3. Remove logs and debris by methods which minimize ground and vegetative disturbance.

Silvicultural Examination and Prescriptions

As a basis for the Vegetative Management Plan, a silvicultural examination should be prepared for every developed recreation site. It should take into account crown closure, hazard trees, and the ability of the stand to withstand concentrated recreation.

Genetic Forest Tree Improvement Program

Genetic improvement program activities should be limited to select trees. Identification marks should be inconspicuous.

Water, Soil and Air

Inventory, Planning, and Improvement

Adverse impacts of recreation on soil, water, and air should be identified. Those which may jeopardize public health and safety will be corrected immediately. Others should be treated before the opening of the next season (see Chapter 2, "Riparian Reserve Standards and Guidelines for Recreation," RM-1 and RM-2).

Rights/Use Management

Water rights should be acquired for all sources supplying or expected to supply domestic water to the recreation site.

Minerals and Geology

Evaluation and Development Proposals

1. Common mineral material sources should not be developed.
2. Potential aquifers should be evaluated prior to well location and drilling.

Lands

Special Use Management

Only those permits, leases, rights-of-way, and other special uses which are compatible with developed recreation should be permitted.

Federal Energy Regulatory Commission License and Permits

Feasibility studies may occur providing they are performed in a manner which does not impair recreational use of the area.

Withdrawals, Modifications, and Revocations

The recreation site or area should be withdrawn from mineral entry, subject to the determination of values, including mineral values, if required to protect the site.

Landownership Planning

All lands should be placed in Landownership Category II, Acquire or Retain.

Facilities

Transportation Planning

Roads and other facilities inconsistent with developed recreation should be located away from the primary use areas, closed, removed, or decommissioned.

Road Operation

Access roads to developed sites should be managed to permit passenger car traffic.

When vandalism is a problem, the Prohibit traffic scheme can be applied to seasonally close sites. When vandalism is not a problem, road use may be seasonally discouraged by posting closure signs.

Protection

Fire Management

Fire Suppression Strategy, Control, should be used at all developed sites.
Fire Hazard Reduction Priorities, Utilize and Dispose, should apply.

Pest Suppression and Prevention

Pest suppression and prevention methods should be used for maintaining the health of vegetation. This activity should be timed to avoid the recreation season if possible. <FP IV-103]

Research Natural Area

Management Area Category Y

Includes Management Areas F8, A8, YC, Y8, and W6 [FP IV-138>

Goal

Manage the Research Natural Area in a natural state for research and education, and/or to maintain biological diversity.

Description of Lands Where This MAC is Applied

Existing Research Natural Areas, classified under the code of Federal Regulations, 36 CFR 251.23. Three of these RNAs are found within the National Volcanic Monument, Experimental Forest, and Wilderness (management areas A8 and F8 and W6). In case of conflict, the more restrictive direction will apply. This also applies to potential RNAs which are actively being evaluated for RNA status through the Forest Planning process.

Desired Future Condition

Except for development which may have occurred prior to classification, human activities are not evident. Alteration is almost entirely the product of natural processes. Vegetation may vary across the full range of Forest species and sizes including mature and old-growth stands. They provide opportunities for research, study, observation, monitoring, and those educational activities that maintain unmodified conditions.

Standards and Guidelines

The following direction applies to all management areas in MAC Y, unless otherwise specified. In consultation with the Forest Supervisor and District Ranger, the Director of the Pacific Northwest Forest and Range Experiment Station is responsible for approving management implementation plans and for overseeing and coordinating approved research on all Research Natural Areas (RNAs), except for those RNAs in Congressionally-designated areas, such as Wilderness and National Monuments. The authority to approve management plans and to oversee and coordinate approved research on RNAs in Congressionally-designated areas rests with the Regional Forester. The Regional Forester should coordinate plans for research with the Station Director. Also see "Research" in Chapter 2.

Recreation

Planning

1. Incidental dispersed use may be permitted, but recreational use of the area will not be encouraged. Camping, collecting plants, berrypicking, and other uses which threaten or interfere with research, educational opportunities, or other purposes for which the RNA was established, will be prohibited.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class or Wilderness ROS class assigned to these management areas are:

Management Prescription	VQO	ROS
YC	Preservation	Semi-primitive Non Motorized
A8, F8, Y8	Preservation	Roaded Natural
W6	Preservation	Special Area

Prescription A8 is applicable only in the National Volcanic Monument, MAC A. Prescription W6 is applicable only within Wilderness, MAC W. F8 is applicable only in the Experimental Forest MAC F.

3. Interpretation of cultural and other features of interest will not be permitted, except for research or educational purposes.
4. Trail construction or reconstruction will be permitted only if required to meet the needs of research, for educational purposes, or to protect RNA values. RNAs will not be shown on maps intended for sale to the general public.

Use Administration

Off-road vehicles, including snow machines, should not be permitted.

Wildlife and Fish

Administration

1. No active management will occur unless it is required to protect Sensitive, Threatened, or Endangered Species, or is included in an approved RNA management prescription.
2. Exotic plants and animals are not permitted. Endemic species may be removed if action is deemed necessary to protect the features for which the RNA was established, or to protect adjacent resources.

Range

Planning

1. Livestock grazing will usually occur only if required for noxious weed control or to preserve the vegetation for which the RNA was created.
2. In research natural areas where livestock grazing is not part of the management prescription, the Regional Forester and Station Director shall, as appropriate, establish a level of acceptable casual or incidental livestock use that can be tolerated and is consistent with the management prescription for the research natural area.

Timber

Planning and Inventory

Ordinary salvage and other timber management activities will not occur. This does not preclude the cutting of snags and other trees if they are a hazard to life or property. Felled trees should remain in place within the Research Natural Area.

Firewood Cutting

Firewood cutting, including campfire wood, will not be permitted.

Minerals and Geology

Inventory and Development Proposals

1. Common variety mineral material sources will not be inventoried or developed.
2. Leasing of mineral or energy resources will only be permitted with a no surface occupancy stipulation.

Lands

Special Use Management

Rights-of-way, easements, and other permits not required for research or educational purposes will not be permitted if there is a practical alternative.

Federal Energy Regulatory Commission (FERC) License and Permits

Licenses or permits will be recommended only when projects are consistent with RNA management.

Withdrawals, Modifications and Revocations

The RNA will be recommended for withdrawal under the public land laws.

Property Boundary Location

RNA boundaries will be surveyed and marked as soon as practical. Posting of markers and signs should not call public attention to these areas.

Landownership Planning

All lands will be placed in Ownership Category II, Retain or Acquire.

Facilities

Transportation Planning

1. When approved by the Station Director, in consultation with the Forest Supervisor, temporary facilities needed for research (e.g., gauging stations and instrument shelters) may be installed.
2. New roads and facilities will be permitted only if they contribute to the Research Natural Area objectives. Existing roads and facilities may be reconstructed if limited to the original clearing limit, and approved by the Station Director.

Protection

There will be no treatment of fuels. No Reduction should be used.

The Station Director, with the concurrence of the Forest Supervisor, may authorize management practices that are necessary for noxious weed control or to preserve the vegetation for which the research natural area was created. These practices may include prescribed burning.

Pest Suppression

No action will be taken against endemic insects or disease unless the outbreak threatens adjacent resources or would significantly alter the natural ecological processes within the RNA. Where pest management activities are prescribed, they shall be as specific as possible against target organisms and induce minimal impact on other components of the ecosystem. <FP IV-140]

Roaded Recreation without Timber Harvest

Management Area Category R

Includes Management Areas RL and RM [FP IV-95>

Goal

Provide a variety of dispersed recreational opportunities in areas conveniently reached by auto.

Description of Lands Where This MAC is Applied

These lands accommodate dispersed recreation—hiking, fishing, berrypicking, camping, wildlife viewing, rockhounding, winter sports—beside or near roads. They include unique or distinctive portions of the Forest with features like clustered lakes, berryfields, and roaded scenic corridors.

Desired Future Condition

Management activities are evident, but not conspicuous. Vegetation will remain largely natural in appearance along the major travel ways and may vary from natural openings through stands of mature and old-growth timber. Travel to dispersed sites over roads maintained at a variety of standards is an important aspect of the recreational experience. Much of the area provides for interaction with a near-natural environment. Recreation facilities have been kept at a minimal level of development.

Standards and Guidelines

Recreation

Planning and Inventory

1. Locations for viewing, photographing, or interpreting wildlife, cultural, geologic, biological, and other features of interest should be identified and evaluated.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these management areas are:

Management Prescription	VQO	ROS
RL	Retention	Roaded Natural
RM	Partial Retention	Roaded Natural

The assigned VQO is applicable to all public roads, recreation sites, and trails within the management area.

Site Management and Administration

Areas which are designated for management as berryfields should be maintained by such methods as emphasizing permits for plant removal and encouraging the removal of encroaching vegetation by volunteers. Future research may provide more efficient methods for perpetuating these popular berrypicking areas.

Use Administration

Off-road vehicles may be permitted on designated routes or areas.

Wildlife And Fish

Planning and Prescriptions

Opportunities for hunting and fishing may be enhanced by methods such as fish stocking and habitat improvement.

Range

Administration

Livestock grazing may be permitted. Animals should be kept away from fields which are being managed for berry picking during the harvest season.

Structural Improvement and Maintenance

Loading ramps, stock tanks, fences, holding pens, and other improvements should be located away from areas of concentrated recreation except for those specifically designed for recreation stock.

Timber

Planning and Administration

Timber harvesting will not be scheduled, and timber salvage should not be permitted. Trees may be felled, however, to enhance recreation, e.g., the opening of a scenic view, construction of a road, or removal of hazard trees.

Fuelwood gathering is not permitted except for campfires.

Genetic Forest Tree Improvement Program

Select trees should be marked inconspicuously. Other genetic Forest tree improvements should be located away from areas of concentrated use.

Minerals and Geology

Development Proposals

The development of common minerals material sources, if necessary, should occur away from areas of concentrated use.

Lands

Landownership Planning

Lands needed to protect the integrity of the management area should be Retained or Acquired, Ownership Category II. The remaining land should be placed in Category III, neutral.

Facilities

Transportation Planning

Roads and other facilities which are not consistent with the recreation objectives should be located away from concentrated use areas.

Local roads should be closed or decommissioned unless needed for a specific recreational purpose.

No additional roads or associated developments are permitted in that portion of the Midway/High Lakes Roaded Recreation Area (Prescription RM) located west of Road 2329 and south of Road 5603.

Protection

Fire Suppression Strategy

During periods of low fire hazard, a Containment, Fire Suppression Strategy should be used. When hazard is high, a Control Strategy should be used.

Pest Suppression and Prevention

Pest suppression and prevention methods which minimize visual disturbance should be employed.

Biological and silvicultural treatments should be favored. Hazard trees in use areas should be felled. <FP IV-97]

Special Interest Management Area Categories S, G, B, and 9

Includes Management Areas SD, GD, GL, BL, and 9L [FP IV-104]

Goal

Maintain the special feature(s) in a substantially natural condition. While providing for an appropriate level of public access and enjoyment. <FP IV-104]

Description of Lands Where This MAC is Applied [FP IV-19]

Eight Special Interest Areas (under 36 CFR 294.1) amounting to 31,750 acres will be managed to maintain the special features in a substantially natural condition and provide for an appropriate level of public access and enjoyment. An implementation schedule will be prepared for each of these areas within 10 years after approval of the Forest Plan.

Table 4-2. Special Interest Areas.

Special Interest Areas		
Area Name	Prescription	Acres
Big Lava Bed	Geologic	14,540
Deadhorse Cave	Geologic	20
Dog Mountain *	Scenic	4,910
Falls Creek Lava Tubes	Geologic	520
Grassy Knoll *	Botanic	2,070
Quartz Creek Big Trees *	Botanic	90
Silver Star *	Scenic	9,320
Weigle Hill *	Botanic	280

* Areas located within Late-Successional Reserve.

In addition to the areas identified above, there is a long list of special features identified by the Management Direction Code 9L which are also deserving of special management (see Forest Plan Appendix C). <FP IV-19] [FP IV-104]

Scenic Areas - SD:

Places of outstanding or matchless beauty.

Geologic Areas - GD and GL:

Outstanding formations, fossils, caves, or other geologic features which display the earth's evolutionary processes.

Botanical Areas - BL:

Lands containing plant species or communities which are significant because of form, color, occurrence, habitat, location, life history, arrangement, ecology, environment, rarity, or other quality.

Other Areas - 9L:

These lands, like those described above, are unique because they include features deserving special management. They include a wide range of features, such as waterfalls, scenic spots, caves, and botanical, historical, and geological sites. They differ from the above areas in two respects. First, they are relatively small in size; ranging from one acre to about 1,200 acres, most are 20 acres or less. The second and most significant difference in these areas, however, is that they are not significant enough to qualify for classification under Code of Federal Regulations (CFR 294.1).

Desired Future Condition

Visual evidence of management activities is subordinate to the special feature(s). Fences, signs, viewpoints, and other facilities may exist if needed to protect the feature(s) or provide for public use and enjoyment. Plant communities are usually the product of natural succession. Vegetation may range from natural openings through stands of mature and old-growth timber.

Most features included in this MAC will remain in a substantially undisturbed condition. Some, however, may be partially altered to provide access or recreational facilities.

In most Special Interest areas, there is an opportunity to interact with the natural environment. In some, there is an opportunity for solitude; in others, the experience is shared.

Standards and Guidelines

The following direction applies to all management areas in MAC S, G, B, 9, unless otherwise indicated.

Recreation

Planning and Inventory

1. The location of trails, campsites, viewpoints, and other recreational opportunities should be identified and evaluated for development.
2. Access to cultural features, wildlife viewing areas, berryfields, and other features of interest should also be evaluated for development or interpretation.
3. All areas, except for those to which the 9L Prescription is assigned, will be classified as Special Interest Areas under the Code of Federal Regulations (CFR 294.1).

- The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these management areas are:

Management Prescription	VQO	ROS
SD, GD	Retention	Semi-primitive Non-Motorized
GL, BL, 9L	Retention	Roaded Natural

NOTE: In the event that oversnow machines are permitted within management areas assigned prescriptions SD or GD, the ROS class is changed to Semi-Primitive Motorized for the duration of such use.

The assigned VQO is applicable to all roads, trails, and use areas within the management area.

Use Administration

- Recreational off-road vehicles, including oversnow machines, should not be permitted in management areas assigned prescriptions BL, GD, GL, or SD, except oversnow machines may be permitted in GD, GL, and SD when snow is deep enough to ensure that resource damage will not occur.
- Off-road vehicles, including oversnow machines, may be permitted in 9L areas on a case-by-case basis.
- Hazard trees near use areas should be felled.

Facility, Site, and Trail Reconstruction and Construction

Trails and facilities should be subordinate to features for which the management area was created.

Wildlife

Habitat Improvement and Maintenance

Native or natural materials should be used.

Range

Planning and Inventory

Livestock grazing may be permitted if it does not detract from the special feature(s) and public use and enjoyment. No grazing should be permitted in areas assigned the BL prescription.

Nonstructural/Structural Improvements and Maintenance

- Native or natural materials, should be used in improvements.
- Stock tanks, fences, and holding pens should be located away from the special interest feature or areas where recreation is concentrated.
- Revegetation or rehabilitation necessitated by stock grazing should be initiated no later than the following season.

Genetic Forest Tree Improvement Program

With the exception of seed orchards, genetic improvement activities may be permitted when they do not adversely affect special feature(s) or public use and enjoyment.

Minerals And Geology

Development Proposals

- Common mineral material sources may not be developed.

2. Recommendations for development should include reasonable, operationally feasible requirements for protecting special features.
3. Recommendations on the design of facilities should be appropriate to the nature of the special feature involved.
4. When facilities are no longer needed they should be removed and the area rehabilitated.

Lands

Special Use Management

Permits, leases, rights-of-way, and easements not compatible with Special Interest Area objectives should not be permitted. Nonconforming uses should be discontinued when the opportunity permits.

Withdrawals, Modifications and Revocations

The area should be recommended for withdrawal under the public land laws, subject to the determination of values, including mineral values.

Landownership Planning

Lands which are critical to the integrity of the Special Interest Area should be Retained or Acquired, Landownership Category II. The remainder of the area should be in Category III, Neutral.

Facilities

Transportation Planning

There should be no roads in management areas assigned the SD, on GD Prescriptions. They may be permitted in GL or BL areas when required for recreation purposes consistent with maintaining special interest values. Existing roads in 9L areas may be permitted if needed for through traffic. All other roads in 9L areas should be closed or decommissioned, and new roads should not be constructed.

Protection

Fire Suppression Strategy

The Suppression Strategies should be Confine or Contain, depending on the nature of the special feature(s) and value of development.

Unroaded Recreation Without Timber Harvest Management Area Category U

Includes the following Management Areas UD, UH, and UL [FP IV-92]

Goal

Provide a variety of dispersed recreation opportunities in a semi-primitive or undeveloped setting.

Description of Lands Where This MAC is Applied

Portions of the Forest with outstanding recreational attributes. They provide quality fishing, hunting, berrypicking, backpacking, and other outdoor activities. They may be located near a road but are in a substantially undisturbed condition.

Desired Future Condition

A natural to predominantly natural-appearing environment has been maintained; changes are largely the result of natural succession. Campsites, sanitation facilities, and other management activities are few in number and not conspicuous. Wildlife habitats are diverse. The area affords visitors an experience which is usually free from the sight and sounds of other people. Principal access is by trail; there are no roads within the area. The opportunity to practice outdoor skills in a challenging environment is afforded. Vegetation may vary widely from natural openings to mature and old-growth stands.

Standards and Guidelines

The following direction applies to all management areas within MAC U unless otherwise indicated.

Recreation

Planning and Inventory

1. Future trail and campsite locations should be identified and coordinated to access areas of interest or destination points, e.g., vistas or berrypicking areas.
2. The trail system should be designed to disperse use and enhance the optimum recreational opportunities of this area.
3. The Visual Quality Objectives and Recreation Opportunity Spectrum classes assigned to these management areas are:

Management Prescription	VQO	ROS
UD	Retention	Semi-primitive Non-Motorized
UH	Retention	Semi-primitive Motorized
UL	Retention	Roaded Natural

4. Cultural sites or other features of interest may be interpreted if they can be adequately protected.

Facility and Site Management and Use Administration

1. Prescribed fire, ground treatments, and tree removal may be used to retain openings for huckleberries (see General Technical Report, PNW-93, July, 1979).
2. Recreational off-road vehicles may be permitted on trails only in management areas where the UH or UL prescriptions are assigned.

Wildlife And Fish

Habitat Improvement and Maintenance

Natural habitats characteristic of the areas (e.g., meadows) should be identified and maintained.

Timber

Administration

There will be no scheduled timber harvest. Timber salvage should not be permitted. Trees may be removed for safety reasons, or to enhance recreation, e.g., to create a scenic view. Ordinary timber salvage should not be permitted.

Firewood Cutting

Gathering campfire wood may be permitted. Firewood cutting for home or commercial use should not be permitted.

Genetic Forest Tree Improvement Program

The genetic improvement program should be limited to select trees.

Minerals and Geology

Development Proposals

1. Exploration should be performed in a manner which does not alter the Semi-Primitive character of the land. Exploration should be timed to avoid conflict with recreational activities, i.e., not on weekends during the summer season.
2. Facilities should be designed to minimum standards and removed when no longer needed. The site should then be rehabilitated.

Lands

Special Use Management

Nonconforming uses should be terminated.

Federal Energy Regulatory Commission Licenses and Permits

Facilities should be designed to minimize adverse effects on the natural setting. Pipelines and transmission lines should not be permitted. If unavoidable, they should be buried if practical.

Landownership Planning

Lands critical to the integrity of the Management Area should be placed in Ownership Category II, Retain or Acquire. The remainder should be in Category III, Neutral.

Facilities

Transportation Planning and Inventory

There will be no roads constructed. Existing roads should be obliterated.

Protection

Fire Management

1. The role of natural fire should be incorporated into fire planning, fuels management, and ecosystem maintenance. Prescribed fires may be used to meet management objectives.
2. During periods of low fire hazard (spring) Suppression Strategy, Contain, should be used. Strategy, Control, will be used when fire hazard is high.
3. The use of retardants and hand lines is preferred to minimize long-term fire suppression impacts.

Pest Suppression and Prevention

The suppression and prevention of pests should be limited to outbreaks which threaten the recreational values of the area or adjacent resources. Biological methods will be preferred. <FP IV-94]

Utility Sites and Corridors

Management Area Category 4

Includes Management Area 4W [FP IV-149>

Goal

Provide effective and economical utilities with the least impact on the various natural resources involved.

Description of Lands Where This MAC is Applied

Existing sites and corridors for such purposes as communication, signal relay, canals, penstocks, pipelines, and power transmission lines. Proposed sites and corridors determined to be the most efficient, cost effective, and environmentally sound places to accommodate these facilities. All utility sites and corridors are not shown on the Amendment Map.

Desired Future Condition

Signs of human activities are frequently dominant. Buildings, antennas, pipelines, high voltage powerlines, and similar structures will usually be visible. The vegetation is mostly ground cover in the form of small conifers and hardwood brush. Vegetation partially screens smaller sites from distant views and provides edge habitat for wildlife. Recreational opportunities are frequently available for operating off-road vehicles, viewing distant scenery, and gathering miscellaneous forest products.

Standards and Guidelines

Recreation

Planning

1. Opportunities to harvest Christmas trees, view wildlife, operate off-road vehicles, hunt, cross-country ski, and pursue other recreational activities may be provided.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these management areas are:

Management Prescription	VQO	ROS
4W	Modification	Rural

3. Permittees will be required to sign or otherwise adequately mark items or areas which may be safety hazards to the public.

Use Administration

Off-road vehicles may be permitted on designated trails or areas.

Wildlife And Fish

Habitat Improvement

Wildlife habitat improvements such as forage seeding and other vegetative manipulations should be considered.

Range

Planning

Livestock grazing may be permitted.

Timber

Administration

Commercial size trees, when present, may be harvested when they interfere with or present a hazard to the utility. Ordinary salvage may be permitted.

Lands

Special Use Management

1. Adherence to Federal standards for the use of chemicals to control vegetation will be required in permits.
2. Additional facility needs should utilize existing sites and corridors whenever possible.
3. When a site or corridor is no longer in use, it should be rehabilitated.

Landownership Planning

All lands should be placed in Ownership Category III, Neutral.

Facilities

Road Construction and Operation

Roads constructed to develop, service, or maintain facilities within this management area should not be maintained or managed for public use. Public use, however, may be permitted when conflicts with other resources are minor. Closures using the Prohibit traffic scheme should be applied if protection of facilities is required.

Roads passing through a corridor for other purposes should be managed commensurate with the adjacent management areas.

Protection

Fire Suppression

Fire Suppression Strategy, Control, should be used.

Fire Suppression Priority 1, protect life and property, will be used and all fuels should be disposed or removed.

Pest Suppression and Prevention

The protection of adjacent resource values should be emphasized in pest suppression and prevention activities. <FP IV-150]

Wild and Scenic Rivers

Management Area Categories 8, N

Includes Management Areas A7, 8D, W7, and NA FP IV-108>

Goal

Protect the Wild or Scenic River characteristics pending possible addition to the National Wild and Scenic Rivers System.

Description of Lands Where This MAC is Applied

Lands within 1/4 mile of designated rivers within the Forest boundary appearing to be both eligible and suitable for addition to the National Wild and Scenic Rivers System. Also included are those eligible river corridors for which suitability has not yet been determined. Suitability for those rivers will be determined after the Forest Plan is approved.

Desired Future Condition

Wild Rivers - A7, 8D, and W7

Wild Rivers are generally inaccessible by road, but can be reached by trail or water. Vegetation is varied in size, species, and age, and is predominantly the product of natural succession. Vegetation may vary from natural openings through stands of mature and old-growth timber. Along Wild Rivers, the opportunity to interact with a natural environment, away from the sights and sounds of other people, is available. A high degree of challenge is offered.

Scenic Rivers - NA

Vegetation is varied in size, species, and age, and is predominantly the product of natural succession. Vegetation may vary from natural openings through stands of mature and old-growth timber. Some structures, farming, and evidence of timber harvest may be visible, but the shorelines are largely undeveloped. The rivers are accessed in some places by road and in some instances a major travel route parallels the river. A challenging interaction with the natural environment is available.

Standards and Guidelines

The following direction applies to all management areas in MAC 8 and N unless otherwise indicated. Wild and Scenic Rivers within Wildernesses and the National Volcanic Monument are subject to the management direction for those areas. Additional Management Direction is described in the Wild and Scenic Rivers Act and guidelines for its implementation. All the following direction is subject to Aquatic Conservation Strategy and Forest-wide direction described in Chapter 2, which may be more restrictive.

Recreation

Planning and Inventory

- 1a. Those rivers determined to be suitable, and their immediate environment, are recommended for designation under the Wild and Scenic Rivers Act of 1968.

Rivers for which suitability has not been determined will require additional analysis. If the analysis finds one or more rivers or segments to be suitable, those will also be recommended for designation under the Act. Until the analysis is completed, no activities should be permitted that would alter the eligibility or potential classification of the stream.

- 1b. Many of the Wild and Scenic River corridors include lands which are actually extensions of other management areas outside of, but adjacent to, the river corridor. Included are lands having attributes needed to complete other prescriptions such as Special Interest Areas, Developed Recreation Sites, and Visual Emphasis Viewsheds. Where the management direction for these lands is more restrictive than that for the Wild, Scenic, or Recreational River corridor in which they occur, the more restrictive direction applies. These “included” management area prescriptions are considered to be a part of these recommendations for designation under the Act.
2. Cultural resource surveys for identification of significant resources are encouraged. Cultural resources and other features of interest which are not jeopardized by public exposure may be interpreted.

The Visual Quality Objectives and Recreation Opportunity Spectrum Classes assigned to these management areas are:

WILD RIVER

Management Prescription	VQO	ROS
A7 and 8D	Preservation	Semi-primitive Non-Motorized
W7	Preservation	Special Area

Within Wildernesses, the Wilderness Recreation Opportunity Spectrum is used.

Prescription A7 is applicable only within the National Volcanic Monument.

Prescription W7 is applicable only within Wilderness, MAC-W.

SCENIC RIVER

Management Prescription	VQO	ROS
NA	Retention	Roaded Natural

Facility and Site Reconstruction and Construction

Site design and facility selection should be compatible with the assigned ROS or WROS Level:

Wild River

Facilities are generally not permitted in wildernesses. Along other Wild Rivers, recreation sites should be limited to simple comfort and convenience facilities located outside the Riparian Reserve.

Scenic River

Subject to meeting the goals of the Aquatic Conservation Strategy, recreation sites may be established in close proximity to the river, but should be widely spaced, blend with the natural landscape, and be screened from the river. Recreation sites should consistent with the Aquatic Conservation Strategy.

Facility and Site Management and Use Administration

1. Off-road vehicles are not permitted in Wild River corridors; they may be permitted in Scenic River corridors on designated trails.
2. Guide service and other recreation concessions in keeping with the assigned ROS or WROS class may be permitted.

Wildlife

Structural Habitat Improvement and Maintenance

Structural habitat improvements should utilize native or natural-appearing materials.

Range

Administration

Livestock grazing may be permitted.

Timber

Administration, Regeneration, and Intermediate Harvest

Wild Rivers — Ordinary timber salvage is not permitted.

Scenic Rivers — Timber salvage is not permitted in the NA management area.

Firewood Cutting

Firewood cutting for home or commercial use should not be permitted in areas recommended for Wild River classification. Gathering firewood for campfire use may be permitted.

Genetic Forest Tree Improvement Program

Genetic improvement activities in Wild and Scenic Rivers are limited to select trees.

Minerals and Geology

Development Proposals

1. Common mineral material sources should not be developed.
2. A no-surface occupancy stipulation will be encouraged in mineral leases.
3. Prior to, and in some instances after designation under the 1968 Act, rivers are generally subject to mining claim location and mineral exploration. Approved plans will include reasonable mitigation and reclamation measures to minimize surface disturbance, sedimentation and visual impairment.

Lands

Special Use Management

1. Utility corridors, dams, diversions and hydroelectric power facilities will be prohibited to the extent of Forest Service authority. Existing facilities may be maintained.
2. Locating new utility lines within Scenic River corridors should be discouraged. Where no reasonable alternative exists, routes should cross, not parallel, the river or be limited to the existing right-of-way.
3. Federal licenses or permits for water resource projects, including dams and transmission lines, will not be recommended unless the project will not have a direct and adverse affect on the Wild or Scenic River character.

Landownership

National Forest lands should be placed in Ownership Category II, Retain.
Other ownerships should be in Category V, Additional Study.

Wild and Scenic Rivers Study

Encourage the participation and cooperation of public and private landholders, particularly in river corridors including other ownerships.

Facilities

Transportation Planning and Inventory

1. Roads should not be permitted in Wild River corridors.
2. In Scenic River corridors, roads may occasionally cross or come near the river, but they should be infrequent and inconspicuous.
3. Roads and other facilities are also limited due to the “included” prescriptions described under Standards and Guidelines, Recreation, No. 1(b).

Road Operation

Roads accessing developed recreation sites within Scenic and Recreation River corridors should be managed to accommodate passenger car traffic.
Local roads not required for a specific recreational objective should be closed using the Eliminate or Prohibit traffic management schemes, or decommissioned.
Major through roads should be managed using the Encourage traffic management scheme.

Protection

Fire Management

Heavy equipment should not be used in the foreground as seen from the river.

Fire Suppression

1. The Fire Suppression Strategy, Control, should be used.
2. In Wild River Corridors use suppression techniques which result in the least possible evidence of human activity.

Pest Suppression and Prevention

1. Strategies which protect the Wild or Scenic character of these areas and avoid the degradation of water quality should be used to suppress the outbreak of pests.
2. Unacceptable damage to sensitive visual areas should be prevented with Integrated Pest Management strategies; cultural methods should be preferred.
3. Pest suppression and prevention methods which maintain the visual and recreation attributes of these areas and protect adjacent resource values should be emphasized. <FP IV-112]

Wildlife Special Management Area Category I

Includes Management Areas IL, IM, and IX [FP IV-126>

Goal

Sustain or enhance a limited and significant habitat to support dependent wildlife.

Description of Lands Where This MAC is Applied

Distinctive habitats such as marshes, caves, mineral licks, and particular groves of old growth. These habitats are generally fragile, limited in size, uncommon, and important to numerous species of wildlife. They require a separate MAC because they do not clearly meet the criteria for other wildlife MACs.

Desired Future Condition

Management activities are not evident in most of the area; there are few or no roads, and signs of other activities are minimal. Vegetation is generally the product of natural succession, although some enhancement of habitat may have occurred, e.g., planting of browse species. Vegetation ranges from natural openings through stands of mature and old-growth timber. Recreational activities which entail high densities of users will not be encouraged; however, some hunting and fishing may occur. These areas may be of particular interest to naturalists.

Standards and Guidelines

The following direction applies to all management areas in MAC I, unless otherwise indicated.

Recreation

Planning and Inventory

1. Opportunities for viewing, photographing, interpreting wildlife, cultural, biological and other features, should be evaluated and may be permitted when it is determined they would not result in harassment to wildlife. Generally, development or management which concentrates recreational activity should not be permitted.
2. The Visual Quality Objectives and Recreation Opportunity Spectrum classes applied to these management areas are:

Management Prescription	VQO	ROS
IL	Retention	Roaded Natural
IM	Partial Retention	Roaded Natural
IX	Modification	Roaded Modified

Facility and Site Trail Reconstruction and Construction

Other than trails, recreation facilities should not be built.

Use Administration

Off-road vehicles, including oversnow machines, should not be permitted.

Wildlife

Habitat Improvement

Direct wildlife and fisheries habitat improvements should be emphasized.

Range

Administration

Grazing will not be permitted except outside of the beaver and waterfowl habitat enclosure in Cave Creek and within the Grand (3078) heron rookery.

Timber

Planning

Individual trees, or small groups, may be cut to improve wildlife habitat, for instance, to provide snags or down material. Alteration of the vegetative character of the area is not permitted. Ordinary timber salvage should be permitted only if an environmental assessment clearly indicates removal outweighs the in-place value of the material to wildlife.

Firewood Cutting

Firewood cutting, except for campfire use, should not be permitted.

Genetic Forest Tree Improvement Program

Genetic improvement activities should be limited to select trees.

Minerals And Geology

Inventory and Development Proposals

1. Common mineral material sources should not be inventoried or developed.
2. Where reasonable and practical, exploration should be conducted in a manner which does not adversely affect wildlife. It should take into account wildlife cycles such as migration and calving.
3. Plans for exploration or development will minimize disturbance to wildlife. Transportation and other facilities should be designed to minimum standards and be obliterated and rehabilitated when the project terminates.

Lands

Special Use Management

Leases, rights-of-way, easements, and other permits should be granted only if they do not adversely affect the habitat. Nonconforming uses should be ended when opportunity allows.

FERC License and Permits

Recommendations for exploration and project permits should minimize disturbance to wildlife and habitat.

Withdrawals, Modifications and Revocations

Subject to a determination of values, including mineral values, some or all of the area should be withdrawn from mineral entry if required to protect the habitat.

Landownership Planning

All lands will be placed in Ownership Category II, Retain or Acquire.

Facilities

Transportation Planning

New roads and other facility construction should not be permitted. Existing roads should be decommissioned if not required for through traffic.

Local roads that remain open should not be managed for public travel in passenger cars. Seasonal closure of roads should be applied where needed to protect wildlife values.

Protection

Fire Management

The use of prescribed fire to maintain or enhance wildlife habitat may be permitted.

Fire Suppression

In periods of low fire hazard, Fire Suppression Strategy, Confine, should be used. During the fire season, Strategy, Control, should apply.

Pest Suppression and Prevention

Pest suppression and prevention should be undertaken when outbreaks threaten wildlife objectives within the area and when adjacent areas are seriously threatened. Biological methods should be favored and suppression efforts should concentrate on the perimeter. <FP IV-128]

Chapter 4

Administratively Withdrawn Areas

Chapter 4

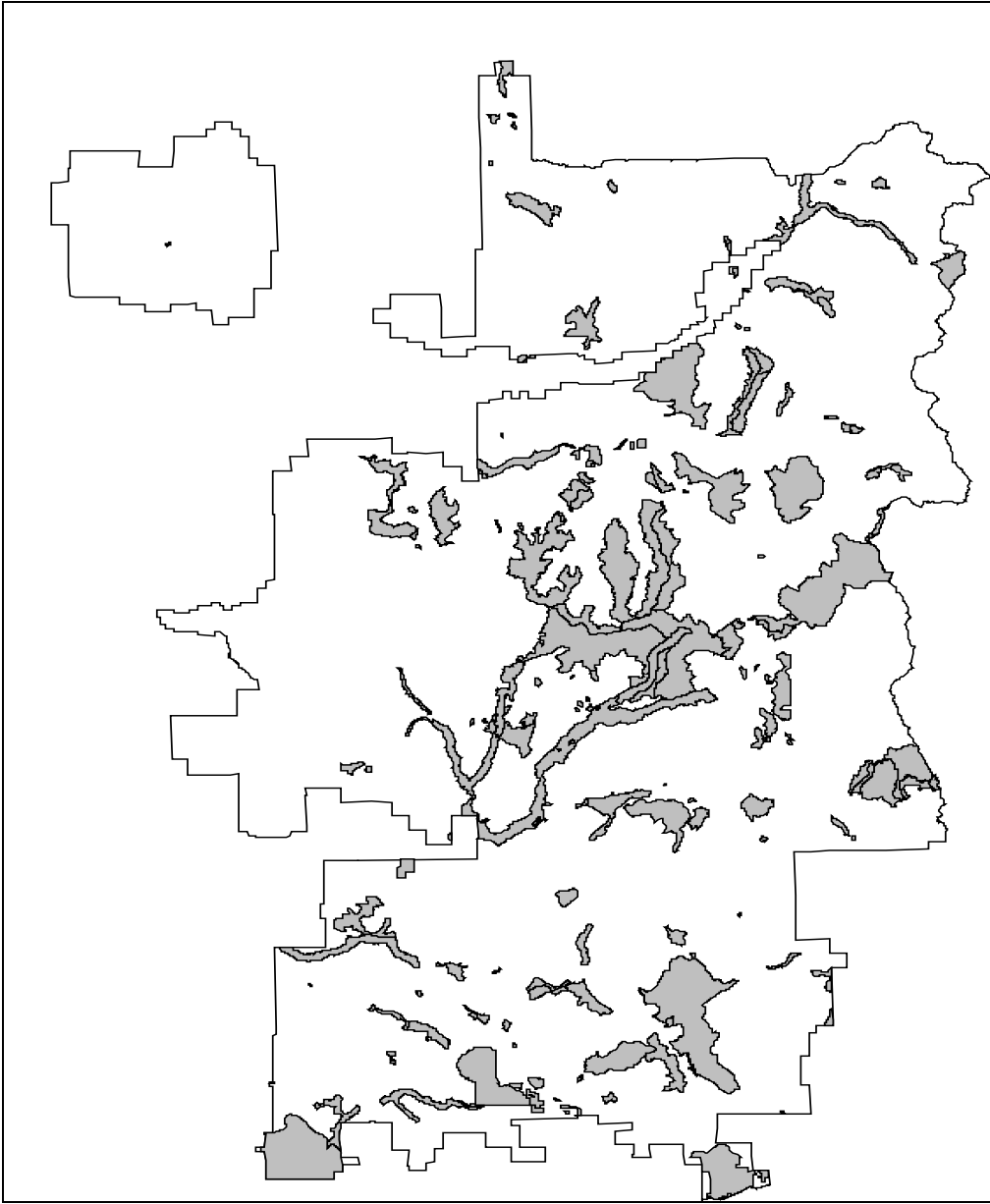
Administratively Withdrawn Areas

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Administratively Withdrawn Areas Map

Gifford Pinchot National Forest



Chapter 4

Administratively Withdrawn Areas [ROD C-29>

Key and non-Key Watersheds are specified for all areas and, therefore, overlay all other land allocations. For the portion of Administratively Withdrawn Areas located within Key Watersheds, standards and guidelines for Key Watersheds as well as standards and guidelines for Administratively Withdrawn Areas apply.

See “Hierarchy of Standards and Guidelines” in Chapter 1 and “Key Watersheds” in Chapter 2.

Description

Administratively Withdrawn Areas include wildlife, recreation, visual, and other areas not managed to provide timber outputs.

On the Amendment Map, these areas are shaded green, except where they overlap with Late-Successional Reserves or the Adaptive Management Area. Where such overlap exists, direction from both designated areas must be considered.

Standards and Guidelines

While it is recognized that changes in administrative withdrawals may occur in future plan amendments, many assumptions within this plan are based in part on existing administrative withdrawals. Plan amendments that propose to significantly reduce protection for late-successional or old-growth forest related species, or reduce protection for aquatic ecosystems, are subject to review by the Regional Ecosystem Office to determine if the objectives of this plan are significantly adversely affected. <ROD C-29]

There will be no scheduled timber harvest; these lands do not contribute to allowable sale quantity (ASQ).

Management Area Categories

National Forest land within the Gifford Pinchot National Forest is assigned to various Management Area Categories (MACs). Each Management Area Category has a goal or management emphasis. Each Management Area Category includes one or more management areas. Each management area has a set of standards and guidelines and other management practices designed to achieve multiple use goals and objectives. The direction given in this section applies only to the management areas Administratively Withdrawn and not overlapping other designated areas. The management areas are shown on the Amendment Map.

Table 4-1 Management Area Categories within the Administratively Withdrawn Area.

Management Area Category	Code	Acres*
Administrative Sites	3W	365
Developed Recreation	2L	2,444
Research Natural Areas	F8	1,140
	Y8	2,051
	YC	261
Roaded Recreation Without Timber Harvest	RL	148
	RM	15,671
Special Interest	9L	3,705
	GD	14,290
	GL	780
	SD	9,559
Unroaded Recreation Without Timber Harvest	UD	8,742
	UH	11,729
	UL	5,224
Wild and Scenic Rivers	8D	418
Wildlife Special	IL	1,090
	IM	1,345
	IX	3,557
Total Administratively Withdrawn Area		82,519
*Includes Riparian Reserves. Does not include Administratively Withdrawn Areas within other designated areas.		

Administrative Sites

Management Area Category 3

Includes Management Area 3W FP IV-146>

Goal

Provide for facilities required to accomplish the administration of the National Forest in an efficient manner.

Description of Lands Where This MAC is Applied

Existing sites such as ranger stations, engineering zone compounds, road maintenance shops and compounds, scale stations, lookouts, the Wind River Nursery, seed orchards, the Cispus Center, the Mount St. Helens National Volcanic Monument Headquarters, work centers, guard stations, and additional lands required for these and other activities which must be performed in order to administer National Forest System lands.

Desired Future Condition

Buildings, roads, and other structures are quite evident; most have required the creation of openings. Since most of the activities are ongoing, structures are generally permanent. They are well kept, neat, and orderly in appearance. Vegetation varies widely from ornamental trees and shrubs to stands of old-growth timber.

Standards and Guidelines

The following direction applies to all management areas in MAC 3.

Recreation

Planning and Inventory

1. Cultural, biological and other features of interest should be inventoried. Public access may be provided when it does not conflict with the functions of the administrative site.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these management areas are:

Management Prescription	ROS
3W	Rural
Modification	

Recreational facilities should be few or absent.

Use Administration

Recreational off-road vehicles should not be permitted.

Range

Planning

Livestock grazing should not be permitted.

Timber

Hazard Trees

Trees should be removed to protect life and property or as necessary for insect attack or disease control. Ordinary timber salvage should not be permitted.

Water, Soil and Air

Rights/Use Management

Water rights should be acquired for all sources supplying water for domestic use or irrigation at the site, unless the Reservation Principal (see Glossary) applies.

Minerals and Geology

Inventory and Development Proposals

1. Common mineral material sources should not be inventoried or developed.
2. Potential aquifers should be evaluated prior to well location and drilling.

Lands

Special Use Management

Permits, leases, rights-of-way, or easements inconsistent with the purposes of the administrative site should not be permitted.

Federal Energy Regulatory Commission (FERC) License and Permits

Feasibility studies should be conducted in a manner which does not interfere with operation of the administrative site.

Withdrawals, Modifications, and Revocations

Subject to the determination of values, including mineral values, portions of the area should be recommended for withdrawal under the public land laws if required to protect special values.

Landownership Planning

All lands should be placed in Ownership Category II, Retain or Acquire. Sites outside the Forest boundary operating with leases or other temporary permits are exceptions.

Facilities

Road Operation

Access roads and parking lots should be managed to encourage or accept general public use.

Some storage areas may require gates or fences to protect government property.

Fire, Administrative, and Other (FA&O) Construction/Reconstruction

1. Boundaries of administrative sites adjacent to private lands should be surveyed and posted prior to site planning and construction. Existing sites should be surveyed and posted prior to further development.
2. Temporary buildings should be limited to temporary activities or circumstances. They should not be built in lieu of permanent structures. Plans should be developed for the removal or replacement of temporary structures.
3. Plans should be developed to blend new construction with architectural and landscape themes of the existing compound facilities.
4. A site development plan will be prepared for all administrative sites to increase operating efficiency. It should include consideration of the direction above.

Protection

Fire Management

Fire plans will adhere to state, county, and local fire ordinances and laws.

Fire Suppression

Fire Suppression Strategy, Control, should be used.

Fire Suppression Priority 1, protect life and property, should apply and all fuels will be disposed or removed.

Pest Suppression and Prevention

The protection of developments and existing vegetation should be emphasized in pest suppression and prevention activities. <FP IV 148]

Developed Recreation

Management Area Category 2

Includes Management Area 2L [FP IV-101>

Goal

Readily-accessible, appropriately-designed facilities will provide for concentrated visitation by people seeking a convenient recreational experience.

Description of Lands Where This MAC is Applied

Developed recreation sites are usually close to water bodies, berryfields, and other areas of scenic or special interest. Except for winter recreation areas, they are usually located on relatively flat land with slopes of less than ten percent. Soils and vegetation must be able to absorb heavy use. Camp and picnic grounds, ski areas, recreation residences, viewpoints, boat launches, and other facilities may be accommodated.

Desired Future Condition

Roads, buildings, ski lifts, tables, docks, and other physical facilities are evident, but design and construction will repeat the color, shapes and lines of the surroundings.

Openings usually exist to accommodate facilities and provide scenic views; trees and other vegetation will vary widely in type and size.

Standards and Guidelines

Recreation

Planning and Inventory

1. The location of unusual geologic forms, cultural features, wildlife and scenic viewing opportunities, and other features of interest should be evaluated for interpretation and development.
2. On selected sites, special facilities needed for the convenience of visitors, including the elderly, young, and handicapped, should be provided.
3. The Visual Quality Objective and Recreation Opportunity Spectrum classes assigned to these management areas are:

Management Prescription	VQO	ROS
2L	Retention	Roaded Natural

Facility and Site Management

1. Site development and management should be guided by these considerations:
 - a) Public safety and sanitation.
 - b) Long-term protection of site and facilities.
 - c) Accommodation for groups and for the handicapped.
 - d) Information services.
 - e) Aquatic Conservation Strategy.
2. Operation and maintenance plans should be prepared.
3. New camp units should be located away from the immediate foreground of lakes and streams. Those which are now in these locations should be moved whenever practicable. See "Riparian Reserve Standards and Guidelines for Recreation," Chapter 2.
4. Every site will be surveyed for hazard trees annually.

Use Administration

Off-road vehicle use on roads should be limited to ingress and egress. ORV use may be permitted on designated trails with the same limitation.

Range

Administration

Livestock grazing should not be permitted.

Timber

Administration

Trees should be felled when they may be a hazard to life or property. Methods least likely to produce lasting visual impacts should be employed. Trees may be removed to improve a ski area, provide a scenic view, or accomplish other recreational enhancements. Ordinary timber salvage should not be permitted.

Firewood cutting should not be permitted unless a blowdown or other unusual circumstance makes that a practical option for clearing the area.

In the foreground of areas adjacent to concentrated use:

1. Remove portions of downed trees which are not needed to meet recreation and Aquatic Conservation Strategy objectives.
2. Flush-cut or remove stumps.
3. Remove logs and debris by methods which minimize ground and vegetative disturbance.

Silvicultural Examination and Prescriptions

As a basis for the Vegetative Management Plan, a silvicultural examination should be prepared for every developed recreation site. It should take into account crown closure, hazard trees, and the ability of the stand to withstand concentrated recreation.

Genetic Forest Tree Improvement Program

Genetic improvement program activities should be limited to select trees. Identification marks should be inconspicuous.

Water, Soil and Air

Inventory, Planning, and Improvement

Adverse impacts of recreation on soil, water, and air should be identified. Those which may jeopardize public health and safety will be corrected immediately. Others should be treated before the opening of the next season (see Chapter 2, "Riparian Reserve Standards and Guidelines for Recreation," RM-1 and RM-2).

Rights/Use Management

Water rights should be acquired for all sources supplying or expected to supply domestic water to the recreation site.

Minerals and Geology

Evaluation and Development Proposals

1. Common mineral material sources should not be developed.
2. Potential aquifers should be evaluated prior to well location and drilling.

Lands

Special Use Management

Only those permits, leases, rights-of-way, and other special uses which are compatible with developed recreation should be permitted.

Federal Energy Regulatory Commission License and Permits

Feasibility studies may occur providing they are performed in a manner which does not impair recreational use of the area.

Withdrawals, Modifications, and Revocations

The recreation site or area should be withdrawn from mineral entry, subject to the determination of values, including mineral values, if required to protect the site.

Landownership Planning

All lands should be placed in Landownership Category II, Acquire or Retain.

Facilities

Transportation Planning

Roads and other facilities inconsistent with developed recreation should be located away from the primary use areas, closed, removed, or decommissioned.

Road Operation

Access roads to developed sites should be managed to permit passenger car traffic.

When vandalism is a problem, the Prohibit traffic scheme can be applied to seasonally close sites. When vandalism is not a problem, road use may be seasonally discouraged by posting closure signs.

Protection

Fire Management

Fire Suppression Strategy, Control, should be used at all developed sites.

Fire Hazard Reduction Priorities, Utilize and Dispose, should apply.

Pest Suppression and Prevention

Pest suppression and prevention methods should be used for maintaining the health of vegetation. This activity should be timed to avoid the recreation season if possible. <FP IV-103]

Research Natural Area

Management Area Category Y

Includes Management Areas F8, A8, YC, Y8, and W6 [FP IV-138>

Goal

Manage the Research Natural Area in a natural state for research and education, and/or to maintain biological diversity.

Description of Lands Where This MAC is Applied

Existing Research Natural Areas, classified under the code of Federal Regulations, 36 CFR 251.23. Three of these RNAs are found within the National Volcanic Monument, Experimental Forest, and Wilderness (management areas A8 and F8 and W6). In case of conflict, the more restrictive direction will apply. This also applies to potential RNAs which are actively being evaluated for RNA status through the Forest Planning process.

Desired Future Condition

Except for development which may have occurred prior to classification, human activities are not evident. Alteration is almost entirely the product of natural processes. Vegetation may vary across the full range of Forest species and sizes including mature and old-growth stands. They provide opportunities for research, study, observation, monitoring, and those educational activities that maintain unmodified conditions.

Standards and Guidelines

The following direction applies to all management areas in MAC Y, unless otherwise specified. In consultation with the Forest Supervisor and District Ranger, the Director of the Pacific Northwest Forest and Range Experiment Station is responsible for approving management implementation plans and for overseeing and coordinating approved research on all Research Natural Areas (RNAs), except for those RNAs in Congressionally-designated areas, such as Wilderness and National Monuments. The authority to approve management plans and to oversee and coordinate approved research on RNAs in Congressionally-designated areas rests with the Regional Forester. The Regional Forester should coordinate plans for research with the Station Director. Also see “Research” in Chapter 2.

Recreation

Planning

1. Incidental dispersed use may be permitted, but recreational use of the area will not be encouraged. Camping, collecting plants, berrypicking, and other uses which threaten or interfere with research, educational opportunities, or other purposes for which the RNA was established, will be prohibited.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class or Wilderness ROS class assigned to these management areas are:

Management Prescription	VQO	ROS
YC	Preservation	Semi-primitive Non Motorized
A8, F8, Y8	Preservation	Roaded Natural
W6	Preservation	Special Area

Prescription A8 is applicable only in the National Volcanic Monument, MAC A. Prescription W6 is applicable only within Wilderness, MAC W. F8 is applicable only in the Experimental Forest MAC F.

3. Interpretation of cultural and other features of interest will not be permitted, except for research or educational purposes.
4. Trail construction or reconstruction will be permitted only if required to meet the needs of research, for educational purposes, or to protect RNA values. RNAs will not be shown on maps intended for sale to the general public.

Use Administration

Off-road vehicles, including snow machines, should not be permitted.

Wildlife and Fish

Administration

1. No active management will occur unless it is required to protect Sensitive, Threatened, or Endangered Species, or is included in an approved RNA management prescription.
2. Exotic plants and animals are not permitted. Endemic species may be removed if action is deemed necessary to protect the features for which the RNA was established, or to protect adjacent resources.

Range

Planning

1. Livestock grazing will usually occur only if required for noxious weed control or to preserve the vegetation for which the RNA was created.

2. In research natural areas where livestock grazing is not part of the management prescription, the Regional Forester and Station Director shall, as appropriate, establish a level of acceptable casual or incidental livestock use that can be tolerated and is consistent with the management prescription for the research natural area.

Timber

Planning and Inventory

Ordinary salvage and other timber management activities will not occur. This does not preclude the cutting of snags and other trees if they are a hazard to life or property. Felled trees should remain in place within the Research Natural Area.

Firewood Cutting

Firewood cutting, including campfire wood, will not be permitted.

Minerals and Geology

Inventory and Development Proposals

1. Common variety mineral material sources will not be inventoried or developed.
2. Leasing of mineral or energy resources will only be permitted with a no surface occupancy stipulation.

Lands

Special Use Management

Rights-of-way, easements, and other permits not required for research or educational purposes will not be permitted if there is a practical alternative.

Federal Energy Regulatory Commission (FERC) License and Permits

Licenses or permits will be recommended only when projects are consistent with RNA management.

Withdrawals, Modifications and Revocations

The RNA will be recommended for withdrawal under the public land laws.

Property Boundary Location

RNA boundaries will be surveyed and marked as soon as practical. Posting of markers and signs should not call public attention to these areas.

Landownership Planning

All lands will be placed in Ownership Category II, Retain or Acquire.

Facilities

Transportation Planning

1. When approved by the Station Director, in consultation with the Forest Supervisor, temporary facilities needed for research (e.g., gauging stations and instrument shelters) may be installed.
2. New roads and facilities will be permitted only if they contribute to the Research Natural Area objectives. Existing roads and facilities may be reconstructed if limited to the original clearing limit, and approved by the Station Director.

Protection

There will be no treatment of fuels. No Reduction should be used.

The Station Director, with the concurrence of the Forest Supervisor, may authorize management practices that are necessary for noxious weed control or to preserve the vegetation for which the research natural area was created. These practices may include prescribed burning.

Pest Suppression

No action will be taken against endemic insects or disease unless the outbreak threatens adjacent resources or would significantly alter the natural ecological processes within the RNA. Where pest management activities are prescribed, they shall be as specific as possible against target organisms and induce minimal impact on other components of the ecosystem. <FP IV-140]

Roaded Recreation Without Timber Harvest

Management Area Category R

Includes Management Areas RL and RM [FP IV-95>

Goal

Provide a variety of dispersed recreational opportunities in areas conveniently reached by auto.

Description of Lands Where This MAC is Applied

These lands accommodate dispersed recreation—hiking, fishing, berrypicking, camping, wildlife viewing, rockhounding, winter sports—beside or near roads. They include unique or distinctive portions of the Forest with features like clustered lakes, berryfields, and roaded scenic corridors.

Desired Future Condition

Management activities are evident, but not conspicuous. Vegetation will remain largely natural in appearance along the major travel ways and may vary from natural openings through stands of mature and old-growth timber. Travel to dispersed sites over roads maintained at a variety of standards is an important aspect of the recreational experience. Much of the area provides for interaction with a near-natural environment. Recreation facilities have been kept at a minimal level of development.

Standards and Guidelines

Recreation

Planning and Inventory

1. Locations for viewing, photographing, or interpreting wildlife, cultural, geologic, biological, and other features of interest should be identified and evaluated.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these management areas are:

Management Prescription	VQO	ROS
RL	Retention	Roaded Natural
RM	Partial Retention	Roaded Natural

The assigned VQO is applicable to all public roads, recreation sites, and trails within the management area.

Site Management and Administration

Areas which are designated for management as berryfields should be maintained by such methods as emphasizing permits for plant removal and encouraging the removal of encroaching vegetation by volunteers. Future research may provide more efficient methods for perpetuating these popular berrypicking areas.

Use Administration

Off-road vehicles may be permitted on designated routes or areas.

Wildlife And Fish

Planning and Prescriptions

Opportunities for hunting and fishing may be enhanced by methods such as fish stocking and habitat improvement.

Range

Administration

Livestock grazing may be permitted. Animals should be kept away from fields which are being managed for berrypicking during the harvest season.

Structural Improvement and Maintenance

Loading ramps, stock tanks, fences, holding pens, and other improvements should be located away from areas of concentrated recreation except for those specifically designed for recreation stock.

Timber

Planning and Administration

Timber harvesting will not be scheduled, and timber salvage should not be permitted. Trees may be felled, however, to enhance recreation, e.g., the opening of a scenic view, construction of a road, or removal of hazard trees.

Fuelwood gathering is not permitted except for campfires.

Genetic Forest Tree Improvement Program

Select trees should be marked inconspicuously. Other genetic Forest tree improvements should be located away from areas of concentrated use.

Minerals and Geology

Development Proposals

The development of common minerals material sources, if necessary, should occur away from areas of concentrated use.

Lands

Landownership Planning

Lands needed to protect the integrity of the management area should be Retained or Acquired, Ownership Category II. The remaining land should be placed in Category III, neutral.

Facilities

Transportation Planning

Roads and other facilities which are not consistent with the recreation objectives should be located away from concentrated use areas.

Local roads should be closed or decommissioned unless needed for a specific recreational purpose.

No additional roads or associated developments are permitted in that portion of the Midway/High Lakes Roded Recreation Area (Prescription RM) located west of Road 2329 and south of Road 5603.

Protection

Fire Suppression Strategy

During periods of low fire hazard, a Containment, Fire Suppression Strategy should be used. When hazard is high, a Control Strategy should be used.

Pest Suppression and Prevention

Pest suppression and prevention methods which minimize visual disturbance should be employed. Biological and silvicultural treatments should be favored. Hazard trees in use areas should be felled. <FP IV-97]

Special Interest

Management Area Categories S, G, B, and 9

Includes Management Areas SD, GD, GL, BL, and 9L [FP IV-104]

Goal

Maintain the special feature(s) in a substantially natural condition. While providing for an appropriate level of public access and enjoyment. <FP IV-104]

Description of Lands Where This MAC is Applied [FP IV-19]

Eight Special Interest Areas (under 36 CFR 294.1) amounting to 31,750 acres will be managed to maintain the special features in a substantially natural condition and provide for an appropriate level of public access and enjoyment. An implementation schedule will be prepared for each of these areas within 10 years after approval of the Forest Plan.

Table 4-2 Special Interest Areas.

Special Interest Areas		
Area Name	Prescription	Acres
Big Lava Bed	Geologic	14,540
Deadhorse Cave	Geologic	20
Dog Mountain *	Scenic	4,910
Falls Creek Lava Tubes	Geologic	520
Grassy Knoll *	Botanic	2,070
Quartz Creek Big Trees *	Botanic	90
Silver Star *	Scenic	9,320
Weigle Hill *	Botanic	280

* Areas located within Late-Successional Reserve.

In addition to the areas identified above, there is a long list of special features identified by the Management Direction Code 9L which are also deserving of special management (see Forest Plan Appendix C). <FP IV-19] [FP IV-104]

Scenic Areas - SD:

Places of outstanding or matchless beauty.

Geologic Areas - GD and GL:

Outstanding formations, fossils, caves, or other geologic features which display the earth's evolutionary processes.

Botanical Areas - BL:

Lands containing plant species or communities which are significant because of form, color, occurrence, habitat, location, life history, arrangement, ecology, environment, rarity, or other quality.

Other Areas - 9L:

These lands, like those described above, are unique because they include features deserving special management. They include a wide range of features, such as waterfalls, scenic spots, caves, and botanical, historical, and geological sites. They differ from the above areas in two respects. First, they are relatively small in size; ranging from one acre to about 1,200 acres, most are 20 acres or less. The second and most significant difference in these areas, however, is that they are not significant enough to qualify for classification under Code of Federal Regulations (CFR 294.1).

Desired Future Condition

Visual evidence of management activities is subordinate to the special feature(s). Fences, signs, viewpoints, and other facilities may exist if needed to protect the feature(s) or provide for public use and enjoyment. Plant communities are usually the product of natural succession. Vegetation may range from natural openings through stands of mature and old-growth timber.

Most features included in this MAC will remain in a substantially undisturbed condition. Some, however, may be partially altered to provide access or recreational facilities.

In most Special Interest areas, there is an opportunity to interact with the natural environment. In some, there is an opportunity for solitude; in others, the experience is shared.

Standards and Guidelines

The following direction applies to all management areas in MAC S, G, B, 9, unless otherwise indicated.

Recreation

Planning and Inventory

1. The location of trails, campsites, viewpoints, and other recreational opportunities should be identified and evaluated for development.
2. Access to cultural features, wildlife viewing areas, berryfields, and other features of interest should also be evaluated for development or interpretation.
3. All areas, except for those to which the 9L Prescription is assigned, will be classified as Special Interest Areas under the Code of Federal Regulations (CFR 294.1).

4. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these management areas are:

Management Prescription	VQO	ROS
SD, GD	Retention	Semi-primitive Non-Motorized
GL, BL, 9L	Retention	Roaded Natural

NOTE: In the event that oversnow machines are permitted within management areas assigned prescriptions SD or GD, the ROS class is changed to Semi-Primitive Motorized for the duration of such use.

The assigned VQO is applicable to all roads, trails, and use areas within the management area.

Use Administration

1. Recreational off-road vehicles, including oversnow machines, should not be permitted in management areas assigned prescriptions BL, GD, GL, or SD, except oversnow machines may be permitted in GD, GL, and SD when snow is deep enough to ensure that resource damage will not occur.
2. Off-road vehicles, including oversnow machines, may be permitted in 9L areas on a case-by-case basis.
3. Hazard trees near use areas should be felled.

Facility, Site, and Trail Reconstruction and Construction

Trails and facilities should be subordinate to features for which the management area was created.

Wildlife

Habitat Improvement and Maintenance

Native or natural materials should be used.

Range

Planning and Inventory

Livestock grazing may be permitted if it does not detract from the special feature(s) and public use and enjoyment. No grazing should be permitted in areas assigned the BL prescription.

Nonstructural/Structural Improvements and Maintenance

1. Native or natural materials, should be used in improvements.
2. Stock tanks, fences, and holding pens should be located away from the special interest feature or areas where recreation is concentrated.

3. Revegetation or rehabilitation necessitated by stock grazing should be initiated no later than the following season.

Genetic Forest Tree Improvement Program

With the exception of seed orchards, genetic improvement activities may be permitted when they do not adversely affect special feature(s) or public use and enjoyment.

Minerals And Geology

Development Proposals

1. Common mineral material sources may not be developed.
2. Recommendations for development should include reasonable, operationally feasible requirements for protecting special features.
3. Recommendations on the design of facilities should be appropriate to the nature of the special feature involved.
4. When facilities are no longer needed they should be removed and the area rehabilitated.

Lands

Special Use Management

Permits, leases, rights-of-way, and easements not compatible with Special Interest Area objectives should not be permitted. Nonconforming uses should be discontinued when the opportunity permits.

Withdrawals, Modifications and Revocations

The area should be recommended for withdrawal under the public land laws, subject to the determination of values, including mineral values.

Landownership Planning

Lands which are critical to the integrity of the Special Interest Area should be Retained or Acquired, Landownership Category II. The remainder of the area should be in Category III, Neutral.

Facilities

Transportation Planning

There should be no roads in management areas assigned the SD, or GD Prescriptions. They may be permitted in GL or BL areas when required for recreation purposes consistent with maintaining special interest values. Existing roads in 9L areas may be permitted if needed for through traffic. All other roads in 9L areas should be closed or decommissioned, and new roads should not be constructed.

Protection

Fire Suppression Strategy

The Suppression Strategies should be Confine or Contain, depending on the nature of the special feature(s) and value of development.

Unroaded Recreation Without Timber Harvest

Management Area Category U

Includes the following Management Areas UD, UH, and UL [FP IV-92]

Goal

Provide a variety of dispersed recreation opportunities in a semi-primitive or undeveloped setting.

Description of Lands Where This MAC is Applied

Portions of the Forest with outstanding recreational attributes. They provide quality fishing, hunting, berrypicking, backpacking, and other outdoor activities. They may be located near a road but are in a substantially undisturbed condition.

Desired Future Condition

A natural to predominantly natural-appearing environment has been maintained; changes are largely the result of natural succession. Campsites, sanitation facilities, and other management activities are few in number and not conspicuous. Wildlife habitats are diverse. The area affords visitors an experience which is usually free from the sight and sounds of other people. Principal access is by trail; there are no roads within the area. The opportunity to practice outdoor skills in a challenging environment is afforded. Vegetation may vary widely from natural openings to mature and old-growth stands.

Standards and Guidelines

The following direction applies to all management areas within MAC U unless otherwise indicated.

Recreation

Planning and Inventory

1. Future trail and campsite locations should be identified and coordinated to access areas of interest or destination points, e.g., vistas or berrypicking areas.
2. The trail system should be designed to disperse use and enhance the optimum recreational opportunities of this area.
3. The Visual Quality Objectives and Recreation Opportunity Spectrum classes assigned to these management areas are:

Management Prescription	VQO	ROS
UD	Retention	Semi-primitive Non-Motorized
UH	Retention	Semi-primitive Motorized
UL	Retention	Roaded Natural

4. Cultural sites or other features of interest may be interpreted if they can be adequately protected.

Facility and Site Management and Use Administration

1. Prescribed fire, ground treatments, and tree removal may be used to retain openings for huckleberries (see General Technical Report, PNW-93, July, 1979).
2. Recreational off-road vehicles may be permitted on trails only in management areas where the UH or UL prescriptions are assigned.

Wildlife And Fish

Habitat Improvement and Maintenance

Natural habitats characteristic of the areas (e.g., meadows) should be identified and maintained.

Timber

Administration

There will be no scheduled timber harvest. Timber salvage should not be permitted. Trees may be removed for safety reasons, or to enhance recreation, e.g., to create a scenic view. Ordinary timber salvage should not be permitted.

Firewood Cutting

Gathering campfire wood may be permitted. Firewood cutting for home or commercial use should not be permitted.

Genetic Forest Tree Improvement Program

The genetic improvement program should be limited to select trees.

Minerals and Geology

Development Proposals

1. Exploration should be performed in a manner which does not alter the Semi-Primitive character of the land. Exploration should be timed to avoid conflict with recreational activities, i.e., not on weekends during the summer season.
2. Facilities should be designed to minimum standards and removed when no longer needed. The site should then be rehabilitated.

Lands

Special Use Management

Nonconforming uses should be terminated.

Federal Energy Regulatory Commission Licenses and Permits

Facilities should be designed to minimize adverse effects on the natural setting. Pipelines and transmission lines should not be permitted. If unavoidable, they should be buried if practical.

Landownership Planning

Lands critical to the integrity of the Management Area should be placed in Ownership Category II, Retain or Acquire. The remainder should be in Category III, Neutral.

Facilities

Transportation Planning and Inventory

There will be no roads constructed. Existing roads should be obliterated.

Protection

Fire Management

1. The role of natural fire should be incorporated into fire planning, fuels management, and ecosystem maintenance. Prescribed fires may be used to meet management objectives.
2. During periods of low fire hazard (spring) Suppression Strategy, Contain, should be used. Strategy, Control, will be used when fire hazard is high.
3. The use of retardants and hand lines is preferred to minimize long-term fire suppression impacts.

Pest Suppression and Prevention

The suppression and prevention of pests should be limited to outbreaks which threaten the recreational values of the area or adjacent resources. Biological methods will be preferred. <FP IV-94]

Utility Sites and Corridors

Management Area Category 4

Includes Management Area 4W [FP IV-149>

Goal

Provide effective and economical utilities with the least impact on the various natural resources involved.

Description of Lands Where This MAC is Applied

Existing sites and corridors for such purposes as communication, signal relay, canals, penstocks, pipelines, and power transmission lines. Proposed sites and corridors determined to be the most efficient, cost effective, and environmentally sound places to accommodate these facilities. All utility sites and corridors are not shown on the Amendment Map.

Desired Future Condition

Signs of human activities are frequently dominant. Buildings, antennas, pipelines, high voltage powerlines, and similar structures will usually be visible. The vegetation is mostly ground cover in the form of small conifers and hardwood brush. Vegetation partially screens smaller sites from distant views and provides edge habitat for wildlife. Recreational opportunities are frequently available for operating off-road vehicles, viewing distant scenery, and gathering miscellaneous forest products.

Standards and Guidelines

Recreation

Planning

1. Opportunities to harvest Christmas trees, view wildlife, operate off-road vehicles, hunt, cross-country ski, and pursue other recreational activities may be provided.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these management areas are:

Management Prescription	VQO	ROS
4W	Modification	Rural

3. Permittees will be required to sign or otherwise adequately mark items or areas which may be safety hazards to the public.

Use Administration

Off-road vehicles may be permitted on designated trails or areas.

Wildlife and Fish

Habitat Improvement

Wildlife habitat improvements such as forage seeding and other vegetative manipulations should be considered.

Range

Planning

Livestock grazing may be permitted.

Timber

Administration

Commercial size trees, when present, may be harvested when they interfere with or present a hazard to the utility. Ordinary salvage may be permitted.

Lands

Special Use Management

1. Adherence to Federal standards for the use of chemicals to control vegetation will be required in permits.
2. Additional facility needs should utilize existing sites and corridors whenever possible.
3. When a site or corridor is no longer in use, it should be rehabilitated.

Landownership Planning

All lands should be placed in Ownership Category III, Neutral.

Facilities

Road Construction and Operation

Roads constructed to develop, service, or maintain facilities within this management area should not be maintained or managed for public use. Public use, however, may be permitted when conflicts with other resources are minor. Closures using the Prohibit traffic scheme should be applied if protection of facilities is required.

Roads passing through a corridor for other purposes should be managed commensurate with the adjacent management areas.

Protection

Fire Suppression

Fire Suppression Strategy, Control, should be used.

Fire Suppression Priority 1, protect life and property, will be used and all fuels should be disposed or removed.

Pest Suppression and Prevention

The protection of adjacent resource values should be emphasized in pest suppression and prevention activities. <FP IV-150]

Wild and Scenic Rivers

Management Area Categories 8 and N

Includes Management Areas A7, 8D, W7, and NA FP IV-108>

Goal

Protect the Wild or Scenic River characteristics pending possible addition to the National Wild and Scenic Rivers System.

Description of Lands Where This MAC is Applied

Lands within 1/4 mile of designated rivers within the Forest boundary appearing to be both eligible and suitable for addition to the National Wild and Scenic Rivers System. Also included are those eligible river corridors for which suitability has not yet been determined. Suitability for those rivers will be determined after the Forest Plan is approved.

Desired Future Condition

Wild Rivers - A7, 8D, and W7

Wild Rivers are generally inaccessible by road, but can be reached by trail or water. Vegetation is varied in size, species, and age, and is predominantly the product of natural succession. Vegetation may vary from natural openings through stands of mature and old-growth timber. Along Wild Rivers, the opportunity to interact with a natural environment, away from the sights and sounds of other people, is available. A high degree of challenge is offered.

Scenic Rivers - NA

Vegetation is varied in size, species, and age, and is predominantly the product of natural succession. Vegetation may vary from natural openings through stands of mature and old-growth timber. Some structures, farming, and evidence of timber harvest may be visible, but the shorelines are largely undeveloped. The rivers are accessed in some places by road and in some instances a major travel route parallels the river. A challenging interaction with the natural environment is available.

Standards and Guidelines

The following direction applies to all management areas in MAC 8 and N unless otherwise indicated. Wild and Scenic Rivers within Wildernesses and the National Volcanic Monument are subject to the management direction for those areas. Additional Management Direction is described in the Wild and Scenic Rivers Act and guidelines for its implementation. All the following direction is subject to Aquatic Conservation Strategy and Forest-wide direction described in Chapter 2, which may be more restrictive.

Recreation

Planning and Inventory

- 1a. Those rivers determined to be suitable, and their immediate environment, are recommended for designation under the Wild and Scenic Rivers Act of 1968.

Rivers for which suitability has not been determined will require additional analysis. If the analysis finds one or more rivers or segments to be suitable, those will also be recommended for designation under the Act. Until the analysis is completed, no activities should be permitted that would alter the eligibility or potential classification of the stream.

- 1b. Many of the Wild and Scenic River corridors include lands which are actually extensions of other management areas outside of, but adjacent to, the river corridor. Included are lands having attributes needed to complete other prescriptions such as Special Interest Areas, Developed Recreation Sites, and Visual Emphasis Viewsheds. Where the management direction for these lands is more restrictive than that for the Wild, Scenic, or Recreational River corridor in which they occur, the more restrictive direction applies. These “included” management area prescriptions are considered to be a part of these recommendations for designation under the Act.
2. Cultural resource surveys for identification of significant resources are encouraged. Cultural resources and other features of interest which are not jeopardized by public exposure may be interpreted.

The Visual Quality Objectives and Recreation Opportunity Spectrum Classes assigned to these management areas are:

WILD RIVER

Management Prescription	VQO	ROS
A7 and 8D	Preservation	Semi-primitive Non-Motorized
W7	Preservation	Special Area

Within Wildernesses, the Wilderness Recreation Opportunity Spectrum is used. Prescription A7 is applicable only within the National Volcanic Monument. Prescription W7 is applicable only within Wilderness, MAC-W.

SCENIC RIVER

Management Prescription	VQO	ROS
NA	Retention	Roaded Natural

Facility and Site Reconstruction and Construction

Site design and facility selection should be compatible with the assigned ROS or WROS Level:

Wild River

Facilities are generally not permitted in wildernesses. Along other Wild Rivers, recreation sites should be limited to simple comfort and convenience facilities located outside the Riparian Reserve.

Scenic River

Subject to meeting the goals of the Aquatic Conservation Strategy, recreation sites may be established in close proximity to the river, but should be widely spaced, blend with the natural landscape, and be screened from the river. Recreation sites should consistent with the Aquatic Conservation Strategy.

Facility and Site Management and Use Administration

1. Off-road vehicles are not permitted in Wild River corridors; they may be permitted in Scenic River corridors on designated trails.
2. Guide service and other recreation concessions in keeping with the assigned ROS or WROS class may be permitted.

Wildlife

Structural Habitat Improvement and Maintenance

Structural habitat improvements should utilize native or natural-appearing materials.

Range

Administration

Livestock grazing may be permitted.

Timber

Administration, Regeneration, and Intermediate Harvest

Wild Rivers — Ordinary timber salvage is not permitted.

Scenic Rivers — Timber salvage is not permitted in the NA management area.

Firewood Cutting

Firewood cutting for home or commercial use should not be permitted in areas recommended for Wild River classification. Gathering firewood for campfire use may be permitted.

Genetic Forest Tree Improvement Program

Genetic improvement activities in Wild and Scenic Rivers are limited to select trees.

Minerals and Geology

Development Proposals

1. Common mineral material sources should not be developed.
2. A no-surface occupancy stipulation will be encouraged in mineral leases.
3. Prior to, and in some instances after designation under the 1968 Act, rivers are generally subject to mining claim location and mineral exploration. Approved plans will include reasonable mitigation and reclamation measures to minimize surface disturbance, sedimentation and visual impairment.

Lands

Special Use Management

1. Utility corridors, dams, diversions and hydroelectric power facilities will be prohibited to the extent of Forest Service authority. Existing facilities may be maintained.
2. Locating new utility lines within Scenic River corridors should be discouraged. Where no reasonable alternative exists, routes should cross, not parallel, the river or be limited to the existing right-of-way.
3. Federal licenses or permits for water resource projects, including dams and transmission lines, will not be recommended unless the project will not have a direct and adverse affect on the Wild or Scenic River character.

Landownership

National Forest lands should be placed in Ownership Category II, Retain.

Other ownerships should be in Category V, Additional Study.

Wild and Scenic Rivers Study

Encourage the participation and cooperation of public and private landholders, particularly in river corridors including other ownerships.

Facilities

Transportation Planning and Inventory

1. Roads should not be permitted in Wild River corridors.
2. In Scenic River corridors, roads may occasionally cross or come near the river, but they should be infrequent and inconspicuous.

3. Roads and other facilities are also limited due to the “included” prescriptions described under Standards and Guidelines, Recreation, No. 1(b).

Road Operation

Roads accessing developed recreation sites within Scenic and Recreation River corridors should be managed to accommodate passenger car traffic.

Local roads not required for a specific recreational objective should be closed using the Eliminate or Prohibit traffic management schemes, or decommissioned.

Major through roads should be managed using the Encourage traffic management scheme.

Protection

Fire Management

Heavy equipment should not be used in the foreground as seen from the river.

Fire Suppression

1. The Fire Suppression Strategy, Control, should be used.
2. In Wild River Corridors use suppression techniques which result in the least possible evidence of human activity.

Pest Suppression and Prevention

1. Strategies which protect the Wild or Scenic character of these areas and avoid the degradation of water quality should be used to suppress the outbreak of pests.
2. Unacceptable damage to sensitive visual areas should be prevented with Integrated Pest Management strategies; cultural methods should be preferred.
3. Pest suppression and prevention methods which maintain the visual and recreation attributes of these areas and protect adjacent resource values should be emphasized. <FP IV-112]

Wildlife Special

Management Area Category I

Includes Management Areas IL, IM, and IX [FP IV-126>

Goal

Sustain or enhance a limited and significant habitat to support dependent wildlife.

Description of Lands Where This MAC is Applied

Distinctive habitats such as marshes, caves, mineral licks, and particular groves of old growth. These habitats are generally fragile, limited in size, uncommon, and important to numerous species of wildlife. They require a separate MAC because they do not clearly meet the criteria for other wildlife MACs.

Desired Future Condition

Management activities are not evident in most of the area; there are few or no roads, and signs of other activities are minimal. Vegetation is generally the product of natural succession, although some enhancement of habitat may have occurred, e.g., planting of browse species. Vegetation ranges from natural openings through stands of mature and old-growth timber. Recreational activities which entail high densities of users will not be encouraged; however, some hunting and fishing may occur. These areas may be of particular interest to naturalists.

Standards and Guidelines

The following direction applies to all management areas in MAC I, unless otherwise indicated.

Recreation

Planning and Inventory

1. Opportunities for viewing, photographing, interpreting wildlife, cultural, biological and other features, should be evaluated and may be permitted when it is determined they would not result in harassment to wildlife. Generally, development or management which concentrates recreational activity should not be permitted.
2. The Visual Quality Objectives and Recreation Opportunity Spectrum classes applied to these management areas are:

Management Prescription	VQO	ROS
IL	Retention	Roaded Natural
IM	Partial Retention	Roaded Natural
IX	Modification	Roaded Modified

Facility and Site Trail Reconstruction and Construction

Other than trails, recreation facilities should not be built.

Use Administration

Off-road vehicles, including oversnow machines, should not be permitted.

Wildlife

Habitat Improvement

Direct wildlife and fisheries habitat improvements should be emphasized.

Range

Administration

Grazing will not be permitted except outside of the beaver and waterfowl habitat enclosure in Cave Creek and within the Grand (3078) heron rookery.

Timber

Planning

Individual trees, or small groups, may be cut to improve wildlife habitat, for instance, to provide snags or down material. Alteration of the vegetative character of the area is not permitted. Ordinary timber salvage should be permitted only if an environmental assessment clearly indicates removal outweighs the in-place value of the material to wildlife.

Firewood Cutting

Firewood cutting, except for campfire use, should not be permitted.

Genetic Forest Tree Improvement Program

Genetic improvement activities should be limited to select trees.

Minerals And Geology

Inventory and Development Proposals

1. Common mineral material sources should not be inventoried or developed.
2. Where reasonable and practical, exploration should be conducted in a manner which does not adversely affect wildlife. It should take into account wildlife cycles such as migration and calving.
3. Plans for exploration or development will minimize disturbance to wildlife. Transportation and other facilities should be designed to minimum standards and be obliterated and rehabilitated when the project terminates.

Lands

Special Use Management

Leases, rights-of-way, easements, and other permits should be granted only if they do not adversely affect the habitat. Nonconforming uses should be ended when opportunity allows.

FERC License and Permits

Recommendations for exploration and project permits should minimize disturbance to wildlife and habitat.

Withdrawals, Modifications and Revocations

Subject to a determination of values, including mineral values, some or all of the area should be withdrawn from mineral entry if required to protect the habitat.

Landownership Planning

All lands will be placed in Ownership Category II, Retain or Acquire.

Facilities

Transportation Planning

New roads and other facility construction should not be permitted. Existing roads should be decommissioned if not required for through traffic.

Local roads that remain open should not be managed for public travel in passenger cars. Seasonal closure of roads should be applied where needed to protect wildlife values.

Protection

Fire Management

The use of prescribed fire to maintain or enhance wildlife habitat may be permitted.

Fire Suppression

In periods of low fire hazard, Fire Suppression Strategy, Confine, should be used. During the fire season, Strategy, Control, should apply.

Pest Suppression and Prevention

Pest suppression and prevention should be undertaken when outbreaks threaten wildlife objectives within the area and when adjacent areas are seriously threatened. Biological methods should be favored and suppression efforts should concentrate on the perimeter. <FP IV-12]

Chapter 5

Late-Successional Reserves and Managed Late-Successional Areas

Chapter 5

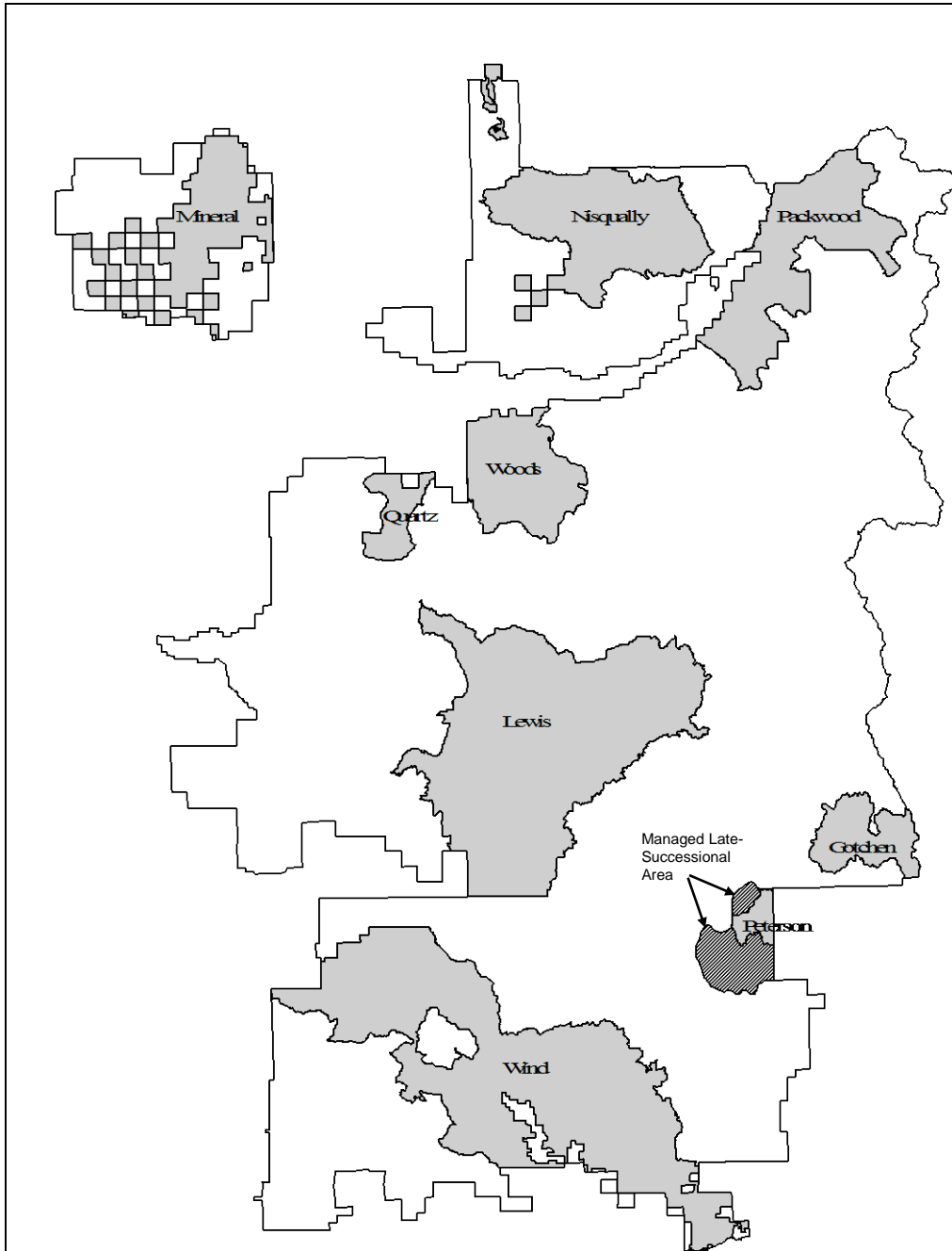
Late-Successional Reserves and Managed Late-Successional Areas

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*Late-Successional Reserves
and
Managed Late-Successional Areas*

Gifford Pinchot National Forest



Chapter 5

Late-Successional Reserves and Managed Late-Successional Areas [ROD C-9>

The ROD created two allocations to protect and enhance late-successional ecosystems; Late-Successional Reserves and Managed Late-Successional Areas. While they are very similar in their goals and objectives, in Managed Late-Successional Areas management is prescribed to reduce the potential for catastrophic loss. Only one Managed Late-Successional Area was identified on the Gifford Pinchot National Forest. Because they are so similar, this chapter contains direction for both allocations. Direction for Late-Successional Reserves is followed by direction for the Managed Late-Successional Area, beginning on page 5-14. Direction for underlying management areas is common to both categories of reserves and begins on page 5-17.

Key and non-Key Watersheds are specified for all areas, and therefore overlay all other land allocations. For the portion of Late-Successional Reserves located within Key Watersheds, standards and guidelines for Key Watersheds as well as standards and guidelines for Late-Successional Reserves apply.

See “Hierarchy of Standards and Guidelines” in Chapter 1, and “Key Watersheds” in Chapter 2.

A late-successional reserve assessment for all LSRs on the Forest was completed in November 1997. This document describes existing and desired conditions for the LSRs, and treatments proposed to accelerate the development of desired conditions. See “Management Assessments,” page 5-15.

Late-Successional Reserves

Description

The objective of Late-Successional Reserves is to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth related species including the northern spotted owl.

These standards and guidelines include reserves designed to maintain and enhance late-successional forests as a network of existing old-growth forest ecosystems, although their size, distribution, and management varies. These reserves represent a network of existing old-growth forests that are retained in their natural condition with natural processes, such as fire, allowed to function to the extent possible. The reserves are designed to serve a number of purposes. First, they provide a distribution, quantity, and quality of old-growth forest habitat sufficient to avoid foreclosure of future management options. Second, they provide habitat for populations of species that are associated with late-successional forests. Third, they will help ensure that late-successional species diversity will be conserved.

Late-successional forest communities are the result of a unique interaction of disturbance, regeneration, succession, and climate that can never be recreated in their entirety through management. The structure, species composition, and function of these forests are, in their entirety, not fully understood. Silvicultural restoration in early-successional forests, however, can accelerate the development of some of the structural and compositional features of late-successional forests. Because early-successional forests will regenerate by different processes during a different time period than existing late-successional forests, silviculturally created stands may look and function differently from current old-growth stands that developed over the last 1,000 years. Consequently, conservation of a network of natural old-growth stands maintains biodiversity into the future.

Desired late-successional and old-growth characteristics that will be created as younger stands change through successional development include: (1) multispecies and multilayered assemblages of trees, (2) moderate-to-high accumulations of large logs and snags, (3) moderate to high canopy closure, (4) imperfections such as cavities, broken tops, and large deformed limbs, and (5) moderate-to-high accumulations of fungi, lichens, and bryophytes. Although they may not be duplicates of existing old-growth forests, these stands could provide adequate habitat for many species in the long term.

Late-Successional Reserves have been designated based on five elements: (1) areas mapped as part of an interacting reserve system; (2) LS/OG 1 and 2 areas within Marbled Murrelet Zone 1, and certain owl additions, mapped by the Scientific Panel on Late-Successional Forest Ecosystems (1991); (3) sites occupied by marbled murrelets; (4) known owl activity centers; and (5) Protection Buffers for specific endemic species identified by the Scientific Analysis Team (SAT)(1993). Additional areas, such as 600 acres around known sites of fungus species *Oxyporous nobilissimus*, are protected under the survey and management standards and guidelines in Chapter 2.

1. Mapped Late-Successional Reserves

Most Late-Successional Reserves are shown on the accompanying map as the purple shaded areas. They were designed to incorporate Key Watersheds to the extent possible, while remaining consistent with other objectives. They also incorporate some or parts of LS/OG1s and LS/OG2s (most ecologically significant and ecologically significant late-successional and old-growth forests, respectively, from the Scientific Panel on Late-Successional Forest Ecosystems [1991]) and some or parts of the Designated Conservation Areas (DCAs) from the Final Draft Spotted Owl Recovery Plan in the western portion of the range of the northern spotted owl.

a) LS/OG 1s and 2s

Where LS/OG status is used to define the boundaries of a Late-Successional Reserve, the boundaries are fixed regardless of the future condition of those (or other) stands.

b) Occupied Marbled Murrelet Sites

The area close to marine environments associated with most marbled murrelet activity is referred to as Marbled Murrelet Zone 1. Zone 1 extends approximately 40 miles inland in Washington. Zone 2 is defined for survey purposes and does not affect land allocations.

Preproject surveys of marbled murrelet habitat are required according to protocol currently used by the federal agencies. Current protocol requires two years of surveys to assure that no marbled murrelet nests exist in areas planned for timber harvest. If behavior indicating occupation is documented (described below), all contiguous existing and recruitment habitat for marbled murrelets (i.e., stands that are capable of becoming marbled murrelet habitat within 25 years) within a 0.5-mile radius will be protected. The 0.5-mile radius circle should be centered on either the behavior indicating occupation, or within 0.5 mile of the location of the behavior, whichever maximizes interior old-growth habitat. When occupied areas are close to each other, the 0.5-mile circles may overlap.

Behavior indicating marbled murrelet occupation includes at least one of the following:

- 1) discovery of an active nest or a recent nest site as evidenced by a fecal ring or eggshell fragments,
- 2) discovery of a chick or eggshell fragments on the forest floor,
- 3) birds flying below, through, into, or out of the forest canopy within or adjacent to a stand,
- 4) birds perching, landing, or attempting to land on branches,
- 5) birds calling from a stationary location within the stand, and
- 6) birds flying in small or large radius circles above the canopy.

2. Unmapped Late-Successional Reserves

a) Known Spotted Owl Activity Centers

This standard and guideline applies to known spotted owl activity centers that are not protected by Congressionally Reserved Areas, Late-Successional Reserves, Riparian Reserves, Managed Late-Successional Areas, or Administratively Withdrawn Areas. One hundred acres of the best northern spotted owl habitat will be retained as close to the nest site or owl activity center as possible for all known

(as of January 1, 1994) spotted owl activity centers located on federal lands in the Matrix and Adaptive Management Areas. These areas are mapped on the GIS system. There is no intent to add additional spotted owl activity centers after January 1, 1994. This is intended to preserve an intensively used portion of the breeding season home range. “Activity center” is defined as an area of concentrated activity of either a pair of spotted owls or a territorial single owl. Timber management activities within the 100-acre area should comply with management guidelines for Late-Successional Reserves. Management around this area will be designed to reduce risks of natural disturbance. Because these areas are considered important to meeting objectives for species other than spotted owls, these areas are to be maintained even if they become no longer occupied by spotted owls.

b) Protection Buffers

Unmapped Late-Successional Reserves result from the application of Protection Buffers (see Late-Successional Reserve Protection Buffers in Chapter 2).

Standards and Guidelines for Late-Successional Reserves

See also Chapter 2, Forest-wide Management Direction.

Objectives - Late-Successional Reserves are to be managed to protect and enhance conditions of late-successional and old-growth forest ecosystems, which serve as habitat for late-successional and old-growth related species including the northern spotted owl. These reserves are designed to maintain a functional, interacting, late-successional and old-growth forest ecosystem.

Exceptions - Research Natural Areas and activities required by recovery plans for listed threatened and endangered species take precedence over Late-Successional Reserve standards and guidelines.

Management Assessment for Late-Successional Reserves - A management assessment should be prepared for each large Late-Successional Reserve (or group of smaller Late-Successional Reserves) before habitat manipulation activities are designed and implemented. Land management agencies may choose to develop these assessments as components of legally-mandated plans (e.g., Forest Plans), as part of province-level planning, or as stand-alone assessments. If developed to stand alone, the assessments should be closely coordinated with subsequent watershed analysis and province-level planning. Standards and guidelines should be refined at the province level, prior to development of Late-Successional Reserve assessments. Late-Successional Reserve assessments should generally include:

1. A history and inventory of overall vegetative conditions within the reserve,
2. A list of identified late-successional associated species known to exist within the Late-Successional Reserve and information on their locations,

3. A history and description of current land uses within the reserve,
4. A fire management plan,
5. Criteria for developing appropriate treatments,
6. Identification of specific areas that could be treated under those criteria,
7. A proposed implementation schedule tiered to higher order (i.e., larger scale) plans, and
8. Proposed monitoring and evaluation components to help evaluate if future activities are carried out as intended and achieve desired results. Only in unusual circumstances would silvicultural treatments, including prescribed fire, precede preparation of this management assessment. Late-Successional Reserve assessments are subject to review by the Regional Ecosystem Office. Until Late-Successional Reserve assessments are completed, fire suppression activities should be guided by land allocation objectives in coordination with local resource management specialists.

Occupied Marbled Murrelet Sites - Timber harvest is prohibited within occupied marbled murrelet habitat at least until completion of the Marbled Murrelet Recovery Plan. Silvicultural treatments in nonhabitat within the 0.5-mile circle must protect or enhance the suitable or replacement habitat. When objectives of the Marbled Murrelet Recovery Plan have been identified, management direction will be amended or revised as appropriate.

Silviculture

Thinning or other silvicultural treatments inside reserves are subject to review by the Regional Ecosystem Office to ensure that the treatments are beneficial to the creation of late-successional forest conditions. The Regional Ecosystem Office may develop criteria that would exempt some activities from review. Stand and vegetation management of any kind, including prescribed burning, is considered a silvicultural treatment. Excepted from review are reforestation activities legally required by, and planned as part of, existing sold timber sales, where the reforestation prescription has been modified as appropriate to meet the objectives of the Late-Successional Reserve.

Activities permitted in the western and eastern portions of the northern spotted owl's range are described separately below. Salvage of dead trees is described separately below, and is limited to stand-replacing disturbance events exceeding ten acres.

West [Side] of the Cascades - There is no harvest allowed in stands over 80 years old. Thinning (precommercial and commercial) may occur in stands up to 80 years old regardless of the origin of the stands (e.g., plantations planted after logging or stands naturally regenerated after fire or blowdown). The purpose of these silvicultural treatments is to benefit the creation and maintenance of late-successional forest conditions. Examples of silvicultural treatments that may

be considered beneficial include thinnings in existing even-age stands and prescribed burning. For example, some areas within Late-Successional Reserves are actually young single-species stands. Thinning these stands can open up the canopy, thereby increasing diversity of plants and animals and hastening transition to a forest with mature characteristics.

East [Side] of the Cascades - The following activities in older stands may also be undertaken in westside Late-Successional Reserves if levels of fire risk are particularly high. Given the increased risk of fire in these areas due to lower moisture conditions and the rapid accumulation of fuels in the aftermath of insect outbreaks and drought, additional management activities are allowed in Late-Successional Reserves. Guidelines to reduce risks of large-scale disturbance are as follows:

Guidelines to Reduce Risks of Large-Scale Disturbance - Large-scale disturbances are natural events, such as fire, that can eliminate spotted owl habitat on hundreds or thousands of acres. Certain risk management activities, if properly planned and implemented, may reduce the probability of these major stand-replacing events. There is considerable risk of such events in Late-Successional Reserves in the Washington Eastern Cascades. Elevated risk levels are attributed to changes in the characteristics and distribution of the mixed-conifer forests resulting from past fire protection. These forests occur in drier environments, have had repeated insect infestations, and are susceptible to major fires. Risk reduction efforts are encouraged where they are consistent with the overall recommendations in these guidelines.

Silvicultural activities aimed at reducing risk shall focus on younger stands in Late-Successional Reserves. The objective will be to accelerate development of late-successional conditions while making the future stand less susceptible to natural disturbances. Salvage activities should focus on the reduction of catastrophic insect, disease, and fire threats. Treatments should be designed to provide effective fuel breaks wherever possible. The scale of salvage and other treatments, however, should not generally result in degeneration of currently suitable owl habitat or other late-successional conditions.

In some Late-Successional Reserves in these provinces, management that goes beyond these guidelines may be considered. Levels of risk in those Late-Successional Reserves are particularly high and may require additional measures. Consequently, management activities designed to reduce risk levels are encouraged in those Late-Successional Reserves even if a portion of the activities must take place in currently late-successional habitat. While risk-reduction efforts should generally be focused on young stands, activities in older stands may be appropriate if:

1. The proposed management activities will clearly result in greater assurance of long-term maintenance of habitat,
2. The activities are clearly needed to reduce risks, and

3. The activities will not prevent the Late-Successional Reserves from playing an effective role in the objectives for which they were established.

Such activities in older stands may also be undertaken in Late-Successional Reserves in other provinces if levels of the risk are particularly high.

Guidelines for Salvage

Salvage of dead trees is based on the following standards and guidelines, and is subject to review by the Regional Ecosystem Office. The Regional Ecosystem Office may develop criteria that would exempt some activities from review. Salvage of dead trees is not generally considered a silvicultural treatment within the context of these standards and guidelines.

Salvage is defined as the removal of trees from an area following a stand-replacing event such as those caused by wind, fires, insect infestations, volcanic eruptions, or diseases. Salvage guidelines are intended to prevent negative effects on late-successional habitat, while permitting some commercial wood volume removal. In some cases, salvage operations may actually facilitate habitat recovery. For example, excessive amounts of coarse woody debris may interfere with stand regeneration activities following some disturbances. In other cases, salvage may help reduce the risk of future stand-replacing disturbances. While priority should be given to salvage in areas where it will have a positive effect on late-successional forest habitat, salvage operations should not diminish habitat suitability now or in the future.

Tree mortality is a natural process in a forest ecosystem. Diseased and damaged trees are key structural components of late-successional forests. Accordingly, management planning for Late-Successional Reserves must acknowledge the considerable value of retaining dead and dying trees in the forest as well as the benefits from salvage activities.

In all cases, planning for salvage should focus on long-range objectives, which are based on desired future condition of the forest. Because Late-Successional Reserves have been established to provide high quality habitat for species associated with late-successional forest conditions, management following a stand-replacing event should be designed to accelerate or not impede the development of those conditions. The rate of development of this habitat will vary among provinces and forest types and will be influenced by a complex interaction of stand-level factors that include site productivity, population dynamics of live trees and snags, and decay rates of coarse woody debris. Because there is much to learn about the development of species associated with these forests and their habitat, it seems prudent to only allow removal of conservative quantities of salvage material from Late-Successional Reserves and retain management opportunities until the process is better understood.

The following guidelines are general. Specific guidelines should be developed for each physiographic province, and possibly for different forest types within provinces.

1. The potential for benefit to species associated with late-successional forest conditions from salvage is greatest when stand-replacing events are involved. Salvage in disturbed sites of less than ten acres is not appropriate because small forest openings are an important component of old-growth forests. In addition, salvage should occur only in stands where disturbance has reduced canopy closure to less than 40 percent, because stands with more closure are likely to provide some value for species associated with these forests.
2. Surviving trees will provide a significant residual of larger trees in the developing stand. In addition, defects caused by fire in residual trees may accelerate development of structural characteristics suitable for associated species. Also, those damaged trees that eventually die will provide additional snags. Consequently, all standing live trees should be retained, including those injured (e.g., scorched) but likely to survive. Inspection of the cambium layer can provide an indication of potential tree mortality.
3. Snags provide a variety of habitat benefits for a variety of wildlife species associated with late-successional forests. Accordingly, following stand-replacing disturbance, management should focus on retaining snags that are likely to persist until late-successional conditions have developed and the new stand is again producing large snags. Late-successional conditions are not associated with stands less than 80 years old.
4. Following a stand-replacing disturbance, management should retain adequate coarse woody debris quantities in the new stand so that in the future it will still contain amounts similar to naturally regenerated stands. The analysis that determines the amount of coarse woody debris to leave must account for the full period of time before the new stand begins to contribute coarse woody debris. As in the case of snags, province-level specifications must be provided for this guideline. Because coarse woody debris decay rates, forest dynamics, and site productivity undoubtedly will vary among provinces and forest types, the specifications also will vary.
5. Province-level plans will establish appropriate levels of coarse woody debris and decay rates to be used. Levels will be “typical” and will not require retention of all material where it is highly concentrated, or too small to contribute to coarse woody debris over the long time frames discussed. This standard and guideline represents one item to be considered and may indeed result in no salvage following windthrow in low density stands. As for other management activities, it is expected that salvage standards and guidelines will be refined through the implementation and adaptive management processes.

6. Some salvage that does not meet the preceding guidelines will be allowed when salvage is essential to reduce the future risk of fire or insect damage to late-successional forest conditions. This circumstance is most likely to occur in the eastern Washington Cascades. It is important to understand that some risk associated with fire and insects is acceptable because they are natural forces influencing late-successional forest development. Consequently, salvage to reduce such risks should focus only on those areas where there is high risk of large-scale disturbance.
7. Removal of snags and logs may be necessary to reduce hazards to humans along roads and trails, and in or adjacent to campgrounds. Where materials must be removed from the site, as in a campground or on a road, a salvage sale is appropriate. In other areas, such as along roads, leaving material on site should be considered. Also, material will be left where available coarse woody debris is inadequate.
8. Where green trees, snags, and logs are present following disturbance, the green tree and snag guidelines will be applied first, and completely satisfied where possible. The biomass left in snags can be credited toward the amount of coarse woody debris biomass needed to achieve management objectives.
9. These basic guidelines may not be applicable after disturbances in younger stands because remnant coarse woody debris may be relatively small. In these cases, diameter and biomass retention guidelines should be developed consistent with the intention of achieving late-successional forest conditions
10. Logs present on the forest floor before a disturbance event provide habitat benefits that are likely to continue. It seldom will be appropriate to remove them. Where these logs are in an advanced state of decay, they will not be credited toward objectives for coarse woody debris retention developed after a disturbance event. Advanced state of decay should be defined as logs not expected to persist to the time when the new stand begins producing coarse woody debris.
11. The coarse woody debris retained should approximate the species composition of the original stand to help replicate pre-existing suitable habitat conditions.
12. Some deviation from these general guidelines may be allowed to provide reasonable access to salvage sites and feasible logging operations. Such deviation should occur on as small a portion of the area as possible. Deviations should not result in violation of the basic intent that late-successional forest habitat or the development of such habitat in the future should not be impaired. While exceptions to the guidelines may be allowed to provide access and operability, some salvage opportunities will undoubtedly be foregone because of access, feasibility, and safety concerns.

Standards and Guidelines for Multiple-Use Activities Other Than Silviculture

The following standards and guidelines apply to Late-Successional Reserves and Managed Late-Successional Areas.

As a general guideline, nonsilvicultural activities located inside Late-Successional Reserves that are neutral or beneficial to the creation and maintenance of late-successional habitat are allowed.

While most existing uses and development are envisioned to remain, it may be necessary to modify or eliminate some current activities in Late-Successional Reserves that pose adverse impacts. This may require the revision of management guidelines, procedures, or regulations governing these multiple-use activities. Adjustments in standards and guidelines must be reviewed by the Regional Ecosystem Office.

Road Construction and Maintenance - Road construction in Late-Successional Reserves for silvicultural, salvage, and other activities generally is not recommended unless potential benefits exceed the costs of habitat impairment. If new roads are necessary to implement a practice that is otherwise in accordance with these guidelines, they will be kept to a minimum, be routed through nonlate-successional habitat where possible, and be designed to minimize adverse impacts. Alternative access methods, such as aerial logging, should be considered to provide access for activities in reserves.

Road maintenance may include felling hazard trees along rights-of-way. Leaving material on site should be considered if available coarse woody debris is inadequate. Topping trees should be considered as an alternative to felling.

Fuelwood Gathering - Fuelwood gathering for home or commercial use will be permitted only in existing cull decks, where green trees are marked by silviculturists to thin (consistent with standards and guidelines), to remove blowdown blocking roads, and in recently harvested timber sale units where down material will impede scheduled post-sale activities or pose an unacceptable risk of future large-scale disturbances. In all cases these activities should comply with the standards and guidelines for salvage and silvicultural activities.

American Indian Uses - The exercise of tribal treaty rights will not be restricted by these standards and guidelines unless the Regional Interagency Executive Committee determines that the restriction is (1) reasonable and necessary for preservation of the species at issue, (2) the conservation purpose of the restriction cannot be achieved solely by regulation of non-Indian activities, (3) the restriction is the least restrictive available to achieve the required conservation purpose, (4) the restriction does not discriminate against Indian activities either as stated or as applied, and (5) voluntary tribal conservation measures are not adequate to achieve the necessary conservation purpose.

Mining - The impacts of ongoing and proposed mining actions will be assessed and mineral activity permits will include appropriate stipulations (e.g., seasonal or

other restrictions) related to all phases of mineral activity. The guiding principle will be to design mitigation measures that minimize detrimental effects to late-successional habitat.

Developments - Development of new facilities that may adversely affect Late-Successional Reserves should not be permitted. New development proposals that address public needs or provide significant public benefits, such as powerlines, pipelines, reservoirs, recreation sites, or other public works projects, will be reviewed on a case-by-case basis and may be approved when adverse effects can be minimized and mitigated. These will be planned to have the least possible adverse impacts on Late-Successional Reserves. Developments will be located to avoid degradation of habitat and adverse effects on identified late-successional species. Existing developments in Late-Successional Reserves such as campgrounds, recreation residences, ski areas, utility corridors, and electronic sites are considered existing uses with respect to Late-Successional Reserve objectives, and may remain, consistent with other standards and guidelines. Routine maintenance of existing facilities is expected to have less effect on current old-growth conditions than development of new facilities. Maintenance activities may include felling hazard trees along utility rights-of-way, trails, and other developed areas.

Land Exchanges - Land exchanges involving Late-Successional Reserves will be considered if they provide benefits equal to or better than current conditions. Consider land exchanges especially to improve area, distribution, and quality (e.g., connectivity, shape, contribution to biodiversity) of Late-Successional Reserves, especially where public and private lands are intermingled (e.g., checkerboard ownership).

Habitat Improvement Projects - Projects designed to improve conditions for fish, wildlife, or watersheds should be considered if they provide late-successional habitat benefits or if their effect on late-successional associated species is negligible. Projects required for recovery of threatened or endangered species should be considered even if they result in some reduction of habitat quality for other late-successional species. For example, watershed rehabilitation projects, such as felling trees along streams, will be coordinated with a wildlife biologist and may include seasonal restrictions. Design and implement watershed restoration projects in a manner that is consistent with Late-Successional Reserve objectives.

Range Management - Range-related management that does not adversely affect late-successional habitat will be developed in coordination with wildlife and fisheries biologists. Adjust or eliminate grazing practices that retard or prevent attainment of reserve objectives. Evaluate effects of existing and proposed livestock management and handling facilities in reserves to determine if reserve objectives are met. Where objectives cannot be met, relocate livestock management and/or handling facilities.

Fire Suppression and Prevention - Each Late-Successional Reserve will be included in fire management planning as part of watershed analysis. Fire management in Late-Successional Reserves will utilize minimum impact suppression methods. Fuels management will adhere to with guidelines for reducing risks of large-scale disturbances. Plans for wildfire suppression will emphasize maintaining late-successional habitat. During actual fire suppression activities, fire managers will consult with resource specialists (e.g., botanists, fisheries and wildlife biologists, and hydrologists) familiar with the area, these standards and guidelines, and their objectives, to assure that habitat damage is minimized. Until a fire management plan is completed for Late-Successional Reserves, suppress wildfire to avoid loss of habitat in order to maintain future management options.

In Late-Successional Reserves, a specific fire management plan will be prepared prior to any habitat manipulation activities. This plan, prepared during watershed analysis or as an element of province-level planning or a Late-Successional Reserve assessment, should specify how hazard reduction and other prescribed fire applications will meet the objectives of the Late-Successional Reserve. Until the plan is approved, proposed activities will be subject to review by the Regional Ecosystem Office. The Regional Ecosystem Office may develop additional guidelines that would exempt some activities from review. In all Late-Successional Reserves, watershed analysis will provide information to determine the amount of coarse woody debris to be retained when applying prescribed fire.

In Riparian and Late-Successional Reserves, the goal of wildfire suppression is to limit the size of all fires. When watershed analysis, province-level planning, or a Late-Successional Reserve assessment are completed, some natural fires may be allowed to burn under prescribed conditions. Rapidly extinguishing smoldering coarse woody debris and duff should be considered to preserve these ecosystem elements.

Special Forest Products - Special forest products include but are not limited to posts, poles, rails, landscape transplants, yew bark, shakes, seed cones, Christmas trees, boughs, mushrooms, fruits, berries, hardwoods, forest greens (e.g., ferns, huckleberry, salal, beargrass, Oregon grape, and mosses), and medicinal forest products. In all cases, evaluate whether activities have adverse effects on Late-Successional Reserve objectives. Sales will ensure resource sustainability and protection of other resource values such as special status plant or animal species. Where these activities are extensive (e.g., collection of Pacific Yew bark or fungi), it will be appropriate to evaluate whether they have significant effects on late-successional habitat. Restrictions may be appropriate in some cases.

Recreational Uses - Dispersed recreational uses, including hunting and fishing, generally are consistent with the objectives of Late-Successional Reserves. Use adjustment measures such as education, use limitations, traffic control devices, or

increased maintenance when dispersed and developed recreation practices retard or prevent attainment of Late-Successional Reserve objectives.

Research - A variety of wildlife and other research activities may be ongoing and proposed in late-successional habitat. These activities must be assessed to determine if they are consistent with Late-Successional Reserve objectives. Some activities (including those within experimental forests) not otherwise consistent with the objectives may be appropriate, particularly if the activities will test critical assumptions of these standards and guidelines, will produce results important for habitat development, or if the activities represent continuation of long-term research. These activities should only be considered if there are no equivalent opportunities outside Late-Successional Reserves.

Rights-of-Way, Contracted Rights, Easements, and Special Use Permits - Access to nonfederal lands through Late-Successional Reserves will be considered and existing right-of-way agreements, contracted rights, easements, and special use permits in Late-Successional Reserves will be recognized as valid uses. New access proposals may require mitigation measures to reduce adverse effects on Late-Successional Reserves. In these cases, alternate routes that avoid late-successional habitat should be considered. If roads must be routed through a reserve, they will be designed and located to have the least impact on late-successional habitat. Review all special use permits and when objectives of Late-Successional Reserves are not being met, reduce impacts through either modification of existing permits or education.

Nonnative Species - In general nonnative species (plant and animal) should not be introduced into Late-Successional Reserves. If an introduction of nonnative species is proposed, complete an assessment of impacts and avoid any introduction that would retard or prevent achievement of Late-Successional Reserve objectives. Evaluate impacts of nonnative species (plant and animal) currently existing within reserves, and develop plans and recommendations for eliminating or controlling nonnative species that are inconsistent with Late-Successional Reserve objectives. These will include an analysis of the effects of implementing such programs to other species or habitats within Late-Successional Reserves.

Other - Other activities should be evaluated by local interdisciplinary teams and appropriate guidelines should be written and documented. Activities deemed to have potentially adverse effects on Late-Successional Reserve objectives are subject to review of the Regional Ecosystem Office. The Regional Ecosystem Office may develop additional criteria for exempting some additional activities from review.

Managed Late-Successional Areas^{[ROD C-22>}

Description

Managed Late-Successional Areas are similar to Late-Successional Reserves but are identified for certain owl activity centers on the eastside where regular and frequent fire is a natural part of the ecosystem. Certain silvicultural treatments and fire hazard reduction treatments are permitted to help prevent complete stand destruction from large catastrophic events such as high intensity, high severity fires or disease or insect epidemics.

Managed Late-Successional Areas have been designated for these standards and guidelines based on two elements:

1. Managed pair areas for known owl pairs and resident singles in the Washington Eastern Cascades Provinces from the Final Draft Spotted Owl Recovery Plan, and
2. Protection buffers for specific endemic species identified by the Scientific Analysis Team (1993).

Details are as follows:

1. **Managed Pair Areas:** Managed Late-Successional Areas are specified as shown on the Amendment Map for northern spotted owl activity centers outside of other designated areas.
2. **Protection Buffers:** Unmapped Managed Late-Successional Areas result from the application of Protection Buffers (see “Managed Late-Successional Area Protection Buffers” in Chapter 2).

Standards and Guidelines for Managed Late-Successional Areas

See also Chapter 2, Forest-wide Management Direction.

Silviculture

Management activities proposed are subject to review by the Regional Ecosystem Office. The Regional Ecosystem Office may develop criteria that would exempt some activities from review. This review is especially important because innovative silvicultural techniques may be applied to manage suitable northern spotted owl habitat through time. These techniques may benefit from technical review by the Regional Ecosystem Office.

Managed Late-Successional Areas are identified in areas where regular and frequent fire is a natural part of the ecosystem. The objective for these areas is to produce and maintain an optimum level of late-successional and old-growth stands on a landscape scale. In these designated areas, certain silvicultural treatments and fire hazard reduction treatments would be allowed to help prevent complete stand destruction from large catastrophic events such as high intensity, high severity fires or disease or insect epidemics.

Suitable northern spotted owl habitat should be maintained through time using various management techniques. The objective will be to always maintain an amount of suitable habitat equal to median amounts observed in pair home ranges in the province. The location of this acreage may change through time as management is rotated through the area. Some uncertainty will be accepted in management to provide habitat in these areas. The intent to accommodate some risk in the managed pair areas should be considered in any Section 7 consultations in these areas. (See Glossary.)

Silviculture, salvage, and other multiple-use activities for these areas always should be guided by the objective of maintaining adequate amounts of suitable habitat.

Management Assessment

Each Managed Late-Successional Area or group of smaller Managed Late-Successional Areas should have a management assessment, as described for Late-Successional Reserves. In addition, the assessment should ensure the Managed Late-Successional Area contains adequate late-successional as old-growth habitat.

Home Ranges

Delineate an area surrounding the owl activity center with an acreage at least equal to the median home range size for pairs. The size of this area will be determined from median home range data for the province (see Table 5-1). Use data from the spotted owl study area that is most similar to the site being considered. The delineated area should be configured so that it contains an amount of suitable habitat that approximates at least the median amount observed in pair home ranges for the province (see Table 5-2).

Table 5-1 Annual home range areas (in acres) of northern spotted owl pairs in the Eastern and Western Cascades Provinces. [ROD C24>

Physiographic Province	Forest Type	Range (in acres)		
		Min	Median	Max
Eastern Cascades	Mixed Conifer	3,694	7,124	15,587
Western Cascades	DF/Hemlock	2,969	6,657	17,942

Table 5-2 Amounts of old-growth and mature forest (in acres) in annual pair home ranges of spotted owls in the Eastern and Western Cascades Provinces.

Physiographic Province	Forest Type	Range (in acres)		
		Min	Median	Max
Eastern Cascades	Mixed Conifer	—	—	—
Western Cascades	DF/Hemlock	1,715	3,281	8,998

Multiple-Use Activities Other Than Silviculture

“Standards and Guidelines for Multiple-Use Activities Other Than Silviculture,” which are found in the standards and guidelines for Late-Successional Reserves earlier in this chapter, also apply to Managed Late-Successional Areas.

Management Area Categories

National Forest land within the Gifford Pinchot National Forest is assigned to various Management Area Categories (MACs). Each Management Area Category has a goal, or management emphasis. Each Management Area Category includes one or more management areas. Each management area has a set of standards and guidelines and other management practices designed to achieve multiple use goals and objectives. Forest-wide standards and guidelines described in Chapter 2 and standards and guidelines for each designated area described previously in this Chapter also apply. The direction given in this section applies only to the management areas within Late-Successional Reserves or the Managed Late-Successional Area. The management areas are shown on the Amendment Map.

Table 5-3 Management Area Categories within the Late-Successional Reserves and Managed Late- Successional Areas.

Management Area Category	Code	Acres**
Developed Recreation Site*	2L	860
Administrative Sites*	3W	703
Utility Sites and Corridors*	4W	37
Recreation River	6L	2,515
Wild River*	8D	7,141
Special Interest Area*	9L	2,225
Botanic Special Interest*	BL	2,403
General Late-Successional Reserve	LS	265,750
Experimental Forest*	FS	8,942
Geologic Special Interest Area*	GD	214
Wildlife Special*	IL	2,593
Mountain Goat Summer Range	ML	11,662
Scenic Rivers*	NA	19,449
Mountain Goat Winter Range	QL	8,819
Roaded Recreation*	RL	2,578
Scenic Special Interest Area*	SD	5,163
Unroaded Recreation without Timber Harvest*	UD	22,461
	UH	9,797
	UL	5,478
Visual Emphasis	VL	68,617
Total		447,408
*These management areas are also Administratively Withdrawn		
**Includes Riparian Reserves		

Administrative Sites

Management Area Category 3

Includes Management Area 3W [FP IV-146]

Goal

Provide for facilities required to accomplish the administration of the National Forest in an efficient manner.

Description of Lands Where This MAC is Applied

Existing sites such as ranger stations, engineering zone compounds, road maintenance shops and compounds, scale stations, lookouts, the Wind River Nursery, seed orchards, the Cispus Center, the Mount St. Helens National Volcanic Monument Headquarters, work centers, guard stations, and additional lands required for these and other activities which must be performed in order to administer National Forest System lands (see page 5-11, “Developments”).

Desired Future Condition

Buildings, roads, and other structures are quite evident; most have required the creation of openings. Since most of the activities are on-going, structures are generally permanent. They are well kept, neat, and orderly in appearance. Vegetation varies widely from ornamental trees and shrubs to stands of old-growth timber.

Standards and Guidelines

Recreation

Planning and Inventory

1. Cultural, biological and other features of interest should be inventoried. Public access may be provided when it does not conflict with the functions of the administrative site.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these Management Areas are:

Management Prescription	VQO	ROS
3W	Modification	Rural

Recreational facilities should be few or absent.

Use Administration

Recreational off-road vehicles should not be permitted.

Range

Planning

Livestock grazing should not be permitted.

Timber

Hazard Trees

Trees should be felled to protect life and property or as necessary for insect attack or disease control. Ordinary timber salvage should not be permitted.

Water, Soil, and Air

Rights/Use Management

Water rights should be acquired for all sources supplying water for domestic use or irrigation at the site, unless the Reservation Principal (see Glossary) applies.

Minerals and Geology

Inventory and Development

1. Common mineral material sources should not be inventoried or developed.
2. Potential aquifers should be evaluated prior to well location and drilling.

Lands

Special Use Management

Permits, leases, rights-of-way, or easements inconsistent with the purposes of the administrative site should not be permitted.

Federal Energy Regulatory Commission (FERC) License and Permits

Feasibility studies should be conducted in a manner which does not interfere with operation of the administrative site.

Withdrawals, Modifications, and Revocations

Subject to the determination of values, including mineral values, portions of the area should be recommended for withdrawal under the public land laws if required to protect special values.

Landownership Planning

All lands should be placed in Ownership Category II, retain or acquire. Sites outside the Forest boundary operating with leases or other temporary permits are exceptions.

Facilities

Road Operation

Access roads and parking lots should be managed to encourage or accept general public use.

Some storage areas may require gates or fences to protect government property.

Fire, Administrative, and Other (FA&O) Construction/Reconstruction

1. Boundaries of administrative sites adjacent to private lands should be surveyed and posted prior to site planning and construction. Existing sites should be surveyed and posted prior to further development.
2. Temporary buildings should be limited to temporary activities or circumstances. They should not be built in lieu of permanent structures. Plans should be developed for the removal or replacement of temporary structures.
3. Plans should be developed to blend new construction with architectural and landscape themes of the existing compound facilities.
4. A site development plan will be prepared for all administrative sites to increase operating efficiency. It should include consideration of the direction above.

Protection

Fire Management

Fire plans will adhere to state, county, and local fire ordinances and laws.

Fire Suppression

Fire Suppression Strategy, Control, should be used.

Fire Suppression Priority 1, protect life and property, should apply and all fuels will be disposed or removed.

Pest Suppression and Prevention

The protection of developments and existing vegetation should be emphasized in pest suppression and prevention activities. <FP IV-148]

Developed Recreation

Management Area Category 2

Includes Management Area 2L

Goal [FP IV-101>

Readily-accessible, appropriately-designed facilities will provide for concentrated visitation by people seeking a convenient recreational experience.

Description of Lands Where This MAC is Applied

Developed recreation sites are usually close to water bodies, berryfields, and other areas of scenic or special interest. Except for winter recreation areas, they are usually located on relatively flat land with slopes of less than ten percent. Soils and vegetation must be able to absorb heavy use. Camp and picnic grounds, ski areas, recreation residences, viewpoints, boat launches, and other facilities may be accommodated.

Desired Future Condition

Roads, buildings, ski lifts, tables, docks, and other physical facilities are evident, but design and construction will repeat the color, shapes and lines of the surroundings.

Standards and Guidelines

Recreation

Planning and Inventory

1. On selected sites, special facilities needed for the convenience of visitors, including the elderly, young, and handicapped, should be provided.
2. The Visual Quality Objective and Recreation Opportunity Spectrum classes assigned to these Management Areas are:

Management Prescription	VQO	ROS
2L	Retention	Roaded Natural

Facility and Site Reconstruction, Construction, and Management Administration

1. Site development and management should be guided by these considerations:
 - a) Public safety and sanitation.
 - b) Long-term protection of site and facilities.
 - c) Accommodation for groups and for the handicapped.

- d) Information services.
 - e) Aquatic Conservation Strategy
2. Operation and maintenance plans should be prepared.
 3. New camp units should be located away from the immediate foreground of lakes and streams. Those which are now in these locations should be moved whenever practicable. See “Riparian Reserve Standards and Guidelines for Recreation,” in Chapter 2.
 4. Every site will be surveyed for hazard trees annually.

Use Administration

Off-road vehicle use on roads should be limited to ingress and egress. ORV use may be permitted on designated trails with the same limitation.

Range

Administration

Livestock grazing should not be permitted.

Timber

Administration

Trees should be felled when they may be a hazard to life or property. Methods least likely to produce lasting visual impacts should be employed. Trees may be felled to improve a ski area, provide a scenic view, or accomplish other recreational enhancements. Ordinary timber salvage should not be permitted.

In the foreground of areas adjacent to concentrated use:

1. Remove portions of downed trees which are not needed to meet recreation and Aquatic Conservation Strategy Objectives.
2. Flush-cut or remove stumps.
3. Remove logs and debris by methods which minimize ground and vegetative disturbance.

Silvicultural Examination and Prescriptions

As a basis for the Vegetative Management Plan, a silvicultural examination should be prepared for every developed recreation site. It should take into account crown closure, hazard trees, and the ability of the stand to withstand concentrated recreation.

Genetic Forest Tree Improvement Program

Genetic improvement program activities should be limited to select trees. Identification marks should be inconspicuous.

Water, Soil, and Air

Inventory, Planning, and Improvement

Adverse impacts of recreation on soil, water, and air should be identified. Those impacts which may jeopardize public health and safety will be corrected immediately. Others should be treated before the opening of the next season (see “Riparian Reserve Standards and Guidelines for Recreation” in Chapter 2.

Rights/Use Management

Water rights should be acquired for all sources supplying or expected to supply domestic water to the recreation site.

Minerals and Geology

Evaluation and Development

1. Common mineral material sources should not be developed.
2. Potential aquifers should be evaluated prior to well location and drilling.

Lands

Special Use Management

Only those permits, leases, rights-of-way, and other special uses which are compatible with developed recreation and Late-Successional Reserve objectives should be permitted.

Federal Energy Regulatory Commission License and Permits

Feasibility studies may occur providing they are performed in a manner which does not impair recreational use of the area.

Withdrawals, Modifications, and Revocations

The recreation site or area should be withdrawn from mineral entry, subject to the determination of values, including mineral values, if required to protect the site.

Landownership Planning

All lands should be placed in Landownership Category II, acquire or retain.

Facilities

Transportation Planning

Roads and other facilities inconsistent with developed recreation should be located away from the primary use areas, closed, removed, or decommissioned.

Road Operation

Access roads to developed sites should be managed to permit passenger car traffic.

When vandalism is a problem, the Prohibit traffic scheme can be applied to seasonally close sites. When vandalism is not a problem, road use may be seasonally discouraged by posting closure signs.

Protection

Fire Management

Fire Suppression Strategy, Control, should be used at all developed sites.

Fire Hazard Reduction Priorities, utilize and dispose, should apply.

Pest Suppression and Prevention

Pest suppression and prevention methods should be used for maintaining the health of vegetation. This activity should be timed to avoid the recreation season if possible.

<FP IV-103]

Experimental Forest

Management Area Category F

Includes Management Areas FS [FP IV-141]

Goal

Manage the Experimental Forest as a center for Forest research and demonstration, providing a variety of long-term research opportunities.

Description of Lands Where This MAC is Applied

The existing Wind River Experimental Forest.

The Experimental Forest is specifically set aside for research essential to managing the Nation's timber and range resources. It is administered by the Pacific Northwest Forest and Range Experiment Station (PNW) in cooperation with the Gifford Pinchot National Forest. Thorton T. Munger RNA, management area F8 is within the boundary of the Experimental Forest. Direction for the RNA is in Management Area Category Y in Chapter 4.

Desired Future Condition

Research activity is apparent. Stand structure and composition ranges from natural openings to stands of mature and old-growth timber. Roads and trails provide passenger car and foot access to most of the Experimental Forest.

Management and development of the forage, recreation, timber, wildlife, and water resources on Experimental Forests and Ranges will be a joint responsibility of the Station Director and the Regional Forester. The Director will determine whether a proposed use or occupancy is compatible with the research program. For additional direction, refer to the 1987 "Wind River Experimental Forest Research Management Plan."

Standards and Guidelines

Also see "Research," in Chapter 2 and page 5-13

Recreation

Planning

1. The Gifford Pinchot National Forest and PNW will jointly determine the Visual Quality and Recreation Opportunity Spectrum objectives to be met. The following options should be considered:

The Visual Quality Objective of Retention, Partial Retention, Modification or Maximum Modification. The Semi-Primitive

Non-Motorized, Semi-Primitive Motorized, or Roaded Natural class on the Recreation Opportunity Spectrum.

For planning purposes in this Forest Plan, the following Visual Quality Objective and Recreation Opportunity Spectrum class have been assumed.

Management Prescription	VQO	ROS
FS	Retention	Roaded Natural

2. Research planners should be attentive to the visual quality requirements of adjacent Forest lands.
3. Unless it is specifically required for research, recreation use of the areas should not be encouraged. Firewood/Christmas tree cutting, collecting plants, berrypicking, hunting, fishing, and other activities which threaten research and education values may be discouraged or prohibited. PNW should review recreation use and its impact on research.
4. Picnicking and camping should be permitted in designated areas only.
5. Interpretive signs may be placed along the Pacific Crest Trail and elsewhere to describe ongoing research projects.
6. Cultural resources and other features of interest may be interpreted.

Use Administration

Recreational off-road vehicles, including snow machines, should not be permitted.

Trail Construction, Reconstruction, Maintenance, and Operation

1. PNW and the Forest should plan trail reconstruction, construction, and maintenance based on the expected needs of research. Trails should be primitive unless a higher standard is required by research.
2. Trail work should usually be done by the Forest. Opportunities should be sought to combine it with other activities, e.g., training crews in fireline construction. It may also be contracted by PNW.

Recreation Research

Opportunities should be sought for both dispersed and developed recreation research. Recreation may be permitted or encouraged if required to meet specific research goals. (Refer to “Problem Analysis for PNW Research Work Unit No. 4901”).

Wildlife and Fish

Planning

Minimum management requirements for the Forest's wildlife indicator species should be met unless they conflict with significant research.

Wildlife, Fish, and Plant Habitat Research

1. Research to determine the impacts of fish and wildlife habitat manipulation should be encouraged.
2. Research on the adequacy of management requirements for wildlife should be emphasized.

Range

Administration and Management

Grazing should be limited to range research projects on transitory forage areas.

Timber

Planning and Inventory

District Ranger will assist PNW in slash disposal and reforestation planning to ensure that the cost of work required on the Experimental Forest is included in requests for K-V funding.

Reforestation

1. Regeneration will be in accordance with research objectives.
2. Atypical methods and sources may be used.

Timber Stand Improvement

PNW and the District will jointly plan and conduct all precommercial thinning.

Timber Sale Preparation

The District staff will assist PNW with Experimental Forest timber sales.

Harvest Administration

1. The District will administer timber sales on the Experimental Forest in consultation with PNW.
2. The District and PNW should jointly sponsor prebid conferences to clarify research-related sale objectives before contract bids are submitted.

Genetic Forest Tree Improvement Program

1. The Forest will manage the Planting Creek Seed Orchard in cooperation with PNW. It is intended that the orchard should remain intact as long as the genetically superior seed produced is required by the National Forest System. The status of the orchard should be reviewed by PNW and the Forest at least each ten years when the Forest Plan is scheduled for revision.

2. Selection of candidate trees as genetic seed sources should be encouraged. If possible, such trees should have crowns within ten feet of existing timber harvest areas.
3. Select trees should be protected.

Nursery Expansion

Expansion onto the Experimental Forest will not be permitted.

Timber Engineering Research

Encourage use, testing, and development of new harvesting systems.

Timber Management Research

Encourage use of the Experimental Forest in developing improved methods for establishing and manipulating timber producing forests, including yield predictions.

Utilization Research

Research should take advantage of both natural and created opportunities for utilization research.

Water, Soil, and Air

Inventory

PNW and Forest soil scientists should jointly determine base line soil inventory and data needs.

Monitoring

Some research projects are designed to estimate the magnitude of various environmental impacts. When activities exceed the management requirements for soil, water, and air, the District and PNW should jointly determine if corrective action is needed to protect adjacent resource values.

Rural Community and Human Resources

Youth Conservation Corps Program and Volunteers

The participation by volunteers and young people in research projects should be encouraged.

Lands

Right-of-Way Grants for Roads and Trails

Except for those required for research, rights-of-way, easements, and other permits should not be permitted if there is a practical alternative.

Withdrawals, Modifications and Revocations

The entire Experimental Forest should be recommended for withdrawal from mineral entry based on a PNW statement of reasons and rationale.

Property Boundary Locations

Boundaries of the Experimental Forest should be jointly determined and posted by PNW and the District.

Land Ownership Planning

Lands which are critical to the integrity of the Experimental Forest should be retained or acquired, Landownership Category II

General Administration

Regional and Forest Level Planning

1. Representatives of PNW, the Forest, and the District should meet annually to review the research program and plan future operations in the Experimental Forest and interactions with surrounding Forest land.
2. A forester or forestry technician should be housed at the Experimental Forest to assist in coordinating public information, technology transfer of research, and maintenance and measurement of studies with the District.

(NOTE: The Station Director and Regional Forester will determine who funds this position.)

3. The District GIS, or another data base system, should be used to record plot locations. Information should be updated annually by PNW scientists.

Resource Economics Research

The economic trade-offs of alternate land management treatments will be studied on appropriate sites.

Facilities

Transportation Planning

1. A road management plan for research projects should be developed by the Forest and PNW. Other roads in the Experimental Forest should be compatible with research objectives. New roads, unless needed to serve research needs, should avoid crossing the Experimental Forest.
2. New roads should not be permitted unless approved by the Station Director and should not cross PNW control areas.

Road Operation

The Road Management Objectives should be reviewed by PNW and the District annually to assure compatibility with the research program. At a minimum, all roads open to public travel should be managed to allow passenger car access.

Protection

Fire Management

1. A cooperative fire protection plan for the Experimental Forest should be jointly prepared by the Forest and PNW.
2. Prevention and suppression activities and priorities should be based on the threat to scientific values. Suppression Strategy, Control, should be used.

Pest Suppression

The Forest and PNW should actively seek opportunities to design and implement control programs. <FP IV-145

General Late-Successional Reserve

Management Area Category L

Includes Management Area LS [FP-IV-136>

Goal

The objective of General Late-Successional Reserve is to protect and enhance conditions of Late-Successional and old-growth forest ecosystems.

Description of Lands Where This MAC is Applied

In the past these lands were primarily timber producing lands and deer and elk habitat. They also include areas with such market values as minerals, energy, and forage for livestock grazing. Where they occur within Late-Successional Reserves, these lands are no longer suitable for timber management or habitat manipulation to benefit early successional related species such as deer and elk.

Desired Future Condition

Late-successional and old-growth forest ecosystems will develop over time. Destructive fires seldom occur. Recreational opportunities are available for hunters, fishermen, off-road vehicle operators, and other motorists, although many roads will be closed in the winter months in the biological deer and elk winter range.

Standards and Guidelines

Recreation

Planning and Inventory

1. The Visual Quality Objectives and Recreation Opportunity Spectrum class assigned to these Management Areas are:

Management Prescription	VQO	ROS
LS	Retention	Roaded Natural

2. Where appropriate, recreational activities compatible with Late-Successional Reserve objectives may continue. Driving for pleasure, hunting, dispersed camping, wildlife viewing, berry-picking, cross-country skiing, the use of off-road vehicles, and interpretation of cultural or other features of interest are examples of possible activities.

Range

Administration

In the biological winter range, conflicts between deer and elk and livestock will be resolved in favor of deer and elk.

Nonstructural Improvement and Maintenance

Plant species selected for range improvement should not significantly compete with Forest tree species. <FP -IV-136]

Mountain Goat

Management Area Categories M, Q

Includes Management Areas QL and ML [FP IV-129>

Goal

Manage habitat to provide forage and cover that maintains the 1990 carrying capacity of 230 animals.

Description of Lands Where This MAC is Applied

Places where mountain goats are known to exist or to have existed in the past as identified on the accompanying Amendment Map.

Winter Range - Q

Winter range habitat is typically characterized by mid-elevation steep slopes with heavy coniferous forest cover. These areas may have avalanche chutes, rock outcrops, cliffs, and ledges.

Summer Range - M

Summer range is characterized by higher elevation habitat where coniferous slopes and rocky and ledge-type terrain are interspersed. Gently sloping meadows within the above habitat are commonly used for feeding and, sometimes, resting.

Desired Future Condition

On summer range and locally on winter range, open ridge areas, rock outcrops, talus slopes, and avalanche chutes are common and are generally in a natural condition. Most trees on forested land will be pole size or larger. Vegetation ranges from natural openings through stands of mature and old-growth timber. There are few roads, and those that do exist usually are closed to motorized traffic. The area is used by backpackers and hunters and affords outstanding opportunities to view scenery and wildlife.

Standards and Guidelines

The following direction applies to all management areas in MAC Q and M, unless indicated otherwise.

Recreation

Planning and Inventory

1. Development or management which concentrates recreational activity should not occur.

2. New trails should be designed to avoid key habitat features such as rock outcrops, talus slopes, avalanche chutes, and kidding areas.
3. Existing trails which conflict with mountain goats should be relocated or be limited in use to reduce harassment.
4. The Visual Quality Objective and Recreation Opportunity Spectrum classes assigned to these Management Areas are:

Range	Management Prescription	VQO	ROS
Winter	QL	Retention	Roaded Natural
Summer	MML	Retention	Roaded Natural

5. Cultural resources will generally not be interpreted.

Facility Site Reconstruction and Construction

Facilities should be limited to those required to protect resources.

Use Administration

ORV use may be permitted on designated trails or routes only.

Recreational off-road vehicles, including oversnow machines, should not be permitted on mountain goat summer range, Management Prescription-MLM, April 15-December 1, and on winter range, Management Prescription QL, November 1-June 30.

Range

Any conflict between grazing by domestic livestock and mountain goats should be resolved in favor of mountain goats.

Timber

Reforestation and Timber Stand Improvement

Herbicides should not be used if they jeopardize desirable wildlife browse species.

Timber Sale Preparation and Harvest Administration

1. Timber harvest and road building should not be performed on winter range, Management Prescription QL, between November 1 and June 30.
2. To provide hiding and thermal cover, a buffer of at least 200 feet should be maintained adjacent to avalanche chutes, cliffs, and rock outcrops which are important mountain goat habitat. Timber harvest should not occur within this 200-foot area.

Genetic Forest Tree Improvement Program

Genetic improvement activities should be limited to select trees.

Minerals and Geology

Exploration Development and Administration

1. Common mineral sources which adversely affect mountain goats should not be developed.
2. Exploration should be performed in a manner which does not significantly disturb mountain goats.
3. Activities may be limited from November 1 to June 30 to protect mountain goats.
4. Cliffs, rock outcrops, and avalanche chutes should be avoided when practicable.

Lands

Federal Energy Regulatory Commission (FERC) License and Permits

Exploration should be performed in a manner which does not significantly disturb mountain goats.

Landownership Planning

Lands should be placed in Ownership Category II, Retain or Acquire.

Facilities

Road Construction and Operation

Construction of roads and other facilities should not be permitted from November 1 to June 30 in winter range, Management Prescription QL. See “Special Habitat Management Objectives” in Chapter 2 for timing restrictions in kidding areas. Major through routes should be managed for standard passenger car use. Some local roads required to access recreation destinations may also be managed for passenger car use. All other roads should be maintained only for intermittent timber management activities. Local roads not being used for resource management activities should be closed using the Eliminate or Prohibit traffic schemes or decommissioned.

All local and minor collector roads in Mountain Goat Winter Range, Management Prescription QL, should be closed from November 1 to June 30. <FP -IV-132]

Roaded Recreation

Management Area Category R

Includes Management Area RL

Goal_{[FP IV-95>}

Provide a variety of dispersed recreational opportunities in areas conveniently reached by auto.

Description of Lands Where This MAC is Applied

These lands accommodate dispersed recreation—hiking, fishing, berrypicking, camping, wildlife viewing, rockhounding, winter sports—beside or near roads. They include unique or distinctive portions of the Forest with features like clustered lakes, berryfields, and roaded scenic corridors.

Desired Future Condition

Management activities are evident, but not conspicuous. Vegetation will remain largely natural in appearance along the major travel ways and may vary from natural openings through stands of mature and old-growth timber. Travel to dispersed sites over roads maintained at a variety of standards is an important aspect of the recreational experience. Much of the area provides for interaction with a near-natural environment. Recreation facilities have been kept at a minimal level of development.

Standards and Guidelines

Recreation

Planning and Inventory

1. Locations for viewing, photographing, or interpreting wildlife, cultural, geologic, biological, and other features of interest should be identified and evaluated.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these Management Areas are:

Management Prescription	VQO	ROS
RL	Retention	Roaded Natural

Site Management

Areas which are designated for management as berryfields should be maintained by such methods as emphasizing permits for plant removal and encouraging the removal of encroaching vegetation by volunteers. Future research may provide more efficient methods for perpetuating these popular berrypicking areas.

Use Administration

Off-road vehicles may be permitted on designated routes or areas.

Wildlife And Fish

Improvements

Opportunities for hunting and fishing may be enhanced by methods such as fish stocking and habitat improvement.

Range

Administration

Animals should be kept away from fields which are being managed for berrypicking during the harvest season.

Structural Improvement and Maintenance

Loading ramps, stock tanks, fences, holding pens, and other improvements should be located away from areas of concentrated recreation except for those specifically designed for recreation stock.

Timber

Administration

Timber harvesting will not be scheduled, and timber salvage should not be permitted in management areas assigned the RL prescriptions. Trees may be felled, however, to enhance recreation, e.g., the opening of a scenic view, construction of a road, or removal of hazard trees.

Fuelwood gathering is not permitted except for camp fires.

Genetic Forest Tree Improvement Program

Select trees should be marked inconspicuously. Other genetic tree improvements should be located away from areas of concentrated use.

Minerals and Geology

Development Proposals

The development of common minerals material sources, if necessary, should occur away from areas of concentrated use.

Lands

Landownership Planning

Lands needed to protect the integrity of the management area should be placed in Ownership Category II, Retain or Acquire, others should be placed in Category III, Neutral.

Facilities

Transportation Planning and Inventory, Arterial/Collector/Local Road Reconstruction, Road Operation, and FA&O Construction and Preconstruction

Roads and other facilities which are not consistent with the recreation objectives should be located away from concentrated use areas.

Local roads should be closed or decommissioned unless needed for a specific recreational purpose.

Protection

Pest Suppression and Prevention

Pest suppression and prevention methods which minimize visual disturbance should be employed. Biological and silvicultural treatments should be favored. Hazard trees in use areas should be felled. <FP IV-97]

Special Interest

Management Area Categories S, G, B, 9

Includes Management Areas SD, GD, BL, and 9L [FP IV-104>

Goal

Maintain the special feature(s) in a substantially natural condition while providing for an appropriate level of public access and enjoyment.

Description of Lands Where This MAC is Applied

Areas with a special feature or features which are important enough to deserve particular attention. Areas S, G, and B qualify for classification under Code of Federal Regulations (CFR 294.1). See Table 4-2, page 4-17, in the “Special Interest” management area section of Chapter 4, for a list of Special Interest Areas within Late-Successional Reserves.

Area	Management Area	Description of Land
Scenic	SD	Places of outstanding or matchless beauty
Geologic	GD	Outstanding formations, fossils, caves, or other geologic features which display the earth's evolutionary processes.
Botanical	BL	Lands containing plant species or communities which are significant because of form, color, occurrence, habitat, location, life history, arrangement, ecology, environment, rarity, or other quality.
Other	9L	These lands, like those described above, are unique because they include features deserving special management. They include a wide range of features, such as waterfalls, scenic spots, caves, and botanical, historical, and geological sites. They differ from the above areas in two respects. First, they are relatively small in size, ranging from one acre to about 1,200 acres; most are 20 acres or less. The second and most significant difference in these areas, however, is that they are not significant enough to qualify for classification under Code of Federal Regulations (CFR 294.1).

Desired Future Condition

Visual evidence of management activities is subordinate to the special feature(s). Fences, signs, viewpoints, and other facilities may exist if needed to protect the feature(s) or provide for public use and enjoyment. Plant communities are usually the product of natural succession. Vegetation may range from natural openings through stands of mature and old-growth timber.

Most features included in this MAC will remain in an essentially undisturbed condition. In most special interest areas, there is an opportunity to interact with the natural environment. In some, there is an opportunity for solitude; in others, the experience is shared.

Standards and Guidelines

The following direction applies to all management areas in MAC S, G, B, and 9, unless otherwise indicated.

Recreation

Planning and Inventory

1. All areas, except for those to which the 9L Prescription is assigned, will be classified as Special Interest Areas under the Code of Federal Regulations (CFR 294.1).
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these Management Areas are:

Management Prescription	VQO	ROS
SD and GD	Retention	Semi-primitive Non-Motorized
BL and 9L	Retention	Roaded Natural

NOTE: In the event that oversnow machines are permitted within management areas assigned prescriptions SD or GD, the ROS class is changed to Semi-Primitive Motorized for the duration of such use.

The assigned VQO is applicable to all roads, trails, and use areas within the management area.

Use Administration

1. Recreational off-road vehicles, including oversnow machines, should not be permitted in management areas assigned prescriptions BL, GD, or SD, except oversnow machines may be permitted in GD and SD when snow is deep enough to ensure that resource damage will not occur.
2. Off-road vehicles, including oversnow machines, may be permitted in 9L areas on a case-by-case basis.
3. Hazard trees near use areas should be felled.

Facility, Site, and Trail Reconstruction and Construction

Trails and facilities should be subordinate to features for which the management area was created.

Wildlife

Nonstructural and Structural Habitat Improvement and Maintenance

Native or natural materials should be used.

Range

Planning and Inventory

Livestock grazing may be permitted if it is consistent with Late-Successional Reserve objectives and does not detract from the special feature(s) and public use and enjoyment. No grazing should be permitted in areas assigned the BL prescription.

Nonstructural/Structural Improvements and Maintenance

1. Native or natural materials should be used in improvements.
2. Stock tanks, fences, and holding pens should be located away from the special interest feature or areas where recreation is concentrated.
3. Revegetation or rehabilitation necessitated by stock grazing should be initiated no later than the following season.

Timber

Administration

Trees should be removed when they are a hazard to life or property. Trees may be felled to enhance recreation, e.g., the creation of a scenic view or construction of a road. Ordinary timber salvage should not be permitted.

Firewood Cutting

Firewood cutting, except for campfire use, should not be permitted.

Genetic Forest Tree Improvement Program

With the exception of seed orchards, genetic improvement activities may be permitted when they do not adversely affect special feature(s) or public use and enjoyment.

Minerals And Geology

Development Proposals

1. Common mineral material sources may not be developed.
2. Recommendations for development should include reasonable, operationally feasible requirements for protecting special features.
3. Recommendations on the design of facilities should be appropriate to the nature of the special feature involved.
4. When facilities are no longer needed they should be removed and the area rehabilitated.

Lands

Special Use Management

Permits, leases, rights-of-way, and easements not compatible with special interest area objectives should not be permitted. Nonconforming uses should be discontinued when the opportunity permits.

Withdrawals, Modifications and Revocations

The area should be recommended for withdrawal under the public land laws, subject to the determination of values, including mineral values.

Landownership Planning

Lands which are critical to the integrity of the special interest area should be retained or acquired, Landownership Category II.

Facilities

Transportation Planning

There should be no roads in management areas assigned the SD or GD Prescriptions. They may be permitted in GL or BL areas when required for recreation purposes consistent with maintaining special interest values. Existing roads in 9L areas may be permitted if needed for through traffic. All other roads in 9L areas should be closed or decommissioned and new roads should not be constructed. [FP IV-107]

Protection

Treatment of Activity Fuels

Fire Hazard Reduction Applications rearrangement, removal, or disposal should be used. Rearrangement, removal, or disposal fuel treatment applications should be employed along travel routes and in or adjacent to special features. The remainder of the area should utilize the fuel treatment application which best meets the natural condition of the area.

Pest Suppression and Prevention

Pest suppression and prevention methods which minimize visual disturbance should be employed. In botanical areas, the plant or plants of interest will be the primary concern. Biological and silvicultural treatment methods will be preferred. Hazard trees near use areas should be felled. <FP IV-107]

Unroaded Recreation Without Timber Harvest

Management Area Category U

Includes Management Areas UD, UH, and UL [FP IV-92>

Goal

Provide a variety of dispersed recreation opportunities in a Semi-Primitive or undeveloped setting.

Description of Lands Where This MAC is Applied

Portions of the Forest with outstanding recreational attributes. They provide quality fishing, hunting, berry-picking, backpacking, and other outdoor activities. They may be located near a road but are in a substantially undisturbed condition.

Desired Future Condition

A natural to predominantly natural-appearing environment has been maintained; changes are largely the result of natural succession. Campsites, sanitation facilities, and other management activities are few in number and not conspicuous. Wildlife habitats are diverse. The area affords visitors an experience which is usually free from the sight and sounds of other people. Principal access is by trail; there are no roads within the area. The opportunity to practice outdoor skills in a challenging environment is afforded. Vegetation may vary widely from natural openings to mature and old-growth stands.

Standards and Guidelines

The following direction applies to all management areas within MAC U unless otherwise indicated.

Recreation

Planning and Inventory

1. Future trail and campsite locations should be identified and coordinated to access areas of interest or destination points, e.g., vistas or berry-picking areas.
2. The trail system should be designed to disperse use and enhance the optimum recreational opportunities of this area.

- The Visual Quality Objectives and Recreation Opportunity Spectrum classes assigned to these management areas are:

Management Prescription	VQO	ROS
UD	Retention	Semi-primitive Non-Motorized
UH	Retention	Semi-primitive Motorized
UL	Retention	Roaded Natural

- Cultural sites or other features of interest may be interpreted if they can be adequately protected.

Facility and Site Management and Use Administration

Recreational off-road vehicles may be permitted on trails only in management areas UH or UL.

Range

Administration

- Improvements should utilize native or natural-appearing materials whenever they are available.
- Livestock grazing may occur when compatible with dispersed recreation.

Timber

Planning and Inventory

Thinning should not be permitted.

Firewood

Gathering campfire wood may be permitted. Firewood cutting for home or commercial use should not be permitted.

Genetic Forest Tree Improvement Program

The genetic improvement program should be limited to select trees.

Minerals and Geology

Exploration and Development Proposals

- Exploration should be performed in a manner which does not alter the semi-primitive character of the land. Exploration should be timed to avoid conflict with recreational activities, i.e., not on weekends during the summer season.
- Facilities should be designed to minimum standards and removed when no longer needed. The site should then be rehabilitated.

Lands

Special Use Management

Nonconforming uses should be terminated.

Federal Energy Regulatory Commission Licenses and Permits

Facilities should be designed to minimize adverse effects on the natural setting. Pipelines and transmission lines should not be permitted. If unavoidable, they should be buried if practical.

Land Ownership Planning

Lands critical to the integrity of the management area should be placed in ownership Category II, Retain or Acquire. The remainder should be in Category III, Neutral.

Facilities

Transportation Planning

There will be no roads constructed. Existing roads should be obliterated.

Protection

Fire Suppression

1. Fire Suppression Strategy should be Control.
2. The use of retardants and hand lines is preferred to minimize long-term fire suppression impacts.

Pest Suppression and Prevention

Biological methods for prevention will be preferred.

<FP IV-94]

Utility Sites and Corridors

Management Area Category 4

Includes Management Area 4W

Goal [FP IV-149>

Provide effective and economical utilities with the least impact on the various natural resources involved.

Description of Lands Where This MAC is Applied

Existing sites and corridors for such purposes as communication, signal relay, canals, penstocks, pipelines, and power transmission lines. (See page 5-10, Developments.) All utility sites and corridors are not shown on the Amendment Map.

Desired Future Condition

Signs of human activities are frequently dominant. Buildings, antennas, pipelines, high voltage powerlines, and similar structures will usually be visible. The vegetation is mostly ground cover in the form of small conifers and hardwood brush. Vegetation partially screens smaller sites from distant views and provides edge habitat for wildlife. Recreational opportunities are frequently available for operating off-road vehicles, viewing distant scenery, and gathering miscellaneous forest products.

Standards and Guidelines

Recreation

Planning

1. Opportunities to harvest Christmas trees, view wildlife, operate off-road vehicles, hunt, cross-country ski, and pursue other recreational activities may be provided.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these Management Areas are:

Management Prescription	VQO	ROS
4W	Modification	Rural

3. Permittees will be required to sign or otherwise adequately mark items or areas which may be safety hazards to the public.

Use Administration

Off-road vehicles may be permitted on designated trails or areas.

Wildlife And Fish

Habitat Improvements

Wildlife habitat improvements such as forage seeding using native species and other vegetative manipulations should be considered.

Lands

Special Use Management

1. Adherence to Federal standards for the use of chemicals to control vegetation will be required in permits.
2. Additional facility needs should utilize existing sites and corridors whenever possible.
3. When a site or corridor is no longer in use, it should be rehabilitated.

Facilities

Road Construction and Operation

Roads constructed to develop, service, or maintain facilities within this management area should not be maintained or managed for public use. Public use, however, may be permitted when conflicts with other resources are minor. Closures using the Prohibit traffic scheme should be applied if protection of facilities is required.

Roads passing through a corridor for other purposes should be managed commensurate with the adjacent management areas.

Protection

Fire Suppression

Fire Suppression Strategy, Control, should be used.

Fire Suppression Priority 1, protect life and property, will be used and all fuels should be disposed or removed.

Pest Suppression and Prevention

The protection of adjacent resource values should be emphasized in pest suppression and prevention activities. <FP IV-150]

Visual Emphasis

Management Area Category V

Includes Management Area VL [FP -IV-98>

Goal

Provide a visually natural or near-natural landscape as viewed from the designated travel route or use area.

Description of Lands Where This MAC is Applied

Scenic viewsheds which are sensitive because they are viewed by many people from major roads, trails, and recreation sites, including lakes and streams.

Desired Future Condition

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 are common. Viewing scenery, hiking, and camping occur, and access to other recreational facilities is provided.

Standards and Guidelines

The following direction applies to all management areas in MAC V, unless indicated otherwise.

Recreation

Planning and Inventory

1. Viewing opportunities may be enhanced by opening views to such features as distant peaks, unique rock forms, and unusual vegetation.
2. The Visual Quality Objectives (viewed from the designated travel route or site) and Recreation Opportunity Spectrum class assigned to these Management Areas are:

Management Prescription	VQO	ROS
VL	Retention	Roaded Natural

Facility and Site Reconstruction and Construction

1. Parking areas should be screened from the designated travel route or recreation site except where visibility might deter vandalism.
2. Industrial camps should not be allowed within the foreground of the designated route or site.

Use Administration

Off-road vehicles should be limited to specified trails.

Range

Structural Improvement and Maintenance

Structures such as loading ramps, stock tanks, fences, and holding pens, should be located away from the immediate foreground.

Timber

Genetic Forest Tree Improvement Program

Genetic improvement activities should be limited to select trees within the immediate foreground of the designated route or sites. Select trees should be inconspicuously marked. Beyond the immediate foreground, genetic activities should meet the assigned Visual Quality Objectives as viewed from the designated route or sites.

Minerals And Geology

Development Proposals and Administration

1. Common mineral material sources should not be developed within the foreground of the designated travel route or recreation site. Visible sources existing in these areas should be identified and programmed for rehabilitation.
2. Within the foreground of the designated travel route or recreation site and to the extent reasonable and operationally feasible, surface mining and geothermal activities should not be visible unless there is no practicable alternative. Where visible, mitigation measures should be applied

Lands

Landownership Planning

Lands should be placed in Ownership Category II, Retain or Acquire.

Facilities

Transportation Planning

1. In planning and designing the designated travel route, location of the route parking areas, viewpoints, etc. should be identified and analyzed with the visual resource in mind. Preference should be given to blending the road into the landscape rather than emphasizing speed and efficiency.
2. Material stockpiles and other facilities should not be visible in the foreground from the designated travel route.

Road Operation

Dust abatement should be considered on the designated travel route.

Vegetation adjacent to the designated travel route or recreation site should be controlled in a visually inconspicuous manner, primarily by hand or machine methods. Any use of chemicals should be timed to avoid vegetative brownout (e.g., a dormant spray used in the fall).

Local roads should be managed using the Discourage, Eliminate, or Prohibit traffic management schemes. Roads providing access to a specific recreation destination may be managed to allow passenger car use and should be maintained at a level commensurate with the recreation opportunity.

Protection

Fire Management

Fire Hazard Reduction should apply. Residues from thinning or harvesting activities remaining in the immediate foregrounds of areas seen from the designated travel route or recreation site should be left in the following condition:

1. Less than two feet above the ground.
2. Screened by shrubs, grasses, or other understory vegetation.
3. Sparsely distributed and behind large diameter, dead material as opposed to tangles of small limbs. <FP -IV-100]

Wild and Scenic Rivers

Management Area Categories 8, N, 6

Includes Management Areas 8D, NA, and 6L [FP -IV-108-]

Goal

Protect the Wild, Scenic, or Recreational River characteristics pending possible addition to the National Wild and Scenic Rivers System.

Description of Lands Where This MAC is Applied

Lands within 1/4 mile of designated rivers within the Forest boundary appearing to be both eligible and suitable for addition to the National Wild and Scenic Rivers System. Also included are those eligible river corridors for which suitability has not yet been determined. Suitability for rivers has not been determined.

Desired Future Condition

Wild Rivers - 8D

Wild Rivers are generally inaccessible by road, but can be reached by trail or water. Vegetation is varied in size, species, and age, and is predominantly the product of natural succession. Vegetation categories may vary from natural openings through stands of mature and old-growth timber. Along Wild Rivers, the opportunity to interact with a natural environment, away from the sights and sounds of other people, is available. A high degree of challenge is offered.

Scenic Rivers - NA

The rivers are accessed in some places by road and in some instances a major travel route parallels the river. Vegetation is varied in size, species, and age, and is predominantly the product of natural succession. Vegetation may vary from natural openings through stands of mature and old-growth timber. Some structures may be visible, but the shorelines are largely undeveloped. A challenging interaction with the natural environment is available.

Recreational Rivers - 6L

Development is acceptable. Parallel roads or railroads on one or both banks, as well as bridge crossings and other river access points, may occur. Vegetation is varied in size, species, and age, and is predominantly the product of natural succession. Vegetation may vary from natural openings through stands of mature and old-growth timber.

Standards and Guidelines

The following direction applies to all Management Areas in MAC 8, N, and 6, unless otherwise indicated. Because this MAC follows the stream corridor, much of the MAC is subject to standards and guidelines of the Aquatic Conservation Strategy. Additional management direction is described in the Wild and Scenic Rivers Act and guidelines for its implementation.

Recreation

Planning and Inventory

- 1a. Those rivers determined to be suitable and their immediate environment are recommended for designation under the Wild and Scenic Rivers Act of 1968.

Rivers for which suitability has not been determined will require additional analysis. If the analysis finds one or more rivers or segments to be suitable, those will also be recommended for designation under the Act. Until the analysis is completed, no activities should be permitted that would alter the eligibility or potential classification of the stream.

- 1b. Many of the Wild and Scenic River corridors include lands which are actually extensions of other management areas outside of, but adjacent to, the river corridor. Also included are lands having attributes needed to complete other prescriptions such as Special Interest Areas, Developed Recreation Sites, and Visual Emphasis Viewsheds. Where the management direction for these lands is more restrictive than that for the Wild, Scenic, or Recreational River corridor in which they occur, the more restrictive direction applies. These “included” management area prescriptions are considered to be a part of these recommendations for designation under the Act.
2. Cultural resource surveys for identification of significant resources are encouraged. Cultural resources and other features of interest which are not jeopardized by public exposure may be interpreted.

The Visual Quality Objectives and Recreation Opportunity Spectrum Classes assigned to these Management Areas are:

Management Prescription	VQO	ROS
Wild River 8D	Preservation	Semi-primitive Non-Motorized
Scenic River NA	Retention	Roaded Natural
Recreational River 6L	Retention	Roaded Natural

Facility and Site Reconstruction and Construction

Site design and facility selection should be compatible with the assigned ROS or WROS Level:

Wild River

Along Wild Rivers, recreation sites should be limited to simple comfort and convenience facilities located outside Riparian Reserves.

Scenic River

Subject to meeting the goals of the Aquatic Conservation Strategy, recreation sites may be established in close proximity to the River, but should be widely spaced, blend with the natural landscape, and be screened from the river.

Recreation River

Subject to meeting the goals of the Aquatic Conservation Strategy, recreation facilities may be established in close proximity to the river, although extensive development is not required. Site development may still be kept to a minimum with visitor services provided outside the river area.

Facility and Site Management and Use Administration

1. Recreational off-road vehicles are not permitted in Wild River corridors; they may be permitted in Scenic and Recreation River corridors on designated trails.
2. Guide service and other recreation concessions in keeping with the assigned ROS class may be permitted.

Wildlife

Structural Habitat Improvement and Maintenance

Structural habitat improvements should utilize native or natural-appearing materials.

Timber

Timber Sale Preparation and Harvest Administration

1. Firewood cutting for home or commercial use may be permitted where timber has been harvested in Scenic and Recreation Rivers. Gathering firewood for campfire use may be permitted.
2. To minimize visual disturbance, log and debris removal within the foreground of the river should be done by aerial or cable systems, with low ground pressure equipment, or hand piling.
3. Logs and debris should be yarded away from foreground areas as seen from the river, use areas, and major travel routes.

Genetic Forest Tree Improvement Program

Genetic improvement activities in Wild Rivers and Scenic Rivers are limited to select trees.

Minerals and Geology

Inventory and Evaluation and Processing of Site Specific Development Proposals

1. Common mineral material sources should not be developed.
2. A no-surface occupancy stipulation will be encouraged in mineral leases.
3. Prior to, and in some instances after designation under the 1968 Act, rivers are generally subject to mining claim location and mineral exploration. Approved plans will include mitigation and reclamation measures to minimize surface disturbance, sedimentation and visual impairment.
4. New claims and leases are prohibited in Congressionally designated Wild River corridors.

Lands

Special Use Management

1. Utility corridors, dams, diversions and hydroelectric power facilities will be prohibited to the extent of Forest Service authority. Existing facilities may be maintained.
2. Locating new utility lines within Scenic River corridors should be discouraged. Where no reasonable alternative exists, routes should cross, not parallel, the river or be limited to the existing right-of-way.
3. Federal licenses or permits for water resource projects, including dams and transmission lines, will not be recommended unless the project will not have a direct and adverse affect on the Wild or Scenic River character.

Landownership

National Forest lands should be placed in Ownership Category II, Retain.

Other ownerships should be in Category V, Additional Study.

Wild and Scenic Rivers Study

Encourage the participation and cooperation of public and private landholders, particularly in river corridors including other ownerships.

Facilities

Transportation Planning and Inventory

1. Roads should not be permitted in Wild River corridors.

2. In Scenic River corridors, roads may occasionally cross or come near the river, but they should be infrequent and inconspicuous.
3. Roads are generally permitted in Recreation River corridors.
4. Roads and other facilities are also limited due to the “included” prescriptions described under Standards and Guidelines, Recreation, No. 1(b).

Road Operation

Roads accessing developed recreation sites within Scenic and Recreation River corridors should be managed to accommodate passenger car traffic.

Local roads not required for a specific recreational objective should be closed using the Eliminate or Prohibit traffic management schemes or decommissioned.

Major through roads should be managed using the Encourage traffic management scheme.

Protection

Fire Management

Heavy equipment should not be used in the foreground as seen from the river.

Fire Suppression

1. The Fire Suppression Strategy, Control, should be used.
2. In Wild River Corridors use suppression techniques which result in the least possible evidence of human activity.

Pest Suppression and Prevention

Strategies which protect the Wild, Scenic, or Recreation character of these areas and avoid the degradation of water quality should be used to suppress the outbreak of pests. <FP -IV-112]

Wildlife Special

Management Area Category I

Includes Management Area IL [FP IV-126>

Goal

Sustain or enhance a limited and significant habitat to support dependent wildlife.

Description of Lands Where This MAC is Applied

Distinctive habitats such as marshes, caves, and mineral licks. These habitats are generally fragile, limited in size, uncommon, and important to numerous species of wildlife. They require a separate MAC because they do not clearly meet the criteria for other wildlife MACs.

Desired Future Condition

Management activities are not evident in most of the area; there are few or no roads, and signs of other activities are minimal. Vegetation is generally the product of natural succession, although some enhancement of habitat may have occurred; e.g., planting of browse species. Vegetation ranges from natural openings through stands of mature and old-growth timber. Recreational activities which entail high densities of users will not be encouraged. Some hunting and fishing, however, may occur. These areas may be of particular interest to naturalists.

Standards and Guidelines

The following direction applies to all management areas in MAC I, unless otherwise indicated.

Recreation

Planning and Inventory

1. Opportunities for viewing, photographing, interpreting wildlife, cultural, biological and other features, should be evaluated and may be permitted when it is determined they would not result in harassment to wildlife. Generally, development or management which concentrates recreational activity should not be permitted.
2. The Visual Quality Objectives and Recreation Opportunity Spectrum classes applied to these Management Areas are:

Management Prescription	VQO	ROS
IL	Retention	Roaded Natural

Facility and Site Trail Reconstruction and Construction

Other than trails, recreation facilities should not be built.

Use Administration

Recreational off-road vehicles, including oversnow machines, should not be permitted.

Range

Administration

Grazing will not be permitted.

Timber

Firewood Cutting

Firewood cutting, except for campfire use, should not be permitted.

Genetic Forest Tree Improvement Program

Genetic improvement activities should be limited to select trees.

Minerals And Geology

Development Proposals

1. Common mineral material sources should not be inventoried or developed.
2. Where reasonable and practical, exploration should be conducted in a manner which does not adversely affect wildlife. It should take into account wildlife cycles such as migration and calving.
3. Plans for exploration or development will minimize disturbance to wildlife. Transportation and other facilities should be designed to minimum standards and be obliterated and rehabilitated when the project terminates.

Lands

FERC License and Permits

Recommendations for exploration and project permits should minimize disturbance to wildlife and habitat.

Withdrawals, Modifications and Revocations

Subject to a determination of values, including mineral values, some or all of the area should be withdrawn from mineral entry if required to protect the habitat.

Landownership Planning

All lands will be placed in Ownership Category II, Retain or Acquire.

Facilities

Transportation Planning

New roads and other facility construction should not be permitted. Existing roads should be decommissioned if not required for through traffic.

Local roads that remain open should not be managed for public travel in passenger cars. Seasonal closures of roads should be applied where needed to protect wildlife values.

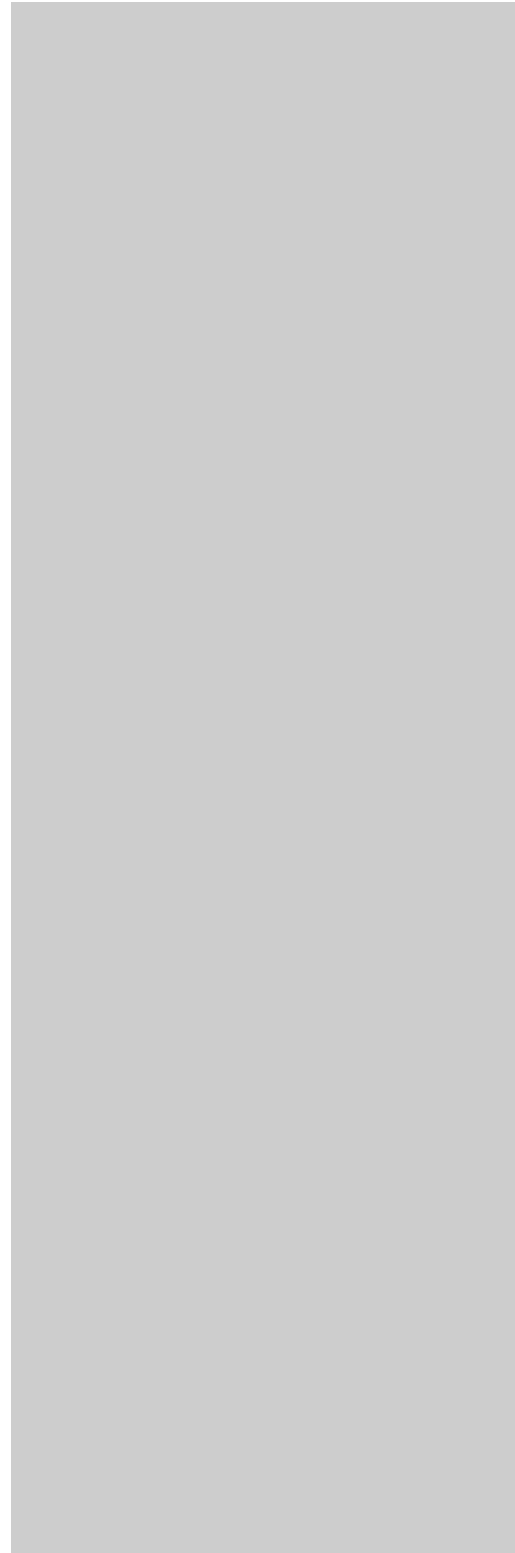
Protection

Pest Suppression and Prevention

Pest suppression and prevention should be undertaken when outbreaks threaten wildlife objectives within the area and when adjacent areas are seriously threatened. Biological methods should be favored and suppression efforts should concentrate on the perimeter. <FP IV-128]

Chapter 6

Matrix



Chapter 6

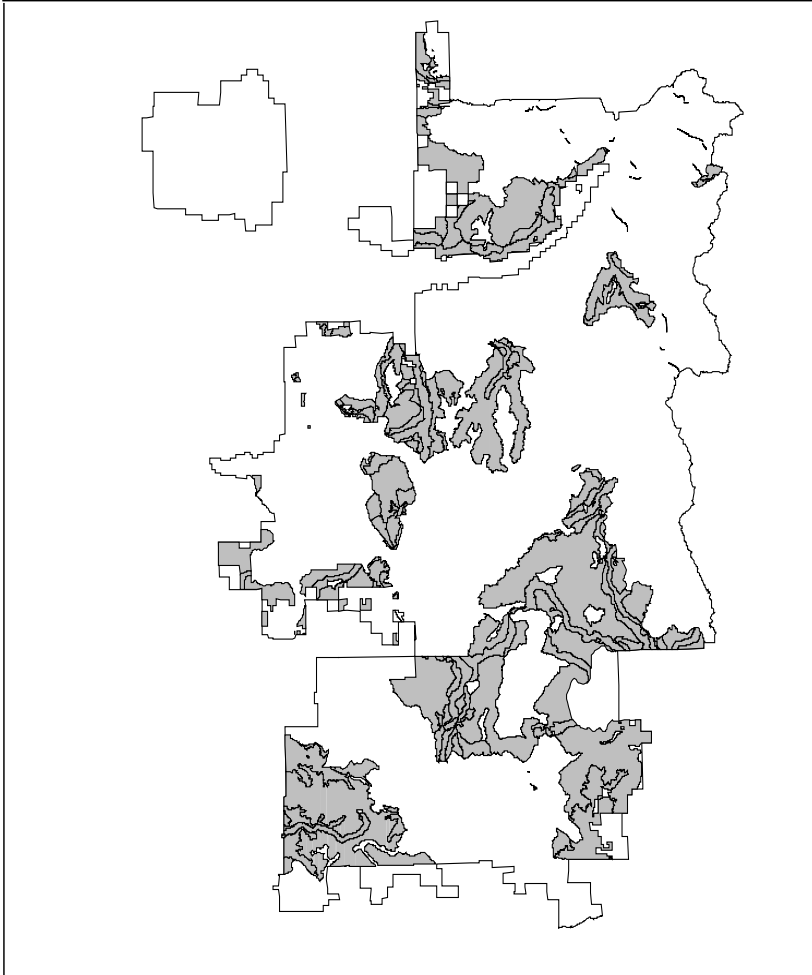
Matrix

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Matrix Map
Within the Gifford Pinchot National Forest



Chapter 6

Matrix [ROD C-39>

Key and non-Key Watersheds are specified for all areas and, therefore, overlay all other land allocations. The standards and guidelines for Key Watersheds, as well as the standards and guidelines for Matrix, listed below, apply.

See “Hierarchy of Standards and Guidelines” in Chapter 1, and “Key Watersheds” in Chapter 2.

Description

The Matrix consists of those federal lands outside the six categories of designated areas (Congressionally Reserved Areas, Late-Successional Reserves, Adaptive Management Areas, Managed Late-Successional Areas, Administratively Withdrawn Areas, and Riparian Reserves). Most scheduled timber harvest not taking place in Adaptive Management Areas will occur in the Matrix. The Matrix includes nonforested areas and forested areas that are technically unsuitable for timber production.

Standards and guidelines for unmapped Late-Successional Reserves and Managed Late-Successional Areas prohibit or limit activities that otherwise appear to be within the Matrix. Unmapped Late-Successional Reserves are identified around occupied marbled murrelet sites, and for 100 acres around known spotted owl activity centers. Unmapped Late-Successional Reserves and Managed Late-Successional Areas are identified for certain protection buffers. See the Late-Successional Reserve and Managed Late-Successional Area descriptions in Chapter 5 for specific information.

Standards and Guidelines

See also Chapter 2, “Forest Wide Management Direction.”

Provide specified amounts of coarse woody debris in Matrix management.

A renewable supply of large down logs is critical for maintaining populations of fungi, arthropods, bryophytes and various other organisms that use this habitat structure. Provision of coarse woody debris is also a key standard and guideline for American marten, fisher, two amphibians, and two species of vascular plants. The objective is to provide coarse woody debris well distributed across the landscape in a manner which meets the needs of species and provides for ecological functions. Standards and guidelines should provide for appropriate coarse woody debris quantity, quality (such as species, decay stage and size) and distribution. Models for computing expected numbers and of logs should be developed for groups of plant associations and stand types which can be used as a base line for managers to develop prescriptions for landscape management. An important factor is to provide the coarse woody debris within a forest patch so that the

appropriate microclimate for various organisms that use this substrate is available. Coarse woody debris that is already on the ground needs to be retained and protected from disturbance to the greatest extent possible during logging and other land management activities that might destroy the integrity of the substrate. Scattered green trees will provide a future supply of down woody material as the stand regenerates and are important in providing for the distribution of this substrate throughout the managed landscape.

Specific measures for coarse woody debris follow. These measures are intended to be applied in Matrix forests. The intent of the measures must also be met in Adaptive Management Areas, but specific standards and guidelines are not prescribed for those areas.

1. Manage to provide a renewable supply of large down logs well distributed across the Matrix landscape in a manner that meets the needs of species and provides for ecological functions. Develop models for groups of plant associations and stand types that can be used as a base line for developing prescriptions.
2. Until standards are developed as described above, the following guidelines apply in areas of regeneration harvests for western Washington. Leave an average of 240 linear feet of logs per acre generally evenly distributed and greater than or equal to 20 inches in diameter on the large end to a 6 inch top. Logs less than 20 feet in length cannot be credited toward this total. The area to be considered for downed log requirements does not include riparian reserves or reserve tree patches associated with the harvest unit. In Washington, east of the Cascades, a minimum of 120 linear feet of logs per acre greater than or equal to 16 inches in diameter and 16 feet long should be retained. Needs for exceeding the 240 or 120 feet requirement may be established through an interdisciplinary analysis. Only decay class 1 and 2 logs can be counted towards these totals. Down logs should reflect the species mix of the original stand. In areas of partial harvest, the same basic guidelines should be applied, but they should be modified to reflect the timing of stand development cycles where partial harvesting is practiced.
3. Coarse woody debris contributing to the 240 or 120 feet requirement and already on the ground should be retained and protected to the greatest extent possible from disturbance during treatment (e.g., slash burning and yarding) which might otherwise destroy the integrity of the substrate.
4. Down logs should be left within forest patches that are retained under green-tree retention guidelines in order to provide the microclimate that is appropriate for various organisms that use this substrate.
5. As with all standards and guidelines, these guidelines are meant to provide initial guidance, but further refinement will be required for specific areas. This can be accomplished through planning based on watershed and the adaptive management process.

Emphasize green-tree and snag retention in Matrix management.

For many species, benefits will be greatest if trees are retained in patches rather than singly. Because very small patches do not provide suitable microclimates for many of these organisms, patches should generally be larger than 2.5 acres.

Although many species would benefit from retention of patches, others may be favored by retention of single trees. Within the minimum constraints described in item 2 below, the relative proportion of patches vs. single trees retained must reflect local knowledge of individual species needs.

Retained patches should be protected for multiple rotations to provide support for those organisms that require very old forests.

Specific measures for green-tree and snag retention follow. These measures are intended to be applied throughout the Matrix forests. Their intent should be met in Adaptive Management Areas, but standards and guidelines are not prescribed for those areas.

1. Retain at least 15 percent of the area associated with each cutting unit (stand). Only Matrix lands count toward the 15 percent.

This limitation does not apply to intermediate harvests (thinnings) in even-age young stands because leaving untreated portions of young stands would retard stand development and be detrimental to the objective of creating late-successional patches.

2. As a general guide, 70 percent of the total area to be retained should be aggregates of moderate to larger size (.5 to 2.5 acres) with the remainder as dispersed structures (individual trees, and possible including smaller clumps less than .5 acres) Larger aggregates may be particularly important where adjacent areas have little late-successional habitat. To the extent possible, patches and dispersed retention should include the largest, oldest live trees, decadent or leaning trees, and hard snags occurring in the unit. Patches should be retained indefinitely.
3. As a minimum, snags are to be retained within the harvest unit at levels sufficient to support species of cavity-nesting birds at 40 percent of potential population levels based on published guidelines and models. The objective is to meet the 40 percent minimum standard throughout the Matrix, with per-acre requirements met on average areas no larger than 40 acres. To the extent possible, snag management within harvest units should occur within the areas of green-tree retention. The needs of bats should also be considered in these standards and guidelines as those needs become better known. Snag recruitment trees left to meet an identified, near-term (less than three decades) snag deficit do not count toward green-tree retention requirements. <ROD C-42]

Cavity Excavators [FP IV-51>

1. Dead and defective tree habitat will be maintained for primary cavity excavators after timber harvesting or other vegetative manipulation. Such habitat includes snags, standing defective trees, and down trees or logs.
2. The cavity excavators for which habitat will be maintained include the following species:

Species	Habitat Capability
Red-breasted sapsucker	40%
Williamson’s sapsucker	40%
Downy woodpecker	40%
Hairy woodpecker	40%
Northern flicker	40%
Red-breasted nuthatch.	40%
Pileated woodpecker	40%
Black-backed woodpecker	100
Three-toed woodpecker	100%
White-headed woodpecker	100%

3. Snags, including defective trees, will be at least 17 inches DBH, and should be at least 40 feet in height. Snags/wildlife trees should be plainly marked or bounded to permit adequate protection during logging and slash disposal. Considering the potential for windthrow and other factors, at least some of the snags should be scattered over the harvest area to provide representation of varying elevations and aspects.

See snag requirements under Protection Buffers, page 6-7.

4. Because of safety considerations during logging and the fact that snags will require replacement as they fall down over the rotation period, some or all of the “snags” to be retained will be in the form of sound, green wildlife trees. After timber removal and throughout the rotation, these trees will be converted to snags as needed to maintain the required level of dead/defective tree habitat. Wildlife trees to be retained should usually be 17 inches DBH or larger.
5. Management of wildlife trees should emphasize retaining the needed number of trees, rather than simply leaving extra trees or larger trees. For example, tops may be blown out of scattered green trees to make them less susceptible to windthrow, assuring that they remain on site for a longer period of time. Table 6-1 shows the minimum number of wildlife trees per acre to be maintained after regeneration harvest.

6. The minimum level of snags, wildlife trees, and down logs will be maintained and protected from harvest and fuel treatment operations, firewood cutting, and future salvage activities.
7. The amount of dead/defective tree habitat, including wildlife trees, to be maintained will be determined for each regeneration timber harvest area and the subsequent stand. All determinations will be done on a case-by-case, interdisciplinary basis.
8. The following silvicultural factors should be considered in the selection and management of wildlife trees. Green wildlife trees are retained under the standards and guidelines as a source of future snags in and adjacent to timber harvest areas:
 - a) Wildlife trees with green crowns (which are not blown out) have an opportunity to disseminate seeds which land in mineral soil exposed by harvest/site prep activities. These seeds have a high probability of successfully germinating and growing on the site prior to planting operation. They would likely be a component of the future stand occupying the site.
 - b) From a tree improvement standpoint, green trees selected as wildlife trees should have straight boles (no crook or sinuosity) and should not be forked (particularly should not exhibit multiple forking). Bole straightness and forking are traits which have a high probability of being inherited by seedlings from the parent trees. Attention to the characteristics of the parental generation will enhance the wood quality of succeeding generations. Lack of attention to inherited traits will decrease long-term productivity of future timber management.
 - c) Tree resistance to diseases that are associated with old age, such as heart rot, stem rot, etc., is probably not hereditary. Root rots tend to be site-endemic, and insect attack is usually secondary to disease overstocking, so "old culls" are not necessarily dysgenic. Since root rot, however, spreads longer and farther from infected live trees than from stumps, trees with root rot should not be left as wildlife trees. Leaving windfirm cull trees *without* root rot is acceptable if the stems are straight and unforked. Due to the ability of overstory dwarf mistletoe to severely infect understory seedlings and saplings, no mistletoe-infected wildlife trees should be left in regeneration harvest units. If all potential wildlife trees are mistletoe-infected, a different species should be planted. <FP IV-52]

Table 6-1 Numbers of wildlife trees to be retained after harvest for snag creation.*

Working Group	Snags >17" DBH	Green Trees >17" DBH	Total per acre
All	2.6/ac.	0.8/ac	3.4
<p>*These are in addition to the 15 percent requirement for biological legacy.</p> <ul style="list-style-type: none"> • Green trees are in addition to snags. • If snags are not available or safe to leave, substitute green trees for conversion • Apply only to treated portion of the harvest unit; not riparian reserves or retention tree patches. • At least one snag per harvest unit must be a hard snag greater than 25" DBH. 			

Modify site treatment practices, particularly the use of fire and pesticides, and modify harvest methods to minimize soil and litter disturbance. [ROD C-44>

Many species of soil and litter-dwelling organisms, such as fungi and arthropods, are sensitive to soil and litter disturbance. Site treatments should be prescribed which will minimize intensive burning, unless appropriate for certain specific habitats, communities or stand conditions. Prescribed fires should be planned to minimize the consumption of litter and coarse woody debris. Other aspects to this standard and guideline include minimizing soil and litter disturbance that may occur as a result of yarding and operation of heavy equipment, and reducing the intensity and frequency of site treatments. Soil compaction, and removal or disturbance of humus layers and coarse woody debris, may impact populations of fungi and arthropods.

Provide for retention of old-growth fragments in watersheds where little remains.

The distribution of old-growth stands throughout the landscape is an important component of ecosystem diversity, and plays a significant role in providing for biological and structural diversity across the landscape. Isolated remnant old-growth patches are ecologically significant in functioning as refugia for a host of old-growth associated species, particularly those with limited dispersal capabilities that are not able to migrate across large landscapes of younger stands. These include, but are not limited to, many species of fungi, lichens, bryophytes, arthropods, and vascular plants, and will likely include vertebrate species such as small mammals and amphibians, and various bird species. Isolated patches will function as refugia where old-growth associated species are able to persist until conditions become suitable for their dispersal into adjacent stands. Loss of these old-growth stands may result in local extirpation of an array of species. It is

prudent to retain what little remains of this age class within landscape areas where it is currently very limited. This will ensure future options for management and enhancement of the diversity within adjacent developing stands

Landscape areas where little late-successional forest persists should be managed to retain late-successional patches. This standard and guideline will be applied in fifth field watersheds (20 to 200 square miles) in which federal forest lands are currently comprised of 15 percent or less late-successional forest. This assessment should include all allocations in the watershed. Within such an area, all remaining late-successional stands should be protected. Protection of these stands could be modified in the future, when other portions of the watershed have recovered to the point where they could replace the ecological roles of these stands.

Known Northern Spotted Owl Activity Centers

Standards and guidelines in the Late-Successional Reserve portion of these standards and guidelines specify the protection of 100-acres of owl habitat around all known owl activity centers. Management of stands in the Matrix surrounding these areas will be designed to reduce risks of natural disturbance.

Protection Buffers

These standards and guidelines incorporated from the Scientific Analysis Team Report will result in protection for specific species. The following rare and locally endemic species are likely to be assured viability if they occur within designated areas. Where these species occur in the Matrix, however, the following standards and guidelines will be applied. For the birds listed below, activities that are implemented in 1994 should use this information to the greatest degree possible. Activities implemented in 1995 and later must include these provisions. For the Lynx, implementation should follow the schedule described for Survey and Manage Component 2.

Birds:

White-headed Woodpecker, Black-backed Woodpecker, Pygmy Nuthatch, and Flammulated Owl - These species will not be sufficiently aided by application of mitigation measures for riparian habitat protection or for marbled murrelets alone. They all occur on the periphery of the range of the northern spotted owl on the east slope of the Cascade Range in Washington or Oregon. The viability of these species within the range of the northern spotted owl was rated as a medium risk on National Forests, although they each are much more widely distributed elsewhere.

Apply the following mitigation standards and guidelines to ensure that the distribution and numbers these species do not severely decline within the range of the northern spotted owl. These guidelines apply to the forest Matrix outside designated habitat for the northern spotted owl and Riparian Reserves. Maintain adequate numbers of large snags and green-tree replacements for future snags

within the four species' ranges in appropriate forest types. Where feasible, green-tree replacements for future snags can be left in groups to reduce blowdown. Specifically, the Scientific Analysis Team (SAT) recommends that no snags over 20 inches DBH be marked for cutting. The Scientific Analysis Team recognizes, however, that safety considerations may prevent always retaining all snags. Use standardized definitions of hazard trees is required. For the longer term, provide for sufficient numbers of green trees to provide for the full (100 percent) population potential of each species.

As depicted by Neitro in *Management of Wildlife and Fish Habitats in Forest of Western Oregon and Washington* (1985). The 100 percent population potential for white-headed woodpeckers is 0.6 conifer snags per acre in forest habitats. These snags must be at least 15 inches DBH (or largest available) and in soft decay stages, and must be provided in stands of ponderosa pine and mixed pine/Douglas-fir.

The 100 percent population potential for black-backed woodpeckers is 0.12 conifer snags per acre in forest habitats. These snags must be at least 17 inches DBH (or largest available if 17 inch DBH snags are not available) and in hard decay stages, and must be provided in stands of mixed conifer and lodgepole pine in higher elevations of the Cascade Range. Provision of snags for other cavity-nesting species, including primary cavity-nesters, must be added to the requirements for these woodpecker species. Site-specific analysis, and application of a snag recruitment model (specifically, the Forest Service's Snag Recruitment Simulator) taking into account tree species, diameters, falling rates, and decay rates, will be required to determine appropriate tree and snag species mixes and densities. ***If snag requirements cannot be met, then harvest must not take place.***

As identified by the expert panel, black-backed woodpeckers also require beetle infested trees for foraging; some such trees should be provided in appropriate habitat and sanitation harvest of all such trees would be detrimental to the species. More information is needed on habitat use, seasonal occurrence, and use of forest age classes and burns for the black-backed woodpecker.

Pygmy nuthatches use habitat very similar to those of white-headed woodpeckers. Pygmy nuthatches require large trees, typically ponderosa pine within the range of the northern spotted owl, for roosting. Provision of snags is assumed to provide for the needs of pygmy nuthatch, as no species-specific guidelines for the species have been developed. Additional information on ecology of pygmy nuthatch within the range of the northern spotted owl is needed to develop more precise standards and guidelines.

Flammulated owls are secondary cavity-nesters and use cavities, in snags and live trees, created by woodpeckers or, less often, that occur naturally. It is assumed that standards and guidelines for snags and green-tree replacements for woodpeckers and other primary cavity-nesting species, as provided by existing National Forest Land Resource Management Plans and for the woodpeckers in this species group, would provide for flammulated owls.

NOTE: The snag recommendations above are based on the model presented by Neitro and others (1985). In that model, snag requirements for individual species were treated as additive in developing snag requirements for the overall community of cavity excavators. As noted above, “provision of snags for other cavity-nesting species, including primary cavity nesters, must be added to the requirements for these two woodpecker species” (black-backed and white headed woodpeckers).

Snag requirements are developed by the National Forests for specific forest cover types, and these may be further broken down by geographic location. The intent is to tailor the requirements to those species that are actually expected to occur in an area. To determine if the protection buffer requirements should be added to existing Forest Plan requirements, the basis for those existing requirements should be analyzed to determine if they include the species identified by SAT at the specified level of percent population potential. If they do not, then the SAT requirements must be added to the existing Forest Plan requirements.

Mammals:

Lynx - Lynx are rare within the range of the northern spotted owl. On the Gifford Pinchot National Forest, they are found primarily along the crest of the Cascade from Mt. Adams north through the William O. Douglas Wilderness. The lynx is currently listed by the Fish and Wildlife Service as a Category 2 candidate (a species for which additional information is needed to propose listing as threatened or endangered). A petition was filed to list the lynx as endangered within the northern Cascades of Washington, based on small population size, population isolation, and lack of adequate prey base (snowshoe hare). The Fish and Wildlife Service, however, ruled that available information does not warrant listing the lynx in Washington.

Three primary habitat components for lynx are (1) foraging habitat (15 to 35 year old lodgepole pine) to support snowshoe hare and provide hunting cover, (2) denning sites (patches of greater than 200-year old spruce and fir, generally less than 5 acres), and (3) dispersal/travel cover (variable in vegetation composition and structure). The major limiting factor is abundance of snowshoe hare, which in turn is limited by availability of winter habitat (primarily early-successional lodgepole pine with trees at least six feet tall). Past excessive trapping of lynx and incidental mortality of lynx from hunting of other species have depressed populations and may have been detrimental to local lynx populations in Washington. Roads provide access to hunters and trappers and thus road density may be related to lynx mortality.

The reserves and other designated areas in these standards and guidelines will provide denning habitat within protected forest stands in juxtaposition with early-successional vegetation in the forest Matrix. Connectivity between many of the denning patches will be provided by the network of buffers along streams under the Riparian Reserves.

In addition, the Scientific Analysis Team proposed development of site-specific timber harvest, roading, and fire management plans in known lynx range. These plans should be developed in consultation with state wildlife agencies and should address: (1) minimizing road construction, closing unused roads, and maintaining roads to the minimum standard possible; (2) using prescribed fire to maintain forage for snowshoe hare in juxtaposition with hunting cover; (3) designating areas as closed to kill trapping of any furbearer to avoid incidental lynx mortality to maintain population refugia for lynx in key areas; (4) planning for kill trapping closure on a wider basis if data indicate a declining lynx population as a result of incidental trapping mortality; and (5) developing and implementing a credible survey and monitoring strategy to determine the distribution of lynx throughout its potential range.

Habitat Management for Bats

These measures apply within Matrix and AMA lands. See page 2-78.

Survey and Manage

These measures apply within all land allocations. See page 2-63.

Recreation Sites

Measures to minimize disturbance to species applies in all land allocations, see page 2-50.

Fire and Fuels Management

For areas in the Matrix that are located in the rural interface, fire management activities should be coordinated with local governments, agencies, and landowners during watershed analysis to identify additional factors which may affect hazard reduction goals. Hazard reduction may become more important in the rural interface and areas adjacent to structures, dwellings or other amenities. <ROD C-48]

Timber [FP IV-56]

Planning and Inventory

1. Except where necessary for other resource values, all stands scheduled for final harvest will have reached at least 95 percent of the Culmination of Mean Annual Increment (see Glossary).
2. A Ten-Year Timber Sale Action Plan for proposed timber sales, based upon the harvest schedule identified in this Forest Plan, should be updated annually.
3. Ordinary salvage, including scattered mortality salvage of dead and dying material, may be permitted as specified for each management area. Such salvage is subject to all applicable standards and guidelines, e.g., if the management area does not permit roads, salvage must be done without the use of mechanized ground equipment within the management area. It is recognized that there is no specific way to define the difference between catastrophic salvage, resulting from from an unusual act of nature, and ordinary salvage, which is a more normal, somewhat predictable occurrence. The determination will depend upon consideration of a number of factors on a case-by-case basis. In

all cases, the land manager must consider the possible effects on wildlife habitat, aesthetics, and other resources before the decision to salvage is made.

4. An area should not be harvested unless seed of the correct species, seed zone, and inventory is available or natural regeneration is prescribed.
5. Utilization standards should be reviewed periodically and adjusted to meet management requirements.
6. Available plant association and management guides should be utilized in planning activities on the ground.

Silvicultural Exam and Prescription

1. The treatment or manipulation of vegetation requires silvicultural examinations and prescriptions. Exceptions to this are removal for safety reasons, rights-of-way clearing, and mineral operations.
2. Both even-aged and uneven-aged silvicultural systems should be considered available when selecting the harvest method to be used on a specific site. The selection criteria are found in Appendix F of the Forest Plan FEIS and summarized beginning with No. 4 below.

The prescribed silvicultural treatment will be based upon the standards and guidelines for the specific management area in which it is applied.

3. There will be no conversion of tree species unless a specific management area requires conversion to meet standards and guidelines. <FP IV-57 [IV-86]>
4. An overstory removal cut should be prescribed when:
 - a) The stand contains a salable quantity of merchantable timber.
 - b) It has at least two distinct canopy levels.
 - c) The highest level does not exceed the minimum stocking level.
 - d) The highest level is composed of mature or cull trees.
 - e) It is determined that the condition of trees in the upper level makes it undesirable to leave them in the stand until the lower level(s) become merchantable.
 - f) The lower levels contain crop trees at or near the recommended stocking level.
5. Commercial thinning should be prescribed when:
 - a) The stand contains enough excess merchantable trees to sell.
 - b) It is stocked to the recommended level with crop trees.
 - c) The growth of crop trees is being inhibited by the density of the stand.
 - d) The characteristics of crop trees (young stand) indicate growth will increase in an acceptable period if thinning occurs.
 - e) The characteristics of crop trees near rotation age indicate that growth can be maintained at an acceptable rate if thinning occurs.
6. A regeneration cut should be prescribed when:
 - a) A stand contains a salable quantity of merchantable timber.
 - b) Its total live tree stocking is:
 - i) At or below minimum stocking level in all tree classes;

- ii) The number of trees exceeds the minimum stocking level, but trees are primarily mature;
 - iii) The stocking level will soon be reduced to below the minimum level by predictable mortality; or
 - iv) There is a stand structure and composition capable of supporting repeated harvest entries.
- c) It has crop tree stocking to recommended level, but stocking in mature and excess trees does not permit expectation of retaining recommended crop tree stocking following the harvest activity.
 - d) The area is able to be reforested within five years.

“Regeneration cut” means even-aged management manipulation of a forest canopy for the purpose of initiating new age classes, typically with the top canopy layer of the stand reduced to a canopy area coverage of 15 to 60 percent, as described in the 2470/1330 memo *Silvicultural Prescription Terminology* from the Forest Supervisor to District Rangers, dated March 3, 1993.

The minimum green-tree and snag retention standard and guideline for Matrix lands (see page 6-3) may be achieved by the “light forest retention” silvicultural system, which is similar to a traditional “seed tree cut, with reserves.” Light forest retention is most appropriately used in the General Forest management area, and in other management areas where it meets the standards and guidelines. It is the preferred prescription where it is consistent with ecosystem management goals. The terminology “clearcut” or “clearcut, with reserves,” is not appropriate for this minimum level of green-tree retention. Heavier canopy retention levels, “medium or heavy forest retention” are most appropriately used in land allocations where standards and guidelines or occasionally local conditions call for a denser canopy. Site-specific silvicultural prescriptions shall be developed in concert with watershed analysis, addressing standards and guidelines and ecological objectives. Objectives and rationale for leaving green trees in addition to the fifteen percent retention standard and guideline must be described in the project NEPA document.

- 7. Precommercial thinning should be prescribed when:
 - a) A stand is stocked to the recommended level with crop trees.
 - b) It does not contain mature trees eligible for removal cutting.
 - c) It is so dense with excess and cull trees that crop trees will not reach merchantable size.
 - d) It has characteristics indicating that thinning will increase growth in an acceptable period of time. This includes a crown ratio greater than 40 percent and an absence of serious mistletoe infection.
- 8. A salvage cut should be prescribed when:
 - a) A stand contains a salable quantity of salvageable dead trees plus other trees which can be identified as certain to die before the stand becomes eligible for another silvicultural prescription.
 - b) It is ineligible for other silvicultural treatment.
 - c) Other treatment is deferred.
- 9. Group selection may be prescribed in mature stands where multiple age classes are evident, standards and guidelines for resources other than timber call for a high percentage

of canopy cover to be retained, and access logistics permit harvest creating 1/2 acre to 2 acre gaps in the stand. The resulting small openings are more correctly termed “gaps” rather than “clearcuts.” The group selection prescription must be supported by analysis applying the selection criteria for choosing even-aged vs. uneven-aged management, as outlined in Appendix F of the Forest Plan FEIS. Individual tree selection prescriptions are discouraged for the Gifford Pinchot National Forest, because of the absence of naturally occurring all-aged stands.

Group selection is further described in the #2470/1330 memo “Silvicultural Prescription Terminology” from the Forest Supervisor to District Rangers, dated March 3, 1993.

10. There should be no treatment when:
 - a) A stand is healthy and will not benefit from stocking level control
 - b) Deferral of treatment is appropriate.
11. Harvest priority should be as follows:
 - a) Poorly stocked, mature stands should receive highest priority for regeneration harvest. Next, in order, should be: poorly stocked immature stands, defective or damaged mature stands, poorly growing immature stands, and mature stands in good condition.
 - b) Lightly stocked, damaged overstory with a certified understory should receive highest priority for overstory removal. Next, in order, should be: lightly stocked stands with healthy overwood and certified understory, lightly stocked overwood with underwood stocking above the minimum, lightly stocked stands with pole understory and an overwood which is not vigorous, and lightly stocked stands with underwood of commercial size and an overwood which is not vigorous.
 - c) The commercial thinning of vigorous, well-stocked young stands should receive highest priority for intermediate cutting. Next, in order, should be: the commercial thinning of slow-growing, well-stocked young stands, the commercial thinning of lightly stocked stands, salvage cutting, and sanitation cuts. The presence or absence of purchasers will also be a factor in the scheduling of intermediate harvest. <FP IV-87]

Reforestation [FP IV-57<

1. Suitable lands planned for harvest will be satisfactorily reforested within five years of final harvest felling. Suitable lands deforested by fire, insects, and other natural causes will be reforested according to the objectives for the management areas. (See page 6-14, Table 6-2 Reforestation Stocking Standards by Working Group.)
2. To reduce susceptibility to disease and insect infestation, species diversification should be fostered. This can be accomplished by such means as planting a variety of species, maintaining genetic diversity in planting stock, and allowing for natural regeneration. <FP IV-57]
3. To reduce the time lag in achieving management and habitat objectives, genetically improved planting stock will be used where available. Genetically improved stock means the seed source of the stock has been genetically or phenotypically selected for desired characteristics, has sufficient levels of genetic diversity and is adapted to the local environment.

Restocking Standards [FP IV-88]

See 36 CFR 219.27(c)(3). Trees harvested to achieve timber production objectives must be cut using Forest management methods which reasonably assure that land can be adequately restocked within five years after final harvest (felling), unless management of other resources dictates a longer regeneration period. Adequate stocking (stocking standards) has been described in treatment class and site for each working group in terms of minimum number of certified stems, spacing, and species composition. Five years after final harvest (felling) means:

- a) Five years after regeneration harvest.
- b) Five years after final overstory removal in shelterwood cutting.
- c) Five years after the seed tree removal in seed tree cutting.
- d) Five years after selection cutting.

The following discussion defines and clarifies the table entries for Table 6-2:

Working Group: A stratification used to separate stands into similar conditions or problems. First defined by District/SO Silviculturists in 1979. Subalpine Fir was added due to reanalysis of land suitability in 1983.

Management Intensity: (Treatment Class) A collection of silvicultural practices, reliable levels of funding, and silvicultural needs. They are as follows:

- a) Ext (Extensive Management): Reforest, and final harvest
- b) PCT (Precommercial Thin.): Reforest, precommercial thin, and final harvest
- c) Low (Low Mgt.): Reforest, commercial thin, and final harvest
- d) Intensive (Intensive Mgt.): Reforest, precommercial thin, commercial thin, and final harvest.

Site: A measure of the timber producing potential of an area.

Number Stems Per Acre:

- a) Minimum: A level below which additional restocking is mandatory.
- b) Desirable: A level above which additional restocking is not mandatory.

Plantations with stocking levels between the minimum and desirable levels will be replanted only after analysis of management direction and economics indicate replanting would be cost effective or provide an ecological benefit. Replanting above minimum levels will not be performed routinely without support of such analyses.

Acceptable Species: A list of tree species that will be used to determine stocking levels.

Table 6-2 Reforestation Stocking Standards by Working Group

Working Group	Management Intensity	Site	Number of Stems Per Acre		Acceptable Species
			Minimum	Desirable	
Western Hemlock	Extensive	All	125	300	Western hemlock, Douglas-fir, western redcedar, Pacific silver fir, western white pine, grand fir, noble fir, western larch, ponderosa pine, black cottonwood, lodgepole pine, Englemann spruce, Pacific yew, big leaf maple
	Intensive	High	125	400	Refer to list for western hemlock extensive treatment class
		Medium	125	350	
		Low	125	300	
Low	High,	125	325	Refer to list for western hemlock extensive treatment class	
	Medium	125	300		
	Low	125	300		
PCT	All	125	300	Refer to list for western hemlock extensive treatment class	
Lodgepole Pine	Extensive	All	125	250	Douglas-fir, grand fir, Pacific silver fir, noble fir, subalpine fir, ponderosa pine, western white pine, lodgepole pine, Alaska yellow-cedar, western redcedar, western larch, Englemann spruce, western hemlock, mountain hemlock, red alder, black cottonwood, bigleaf maple, Pacific yew
Subalpine	Extensive	All	125	125	subalpine fir, lodgepole pine, Pacific silver fir, whitebark pine, Pacific yew

Table 6-2 Reforestation Stocking Standards by Working Group (Continued)

Working Group	Management Intensity	Site	Number of Stems Per Acre		Acceptable Species
			Minimum	Desirable	
Mountain Hemlock	Extensive	All	125	250	mountain hemlock, subalpine fir, Pacific silver fir, noble fir, western white pine, Alaska yellow-cedar, lodgepole pine, Englemann spruce, western hemlock, Douglas-fir, Pacific yew
Red Alder	Extensive	All	200	350	grand fir, red alder, black cottonwood, bigleaf maple, Douglas-fir, western hemlock, western redcedar, Pacific yew
Silver Fir	Extensive	All	125	300	Pacific silver fir, grand fir, subalpine fir, noble fir, Englemann spruce, western white pine, lodgepole pine, Douglas-fir, Alaska yellow-cedar, western redcedar, mountain hemlock, western larch, black cottonwood, Pacific yew
	Intensive	High	125	400	Refer to list for silver fir extensive treatment class
		Medium	125	350	
		Low	125	300	
	PCT	All	125	300	Refer to list for silver fir extensive treatment class
Low	High	125	350	Refer to list for silver fir extensive treatment class	
	Medium	125	300		
	Low	125	300		

Timber Stand Improvement [FP IV-57>

All regenerated stands will be considered for timber stand improvement. Priority should be based upon stand condition, requirements of the silvicultural prescription, and levels of benefits expected. This process should be documented.

Timber Sale Preparation

For the purposes of the silvicultural direction in this section, an *opening* is created by any silvicultural treatment which retains less than 40 percent crown closure.

1. Openings created by even-aged timber harvesting methods will not exceed limits established by the Regional Land Management Guide. Openings in the Douglas-fir type of the coastal Douglas-fir zone (Western Hemlock Working Group on the Gifford Pinchot National Forest) will be no larger than 60 acres and no larger than 40 acres elsewhere. Exceptions are permitted in the following cases:
 - a) When natural catastrophic situations such as fires, windstorms, or insect and disease attacks occur.
 - b) When larger openings will reduce resource damage to soils, water, fish and riparian values. This might include the use of a logging system which would minimize overall resource disturbance.
 - c) When required to prevent the spread of insects or disease.
 - d) When visual resource management requires shaping and blending of openings.
 - e) When existing shelterwood units are larger than the maximum size. In all of the latter instances, openings can be increased by no more than 50 percent without review by the Regional Forester and 60-day public notice. To exceed this 50 percent limit or to increase the standard limits on openings for any other reason, a 60-day public notice and review by the Regional Forester is required.
2. Created openings will be separated by blocks of land that generally are not classed as created openings and that contain one or more logical regeneration harvest units. These areas shall be large enough and contain a stand structure appropriate to meet resource requirements. Resource requirements may include wildlife habitat, watershed, landscape management, and others. Two or more even-aged harvest areas which are contiguous, cornering, or otherwise share a common boundary of any length, will be considered to be a single created opening. Their combined acreage will not exceed the size limits for created openings.
3. The total area of created openings contiguous to 30-acre or larger natural openings should normally not exceed one-third the size of the natural opening and not occupy more than one-third of the natural opening perimeter. Openings should not be created adjacent to any natural openings (regardless size), unless adequate vegetation along the edge can be developed or retained in sufficient density to protect wildlife and visual management objectives. The determination of adequate vegetation will be made by an appropriate interdisciplinary team.

4. For silvicultural purposes, a harvested area will no longer be considered a created opening when trees are 4-1/2 feet in height, meet the minimum reforestation required stocking level standards (Table 6-2), and are certified free to grow.
5. Separate utilization standards are used in determining harvest levels for the first and future decades of the planning horizon. These standards are listed in Table 6-3.
6. Where questions arise concerning timberland suitability, the process in FSM 2400, GP Supplement No. 150, will be used. The process for identifying tentatively suitable forest lands is identified in FSH 2409.13, 21, effective 3/15/93. <FP IV-58J

Field Code Changed

Table 6-3 Utilization Standards Determining Harvest Levels for the First and Future Decades of the Planning Horizon

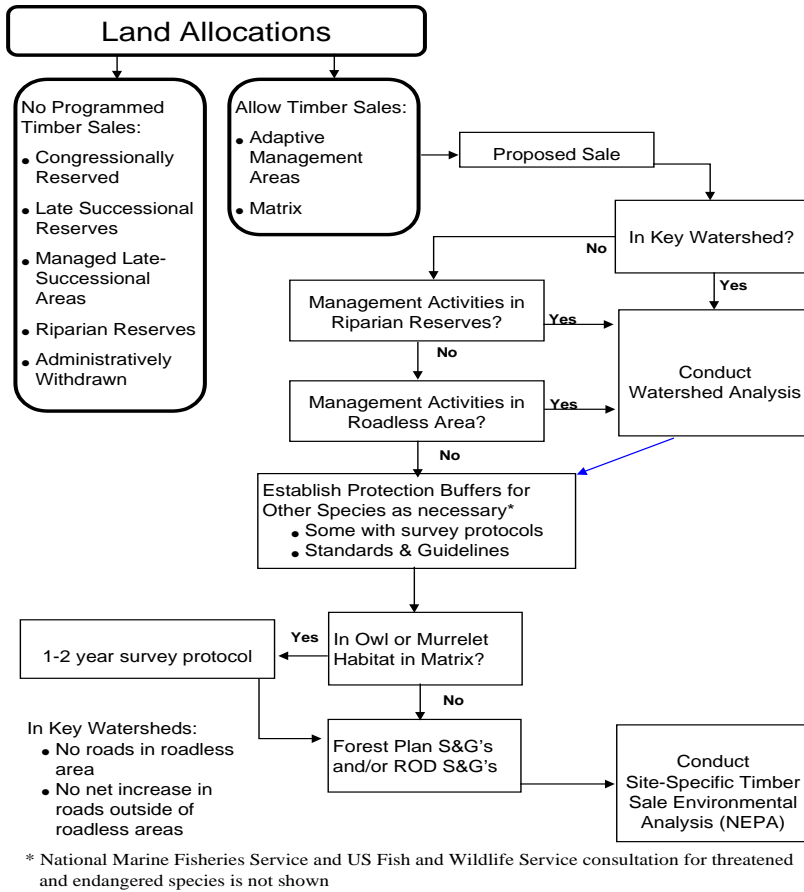
First Decade	Min. DBH 1/ (inches)	Min. Top 2/ DIB (inches)
Existing mature trees, except lodgepole pine (First and Future decades)	9	6
Existing commercial thinning size trees and lodgepole pine	7	4
Future Decades All, except surviving stands of first decade existing mature	7	4
1/ DBH = diameter at breast height 2/ DIB = diameter inside bark.		

Standards in individual timber sale contracts may vary depending on market demand and logging costs.

A description of the activities preceding programmed timber harvest is portrayed in the following Figure 6-1.

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Figure 6-1 Steps to a Programmed¹ Timber Sale



¹ Programmed timber sales are those which contribute to PSQ (timber output) projections. Timber sales may also occur outside Matrix and AMA lands where timber management is used as a tool to achieve other resource objectives. Non-programmed sales would follow the same process as programmed sales.

Management Area Categories

National Forest land within the Gifford Pinchot National Forest is assigned to various Management Area Categories (MACs). Each Management Area Category has a goal, or management emphasis. Each Management Area Category includes one or more management areas. Each management area has a set of standards and guidelines and other management practices designed to achieve multiple use goals and objectives. The direction given in this section applies only to the management areas within the Matrix. The management areas are shown on the Amendment Map.

Table 6-4 Management Area Categories within the Matrix.

Management Area Category	Code	Acres*
Recreation River	6L	1,407
	6M	1,994
Roaded Recreation	DL	439
	DM	741
Deer and Elk Winter Ranges	EM	9,139
	ES	39,135
Mountain Goat Summer Ranges	MM	899
	MX	3,585
Scenic Rivers	NL	10,737
Mountain Goat Winter Ranges	QM	7
	QX	1,149
General Forest	TS	264,722
Visual Emphasis	VL	17,077
	VM	51,788
Total Matrix		402,770
* Includes Riparian Reserves		

Deer and Elk Winter Range

Management Area Category E

Includes Management Areas EM and ES

Goal^{FP IV-133}

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, maintain a level of deer and elk commensurate with other resource management goals and objectives.

Accomplishment of this goal will require a cooperative program with the Washington Department of Fish and Wildlife, particularly in increasing the current deer population.

Description of Lands Where This MAC is Applied

This typically includes lands up to 2,200 feet in elevation on south- and west-facing aspects to 2,000 feet on east-facing aspects, and to 1,800 feet on north-facing aspects. Other areas that deer and/or elk utilize during an average winter are also included.

Desired Future Condition

Management activities, including timber harvest, are locally apparent. Tree species and sizes are varied and well distributed. Optimal cover may be present, particularly if required to ensure that at least 44 percent of the biological winter range in the 5th field watershed is in optimal cover. Regeneration harvest areas are usually less than 30 acres in size and well dispersed. Dispersed recreation, viewing wildlife, and hunting are among the recreational opportunities, although many roads are closed during the winter months.

Standards and Guidelines

The following direction applies to all Management Areas in MAC-E unless otherwise indicated.

See "Deer and Elk" in Chapter 2 for additional information concerning standards and guidelines applicable to other management areas within the biological range.

Recreation

Planning and Inventory

1. The Visual Quality Objectives and Recreation Opportunity Spectrum classes assigned to these Management Areas are:

Management Prescription	VQO	ROS
EM	Partial Retention	Roaded Natural
ES	Modification	Roaded Natural

2/21/95

NOTE: Inclusion of the Partial Retention VQO in management prescription EM is not intended to be a conflict; rather, Partial Retention is essentially compatible with deer/elk management. Generally, the only significant deference to Partial Retention in these prescriptions is a limitation on the size of regeneration timber harvest units in immediate foreground areas (up to about 500 feet). Some limitation on unit size also occurs in middle ground viewing areas. Because of the relatively small area to which these unit size limitations are applicable, they should have little adverse effect upon deer/elk outputs across the MAC E as a whole.

2. Cultural resources and other features of interest may be interpreted if no significant adverse effects on wildlife will occur.

Use Administration

Off-road vehicles may be permitted on designated trails only.

Wildlife And Fish

Surveys, Planning, Prescriptions, Monitoring, Cooperation and Administration

Direct habitat improvements such as forage seeding, fertilization, burning, and road closures should be initiated to improve deer and elk carrying capacities. Forage seeding and fertilization projects should be consistent with guidelines in the Plant Association Guide for the Western Hemlock zones.

Range

Planning and Inventory

1. Livestock grazing may be permitted.
2. Conflicts between livestock and deer and elk should be resolved in favor of deer and elk.
3. Improvements should be available to, and not adversely affect, wildlife.

Timber

Planning and Inventory, Regeneration, and Intermediate Harvest

See "Deer and Elk" in Chapter 2 for associated standard and guidelines applicable to the entire biological winter range.

1. Timber harvest will be scheduled. Ordinary timber salvage may be permitted.
2. Thermal and optimal cover should be in contiguous blocks at least 60 acres in size, and distributed over the management area. The intention is that no acre of forage (regeneration harvest unit) should be more than about 800 feet from

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thermal/optimal cover, and no acre of thermal/optimal cover should exceed about 2,000 feet from forage.

- a) Regeneration harvest units should normally be 10 to 20 acres in size, with a maximum size of 20 acres.
 - b) Thermal and optimal cover should be in contiguous blocks at least 60 acres in size, and dispersed over the management area. The intention here also is that forage should not be more than 800 feet from thermal or optimal cover, and thermal/optimal cover should not be more than about 2,000 feet from forage.
3. Some stands may be harvested prior to culmination of mean annual increment (CMAI) where necessary to meet forage objectives.
 4. No harvest is to occur in optimal cover (stands above 21 inches dbh) if less than 44 percent of the biological winter range (BWR) in each 5th field watershed is in optimal cover. See Table 6-5, page 6-25.

Silvicultural Exams and Prescriptions and Reforestation

1. Prescriptions and reforestation plans should provide for direct wildlife habitat improvements such as forage seeding, fertilization, and prescribed burning to improve wildlife habitat values. Forage seed and fertilization, when included in an approved reforestation plan, should take place immediately after site preparation.
2. Planting or seedling density should ensure adequate openings for forage production.

Timber Sale Preparation and Harvest Administration

1. Firewood cutting, except for campfire use, should be limited to designated timber harvest areas.
2. Timber harvest units should be irregularly shaped to increase edge for wildlife habitat.
3. Timber harvest activities may be limited from December 1 to April 1 to prevent harassment of deer and elk.

Minerals And Geology

Development Proposals

To the extent reasonable, mineral activities may be limited from December 1 to April 1 to prevent the harassment of deer and elk.

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Lands

Special Use Management

Recommendations for permits, leases, rights- of-way, and easements should afford protection for deer and elk from December 1 to April 1.

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Landownership Planning

All lands should be placed in Ownership Category II, Retain or Acquire.

Facilities

NFS	Watershed	BWR	Optimal Cover	Percent Optimal
01	Clearfork Cowlitz	5,787	1,911	33%
02	Middlefork Cowlitz	12,881	5,840	45%
03	Toutle River	202	74	36%
04	Lower Cispus	10,550	4,825	45%
05	Middle Cispus	6,288	1,286	21%
06	Middle Lewis	8,697	1,484	17%
07	Muddy River	11,822	3,056	26%
08	Lower Lewis	13,795	1,506	11%
09	Wind River	42,115	13,164	31%
10	L.White Salmon	10,297	3,648	51%
11	Wind River	7,236	1,236	17%
13	E. Fork Lewis	6,493	89	1%
15	Puyallup River	0	0	0%
17	Kahle River	638	318	50%
20	Nisqually River	6,438	1,987	31%
22	Lower Cowlitz	925	510	55%
24	Upper Cispus	0	0	0%
25	Upper Cowlitz	18,339	2,913	16%

General Forest

Management Area Category T

Includes Management Area TS

Goal [ROD 3]

Produce a predictable and sustainable level of timber sales other resources that will not degrade the environment. <ROD-3]

Description of Lands Where This MAC is Applied [FP-IV-136]

Portions of the Forest which are suitable for commodity production. They are timber producing lands but also include areas with such market values as minerals, energy, and forage for livestock grazing. Some lands not suitable for timber management may occur within these areas.

Desired Future Condition

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.

Standards and Guidelines

Recreation

Planning and Inventory

1. The Visual Quality Objectives and Recreation Opportunity Spectrum class assigned to these Management Areas are:

Management Prescription	VQO	ROS
TS	Modification	Roaded Modified

2. Where appropriate, recreational activities compatible with commodity management may be encouraged. Driving for pleasure, hunting, dispersed camping, wildlife viewing, berrypicking, cross-country skiing, the use of off-road vehicles, and interpretation of cultural or other features of interest are examples of possible activities.

Use Administration

Off-road vehicles may be permitted on designated routes or areas.

Range

Administration

Grazing may occur.

Nonstructural Improvement and Maintenance

Plant species selected for range improvement should not significantly compete with forest tree species.

Timber

Planning and Inventory

Ordinary timber salvage is usually permitted, except where limited by Forest-wide standards and guidelines.

Regeneration Harvest

All regeneration harvest methods will be determined on a case-by-case basis.

Lands

Landownership Planning

To sustain the Forest's capability to meet the demand for wood fiber, highly productive lands should be placed in Ownership Category II, Retain or Acquire; other lands should be classified as Category III, Neutral.

Facilities

Road Operation

Roads being managed for commodity production will generally accept high-clearance vehicle use. Closures, however, may be applied to roads not being used for commodity production by using the Eliminate or Prohibit traffic schemes. The Discourage traffic scheme can also be used to close roads by allowing the roads to degenerate until they are no longer passable.

Fire, Administrative, and Other (FA&O) Construction and Reconstruction

Fire, administrative, and other structures may be permitted if no alternative exists and they are needed for resource protection.

Protection

Fire Prevention

The industrial inspection program should be emphasized.

Fire Suppression

Suppression Strategy, Control, should be used in younger, less-than-sawlog-size stands. Elsewhere, Strategy, Contain or Control, should be used.

Pest Suppression and Prevention

1. Insects and disease should be aggressively suppressed using the most cost-effective strategies. This may include such activities as stump treatment for root rots and application of pesticides for defoliators and cone insects. Cost-effective pest prevention activities should be intensive.
2. These lands should be surveyed for *Phellinus weirii* as soon as practicable, with emphasis placed on the lower elevations in the Cowlitz River Drainage.

<FP IV-137

Mountain Goat

Management Area Categories M, Q

Includes Management Areas QM and QX Winter Range
and MM and MX Summer Range. [FP IV-129]

Goal

Manage habitat to provide forage and cover that maintains the (1990) carrying capacity of 230 animals.

Description of Lands Where This MAC is Applied

Places where mountain goats are known to exist or to have existed in the past as identified on the accompanying map.

Winter Range - Q

Winter range habitat is typically characterized by mid-elevation steep slopes with heavy coniferous forest cover. These areas may have avalanche chutes, rock outcrops, cliffs, and ledges.

Summer Range - M

Summer range is characterized by higher elevation habitat where coniferous slopes and rocky and ledge-type terrain are interspersed. Gently sloping meadows within the above habitat are commonly used for feeding and, sometimes, resting.

Desired Future Condition

On summer range and locally on winter range, open ridge areas, rock outcrops, talus slopes, and avalanche chutes are common and are generally in a natural condition. On winter and locally on summer range, some timber harvest areas may be evident but are usually screened by trees. Most trees on forested land will be pole size or larger. Vegetation ranges from natural openings through stands of mature and old-growth timber. There are few roads and those that do exist usually are closed to motorized traffic. The area is used by backpackers and hunters and affords outstanding opportunities to view scenery and wildlife.

Standards and Guidelines

The following direction applies to all management areas in MACs M and Q unless indicated otherwise.

Recreation

Planning and Inventory

1. Development or management which concentrates recreational activity should not occur.
2. New trails should be designed to avoid key habitat features such as rock outcrops, talus slopes, avalanche chutes, and kidding areas.
3. Existing trails which conflict with mountain goats should be relocated or be limited in use to reduce harassment.
4. The Visual Quality Objective and Recreation Opportunity Spectrum classes assigned to these Management Areas are:

Management Prescription	VQO	ROS
Winter Range		
QM	Partial Retention	Roaded Natural
QX	Modification	Roaded Natural
Summer Range		
MM	Retention	Roaded Natural
MX	Modification	Roaded Natural

5. Cultural resources will generally not be interpreted.

Facility Site Reconstruction and Construction

Facilities should be limited to those required to protect resources.

Use Administration

ORV use may be permitted on designated trails or routes only.

Recreational off-road vehicles, including oversnow machines, should not be permitted on mountain goat summer range, Management Prescriptions MM and MX, April 15-December 1, and on winter range, Management Prescriptions QM and QX, November 1- June ~~15~~30.

Wildlife and Fish

Surveys

A mountain goat population survey should be completed at least every five years in cooperation with the Washington Department of Game

Range

Administration

Any conflict between grazing by livestock and mountain goats should be resolved in favor of mountain goats.

Timber

Planning

Timber harvest will be scheduled. It will be done to provide mountain goat habitat. Logging systems which do not require roads should be used unless no reasonable alternative exists.

Ordinary timber salvage may be permitted.

On Winter Range—Management Areas QM and QX

1. A maximum of four percent of lands classified as suitable for timber production in the Western Hemlock Working Group (3.6% in the True Fir Group) may be regeneration harvested per decade. These harvest rates, based upon an average rotation age of 240 years in the Western Hemlock Working Group (280 years in the True Fir Group), are required to provide the desired levels of forage and optimal cover.
2. A minimum of 50 percent of suitable timberland in the winter range should be large sawtimber (21" + DBH) to provide optimal cover in blocks of at least 100 acres in size.
3. The object of intermediate harvest should be to gain rapid tree diameter growth while generally maintaining a closed canopy for thermal cover.

On Summer Range—Management Areas MM and MX

A maximum of five percent of the suitable timberland may be regeneration harvested per decade.

A minimum of 30 percent of the land suitable for timber production should be maintained pole size (9" + DBH) to large sawtimber to provide optimal cover.

Silvicultural Exam and Prescriptions, and Reforestation

Prescriptions and reforestation plans should provide for direct wildlife habitat improvements such as forage seeding, fertilization, prescribed burning, and the development of optimal cover

. Reforestation and Timber Stand Improvement

1. Herbicides should not be used if they jeopardize desirable wildlife browse species.
2. Prescribed burning should be used in site preparation whenever practicable to enhance forage production on both summer and winter range and optimal cover development on winter range.

Timber Sale Preparation and Harvest Administration

1. Timber harvest and road building should not be performed on winter range, Management Prescriptions QM and QX, between November 1 and June 30.

2. Regeneration timber harvest units should be no larger than 30 acres; most will be between 10 and 20 acres.
3. Thermal cover should be provided on at least two sides of timber harvest openings.
4. To provide hiding and thermal cover, a buffer of at least 200 feet should be maintained adjacent to avalanche chutes, cliffs, and rock outcrops which are important mountain goat habitat. Timber harvest should not occur within this 200-foot area.
5. Firewood cutting may be permitted.

Genetic Forest Tree Improvement Program

Genetic improvement activities should be limited to select trees and evaluation plantations.

Minerals And Geology

Exploration, Development, and Administration

1. Common mineral sources which adversely affect mountain goats should not be developed.
2. Exploration should be performed in a manner which does not significantly disturb mountain goats.
3. Activities may be limited from November 1 to June 30 to protect mountain goats.
4. Cliffs, rock outcrops, and avalanche chutes should be avoided when practicable

Lands

Federal Energy Regulatory Commission (FERC) License and Permits

Exploration should be performed in a manner which does not significantly disturb mountain goats.

Landownership Planning

Lands should be placed in Ownership Category II, Retain or Acquire.

Facilities

Road Construction and Operation

Construction of roads and other facilities should not be permitted from November 1 to June 30 in winter range, Management Prescriptions QM and QX. See 2, "Special Habitat Management Requirements," for timing restrictions in kidding areas.

Roads should be constructed only if no reasonable alternative exists.

Major through routes should be managed for standard passenger car use. Some local roads required to access recreation destinations may also be managed for passenger car use. All other roads should be maintained only for intermittent timber management activities. Local roads not being used for resource management activities should be closed using the Eliminate or Prohibit traffic schemes or decommissioned.

All local and minor collector roads in Mountain Goat Winter Range, Management Prescriptions QM and QX, should be closed from November 1 to June 15~~30~~.

Protection

Fire Suppression

During periods of low fire hazard in higher elevations, Fire Suppression Strategy, Confine, should be used. Strategy Contain, should be used there and at lower elevations during periods of moderate fire hazard, unless fire intensity or resource values require Control.

Pest Suppression and Prevention

Pests which adversely affect vegetation essential to mountain goats should be suppressed. Biological and cultural methods will be favored. <FP IV-132]

Roded Recreation with Timber Harvest

Management Area Category D

Includes Management Areas DL and DM

Goal [FP IV-95]

Provide a variety of dispersed recreational opportunities in areas conveniently reached by auto.

Description of Lands Where This MAC is Applied

These lands accommodate dispersed recreation—hiking, fishing, berrypicking, camping, wildlife viewing, rockhounding, winter sports—beside or near roads. They include unique or distinctive portions of the Forest with features like clustered lakes, berryfields, and roded scenic corridors.

Desired Future Condition

Management activities, including timber harvest are evident, but not conspicuous. Vegetation will remain largely natural in appearance along the major travel ways and may vary from natural openings through stands of mature and old-growth timber. Travel to dispersed sites over roads maintained at a variety of standards is an important aspect of the recreational experience. Much of the area provides for interaction with a near-natural environment.

Standards and Guidelines

The following direction applies to all management areas in MAC D, unless otherwise indicated.

Recreation

Planning and Inventory

1. Locations for viewing, photographing, or interpreting wildlife, cultural, geologic, biological, and other features of interest should be identified and evaluated.
2. The Visual Quality Objective and Recreation Opportunity Spectrum class assigned to these management areas are:

Management Prescription	VQO	ROS
DL	Retention	Roded Natural
DM	Partial Retention	Roded Natural

Facility and Site Management and Administration

Areas which are designated for management as berryfields should be maintained by such methods as emphasizing permits for plant removal and encouraging the removal of encroaching vegetation by volunteers. Future research may provide more efficient methods for perpetuating these popular berrypicking areas.

Use Administration

Off-road vehicles may be permitted on designated routes or areas.

Wildlife And Fish

Habitat Improvement

Opportunities for hunting and fishing may be enhanced by methods such as fish stocking and habitat improvement.

Range

Administration

Livestock grazing may be permitted. Animals should be kept away from fields which are being managed for berrypicking during the harvest season.

Structural Improvement and Maintenance

Loading ramps, stock tanks, fences, holding pens, and other improvements should be located away from areas of concentrated recreation except for those specifically designed for recreation stock.

Timber

Administration

Harvest will be scheduled and ordinary salvage may be permitted in management areas DM or DL, with the level of harvest determined principally by the assigned VQO and Roded Natural ROS class.

Reforestation and Timber Stand Improvement

Site preparation and slash disposal within foreground areas and adjacent to concentrated use areas should employ methods which minimize visual disturbance.

Timber Sale Preparation

Timber harvest systems which minimize ground disturbance, such as aerial, cable, or low ground pressure equipment, should be used to remove logs and debris in foreground areas.

Genetic Forest Tree Improvement Program

Select trees should be marked inconspicuously. Other genetic Forest tree improvements should be located away from areas of concentrated use.

Minerals and Geology

Development Proposals

The development of common minerals material sources, if necessary, should occur away from areas of concentrated use.

Lands

Landownership Planning

Lands needed to protect the integrity of the management area should be Retained or Acquired, Ownership Category II. The remaining land should be placed in Category III, Neutral.

Facilities

Transportation Planning

Roads and other facilities which are not consistent with the recreation objectives should be located away from concentrated use areas.

Local roads should be closed or decommissioned unless needed for a specific recreational purpose.

Protection

Fire Suppression

During periods of low fire hazard, a Containment Fire Suppression Strategy should be used. When hazard is high, a Control Strategy should be used.

Pest Suppression and Prevention

Pest suppression and prevention methods which minimize visual disturbance should be employed. Biological and silvicultural treatments should be favored. Hazard trees in use areas should be removed. <FP IV-97]

Scenic and Recreational Rivers

Management Area Categories N, 6

Includes Management Areas NL, 6L, and 6M [FP VI-108]

Goal

Scenic or Recreational River characteristics pending possible addition to the National Wild and Scenic Rivers System.

Description of Lands Where This MAC is Applied

Lands within 1/4 mile of designated rivers within the Forest boundary appearing to be both eligible and suitable for addition to the National Wild and Scenic Rivers System. Also included are those eligible river corridors for which suitability has not yet been determined. Suitability for those rivers will be determined.

Desired Future Condition

Scenic Rivers NL

Some structures, farming, and evidence of timber harvest may be visible, but the shorelines are largely undeveloped. The rivers are accessed in some places by road and in some instances a major travel route parallels the river. A challenging interaction with the natural environment is available.

Recreational Rivers 6L and 6M

Development is acceptable. The full range of agricultural and forestry uses may be evident; parallel roads or railroads on one or both banks, as well as bridge crossings and other river access points, will occur.

Standards and Guidelines

The following direction applies to all Management Areas in MAC N and 6, unless otherwise indicated. Because this MAC follows the stream corridor, much of this MAC is subject to the standard and guidelines of the Aquatic Conservation Strategy. Additional management direction is described in the Wild and Scenic Rivers Act and guidelines for its implementation:

Recreation

Planning and Inventory

1. Those rivers determined to be suitable and their immediate environment are recommended for designation under the Wild and Scenic Rivers Act of 1968.

**Management Area Categories
Scenic and Recreational Rivers
MACs N and 6
(Includes: NL, 6L, and 6M) Mountain Goat**

- a) Rivers for which suitability has not been determined will require additional analysis. If the analysis finds one or more rivers or segments to be suitable, those will also be recommended for designation under the Act. Until the analysis is completed, no activities should be permitted that would alter the eligibility or potential classification of the stream.
 - b) Many of the Scenic and Recreational River corridors include lands which are actually extensions of other management areas outside of, but adjacent to, the river corridor. Included are lands having attributes needed to complete other prescriptions such as Special Interest Areas, Developed Recreation Sites, and Visual Emphasis Viewsheds. Where the management direction for these lands is more restrictive than that for the Scenic or Recreational River corridor in which they occur, the more restrictive direction applies. These “included” management area prescriptions are considered to be a part of these recommendations for designation under the Act.
2. Cultural resource surveys for identification of significant resources are encouraged. Cultural resources and other features of interest which are not jeopardized by public exposure may be interpreted.

The Visual Quality Objectives and Recreation Opportunity Spectrum Classes assigned to these Management Areas are:

Management Prescription	VQO	ROS
Scenic River		
NL	Retention	Roaded Natural
Recreational River		
6L	Retention	Roaded Natural
6M	Partial Retention	Roaded Natural

Facility and Site Reconstruction and Construction

Site design and facility selection should be compatible with the assigned ROS or WROS Level:

Scenic River

Subject to meeting the goals of the Aquatic Conservation Strategy, recreation sites may be established in close proximity to the river, but should be widely spaced, blend with the natural landscape, and be screened from the river.

Recreation River

Subject to meeting the goals of the Aquatic Conservation Strategy, recreation facilities may be established in close proximity to the river,

although extensive development is not required. Site development may still be kept to a minimum, with visitor services provided outside the river area.

Facility Use Administration

1. Off-road vehicles may be permitted in Scenic and Recreation River corridors on designated trails.
2. Guide service and other recreation concessions in keeping with the assigned ROS or WROS class may be permitted.

Wildlife

Structural Habitat Improvement and Maintenance

Structural habitat improvements should utilize native or natural-appearing materials.

Range

Administration

Livestock grazing may be permitted.

Timber

Planning and Inventory

Scenic Rivers

Harvest will be scheduled consistent with the assigned Visual Quality Objectives in the NL prescription. Timber salvage may be permitted in corridors assigned the NL prescription.

Recreation Rivers

Harvest will be scheduled consistent with the assigned Visual Quality Objectives. Ordinary timber salvage may be permitted.

Timber harvest and related activities are also limited due to the “included” prescriptions described under Standards and Guidelines, Recreation, No. 1 (b), above.

Timber Sale Preparation and Harvest Administration

1. Firewood cutting for home or commercial use may be permitted where timber has been harvested in Scenic and Recreation Rivers areas. Gathering firewood for campfire use may be permitted.
2. To minimize visual disturbance, log and debris removal within the foreground of the river should be done by aerial or cable systems, with low ground pressure equipment, or hand piling.

3. Logs and debris should be yarded away from foreground areas as seen from the river, use areas, and major travel routes.

Genetic Forest Tree Improvement Program

Genetic improvement activities in the immediate foreground along Scenic Rivers, are limited to select trees. In Recreation Rivers, genetic activities may be permitted if they meet the assigned Visual Quality Objectives.

Minerals and Geology

Development Proposals

1. Common mineral material sources should not be developed.
2. A no-surface occupancy stipulation will be encouraged in mineral leases.
3. Prior to, and in some instances after designation under the 1968 Act, rivers are generally subject to mining claim location and mineral exploration. Approved plans will include reasonable mitigation and reclamation measures to minimize surface disturbance, sedimentation and visual impairment.

Lands

Special Use Management

1. Utility corridors, dams, diversions and hydroelectric power facilities will be prohibited to the extent of Forest Service authority. Existing facilities may be maintained.
2. Locating new utility lines within Scenic River corridors should be discouraged. Where no reasonable alternative exists, routes should cross, not parallel, the river or be limited to the existing right-of-way.
3. Federal licenses or permits for water resource projects, including dams and transmission lines, will not be recommended unless the project will not have a direct and adverse affect on the Scenic and Recreational Rivers character.

Landownership

National Forest lands should be placed in Ownership Category II, Retain.

Other ownerships should be in Category V, Additional Study.

Scenic and Recreational Rivers Study

Encourage the participation and cooperation of public and private landholders, particularly in river corridors including other ownerships.

Facilities

Transportation Planning

1. In Scenic River corridors, roads may occasionally cross or come near the river, but they should be infrequent and inconspicuous.
2. Roads are generally permitted in Recreation River corridors.
3. Roads and other facilities are also limited due to the “included” prescriptions described under Standards and Guidelines, Recreation, No. 1(b).

Road Operation

Roads accessing developed recreation sites within Scenic and Recreation River corridors should be managed to accommodate passenger car traffic.

Local roads not required for a specific recreational objective should be closed using the Eliminate or Prohibit traffic management schemes or decommissioned.

Major through roads should be managed using the Encourage traffic management scheme.

Protection

Fire Management Planning

Use minimum impact techniques in the foreground as seen from the river.

Fire Suppression

The Fire Suppression Strategy Control should be used.

Pest Suppression and Prevention

1. Strategies which protect the Scenic or Recreation character of these areas and avoid the degradation of water quality should be used to suppress the outbreak of pests.
2. Unacceptable damage to sensitive visual areas should be prevented with Integrated Pest Management strategies; cultural methods should be preferred.
3. Pest suppression and prevention methods which maintain the visual and recreation attributes of these areas and protect adjacent resource values should be emphasized. <FP IV-112]

Visual Emphasis

Management Area Category V

Includes Management Areas VL and VM [FP IV-98]

Goal

Provide a visually natural or near-natural landscape as viewed from the designated travel route or use area.

Description of Lands Where This MAC is Applied

Scenic viewsheds which are sensitive because they are viewed by many people from major roads, trails, and recreation sites, including lakes and streams.

Desired Future Condition

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.

Standards and Guidelines

The following direction applies to all Management Areas in MAC V, unless indicated otherwise.

Recreation

Planning and Inventory

1. The management area visual corridor should be inventoried for sites where scenic, cultural, geological, biological and other features of interest may be viewed and interpreted.
2. Viewing opportunities should be enhanced by opening views to such features as distant peaks, unique rock forms, and unusual vegetation.
3. The Visual Quality Objectives (viewed from the designated travel route or site) and Recreation Opportunity Spectrum class assigned to these Management Areas are:

Management Prescription	VQO	ROS
VL	Retention	Roaded Natural
VM	Partial Retention	Roaded Natural

Facility and Site Reconstruction and Construction

1. Parking areas should be screened from the designated travel route or recreation site except where visibility might deter vandalism.
2. Industrial camps should not be allowed within the foreground of the designated route or site.

Use Administration

Off-road vehicles should be limited to specified trails.

Range

Administration

Livestock grazing may be permitted.

Structural Improvement and Maintenance

Structures such as loading ramps, stock tanks, fences, and holding pens should be located away from the immediate foreground.

Timber

Planning

Timber harvest will be scheduled, and ordinary timber salvage may be permitted in compliance with the assigned Visual Quality Objectives.

Reforestation

Site preparation methods which minimize visual disturbance should be employed in the foreground.

Timber Sale Preparation and Harvest Administration

Temporary spur roads and landings should not be visible from the designated travel route or recreation site unless there is no reasonable alternative.

Genetic Forest Tree Improvement Program

Genetic improvement activities should be limited to select trees within the immediate foreground of the designated route or sites. Select trees should be inconspicuously marked. Beyond the immediate foreground, genetic activities

should meet the assigned Visual Quality Objectives as viewed from the route or sites.

Minerals And Geology

Development Proposals and Administration

1. Common mineral material sources should not be developed within the foreground of the designated travel route or recreation site. Visible sources existing in these areas should be identified and programmed for rehabilitation.
2. Within the foreground of the designated travel route or recreation site, and to the extent reasonable and operationally feasible, surface mining and geothermal activities should not be visible unless there is no practicable alternative. Where visible, mitigation measures should be applied.

Lands

Landownership Planning

Lands should be placed in Ownership Category II, Retain or Acquire.

Facilities

Transportation System Planning

1. In planning and designing the designated travel route, location of the route parking areas, viewpoints, etc. should be identified and analyzed with the visual resource in mind. Preference should be given to blending the road into the landscape rather than emphasizing speed and efficiency.
2. Material stockpiles and other facilities should not be visible in the foreground from the designated travel route.

Road Operation

Dust abatement should be considered on the designated travel route.

Vegetation adjacent to the designated travel route or recreation site should be controlled in a visually inconspicuous manner, primarily by hand or machine methods. Any use of chemicals should be timed to avoid vegetative brownout (e.g., a dormant spray used in the fall).

Local roads should be managed using the Discourage, Eliminate, or Prohibit traffic management schemes. Roads providing access to a specific recreation destination may be managed to allow passenger car use and should be maintained at a level commensurate with the recreation opportunity.

Protection

Fire Management

1. The Fire Suppression Strategy should be Control for all fires.

2. Fire suppression techniques which minimize impacts on visual values should be employed in areas seen from the designated travel route or recreation site.
3. Fire Hazard Reduction should apply. Residues from thinning or harvesting activities remaining in the immediate foregrounds of areas seen from the designated travel route or recreation site should be left in the following condition:
 - a) Less than two feet above the ground.
 - b) Screened by shrubs, grasses, or other understory vegetation.
 - c) Sparsely distributed and behind large diameter, dead material as opposed to tangles of small limbs. <FP VI-100]

Chapter 7

Adaptive Management Area

Chapter 7

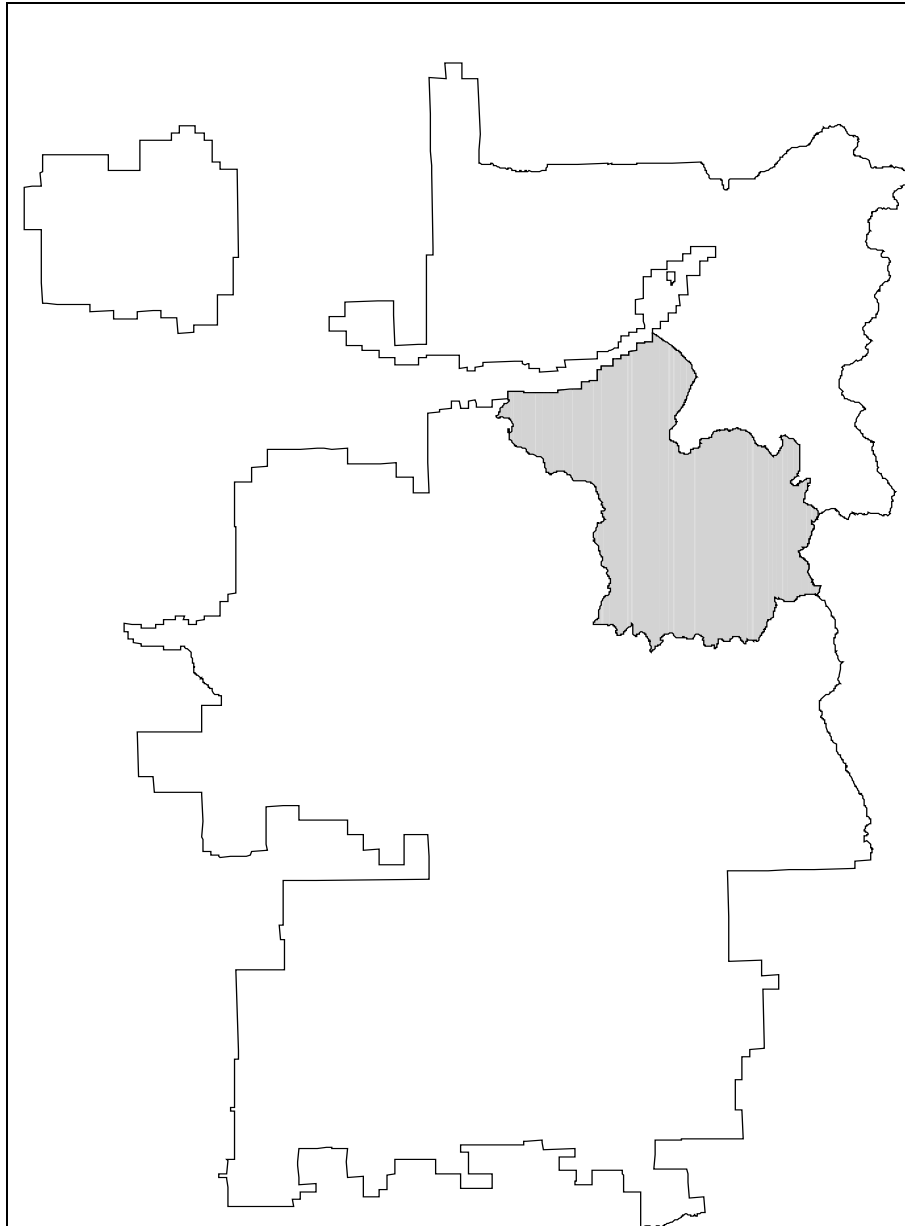
Adaptive Management Area

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Adaptive Management Areas Map

Gifford Pinchot National Forest



Chapter 7

Adaptive Management Area [ROD D-1>

Key and non-Key Watersheds are specified for all areas and, therefore, overlay all other land allocations. For the portion of Adaptive Management Area located within Key Watersheds, standards and guidelines for Key Watersheds, as well as standards and guidelines for the Adaptive Management Area, apply, with some flexibility as described below (see additional detail under "Hierarchy of Standards and Guidelines Within the AMA" on page 7-10).

Introduction

The Adaptive Management Area is a landscape unit designated to encourage the development and testing of technical and social approaches to achieving desired ecological, economic, and other social objectives. One area of about 144,000 acres of federal land has been identified on the Gifford Pinchot National Forest.

The overall objective for the Adaptive Management Area is to learn how to manage on an ecosystem basis in terms of both technical and social challenges, and in a manner consistent with applicable laws. It is hoped that localized, idiosyncratic approaches that may achieve the conservation objectives of these standards and guidelines can be pursued. These approaches rely on the experience and ingenuity of resource managers and communities rather than traditionally derived and tightly prescriptive approaches that are generally applied in management of forests.

The Adaptive Management Area is intended to contribute substantially to the achievement of objectives for these standards and guidelines. This includes provision of well-distributed late-successional habitat outside of reserves, retention of key structural elements of late-successional forests on lands subjected to regeneration harvest, and restoration and protection of riparian zones as well as provision of a stable timber supply.

The Adaptive Management Area concept incorporates the three adaptive management models/objectives discussed in the Forest Ecosystem Management Assessment Team (FEMAT) Report—technical, administrative, and cultural/social.

Key Features of the Adaptive Management Area:

- The areas are well-distributed geographically, represent a mix of technical and social challenges and are of sufficient size to provide for landscape-level management approaches.
- The areas provide for development and demonstration of monitoring protocols and new approaches to land management that integrate economic and ecological objectives based on credible development programs and watershed and landscape analysis.

- Opportunities exist for education, including technical training, to qualify local community residents for employment in monitoring and other management programs.
- Innovation in community involvement is encouraged, including approaches to implementation of initial management strategies and perhaps, over the longer term, development of new forest policies.
- Innovation is expected in developing adequate and stable funding sources for monitoring, research, retraining, restoration and other activities.
- Innovation in integration of multi-ownership watersheds is encouraged among federal agencies and is likewise encouraged among state and federal agencies and private landowners.
- Innovation in agency organization and personnel policies might include individual certification requirements and modification of recruitment and promotion procedures to encourage local longevity among the federal work force.

Selection of the Adaptive Management Area

The Adaptive Management Area was selected to provide opportunities for innovation, to provide examples in major physiographic provinces, and to provide a range of technical challenges, from an emphasis on restoration of late-successional forest conditions and riparian zones to integration of commercial timber harvest with ecological objectives.

The Adaptive Management Area is geographically located to minimize risk to achieving the conservation objectives of these standards and guidelines. The designation of Adaptive Management Area was intended to provide a mixture of public and private lands. In locating the Adaptive Management Area, the proximity of communities that were subject to adverse economic impacts resulting from reduced federal timber harvest was considered. The social and economic analysis of the Forest Ecosystem Management Assessment Team was a major source of information that helped guide these decisions.

Establishment of the Adaptive Management Area is not intended to discourage the development of innovative social and technical approaches to forest resource issues in other locales. They are intended to provide a geographic focus for innovation and experimentation with the intent that such experience will be widely shared. The array of areas provides a balance between having a system of areas that is: (1) so large and diffuse that it lacks focus and adequate resources; and has extensive management constraints because of its size and overall impact on regional conservation strategies; and (2) too small to allow for meaningful ecological and social experimentation.

Technical Objectives

The Adaptive Management Area has scientific and technical innovation and experimentation as objectives. The guiding principle is to allow freedom in forest management approaches to encourage innovation in achieving the goals of these standards and guidelines. This challenge includes active involvement by the land management and regulatory agencies early in the planning process.

The primary technical objectives of the Adaptive Management Area are development, demonstration, implementation, and evaluation of monitoring programs and innovative management practices that integrate ecological and economic values. Experiments, including some of large scale, are likely. Demonstrations and pilot projects alone, while perhaps significant, useful, and encouraged in some circumstances, may not be sufficient to achieve the objectives.

Monitoring is essential to the success of any plan and to an adaptive management program. Hence, development and demonstration of monitoring and training of the work force are technical challenges and should be emphasized.

Technical topics requiring demonstration or investigation are a priority for the Adaptive Management Area and cover a wide spectrum, from the welfare of organisms to ecosystems to landscapes. Included are development, demonstration, and testing of techniques for:

- Creation and maintenance of a variety of forest structural conditions including late-successional forest conditions and desired riparian habitat conditions.
- Integration of timber production with maintenance or restoration of fisheries habitat and water quality.
- Restoration of structural complexity and biological diversity in forests and streams that have been degraded by past management activities and natural events.
- Integration of the habitat needs of wildlife (particularly of sensitive and threatened species) with timber management.
- Development of logging and transportation systems with low impact on soil stability and water quality.
- Design and testing of effects of forest management activities at the landscape level.
- Restoration and maintenance of forest health using controlled fire and silvicultural approaches.

Each Adaptive Management Area will have an interdisciplinary technical advisory panel, including specialists from outside government agencies, that will provide advice and support to managers and local communities involved with this effort.

Social Objectives

The primary social objective of the Adaptive Management Area is the provision of flexible experimentation with policies and management. These areas should provide opportunities for land managing and regulatory agencies, other government entities, nongovernmental organizations, local groups, landowners, communities, and citizens to work together to develop innovative management approaches. Broadly, the Adaptive Management Area is intended to be a prototype of how forest communities might be sustained.

Innovative approaches include social learning and adaptation, which depend upon local communities having sufficient political capacity, economic resources, and technical expertise to be full participants in ecosystem management. Similarly, management will need to be coordinated and characterized by collaboration across political jurisdictions and diverse ownerships. This will require mediating across interests and disciplines,

strengthening local political capability, and enhancing access to technical expertise. Adaptive management is, by definition, information dependent. Setting objectives, developing management guidelines, educating and training a work force, organizing interactive planning and management institutions, and monitoring accomplishments all require reliable, current inventories. New information technologies can be used to provide such information. Local people might be ideally suited to this task if appropriately trained.

Agency Approaches and Management Review

Federal agencies are expected to use the Adaptive Management Area to explore alternative ways of doing business internally, and with each other, other organizations, local and state government, and private landowners. In effect, the areas should be used to “learn to manage” as well as to “manage to learn.”

Agencies are expected to develop plans (jointly where multiple agencies are involved) for the Adaptive Management Area. Development of a broad plan that identifies general objectives and roles and provides flexibility should be the goal. Such a plan could be used in competing for financial resources, garnering political support, providing a shared vision, and identifying experiences to be tracked.

If the Adaptive Management Area is to make timely contributions to the objectives of these standards and guidelines, and to the communities, it is absolutely critical that initiation of activities not be delayed by requirements for comprehensive plans or consensus documents beyond those required to meet existing legal requirements for activities. Development of such documents can proceed simultaneously with other activities. Current plans as modified by the direction established in these standards and guidelines can provide the starting point for activities. Initial involvement of user groups and communities would emphasize how the strategy and plans should be implemented.

Initial direction and continuing review should be provided by the Regional Interagency Executive Committee. It is important that the interagency coordination involve both the regulatory and management agencies, and that the regulatory agencies participate in planning and regular review processes.

AMA Implementation Guidelines

Role of Agencies - The agencies will facilitate collaborative efforts, partnerships, mutual learning and innovation. They will provide staff work to the process of managing the Adaptive Management Area. This could include providing meeting places, meeting facilitation, and expert analysis. Agency scientists are expected to provide scientific design of monitoring and experiments, though the decision is reserved for the federal land manager.

Although the agencies have a facilitation role, the land management agencies retain the authority and responsibility to make decisions and the regulatory agencies retain the authority and responsibility to regulate. Nothing in these guidelines is intended to change those authorities or responsibilities.

Local Communities - Specific community roles with public agencies and subject matter experts (such as the technical advisory panels) will include helping find innovative ways to set objectives, develop plans, implement projects, and monitor accomplishments. For example, Subtitle G of the 1990 Farm Bill gives criteria to identify “natural resource dependent communities” which may be used if appropriate when identifying local communities.

Participation in the Adaptive Management Area - Although the emphasis is on the participation of people who are actively involved with that geographic location, nothing in these guidelines should be construed to suggest that the interests of people living outside “local communities” should not be considered in making agency decisions. Participation will be self identifying to the extent possible. Experiments to address how this might happen are encouraged.

Project Development and Implementation - Specific project planning must:

- Involve the public early
- Coordinate with overall activities within the province
- Begin some projects as soon as practicable to respond to and facilitate public interest and involvement
- Begin some projects prior to completing an entire watershed analysis
- Begin watershed analysis as soon as possible
- Develop early plans and projects with the best available information
- Identify needs for improved inventory
- Proceed simultaneously with activities and Adaptive Management Area planning
- Assign priority status to watershed restoration projects that can be completed quickly
- Begin projects in nonsensitive sections of the Adaptive Management Area.

Area Assessment - The Adaptive Management Area plans need to be based on information about historical, current, and desired future conditions of the biophysical, social, and economic aspects of the area. The plans will rely largely on existing information. The area assessment will be a concise working document. The following is provided as a suggested framework:

Biophysical: Consider disturbance history, terrestrial and aquatic conditions, sensitive plant and animal species and/or habitat, capability of the system to produce a variety of forest products. A description of the desired future condition or a range of acceptable conditions for the biophysical system is needed. For example, what functions are important to maintain at the landscape level? What structure, species, age classes, and/or arrangement will maintain those functions? Consider both coarse and fine detail over time. What does the community want the Adaptive Management Area to be like in the future? What actions are needed to create that desired future condition?

Social: Consider historical and extant communities, their use patterns, uses of the land, issues, resources, and opportunities. In some areas, other demographic data will be helpful as well. What networks for communications are at work? How can the agencies better interact with these? What collaborative process will work best for the communities of interest to effectively participate in managing the Adaptive Management Area? What does the community want to look like in the future? Desired future social condition can be considered in terms of composition, structure, and/or functions over time.

Economic: A description of current economic conditions might include an inventory of local employment, resource workers, skills, and access to technology. Desired future conditions could describe the future employment opportunities (e.g., what forest work will be needed in the future?) and skills needed to seize those opportunities. As the desired future condition of the ecosystem is better understood, the future forest work will also be more clear. Identification of needed knowledge, skills, abilities, and technology for the future may be useful in developing training programs as well as business or marketing assistance.

Plans - The Adaptive Management Area will have a plan. An individual public, interagency approach to planning will be developed for the Adaptive Management Area. The plan should address or provide:

- A shared vision of the Adaptive Management Area, e.g., the kind of knowledge the participants hope to gain. Identification of the desired future conditions may be developed in collaboration with communities, depending on the area.
- Learning that includes social and political knowledge, not just biological and physical information.
- A strategy to guide implementation, restoration, monitoring and experimental activities.
- A short-term (three to five year) timber sale plan and long-term yield projections.
- Education of participants.

- A list of communities influenced by the Adaptive Management Area projects and outputs.
- An inventory of community strategies, and resources and partners being used.
- Coordination with overall activities within the province.
- A funding strategy.
- Integration of the community strategies and technical objectives.

Monitoring and Research - The ROD Monitoring and Evaluation Plan and watershed analysis present the framework and some required actions for each Adaptive Management Area. Additional efforts and specificity may be developed for each Adaptive Management Area.

The learning opportunity provided by the Adaptive Management Area will be enhanced if clear, measurable goals and objectives are set, monitored, and conveyed into the planning of projects or into the appropriate component of the Adaptive Management Area plan or Forest or District Plan. Shared synthesis of monitoring results will help provide a multiple-perspective assessment on whether social and ecosystem goals are being met, help identify problems to avoid in subsequent projects, and help gain consensus on what data gaps exist and what changes to the monitoring and research programs are needed.

Review - Monitoring and research, with careful experimental design, will be conducted in the Adaptive Management Area. Research in forest ecology and management as well as social, biological, and earth sciences may be conducted. Each Adaptive Management Area will have an interdisciplinary technical advisory panel that will provide advice to managers and the local communities involved with this effort. The technical advisory panels will provide advice and information on the appropriateness of the project.

Direction and review are provided by the Regional Interagency Executive Committee through the Regional Ecosystem Office. This review will help assure that plans and projects developed for the Adaptive Management Area will be both scientifically and ecologically credible. It will assure that new, innovative approaches are used, that the laws and the goals of the plan are met, and that validation monitoring is incorporated.

The Regional Ecosystem Office will facilitate and coordinate the implementation of the Adaptive Management Area program. Federal agencies are expected to use the Adaptive Management Area to explore new ways of working internally and externally.

Legal - All activities must comply with existing laws such as Endangered Species Act, National Environmental Policy Act, National Forest Management Act, Forest Land Policy and Management Act, Federal Advisory Committee Act, National Historic Preservation Act, Clean Water Act, Clean Air Act, and treaty rights. Management and regulatory agencies should work together to determine ways to expedite management while ensuring compliance, to improve cooperation through planning and on-the-ground consultation, and to avoid confrontation.

Other Issues - Some issues are beyond the authority of the agencies or the Regional Interagency Executive Committee. These include:

- Use of receipts from timber sales and other products derived from Adaptive Management Area to develop programs and projects within the areas
- Employment targets for local people for special jobs like planning, training, and monitoring
- Special land management or stewardship contracts
- Restricted local use of wood and other products derived from Adaptive Management Area.

Fire and Fuels Management

In the Adaptive Management Area, fire managers are encouraged to actively explore and support opportunities to research the role and effects of fire management on ecosystem functions. Cooperation across agency and ownership boundaries should be emphasized. The standards and guidelines in current plans for hazard reduction should be followed until approved Adaptive Management Area plans are established. Fire management experts will participate on the local Interdisciplinary Technical Advisory Panel on the Adaptive Management Area. Management of the Adaptive Management Area is intended to be innovative and experimental. Wildfire suppression actions, however, should use accepted strategies and tactics, and conform with specific agency policy.

Timber Supply

One reason for locating the Adaptive Management Area adjacent to communities experiencing adverse economic impacts is to provide opportunity for social and economic benefits to these areas. The Adaptive Management Area is expected to produce timber as part of their program of activities consistent with their specific direction under these standards and guidelines. The rates and methods of harvest will be determined on an area-by-area basis. Each area management team is expected to develop a strategy for ecosystem management as part of the Adaptive Management Area plan to guide implementation, restoration, monitoring, and experimental activities involving timber sales. The strategy should contain a short-term (3 to 5 year) timber sale component and an assessment of long-term outputs of timber.

Education

Each Adaptive Management Area was located adjacent to one or more communities with economies and culture long associated with utilization of forest resources. As a result, the people have a “sense of place” and desire for involvement. Many of these local workers already possess timber/forest-related skills and knowledge, as well as that sense of place, which in combination make them natural participants in ecosystem-based management and monitoring. Here adaptive management can bring indigenous knowledge together with formal studies, the local communities and the land management agencies in a mix that may provide creative common-sense approaches to complicated problems.

Technical and scientific training of a local work force should be an educational priority of the Adaptive Management Area Program. Formal schooling and field apprenticeship might provide the work force needed to help implement ecosystem management, particularly in the area of monitoring. This program might be based on collaborations among local community colleges, state universities, and the agencies.

Standards and Guidelines

Also see Chapter 2, “Forest-wide Management Direction.”

Unmapped Late-Successional Reserves within the Adaptive Management Area will be managed according to the standards and guidelines for such reserves except as provided elsewhere in this section. Management of these areas will comply with the standards and guidelines for Late-Successional Reserves, and management around these areas will be designed to reduce risk of natural disturbances. Unmapped Late-Successional Reserves are specified for spotted owl activity centers, occupied marbled murrelet sites, and for certain protection buffers (see Chapter 5).

Riparian protection in the Adaptive Management Area should be comparable to that prescribed for other federal land areas. For example, Key Watersheds with aquatic conservation emphasis within the Adaptive Management Area must have a full watershed analysis and initial Riparian Reserves comparable to those for Tier 1 Key Watersheds. Riparian objectives (in terms of ecological functions) in other portions of the Adaptive Management Area should have expectations comparable to Tier 2 Key Watersheds where applicable. Flexibility, however, is provided to achieve these conditions, if desired, in a manner different from that prescribed for other areas and to conduct bonafide research projects within riparian zones.

At the same time, any analysis of Riparian Reserve widths must also consider the contribution of these reserves to other, including terrestrial, species. Watershed analysis should take into account all species that were intended to be benefited by the prescribed Riparian Reserve widths. Those species include fish, mollusks, amphibians, lichens, fungi, bryophytes, vascular plants, American marten, red tree voles, bats, marbled murrelets, and northern spotted owls. The specific issue for spotted owls is retention of adequate habitat conditions for dispersal.

Standards and guidelines for Matrix management in Chapter 6 of these standards and guidelines (there is no Matrix in the Adaptive Management Area) provide specific measures for coarse woody debris, and for green tree and snag retention, for the Matrix. The intent of the measures must also be met in the Adaptive Management Area, but specific standards and guidelines are not prescribed for this area.

Modify site treatment practices, particularly the use of fire and pesticides, and modify harvest methods to minimize soil and litter disturbance.

Many species of soil and litter-dwelling organisms, such as fungi and arthropods, are sensitive to soil and litter disturbance. Site treatments should be prescribed which will minimize intensive burning, unless appropriate for certain specific habitats, communities or stand conditions. Prescribed fires should be planned to minimize the consumption of litter and coarse woody debris. Other aspects to this standard and guideline include minimizing

soil and litter disturbance that may occur as a result of yarding and operation of heavy equipment, and reducing the intensity and frequency of site treatments. Soil compaction, and removal or disturbance of humus layers and coarse woody debris, may impact populations of fungi and arthropods.

Provide for old-growth fragments in watersheds where little remains.

Matrix standards and guidelines on page 6-6 specify retention of old-growth fragments in fifth field watersheds containing less than 15 percent of such stands. In the Adaptive Management Area, less than 15 percent of fifth field watershed in late-successional forest should be considered as a threshold for analysis rather than a strict standard and guideline, and the role of remaining stands of late-successional forests must be fully considered in watershed analysis before they can be modified.

Habitat Management for Bats

These measures apply within Matrix and AMA lands. See page 2-78.

Survey and Manage

These measures apply within all land allocations. See page 2-63.

Recreation Sites

Measures to minimize disturbance to species applies in all land allocations, see page 2-50.

Hierarchy of Standards and Guidelines Within the AMA

In summary, management activities in the Adaptive Management Area will be conducted to achieve the objectives described in these standards and guidelines. Standards and guidelines for Unmapped Late-Successional Reserves must be followed when they occur within the Adaptive Management Area. Flexibility is provided to meet objectives for Riparian Reserves and Key Watersheds. Full watershed analysis will be conducted prior to new management activities in identified Key Watersheds within Adaptive Management Area.

Management area standards and guidelines need to be considered during planning and implementation of activities within Adaptive Management Areas, and they may be modified in Adaptive Management Area plans based on site-specific analysis. Otherwise, standards and guidelines are to be developed to meet the objectives of the Adaptive Management Area and the overall strategy. Coordination with the Regional Ecosystem Office through the Regional Interagency Executive Committee is required. <ROD D-12]

See Chapter 6 for standards and guidelines for the following Matrix management areas: DM, EM, ES, MM, MX, NL, QM, QX, TS, VL, and VM.

See Chapter 4 for standards and guidelines for the following Administratively Withdrawn management areas: 2L, 9L, NA, RL, RM, UD, UH, and UL

Management Area Categories

National Forest land within the Gifford Pinchot National Forest is assigned to various Management Area Categories (MACs). Each Management Area Category has a goal or management emphasis. Each Management Area Category includes one or more management areas. Each management area has a set of standards and guidelines and other management practices designed to achieve multiple use goals and objectives. The direction given in this section applies only to the management areas within the Adaptive Management Area. The management areas are shown on the Amendment Map.

Table 7-1 Management Area Categories within the Adaptive Management Area.

Management Area Category	Code	Acres*
Developed Recreation Sites	2L	357
Special Interest Area	9L	131
Roaded Recreation	DM	161
Deer and Elk Winter Range	EM	2,878
	ES	3,991
Mountain Goat Summer Range	MM	544
	MX	3,006
Scenic Rivers	NA	59
	NL	8,147
Mountain Goat Winter Range	QM	700
	QX	7,158
Roaded Recreation	RL	259
	RM	19,065
General Forest	TS	68,904
Unroaded Recreation	UD	9,152
	UH	8,177
	UL	557
Visual Emphasis	VL	2,814
	VM	7,123
Total Adaptive Management Area		143,182
*Includes Riparian Reserves		

Descriptions of the Cispus Adaptive Management Area

The Adaptive Management Area contributes to accomplishing the objectives of these standards and guidelines, such as protection or enhancement of riparian habitat and provision for well-distributed late-successional forest habitat. Detailed prescriptions for achieving such objectives are *not* provided, however, in order to permit managers to develop and test alternative approaches applicable to their areas and in a manner consistent with existing environmental and other laws.

Unlike tables elsewhere in these standards and guidelines that show only Federal Acres outside of Late-Successional Reserves and Congressional Reserves, the area listed below includes all acres within the Adaptive Management Area boundaries, including all land allocations and ownerships.

Table 7-2 Cispus Adaptive Management Area.

Name:	Cispus Adaptive Management Area, Washington
Size:	144,000 acres
Ownership:	Gifford Pinchot National Forest; potentially state and private lands.
Associated Communities:	Randle, Morton, and Packwood, Washington; Lewis and Skamania Counties, Washington.
Emphasis:	Development and testing of innovative approaches at stand, landscape, and watershed level to integration of timber production with maintenance of late-successional forests, healthy riparian zones, and high quality recreational values.

Glossary

Many of the definitions in this glossary are referenced to the following sources. The sources are identified by a number in parentheses following the definition. This number corresponds to the list below. Some other terms will be referenced to Forest Service Manuals (FSM), Forest Service Handbooks (FSH), or other sources which are too numerous to list. Finally, many other definitions are not referenced, but are those in general use on the Forest.

Source List

- (1) 36 CFR 219 National Forest Management Act Regulations.
- (2) Regional Guide for the Pacific Northwest Region, 1984.
- (3) SAF Dictionary of Forestry Terms, 1971.
- (4) The Random House College Dictionary, Revised Edition, 1975.
- (5) Webster's New International Dictionary, 1957.
- (6) Wildland Planning Glossary, 1976.
- (7) Webster's Third New International Dictionary, 1981.
- (8) Wildlife Habitats in Managed Forests, The Blue Mountains of Oregon and Washington, 1979.
- (9) A Glossary of Terms Used in Range Management.
- (10) Forest Service Manual or Forest Service Handbook.
- (11) Forest Ecosystem Management Assessment Team's report, *Forest Ecosystem Management: An Ecological, Economic, and Social Assessment*.

Glossary

A

AMA - See Adaptive Management Area

ASQ - See Allowable Sale Quantity

AUM - See Animal Unit Month

Abiotic - Referring to the absence of living organisms.

Accretion - The process, driven by plate tectonics, whereby the continental margin grows by addition of ocean crust and sediments at a subduction zone. (11)

Acquired lands - Lands added to the National Forest system by purchase, transfer, or donation under authority of the Weeks Law or related acts. Also, lands obtained by the Forest Service by exchange for other acquired lands.

Acre-foot - A measure of water or sediment volume, equal to the amount which would cover an area of one acre to a depth of one foot (i.e., 43,560 cubic feet or 325,851 gallons). (6)

Activity - An action, measure or treatment undertaken that directly or indirectly produces, enhances, or maintains forest and rangeland outputs, or achieves administrative or environmental quality objectives (FSM 1309, Management Information Handbook). An activity can generate multiple outputs. (2)

Activity Center [Spotted Owl Activity Center] - An area of concentrated activity of either a pair of spotted owls or a territorial single owl.

Adaptive Management - A continuing process of action-based planning, monitoring, researching, evaluating, and adjusting with the objective of improving implementation and achieving the goals of the selected alternative.

Adaptive Management Areas (AMA) - Landscape units designated for development and testing of technical and social approaches to achieving desired ecological, economic, and other social objectives. (11)

Administrative unit - An area under the administration of one line officer, such as a District Ranger, Forest Supervisor, or Regional Forester. (6)

Administratively Withdrawn Areas - Areas removed from the suitable timber base through agency direction and land management plans. (11)

Age class - An interval, usually 10 to 20 years, into which the age ranges of vegetation are divided for classification or use. (3)

Age-Class Distribution - The area in each age class of trees across a forest, watershed, stands or any other area of consideration.

Air Quality Related Values (AQRVs) - Values within Class I areas, such as visibility, biological diversity, and water quality, that under the Clean Air Act, should be protected from the adverse impacts of air pollution.

Airshed - A geographic area that, because of topography, meteorology, and climate, shares the same air. (2)

Alevin - Newly hatched salmon or trout with exterior yolk sac residing in the gravel prior to emergence to the stream.

Allocation - See Land use allocation.

Allotment - See Range allotment.

Allowable sale quantity (ASQ) - The quantity of timber that may be sold, from the area of suitable land covered by the Forest Plan, for a time period specified by the Plan. This quantity is usually expressed on an annual basis as the "average annual allowable sale quantity". (6) (1)

Alluvial - Originated through the transport by and deposition from running water. (11)

- Alternative** - One of several policies, plans, or projects proposed for decision making. (2) (10)
- Amenity** - An object, feature, quality, or experience that gives pleasure or is pleasing to the mind or senses. The terms “amenity values” or “amenity resources” are typically used in land management planning to describe those resources for which monetary values are not or cannot be established (such as clean air and water, or scenic quality).
- Anadromous Fish** - Fish that are born and rear in freshwater, move to the ocean to grow and mature, and return to freshwater to reproduce. Salmon, steelhead, and shad are examples. (11)
- Analysis of the Management Situation (AMS)** A determination of the ability of the planning area to supply goods and services in response to society’s demand for those goods and services. (1)
- Animal index** - Wildlife population numbers used to indicate habitat capability.
- Animal Unit Month (AUM)** - The amount of forage required by one mature (1,000 lb.) cow or its equivalent for one month (based upon average forage consumption of 26 lbs. dry matter per day). (6)
- Animal Month is one month's use and occupancy of the range by one animal. For grazing fee purposes, it is a month’s use and occupancy of range by one weaned or adult cow with or without calf, bull, steer, heifer, horse, burro, or mule, or five sheep or goats. Forage consumption by other animals is converted to AUM's from animal months by the following factors:
- | | |
|--------------|------------|
| mature cow | = 1.0 AUM |
| mature sheep | = .2 AUM |
| one horse | = 1.2 AUM |
| cow/calf | = 1.32 AUM |
| ewe/lamb | = .3 AUM |
- Appropriated Funds** - Monies authorized by an act of Congress which permit Federal agencies to incur obligations and to make payments out of the U.S. Treasury for specified purposes.
- Aquatic Ecosystem** - Any body of water, such as a stream, lake or estuary, and all organisms and nonliving components within it, functioning as a natural system. (11)
- Aquifer** - A geological formation or structure that contains water in sufficient quantity to supply needs for water development. (6)
- Arterial roads** - See Roads.
- Arthropods** - Invertebrates belonging to the largest animal phylum (over 800,000 species) including crustaceans, insects, centipedes and arachnids. Characterized by a segmented body, jointed appendages and an exoskeleton composed of chitin.
- Artifact** - An object made or modified by humans. (4)
- Associated Species** - A species found to be numerically more abundant in a particular forest successional stage or type compared to other areas. (11)
- At-risk Fish Stocks** - Stocks of anadromous salmon and trout that have been identified by professional societies, fish management agencies, and in the scientific literature as being in need of special management consideration because of low or declining populations. (11)
- Attainment Area** - A geographic area in which the level of a criteria air pollutant meets the federal standards set by the Environmental Protection Agency. A single geographic area may have acceptable levels of one criteria air pollutant but unacceptable levels of other criteria pollutants, which means an area can be in both attainment and nonattainment status at the same time.
- Available forest land** - Land which has not been legislatively or administratively withdrawn by the Secretary of Agriculture or Forest Service Chief from timber production.

B

BMP - See Best Management Practices

BLM - See Bureau of Land Management

Background - In visual management terminology, refers to the visible terrain beyond the foreground and middle ground where individual trees are not visible, but are blended into the total fabric of the stand. Also a portion of a view beyond three to five miles from the observer, and as far as the eye can detect objects. (6)

Banding - Marking with a band for identification.

Basal area - The area of the cross-section of a tree stem near the base, generally at breast height and inclusive of bark. (3)

Base sale schedule - A timber sale schedule formulated on the basis that the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than the long-term sustained yield capacity. (This definition expresses the principle of nondeclining flow.) (1)

Best Management Practices - A practice or combination of practices that is determined by a State (or designated area-wide planning agency) after problem assessment, examination of alternative practices, and appropriate public participation to be the most effective, practicable (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals (Federal Register, Volume 40, No. 230 dated 11/28/75).

Big game - Large mammals hunted for sport. On the National Forest these include animals such as deer, elk, antelope, and bear. (8)

Big game summer range - A range, usually at higher elevation, used by deer and elk during the summer. Summer ranges are usually much more extensive than winter ranges. (8)

Big game winter range - A range, usually at lower elevation, used by migratory deer and elk during the winter months, usually more clearly defined and smaller than summer ranges. (8)

Biogeography - Traditionally, the study of the distribution of plants and animals in their environment over space and time. In recent years, this term has included the interactions between humans and the ecosystem.

Biological control - A method to control insect populations or tree diseases through the use of applied technology. Also used in noxious plant control. (3)

Biological Diversity - The variety of life forms and processes, including a complexity of species, communities, gene pools, and ecological functions. Forest Ecosystem Management Assessment Team's report, *Forest Ecosystem Management: An Ecological, Economic, and Social Assessment*.

Biological Growth Potential - The average net growth attainable in a fully stocked natural forest stand. (1)

Biological potential - The maximum production of a selected organism that can be attained under optimum management. (8)

Biomass - The total quantity (at any given time) of living organisms of one or more species per unit of space (species biomass), or of all the species in a biotic community (community biomass). (11)

Board foot (BF) - The amount of wood equivalent to a piece of wood one foot by one foot by one inch thick. (3)

Broadcast Burn - Allowing a prescribed fire to burn over a designated area within well-defined boundaries for reduction of fuel hazard or as a silvicultural treatment or both.

Browse - Twigs, leaves, and young shoots of trees and shrubs on which animals feed, in particular, those shrubs which are used by big game animals for food. (6)

Bryophytes - Plants of the phylum Bryophyta, including mosses, liverworts and hornworts, characterized by the lack of true roots, stems and leaves.

Buffer - As specifically defined in the FEMAT Report, used in the context of marbled murrelet standards and guidelines: a forested area located adjacent to suitable (nesting) marbled murrelet habitat that reduces dangers of having sharply contrasting edges of clearcuts next to such habitat. Dangers include risk of wind damage to nest trees and young, increased predation, and loss of forest interior conditions.

Bureau of Land Management (BLM) - An agency within the Department of the Interior with land management responsibility for the Public Domain lands.

Bureau of Land Management (BLM) Administered Lands - Oregon and California railroad lands (O&C), Public Domain (PD), Coos Bay Wagon Road (CBWR), acquired lands, and split estate (Federal Minerals).

C

CEQ - See Council on Environmental Quality

CFR - See Code of Federal Regulations

CMAI - See Culmination of Mean Annual Increment

CMP - See Comprehensive Management Plan

CWD - See Coarse Woody Debris

Candidate Species - Those plants and animals included in Federal Register "Notices of Review" that are being considered by the Fish and Wildlife Service for listing as threatened or endangered. Two categories that are of primary concern: Category 1 - Taxa for which there is substantial information to support proposing the species for listing as threatened or endangered. Listing proposals are either being prepared or have been delayed by higher priority listing work. Category 2 - Taxa information indicates that listing is possibly appropriate. Additional information is being collected. (11)

Canopy - The more-or-less continuous cover of branches and foliage formed collectively by the crown of adjacent trees and other woody growth. (3)

Canopy Closure - The degree to which the canopy (forest layers above one's head) blocks sunlight or obscures the sky. It can only be accurately determined from measurements taken under the canopy as openings in the branches and crowns must be accounted for. (11)

Cant - A log slabbed (milled) on one or more sides.

Capability - The potential of an area of land to produce resources, supply goods and services, and allow resource uses under an assumed set of management practices and at given levels of management intensity. Capability depends upon current conditions and site conditions such as climate, slope, landform, soils and geology, as well as the application of management practices, such as silviculture or protection from fire, insects, and disease. (1)

Glossary

- Capability area** - Geographic delineations used to describe characteristics of the land and resources in integrated forest planning. Capability areas may be synonymous with ecological land units, ecosystems, or land response units. (10)
- Capital investment** - Activities that create or improve capital assets to obtain benefits occurring during several planning periods. (10)
- Categorical Exclusion** - Under the National Environmental Policy Act, those actions that are categorically excluded from documentation in an environmental analysis or environmental impact statement (40 CFR 1508.4).
- Cavity** - The hollow excavated in trees by birds or other natural phenomena; used for roosting, food storage, and reproduction by many birds and mammals. (2)
- Cavity Nester** - Wildlife species, most frequently birds, that require cavities (holes) in trees for nesting and reproduction. (11)
- Channel or Stream Scour** - Erosion of the channel bottom caused by high flows of water, loss of channel stability, or debris torrents.
- Chargeable Timber Volume** - All timber volume included in the growth and yield projections for the selected management prescriptions used to arrive at the allowable sale quantity, based on regional utilization standards. (10)
- Class I Areas** - National Parks or Wildernesses that receive the greatest air quality protection under the Clean Air Act's Prevention of Significant Deterioration (PSD) Program.
- Clearcutting** - The cutting method that describes the silviculture system in which the old crop is cleared over a considerable area at one time. Regeneration then occurs from (a) natural seeding from adjacent stands, (b) seed contained in the slash or logging debris, (c) advance growth, or (d) planting or direct seeding. An even-aged forest usually results. (3)
- Climax** - The culminating stage in plant succession for a given site where the vegetation has reached a highly stable condition. (6)
- Climax Species** - Those species that dominate a climax stand in either numbers per unit area or biomass.
- Closely Associated Species** - A species is designated as "closely associated" with a forest successional stage if the species is found to be significantly more abundant in that forest successional stage compared to the other successional stages, if it is known to occur almost exclusively in that successional stage, or if it uses habitat components that are usually produced at that stage. (11)
- Cluster** - An area that contains habitat capable of supporting three or more breeding pairs of spotted owls with overlapping or nearly overlapping home ranges. (11)
- Comprehensive Management Plan (CMP)** - Comprehensive Management Plan for Mount St. Helens National Volcanic Monument.
- Coarse Woody Debris (CWD)** - Portion of a tree that has fallen or been cut and left in the woods. Usually refers to pieces at least 20 inches in diameter. (11)
- Code of Federal Regulations (CFR)** - A codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal government. (11)
- Coho Smolt** - Young coho salmon which are ready to migrate to the sea.
- Commercial Forest Land** - See Tentatively Suitable Forest Land.
- Commercial Thinning** - The removal of generally merchantable trees from an even-aged stand, usually to encourage growth of the remaining trees. (11)
- Compaction** - The packing together of soil particles by forces exerted at the soil surface, resulting in increased soil density.

- Condition class** - 1) Timber: a grouping of timber strata into size-age-stocking classes for Forest planning.
2) Range: one of a series of arbitrary categories used to classify range conditions, usually expressed as excellent, good, fair, or poor. (9)
- Conferencing** - A process that involves informal discussions between a federal agency and the Fish and Wildlife Service or the National Marine Fisheries Service under Section 7(a)(4) of the Endangered Species Act regarding the impact of a federal action on proposed species or proposed critical habitat and recommendations to minimize or avoid the adverse effects.
- Congressionally Classified and Designated Areas** - Areas that require congressional enactment for their establishment, such as National Wildernesses, National Wild and Scenic Rivers, and National Recreation Areas.
- Congressionally Reserved Areas** - Areas that require Congressional enactment for their establishment, such as National Parks, Wild and Scenic Rivers, National Recreation Areas, National Monuments, and Wilderness. (11). These are also referred to as Congressional Reserves.
- Connectivity** - A measure of the extent to which conditions among LS/OG forest areas provide habitat for breeding, feeding, dispersal, and movement of LS/OG-associated wildlife and fish species (see LS/OG Forest). (11)
- Consultation** - Formal consultation is a process that occurs between the Fish and Wildlife Service or the National Marine Fisheries Service and a federal agency that commences with the federal agency's written request for consultation under Section 7(a)(2) of the Endangered Species Act regarding a federal action which may affect a listed species or its critical habitat. It concludes with the issuance of the biological opinion under Section 7(b)(3) of the Act. Informal consultation is an optional process that includes all discussions, correspondence, etc., between the Fish and Wildlife Service and the federal agency, or the designated nonfederal representative, prior to formal consultation, if required. If the listing agency determines that there is no likely adverse affect to the listed species, it may concur with the action agency that formal consultation is unnecessary.
- Consumptive use** - A use of resources that permanently reduces the supply, such as mining. (6)
- Core Area** - An area (as related to the spotted owl) encompassing at least 300 contiguous acres of old growth suitable for nesting and reproduction. The area consists of a pair's territory, in part, the nest site, and principal roost areas.
- Corridor** - A linear strip of land identified for the present or future location of transportation or utility rights-of-way within its boundaries. (1)
- Cost effective** - Achieving specified outputs or objectives under given conditions for the least cost. (6)
- Cost efficiency** - The usefulness of specified inputs (costs) to produce specified outputs (benefits). In measuring cost efficiency, some outputs, including environmental, economic, or social impacts, are not assigned monetary values, but are achieved at specified levels in the least costly manner. Cost efficiency is usually measured using present net value, although use of benefit cost ratios and internal rate-of-return may be appropriate. (1)
- Council on Environmental Quality (CEQ)** - An advisory council to the President established by the National Environmental Policy Act of 1969. It reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters. (Abstracted from the National Environmental Policy Act of 1969, as Amended.)
- Cover** - Vegetation used by wildlife for protection from predators, or to mitigate weather conditions, or to reproduce. May also refer to the protection of the soil and the shading provided to herbs and forbs by vegetation. (11)
- Cover/forage ratio** - The mixture of cover and forage areas on a unit of land, expressed as a ratio. For example: The optimum cover/forage mix for mule deer on summer range is 60:40.

Glossary

- Created opening** - An opening in the Forest created by the silvicultural practices of final removal harvest of shelterwood, clearcutting, seed tree cutting, or group selection cutting. (2)
- Criteria Air Pollutants** - A group of common air pollutants regulated by the Environmental Protection Agency on the basis of criteria (information on health and/or environmental effects of pollution). Concentrations of these criteria pollutants are limited by National Ambient Air Quality Standards (NAAQS).
- Critical Habitat** - Under the Endangered Species Act, critical habitat is defined as (1) the specific areas within the geographic area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management considerations or protection; and (2) specific areas outside the geographic area occupied by a listed species, when it is determined that such areas are essential for the conservation of the species. (11)
- Crown height** - In a standing tree, the vertical distance from ground level to the base of the crown, measured either to the lowest live branch whorl, or to the lowest live branch (excluding shoots arising spontaneously from buds on the stem of a woody plant), or to a point halfway between. (3)
- Cubic foot (CF)** - The amount of timber equivalent to a piece of wood one foot by one foot by one foot. (3)
- Culmination of mean annual increment (CMAI)** The age at which average annual growth is greatest for a stand of trees. Mean annual increment is expressed in cubic feet measure, and is based upon expected growth according to the management intensities and utilization standards assumed in accordance with 36 CFR 219.16(a)(2)(i) and (ii). Culmination of mean annual increment includes regeneration harvest yields and any additional yields from planned intermediate harvests. (10)
- Cultural resource** - The remains of sites, structures, or objects used by humans in the past—historic or prehistoric. (2)
- Cumulative Effects** - Those effects on the environment that result from the incremental effect of the action when added to the past, present, and reasonably foreseeable future actions regardless of what agency (Federal or nonfederal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. (11)

D

- DBH** - See Diameter at breast height
- DCA** - See Designated Conservation Area
- DEIS** - See Draft Environmental Impact Statement
- Debris Flow** - A rapid moving mass of rock fragments, soil, and mud, with more than half of the particles being larger than sand size.
- Debris Slide** - A slow to rapid slide, involving downslope translation of relatively dry and predominantly unconsolidated materials, with more than half of the particles being larger than sand size. (11)
- Debris Torrent** - Rapid movement of a large quantity of materials (wood and sediment) down a stream channel during storms or floods. This generally occurs in smaller streams and results in scouring of streambed.
- Decay Class** - See **Log Decomposition Class**.
- Decommission** - To remove those elements of a road that reroute hillslope drainage and present slope stability hazards. Another term for this is “hydrologic obliteration.” (11)
- Deer winter range** - See Big game winter range.

- Demand** - The amount of an output that users are willing to take at a specified price, time period, and condition of sale. (10)
- Demography** - The quantitative analysis of population structure and trends; population dynamics. (11)
- Designated Area** - One of the six land allocations in the President's Plan: Congressionally Reserved, Administratively Withdrawn, Late-Successional Reserve, Managed Late-Successional Reserve, Adaptive Management Area, and Riparian Reserve.
- Designated Area (Air Quality)** - Those areas delineated in the Oregon and Washington Smoke Management Plans as principal population centers of air quality concern.
- Designated Conservation Area (DCA)** - A contiguous area of habitat to be managed and conserved for spotted owls under the Final Draft Recovery Plan for the Northern Spotted Owl. This general description can be applied to two DCA categories: DCA 1 - Category intended to support at least 20 pairs of spotted owls. DCA 2 - Category intended to support one to 19 pairs of spotted owls. (11)
- Detritivores** - Organisms that feed on dead animals or partially decomposed organic matter.
- Developed recreation site** - Relatively small, distinctly defined areas where facilities are provided for concentrated public use, e.g., campgrounds, picnic areas, swimming areas, and downhill ski areas. (6)
- Diameter at breast height (d.b.h.)** - The diameter of a tree measured 4 feet 6 inches above the ground. (6)
- Dispersal Habitat** - Habitat that supports the life needs of an individual animal during dispersal. Generally satisfies needs for foraging, roosting, and protection from predators. (11)
- Dispersed recreation** - A general term referring to recreation use outside developed recreation sites; this includes activities such as scenic driving, hiking, backpacking, hunting, fishing, snowmobiling, horseback riding, cross-country skiing, and recreation in primitive environments. (2)
- Dissected** - Cut by erosional processes into hills and valleys, or into flat interstream areas and valleys. (11)
- District** - An administrative unit within the Bureau of Land Management, comparable to a Forest Service national forest.
- Disturbance** - A force that causes significant change in structure and/or composition through natural events such as fire, flood, wind, or earthquake, mortality caused by insect or disease outbreaks, or by human-caused events, e.g., the harvest of forest products. (11)
- Diversity** - The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan. (2) (1)
- Draft Environmental Impact Statement (DEIS)** The draft statement of environmental effects which is required for major federal actions under Section 102 of the National Environmental Policy Act, and released to the public and other agencies for comment and review. (6)
- Drainage** - An area (basin) mostly bounded by ridges or other similar topographic features, encompassing part, most, or all of a watershed and enclosing some 5,000 acres (see Subdrainage and Forest Watershed). (11)
- Duff Layer** - As specifically defined in the FEMAT Report, the layer of loosely compacted debris underlying the litter layer on the forest floor.

E

- EA** - See Environmental Assessment
- EIS** - See Environmental Impact Statement

Glossary

EPA - See Environmental Protection Agency

Early-Successional Forest - Forest seral stages younger than mature and old-growth age classes.

Earthflow - A mass-movement landform and slow to rapid process characterized by downslope translation of soil and weathered rock over a discrete shear zone at the base, with most of the particles being smaller than sand. (11)

Eastside - Generally, east of the crest of the Cascade Range.

Ecosystem - An interacting system of organisms considered together with their environment, for example, marsh, watershed, and lake ecosystems. (2)

Ecosystem Approach - As defined by the Forest Ecosystem Management Assessment Team: A strategy or plan to manage ecosystems to provide for all associated organisms, as opposed to a strategy or plan for managing individual species.

Ecosystem Management - The use of an ecological approach in land management to sustain diverse, healthy, and productive ecosystems. Ecosystem management is applied at various scales to blend long-term societal and environmental values in a dynamic manner that may be adapted as more knowledge is gained through research and experience.

Ecotone - A zone of intergradation between ecological communities.

Edge - An area where plant communities meet or where successional stages or vegetation conditions within the plant communities come together. (2)

Edge Effect - The effect of adjoining vegetative communities on the population structure along the margin, which often provides for greater numbers of species and higher population densities than either adjoining community. Edge may result in negative effects as well; habitat along an edge is different than in the patch of habitat, thus reducing the effective area of the habitat patch.

Effects - Environmental changes resulting from a proposed action. Included are direct effects, which are caused by the action and occur at the same time and place, and indirect effects, which are caused by the action and are later in time or further removed in distance, but which are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic quality, historic, cultural, economic, social, or healthy effects, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial. (40 CFR 1508.8, 2)

Endangered Species - Any species of plant or animal defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range, and published in the Federal Register. (11)

Endemic - A species that is unique to a specific locality. (11)

Ending Inventory Constraint - The standing volume left in the inventory at the end of the planning horizon. The constraint insures that there is enough standing inventory at the end of the planning horizon to perpetuate long-term sustained yield capacity harvest levels on a nondeclining flow basis.

Environmental Analysis - An analysis of alternative actions and their predictable short-term and long-term environmental effects, incorporating physical, biological, economic, and social considerations. (11)

Environmental Assessment (EA) - A systematic analysis of site-specific activities used to determine whether such activities have a significant effect on the quality of the human environment and whether a formal environmental impact statement is required; and to aid an agency's compliance with the National Environmental Policy Act when no environmental impact statement is necessary. (11)

Environmental Impact Statement (EIS) - A statement of the environmental effects of a proposed action and alternatives to it. It is required for major federal actions under Section 102 of the National Environmental Policy Act (NEPA), and released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, the Council on Environmental Quality (CEQ) guidelines, and directives of the agency responsible for the project proposal. (6)

Environmental Protection Agency (EPA) - An agency of the Executive Branch of the Federal Government which has the responsibility for environmental matters of national concern.

Ephemeral Streams - Streams that contain running water only sporadically, such as during and following storm events. It may not have a defined channel.(11)

Epizootic - Outbreak of disease (an epidemic) in a population of nonhuman animals.

Erosion - (1) The wearing away of the land surface by running water, wind, ice, or other geologic agents, including such processes as gravitation creep; or (2) detachment and movement of soil or rock fragments by water, wind, ice, or gravity. The following terms are used to describe different types of erosion:

Accelerated Erosion - Erosion which is much more rapid than natural erosion, with the increase in erosion rate resulting primarily from the influence of human activities, or, in some cases, of other events that expose mineral soil surfaces, such as wildfire.

Gully erosion - The erosion process whereby water accumulates in narrow channels, and over short periods, removes the soil from this narrow area to considerable depths, ranging from 4 inches to as much as 75 to 100 feet.

Rill erosion - An erosion process in which numerous small channels less than 4 inches deep and 6 inches wide are formed.

Sheet erosion - The removal of a fairly uniform layer of soil from the land surface by runoff water.

Escape Cover - Usually vegetation dense enough to hide an animal; used by animals to escape from potential enemies.

Even-aged management - The application of a combination of actions that results in the creation of stands in which trees of essentially the same age grow together. Managed even-aged forests are characterized by a distribution of stands of varying ages (and, therefore, tree sizes) throughout the forest area. The difference in age between trees forming the main canopy level of a stand usually does not exceed 20 percent of the age of the stand at harvest rotation age. Regeneration in a particular stand is obtained during a short period at or near the time that a stand has reached the desired age or size for regeneration and is harvested. Clearcut, shelterwood, or seed tree cutting methods produce even-aged stands. (1)

Exports - As used in IMPLAN are defined as outputs or products produced but not consumed or used in production of other outputs in the impact area. Includes both exports to other areas of the U.S. and international exports. (10)

Extensive Forest Management - A low investment level of management on regulated timberlands that requires initial harvest, regeneration, and final harvest. Some precommercial thinning may be done to prevent stagnation and disease buildup.

Extirpation - The elimination of a species from a particular area. (11)

F

FEMAT - See Forest Ecosystem Management Assessment Team

FERC - See Federal Energy Regulatory Commission

FLPMA - See Federal Land Policy and Management Act

FEIS - See Final Environmental Impact Statement

Fault - A break or shear in the continuity of a body of rock on which there has been an observable displacement of the two parts. (11)

Fauna - The animal life of a region or geological period.

Fecundity - Number of female young produced per adult female in the population of interest. (11)

Federal Land Policy and Management Act (FLPMA) - A law passed in 1976 applying to the Bureau of Land Management directing the management of lands administered by that agency including the requirement to develop land use plans and prepare regulations to guide that development.

Federal Energy Regulatory Commission (FERC) - Federal Agency under the Department of Energy having licensing authority for small hydro-power projects on Federal lands.

50-11-40 Rule - One of the standards and guidelines of the Interagency Scientific Committee strategy designed to provide dispersal habitat for northern spotted owls on lands outside reserves. Calls for maintaining 50 percent of forested land within each quarter township (9 square miles) in forested condition with stands of trees averaging at least 11 inches diameter at breast height and with a stand canopy closure of at least 40 percent. (11.)

Final cut - See Final removal harvest.

Final Environmental Impact Statement (FEIS) - The final report of environmental effects of proposed action on an area of land. This is required for major federal actions under Section 102 of the National Environmental Policy Act. It is a revision of the draft environmental impact statement to include public and agency responses to the draft. (11)

Final removal harvest - The removal of the last seed bearers or shelter trees after regeneration is established under a shelterwood system. (6)

Fish-Bearing Streams - Any stream containing any species of fish for any period of time.

Flood plain - The lowland and relatively flat area adjoining inland waters including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year. (2)

Flora - The plant life of a region or geological period.

Food Web - A modified food chain that expresses feeding relationships at various, changing trophic levels.

Forage - All browse and nonwoody plants that are available to livestock or game animals and used for grazing or harvested for feeding. (6)

Forb - Any herb other than grass. (7)

Foreground - A term used in visual management to describe the portions of a view between the observer and up to 1/4 to 1/2 mile distant. (6)

Forest and Rangeland Renewable Resources Planning Act of 1974 - An Act of Congress requiring the preparation of a program for the management of the National Forests' renewable resources, and the preparation of land and resource management plans for units of the National Forest System. It

also requires a continuing inventory of all National Forest System lands and renewable resources. (6)

Forest Ecosystem Management Assessment Team (FEMAT) - As assigned by President Clinton, the team of scientists researchers and technicians who formulated and analyzed the ten options which became the alternatives examined in the FSEIS for the President's Plan

Forest Land - Land that is now, or is capable of becoming, at least ten percent stocked with forest trees and that has not been developed for nontimber use. (11)

Forest system roads - Roads that are part of the Forest development transportation system, which includes all existing and planned roads as well as other special and terminal facilities designated as Forest development transportation facilities. (See roads.)

Forest Types - A classification of forest land based on the tree species presently forming a plurality of basal area stocking or crown cover of live trees.

Forest Watershed - The forested drainage area contributing water, organic matter, dissolved nutrients, and sediments to a lake or stream. (11)

FORPLAN - A linear programming system used for developing and analyzing forest planning activities. (10)

Fractured - A rock mass separated into distinct fragments. (11)

Fragmentation - The process of reducing size and connectivity of stands that compose a forest. (11)

Free-to-Grow - A term used by silviculturists to indicate that trees are free of growth restraints, the most common of which is competing overtopping vegetation.

Fuel break - A zone in which fuel quantity has been reduced or altered to provide a position for suppression forces to make a stand against wildfire. Fuel breaks are designated or constructed before the outbreak of a fire. Fuel breaks may consist of one or a combination of the following: natural barriers, constructed fuel breaks, constructed barriers. (6)

Fuel Loading - The weight of fuel present at a given site, usually expressed in tons per acre. This value generally refers to the fuel that would typically be available for consumption by fire. Fuel loading varies as a result of disturbance (including human activities), the magnitude of that disturbance, the successional stage of the vegetation, and other conditions of the site.

Fuel Profile - The amount and characteristics of live fuel and coarse woody debris in a given area. The amount is referred to as the fuel loading, while the characteristics include the horizontal and vertical arrangement and continuity of fuels that affect the spread and intensity of fire.

Fuel treatment - The rearrangement or disposal of natural or activity fuels (generated by management activity, such as slash left from logging) to reduce fire hazard. Fuels are defined as both living and dead vegetative materials consumable by fire.

Fuels - Combustible wildland vegetative materials. While usually applied to above ground living and dead surface vegetation, this definition also includes roots and organic soils such as peat. (10)

G

GIS - See Geographic Information System

Game species - Any species of wildlife or fish for which seasons and bag limits have been prescribed and which are normally harvested by hunters, trappers, and fishermen under state or federal laws, codes, and regulations. (6)

Glossary

Genetic Integrity - Refers to a normal healthy genetic pool (foundation) within the biological population to provide for long-term maintenance and survival of the species. Of specific concern in management direction is the prevention of loss of genetic variance (heterozygosity) and the avoidance of inbreeding depression, an important part of a given population's genetic integrity within the gene pool.

Genetic seedlings - Tree seedlings from a genetically superior seed source. The seeds are collected from trees displaying exceptional form and raised in nurseries before outplanting. The seedlings usually have faster growth rates than naturally regenerated seedlings.

Geographic Information System (GIS) - A computer system capable of storing and manipulating spatial (i.e., mapped) data.

Geomorphic - Pertaining to the form or shape of those processes that affect the surface of the earth. (11)

Goal - A concise statement that describes a desired condition to be achieved sometime in the future. It is normally expressed in broad general terms and is timeless in that it has no specific date by which it is to be completed. Goal statements form the principal basis from which objectives are developed. (2) (1)

Goods and services - The various outputs, including on-site uses, produced from forest and rangeland resources. (2) (1)

Granitic - Any light-colored, coarse-grained rock formed at considerable depth by crystallization of molten rock. (11)

Grass/forb - An early forest successional stage where grasses and forbs are the dominant vegetation.

Green Tree Retention - A stand management practice in which live trees as well as snags and large down wood are left as biological legacies within harvest units to provide habitat components over the next management cycle. There are two levels:

High level - A regeneration harvest designed to retain the highest level of trees possible while still providing enough disturbance to allow regeneration and growth of the naturally occurring mixture of tree species. Such harvest should allow for the regeneration of intolerant and tolerant species. Harvest design would also retain cover and structural features necessary to provide foraging and dispersal habitat for mature and old-growth dependant species.

Low level - A regeneration harvest designed to retain only enough green trees and other structural components (snag, coarse woody debris, etc.) to result in the development of stands that meet old-growth definitions within 100 to 120 years after harvest entry, considering overstory mortality. (11)

Group selection cutting - See Uneven-aged silvicultural systems.

H

Habitat - The place where a plant or animal naturally or normally lives or grows. (2)

Habitat Capability - The estimated ability of an area, given existing or predicted habitat conditions, to support a wildlife, fish or plant population. It is measured in terms of potential population numbers.

Habitat diversity - The distribution and abundance of different plant and animal communities and species within a specific area.

Hardwood - A broad-leaved flowering tree.

Harvest Cutting Method - A combination of interrelated actions whereby forests are tended, harvested, and replaced. The combination of management practices used to manipulate the vegetation results

in forests of distinctive form and character. Harvest cutting methods are classified as even-aged and uneven-aged. See also light, medium and heavy forest retention.

Harvest dispersion (factor) - The dispersion of cutting units over the land base in order to meet clearcut size limitations, or other resource constraints. An example of a harvest dispersion constraint is: no more than 25 percent of an analysis area may be harvested in one decade.

Helibase - A location within the general area of a wildfire or emergency event that is used to park, maintain, fuel and load helicopters.

Heavy Forest Retention - A harvest prescription which retains from 41 to 60 percent canopy cover after harvest.

Heterogeneity - The condition or state of being different in kind or nature.

Hibernacula - A case or covering which protects all or part of an animal or plant from extreme cold. A winter shelter for plants or dormant animals.

Hiding cover - Vegetation that will hide 90 percent of an adult deer or elk from the view of a human at a distance of 200 feet or less. The distance at which the animal is essentially hidden is called a "sight distance."

High Intensity Fire - A fire with the capability to be stand replacing or to cause excessive damage to late-successional forest characteristics.

High Severity Fire - A wildfire event with acute ecological impacts, usually, but not always of high intensity. (11)

Hybridization - The crossing or mating of two different varieties of plants or animals. (11)

Hydrology - The scientific study of the properties distribution and effects of water in the atmosphere, on the earth's surface, and in soil and rocks.

Hypogeous - Living or maturing below the surface of the ground (i.e., seedling cotyledons).

Hyporheic Zone - The area under the stream channel and flood plain that contributes to the stream. (11)

I

ID Team - See Interdisciplinary team.

Impacts - See Effects.

IMPLAN - A computer-based system used by the Forest Service for constructing nonsurvey input/output models to measure economic input. The system includes a data base for all countries in the U.S. and a set of computer programs to retrieve data and perform the computational tasks for input/output analysis. (10)

Improved genetic stock - Group of plants (trees) that have been improved genetically (4).

Indicator species - See Management indicator species.

Individual (single) tree selection - See Unevenaged silvicultural systems.

Induced outputs - Outputs in the private sector induced by the direct outputs produced on the Forest. (6)

Influence zone - See Zone of influence.

Ingrowth - The period after successional growth of a forest stand when it reaches a specified age or structure class. For instance, spotted owl forage habitat. (11)

Inner Gorge - A stream reach bounded by steep valley walls that terminate upslope into a more gentle topography. Common in areas of rapid stream downcutting or uplift, such as northern California and southwestern Oregon. (11)

Glossary

Input/output analysis - A quantitative study of the interdependence of a group of activities, based on the relationship between inputs and outputs of the activities. The basic tool of analysis is an input-output model for a given period that shows simultaneously for each economic sector the value of inputs and outputs, as well as the value of transactions within each economic sector. It has especially been applied to estimate the effects of changes in Forest output levels on local economic activity. (3)

Insectivores - Plants or animals which feed on insects.

Integrated pest management - A process for selecting strategies to regulate forest pests in which all aspects of a pest-host system are studied and weighed. The information considered in selecting appropriate strategies includes the impact of the unregulated population on various resource values, alternative regulation tactics and strategies, and benefit/cost estimates of those alternative strategies. Regulatory strategies are based on sound silvicultural practices and ecology of the pest-host system, and consist of a combination of tactics such as timber stand improvement plus selective use of pesticides. A basic principle in the choice of strategy is that it be ecologically compatible or acceptable. (2) (1)

Intensive management (intensive forest management) - A high investment level of timber management that includes use of precommercial thinnings, commercial thinnings, genetically improved stock, and control of competing vegetation. (2)

Interdisciplinary Team - A group of individuals with varying areas of specialty assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad enough to adequately analyze the problem and propose action. (11)

Intermingled Ownerships - Lands within the National Forest boundaries or surrounded by National Forest lands that are owned by private interests or other government agencies.

Intermittent Stream - Any non-permanent flowing drainage feature having a definable channel and evidence of annual scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two criteria. (11)

Inviolate Trail - (Similar to Priority Trail) A Forest trail managed to provide for a continuity of a quality recreation experience. Within a corridor averaging 50 feet on each side of the trail" no scheduled timber harvest or additional roads will occur. Refer to Forest-wide Standards and Guidelines, Recreation Planning and Inventory.

Irretrievable - Applies to losses of production, harvest, or commitment of renewable natural resources. For example, some or all of the timber production from an area is irretrievably lost during the time an area is used as a winter sports site. If the use is changed, timber production can be resumed. The production lost is irretrievable, but the action is not irreversible. (10)

Irreversible - Applies primarily to the use of nonrenewable resources, such as minerals or cultural resources, or to those factors that are renewable only over long time spans, such as soil productivity. Irreversible also includes loss of future options. (10)

Issue - A point, matter, or question of public discussion or interest to be addressed or decided through the planning process. (See also Public issue.) (2)

K

Key Watershed - As defined by National Forest and Bureau Land Management District fish biologists, a watershed containing (1) habitat for potentially threatened species or stocks of anadromous salmonids or other potentially threatened fish (Tier 1), or (2) greater than six square miles with high-quality water and fish habitat (Tier 2). (11)

Known Pairs or Resident Singles [owls] - Northern spotted owl activity centers identified prior to January 1, 1994.

Knutson-Vandenberg Act (K-V) - Legislation authorizing the collection of money from timber sales receipts for reforestation, stand improvement, or mitigation projects on timber sale areas.

Kuchler Vegetation Types - Potential natural vegetation of the contiguous United States, classified by A.W. Kuchler.

L

LS/OG - See LS/OG Forests

LSR - See late-successional reserve

LTSY - See Long-Term Sustained Yield Capacity

Land class - The topographic relief of a unit of land. Land classes are separated by slope, which coincides with the timber inventory process.

Land exchange - The conveyance of nonfederal land and/or interests in exchange for National Forest System land or interests in land.

Land management - The intentional process of planning, organizing, programming, coordinating, directing, and controlling land use actions. (6)

Land use allocation - The commitment of a given area of land or a resource to one or more specific uses—for example, to campgrounds or wilderness. (6)

Landing - Any place where round timber is assembled for further transport, commonly with a change of method. (3)

Landownership pattern - The National Forest System resource land base in relation to other land ownerships within given boundaries. (2)

Lands Not Appropriate for Timber Production - Includes lands that: 1) are proposed for resource uses that preclude timber production, such as Wilderness; 2) have other management objectives that limit timber production to the point where management requirements set forth in CFR 219.27 cannot be met; or 3) are not cost efficient over the planning horizon in meeting forest objectives including timber production. (1)

Lands Not Suited (Unsuitable) for Timber Production - Includes lands that: 1) are not forest land as defined in CFR 219.3; 2) are likely, given current technology, to suffer irreversible resource damage to soils productivity or watershed conditions; 3) cannot be adequately restocked as provided in 36 CFR 219.27(c)(3); or 4) have been withdrawn from timber production by an Act of Congress, the Secretary of Agriculture, or the Chief of the Forest Service. In addition, Forest lands in alternatives that are otherwise suited (items 1,2,3 and 4), but are located in management areas with prescriptions that preclude management timber production, such as Wilderness or Research Natural Areas.

Lands Suitable for Timber Production - Includes all lands not classified as either Not Suited or Not Appropriate for Timber Production.

Landscape - A heterogeneous land area with interacting ecosystems that are repeated in similar form throughout. (11)

Landscape management - The art and science of planning and administering the use of Forest lands in such ways that the visual effects maintain or upgrade human psychological welfare. The planning and design of the visual aspects of multiple-use land management.

Glossary

11/15/97

Large-scale Fire - A very large-sized fire compared to the natural range of fire sizes of the fire regime in the geographic area considered. Fires that greatly exceed the typical fire size are often of high intensity and may cause profound fire effects.

Late-Successional Forests - Forest seral stages which include mature and old-growth age classes.

Late-Successional Reserve (LSR) - A forest in its mature and/or old-growth stages that has been reserved. (11)

Lava Flow - A congealed stream of lava. (11)

Light Forest Retention - A harvest prescription which retains from 15 to 20 percent canopy cover after harvest.

Litter Layer - The loose, relatively undecomposed organic debris on the surface of the forest floor made up typically of leaves, bark, small branches, and other fallen material (see also Duff Layer). (11)

Log Decomposition Class - Any of five stages of deterioration of logs in the forest. Stages range from essentially sound (class 1) to almost total decomposition (class 5). (11)

Logging residues - See Slash.

Long-term sustained yield timber capacity (LTSY) - The highest uniform wood yield from lands being managed for timber production that may be sustained under a specified management intensity, consistent with multiple-use objectives. (1)

Long-Term Soil Productivity - The capability of soil to sustain inherent, natural growth potential of plants and plant communities over time.

LS/OG Forest (or Stands) - Late-successional and/or old growth. Forests or stands consisting of trees and structural attributes and supporting biological communities and processes associated with old-growth and/or mature forests. (11)

M

MA - See Management Area

MAC - See Management Area Category

MR - See Management Requirement

Managed Forest - Any forest land that is treated with silvicultural practices and/or harvested. Generally applied to land that is harvested on a scheduled basis and contributes to an allowable sale quantity. (11)

Managed Pair Areas - In some portions of the northern spotted owl's range it is necessary to provide additional protection in the matrix for pairs of owls and territorial singles. This consists of delineating a core habitat area, plus additional acreage of suitable habitat around the core. The acreage to be delineated around the core varies throughout the range, based on data for pairs in that area. The suitable acreage must be delineated in an area equal to the mean home range for that physiographic province. Appropriate silvicultural treatment is encouraged in suitable and unsuitable habitat in the acreage around the core. (11)

Management Activity - An activity undertaken for the purpose of harvesting, traversing, transporting, protecting, changing, replenishing, or otherwise using resources. (11)

Management Area (MA) - An area with similar management objectives and a common management prescription. (1) (10)

Management Area Category (MAC) - Provides direction (practices) for specific portions of the Forest. Each MAC identifies a goal, or management emphasis, and the desired future condition of the land. Each MAC includes one or more management areas.

Management concern - An issue, problem, or condition which influences the range of management practices identified by the Forest Service in the planning process. (1)

- Management direction** - A statement of multiple use and other goals and objectives, and the associated management prescriptions, and standards and guidelines for attaining them. (1)
- Management emphasis** - That portion of a management scheme which receives the most stress or is of the greatest significance or importance. It may be the resources being produced or it may be the way in which they are produced.
- Management Framework Plan (MFP)** - A land use plan that established coordinated land use allocations for all resource and support activities for a specific land area within a Bureau of Land Management District. It established objectives and constraints for each resource and support activity and provided data for consideration in program planning. This process has been replaced by the Resource Management Planning process. (11)
- Management Indicator species** - A species selected because it's welfare is presumed to be an indicator of the welfare of other species using the same habitat. A species whose condition can be used to assess the impacts of management actions on a particular area. (8)
- Management intensity** - The management practices or combination of management practices and associated costs to obtain different levels of goods and services (1). In FORPLAN management prescriptions, a set of activities designed to accomplish a particular management emphasis.
- Management practice** - A specific activity, measure, course of action, or treatment. (1)
- Management Requirement (MR)** - Minimum standards for resource protection, vegetation manipulation, silvicultural practices, even-aged management, riparian areas, wildlife population viability, soil and water protection and diversity, to be met in accomplishing National Forest System goals and objectives. (1)
- Marbled Murrelet Zone 1** - A 10 to 40 mile-wide zone adjacent to marine areas in which the majority of marbled murrelet detections and nests are located. (11)
- Marbled Murrelet Zone 2** - An inland zone that abuts marbled murrelet zone 1. Numbers of murrelet detections in zone 2 indicate that it is used by only a small fraction of the breeding population. (11)
- Mass Movement** - The downslope movement of earth caused by gravity. Includes but is not limited to landslides, rock falls, debris avalanches, and creep. It does not, however, include surface erosion by running water. It may be caused by natural erosional processes or by natural disturbances (e.g., earthquakes or fire events) or human disturbances (e.g., mining or road construction). (11)
- Matrix** - Federal lands outside of the six designed areas. (11)
- Mature timber** - Trees that have attained full development, particularly height, and are in full seed production. (3)
- Maximum modification** - See Visual quality objective.
- Mean Annual Increment of Growth** - The total volume of a tree or stand of trees up to a given age divided by that age. (2)
- Medium Forest Retention** - A harvest prescription which retains from 21 to 40 percent canopy cover after harvest.
- Merchantable Trees, Stands, Timber** - Trees or stands that people will buy for the wood they contain. (11)
- Mesic** - Pertaining to or adapted to an area that has a balanced supply of water; neither wet nor dry. (11)
- Microhabitats** - A restricted set of distinctive environmental conditions that constitute a small habitat, such as the area under a log. (11)

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Middle ground - A term used in visual management to describe the portions of a view extending from the foreground zone out to 3 to 5 miles from the observer. (6)

Mineral entry - The filing of a mining claim upon public domain or related land to obtain the right to any minerals it may contain. (6)

Mineral entry withdrawal - The exclusion of mining locations and mineral development work on areas required for administrative sites by the Forest Service and other areas highly valued by the public. (6)

Mining claim - A portion of the public lands which a miner, for mining purposes, takes and holds in accordance with mining laws. (6)

Mitigation - Mitigation includes: (a) avoiding the impact altogether by not taking a certain action or parts of an action; (b) minimizing impacts by limiting the degree or magnitude of the action and its implementation; (c) rectifying the impact by repairing, rehabilitating, or restoring the affected environment; (d) reducing or elimination the impact over time by preservation and maintenance operations during the life of the action; and, (e) compensating for the impact by replacing or providing substitute resources or environments. (40 CFR Part 1508.20)

Mitigation measures - Modifications of actions that (1) avoid impacts by not taking a certain action or parts of an action; (2) minimize impacts by limiting the degree or magnitude of the action and its implementation; (3) rectify impacts by repairing, rehabilitating, or restoring the affected environment; (4) reduce or eliminate impacts over time by preservation and maintenance operations during the life of the action; or (5) compensate for impacts by replacing or providing substitute resources or environments(11)

Modification - See Visual quality objective.

Monitoring - A process of collecting information to evaluate if objective and anticipated or assumed results of a management plan are being realized or if implementation is proceeding as planned. (11)

Monitoring and evaluation - The periodic evaluation of Forest Plan management practices on a sample basis to determine how well objectives have been met.

Mosaic Burn - A burn pattern that leaves a range of spatial and temporal effects as a result of different fire intensities and duration. The objective of mosaic burning is to cause differential fire effects across the landscape.

Multiple Use - The management of all the various renewable surface resources of the National Forest System so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some lands will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land and with consideration being given to the relative values of the various resources; and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output. (1)

Multistoried - Forest stands that contain trees of various heights and diameter classes and therefore support foliage at various heights in the vertical profile of the stand. (11)

Municipal Watershed - A watershed which provides water for human consumption, where Forest Service management could have a significant effect on the quality of water at the intake point, and that provides water utilized by a community or any other water system that regularly serves: 1) at least 25 people on at least 60 days in a year, or 2) at least 15 service connections. In addition to cities, this includes campgrounds, residential developments, and restaurants. (10)

Mycotrophic - Feeding on or otherwise being nourished by fungi

N

NEPA - See National Environmental Policy Act

NFMA - See National Forest Management Act

NFS - National Forest System

NRT - National Recreation Trails

National Ambient Air Quality Standards (NAAQS) - Standards set by the Environmental Protection Agency that limit the concentrations of certain air pollutants that endanger public health or welfare.

National Environmental Policy Act (NEPA) - An Act passed in 1969 to declare a National policy that encourages productive and enjoyable harmony between humankind and the environment, promotes efforts that prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humanity, enriches the understanding of the ecological systems and natural resources important to the nation, and establishes a Council on Environmental Quality (The Principal Laws Relating to Forest Service Activities, Agric. Handbook. 453. USDA Forest Service, 359 p.). (11)

National Forest Land and Resource Management Plan - A Plan which “. . . shall provide for multiple use and sustained yield of goods and services from the National Forest System in a way that maximizes long-term net public benefits in an environmentally sound manner.” (1)

National Forest Management Act (NFMA) - A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act, requiring the preparation of Forest Plans and the preparation of regulations to guide that development. (11)

National Forest Systems (NFS) - All National Forest lands reserved or withdrawn from the public domain of the United States, all National Forest lands acquired through purchase, exchange, donation, or other means, the National Grasslands and land utilization projects administered under Title III of the Bankhead-Jones Farm Tenant Act (50 Stat. 525, 7 U.S.C. 1010-1012), and other lands, waters, or interests therein which are administered by the Forest Service or are designated for administration through the Forest Service as a part of the system. (16 U.S.C. 1608)

National Recreation Trails (NRT) - Trails designated by the Secretary of the Interior or the Secretary of Agriculture as part of the national system of trails authorized by the National Trails System Act. National Recreation Trails provide a variety of outdoor recreation uses. (6)

National Register of Historic Places - A listing (maintained by the U.S. National Park Service) of areas which have been designated as being of historical significance. The Register includes places of local and state significance as well as those of value to the nation. (6)

Natural regeneration - Reforestation of a site by natural seeding from the surrounding trees. Natural regeneration may or may not be preceded by site preparation.

Neotropical - Designating or of the biogeographic realm that includes South America, the Indies, Central America and tropical Mexico.

Nesting, Roosting, and Foraging Habitat - The forest vegetation with the age class, species of trees, structure, sufficient area, and adequate food source to meet some or all of the life needs of the northern spotted owl. (11)

Net public benefits - An expression used to signify the overall long-term value to the nation of all outputs and positive effects (benefits) less all associated inputs and negative effects (costs), whether they can be quantitatively valued or not. Net public benefits are measured by both quantitative and qualitative criteria rather than a single measure or index. The maximization of net public benefits

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to be derived from management of units of the National Forest System is consistent with the principles of multiple use and sustained yield. (1)

Nonattainment Area - A geographic area in which the level of a criteria air pollutant is higher than the geographic area may have acceptable levels of one criteria air pollutant, but unacceptable levels of other criteria pollutants, resulting in an area that is in both attainment and nonattainment status at the same time.

Noncommercial Tree Species - Minor conifer and hardwood species whose yields are not reflected in the commercial conifer forest land allowable sale quantity. Some species may be managed and sold under a suitable woodland allowable sale quantity and, therefore, may be commercial as a woodland species. (11)

Nondeclining flow - Where the quantity of timber planned for sale and harvest for any future decade is equal to or greater than the planned sale and harvest for the preceding decade, and this planned sale and harvest for any decade is not greater than the long-term sustained yield capacity. (1)

Nonforest Land - Land developed for nontimber uses or land incapable of being ten percent stocked with forest trees. (11)

Nongame species - Animal species which are not hunted, fished, or trapped.

Nonpoint source pollution - Pollution whose source is general rather than specific in location. It is widely used in reference to agricultural and related pollutants-- for example, production of sediments by logging operations, agricultural pesticide applications, or automobile exhaust pollution. (6)

O

ORV - See Off-road vehicle

O&C Lands - Public lands granted to the Oregon and California Railroad Company or the Coos Bay Wagon Road Company and subsequently revested to the United States, which are managed by the Bureau of Land Management under the authority of the O&C Lands Act.

Objective - A concise, time-specific statement of measurable planned results that respond to pre-established goals. An objective forms the basis for further planning to define the precise steps to be taken and the resources to be used in achieving identified goals. (1)

Occupancy Trespass - The illegal occupation or possession of National Forest land or property.

Off-road vehicle (ORV) - Vehicles such as motorcycles, all-terrain vehicles, four-wheel drive vehicles, and snowmobiles. (2)

Off-Channel Habitat - Channels or ponds in a flood plain, at least seasonally connected to the primary channel, that are in addition to and frequently parallel the primary flowing channel. These most frequently occur in unconstrained reaches.

Old-growth stand (old growth) - Any stand of trees ten acres or greater generally containing the following characteristics: 1) contain mature and overmature trees in the overstory and are well into the mature growth stage; 2) will usually contain a multi-layered canopy and trees of several age classes; 3) standing dead trees and down material are present; and 4) evidences of man's activities may be present, but do not significantly alter the other characteristics and would be a subordinate factor in a description of such a stand. See the Regional Guide. (2)

Old-Growth Associated Species - Plant and animal species that exhibit a strong association with old-growth forests. (11)

Old-Growth Emphasis Areas (OGEA) - In Bureau of Land Management Draft planning documents of 1992, areas where management emphasis will be given to providing for old-growth associated

species and biological diversity. Management would provide for timber production when consistent with local and landscape level diversity. (11)

Opening -

Silvicultural Context: a plantation less than 4 ½ feet in height and/or not meeting the minimum reforestation stocking standards.

a harvest prescription resulting in less than 40 percent crown closure.

Visual Quality Context: stands less than 5 inches dbh are considered openings.

Harvest prescriptions retaining less than Moderate Forest Retention are considered openings.

Ordinary Salvage - Recovery of scattered small group or individual tree mortality resulting from inter-tree competition or endemic levels of insect and disease activity.

Orographic - Influenced or caused by the effect of mountains, as in moisture laden air being forced across mountains, thereby cooling and condensing, and if in sufficient quantity, this is deposited on the higher terrain as precipitation. The amount of precipitation on the higher terrain may be significantly greater than on the surrounding landscape.

Output - A good, service, or on-site use that is produced from forest and rangeland resources. See FSH 1309.11 for forest and rangeland outputs codes and units measure. Examples: X06-Softwood Sawtimber Production MBF; X80-increased Water Yield - Acre Feet; W01-Primitive Recreation Use RVD's. (FSM 1905)

Overstory - Trees that provide the uppermost layer of foliage in a forest with more than one roughly horizontal layer of foliage. (11)

P

PAOT -See Persons-at-one-time

PSD - See Prevention of Significant Deterioration

PSQ - See Probable Sale Quantity

Packing - A temporary influx of organisms of various sex and age classes into remaining suitable habitat as previously available habitat is changed to unsuitable conditions. (11)

Pair Site - An amount of habitat that is considered capable of supporting one pair of spotted owls. (11)

Partial Cut - Covers a variety of silvicultural practices where a portion of the stand is removed and a portion is left.

Partial retention - See Visual quality objective.

Particulates - Small particles suspended in the air and generally considered pollutants. (See Total Suspended Particulates.) (5)

Passerine - Pertaining to an order (Passeriformes) of small or medium-sized, chiefly perching songbirds having grasping feet with the first toe directed backward.

Patch - A small (20-60 acre) part of the forest. This term is often used to indicate a type of clearcutting (patch cuts) associated with the "staggered setting" approach to distributing harvest units across the landscape. (11)

Perennial Stream - A stream that typically has running water on a year-round basis. (11)

Persistence - As in population persistence, is a term for the capacity of a population to maintain sufficient numbers and distribution over time.

Persons-at-one-time (PAOT) - A recreation capacity measurement term indicating the number of people who can use a facility or area at one time. (2)

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- Physiographic Province** - A geographic area having a similar set of biophysical characteristics and processes due to effects of climate and geology which result in patterns of soils and broad-scale plant communities. Habitat patterns, wildlife distributions, and historical land use patterns may differ significantly from those of adjacent provinces. (11)
- Planning Area** - All of the lands within a Federal agency's management boundary addressed in land management plans. (11)
- Plateau** - A table-land of flat-topped region of considerable extent and elevation. (11)
- PM10** - Particulate Matter smaller than 10 micrometers in size. A criteria pollutant comprised of airborne solid and liquid particles that are 10 micrometers or smaller in size. Because of its small size, PM10 readily lodges in the lungs, thus increasing respiratory and cardiac diseases in humans and other organisms.
- Population Viability** - Probability that a population will persist for a specified period across its range despite normal fluctuations in population and environmental conditions. (11)
- Precommercial Thinning** - The practice of removing some of the trees less than merchantable size from a stand so that remaining trees will grow faster. (11)
- Prescribed fire** - A wildland fire burning under specified conditions which will accomplish certain planned objectives. The fire may result from either planned or unplanned ignitions. Proposals for use of unplanned ignitions for this purpose must be approved by the Regional Forester. (2)
- Prescription** - A written direction for harvest activities and regeneration methods.
- Preservation** - A visual quality objective that allows only for ecological changes. (2)
- President's Plan** - Common name for the *Record of Decision for Amendments to the Forest Service and the Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl*.
- Presuppression** - Activities organized in advance of fire occurrence to ensure effective suppression action and/or to minimize risk to humans and resource damage. (11)
- Prevention of Significant Deterioration (PSD)** - A program under the Clean Air Act that sets forth regulations to prevent degrading the air in areas where the air is already cleaner than required by the National Ambient Air Quality Standards.
- Primary Influence Area** - Those southwestern Washington areas most directly affected socially and economically by the Forest (including Clark, Cowlitz, Lewis, Skamania, and the western portion of Klickitat Counties).
- Primitive recreation** - Those types of recreational activities associated with unroaded land -- e.g., hiking, backpacking, cross-country travel. (6)
- Probable Sale Quantity (PSQ)** - Probable sale quantity (PSQ) was used by the Assessment Team rather than allowable sales quantity (ASQ) to describe the allowable harvest levels for the various alternatives that could be maintained without decline over the long term if the schedule of harvests and regeneration were followed. "Allowable" was changed to "probable" to reflect some uncertainty in the calculations for the various alternatives, for example, many of the alternatives require watershed analysis in Key Watersheds before timber harvest can occur. Estimates were made of probable sale levels using a set of interim rules for those Key Watersheds. PSQ is otherwise comparable to ASQ. PSQ includes only scheduled or regulated yields from the matrix and does not include "other wood," or volume of cull and other products that are not normally part of ASQ calculations.
- Programmed Harvest** - The amount of timber on the Forest that is scheduled for harvest. Programmed harvest is based on current demand, funding, and multiple-use considerations.
- Propagule** - A reproductive structure of in a plant from which a new individual may arise, may also be a unit of dispersal.

Public Involvement - A Forest Service process designed to broaden the information base upon which agency decisions are made by (1) informing the public about Forest Service activities, plan, and decisions, and (2) encouraging public understanding about and participation in the planning processes which lead to final decision making. (10)

Public issue - A subject or question of widespread public interest relating to management of the National Forest System. (1)

Public participation - Meetings, conferences, seminars, workshops, tours, written comments, responses to survey questionnaires, and similar activities designed and held to obtain comments from the public about Forest Service planning. (2)

Public Participation Activities - Meetings, conferences, seminars, workshops, tours, written comments, survey questionnaires, and similar activities designed or held to obtain comments from the general public and specific publics.

Q

Quarter-Township - An area approximately 3 miles square containing nine sections of land. (11)

R

RARE II - See Roadless Area Review and Evaluation II

RIM - See Recreation Information Management

RM - See Roaded modified

RMP - See Resource Management Plan

RN - See Roaded natural

RNA - See Research Natural Area

ROS - See Recreation Opportunity Spectrum

RPA - See Resource Planning Act

RVD - See Recreation Visitor Day

Range - Land producing native forage for animal consumption, and lands that are revegetated naturally or artificially to provide forage that is managed like native vegetation. (6)

Range allotment - An area designated for use of a prescribed number and kind of livestock under one management plan. (6)

Range of the Northern Spotted Owl - The range of the northern spotted owl in the United States is generally comprised of lands in western Washington and Oregon, and northern California.

Raptors - Predatory birds such as falcons, hawks, eagles, and owls.

Record of Decision - A document separate from but associated with an environmental impact statement that states the management decision, identifies all alternatives including both the environmentally preferable and selected alternatives, states whether all practicable means to avoid environmental harm from the selected alternative have been adopted, and if not, why not. (11)

Recovery Plan - A plan for the conservation and survival of an endangered species or a threatened species listed under the Endangered Species Act, to improve the status of the species to justify delisting in accordance with the Endangered Species Act.

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Recreation capacity - The number of people that can take advantage of the recreation opportunity at any one time without substantially diminishing the quality of the experience or the biophysical resources. (2)

Recreation Information Management (RIM) - A computer-oriented system for the organization and management of information concerning recreation use, occupancy, and management of National Forest lands.

Recreation opportunity - The availability of choices for users to participate in the recreational activities they prefer within the settings they prefer.

Recreation Opportunity Spectrum (ROS) - A framework for stratifying and defining classes of outdoor recreation environments, activities, and experience opportunities. The settings, activities, and opportunities for obtaining experiences have been arranged along a continuum or spectrum divided into seven classes: Primitive, Semiprimitive Nonmotorized, Semiprimitive Motorized, Roaded Modified, Roaded Natural, Rural, Urban.

1. Primitive - Area is characterized by an essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.

2. Semiprimitive Nonmotorized - Area is characterized by a predominantly natural or natural appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but would be subtle. Motorized recreation use is not permitted, but local roads used for other resource management activities may be present on a limited basis. Use of such roads is restricted to minimize impacts on recreational experience opportunities.

3. Semiprimitive Motorized - Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on site controls and restrictions use of local primitive or collector roads with predominantly natural surfaces and trails suitable for motor bikes is permitted.

4. Roaded Natural - Area is characterized by predominantly natural-appearing environments with moderate evidence of the sights and sounds of man. Such evidence usually harmonizes with the natural environment. Interaction between users may be moderate to high, with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is allowed and incorporated into construction standards and design of facilities.

Recreation Visitor Day (RVD) - A measure of recreation use, in which one RVD equals twelve visitor hours, which may be aggregated continuously, intermittently, or simultaneously by one or more persons. (2)

Recreational river - See Wild and scenic river.

Reforestation - The natural or artificial restocking of an area with forest trees; most commonly used in reference to artificial stocking. (11)

Refugia - Locations and habitats that support populations of organisms that are limited to small fragments of their previous geographic range (i.e., endemic populations). (11)

Regeneration - The renewal of a tree stand, whether by natural or artificial means. Also, the young stand itself, which is commonly referred to as reproduction. (2)

Regeneration Cut - Any removal of trees to make regeneration possible.

- Region** - A Forest Service administrative unit. The two Regions affected by this proposed action are the Pacific Northwest Region (Region 6) which includes National Forests in Oregon and Washington, and the Pacific Southwest Region (Region 5) which includes National Forests in California. (11)
- Regional Forester** - The Forest Service official responsible for administering a single Region.
- Regional Guide** - The guide developed to meet the requirements of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act. Regional Guides provide standards and guidelines for addressing major issues and management concerns which need to be considered at the Regional level to facilitate National Forest planning. (11)
- Regulations** - Generally refers to the Code of Federal Regulations. (11)
- Release** - Freeing trees from competition for light, water, and nutrients by removing or reducing the vegetation growth that is overtopping or closely surrounding them.
- Removal cut (final cut)** - The removal of the last seed bearers or shelter trees after regeneration is established under a shelterwood method. (6)
- Renewable Resources** - Resources that are possible to use indefinitely, when the use rate does not exceed the ability to renew the supply.
- Rescue Effect** - Immigration of new individuals sufficient to maintain a population that might otherwise decline toward extinction. (11)
- Research Natural Area (RNA)** - An area set aside by a public or private agency specifically to preserve a representative sample of an ecological community, primarily for scientific and educational purposes. In Forest Service usage, research natural areas are areas designated to ensure representative samples of as many of the major naturally occurring plant communities as possible. (11)
- Reservation Principle** - Reserved water to protect and improve the use and productivity of the national forest and its resources.
- Reserved lands** - Lands reserved from the public domain for National Forest purposes, and lands which are added to the National Forest System by exchange for reserved National Forest lands.
- Reserved Pair Areas** - In those portions of the species' range where habitat and owl populations were inadequate to apply the criteria creating designated conservation areas, then individual pair areas were also reserved. These are areas of suitable habitat identified for pairs and territorial single owls. The acreage of these areas varies throughout the range, based on data for pairs in each physiographic province. All suitable habitat is reserved in an area equal to the mean home range for that province. (11)
- Residual stand** - The trees remaining standing after some activity such as selection cutting. (2)
- Resource Advisor** - A resource specialist designated to assist fire management personnel in the protection of resource values (biological, physical, social, or cultural) during the suppression of a wildfire. This protection is intended to limit the negative impacts of both the wildfire and the fire suppression actions.
- Resource Management Plan (RMP)** - A land use plan prepared by an agency under current regulations in accordance with the Federal Land Policy and Management Act. (11)
- Resource Planning Act (RPA)** - The Forest and Rangeland Renewable Resources Planning Act of 1974. Also refers to the National Assessment and Recommended Program developed to fulfill the requirements of the act. (2)
- Responsible Line Officer** - The Forest Service employee who has the authority to select and/or carry out a specific planning action. (1)
- Retention** - See Visual quality objective.

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Returns to Counties - The portion of receipts derived from Forest Service resource management that is distributed to State and county governments such as the Forest Service 25 percent fund payments.

Right-of-way (R/W) - An accurately located strip of land with defined width, point of beginning, and point of ending; the area within which the user has authority to conduct operations approved or granted by the landowner in an authorizing document, such as a permit, easement, lease, license, or Memorandum of Understanding. (6)

Riparian - Pertaining to areas of land directly influenced by water. Riparian areas usually have visible vegetative or physical characteristics reflecting this water influence. Stream sides, lake borders, or marshes are typical riparian areas. (3)

Riparian Area - As specifically defined in the FEMAT Report, a geographic area containing an aquatic ecosystem and adjacent upland areas that directly affect it. This includes flood plain, woodlands, and all areas within a horizontal distance of approximately 100 feet from the normal line of high water of a stream channel or from the shoreline of a standing body of water.

Riparian ecosystem - A transition between the aquatic ecosystem and the adjacent upland terrestrial ecosystem. Identified by soil characteristics and distinctive vegetation communities that require free or unbound water.

Riparian Habitat Conservation Area - Portions of a watershed that contribute to the creation and maintenance of fish habitat. (11)

Riparian Reserves - Designated riparian areas found outside Late-Successional Reserves. (11)

Riparian Zone - As specifically defined in the FEMAT Report, those terrestrial areas where the vegetation complex and microclimate conditions are products of the combined presence and influence of perennial and/or intermittent water, associated high water tables, and soils that exhibit some wetness characteristics. Normally used to refer to the zone within which plants grow rooted in the water table of these rivers, streams, lakes, ponds, reservoirs, springs, marshes, seeps, bogs, and wet meadows.

Ripping - The process of breaking up or loosening compacted soil (e.g., skid trails or spur roads) to better assure penetration of roots of young tree seedlings. (11)

Road - A general term denoting a way for purposes of travel by vehicles greater than 40 inches in width.

1. *Forest Arterial Road.* Provides services to large land areas and usually connects with public highways or other forest arterial roads to form an integrated network of primary travel routes. The location and standard are often determined by a demand for maximum mobility and travel efficiency rather than specific resource management service. It is usually developed and operated for long-term land and resource management purposes and constant service. (10)
2. *Forest Collector Road.* Serves smaller land areas than a forest arterial road and is usually connected to a forest arterial or public highway. Collects traffic from forest local roads and/or terminal facilities. The location and standard are influenced by both long-term multi-resource service needs as well as travel efficiency. May be operated for either constant or intermittent service, depending on land use and resource management objectives for the area served by the facility. (10)
3. *Forest Local Road.* Connects terminal facilities with forest collector or forest arterial roads or public highways. The location and standard are usually controlled by specific resource activity requirements rather than travel efficiency needs.

Roaded modified (RM) - A classification of the Recreation Opportunity Spectrum that characterizes a predominately altered environment, allowing for noticeable to strongly-evident management activity.

Roaded natural (RN) - A classification of the Recreation Opportunity Spectrum that characterizes a predominately natural environment with evidence of moderate permanent alterations and resource utilization. Evidence of the sights and sounds of people is moderate, but in harmony with the natural environment. Opportunities exist for both social interaction and moderate isolation from the sights and sounds of people. (2)

Roadless Area - Areas typically exceeding 5,000 acres that were inventoried during the Forest Service's Roadless Area Review and Evaluation (RARE II) process and remain in a roadless condition.

Roadless Area Review and Evaluation II (RARE II) - The national inventory of roadless and undeveloped areas within the National Forest and Grasslands. This refers to the second such assessment, which was documented in the Final Environmental Impact Statement of the Roadless Area Review and Evaluation, January 1979. (2)

Rock Stability Groups - Groups of rocks having similar resistance to physical and chemical weathering. These properties strongly influence rates of soil development, types of mass wasting and other erosion processes, and hydrologic and biologic processes. Groups with decreasing resistance are described as resistant, intermediate, weak, and unconsolidated.

Roost - The resting behavior of an animal. (11)

Rotation - The planned number of years between regeneration of a forest stand and its final harvest (regeneration cut or harvest). A forest's age at final harvest is referred to as rotation age. In this report, an extended rotation is 120-180 years, a long rotation 180 years. (11)

Roundwood products - Logs, bolts, or other round sections cut from trees.

RPA - See Forest and Rangeland Renewable Resources Planning Act of 1974.

Rural - A Recreation Opportunity Spectrum classification for areas characterized by a substantially modified natural environment. Sights and sounds of people are evident. Renewable resource modification and utilization practices enhance specific recreation activities or provide soil and vegetative cover protection.

Rural Interface (urban/wildland interface) - A line, area, or zone where structures and other human developments meet or intermingle with undeveloped wildland or vegetative fuels.

S

SIP - See State Implementation Plan

SMU - See Streamside Management Unit

SOHA - See Spotted Owl Habitat Area

SPM - See Semiprimitive motorized

SPNM - See Semiprimitive nonmotorized

Sale schedule - The quantity of timber planned for sale by time period from the area of suitable land covered by a Forest plan. The first period, usually a decade, of the selected sale schedule provides the allowable sale quantity. Future periods are shown to establish that long-term sustained yield will be achieved and maintained. For planning purposes, the sale schedule and the allowable sale quantity are synonymous for all periods or decades over the planning horizon. (1)

Salmonid - Refers to fish of the family Salmonidae. Within the range of the northern spotted owl these include all salmon, trout, and whitefish.

Salvage cuttings - Intermediate cuttings made to remove trees that are dead or in imminent danger of being killed by injurious agents. (10)

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Sanitation cuttings - Intermediate cuttings made to remove dead, damaged, or susceptible trees to prevent the spread of pests or pathogens. (10)

Sawtimber - Trees containing at least one 12-foot sawlog or two noncontiguous 8-foot logs, and meeting regional specifications for freedom from defect. Softwood trees must be at least 9 inches in diameter and hardwood trees 11 inches in diameter at breast height.

Scenic River Areas - See Wild and scenic river.

Scheduled timber harvests - Volumes and acres programmed for harvest which are within the allowable sale quantity. This does not include salvage and sanitation harvesting.

Scoping process - A part of the National Environmental Policy Act (NEPA) process; early and open activities used to determine the scope and significance of the issues, and the range of actions, alternatives, and impacts to be considered in an Environmental Impact Statement. (40 CFR 1501.7)

Scour - Evidence of movement of material, erosion or deposition, in a downslope direction due to transport of water. Substrate in channel different than surrounding substrate (mineral or litter layers). Similar substrate underlays surrounding mineral or litter layers.

Scribner - A system for estimating the number of board feet that may be produced from a tree or log.

Seasonally Saturated Soil - A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions.

Second Growth - Relatively young forests that have developed following a disturbance (e.g., wholesale cutting, serious fire, or insect attack) of the previous old-growth forest. (11)

Section 7 Consultation - Consultation with the U.S. Fish and Wildlife Service prescribed by Section 7 of the Endangered Species Act in situations where an endangered species may be present in the area affected by a project.

Sediment - Earth material transported, suspended, or deposited by water. (6)

Sediment Yield - The quantity of soil, rock, particles, organic matter, or other dissolved or suspended debris is transported through a cross-section of stream in a given period. Measured in dry weight or by volume. Consists of dissolved load, suspended load, and bed load. (11)

Seed tree cutting - Removal in one cut of the mature timber from an area, except for a small number of seed bearers left singly or in small groups. (3)

Seedlings and saplings - Live trees less than five inches in diameter at breast height. (See also Size class.) (3)

Seeps - Places where water oozes from the ground to form a pool.

Selection Cutting - a method of uneven-aged management involving the harvesting of single trees from stands (single-tree selection) or in groups (group selection) without harvesting the entire stand at any one time. (11)

Semiprimitive motorized (SPM) - A classification of the Recreation Opportunity Spectrum, characterized by a predominantly unmodified natural environment in a location that provides good to moderate isolation from sights and sounds of people, except for those facilities/travel routes sufficient to support motorized recreational travel opportunities which present at least moderate challenge, risk, and a high degree of skill testing. (2)

Semiprimitive nonmotorized (SPNM) - A classification of the Recreation Opportunity Spectrum, characterized by a predominately unmodified natural environment of a size and location that provides a good to moderate opportunity for isolation from sights and sounds of people. The area is large enough to permit overnight foot travel within the area, and presents opportunity for

interaction with the natural environment with moderate challenge, risk, and use of a high degree of outdoor skills. (2)

Sensitive Species - Those species that (1) have appeared in the Federal Register as proposed for classification and are under consideration for official listing as endangered or threatened species or (2) are on an official state list or (3) are recognized by the U.S. Forest Service or other management agency as needing special management to prevent their being placed on Federal or state lists. (11)

Sensitivity analysis - A determination of the effects of varying the level of one or more factors, while holding the other factors constant. (6) (10)

Seral - A biotic community which is a developmental, transitory stage in an ecologic succession. (6)

Seral Stages - The series of relatively transitory planned communities that develop during ecological succession from bare ground to the climax stage. (11)

Serpentine Soils - Soils developed on altered ultramafic rocks. (11)

Serpentinite/Peridotite - The association of dark-colored, coarse-grained, iron and magnesium-rich igneous rock (peridotite) with the products of hydrothermal alteration and faulting of these rocks (serpentinite). (11)

Shelterwood - A regeneration method under an even-aged silvicultural system. A portion of the mature stand is retained as a source of seed and/or protection during the period of regeneration. The mature stand is removed in two or more cuttings. (11)

Shoreline/Coastline ratio - The ratio of the actual shoreline length to the length of a line running north-south between the northern and southern coastal borders of the analysis area.

Short List - Refers to Appendix 5-D, Attributes of Terrestrial (Non-Fish) Vertebrates Closely Associated With Old-Growth Forests in National Forests Within the Range of the Northern Spotted Owl (Short List) of the Scientific Analysis Team Report (Thomas et al. 1993).

Silvicultural Prescription - A professional plan for controlling the establishment, composition, constitution and growth of forests. (11)

Silvicultural System - A planned sequence of treatments or prescriptions over the entire life of a forest stand needed to meet management objectives.

Silviculture - The art and science of controlling the establishment, composition, and growth of forests. (2)

Single-tree selection - See *Uneven-aged Management*.

Site Index - A numerical evaluation of the quality of land for plant productivity (6) . . . based on the height of dominant trees in a stand at an arbitrarily chosen age. (3)

Site preparation - 1) An activity (such as prescribed burning, disking, and tilling) performed on a reforestation area, before introduction of reforestation, to ensure adequate survival and growth of the future crop; or 2) manipulation of the vegetation or soil of an area prior to planting or seeding. The manipulation follows harvest, wildfire, or construction in order to encourage the growth of favored species. Site preparation may include the application of herbicides; burning, or cutting of living vegetation that competes with the favored species; tilling the soil; or burning of organic debris (usually logging slash) that makes planting or seeding difficult.

Site productivity - Production capability of specific areas of land.

Site-Potential Tree - A tree that has attained the average maximum height possible given site conditions where it occurs. (11)

Size class - For the purposes of Forest planning, size class refers to the intervals of tree stem diameter used for classification of timber in the Forest Plan data base:

Glossary

1. seedling/sapling = less than five-inch diameter
2. pole/sapling or pole timber = five-inch to nine-inch diameter
3. sawtimber = greater than nine-inch diameter

Skidding - A general term for hauling loads by sliding, not on wheels, as developed originally from stump to roadside, deck, skidway, or other landing. (3)

Skyline Logging - A system of cable logging in which all or part of the weight of the logs is supported during yarding by a suspended cable.

Slash - The residue left on the ground after tree felling and tending, and/or accumulating there as a result of storm, fire, girdling or poisoning. It includes unutilized logs, uprooted stumps, broken or uprooted stems, the heavier branchwood, etc. (3)

Slope Stability - The resistance of a natural or artificial slope or other inclined surface to failure by landsliding (mass movement). (11)

Small game - Birds and small mammals normally hunted or trapped and defined by State regulations. (2)

Snag - Any standing dead, partially dead, or defective (cull) tree at least 10 inches in diameter at breast height and at least 6 feet tall. A hard snag is composed primarily of sound wood, generally merchantable. A soft snag is composed primarily of wood in advanced stages of decay and deterioration, generally not merchantable. (11)

Soil - The portion of the earth's surface consisting of disintegrated rock and humus. (7)

Soil Productivity - Capacity or suitability of a soil, for establishment and growth of a specified crop or plant species, primarily through nutrient availability. (11)

Soil resource inventory - See Soil surveys.

Soil surveys - Systematic examinations of soils in the field and in laboratories; their description and classification; the mapping of kinds of soil; the interpretation according to their adaptability for various crops, grasses, and trees; their behavior under use or treatment for plant production or for other purposes; and their productivity under different management systems. (6)

Special Interest Areas - Areas managed to make recreation opportunities available for the understanding of the earth and its geological, historical, archeological, botanical, and memorial features. (6)

Special Use Permit - A permit issued under established laws and regulations to an individual, organization, or company for occupancy or use of National Forest land for some special purpose.

Speciation - The process by which a new species comes into existence; the origin of a new species.

Spotted Owl Additions - Areas of LS/OG or suitable spotted owl habitat or potential owl habitat added to most significant LS/OG forest (LS/OG1) to ensure compliance with the Interagency Scientific Committee Strategy. (11)

Spotted Owl Habitat Area (SOHA) - Obsolete -- An area containing the home range of one or more owl pairs established for the propagation and protection of the species in accordance with a management plan.

Staging Areas - Temporary locations near wildfires or other emergency events where fire suppression resources (e.g., firefighting personnel and heavy equipment) are available to respond at very short notice.

Stand (Tree Stand) - An aggregation of trees occupying a specific area and sufficiently uniform in composition, age, arrangement, and condition so that it is distinguishable from the forest in adjoining areas. (11)

- Stand diversity** - Any attribute that makes one timber stand biologically or physically different from other stands. This difference can be measured by, but not limited to: different age classes; species; densities; or non-tree floristic composition.
- Standards and Guidelines** - The rules and limits governing actions, and the principles specifying the environmental conditions or levels to be achieved and maintained.
- State Implementation Plan (SIP)** - A detailed description of the programs and regulations a state will use to reduce air pollution. The Clean Air Act requires the Environmental Protection Agency to review and approve each SIP.
- Stocked/Stocking** - The degree an area of land is occupied by trees as measured by basal area or number of trees. (11)
- Stocking** - The degree of occupancy of land by trees as measured by basal area or number of trees and as compared to a stocking standard; that is, the basal area or number of trees required to fully use the growth potential of the land.
- Stream Buffer** - Vegetation left along a stream channel to protect the channel or water from the effects of logging, road building, or other management activity. (see vegetation leave area)
- Stream class** - Classification of streams based on the present and foreseeable uses made of the water, and the potential effects of on-site changes on ~ downstream uses. Four classes are defined:
- Class I* - Perennial or intermittent streams that: provide a source of water for domestic use; are used by large numbers of fish for spawning, rearing or migration; and/or are major tributaries to other Class I streams.
- Class II* - Perennial or intermittent streams that: are used by moderate though significant numbers of fish for spawning, rearing or migration; and/or may be tributaries to Class I streams or other Class II streams.
- Class III* - All other perennial streams not meeting higher class criteria.
- Class IV* - All other intermittent streams not meeting higher class criteria. (10)
- Stream Structure** - The arrangement of logs, boulders, and meanders which modify the flow of water, thereby causing the formation of pools and gravel bars in streams. Generally, there is a direct relationship between complexity of structure and fish habitat. Complex structure is also an indication of watershed stability.
- Streamflow** - The flow of water, generally with its suspended load, down a well-defined water course. (6)
- Streamside Management Unit (SMU)** - An area of varying width adjacent to a stream where practices that might affect water quality, fish, and other aquatic resources are modified to meet water quality goals, for each class of stream. The width of this area will vary with the management goals for each class of stream, characteristics of the stream and surrounding terrain, and the type and extent of the planned activity.
- Structural Diversity** - The diversity of forest structure, both vertical and horizontal, that provides for a variety of forest habitats for plants and animals. The variety results from layering or tiering of the canopy and the die-back, death, and ultimate decay of trees. In aquatic habitats, the presence of a variety of structural features such as logs and boulders that create a variety of habitat. (11)
- Stumpage (stumpage value)** - The value of timber as it stands uncut, in terms of an amount per unit of volume. (6)
- Subadult** - A young, spotted owl that has dispersed but not yet reached breeding age. Subadults are in their second, or in some cases, third year of life. (11)

Glossary

Subdrainage - A land area (basin) bounded by ridges or similar topographic features, encompassing only part of a watershed, and enclosing on the order of 5,000 acres; smaller than, and part of, a watershed. (See Drainage and Forest watershed.) (11)

Subspecies - An aggregate of phenotypically similar (i.e., similar in appearance) populations of a species generally inhabiting a geographic subdivision of the range of the species and differing taxonomically (e.g., different color, different size, differing in a set of morphological characteristics-tics, differing behaviorally) from other populations of the species.

Substantive comment - A comment that provides factual information, professional opinion, or informed judgment germane to the action being proposed. (10)

Substrate - Any object or material upon which an organism grows or is attached.

Subwatershed - A part of a whole watershed. As used in the Forest Plan: the part of a watershed that lies within the boundary of the Gifford Pinchot National Forest.

Succession - A series of dynamic changes by which one group of organisms succeeds another through stages leading to potential natural community or climax. An example is the development of series of plant communities (called seral stages) following a major disturbance. (11)

Successional stage - A stage or recognizable condition of a plant community that occurs during its development from bare ground to climax; for example, coniferous forests in the Blue Mountains progress through six recognized stages: grass forb, shrub-seedling, pole-sapling timber, young timber, mature timber, and old-growth timber. (2)

Suitability - The appropriateness of applying certain resource management practices to a particular area of land as determined by an analysis of the economic and environmental consequences and the alternative uses foregone. A unit of land may be suitable for a variety of individual or combined management practices. (1) (2) (FSM 1905)

Suitable Forest land - Land to be managed for timber production on a regulated basis.

Suppression - The process of extinguishing or confining fire. (2)

Surface Erosion - A group of processes whereby soil material are removed by running water, waves and currents, moving ice, or wind. (11)

Sustained Yield - The yield that a forest can produce continuously at a given intensity of management. (11)

Sustained Yield of Products and Services - The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the National Forest System without impairment of the productivity of the land. (1) (6)

T

T&E - See Threatened and Endangered Species

TSI - See Timber stand improvement

TSP - See Total Suspended Particulates

TSPQ - See Timber Sale Program Quantity

Take - Under the Endangered Species Act, take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect an animal, or to attempt to engage in any such conduct. (11)

Talus - A slope landform, typically covered by coarse rock debris forming a more or less continuous layer that may or may not be covered by duff and litter. (11)

Taxon - A category in scientific classification system, such as class, family, or phylum. (11)

Tentatively suitable Forest land - Forest land that is producing or is capable of producing crops of industrial wood and: (a) has not been withdrawn by Congress, the Secretary, or the Chief; (b) existing technology and knowledge is available to ensure timber production without irreversible damage to soils productivity, or watershed conditions; (c) existing technology and knowledge, as reflected in current research and experience, provides reasonable assurance that it is possible to restock adequately within five years after final harvest; and (d) adequate information is available to project responses to timber management activities.

Territory - The area that an animal defends, usually during breeding season, against intruders of its own species. (11)

Thermal cover - Cover used by animals to ameliorate effects of weather.

Thinning - A felling made in an immature stand primarily to maintain or accelerate diameter increment and also to improve the average form of the remaining trees without permanently breaking the canopy. An intermediate cutting. (3)

Threatened and Endangered (T&E) species. See Threatened Species; see Endangered Species.

Threatened Species - Those plant or animal species likely to become endangered species throughout all or a significant portion of their range within the foreseeable future. A plant or animal identified and defined accordance with the 1973 Endangered Species Act and published in the Federal Register. (11)

Threshold Phenomenon - Pattern or trend in population growth rate that exhibits relatively long periods of slow change followed by precipitous increase or response to an environmental gradient. (11)

Tier Watershed - See Key Watershed.

Tiering - Refers to the coverage of general matters in broader environmental impact statements (such as National program or policy statements) with subsequent narrower statements or environmental analyses (such as Regional or Basin-wide program statements, or ultimately, site-specific statements) incorporating, by reference, the general discussions and concentrating solely on the issues specific to the statement subsequently prepared. (40 CFR 1508.28)

Timber classification - Forest land is classified under each of the land management alternatives according to how it relates to the management of the timber resource. The following are definitions of timber classifications used for this purpose.

1. *Nonforest*--Land that has never supported forests and land formerly forested where use for timber production is precluded by development or *other uses*.
2. *Forest*--Land at least ten percent stocked (based on crown cover) by forest trees of any size, or formerly having had such tree cover and not currently developed for nonforest use.
3. *Suitable*--Commercial forest land identified as appropriate for timber production in the forest planning process.
4. *Unsuitable*--Forest land withdrawn from timber utilization by statute or administrative regulation (for example, wilderness) or identified as not appropriate for timber production in the forest planning process.

Timber harvest schedule - See Sale schedule.

Timber Management - A general term for the directing, managing or controlling of forest crops and stands of trees.

Glossary

Timber Production - The purposeful growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs, bolts, or other round sections for industrial or consumer use other than for fuelwood. (11)

Timber Sale Program Quantity (TSPQ) - The volume of timber planned for sale during the first decade of the planning horizon. It includes the allowable sale quantity (chargeable volume) and any additional material (nonchargeable volume) planned for sale. Expressed as the average for the first decade.

Timber stand improvement (TSI) - Measures such as thinning, pruning, release cutting, prescribed fire, girdling, weeding, or poisoning of unwanted trees aimed at improving the growing condition of the remaining trees. (2)

Torpor - A state of being dormant or inactive.

Total Suspended Particulates (TSP) - A broad category of particulate matter that includes essentially all solid or liquid particles in the ambient air. The Environmental Protection Agency previously recognized TSP as a criteria pollutant, but in 1987 the standard was revised to cover only particulate matter less than 10 micrometers in size (PM10).

Tractor logging - Any logging method which uses a tractor as the motive power for transporting logs from the stumps to a collecting point--whether by dragging or carrying the logs. (3)

Turbidity - The degree of opaqueness, or cloudiness, produced in water by suspended particulate matter, either organic or inorganic. Measured by light filtration or transmission and expressed in Jackson Turbidity Units (JTU's).

U

Ultramafic - Dark-colored igneous rocks composed of minerals which are enriched in iron and magnesium. (See serpentinite/peridotite.) (11)

Unconsolidated Deposits - Sediments that are loosely arranged, with particles that are not cemented together. Includes alluvial, glacial, volcanic, and landslide deposits. (11)

Underburning - Prescribed burning of the forest floor or understory for botanical or wildlife habitat objectives, hazard reduction, or silvicultural objectives. (11)

Understory - The trees and other woody species growing under the canopies of larger adjacent trees and other woody growth. (11)

Undeveloped Area - Portion of the National Forest that is essentially unroaded.

Uneven-aged Management - A combination of actions that simultaneously maintains continuous tall forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection. (11)

Uneven-aged silviculture systems - The combination of actions that result in the creation of forests or stands of trees, in which trees of several or many ages grow together. Cutting methods that develop and maintain uneven-aged stands are individual tree and group selecting cutting methods:
Individual tree selection cutting - The removal of selected trees of all size classes on an individual basis.
Group selection cutting - The removal of all trees in groups for regeneration purposes. The size of the group will be small enough in area that all subsequent regeneration will be influenced by the surrounding uncut stand. Cuts are generally .25 - 2.0 acres in size.

Ungulate - A hoofed mammal.

Unplanned ignition - A fire started at random by either natural or human causes or a deliberate incendiary fire.

Unroaded Area - Includes those portions of the Forest not accessible by roads. This inventory was used in analyzing such factors as access and transportation system costs for each alternative. These areas should not be confused with Roadless Areas or the Unroaded Recreation Strategies/Prescriptions.

Unstable and Potentially Unstable Lands - The unstable land component of the Riparian Reserves includes lands which are prone to mass failure under natural conditions (unroaded, unharvested), and where human activities such as road construction and timber harvest are likely to increase landslide distribution in time and space, to the point where this change is likely to modify natural geomorphic and hydrologic processes (such as the delivery of sediment and wood to channels), which will in turn affect aquatic ecosystems including streams, springs, seeps, wetlands, and marshes.

The following types of land are included: 1) active landslides and those which exhibit sound evidence of movement in the past 400 years; 2) inner gorges; 3) those lands identified as unstable by geologic investigations, using the criteria stated above (includes lands already classified by the Forest Service as unsuited for programmed timber harvest due to irreversible soil loss, and by the BLM as nonsuitable fragile lands). Highly erodible lands (i.e., lands prone to sheet and rill erosion) are not included in this definition. (11)

Uplift - A structurally high area in the earth's crust, produced by positive movements that raise or upthrust the rocks. (11)

Utility corridor - A strip of land, up to approximately 600 feet in width, designated for the transportation of people, energy, commodities, and communications by: railroad, state highway, electrical power transmission (66 kV and above), and/or oil, gas, and coal slurry pipelines ten inches in diameter and larger; and telecommunication cable and electronic sites for interstate use. (1)

Utilization standards - Standards guiding the projection of timber yields and the use and removal of timber. The standards are described in terms of minimum diameter at breast height, minimum length, and percent soundness of the wood, as appropriate. (1)

V

VAC - See Visual absorption Capacity

VQO - See Visual quality objective

Variety Classes - Variety Classes are obtained by classifying the landscape into different degrees of variety. This determines those landscapes which are most important and those which are of lesser value from the standpoint of scenic quality.

The classification is based on the premise that all landscapes have some value, but those with the most variety or diversity have the greatest potential for high scenic value.

There are three variety classes which identify the scenic quality of the natural landscape:

Class A - Distinctive

Class B - Common

Class C - Minimal

Vegetative management - Activities designed primarily to promote the health of the crop forest cover for multiple-use purposes.

Glossary

Viability - The ability of a wildlife or plant population to maintain sufficient size so that it persists over time in spite of normal fluctuations in numbers, usually expressed as a probability of maintaining a specific population for a specified period. (11)

Viable Population - A wildlife or plant population that contains an adequate number of reproductive individuals appropriately distributed on the planning area to ensure the long-term existence of the species. (11)

Viewshed - Portion of the Forest that is seen from a major travel route, or high use location.

Visual absorption capacity (VAC) - The physical capability of the land to support management activities without significantly affecting its visual character. Rated as high, moderate, and low.

HIGH (H) - High visual capability to absorb change

MODERATE - Moderate visual capability to absorb change.

LOW (L) - Low visual capability to absorb change.

Visual quality objective (VQO) - Categories of acceptable landscape alteration measured in degrees of deviation from the natural-appearing landscape.

Preservation (P) - Ecological changes only.

Retention (R) - Management activities should not be evident to the casual Forest visitor.

Partial Retention (PR) - Management activities remain visually subordinate to the characteristic landscape.

Modification (M) - Management activities may dominate the characteristic landscape but must "at the same time, follow naturally established form, line, color, and texture. It should appear as a natural occurrence when viewed in foreground or middleground.

Maximum Modification (MM) - Human activity may dominate the characteristic landscape, but should appear as a natural occurrence when viewed as background.

Enhancement (E) - A short-term management alternative which is done with the express purpose of increasing positive visual variety where little variety now exists. (2)

Visual resource - The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors. (2)

W

WFUD - See Wildlife and Fish User Day

WROS - See Wilderness Recreation Opportunity Spectrum

Water Quality - The chemical, physical, and biological characteristics of water. (11)

Watershed - The drainage basin contributing water, organic matter, dissolved nutrients, and sediments to a stream or lake. (11)

Watershed Analysis - A systematic procedure for characterizing watershed and ecological processes to meet specific management and social objectives. Watershed analysis provides a basis for ecosystem management planning that is applied to watersheds of approximately 20 to 200 square miles. (11)

Westside - Generally, west of the crest of the Cascade Range.

Wetlands - Areas that are inundated by surface water or ground water with a frequency sufficient to support, and under normal circumstances do or would support, a prevalence of vegetative or

aquatic life that require saturated or seasonally saturated soil conditions for growth and reproduction (Executive Order 11990). Wetlands generally include, but are not limited to, swamps, marshes, bogs, and similar areas. (11)

Wild and Scenic river - Those rivers or sections of rivers designated as such by congressional action under the 1968 Wild and Scenic Rivers Act, as supplemented and amended, or those sections of rivers designated as wild, scenic, or recreational by an act of the legislature of the state or states through which they flow. Wild and scenic rivers may be classified and administered under one or more of the following categories:

1. Wild River Areas - Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.
2. Scenic River Areas - Those rivers or sections of rivers that are free of impoundments, with watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
3. Recreational River Areas - Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past. (2) (6)

Wild and Scenic River System - Those rivers or section of rivers designated as such by Congressional action under the Wild and Scenic River Act (Public Law 90-542, 1968), as supplemented and amended, or those sections of rivers designated as wild, scenic, or recreational by an act of the legislature of the state or states through which they flow. (11)

Wilderness - Areas designated by congressional action under the 1964 Wilderness Act. Wilderness is defined as undeveloped Federal land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature with the imprint of human activity substantially unnoticeable; have outstanding opportunities for solitude or for a primitive and confined type of recreation; include at least 5,000 acres or are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, education, scenic, or historical value as well as ecologic and geologic interest. (11)

Wilderness Recreation Opportunity Spectrum (WROS) - A framework for the stratifying and defining classes of wilderness recreation environments, activities, and experience opportunities.

Wildfire - Any wildland fire that is not a prescribed fire. (See also Prescribed fire.) (2)

Wildfire Situation Analysis - Analysis of factors that influence suppression of an escaped fire. A plan of attack developed from a Wildfire Situation Analysis includes the development of alternative strategies of wildfire suppression and estimates of the expected net result of each.

Wildlife and Fish User Day (WFUD) - Twelve visitor hours which may be aggregated continuously, intermittently, or simultaneously by one or more persons.

Windthrow - A tree or trees uprooted or felled by the wind. (11)

Withdrawal - A legislative or administrative order removing specific land areas from availability for certain uses.

Woody Debris - See **Coarse Woody Debris**.

X

Y

Yarding - Hauling timber from the stump to a collection point. (2)

Yield table - Tables that estimate the level of outputs that would result from implementing a particular activity. Usually referred to in conjunction with FORPLAN input or output. Yield tables can be developed for timber volumes, range production, soil and water outputs, and other resources.

Z

Zone of influence - The geographic area whose social, economic and/or environmental condition is significantly affected by changes in Forest resource production or management