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Preliminary Draft Proposed Malheur, Umatilla, and Wallowa-Whitman National Forest Land Management Plans




Front cover image: Top left is the view from Oregon Butte on the Umatilla National Forest, top right looking west over the Imnaha River on Wallowa-Whitman National Forest, bottom left Strawberry Lake on the Malheur National Forest, and bottom right sunset over the Blue Mountains National Forest. Photo credit USDA Forest Service.

Preliminary Draft Proposed Malheur, Umatilla, and Wallowa-Whitman National Forest Land Management Plans

Baker, Crook, Grant, Harney, Malheur, Morrow, Umatilla, Union, Wallowa, and Wheeler Counties in Oregon

Asotin, Columbia, Garfield, and Walla Walla Counties in Washington

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Chapter 1. Introduction

Purpose of this Land Management Plan

The National Forest Management Act of 1976 requires that the Forest Service develop a land management plan for every national forest. Land management plans provide the strategic direction for management of forest resources. The Malheur, Umatilla, and Wallowa-Whitman National Forests, also referred to collectively as the Blue Mountains National Forests, are revising land management plans under the 2012 Planning Rule (36 CFR 219.19). The 2012 Planning Rule guides collaborative and science-based revision of land management plans that promote ecological integrity of national forests while contributing to social and economic sustainability.

Revising land management plans for the Blue Mountains National Forests addresses the following purposes:

- The current 1990 land and resource management plans are 35 years old and is due for a revision.
- Since the land management plans were approved, there have been changes in economic, social, and ecological conditions, new policies and priorities, and new information based on monitoring and scientific research.
- To consider findings identified in the Preliminary Need for Change to the existing land management plan.

This document is a detailed proposed action that provides all required elements of a revised land management plan. This proposed action was developed using the findings in the Final Assessment and the Preliminary Need to Change.

What is a Land Management Plan

A land management plan sets the overall management direction and guidance for a national forest; identifies areas intended for specific uses such as timber harvest, primitive recreation, or rare plant protection; and identifies areas as not suitable for timber production. Land management plans are strategic and provide general guidance for achieving long-term desired conditions. Decisions regarding site-specific work is analyzed at the project planning level, under the general guidance of the land management plan. Site-specific designation of roads, trails, and motorized areas is outside the scope of forest planning and is addressed in a National Forest travel plan.

Land management plans themselves do not compel any action, authorize projects or activities, or guarantee specific results. A project might be needed because of a

discrepancy between current conditions and desired conditions or to respond to public need or plan objectives. When a project is proposed, it is first checked against the suitability of areas. If the project is an appropriate use, then relevant guidance from the land management plan is applied. The proposed action for the project is then analyzed using appropriate National Environmental Policy Act procedures. If the project is not consistent with the land management plan, the project may be redesigned or rejected, or an amendment to the land management plan may be considered.

Plan Area

The Blue Mountains National Forests plan area (Figure 1) includes three national forests totaling 4.9 million acres in eastern Oregon and southeastern Washington.

- 1.7 million-acre Malheur National Forest including the adjoining 242,000-acre portion of the Ochoco National Forest as one administrative unit
- 1.4 million-acre Umatilla National Forest
- 1.8 million-acre Wallowa-Whitman National Forest, excluding Hells Canyon National Recreation Area

The Wallowa-Whitman National Forest completed a comprehensive management plan in 2003 which guides management within Hells Canyon National Recreation Area.

Planning at the regional scale integrates forest management across national forest boundaries and improves service for those who use and visit the Blue Mountains National Forests. The individual forest plans for the Malheur, Umatilla, and Wallowa-Whitman National Forests are being developed to integrate similar plan components where appropriate to improve management, administration, and implementation consistency across the Blue Mountains region.

For the National Environmental Policy Act (NEPA) process, the Blue Mountains National Forests will develop one combined Environmental Impact Statement (EIS) and one draft Land Management Plan for the three Forests. Management guidance and situations that are relevant only to specific Forests will be identified in the combined plan.

Based on the analysis documented in the Final Environmental Impact Statement (FEIS), three decisions will be made. Each Forest Supervisor will produce a draft Record of Decision (ROD) and a Forest-specific draft land management plan for their respective forest.

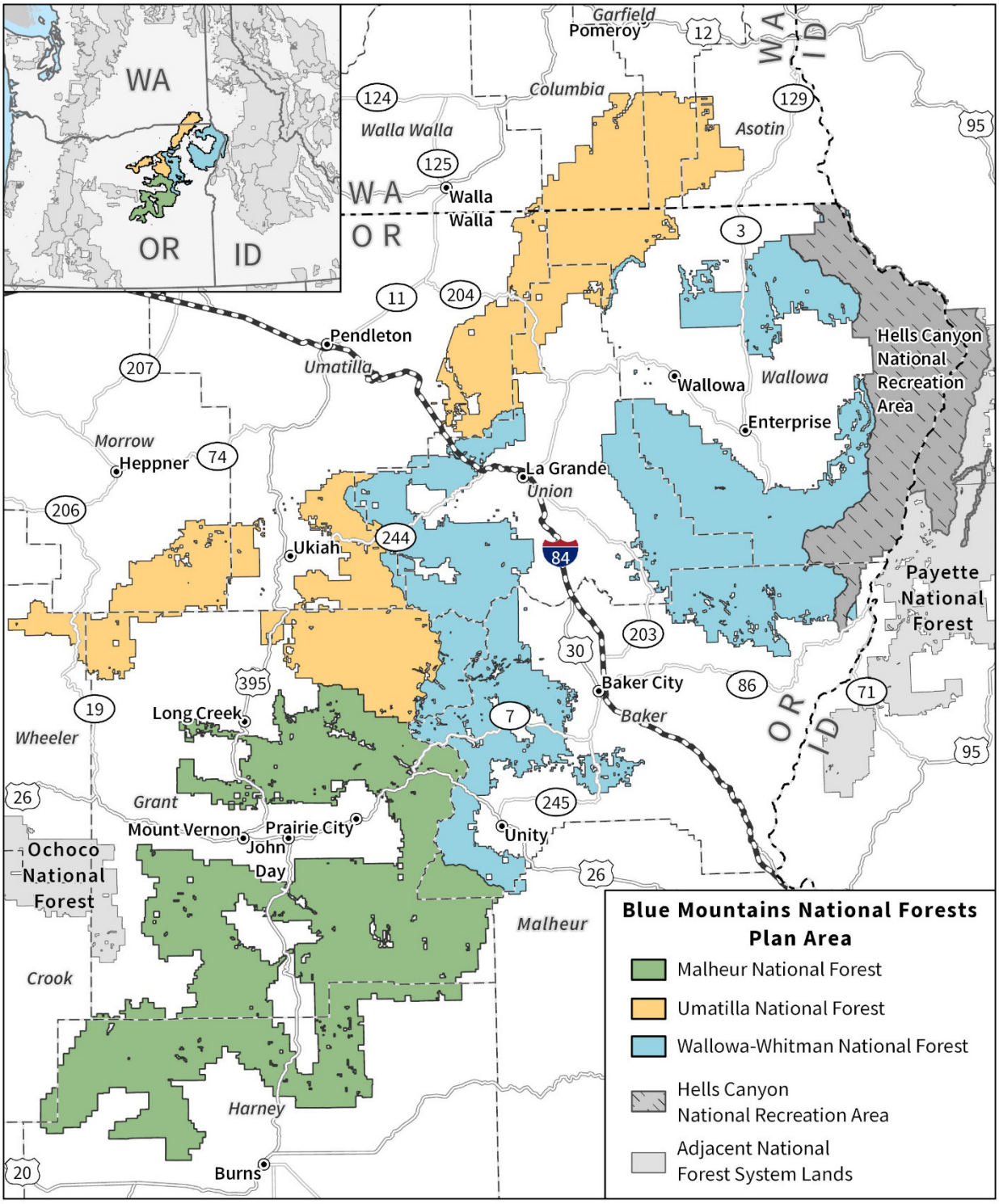


Figure 1: Blue Mountains National Forests Plan Area

Plan Components

Plan components guide future project and activity decision-making. Every plan must include plan components; desired conditions, objectives, standards, guidelines, and suitability of lands as required by the 2012 Planning Rule. The following narratives define and describe the plan components used in this plan, (36 CFR 219.7(e)). Additional guidance about plan components is found in Forest Service Handbook 1909.12.

Desired Conditions

A desired condition (DC) describes specific social, economic, or ecological characteristics of the plan area, or a portion of the plan area, towards which management of the land and resources should be directed. Desired conditions must be described in terms that are specific enough to allow progress towards their achievement to be determined but not include completion dates.

Scale

Each desired condition includes a scale, or a range of appropriate scales, to identify the relevant portion of the plan area applicable to the resource desired condition. Projects and management activities are designed to maintain, move toward, or achieve the full range of desired characteristics within the stated scale.

Objectives

An objective (OBJ) is a concise, measurable, and time-specific statement of a desired rate of progress towards a desired condition or conditions. Objectives should be based on reasonably foreseeable budgets. Objectives describe the focus of management on the national forest within the plan period. Objectives will occur over the life of the plan, considered to be over the first 15 years of plan implementation, unless otherwise specified.

Objectives were developed considering previous and expected budget allocations, as well as professional experience with implementing various resource programs and activities. It is possible that objectives could either exceed or not meet a target based upon several factors, such as budget and staffing increases or decreases, increased or decreased planning efficiencies, or unanticipated resource constraints. A single project may meet multiple forest plan objectives.

Standards

A standard (STD) is a mandatory constraint on project and activity decision making, established to help achieve or maintain the desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements.

Guidelines

A guideline (GDL) is a constraint on project and activity decision-making that allows for departure from its terms, so long as the purpose of the guideline is met. Guidelines are established to help achieve or maintain a desired condition or conditions, to avoid or mitigate undesirable effects, or to meet applicable legal requirements.

Suitability of Lands

Specific lands within the national forest are identified as suitable for various multiple uses or activities based on the desired conditions applicable to those lands. The plan will also identify lands within the plan area as not suitable for uses that are not compatible with desired conditions for those lands. Also, the suitability of lands is not identified for every use or activity. If certain lands are identified as not suitable for a use, then that use or activity may not be authorized.

Identifying lands as suitable for a use in the plan indicates that the use may be appropriate but not necessarily that the use will be appropriate or authorized in all situations. Specific authorizations to determine whether uses are consistent with plan suitability designations and where suitable uses are appropriate will take place during the project or activity-level decision-making process. Generally, lands on the national forest are suitable for most uses and management activities appropriate for national forests, such as outdoor recreation, grazing, energy and mining activities, or timber harvest, unless *otherwise restricted or* identified as not suitable. Every plan must identify those lands that are not suitable for timber production.

In this plan, suitability identifications are made for timber production, timber harvest, and mechanical fuel treatment uses based on management area. These identifications are found in the Suitability of Lands section in Chapter 3.

Geographic Applicability of Plan Components

Plan components apply forest-wide or by management area.

Forest-wide components apply across the planning area, including management areas, but may be applicable to specific areas described in the plan component or a referenced map.

Management Area components are specific to an area or place and may include special areas or designated areas. Management area plan components may supplement or supersede what is stated in the forest-wide section. The management area components allow focus on specific circumstances in specific management area locations.

A management area is a "land area identified within the planning area that has the same set of applicable plan components. A management area does not have to be spatially contiguous" (36 CFR 219.19). Management areas are defined by purpose, as opposed to geography. Plan components for a management area may differ from forest-wide guidance by:

- Constraining an activity where forest-wide direction does not.
- Constraining an activity to a greater degree than forest-wide direction.
- Providing for an exception to forest-wide direction, when forest-wide direction would otherwise conflict with the management emphasis of the management area.

Plan Component Codes

Desired conditions, objectives, standards, guidelines, and monitoring questions indicators have been given alphanumeric identifiers for ease in referencing within the land management plan. The identifiers include:

- The level of direction is FW = Forest-wide which applies across the entire national forest, and MA = Management Area applies only within a specific management area.
- The resource (for example, WTR = Aquatic, Riparian, Wetland, and Water Quality and FOR = Forested Vegetation)
- Subcategories within a resource will carry forward all previous codes and include additional identifier (for example FW-FOR-CMP=Forest-wide, Forest Vegetation, Tree Species Composition)
- The type of direction (where DC = desired condition, OBJ = objective, STD = standard, GDL = guideline, MON=monitoring question)
- Management Approaches are optional plan content. However, this is included in the plan component coding as MAPR to allow for ease of referencing for implementation of the plan.
- A unique number (a numerical order starting with "01")

For example, forest-wide direction for Forest Vegetation, Tree Species Composition using desired conditions are identified starting with FW-FOR-CMP-DC-01.

The management area desired conditions for Designated Wilderness would be identified starting with MA-DWA-DC-01. The identifiers are included as part of the headings in Chapters 2 and 3 with the unique number preceding each plan component.

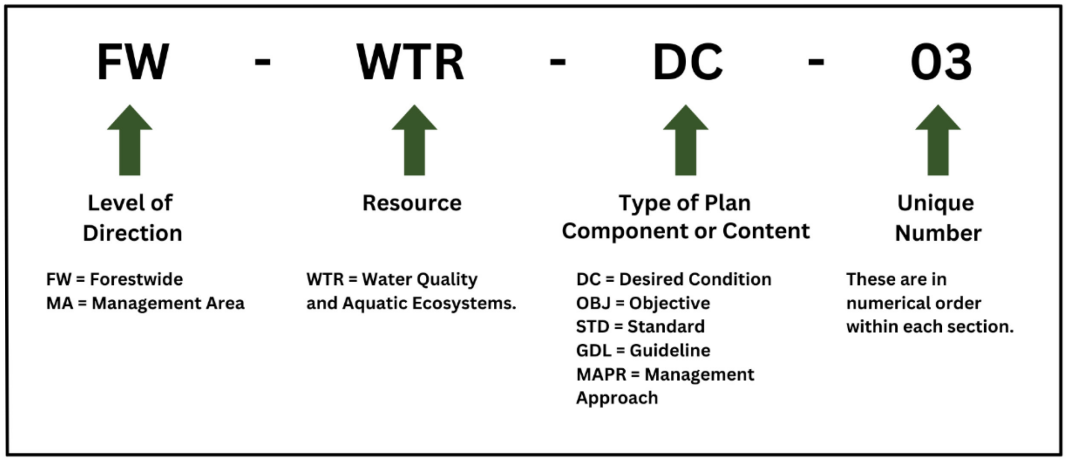


Figure 2: Plan Component Coding

Additional Plan Content

Required Plan Content

Priority Watersheds

The 2012 Planning Rule requires land management plans to identify watershed(s) at the 12th Hydrologic Unit Code (HUC) scale that are a priority for maintenance or restoration (36 CFR 219.7(f)(1)(i)) (16 U.S.C. 1604(g)(3)(C)). (36 CFR 219.12(a). Identification of these watersheds is to focus efforts on the integrated restoration of watershed conditions in these areas. The latest priority watersheds for the Blue Mountains National Forests can be found on the USDA Forest Service Watershed Condition Classification and Prioritization Interactive Map. This interactive map is linked to Forest Service databases that are updated as priority watershed projects are completed, and new priority watersheds are identified.

Distinctive Roles and Contributions within the Broader Landscape

The Blue Mountains National Forests play a distinctive role both locally and at a broader scale by uniquely contributing ecological diversity, cultural and heritage values, diverse outdoor recreation opportunities, and social and economic sustainability. Identifying ecosystem services and benefits such as clean air and water, nutrient cycling, providing

for plant and animal biodiversity, and carbon sequestration provides the foundation for realistic and achievable desired conditions.

The highly diverse natural resources of the Blue Mountains National Forests serve many important ecological, social, and economic functions. This section highlights some of the unique roles and characteristics that the national forests contribute to the local area, region and nation; describes emerging challenges that national forest managers face; and outlines the vision of the national forests. The descriptions are not intended to be comprehensive. Additional information is available in the planning record and the Final Environmental Impact Statement.

Social and Economic Characteristics

The Blue Mountains region has a rich and diverse cultural history of human habitation that spans more than 10,000 years. Several American Indian Tribes are indigenous to the land within the footprint of the Blue Mountains National Forests. These Tribes maintain strong ties to the area as it plays a significant role in their life and culture. Numerous archaeological and historical resources existing within the Blue Mountains National Forests are important to American Indian Tribes. Tribal members gather herbs and plants, hunt and fish, and utilize other cultural resources for traditional, subsistence, ceremonial, and spiritual purposes. Healthy forests, shrublands, and grasslands provide clean water and air, along with habitat for fish and wildlife across the Blue Mountains that are important to American Indian Tribes.

The Blue Mountains National Forests also have a long history of supplying timber and other forest products to meet local and national needs. Managing vegetation is crucial to maintaining healthy forests that can withstand changes in temperature and precipitation patterns. This in turn, supports local forest product industries. A thriving forest products industry enhances the efficiency of restoration efforts, creates jobs, and improves social and economic well-being. Additionally, a sustainable wood products industry helps maintain local infrastructure, such as roads and wood processing plants.

Many historical uses of national forests resonate today in the rural western culture of the area and continue to contribute to the economies of local communities. Historical sites visited today include remnants of the 1860s-gold rush in the John Day and Powder River country where remnants of railroad logging and old company towns exist in numerous places.

The Blue Mountains region encompass one of the most extensively mineralized areas in Oregon. Gold and other valuable minerals still exist beneath the land's surface and are available for prospecting and mining in accordance with mining laws.

Ranchers are issued permits to graze cattle on specified allotments within the national forests during late spring, summer, and early fall. Fees collected from grazing contribute toward county receipts and are reinvested into range improvements.

Residents and visitors alike seek out the national forests year-round for recreational opportunities. Activities range from seeking solitude in the backcountry to staying in developed campgrounds along travel corridors. Additional recreational activities include hunting, fishing, wildlife watching, rock climbing, hiking, off-highway vehicle use, whitewater rafting, and horseback riding. Hunters travel to the national forests in search of elk, deer, and antelope during the appropriate seasons, which also contributes to local economies. The national forests also provide winter sports opportunities such as snowmobiling, cross-country, and downhill skiing.

The Blue Mountains National Forests provides areas with an undeveloped character and backcountry setting. With six designated wilderness areas, eleven wild and scenic rivers, and seventy-two inventoried roadless areas, the Blue Mountains National Forests offer a variety of diverse experiences.

Exceptional scenic qualities are important features of the Blue Mountains region. Wild and scenic rivers, including the Grande Ronde, Imnaha, Lostine, Malheur, Minam, North Fork John Day, North Fork Malheur, North Powder, and Wenaha rivers, and Eagle and Joseph creeks, have outstanding remarkable values, such as unique history or cultural values, recreational opportunities, wildlife, botanical and aquatic values, scenic qualities, and unusual geology.

The Blue Mountains National Forests provide a scenic backdrop to local communities. Several of the roads that provide access to the national forests are part of national, regional, and state scenic byways. Along the Hells Canyon, Blue Mountains, Elkhorn, or Journey through Time scenic byways, visitors and residents enjoy scenic panoramas of pastoral valleys, mountain vistas, and rolling uplands interspersed with steep river canyons. An abundance and variety of wildlife species may be seen, including bald eagles in the winter and bighorn sheep in the summer and fall. Remarkable scenery and solitude are available in many areas, including the Vinegar Hill-Indian Rock Scenic Area located along the border of the Malheur and Umatilla National Forests.

Ecological Diversity

The complex geological history of the Blue Mountains region, including floods, volcanic eruptions, landslides, and erosion, has shaped the landscape into a unique combination of landforms and vegetative patterns. The Blue Mountains region contains large variations in elevation, from deep river canyons layered with gently sloping upland benches that are vertically cut by steep, V-shaped drainages to Sacajawea Peak at 9,843

feet, the 6th highest peak in Oregon. Rocky outcrops and high peaks protrude along the backbone of the Strawberry, Aldrich, Elkhorn, Wallowa, and Wenaha Mountain ranges.

This combination of geology and topography produces a distinctive, mosaic pattern of dense, heavily forested slopes interspersed with open, rugged shrublands and grasslands. Deep volcanic ash soils contribute to productive forest stands, shrublands, and grasslands that provide forage and browse. Sparse, scattered stands of ponderosa pine and juniper dot areas of shallow, rocky soil. Additionally, the region has been an important producer of gold, silver, and copper and has been a source of lesser amounts of lead, zinc, platinum, chromium, and other metals. It is also a potential source for geothermal energy.

The Blue Mountains region is situated at the extreme eastern edge of the Cascade Range's rain shadow. This produces a combination of high-desert climate with hot, dry summers (less than 10 inches of precipitation per year) in the lower valleys with moist maritime conditions influenced by the Columbia River at the higher elevations (more than 80 inches of precipitation per year). This variety of landform, elevation, and climate results in a diversity of plants within the watersheds that range from lower to higher elevations, including perennial bunchgrasses, sagebrush shrublands, juniper woodlands, ponderosa pine, mixed conifer, subalpine fir, Engelmann spruce, and alpine plant communities, as well as several rare and endemic plant species. A variety of plant communities occur throughout the Blue Mountains region, including Research Natural Areas (see also MA 2B) established for the protection of biological diversity at the genetic, species, ecosystem and landscape scales. The Blue Mountains region provides habitat for more than 250 native wildlife species, including larger species, such as cougar, black bear, mountain goat, bighorn sheep, mule deer, white tail deer, pronghorn antelope, gray wolf, and elk, along with a host of smaller birds and animals, such as marten, mink, beaver, badger, bobcat, coyote, river otter, Clark's nutcracker, and ruffed and blue grouse. This area also provides an important corridor for many of these species between the Rocky Mountains and central Oregon. One of the nation's largest herds of Rocky Mountain elk inhabit the Blue Mountains region.

Streams, rivers, and lakes provide habitat for a variety of native anadromous and resident fish species. For example, the Imnaha and Grande Ronde River drainages provide the highest upstream spawning areas for Chinook salmon and steelhead trout on the Snake River in Oregon. The John Day River is the second longest undammed river (280 miles) in the contiguous United States and supports four different species of naturally reproducing native salmonids. Several streams and rivers within the Blue Mountains region are also home to three federally listed threatened species: bull trout, summer steelhead and Chinook salmon. Other important fish species include Westslope cutthroat, and inland redband.

Monitoring Program

The 2012 Planning Rule requires the responsible official to develop a monitoring program for the land management plan. The monitoring program is designed to test assumptions used in developing plan components and to evaluate relevant changes and management effectiveness of the plan components. Monitoring questions seek additional information to increase knowledge and understanding of changing conditions, uncertainties, and risks identified in the best available scientific information as part of an adaptive management framework. Best available scientific information can identify monitoring indicators and protocols for the collection and evaluation of monitoring information (from FSH 1909.12 07.11). Chapter 4 provides information for the monitoring program.

Proposed and Possible Actions

The possible actions and strategies that the Blue Mountains National Forests may undertake to make progress in achieving the desired conditions described in this plan can be found in plan Appendix B.

Optional Plan Content

Management Approach

Management approaches (MAPR) are optional plan content. They are not plan components, and as such, are not requirements for plan implementation. Management approaches may be changed administratively.

A management approach:

- May describe partnership opportunities that support the achievement of desired conditions and objectives as well as supporting memoranda of understanding between the Forest Service and other agencies.
- May describe principal strategies and program priorities the Responsible Official intends to employ to convey a sense of focus.
- May succinctly describe a potential analysis process related to the implementation of plan components.
- May reference other sources of relevant information such as, but not limited to, previous studies and project planning, amendment decisions, Congressional direction, or best management practice guides.

Additional Information for Implementing the Plan

Project and Activity Consistency with the Plan

As required by the National Forest Management Act and the 2012 Planning Rule, subject to valid existing or statutory rights, all projects and activities authorized by the Forest Service after approval of this land management plan must be consistent with the applicable plan components (16 U.S.C. 1604(i)) as described at 36 CFR 219.15.

All project or activity approval documents, made after the effective date of the land management plan, will describe how the project or activity is consistent with the applicable components of the plan. When a proposed project or activity may not be consistent with the applicable plan components, the responsible official shall take one of the following steps, subject to valid existing or statutory rights:

- Modify the proposed project or activity to make it consistent with the applicable plan components.
- Reject the proposal or terminate the project or activity.
- Amend the plan so that the project or activity will be consistent with the plan as amended.
- Amend the plan simultaneously with the approval of the project or activity so that the project or activity will be consistent with the plan as amended. This amendment may be limited to apply only to the project or activity.

Authorizations for occupancy and use made before this plan approval may proceed unchanged until time of reauthorization. At time of reauthorization, all permits, contracts, and other authorizing instruments must be made consistent with the plan, subject to existing valid rights, as provided at section 219.15(d).

Determining Consistency

Because of the many types of projects and activities that can occur over the life of the plan, it is not likely that a project or activity can maintain or contribute to the attainment of all desired conditions, nor are all desired conditions relevant to every activity (for example, recreation desired conditions may not be relevant to a fuels treatment project). Most projects and activities are developed specifically to maintain or move conditions towards one or more of the desired conditions of the plan.

Every project and activity must be consistent with the applicable plan components. A project or activity approval document must describe how the project or activity is consistent with applicable plan components by meeting the following criteria (36 CFR 219.15(d)):

- Desired conditions and objectives. The project or activity contributes to the maintenance or attainment of one or more desired conditions or objectives or does not foreclose the opportunity to maintain or achieve any desired conditions or objectives, over the long term.
- Standards. The project or activity complies with applicable standards.
- Guidelines. The project or activity complies with applicable guidelines as set out in the plan or is designed in a way that is as effective in achieving the purpose of the applicable guidelines (36 CFR 219.7(e)(1)(iv)).
- Suitability. A project or activity would occur in an area that the plan identifies as suitable for that type of project or activity or for which the plan is silent with respect to its suitability for that type of project or activity.

Maintaining and Adapting to New Information

The plan is an integral part of an adaptive management cycle that guides future management decisions and actions. Plan-level adaptive management includes:

- Assessing information relevant to the national forest.
- Developing land management direction to respond to social, economic, and ecological conditions.
- Monitoring management outcomes and changing circumstances.
- Revising or amending management strategies accordingly.

This adaptive management cycle enables the Blue Mountains National Forests to identify and respond to changing conditions, changing public desires, and new information, such as that obtained through research and scientific findings. The national forest's monitoring program is an integral part of this adaptive management cycle, consisting of monitoring questions and performance measures. The monitoring evaluation report will indicate whether a change to the plan may be warranted, based on new information.

Use of Best Available Science

The 2012 Planning Rule requires the responsible official to use the best available scientific information to inform the development of the plan, including plan components and the monitoring program. The foundation from which the plan components were developed for the plan was provided by the Assessment Report of Ecological, Social, and Economic Conditions on the Blue Mountains National Forests (September 2024) and associated resource reports, and the best available scientific information and analyses therein.

Aquatic and Riparian Conservation Strategy

Plan content presented in this plan is part of a comprehensive aquatic and riparian conservation strategy (ARCS) for the Blue Mountains National Forests. The ARCS is comprised of multiple elements: Riparian Management Areas (see Chapter 3), Key Watersheds (Appendix A), Watershed Analysis (see Appendix A), Watershed Restoration (see Appendix A), and Monitoring and Adaptive Management (see Chapter 4).

Interaction of all elements at the watershed and landscape-scales provides the basis for watershed, aquatic, and riparian ecosystem management and restoration. These elements work together and complement each other to move towards appropriately distributed watershed conditions. The strategy will not achieve desired results if implemented alone or in limited combination (FEMAT 1993, USDA and USDI 1994a and 1994b). As such, the elements of the ARCS are designed to be applied in an integrated fashion. The ARCS elements are implemented via land management plan components (desired conditions, objectives, standards and guidelines and suitability determinations), other plan content and other administrative direction (see Appendix A for more details).

Rights and Interests

The land management plan will provide a strategic framework that guides future management decisions and actions, subject to valid existing or statutory rights. As such, the plan will not create, authorize, or execute any ground-disturbing activity. The plan will not subject anyone to civil or criminal liability and will not create legal rights. The plan will not change existing permits and authorized uses.

The Forest Service land management planning process shall coordinate with planning efforts of State, county, and local governments, Tribes, and other federal agencies in recognition that these entities may have laws, regulations, and interests that pertain to National Forest System Lands.

The Forest Service will continue to honor American Indian reserved treaty rights through consultation and coordination and will maintain the government-to-government relationship with federally recognized tribal governments.

Chapter 2. Forest-wide Plan Components

Introduction

This chapter provides direction that applies forest-wide, except where additional or more restrictive direction is found in the "management area" direction found in Chapter 3. Forest-wide direction includes desired conditions, objectives, standards, and guidelines for future project and activity decision making. Where appropriate, management approaches are also included as optional plan content by topic.

Not every topic requires a full range of plan components, nor is every type of plan component included for every topic. Plan direction for a topic may be found in multiple plan sections, for instance riparian management guidance is found in many plan topics.

Desired conditions describe the vision for the Blue Mountains National Forests, while other plan components (such as objectives, standards, and guidelines) and management approaches provide guidance on achieving this vision. Plan components and other plan content are designed to move towards applicable desired conditions or not foreclose the opportunity to maintain or achieve the desired conditions over the long term.

The Blue Mountains National Forests intend to move towards these forest-wide desired conditions over the next 15 or more years, although they may not be achieved for many decades. Some desired conditions may be very difficult to achieve, but it is important to move towards them over time.

Other direction for managing National Forest System lands comes from a variety of sources, including Executive Orders, the Code of Federal Regulations, and the Forest Service directive system which includes the Forest Service Manual and the Forest Service Handbook. Management direction from the Code of Federal Regulations, the Forest Service Manual, and the Forest Service Handbook are generally not repeated in the land management plan.

Ecological Integrity

Air Quality (AQ)

Introduction

The Clean Air Act of 1970 and subsequent amendments give federal managers the responsibility to protect air quality-related values in Class I and Class II areas and to protect human health and basic resource values in all areas. Class I airsheds, which have the highest standards for air quality, apply to designated wilderness areas larger than

5,000 acres, and in existence in 1977. Within the plan area the Eagle Cap Wilderness and Strawberry Mountain Wilderness are classified as Class I airsheds. The rest of the Blue Mountains National Forests are classified as Class II areas, adjacent to the plan area the Hells Canyon National Recreation Area is classified as a Class I airshed.

Desired Conditions (FW-AQ-DC)

01. The overall quality of air contributes positively to human and ecosystem health, visibility, recreation, multiple-uses, economic opportunities and wilderness values acknowledging that short term smoke impacts may occur.

Scale

Smoke emissions are relevant at the scale of the Blue Mountains as well as at local airsheds surrounding local communities and the broader areas that encompass designated wilderness.

Standards (FW-AQ-STD)

01. Planned burning shall be conducted in accordance with State smoke management plans in Oregon and Washington, as applicable.

Soil (SOIL)

Introduction

By law, management activities on National Forest System lands must not produce substantial and permanent impairment of soil productivity. The 2012 Planning Rule emphasizes the need for soil productivity to sustain the productive capability of the land, its ecological resources, and watershed functions. Current policies require that soil management include long-term soil quality and ecological function. FS Manual Chapter 2550 Soil Management defines six soil functions: soil biology, soil hydrology, nutrient cycling, carbon storage, soil stability and support, and filtering and buffering. National and regional (FSM 2520) soil management policy further requires land management plans to (1) maintain or restore soil quality and (2) manage resource uses and soil resources to sustain ecological processes and function so that desired ecosystem services are provided in perpetuity.

Desired Conditions (FW-SOIL-DC)

01. Soil productivity and function contributes to the long-term resilience of ecosystems, including soil types that support unique native plant communities. See also FW-WTR-DC-04.

02. Organic substrates (vegetative litter, down wood, and soil organic matter) are present in sufficient amounts to support soil fertility and ecological functions. See also FW-SNAG-DC.

03. Volcanic ash-influenced soils are intact and retain unique properties, high porosity and high water and nutrient holding capacity.

Scale

Activity area or project area depending on the level of project disturbance.

Standards (FW-SOIL-STD)

01. All management practices shall be designed or modified as necessary to maintain land productivity.

02. Management activities shall leave a minimum of 80 percent activity area in an acceptable soil quality condition. In activity areas with existing detrimental soil conditions exceeding or approaching 20 percent, soil restoration activities shall be addressed to improve long-term soil condition. This standard does not apply to intensively developed sites not included in the productive land base such as mining site, developed recreation sites, administrative sites, and rock quarries.

03. Project-specific best management practices for water quality and soil design features shall be incorporated into land management activities as necessary to maintain soil productivity. See also FW-WTR-STD-01.

Guidelines (FW-SOIL-GDL)

01. To reduce detrimental impacts to soil productivity and function, all ground based mechanical equipment should not operate on sustained steeper slopes. Based on site-specific analysis of soil, slope, and equipment, a higher or lower slope limitation may be authorized. Exceptions to this may include equipment designed for steep slopes that are determined appropriate to maintain soil function.

02. To support short and long-term soil ecosystem function and resiliency, habitat and vegetation management activities should retain organic matter and down wood, in a variety of species, sizes, and decay stages based on vegetation communities. Recommended acceptable amounts are based on best available science and multi-resource objectives. See also FW-SNAG, FW-SPDIV, and FW-WF DCs.

03. To minimize additional soil disturbance, existing or past disturbed areas should be utilized before creating new soil disturbance for all ground disturbing activities. Case-by-case exceptions may be made when the creation of new soil disturbance is the environmentally preferred option.

04. To maintain long-term soil productivity, post wildland fire vegetation management activities should be designed to avoid permanent soil impairment and accelerated erosion on verified moderate and high soil burn severity areas.

05. To maintain soil quality and stability, ground disturbing management activities should not occur on soils prone to mass wasting. Exceptions may be considered after site-specific soil or geological analysis results indicate low risks of adverse effects to soil and downstream resources.

Wildland Fire (WF)

Introduction

Fire is a natural ecosystem process and is the dominant disturbance type for most forests in the Pacific Northwest, particularly in the Blue Mountains. It is a primary ecological function that has shaped and maintained both forest and non-forest ecosystems. Fire regimes are a key component of range of variability characterizations for vegetation types and are described by fire frequency, intensity, and size. When fire frequency and severity characteristics of fire regimes are functioning within normal ranges, this sustains the environment at both landscape and local scales over time and contributes to landscapes that are resilient from the effects of disturbance and vary across ecosystems.

Fire on the landscape occurs due to planned and natural ignitions. Wildfires occur annually in the Blue Mountains National Forests, with natural lightning ignitions occurring typically from July through September. Fire managers strive to manage the natural role of fire while protecting values from adverse fire impacts. Strategic vegetation treatments over time create fuel and habitat conditions leading to desired fire behavior outcomes and contributing to fire resilience.

Desired Conditions (FW-WF-DC)

01. The frequency, size, and severity of wildland fire is within the natural fire regime. Fire-adapted ecological conditions are resilient to disturbance.

02. Vegetation conditions, including their pattern across the landscape, density, composition, and structure, support fire frequency, size, and severity characteristics of the natural fire regime. An exception is in locations where low-intensity fire conditions are needed to reduce risks to fire fighters, the public, or other values-at-risk. See also FW-CON-DC, FW-FOR-DC, FW-FOR-STR-DC, and FW-FOR-DEN-DC.

Scale

Subwatershed to Forest-wide

Objectives (FW-WF-OBJ)

01. Hazardous fuel mitigation treatments (prescribed fire, natural fire, mechanical fuel, silvicultural) occur annually. Treatment includes initial entry and maintenance. See also FW-FOR-OBJ-01.

    Malheur NF: 30,000 acres annually

    Umatilla NF: 20,000 acres annually

    Wallowa-Whitman NF: 20,000 acres annually

Standards (FW-WF-STD):

01. Firefighter and public safety are the highest priority during a fire incident.

Guidelines (FW-WF-GDL):

01. To create resilient, healthy ecosystems, wildland fire management strategies should promote desired vegetation conditions where wildland fire results in fire severities and intensities that are within the historical fire regimes.

02. To maintain the intent of Community Protection Areas and protect values at risk, fuel reduction treatments should be prioritized over other standards and guidelines.

Management Approach (FW-WF-MAPR)

01. Consider expanding the strategic use of wildland fire to reduce undesired impacts from future wildfire including fire size, intensity and severity.

02. Prioritize implementing fuel treatments such as vegetation management and targeted grazing in Community Protection Areas and values at risk from wildfire. While ecological conditions are considerations, risk reduction projects adjacent to communities and values at risk may hinder ecological desired conditions.

03. Consider using fire as a management tool to restore ecosystem processes essential to maintaining resilient landscapes. Decisions for the management of wildland fire include assessing fire location, expected fire behavior, land management plan desired conditions, and values at risk while utilizing best available scientific information, decision-making tools, and collaborative decision making.

04. Prioritize fuel projects to promote fire-adapted landscapes and communities.

05. Prioritize treatments focused on restoring and maintaining historical fire regimes and reducing negative impacts of wildfires.

06. Consider partnering with counties, agencies, states, Tribes, local governments, and landowners to maximize wildfire response capabilities and meet multiple land management objectives across ownership boundaries.

07. Identify and consider using Community Protection Areas through locally developed community wildfire protection plans, that emphasize a collaborative approach to fuel reduction projects on both National Forest System land and land of other ownership. Prioritize treatment areas identified by communities. These plans may involve identifying fuel hazards, the risk of wildfire occurrence, structures and other community values at risk, and local preparedness capabilities.

Insect and Disease (INSDIS)

Introduction

Insects and disease play a natural role in forested ecosystems, initiating decay processes and mortality across tree species important for wildlife use. Forestland susceptibility to major insects and disease disturbances is heavily influenced by stand and landscape-level tree species composition, stand density, and stand structure, which can be affected by many factors such as timber harvest, grazing, extended drought, and fire suppression. Some past management activities have led to large, unintended landscape-level changes and have increased the potential for uncharacteristic disturbances from insects and diseases across the landscape. Due to the strong connection between insect and disease processes and forest management, many relevant plan components are integrated into other sections of this plan, in particular the Wildland fire (FW-WF) and Forest Vegetation (FW-FOR, FW-FOR-DEN, FW-FOR-CMP, FW-FOR-STR) sections.

Desired Conditions (FW-INSDIS-DC)

01. Ecologically resilient and resistant forests that limit the temporal and spatial scales of insect and disease disturbances and prepare forests to recover from occasional outbreaks are desired. Vegetation structure, stand density, landscape pattern, species composition (see also FW-FOR-STR, FW-VEGNF, FW-FOR-DEN, FW-CON, and FW-FOR-CMP DCs) and wildland fire frequency and severity (see also FW-WF-DC) all influence the susceptibility of forests to insect and disease disturbance severity.

02. Limited disturbance and tree mortality caused by insect and disease activity contribute to diverse landscape conditions such as structural, tree species, and age class diversity (see also FW-FOR-CMP and FW-FOR-STR) and provide desired wildlife habitat components such as hollow trees, dead wood, dead tops, and mistletoe brooms (See also FW-FOR-OLD-DC-03 and FW-SNAG-GDL-02).

Scale

Minimum scale of subwatershed. Scale may be changed to watershed or subbasin level if justified as more appropriate through project analysis.

Management Approach (FW-INSDIS-MAPR):

01. Consider partnering with counties, agencies, states, Tribes, local governments, and landowners to reduce susceptibility to insect and disease agents across ownership boundaries.

Invasive Species (INV)

Introduction

Terrestrial and aquatic invasive species threaten native plant and animal communities and may have social and economic implications. Invasive species are present in all taxa, including plants (such as state and county designated noxious weeds), vertebrates, invertebrates (such as emerald ash borer, non-native mussel larvae), and pathogens (such as blister rust or white-nosed syndrome fungus). The effects of invasive species can cause reductions in long-term productivity of the land, be detrimental to aquatic systems, cause economic loss, disrupt recreational use, and reduce resource production. Invasive plant species establishment and conifer encroachment can pose threats to grassland, shrubland, woodland, and riparian ecosystem resilience.

The intent of the invasive species components in this plan are to emphasize that all management activities authorized by the Forest Service are designed to minimize or eliminate establishment or spread of invasive species on National Forest System lands, or to adjacent areas. The following desired conditions are complementary to other sections that provide for resilient and resistant plant communities, see also FW-WTR-DC-08, FW-SPDIV-STD-02, FW-FOR-Intro, and FW-RNG-MAPR.

Desired Conditions (FW-INV-DC)

01. Invasive species and other undesirable species such as non-native and aggressively spreading native species are absent or occur in small areas. Where invasive species and acceptable non-native species occur, they have low to no impact on the capability for healthy, native animal and plant species to dominate the landscape and be resilient given climate conditions; nor do they significantly diminish the ability of national forests to provide goods and services that communities expect. See also FW-WTR- DC-08.

02. Invasive annual grasses such as cheatgrass, medusahead rye, and ventenata are absent or are present in trace amounts. Invasive annual grass growth after wildfire is controlled.

Scale

Watershed.

Objectives (FW-INV-OBJ)

01. Reduce the occurrence of invasive plant species. Detect and treat new infestations of terrestrial and aquatic invasive plant species before they become permanently established.

    Malheur NF: 3,000 acres annually

    Umatilla NF: 3,000 acres annually

    Wallowa-Whitman NF: 4,000 acres annually

Standards (FW-INV-STD)

01. Materials used for construction or restoration projects on National Forest System lands such as straw, mulch, gravel, rock, fill, or soil, shall be certified weed-free, by State or the North American Weed Free Forage Program standards or a similar certification process.

02. Equipment used for actions conducted or authorized by written permit or contract by the Forest Service operating outside the limits of the road prism shall not be authorized unless the equipment is weed- and pest-free prior to entering National Forest System lands.

03. Pelletized or certified weed-free feed shall be used on all National Forest System lands. If state-certified weed-free feed is not available, feed certified weed-free using North American Weed-Free Forage Program standards or a similar certification process may be used.

Guidelines (FW-INV-GDL)

01. To prevent cross contamination of invasive species between streams, reservoirs and lakes from pumps, suction and dipping devices or any other equipment including other watercraft, waders, nets, and boots should avoid transferring water directly from one stream or lake into another. Water storage and conveyance equipment should be disinfected including sampling equipment, water tenders, pumps, engines and aircraft prior to use on Forest.

02. To protect human health, treatment areas should be posted to inform the public and forest workers of application dates and pesticides used.

Management Approaches (FW-INV-MAPR)

01. An integrated pest management approach, including early detection and rapid response, is encouraged to manage insects, diseases, and invasive or unwanted plants and animals.

02. To prevent the introduction or spread of invasive species, consider restoring or revegetating sites disturbed by management activities, including sites treated specifically to control invasive plants, preferentially with native species. Where available native species or cultivars cannot prevent invasive species from dominating the landscape, non-invasive non-native plants may be used in treatments. See also FW-VEGNF DCs.

03. Consider an appropriate range of treatments necessary to meet objectives for invasive species and native pests, while mitigating negative effects of treatments. Methods including prevention, manual, cultural, mechanical, regionally or forest approved chemicals and biological agents may be considered within all management areas, unless the Management Area has other guidance.

04. Plan and conduct activities to prevent the potential spread or establishment of invasive species.

05. Actions intended to prevent and respond to invasive plants is dynamic and designed in a manner that allows for an adaptive management approach.

Water Quality and Aquatic Ecosystems (WTR)

Introduction

The 2012 Planning Rule requires the development of plan components to maintain or restore the integrity and resilience of aquatic, riparian, wetland and other groundwater-dependent ecosystems and watersheds. This section provides forest-wide direction for ecological integrity of these ecosystems and water quality, primarily desired conditions at the appropriate watershed scale. The MA3A Riparian Management Area section of Chapter 3 includes the majority of the finer scale plan components. Additional complementary plan components are in the Water Use section of this chapter and Municipal Watershed Management Area section of Chapter 3.

Desired Conditions (FW-WTR-DC)

01. National Forest System lands contribute to the distribution, diversity, and complexity of watershed and landscape-scale features, including natural disturbance regimes, that support the aquatic and riparian ecosystems to which species, populations, and communities are uniquely adapted.

02. National Forest System lands contribute to spatial connectivity within or between watersheds where appropriate. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact habitat refugia. These network connections provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic, riparian-dependent, and upland species of plants and animals. They also provide access to habitat

refugia in some areas within the landscape while other areas are disturbed by stochastic events such as floods, landslides, and fires.

03. National Forest System lands contribute to water quality necessary to support healthy riparian, aquatic, and wetland ecosystems and other State-designated beneficial uses of water. Water quality maintains the biological, physical, and chemical integrity of the system and benefits the survival, growth, reproduction, and migration of species composing aquatic and riparian communities. See also all FW-SPDIV-DC, FW-WTR-DC, and FW-WTRUSE-DC.

04. National Forest System lands contribute to a sediment regime under which aquatic and riparian ecosystems evolved. The sediment regime (including the timing, volume, rate, and character of sediment input, storage, and transport) supports healthy watershed functions.

05. National Forest System lands contribute to in-stream flows with the timing, magnitude, duration, and spatial distribution that support hydrological and ecological functions, including patterns of sediment, heat, nutrient, and wood routing sufficient to create and sustain riparian, aquatic, and wetland habitats.

06. National Forest System lands contribute to the timing, variability, scale, and duration of floodplain inundation within the natural range of variation.

07. National Forest System lands contribute to flow regimes and hydrologic connections that maintain water elevations in wetlands, fens, seeps, springs and other groundwater-dependent ecosystems to support the structure and function of those systems.

08. National Forest System lands contribute to native assemblages of riparian-dependent plants and animals free of persistent invasive and undesirable non-native species, diseases, and pathogens. See also all FW-INV-DCs and FW-INV-GDL-01.

09. National Forest System lands contribute to aquatic, wetland, riparian, and groundwater-dependent ecosystems resilient to the effects of changes in temperature and changing precipitation patterns as well as other major disturbances.

Scale

For all desired conditions above: The spatial scales most relevant to project implementation are river basin (6-digit hydrologic unit, HU), subbasin (8-digit HU), watershed (10-digit HU), and subwatershed (12-digit HU). Minimum scale desired conditions apply to is subwatershed. Scale may be changed to watershed or subbasin level if justified as more appropriate through project analysis.

Objectives (FW-WTR-OBJ)

01. Maintain or restore watershed conditions through implementation of watershed restoration action plans.

    Malheur NF: 5 watershed action plans per decade

    Umatilla NF: 2 watershed action plans per decade

    Wallowa-Whitman NF: 3 watershed action plans per decade

Standards (FW-WTR-STD)

01. All activities shall be implemented in accordance with Best Management Practices (as described in National and/or Regional Technical Guides) for controlling non-point pollution sources to meet soil and water desired conditions and to protect beneficial uses.

02. When drafting, pumps shall be screened at drafting sites to prevent entrainment of aquatic species, screen area shall be sized to prevent impingement on the screens, and pumps shall have one-way valves to prevent back-flow into streams. Use appropriate screening criteria where species at risk or critical habitat are present.

Guidelines (FW-WTR-GDL)

01. To protect water quality, roads and landings should be designed and constructed to avoid or minimize: 1) delivery of water and sediment to streams, 2) interception of surface and subsurface flow, and 3) routing water on unstable channels, fills, and hillslopes.

02. To protect aquatic resources, hydroelectric and other water development authorizations should include requirements for in-stream flow regimes and habitat conditions that maintain or restore native fish and other desired aquatic species populations, riparian-dependent resources, favorable channel conditions, and aquatic connectivity. Tools to help achieve or ensure implementation may include but are not limited to headgates, screens, diversion monitoring devices, and fish bypass systems.

Management Approach (FW-WTR-MAPR)

01. Leasable oil, gas, and geothermal exploration and development activities on the Malheur and the Umatilla National Forests follow management direction found in their oil and gas leasing Record of Decisions and coordinate with the Bureau of Land Management as appropriate to recommend the application of Best Management Practices and mitigation as Conditions of Approval to support attainment and maintenance of aquatic and riparian desired conditions.

02. Watershed Analysis (Appendix A) is completed or updated as necessary to describe unique ecological characteristics of a given watershed to inform project planning and design.

03. Watershed restoration projects are consistent with the Watershed Restoration strategy (Appendix A), including: 1) promoting long-term ecological integrity and resilience, conserving the genetic integrity of native species, and facilitating attainment of aquatic and riparian desired conditions, 2) using natural ecological processes to achieve restoration long-term objectives and minimizing the need for long-term maintenance, 3) using best available science, including projected future changes in stream flows, stream temperatures, and disturbance regimes, and 4) after completion providing sufficient time from resource use to facilitate recovery.

04. Consider using Key Watersheds (Appendix A) as a criterion for prioritizing land acquisitions and restoration priorities to maintain, restore, or enlarge the existing network.

05. To promote building and maintaining partnerships, coordinate with federal agencies, state agencies, Tribes, local watershed councils, and advisory groups to meet applicable water quality requirements, support beneficial uses of water, develop TMDL implementation plans, and water quality monitoring programs.

06. Watersheds occupied by threatened or endangered aquatic species or their critical habitats are managed for high-quality habitat, functionally intact ecosystems, production of high-quality downstream water, and high watershed integrity and resilience to contribute towards their recovery and conservation.

Landscape Patterns and Connectivity (CON)

Introduction

Landscape patterns influence disturbance processes, landscape diversity, nutrient cycling, and plant and animal distribution at multiple scales. Landscape patterns are driven by soil, landform, topography, temperature, precipitation, and solar radiation. Landscape patterns can occur at multiple spatial scales. This includes broad patterns of grassland, shrubland, and forested patches that correspond with major topographic and elevation features. In the Blue Mountains forested vegetation varies from high elevation cold forest types to middle elevation moist forest types, and low elevation dry forests and woodlands. This also includes finer scale patterns of diverse forest and non-forest patch sizes and shapes. These patches vary depending on species composition, density, stage of succession, and layering structures. At the finest spatial scales this includes patterns of individual trees, clumps of trees, and small openings. Landscape diversity

that resembles natural patterns resulting from characteristic fire regimes has been shown to provide for richer, more resilient biodiversity.

Connectivity is defined as ecological conditions that exist at several spatial and temporal scales that provide landscape linkages that permit the exchange of flow, sediments, and nutrients; the daily and seasonal movements of animals within home ranges; the dispersal and genetic interchange between populations; and the long distance range shifts in use of changing habitats.

Desired Conditions (FW-CON-DC)

01. Dry forest structure occurs at fine grained spatial patterns that occur over large spatial scales. Fine grained spatial patterns include individual trees, and small to medium clumps of trees of various ages, with small to medium grassland and shrubland openings. Large areas of contiguous dry forest are also intermingled with large patches of grasslands and shrublands. Dry woodlands tend to be a sparser expression of the dry forest type.

02. Cold and moist forest structure occur at coarse grained spatial patterns, which include small to large patches of each of the following: low density forest, high density forest, young forest, old forest, shrublands, wet and dry meadows, and rocky outcrops.

03. Habitat conditions near forest boundaries facilitate connectivity between National Forest System and lands of other ownership.

04. Public use and infrastructure on National Forest System lands is designed to enable the daily activities, seasonal movements, dispersal, and potential range shifts of native species through habitat connectivity.

05. The landscape contains a mosaic of vegetation types and structures that provide habitat and connectivity for a variety of species including wide-ranging habitat generalists such as black bear and mule deer; more localized, semi-specialists such as ground-nesting and cavity-nesting birds and mammals; and habitat specialists such as old-forest- and early seral-associated species.

Scale

Desired conditions for landscape patterns apply at multiple scales ranging from subwatershed to forest-wide extents.

Objectives (FW-CON-OBJ)

01. Remove fencing that is no longer needed. Replace or modify existing fencing with wildlife friendly specifications.

Malheur NF: 15 miles per decade

Umatilla NF: 5 miles per decade

Wallowa-Whitman NF: 6 miles per decade

Guidelines (FW-CON-GDL):

01. To allow for movement and distribution of wildlife and to reduce barriers and probability of wildlife entanglement, new fence construction and reconstruction, replacement, or modification of existing fences should use wildlife friendly specifications.

02. To provide dispersal opportunities and reduce risk of population-level fragmentation, when conducting vegetation treatments, connected areas should be retained for species dependent on structurally complex forest.

Management Approaches (FW-CON-MAPR)

01. Collaborate with state agencies and other land managers across broader landscapes to promote connectivity of terrestrial, riparian, and aquatic ecosystems in the Blue Mountains.

02. To maintain or restore wildlife dispersal and distribution of wildlife and to reduce the probability of wildlife entanglement, the following may be implemented:

    a. Consider removing fences that are non-essential or no longer utilized for permitted livestock management, ungulate exclusion, or boundary delineation.

    b. Consider replacing fences in key wildlife migration or seasonal movement areas with wildlife friendly designs, where existing fences do not meet those specifications.

Forested Vegetation (FOR)

Introduction

Forested vegetation across the Blue Mountains National Forests is variable in structure, composition, and function, providing a diversity of habitats and plant and animal species across the landscape. Forests range from open, park-like stands of ponderosa pine to dense high elevation subalpine zone forests of Engelmann spruce and subalpine fir. Vegetation communities are in a constant state of change, driven primarily by vegetative succession, fire, insects, disease, drought, invasive species, and human uses and developments.

The full spectrum of ecosystem biodiversity includes vegetation that varies in size, shape, dynamics, and origin, contributing to resilient forests and ecosystem integrity, and influencing ecosystem and disturbance processes such as nutrient cycling and fire regimes, and plant and animal distribution. Potential vegetation groups are used to

define forested vegetation, providing a basis for understanding ecological dynamics including successional development, site productivity, and fire regimes. Fire regimes vary by potential vegetation group, representing the historical and natural conditions for fire severity and frequency.

Forested vegetation plan components are designed to maintain or restore ecological integrity, diversity, function, and resiliency while contributing to social and economic sustainability. Desired conditions are based on an analysis of the natural range of variation for key ecosystem characteristics like tree species composition, structure, and density. This analysis provides an understanding of how ecosystems are dynamic and change over time in a manner that is resilient to perturbations and disturbance. As such, the natural range of variation is a guide to understanding how to maintain or restore a resilient ecosystem with structural and functional properties that will enable it to persist into the future. The distribution and amount of forest types may change over time, with those forest and non-forest types appropriate for future conditions increasing in their distribution and proportion, particularly at the site-specific scale.

Desired Conditions (FW-FOR-DC)

01. Forested ecosystems have ecological integrity in their composition, structure, function, and connectivity. Forested vegetation reflects the natural range of variation while providing for wildlife habitat needs, existing or anticipated human use patterns, resiliency to future disturbances, and ecosystem services that may be desired (such as reduction of fire hazard or production of forest products).

Scale

Minimum scale of subwatershed. Scale may be changed to watershed or subbasin level if justified as more appropriate through project analysis.

Objectives (FW-FOR-OBJ):

01. Mechanically treat forested stands within all potential vegetation groups to move them towards desired conditions for species composition, structure, and density. See also FW-FOR-DEN-DC, FW-FOR-COMP-DC, and FW-FOR-STR-DC.

    Malheur NF: 130,000 acres per decade

    Umatilla NF: 70,000 acres per decade

    Wallowa-Whitman NF: 88,000 acres per decade

Management Approach (FW-FOR-MAPR):

01. See Range of Variation Recommendations for Dry, Moist, and Cold Forests (Powell 2019) for guidance on how to perform a natural range of variation analysis.

Forest Density (FW-FOR-DEN)

Introduction

Stand density refers to the degree to which an area is occupied by trees and the intensity by which trees are competing for site resources. Stand density directly relates to the availability of resources critical for both stand-level productivity and individual tree vigor as well as its influence on wildfire behavior, wildlife habitat availability, and insect and disease disturbances.

For any given average tree size for each species, there is a limit to the number of trees per acre that may coexist in a stand. That limit is known as the maximum stand density index. The stand density index is independent of individual tree age or size. Dividing the stand density index by the maximum number of trees per acre generates the percent maximum stand density index. The percent maximum stand density index measures competition between trees for site resources and serves as an indicator of overall stand health, including tree growth and mortality, and susceptibility to mortality from insects, diseases and wildfire.

Percent maximum stand density index is divided into categories that define low, moderate, and high stand density.

- Low: 0 to 25 percent maximum stand density with high individual tree growth and vigor.
- Moderate: 26 to 55 percent maximum stand density with site resources generally captured into tree growth and there is high stand growth.
- High: greater than 55 percent maximum stand density, with consistent mortality and trees eventually stop growing.

Susceptibility to and potential impacts of insect infestation are displayed Figure 3 and wildfire disturbance processes are displayed in Figure 4.

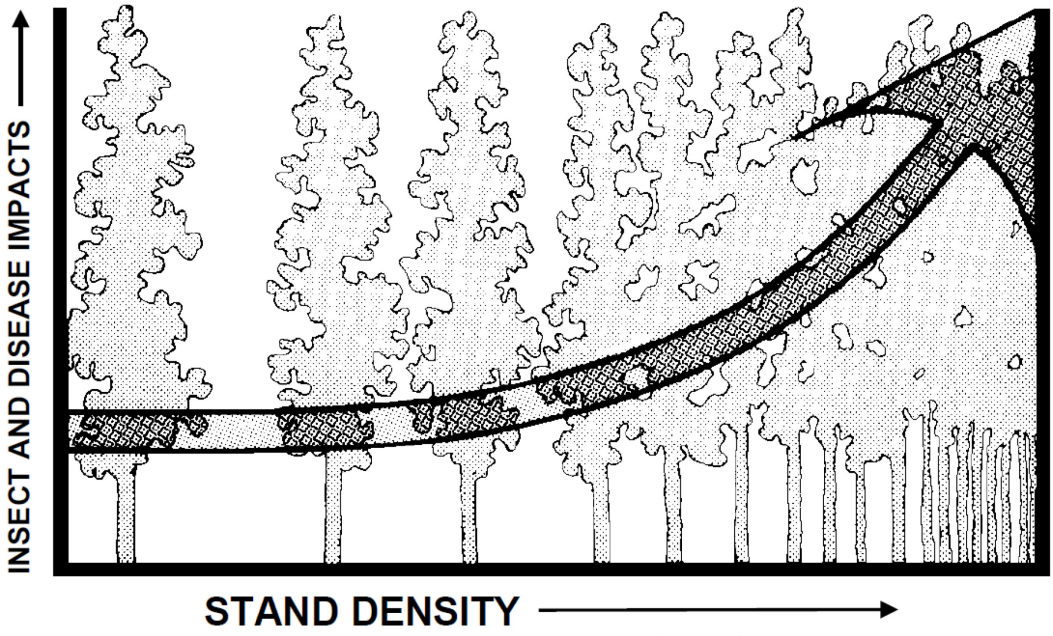


Figure 3: Insect and disease impacts related to stand density (Powell 1999)

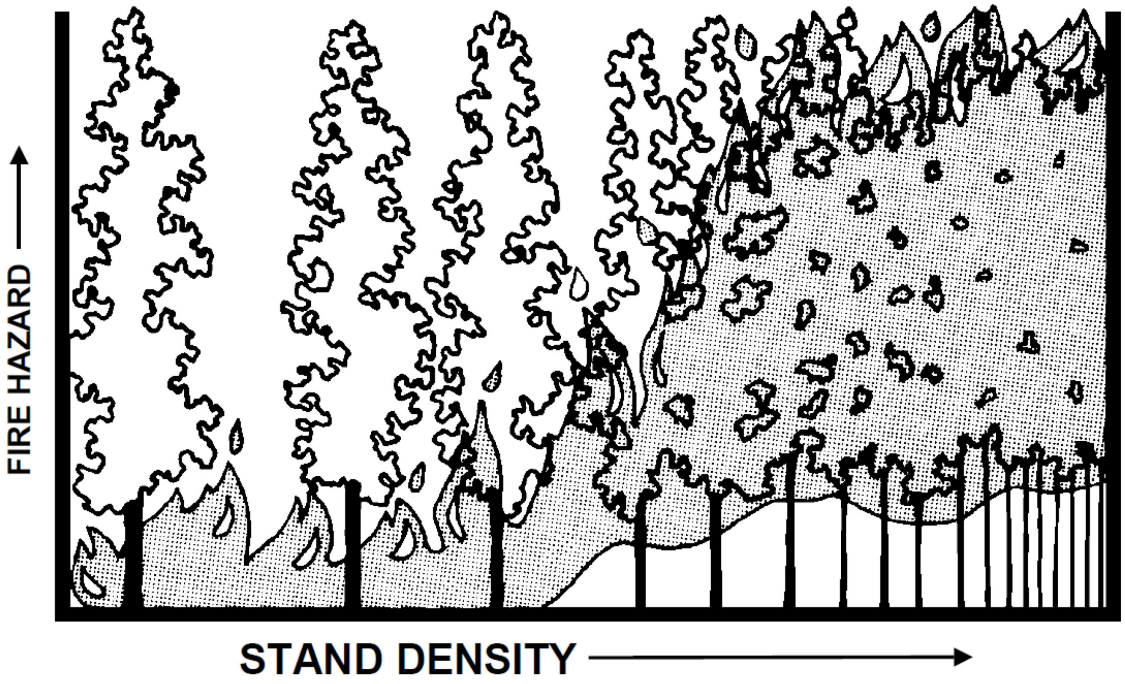


Figure 4: Fire hazard as related to stand density (Powell 1999)

Desired Conditions (FW-FOR-DEN-DC)

01. A diversity of vegetation densities across the landscape contribute to conditions that are ecologically resilient and sustainable. See also FW-FOR-CMP-DC, FW-FOR-STR-DC, FW-CON-DC, and FW-FOR-SNAG-DC.

02. Table 1 displays the desired ranges of forest stand densities for each forested potential vegetation group. The range of desired stand density conditions reflect natural variations expected to occur across the landscape over time and provides flexibility to address other desired conditions. Appropriate levels of fine-scale variability in density exist within stand-level units.

Table 1: Desired conditions for forest stand density, described as a percentage of each upland forest potential vegetation group.

Potential Vegetation Group	Low Stand Density %	Moderate Stand Density %	High Stand Density %
Cold upland forest	15-35	20-40	25-60
Moist upland forest	20-40	25-60	15-30
Dry upland forest	40-85	15-30	5-15

Scale

Desired conditions for potential vegetation group are relevant at the minimum scale of subwatershed and need to consider landscapes at least 15,000 acres in size; the scale may be changed to watershed or subbasin level if justified through project analysis.

Management Approach (FW-FOR-DEN-MAPR):

01. Utilize existing crosswalks for each stand type and density to determine target basal area and canopy cover. Stand level density calculations are determined by plant association, species composition, and tree size.

02. During project analysis characterize existing vegetation conditions of the proposed project area for patterns of stand density by biophysical environment. Compare existing conditions to desired conditions to inform treatment needs.

Tree Species Composition (FW-FOR-CMP)

Introduction

Tree species composition can influence wildfire and insect and disease activity in an area. The shade tolerance of tree species is a measure of a species' ability to grow successfully and regenerate in shaded conditions. Common tree species in the Blue Mountains National Forests that are less tolerant to shaded conditions include ponderosa pine, lodgepole pine, and western larch. Tree species that are relatively shade-tolerant include Engelmann spruce, subalpine fir, and grand fir. The variety of Douglas-fir and western white pine found in the plan area are generally considered intermediate shade

tolerance. Common shade-intolerant tree species like ponderosa pine and western larch, and intermediate Douglas-fir and western white pine tend to be better adapted to low-severity surface fires. Shade-intolerant species also tend to have greater tolerance to drought conditions. Conversely, shade-tolerant species like grand fir or subalpine fir are generally associated with a high susceptibility to defoliators, root diseases, fir engraver beetle, stem decay, and other insect and disease agents. Drought and excessive stocking often compound and exacerbate mortality caused by these agents.

Table 2: Shade, drought, and fire tolerance by common tree species in Blue Mountains National Forests

Tree Species	Shade Tolerance	Drought Tolerance	Overall Fire Resistance
Douglas-fir	Intermediate	Moderate	Medium to high
Engelmann spruce	Tolerant	Low	Low
Grand fir	Tolerant	Moderate	Medium to low
Lodgepole pine	Intolerant	Moderate	Low
Ponderosa pine	Intolerant	High	High
Subalpine fir	Tolerant	Low	Very low
Western larch	Intolerant	Moderate	Very high
Western white pine	Intermediate	Moderate	Medium

Diversity of tree species is important for creating conditions that contribute to ecosystem resiliency. Wildlife habitat, scenic diversity, and the availability of socially desired products are also impacted by the mix of species present across the landscape. The desired range of tree species composition represents what would likely develop under natural disturbance regimes and forest conditions that are more resilient and resistant to disturbance.

Desired Conditions (FW-FOR-CMP-DC)

01. The amount and distribution of tree species composition across the landscape supports the resilience and resistance of forested ecosystems to natural disturbance. A site-appropriate mixture of species is promoted and maintained to mitigate the risk of drought stress and prevent uncharacteristic damage from insects or diseases across extensive areas.

02. Sites that historically had the potential to support forested vegetation and are likely to maintain forests in the future, given regional projections for future conditions, reflect conifer species compositions within the ranges displayed in Table 3. Table 4 through Table 6 also displays by forest the desired proportion of each upland forest potential vegetation group in each of the dominant species composition classes. The range of desired proportions allows for variations in the species composition across the landscape to respond to potential changes in conditions or other management while also representing the natural variability inherent within these systems. Diverse native

understory plant communities that provide forage and wildlife habitat are represented within forested communities. See also FW-CON-DC-03 and FW-VEGNF DCs.

Table 3: Desired conditions for conifer species composition, described as a proportion of each potential vegetation group with the following dominant species.

Potential Vegetation Group	Shade-intolerant Dominant Species Composition	Intermediate-tolerant Dominant Species Composition	Shade-tolerant Dominant Species Composition
Cold upland forest Current total acres:	40 to 60 percent (preferred species include western larch, whitebark pine, lodgepole pine)	5 to 20 percent (preferred species include Douglas-fir, western white pine)	25 to 50 percent (preferred species include Engelmann spruce, subalpine fir, grand fir)
Moist upland forest Current total acres:	30 to 60 percent (preferred species include western larch, ponderosa pine)	20 to 40 percent (preferred species include Douglas-fir, western white pine)	10 to 30 percent (preferred species include grand fir, Engelmann spruce, subalpine fir)
Dry upland forest Current total acres:	75 to 100 percent (preferred species include ponderosa pine, western larch)	0 to 10 percent (preferred species include Douglas-fir)	0 to 15 percent (preferred species include grand fir)

Scale

Minimum scale of subwatershed and needs to consider landscapes at least 15,000 acres in size. Scale may be changed to watershed or subbasin level if justified as more appropriate though project analysis.

Management Approach (FW-FOR-CMP-MAPR):

01. During project analysis characterize existing vegetation conditions of proposed project areas for patterns of tree species composition by biophysical environment. Compare existing conditions to desired conditions to inform treatment needs.

Forested Structural Stages (FW-FOR-STR)

Introduction

Vegetation structure, both vertical and horizontal, and the size and spatial pattern of trees, shrubs, grasses, and forbs are important components related to wildlife habitat, insects and diseases, wildfire hazard, scenic integrity, and potential social and economic products such as timber and culturally significant plants.

Forested structural stages include stand initiation (bare ground to young stands less than 5 inches diameter at breast height), stem exclusion (single story stands from 5 to 20 inches diameter), understory reinitiation (multi-story stands from 5 to 20 inches diameter), old forest multi story (multi-story stands with an overstory generally greater

than 20 inches diameter), and old forest single story (single story stands with an overstory generally greater than 20 inches diameter). Forested structural stages fluctuate over time and space as forests develop through natural succession and respond to the presence or absence of disturbances.

The forested structural stages used to classify vegetation are defined in the glossary and are shown below in Figure 5. These definitions include both size and trees per acre and may include age.

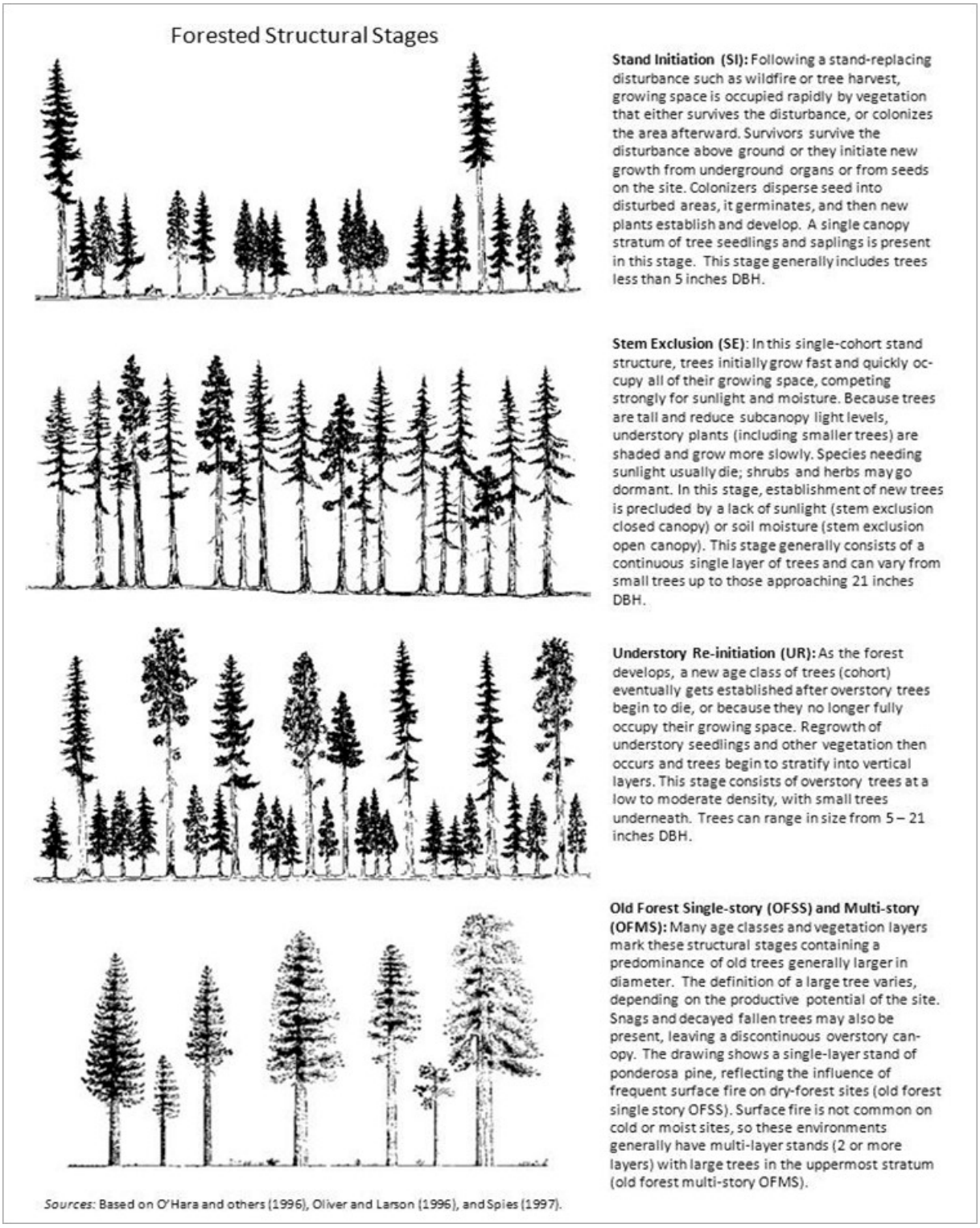


Figure 5: Description of forest structural stages used to classify vegetation for the Blue Mountains National Forests plan revision

Desired Conditions (FW-FOR-STR-DC)

01. In forested environments, the full spectrum of structure from young to old stands are represented, including snags and down wood. The distribution and abundance of forest structural stages creates conditions that are ecologically resilient, sustainable, and compatible with natural levels of disturbance. Table 4 through Table 6 displays the desired range of forest structural conditions for each upland forest potential vegetation group within the scale. The range of desired conditions reflects the natural variations in structural stage combinations that would be expected to occur across the landscape scale over time.

Table 4: Malheur NF Desired conditions for forest structural stages, described as a percentage of each upland forest potential vegetation group

Potential Vegetation Group	Malheur NF Current Total Acres:	Stand Initiation %	Stem Exclusion %	Understory Reinitiation %	Old Forest Single Story %	Old Forest Multi-Story %
Cold upland	≈ 160,000	20-45	15-30	10-25	5-20	10-25
Moist upland	≈ 95,000	20-30	20-30	15-25	10-20	15-20
Dry upland	≈ 1,230,000	15-30	10-20	0-5	40-65	1-15

Table 5: Umatilla NF Desired conditions for forest structural stages, described as a percentage of each upland forest potential vegetation group

Potential Vegetation Group	Umatilla NF Current Total Acres:	Stand Initiation %	Stem Exclusion %	Understory Reinitiation %	Old Forest Single Story %	Old Forest Multi-Story %
Cold upland	≈ 115,000	20-45	15-30	10-25	5-20	10-25
Moist upland	≈ 430,000	20-30	20-30	15-25	10-20	15-20
Dry upland	≈ 595,000	15-30	10-20	0-5	40-65	1-15

Table 6: Wallowa-Whitman NF Desired conditions for forest structural stages, described as a percentage of each upland forest potential vegetation group

Potential Vegetation Group	Wallowa-Whitman NF Current Total Acres:	Stand Initiation %	Stem Exclusion %	Understory Reinitiation %	Old Forest Single Story %	Old Forest Multi-Story %
Cold upland	≈ 365,000	20-45	15-30	10-25	5-20	10-25
Moist upland	≈ 370,000	20-30	20-30	15-25	10-20	15-20
Dry upland	≈ 640,000	15-30	10-20	0-5	40-65	1-15

Scale

Minimum scale of subwatershed and needs to consider landscapes at least 15,000 acres in size. Scale may be changed to watershed or subbasin level if justified as more appropriate through project analysis.

Management Approach (FW-FOR-STR-MAPR):

01. During project analysis characterize existing vegetation conditions of proposed project areas for patterns of stand structure by biophysical environment. Compare existing conditions to desired conditions to inform treatment needs.

Old Forest and Individual Old - Large Trees (FW-FOR-OLD)

Introduction

Old forest is a late stage of stand development mainly distinguished from younger forest by having an abundance of trees that are biologically old and large. This section contains additional plan direction related to old forest, as well as individual large trees and individual old trees, with understanding that the presence, distribution, recruitment, and disturbance of these features is dynamic on the landscape. Trees may be old, large, or both large and old. Not all old trees are large, and not all large trees are old. For the purposes of this plan, the definitions of old, large, and legacy trees are as follows:

- "Old" trees have distinct features indicating ages of generally 150 years or older.
- "Large" trees are grand fir over 30-inches diameter at breast height or trees of any other species over 21 inches diameter at breast height.
- "Legacy" trees are trees that remain following prior disturbance that are older and larger than the average trees in the general area.

Old forests, large trees, and old trees provide a variety of ecosystem services and social values, are economically valuable as a timber resource, and are necessary for a landscape that is healthy and resilient to natural disturbances such as wildfire. Old forests and large old trees are also an important component of cultural identity.

Many wildlife species require structural complexity typical of old forests and the presence of large trees and old trees within a stand can increase wildlife habitat values in both old and young forests. Rare lichen species also require old trees in old forests.

Old trees, especially large old trees, found both within old forest stands and as scattered individuals are acknowledged to have great importance as ecological keystones, developing physiological and structural features. This makes them valuable in terms of wildlife habitat, fire and drought resistance, and as genetic resources.

Desired Conditions (FW-FOR-OLD-DC)

01. Old forests and trees provide a variety of ecosystem services and social values, and old forest conservation is integrated and balanced with other ecological, social, and economic desired conditions to the extent practicable. See also FW-FOR-STR-DC.

02. Stands representing old forest structural stages are within the desired condition indicated in Table 4 through Table 6 within the management scale, are well distributed across the landscape. See also FW-CON-DC-01 and -02.

03. The extent, concentration and distribution of individual, old trees are sufficient to provide structural diversity, wildlife habitat, future snags, and potential future old forest conditions. Old trees and large trees are present within young forest stands, are distributed across the landscape, and young trees are continually growing into old trees. Young forest stands are continually growing into old forest stands, which allows for the transition to old forest across the landscape over time following disturbance such as fire, insects, and diseases. Large, old, and legacy trees particularly important for certain species of plants and animals include those that are rough-boled with large horizontal limbs, are hollow; have heart rot, pockets of decay, dead or broken tops, cavities or substantial wounds; or have witch's broom deformities. See also FW-FOR-CMP-DC and FW-FOR-STR-DC.

Scale

Stand to subwatershed level for individual trees. For old forest structure, minimum scale of subwatershed and needs to consider landscapes at least 15,000 acres in size. Scale may be changed to watershed or subbasin level if justified as more appropriate through project analysis.

Guidelines (FW-FOR-OLD-GDL)

01. To provide large tree habitat in the short and long term, management activities should retain and manage for the recruitment of old trees (150 years or older), large trees and legacy trees, except as provided in other plan components.

02. To reduce threat to human life and infrastructure, old trees and large trees identified as hazards may be felled or removed. These situations may include but are not limited to roads, developed sites, and powerlines. See Region 6 Field Guide for Tree Risk Assessments and Hazard Tree Mitigation document.

03. To avoid hazardous conditions, landings, skid trails, and corridors should be located where the felling or removal of large trees is avoidable except where doing so conflicts with other plan components.

04. To reinforce, facilitate, or improve effectiveness of fuel reduction in Community Protection Areas and within planned and emergency fuel breaks, old trees and large trees may be removed when unavoidable.

05. To maintain, move toward, or achieve ecological desired conditions where removal of smaller trees alone is not effective, old trees and large trees may be felled or removed.

This may include to provide complex instream large wood structure; to increase space and resources for aspen, cottonwood, whitebark pine, and old trees; and to meet desired conditions for forest species composition and density. See also FW-WTR-DC, FW-VEGNF-DC, FW-FOR-CMP-DC, and FW-FOR-DEN-DC.

Management Approach (FW-FOR-OLD-MAPR):

01. Consider forest management activities that are - completed in a manner to set the landscape on a trajectory to meet desired conditions for structure, species composition, density, and landscape patterns and connectivity. This may necessitate a short-term loss of large or old trees in some areas for a long-term gain of meeting multiple desired conditions.

02. For each project proposing the removal of large trees or old trees, demonstrate through project analysis that over time management actions move the landscape towards desired conditions and that large and old trees are distributed in a manner and are of enough abundance to sustain old forest conditions and wildlife habitat through time.

Snags and Down Wood (SNAG)

Introduction

Snags and down wood are essential ecological components of the forested ecosystem. Standing snags provide foraging, roosting, denning and nesting habitat for numerous wildlife species. As snags decay and fall to the ground and become down wood, they continue to provide food and shelter for different species. Down wood also stores nutrients and moisture, aids in soil development, and affects stream channel morphology when near water. Generally, the largest diameter snags and down wood provide for the largest number of species.

Desired Conditions (FW-SNAG-DC)

01. Snags, down wood, and green tree replacement trees are contributing to forest structural diversity, soil ecological function, and habitat for associated plant, fungus, and animal species. Snags vary in amount and distribution across the landscape over time, based on past management, site productivity, species composition, and disturbance patterns such as wildfire, wind, insects, and disease. A range of decay classes is present. See also FW-FOR-STR-DC and FW-FOR-DEN-DC.

02. Snags and down wood are not scattered equally across all acres but are distributed across the landscape at varying densities that are higher in riparian areas, unroaded areas, and burned areas, with lower densities along open roads and in developed sites or other areas where the concern for human safety is elevated.

03. Down wood, especially larger material (8 inches or larger in diameter on the small end and >6 feet in length), is contributing to forest structural diversity, soil ecological function, and habitat for associated plant, fungus, and animal species. Down wood is highly variable in amount, sizes, species, and stages of decay, both across the landscape and over time. Specific stands or sites may have much lower or higher amounts of down wood.

Scale

Minimum scale of subwatershed. Scale may be changed to watershed or subbasin level if justified as more appropriate through project analysis.

Guidelines (FW-SNAG-GDL):

01. To provide habitat for the greatest array of plant, fungus, and animal species, maintain the presence of large snags. Snags 20 inches diameter at breast height (DBH) and larger should be retained during management activities unless they are a hazard to infrastructure or safety, to meet fuels desired conditions, and except for salvage harvesting activities. Protect the largest and oldest snags with evidence of woodpecker nesting where operationally possible.

02. To provide for future dead and down wood, live green recruitment trees should be retained with a preference for the largest and most decadent trees available. Green tree snag recruitment considerations include: retaining the largest trees showing evidence of rot, hollow trunks, wildlife use, and broken tops; consider natural decay processes and agents such as wounds and brooming; and provide for a diversity of tree species.

03. To ensure long term availability of down wood, management activities should retain existing down wood according to Table 7. Exceptions might include salvage, skyline, or fuels treatments.

Table 7: Down Wood minimum amounts following management activities by vegetation type where available

Species	Pieces per Acre	Diameter Small End	Piece Length and Total Lineal Length
Dry Forest	3-6	12"	>6 ft. 20-40 ft.
Moist Forest	15-20	12"	>6 ft. 100-140 ft.
Cold Forest	15-20	8"	>8 ft. 120-160 ft.

Aspen, Woodland, Shrubland, Grassland, Meadow, other Non-forested Habitats (VEGNF)

Introduction

Aspen in the Blue Mountains is often found in scattered, small stands in the ecotone between forest and meadow. Fire is important in both establishing new stands of aspen and assisting aspen in maintaining its position on the landscape. Fire exclusion has reduced the opportunity for shade-intolerant aspen to persist, since they established after fire and slowly decline as conifer overtop the aspen canopy. Aspen's palatable twigs and foliage, and tendency to develop cavities, make it valuable habitat for wildlife such as deer, elk, woodpeckers, beaver, songbirds, and small mammals. Regeneration of aspen clones has been hindered, mainly from browsing pressure from large ungulates. Aspen is appreciated for its scenic value, especially their golden colors in the fall.

Within the plan area, persistent woodlands typically include areas that have low density trees with sparse understories of shrubs, forbs, and grasses, and occur on shallow rocky soils. In the Blue Mountains National Forests, woodlands are often comprised of juniper and mountain mahogany communities. In the absence of disturbance such as fire, juniper infills within or encroach outside of woodlands into adjacent shrublands.

Shrublands in the plan area span a wide range of elevation, soil types, and landscape positions. Shrublands contain multiple species such as ninebark, snowberry, bitterbrush, rabbitbrush and several sagebrush species. In the absence of disturbance such as fire, shrubs can expand over time into the interspaces and outcompete grass and forbs in the understory. Depending on site productivity and time since disturbance, western junipers and other conifers may also encroach into shrublands. While some shrub species thrive after fire, most of the sagebrush species can quickly be lost due to disturbance and take many years to re-establish. High intensity wildfires that burn through sagebrush may kill both the seedbank from burned ground and mature sagebrush. In these instances, recovery is slow, or natural recovery is prevented entirely.

Grasslands in the plan area span all elevation ranges and are characterized by a plant community composition that is dominated by deep rooted perennial grasses and forbs, most often on deeper and more productive soils when compared to shrublands. Grasses are well-adapted to drought stress by concentrating growth in the spring and early summer, going to seed, and then going dormant. Aspect can drive species composition at all elevations. Throughout the mid-elevation grasslands, the most consistent pattern throughout the plan areas features south facing aspects that are commonly drier and dominated by bluebunch wheatgrass and Sandberg bluegrass, while north facing grasslands are often characterized by Idaho fescue and bluebunch wheatgrass. Into the

future, it is predicted that grasslands may be increasingly dominated by the most drought-tolerant species.

Canyon grasslands exist in the lower elevation ranges. They are very hot and dry in the summer and relatively mild and moist in the winter. Many rare plants and less common plant communities only occur in these canyon grasslands. These areas warm up earlier in the season which initiates grass growth earlier. Early spring growth provides important early forage for wildlife, permitted livestock, wild horses, and is habitat for a wide variety of animal species. The grasslands in the northern portion of the plan area are connected to but are higher in elevation than canyon grasslands. These grasslands are remnants of the forb dominated Palouse Prairie ecosystem. Subalpine and alpine grasslands are found at highest elevations in the plan area, where temperatures are generally too cold, or snow is too persistent, for tree growth.

Dry meadow communities in the plan area are characterized by perennial grasses and forbs, composed mostly of common dominant plant species such as greenleaf fescue, Idaho fescue, elk sedge, and Hood's sedge. Wet meadows (included in the Aquatics section) are a type of wetland with soils that are saturated for part or all of the growing season. and are dominated by perennial sedges, rushes, and grasses.

Unique habitats occupy a small percentage of the plan area, but they are essential to maintaining overall species diversity and integrity on a broader scale. They can provide high quality niche habitat for species at risk, serve as hotspots for species diversity, and can contain fragile ecosystems. In the plan area, these include aspen, portions of woodland, shrublands and grasslands, as well as rock formations (e.g., talus, cliffs, outcrops), waterfalls, caves, and rocky shallow soils (scablands). Some of these habitats result from or are affected by disturbances. Other unique habitats, such as rock outcrops, may be indirectly affected by disturbance. Depending on their extent and intensity of the disturbance, many unique habitats may be created or are transitioned to a different ecological state. See also FW-CON-DC and FW-SPDIV-DC.

Some unique habitats are associated with water including wetland and other surface waterbodies, and groundwater dependent ecosystems (GDEs) such as springs, fens, and seeps which are discussed in forest-wide Aquatic (WTR) and Riparian Management Area (MA 3A RMA) sections.

Desired Conditions (FW-VEGNF-DC)

01. The composition, distribution, and abundance of vegetation within aspen, woodlands, shrublands, grasslands, and meadows are maintained, restored, or making progress toward an ecologically sustainable state.

02. Aspen habitats are ecologically resilient, sustainable, and compatible with natural disturbance processes. The distribution and abundance of aspen across the landscape is consistent with the ecological site potential. A diversity of aspen age and structure classes exist.

03. Juniper presence reflects the historical distribution and abundance across the landscape. Disturbance occurs in a mosaic pattern that promotes age class diversity in understory shrubs and maintains or increases perennial bunchgrass cover while maintaining an open-tree canopy. Scattered old juniper, consistent with ecological site potential, persist on rocky outcrops and sparsely vegetated areas to provide wildlife habitat.

04. Healthy stands of mountain mahogany provide food and cover for wildlife and are not stressed by overuse by ungulates or resource competition with conifers. Mountain mahogany stands and shrublands persist after vegetation or prescribed fire treatments.

05. Shrublands are characterized by native perennial plant communities that support diverse age classes of shrubs and a vigorous, diverse, self-sustaining understory of grasses and forbs relative to the ecological site potential.

06. Grasslands are ecologically resilient and sustainable. Natural disturbances that decrease shrubs and reduce resource competition occur in a mosaic pattern that maintains perennial grass and forb cover.

07. Sagebrush and bunchgrass habitat is protected from loss caused by unplanned wildfires or damage resulting from management related activities.

08. Where the lack of native vegetation weakens ecological integrity, acceptable non-native grasses such as Kentucky bluegrass, timothy, and smooth brome may be present, but are not increasing in abundance or extent, and not disrupting ecological processes or function.

09. Unique habitats such as talus slopes, fractured wet bedrock, rocky outcrops, scree slopes, waterfalls, and geologic inclusions support long-term persistence of associated native species with narrow or very narrow habitat specificity and limited distribution.

Scale

The desired condition for non-forested habitats can be applied at a variety of scales depending on the species (i.e., national forest, watershed, subwatershed, or fine-scale stand level). The identification and protection non-forested habitats are primarily accomplished at project-level planning.

Objectives (FW-VEGNF-OBJ)

01. Restore aspen stands with diverse age classes across the Blue Mountains National Forests.

    Malheur NF: 200 acres

    Umatilla NF: 100 acres per decade

    Wallowa-Whitman NF: 50 acres per decade

02. Reduce juniper canopy cover to less than 10 percent in sagebrush steppe habitat, mahogany, meadows, springs, seeps, or riparian areas.

    Malheur NF: 800 acres per decade

    Umatilla NF: No objective

    Wallowa-Whitman NF: No objective

03. Maintain existing meadows and grasslands by reducing conifer encroachment into them.

    Malheur NF: 5 meadows per decade

    Umatilla NF: 5 meadows per decade

    Wallowa-Whitman NF: 5 meadows per decade

Guidelines (FW-VEGNF-GDL)

01. To reduce encroachment by other vegetation habitat types, aspen, shrublands, grasslands, and meadows should be maintained or restored where ecologically appropriate.

Management Approaches (FW-VEGNF-MAPR)

01. For restoration of non-forest vegetation, considerations might include ecological site potential, ecological integrity, and site-specific desired conditions based on the best available science. Utilize resources such as Natural Resource Conservation Service (NRCS) ecological site descriptions, additional soil information, local plant association guides, and historical records and photos.

02. When proposing restoration treatments for shrublands, grasslands, or meadows on sites that are currently forested, utilize key indicators that reflect the site potential for non-forested vegetation such as soil type and depth, stressed live or dead remnants of shrubs, or a general lack of stumps and old trees on a site.

03. Utilization of livestock (normally sheep, goats, or cattle) are appropriate tools for targeted grazing for vegetation management, such as fuels reduction or invasive plant control. Outputs are acres not limited by AUMs, and may be authorized with a special use or livestock use permit.

Species Diversity (SPDIV)

Introduction

The 2012 Planning Rule adopts a complementary ecosystem and species approach, to provide for the diversity of plant and animal communities and the long-term persistence of native species in the plan area. Plan components in many sections of the plan are designed to maintain or restore ecological conditions for ecosystem integrity and plant and animal diversity. Species with specific needs are addressed here.

Desired Conditions (FW-SPDIV-DC)

01. Ecological integrity provides the key characteristics, conditions and functionality of native ecological systems, and provides for habitat needs of diverse plant and animal species in the plan area. These ecosystems are resilient and provide social and economic benefits derived from observing, fishing, hunting, foraging and other recreational pursuits of fish, wildlife, fungus, and plant species.

02. The range of habitats for native and desired non-native species is of adequate quality, distribution, and abundance to provide for viable populations. This includes the ability of species and individuals to interact, disperse, and find safety within habitats in the plan area. See also FW-WF-DC, FW-INSDIS-DC, FW-FOR-CMP-DC, FW-FOR-STR-DC, FW-FOR-DEN-DC, FW-FOR-OLD-DC, and FW-SNAG-DC.

03. Healthy plant communities provide native floral resources and conditions that support diverse native pollinator communities. In turn, pollinators provide effective pollination that sustains native plant communities, symbiotically contributing to overall ecological integrity of plant and animal communities.

04. Habitat conditions are resilient and sustainable, considering shifting or changing temperatures, precipitation patterns, and more frequent and intense fire regimes.

05. Beaver habitat conditions enable beaver populations to persist at levels and distribution sufficient to modify the aquatic and riparian ecosystems to increase water holding capacity, expand the wetted surface area, and increase the complexity and connectivity of the aquatic and riparian ecosystems, which provides resiliency to these ecosystems.

06. Forest vegetation and use support a broad distribution of elk on National Forest Lands based on their seasonal needs, providing for healthy elk populations, and contributing to social and economic benefits.

07. Amphibian breeding, rearing, and upland habitat is of sufficient quality and distribution to support all life stages.

Scale

Forest wide to specific ecological niche depending on species habitat characteristics involved.

Objectives (FW-SPDIV-OBJ)

01. Complete projects that are designed to maintain or restore habitat for one or more wildlife species.

    Malheur NF: 10 projects per decade

    Umatilla NF: 10 projects per decade

    Wallowa-Whitman NF: 10 projects per decade

Standards (FW-SPDIV-STD)

01. Apiaries shall not be authorized to avoid introducing parasites and diseases to native pollinators and to reduce competition for floral resources.

02. Replanting efforts shall use native species with genetically appropriate seed and plant material when available, except where native species cannot prevent invasive species from dominating the landscape, to maintain ecological integrity.

Guidelines (FW-SPDIV-GDL)

01. To achieve desired conditions for large trees and old trees (See FW-FOR-OLD-DC) and to promote high-quality nesting and denning habitat for old-forest (See FW-FOR-STR-DC) associated species, thinning to increase heterogeneity and resilience should retain the oldest and largest trees and large trees with habitat features (such as deformities, broken tops, large branches, and cavities) that benefit these wildlife species.

02. To reduce localized impacts resulting from concentrated livestock use, salt and supplements should not be placed within ¼ mile of water developments, groundwater-dependent ecosystems, streams, aspen stands, occupied habitat of botanical species at risk, and other unique habitats (defined in FW-VEGNF introduction) that are susceptible to livestock trampling or compaction, unless the topography or other physical features prevent such impacts within a shorter distance of the salting location.

03. To reduce wildlife drowning in water developments that use smooth sided materials to hold or store water, devices should be in place that provide traction for small animals to escape.

04. To protect rare plant species, species of conservation concern, or state protected species, collection permits should not be authorized if the species cannot withstand collection or if the collection would result in significant negative impacts to populations on the Forest. Exceptions may be authorized for research that demonstrates benefit for the species or forest management, or for traditional tribal uses.

05. To preserve at-risk botanical species and state protected botanical species when forest product and research collection permits are issued, guidance for seed collection and cuttings rather than whole plant removal should be provided for the preferred collection methods. An exception would be when whole plant removal is required to meet the needs of the permit holder and removal would not have the potential to negatively impact rare plant populations.

06. To prevent bat, owl, and bird collision while dipping in livestock water troughs at night, wire strands or boards should not be used to support trough brace posts.

07. To limit wildlife species disturbance, known cavity or nest trees should be preserved when conducting prescribed (planned ignition) burning activities, mechanical fuel treatments, and silvicultural treatments to protect the integrity of the nest sites.

08. To improve nesting success for migratory birds, management activities should be conducted outside the nesting season when possible or develop project design criteria to minimize impacts in coordination with the wildlife biologist.

09. To maintain riparian bryophytes, which support macroinvertebrate populations, large woody structures should be retained around springs, seeps and pools during aquatic restoration projects. See also FW-SNAG-DCs.

10. To provide pollinators with diverse foraging, breeding, and overwintering resources, a variety of native forb, grass, shrub, and tree species should be seeded or planted as appropriate for the project type. Forbs should include a variety of flower types which provide resources for different types of pollinators. Other management activities should use best available science when treating habitat areas that will affect pollinators, especially prescribed fire use for meadow restoration.

Management Approach (FW-SPDIV-MAPR)

01. Consider vegetation management projects designed to maintain or restore elk habitat quality and quantity in a manner that encourages elk to remain on public lands and on sites that are capable of providing moderate or high nutrition potential.

02. Consider the following in project design to reduce abandonment of raptor nests:

    - Distance buffers
    - Compressed work periods
    - Low impact operational methods
    - Phased project implementation
    - Other means of avoiding disturbance are based on the best available information and site-specific factors, such as topography, available habitat, and location.

03. Coordinate with silviculturists, botanists, geneticists, and seed and plant materials centers to identify and prepare appropriate genetic materials in sufficient quantity to meet revegetation goals that are resilient to projected conditions. Applies also to FW-FORCMP-DC-01 and 02.

04. To protect plant communities sensitive to trampling, manage high levels of recreation use at subalpine lakes and meadows to reduce the degree of impacts to plants.

05. Consider projects to protect and restore habitat for botanical species at risk in areas that receive high levels of recreation use, such as around alpine lakes. This may include, for example, rehabilitating user-created trails and restoring areas of denuded ground.

06. To preserve species diversity, buffer unique habitat such as cliffs, rock crevices, calcareous substrates, areas with high concentrations of metal ores, peat mound-form springs, seeps, exposed ridges, fragile alpine and subalpine communities, and rocky or naturally moist areas that are still in a natural or near natural state from impacts during project implementation, unless activities benefit ecological integrity.

07. To preserve species diversity, consider not constructing new facilities in unique habitat areas. Complete maintenance of existing facilities in a way that would not damage these habitats. Consider avoiding these areas for fire staging areas or camps.

08. To reduce loss of habitat and known mortality risk from new energy developments consider:

    - Best available technology to deter bird collisions from wind energy developments.
    - Locate solar energy developments in areas that do not result in loss of big game winter range.
    - Install anti-perching devices on utility poles to reduce mortality of raptors.

09. To maintain the presence of biological soil crusts, in areas with these crusts, management activities consider methods that minimize surface disturbance.

Species at Risk (SPRSK)

Species at risk for planning are federally recognized threatened, endangered, proposed, and candidate species under the Endangered Species Act, and species of conservation concern identified for each national forest.

Section 7(a)(1) of the Endangered Species Act (ESA) requires all federal agencies to use their authorities to conserve species listed under the Act, including the ecosystems upon which they depend. Federal agencies promote the conservation and recovery of listed species, as well as implement conservation agreements, management plans, and recovery plans developed for those listed species. Areas of the national forests which currently overlap with federally listed species or designated critical habitat require a focused protection and restoration strategy designed to recover listed species while pursuing land management activities.

A species of conservation concern is a species, other than federally recognized threatened, endangered, proposed, or candidate species, that is known to occur in the plan area and for which a regional forester determines the best available scientific information indicates substantial concern about the species' capability to persist over the long-term in the plan area (36 CFR 219.9). The criteria for identifying species of conservation concern are outlined in the Forest Service Handbook FSH 1909.12 Chapter 10, Section 12.52c. Preliminary species of conservation concern are provided in Appendix C.

Desired Condition (FW-SPRSK-DC)

01. Habitat for species at risk is resilient to forest management, disturbance processes, and other changing conditions. See also desired conditions for resiliency in these and other sections: FW-FOR-DC, FW-VEGNF-DC, FW-INSDIS-DC, FW-WF-DC.

02. An abundant food base exists in aquatic habitats, which includes terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish. Non-native predatory, interbreeding, or competing species exist at low level, and if present, they are temporally and spatially isolated from federally listed species.

03. Fish and other aquatic species at risk have access to historical habitat to support life cycle needs. Spawning, rearing, and migratory habitat is widely available and inhabited on the Blue Mountains National Forests.

04. Habitat suitable for bumble bees and monarch butterflies is present in appropriate and connected areas, including open fields and meadows with diverse floral composition, native milkweed patches, and late season flowering species.

05. Forest and alpine habitat characterized by persistent snow cover and cooler temperatures provide wolverine denning and foraging opportunities. High elevation habitat and associated micro-climates provide refugia and habitat connectivity for species at risk in the face of changing temperature and precipitation patterns, and other emerging threats.

06. Whitebark pine and limber pine promote community diversity and stability in high mountain ecosystems. Ecological conditions and processes lead to an increase in cone-bearing trees, particularly in areas projected to be suitable habitat under future temperature and precipitation patterns, and a decrease in susceptibility to succession to more shade tolerant conifers, mountain pine beetle, wildland fire, and blister rust.

07. Bighorn sheep herds are sustained at current or larger population size with minimal disease transfer from permitted domestic sheep and goats. Grasslands with nearby rocky escape areas provide native, high protein grass and forbs for bighorn sheep.

08. Cross-connected landscape patches provide quality forage, cover (including down wood, shrubs and saplings near roadways), and solitude as viable species move through landscapes while facilitating migration, dispersal, genetic exchange, and adaptation to changing conditions for wildlife, fisheries, and plant species at risk.

09. Spalding's catchfly habitat retains Idaho fescue as the dominant species.

Scale

Forest wide to specific ecological niche depending on the species habitat characteristics involved.

Objectives (FW-SPRSK-OBJ):

01. Complete projects that are designed to maintain, restore, or protect habitat for one or more botanical species at risk.

Malheur NF: 10 projects per decade

Umatilla NF: 10 projects per decade

Wallowa-Whitman NF: 10 projects per decade

Standards (FW-SPRSK-STD)

01. In the long term, management activities shall not retard recovery of or contribute to decline of federally listed threatened, endangered, and proposed species and their designated and proposed critical habitat.

Guidelines (FW-SPRSK-GDL)

01. To avoid disturbance to habitat associated with species at risk, fire and fuels management activities should be managed to avoid or mitigate the occupied habitat of species at risk unless the burn plan or prescription would benefit or not degrade the species or its habitat.

02. To reduce impacts to species at risk, land exchanges should avoid the disposition of habitat associated with species at risk, except where disposition of such lands does not result in reduced protection for those species.

03. To prevent loss of epiphytic lichen species at risk, old trees and large old snags, of a variety of species should be retained in projects implemented in cold upland and moist upland forest types. See also FW-SPRSK-MAPR.

04. To reduce disturbance to denning wolves, and the potential for livestock conflict, management activities within one mile of known, active (during same calendar year that use is documented) wolf den and rendezvous sites should implement appropriate site-specific restrictions. See also FW-SPRSK-MAPR.

05. To prevent the introduction or spread of pathogens, Forest Service employees and agency-authorized personnel should use established precautionary measures prior to entering and exiting caves, karst features, and abandoned mines with suspected bat use.

06. To minimize displacement of bats, activities should not disturb known roosting, hibernating, and reproductive sites when occupied. When removal or reconstruction of infrastructure used by bats is necessary, demolition and construction activities should occur during seasonal windows when bats are not present, and bat structures should be installed to compensate for or prevent habitat loss.

Management Approach (FW-SPRSK-MAPR):

Botanical

01. Collaborate and coordinate work with other agencies, Tribes, and landowners to expand inventories, identify potential habitat for species at risk, and promote protection and restoration of associated habitats.

02. Consider incorporating measures to conserve and reduce the risk of federal listing of species at risk into all program areas at appropriate times and scales, including but not limited to recreation, fire and fuels, vegetation management, minerals, rangeland management, engineering, and special uses.

03. Maintain native milkweed habitat using the best available science recommended practices. Avoid native milkweed during roadside and other herbicide applications.

04. Gather necessary information early in the planning process to locate unknown occurrences and confirm known occurrences of plants, fungi, and lichen species at risk to avoid or mitigate project impacts on these species. See also FW-SPRSKBOT-STD.

Wolves

05. The potential for conflicts between domestic livestock and wolves may be reduced by considering the following best management practices recommended by ODFW and WDFW:
    - Placement of salt and trailing of livestock away from denning areas.
    - Herders stay with sheep.
    - Known stray domestic sheep are retrieved promptly.
    - Sick or injured livestock are removed from the allotment as soon as discovered.
    - Livestock carcasses are removed from National Forest System lands, if that is not viable coordinate with state agencies to seek other option(s).

Bighorn Sheep

06. The potential for spread of disease from domestic sheep and goats to bighorn sheep may be reduced by following a site-specific plan for sheep grazing allotments and special use permit areas for sheep and goats within 21.75 miles (35 km) of bighorn sheep herds. At minimum, plans would consider the following best management practices recommended by ODFW and WDFW:

    - Maintain control of sheep or goats with use of herders and dogs.
    - Individually mark domestic sheep in a manner that allows field identification of ownership while on National Forest System lands.
    - Count domestic sheep as they go onto and off the permitted area to determine if any are missing. Report discrepancies to the District Ranger within 24 hours, and the permittee is to make a concerted effort to find missing sheep.
    - Remove sick or injured sheep or goats from the allotment as soon as discovered.
    - Manage recreational uses to consider health to bighorn sheep herds.
    - Report bighorn sheep observed near active sheep allotments to the state wildlife agency.

Marten

07. To reduce the risk of population-level fragmentation, when working in marten habitat:
    - Consider retaining higher canopy cover in drainages, north facing slopes, and riparian corridors where conditions permit,
    - Consider improving connectivity where cover is lacking by retaining some brush piles or slash piles that are large enough for marten to use, contain at least two large-diameter logs, and contain large enough interstitial spaces for marten to move within the pile,

- When conducting hazard tree removal near secondary roads and unpaved roads, where down logs or hiding cover is deficient, consider leaving all or portions of large-diameter logs for hiding cover in places where they are unlikely to be removed by fuelwood gatherers and where they won't impede planned prescribed burns or create excessive fuels near the road,
- Consider management that provides additional cover, connectivity, and vegetation variability where linear pathways are present that facilitate avian predation on marten.
- Consider maintaining habitat patches of sufficient size and scale that provides a potential home range for marten (approximately 2,000 acre mean patch size) when implementing vegetation management projects.

Social and Economic Sustainability

Tribal Rights and Culturally Significant Resources (TRI)

Introduction

Tribal communities rely upon forested and grassland habitats for culturally significant resources including water, fish, big game, roots, berries, fiber and other resources for subsistence and maintaining cultural and ceremonial practices.

Spiritual life for Tribes relies on an environment where all natural components are present and where ritual life is inextricably linked to the natural world. Many species of plants were used as sources of food. Plants are also used for a variety of purposes including dyes, cordage, containers, glues, weaving materials, and medicinal, spiritual, and ceremonial purposes.

The Forest Service maintains government-to-government relationships with federally recognized American Indian Tribes. Government-to-government relationships are vital for protecting and managing ecological resources to honor, support, and respect cultural, spiritual, and community interests. Through the treaty process, some Tribes reserved certain rights for their tribal members both on and off-reservation lands. Non-treaty Tribes have a variety of rights and protections afforded under law.

The Forest Service has certain legal responsibilities to federally recognized Tribes, beyond those identified in treaties, that are clarified in statutes, executive orders, and case law that are interpreted for the protection and benefit of federally recognized American Indian Tribes. In meeting these responsibilities, the Forest Service consults with Tribes whose ancestral lands, or portions of, lie within the plan area whenever

proposed policies or actions may affect their interests. As such, a Memoranda of Understanding for collaboration, consultation, and cooperation in the management of natural resources on National Forest System lands are in effect between the Forest Service and the Confederated Tribes of the Umatilla Indian Reservation, the Nez Perce Tribe, and the Confederated Tribes of the Warm Springs Reservation, and the Burns Paiute Tribe.

Desired Conditions (FW-TRI-DC).

01. At the forest scale, a diversity of habitats provides culturally significant resources in sustainable quantities and harvestable population levels and are accessible to Tribes or tribal members.

Scale

Forest-wide.

Objectives (FW-TRI-OBJ)

01. Restore hydrologic function in wet meadows associated with culturally important botanical species, such as camas.

    Malheur NF: 80 acres in the first decade

    Umatilla NF: 100 acres in the first decade

    Wallowa-Whitman NF: 100 acres in the first decade

Management Approach (FW-TRI-MAPR):

01. Work with Tribes to develop a long-term strategy to secure treaty reserved resources, consistent with applicable federal laws and executive orders.

02. The Forests consult with Tribes to address the forest's joint treaty responsibilities and discuss their annual forest programs of work.

03. The Forest Service consults with Tribes to coordinate agency or joint Forest Service and Tribal site-specific restoration projects. Individual project elements may include but are not limited to stream and watershed restoration, culvert replacement, streamside and spring protection, riparian area planting and large wood recruitment, development and reconstruction of upland water sources for livestock and wildlife, water quality improvement, native plant propagation material collection and propagation, and wildlife habitat restoration. These combined project and program initiatives help support and sustain culturally significant resources that are essential to tribal communities and contribute to the ongoing cultural vitality of Tribes.

04. The Forests consider project effects to culturally significant foods at the site-specific project level.

05. At the request of and in consultation with Tribes, plan restoration projects of forested stands in habitat types that could produce huckleberries in a manner that promotes huckleberry abundance.

Local Communities (LOCCOM)

Introduction

The Blue Mountains National Forests are important to the resilience of local communities and Tribes because residents benefit from jobs and income produced from management activities, such as timber harvesting and livestock grazing. Mining, which is a statutory right, also produces jobs and income. The national forest also provides resources such as clean water and air, culturally significant foods relating to treaty-reserved rights, wildlife, recreation opportunities, berry gathering, and landscape settings that contribute to residents' quality of life and the character of local communities and Tribes.

Desired Conditions (FW-LOCCOM-DC)

01. The National Forest System lands have sustainable ecosystems that provide resources to Tribes, local communities, and visitors. These lands contribute to clean water, clean air, jobs and income, traditional foods and medicines, recreation, carbon storage, native species habitat, and forest products. See also FW-WTR-DC, FW-AQ-DC, FW-TRI-DC, FW-FOR-DC, FW-VEGNF-DC, and FW-FORPROD-DC.

02. Sustainable levels of forest resources such as timber, livestock grazing, fish and wildlife, recreation and wilderness experiences, contribute to the social, cultural, and economic sustainability of local communities. See also FW-FORPROD, FW-RNG, FW-SPDIV, FW-REC, and MA1A-DWA DCs.

Scale

Forest-wide

Management Approach (FW-LOCCOM-MAPR):

01. The Blue Mountains National Forests engage with county and local governments, partner organizations, and the public in a learning and collaborative environment. Consider communities with social and economic conditions that are more highly influenced by changes in forest policy and management decisions.

Transportation Infrastructure (TRNSPT)

Introduction

Transportation infrastructure includes the system of roads, trails and airstrips located on National Forest System lands that provide access throughout the national forests. Facilities infrastructure is addressed in the Forest-wide REC and Management Area MA5 sections.

The road system supports land management activities, wildfire operations, recreational and hunting use, access to private land in-holdings and commercial ventures, and Forest Service administrative needs. Roads include the roadway, any constructed feature such as vegetation clearing, bridges, ditches, culverts, signs, and retaining walls that support the user and minimize the effects to other values. The road system is comprised of National Forest System roads and are part of the national forest's Transportation Atlas.

The summer and winter trail system is managed for a variety of recreational uses, including hiking, horseback riding, bicycling, running, skiing and snowshoeing, snowmobiling, motorcycle and all-terrain vehicle riding, and off-highway vehicle riding. In addition to recreation uses, the trail system also supports commercial ventures such as outfitter and guide services. Trails include the trail-way, any constructed feature such as bridges, ditches, culverts, signs, retaining walls, and other features that support the user and minimize the effects to other resources. The trail system is comprised of National Forest System trails and are part of the national forest's Transportation Atlas.

Airfields are part of the Forest's Transportation Atlas and include the runway and any constructed feature such as vegetation clearing, ditches, signs, and other features that support the user and minimize the effects to other resources.

Site-specific designation of roads, trails, and motorized areas is outside the scope of forest planning and is addressed in a national forest's travel plan.

Desired Conditions (FW-TRSPT-DC)

01. The forest transportation system of roads, trails, and airfields provides safe and efficient public, private inholding, tribal, and administrative access for recreation, special uses, forest resource management, fire management, and treaty related activities. The transportation system and its use support ecological sustainability and contributes to social and economic sustainability. Transportation infrastructure and its use are managed to avoid or mitigate undesired effects to ecological integrity and diversity and on resources including threatened and endangered species, species of conservation concern, heritage and cultural sites, watersheds, water quality and aquatic species.

02. The transportation system is connected to state, county, local public, and other federal roads and trails. The transportation system provides reasonable access to facilities, private in-holdings, and infrastructure (such as buildings, recreation facilities, municipal water systems, dams, reservoirs, range improvements, electronic and communication sites, and utility lines).

03. Rights-of-way and easements provide adequate and legal access to National Forest System lands. Cooperative road agreements with states and counties are used to provide a seamless public road system to access and manage private, state, and public lands.

04. The trail system accommodates current and reasonably foreseeable motorized and non-motorized recreational needs.

Scale

Forest-wide

Objectives (FW-TRSPT-OBJ)

01. Maintain forest roads.

    Malheur NF: Approximately 400-600 miles of road annually

    Umatilla NF: Approximately 150-300 miles of road annually

    Wallowa-Whitman NF: Approximately 200-600 miles of road annually

02. Maintain trails.

    Malheur NF: 100 miles per decade

    Umatilla NF: 500 miles per decade

    Wallowa-Whitman NF: 650 miles per decade

Guidelines (FW-TRSPT-GDL)

01. To avoid or mitigate undesirable effects to forest resources, existing roads and trails that cross sensitive areas or affect ecological or cultural resources may require additional mitigation or be rerouted whenever practicable rather than maintained in place. This is determined at the project level.

02. To avoid or mitigate undesirable effects, maintenance activities (grading, ditch and culvert cleaning) manage water and sediment movement. New construction should avoid, as practicable, sensitive ecological areas and cultural resources. Designs consider anticipated precipitation timing and amounts.

Please refer to Management Area specific standards and guidelines for transportation infrastructure in MA2G Scenic Byways and MA3A Riparian Management Areas.

Management Approaches (FW-TRSPT-MAPR)

01. The forest transportation system is part of a broader public system of roads and trails that is under the jurisdiction of multiple road agencies. Counties and adjacent national forests cooperate routinely to reduce conflicts, facilitate operations such as wildfire response, encourage cost effective partnering, and provide a seamless transportation system and user experience to the public which includes recreational opportunities such as hunting and camping.

02. To provide varied trail experiences, trail routes consider one or more of the following: create loop opportunities, connect developed recreation sites, provide access to destination overlooks, connect existing trails to larger trail networks, and connect communities to the Forest.

03. To provide quality trail experiences for forest users, trail maintenance priorities may consider trail use levels.

Recreation (REC)

Introduction

Sustainable recreation is defined as the set of recreation settings and opportunities that are ecologically, economically, and socially sustainable for present and future generations. The Forest Service manages three types of general recreational settings: developed recreation, dispersed recreation, and backcountry recreation. Recreational activities are also offered through special use permits with partners such as outfitter and guides, volunteer and non-profit organizations, and commercial ski area operators.

The Recreation Opportunity Spectrum (ROS) is the Forest Service's management tool to define, classify, allocate and manage desired recreation settings and opportunities. See Appendix E.

Desired conditions and other plan components under the recreation (REC) heading apply to forest-wide recreation. The plan also describes other general recreation settings (developed recreation, dispersed recreation and backcountry recreation) and provides management direction for specific opportunities and activities within those settings. See also plan components for RECDEV, RECDIS, and RECBCA.

Desired Conditions (FW-REC-DC)

01. Recreation opportunities promote the long-term physical and mental health of the public by encouraging opportunities to connect with nature while pursuing adventure and accepting appropriate challenge and risk, and by instilling a culture of stewardship and appreciation.

02. Recreation in all forms does not degrade the sustainability of ecological, social and cultural resources.

03. The Forest provides a range of year-round developed and dispersed recreation settings that offer a variety of motorized and non-motorized opportunities and recreation experiences. The distribution of desired recreation opportunity spectrum classes is summarized in Appendix E.

04. Opportunities for hunting and fishing are available in a variety of motorized and non-motorized settings. The national forest provides a mix of opportunities that foster hunting, fishing, and related visitor activities.

05. Winter recreation is managed to provide varying experiences while protecting ecological systems and benefitting all users.

06. Recreation special uses provide unique opportunities, services, and experiences for the public on National Forest System lands or address a demonstrated demand for a specific recreation opportunity. Services provided by recreation special uses enhance the recreation experiences of national forest visitors, promote public health and safety, protect natural resources, and protect historic resources.

07. Recreation special uses contribute to jobs and income in the local economy, community stability or growth, and quality of life while remaining compatible with ecological and social capacity thresholds.

08. The number of recreation special use authorizations issued, including outfitters and guides, balances public demand with desired conditions for ecological resources, and expands the variety of suitable outdoor recreation experiences.

Scale

Forest-wide.

Standards (FW-REC-STD):

01. Permits for new recreation residence tracts shall not be issued.

Guidelines (FW-REC-GDL)

01. To ensure recreational settings are consistent with desired conditions, recreation-related project-level decisions and implementation activities should be consistent with mapped desired ROS classes and setting descriptions.

02. To facilitate quality recreational experiences, recreational resources that cross jurisdictional boundaries, such as rivers or trails, should be managed collaboratively with other land managers whenever possible. Examples of collaborative cross-jurisdictional management include cooperation on capacity studies, jointly determining desired levels of social encounters, or co-authoring management plans.

Management Approach (FW-REC-MAPR)

01. Develop and sustain relationships with local communities, private providers of recreational services, partners, local, state and federal agencies, Tribes and other stakeholders to provide and support specialty services, such as backcountry skiing, jet boat and raft trips, aerial recreation opportunities, outfitting, and guiding services and events that encourage hunting and fishing on National Forest System land.

02. Maintain partnerships with private providers for highly developed areas, such as ski areas, trams, lodges, and concessionaire-operated campgrounds. Manage special use permits, such as recreation residences, to provide recreation opportunities available to permit holders. Work with recreation special uses permit holders to enhance the recreation experiences of national forest visitors, enhance public health and safety, and protect natural resources. Use partnerships with private providers and recreation special use permit holders to address changes in recreation demand and ensure the forest continues to provide diverse recreation opportunities given future environmental conditions and the capability of the forest.

03. In Management Areas where a range of desired ROS classes is applicable, implement projects to be as consistent with the current recreational setting as practicable, provided the current recreational setting falls within the desired ROS classes applicable to the project area. When projects would cause a shift among acceptable ROS classes, analyze and document the change in the project record and reflect the new ROS class in the ROS inventory for the forest.

04. Permits for in-lieu lots within existing tracts will be determined and analyzed at the project level.

Developed Recreation (RECDEV)

Introduction

The developed recreation setting is primarily found in areas accessible to motor vehicles and adjacent to primary roads and highways. This recreational experience is generally accommodated by facilities that provide comfort and convenience for the visitor in the outdoor environment. Developed recreation sites in this setting include developed campgrounds; ski areas; snow parks; interpretive trails; designed, developed, large, and popular trailheads; and motorboat launch sites.

Developed recreation settings are typically the most well-known and heavily used sites within the national forests and tend to be in roaded natural or rural recreation opportunity spectrum classes.

Desired Conditions (FW-RECDEV-DC)

01. Developed facilities, such as campgrounds, restrooms, picnic areas, trailheads, snow parks, and boating and fishing sites, are well maintained, fully functional, provide for visitor safety, and are accessible to people of varying abilities and needs. Developed recreation infrastructure is resilient to extreme events such as wildfires, floods, and landslides that may result from expected warming and changes in precipitation patterns. Potable water and sanitary systems provided at developed facilities meet required health standards.

02. Developed recreation facilities are designed to provide a higher degree of comfort and convenience than can be found at dispersed recreation sites. Areas of highly concentrated use provide amenities that accommodate people of all ages and those with varying abilities and needs. Developed recreation facilities are fully utilized with occupancy rates approaching full capacity during peak use periods and moderate occupancy rates during nonpeak summer and fall periods. The suite of developed recreation facilities across the national forest provides sufficient options to be responsive to changing use patterns, including shifts in seasonality and use type.

03. New construction and reconstruction projects reflect, to the extent practicable, a contemporary yet rustic design based on the use of native or durable materials such as naturally found materials or materials that appear natural. Recreation facilities are of consistent design and character. Facilities complement the natural environment by using materials that fit with the surrounding landscape.

04. Impacts to natural resources from visitor use of developed recreation facilities are minimized through design and site protection.

Scale

Recreational setting.

Guidelines (FW-RECDEV-GDL)

01. To provide quality developed recreation experiences for the maximum number of national forest users, recreation facility maintenance should be prioritized considering use levels whenever possible.

02. To protect national forest natural and cultural resources and to ensure recreation infrastructure is resilient to environmental changes, developed recreation area maintenance and rehabilitation should emphasize improvements that reduce existing resource impacts or improve resistance to anticipated threats whenever possible.

03. To provide diverse recreational settings and opportunities across the national forest, developed recreation settings should emphasize opportunities to socialize, trails and recreation sites at higher development scales, opportunities for interpretation and education, and signs or other infrastructure or managerial controls that limit risks and challenges in these outdoor settings.

Management Approach (FW-RECDEV-MAPR)

01. The operation and maintenance of developed recreation facilities and delivery of programs, information, education, and visitor services are supported by partnerships and volunteer programs.

Dispersed Recreation (RECDIS)

Introduction

Dispersed recreation settings offer a broad array of opportunities to users who require few developed site amenities. National forest camps, rental cabins, lookouts, off-highway vehicle trailheads, and wayside interpretive sites are examples of minimally developed facilities that are rustic in nature yet appeal to those wanting to be more self-sufficient. The sites lack plumbing, paved surfaces, or potable water sources found in the developed recreation setting. Dispersed recreation settings tend to occur throughout the primitive to roaded natural recreation opportunity spectrum classes.

Desired Conditions (FW-RECDIS-DC)

01. Dispersed recreation allows national forest visitors opportunities to recreate independent of developed recreation facilities. Encounters with other visitors are common along travel routes; however, activities away from developed facilities provide for fewer encounters.

02. Recreation activities and access are readily available in this setting. Areas and facilities accommodate a variety of motorized and non-motorized uses and are primarily used by visitors to begin and end recreational experiences with most of the time spent away from developed facilities. The rustic amenities provided are well maintained and fully functional. Rustic facilities are provided for site protection and sanitary purposes and fit in with the surrounding area.

Scale

Recreational setting

Guidelines (FW-RECDIS-GDL):

01. To provide moderate to high degrees of solitude and moderate to high opportunities for risk and challenge, dispersed recreation settings should incorporate minimal recreation facilities typically at lower development scales and should employ managerial controls primarily for resource protection.

Backcountry Recreation (RECBCA)

Introduction

Backcountry recreation includes use of roaded and unroaded backcountry, designated wilderness areas, and wild and scenic rivers.

This type of recreation occurs in the least developed setting and provides the greatest opportunity for solitude, risk, and challenge in environments of rugged, undeveloped landscapes. There are minimal facilities, creating more self-reliance and challenge for visitors. Existing facilities are generally rustic or primitive in nature. Trails for motor vehicle use and trails where motor vehicle use is prohibited are available in some areas but are not always open or maintained. Activities available in these areas often require self-reliance and higher levels of outdoor skills. Backcountry recreation settings tend to occur in primitive through semi-primitive motorized recreation opportunity spectrum classes.

Desired Conditions (FW-RECBCA-DC)

01. Backcountry recreation allows national forest visitors opportunities to recreate independent of developed recreation sites except for trailheads, staging areas, and other developed sites that facilitate backcountry access. Amenities are functional and are provided primarily for visitor safety, site protection, information, vehicle parking, and sanitary purposes. Materials used are rustic and minimal.

02. Encounters with other people are infrequent except near main portals.

03. Recreation activities that require minimal amenities are available. The setting presents visitors with opportunities to experience solitude where backcountry skills and abilities are required.

Scale

Recreational setting

Guidelines (FW-RECBCA-GDL):

01. To provide high degrees of solitude and plentiful opportunities for risk and challenge, backcountry recreation settings should incorporate minimal recreation facilities generally at lower development scales when present at all and should typically employ managerial controls only when necessary for resource protection.

Scenery (SCENE)

Introduction

Scenic attributes, including identifiable patterns, distinct color, texture, form, and elements, such as aspen stands and rock formations, are derived from specific geological features and functioning ecosystems. These features provide a scenic identity and image that is valued as a backdrop for activities and experiences that create memories and meet expectations of forest visitors. People value the Blue Mountains National Forests for their beauty, undeveloped and undisturbed scenes, and rural western setting when visiting, recreating, or traveling locally. There are opportunities to view historical operations, ditches, and structures (e.g., erected by Civilian Conservation Corps) and observe traditional uses in current times (e.g., ranching facilities and pole fences). Mountainous environments and canyons create dynamic settings that contribute to the scenery of the Blue Mountains National Forests. Strong landscape images often appreciated include the diverse plant communities present in the forefront at different elevations along with a multitude of geological features such as rock outcrops and peaks in the background, integrated with varying types of water features.

Scenic integrity and scenic stability are two indicators used to evaluate the condition of scenery resources. Scenic integrity addresses human caused disturbances and development that may detract from desired scenic character. Scenic stability addresses the relative stability of the valued scenic character and its scenic attributes. Further in-depth scenic character descriptions can be found in the Scenery Management System Handbook (USDA Forest Service 1995b).

Desired Conditions (FW-SCENE-DC)

01. The national forest provides a variety of ecologically sound, resilient, and visually appealing forest landscapes that sustain scenic character, supporting the national forest recreation program in ways that contribute to visitors' sense of place and connection with nature.

02. The forest's scenery contributes positively to visitors' experiences and the quality of life in neighboring communities while reflecting a range of allowable actions that balance social and economic values, ecological integrity, landscape dynamics, and sustainability.

03. Management activities and infrastructure development allow for the achievement of desired scenic integrity objectives, and blend with the surrounding landscape to the extent practicable. Temporary reductions in scenic integrity occur when needed to achieve ecological desired conditions or to improve long-term scenic integrity.

04. Desired scenic integrity objectives complement recreation settings and experiences and reflect healthy and sustainable ecosystem conditions. The distribution of desired scenic integrity objectives is summarized in Appendix D.

Scale

Forest-wide.

Guidelines (FW-SCENE-GDL)

01. To protect the scenic character of the forest, project level decisions and implementation activities should be consistent with mapped scenic integrity objectives.

02. To protect the scenic character of the forest, non-permanent reductions to existing scenic integrity levels should be authorized only when needed to achieve long-term ecosystem restoration or to improve scenic integrity or scenic stability.

03. To maintain or improve the forest's scenic character, vegetation management activities should be designed to reflect natural disturbance regimes and processes.

04. To maintain the forest's scenic character, infrastructure such as communication towers, energy developments, ski areas, or recreation facilities should be designed to blend in with or complement the surrounding landscape where practicable.

Cultural Resources (CULTRES)

Introduction

Various laws, regulations, and policies govern the use and administration of cultural resources on National Forest System lands. The heritage program ensures that

significant archaeological and historical resources are identified, protected, and preserved for the benefit and enjoyment of current and future generations. These cultural resources include archaeological sites, traditional cultural properties, historic properties of religious and cultural importance to native Tribes, among others, within the Blue Mountains National Forests.

Cultural resources eligible for inclusion in the National Register of Historic Places are considered historic properties under the National Historic Preservation Act and are legally protected and managed accordingly. However, not all sites within the Blue Mountains National Forests are currently on the National Register of Historic Places.

Desired Conditions (FW-CULTRES-DC)

01. Cultural resources having scientific, cultural, or social values are intact and remain in context within their original setting.

02. Identified traditional cultural properties, cultural landscapes, and other culturally significant areas provide tangible links to historically rooted beliefs, customs, and practices.

03. Interpretation and adaptive use of cultural resources provide public benefits and education and enhance understanding and appreciation of Blue Mountain National Forest precontact, and post-contact history, and indigenous presence.

04. Historic Forest Service administrative buildings and sites reflect agency history, identity, and function. Historic buildings are adaptable to other innovative proposed uses.

Scale

Forest-wide.

Standards (FW-CULTRES-STD):

01. The Forest Service shall consult with Tribes, and coordinate with the State Historic Preservation Officer and other interested parties.

02. Prehistoric, historic, and traditional cultural properties shall be protected unless an exemption is specified in a programmatic agreement, or a project specific mitigation plan is developed in consultation with the appropriate State Historic Preservation Officer and affected Indian Tribe(s).

03. To protect cultural resources, provisions shall be included in applicable contracts, agreements, and special use permits for properties that are unevaluated, eligible for, or listed in the National Register of Historic Places.

Guidelines (FW-CULTRES-GDL):

01. Known fire-sensitive cultural resources (e.g. historic structures, culturally modified trees) should be protected during prescribed fires, when practicable during wildland fires, or as requested by Tribes.

Management Approach (FW-CULTRES-MAPR)

01. To promote and foster public participation in identifying and understanding cultural resources consider facilitating interpretive, educational, and volunteer projects, such as the Forest Service's Passport in Time program.

Forest Products (FORPROD)

Introduction

The Blue Mountains National Forests have a long history of providing timber and other forest products to address local, regional, and national needs. Timber harvest continues to be an important tool for managing vegetation to achieve desired conditions such as wildlife habitat, ecological resilience, and fuel management.

National forests in the Blue Mountains have also contributed non-timber forest products, such as firewood, posts and poles, mushrooms, and berries important to residents. These products help provide communities with heat, infrastructure, and food and represent important connections between people and the national forests. Forest products and treaty reserved resources contribute to tribal economies and are not quantified.

The sustained yield limit is the amount of timber that can be removed annually in perpetuity on a sustained yield basis from all lands that may be suitable for timber production. For this calculation the assumption is made that all lands are managed to produce timber without considering other multiple uses or fiscal or organizational capability. The annual sustained yield limit and acres that may be suitable for timber production are summarized for each forest in Table 8 below.

Table 8: Summary of annual sustained yield limit for 1st and 2nd decade

	Malheur National Forest	Umatilla National Forest	Wallowa-Whitman National Forest
Annual Sustained Yield Limit MMCF (MMBF)	29 (135)	23 (106)	25 (115)
Lands that *May be Suitable* for Timber Production (Acres)	1,197,700	662,200	900,900

The numbers do not represent an annual target. Timber targets are calculated including other program considerations.

The projected wood sale quantity is the estimated output of timber and all other wood products (such as fuelwood, firewood, or biomass) expected to be sold during the planning period for any purpose (except salvage harvest or sanitation harvest) on all

lands. The projected timber sale quantity is the portion of the projected wood sale quantity that meets applicable utilization standards (the sawlog portion of offered timber sales). Both the projected wood sale quantity and the projected timber sale quantity are limited by the projected fiscal capability and organizational capacity of each forest. Projected wood sale quantity and projected timber sale quantity are in the objectives below.

Desired Conditions (FW-FORPROD-DC)

01. Land classified as suitable for timber production has a regularly scheduled timber harvest program that provides social and economic benefits while contributing to ecosystem health and sustainability. On land classified as not suitable for timber production, but available for timber harvest, an irregular timber harvest program is used as a resource management tool to meet non-timber desired conditions such as ecosystem restoration, hazardous fuel reduction or reducing insect and disease risk. Forest products produced from these management activities contribute to the social and economic well-being of local communities.

02. The supply of timber outputs contributes to a local forest products industry. See also FW-LOCCOM-DC-01.

03. Small-diameter biomass provides a variety of forest products, such as hog fuel, fuel chips, pulp, small-diameter round wood, and firewood. Biomass harvesting projects are designed to both improve the resilience and health of forests and contribute towards the development of innovative technologies and products.

04. Non-timber forest products, such as berries, transplant material, and mushrooms, continue to be available for gathering in sustainable amounts for public, commercial, and tribal use.

05. Where compatible with ecological desired conditions, salvage harvest is used to supplement the regularly scheduled timber harvest program and recover the economic value of dead and dying trees following disturbance events.

Scale

Forest-wide.

Objectives (FW-FORPROD-OBJ)

01. Conduct management activities to maintain or restore forest vegetation desired conditions and contribute to local economies by harvesting sawlogs and timber volume other than sawlogs annually as indicated in Table 9 through Table 11, per decade. The measure is average annually for 10 years. MMCF is millions of cubic feet. MMBF is millions of board feet.

Table 9: Malheur NF Detailed Planned Timber Sale Program for 1st and 2nd Decade

	First Decade		Second Decade	
Malheur National Forest	**MMCF**	**MMBF**	**MMCF**	**MMBF**
Timber Products	Volumes other than salvage or sanitation volumes that meet timber product utilization standards			
Lands suitable for timber production				
A1. Sawtimber	109	483	109	483
A2. Other products	6	25.5	6	25.5
Lands not suitable for timber production				
B1. Sawtimber	16.9	74.8	16.9	74.8
B2. Other products	0.9	4	0.9	4
C. **Projected Timber Sale Quantity (PTSQ)** (A1+A2+B1+B2)	**132.8**	587.3	**132.8**	587.3
Other Estimated Wood Products	Fuelwood, biomass, and other volumes that do not meet timber product utilization standards			
	MMCF	**Tons**	**MMCF**	**Tons**
D. Fuelwood	6		6	
E. **Projected Wood Sale Quantity (PWSQ)**(C+D)	**138.8**		**138.8**	

Table 10: Umatilla NF Detailed Planned Timber Sale Program for 1st and 2nd Decade

	First Decade		Second Decade	
Umatilla National Forest	**MMCF**	**MMBF**	**MMCF**	**MMBF**
Timber Products	Volumes other than salvage or sanitation volumes that meet timber product utilization standards			
Lands suitable for timber production				
A1. Sawtimber	102	472.1	102	472.1
A2. Other products	5	20.5	5	20.5
Lands not suitable for timber production				
B1. Sawtimber	16.4	74.5	16.4	74.5
B2. Other products	0.6	2.5	0.6	2.5
C. **Projected Timber Sale Quantity (PTSQ)** (A1+A2+B1+B2)	**124**	569.6	**124**	569.6
Other Estimated Wood Products	Fuelwood, biomass, and other volumes that do not meet timber product utilization standards			
	MMCF	**Tons**	**MMCF**	**Tons**
D. Fuelwood	6.57		6.57	
E. **Projected Wood Sale Quantity (PWSQ)** (C+D)	**130.57**		**130.57**	

Table 11: Wallowa-Whitman NF Detailed Planned Timber Sale Program for 1st and 2nd Decade

	First Decade		Second Decade	
Wallowa-Whitman National Forest	**MMCF**	**MMBF**	**MMCF**	**MMBF**
Timber Products	Volumes other than salvage or sanitation volumes that meet timber product utilization standards			
Lands suitable for timber production				
A1. Sawtimber	113	500.8	113	500.8
A2. Other products	6	27.1	6	27.1
Lands not suitable for timber production				
B1. Sawtimber	26	116.2	26	116.2
B2. Other products	1	5.1	1	5.1
C. **Projected Timber Sale Quantity (PTSQ)** (A1+A2+B1+B2)	**146**	649.2	**146**	649.2
Other Estimated Wood Products	Fuelwood, biomass, and other volumes that do not meet timber product utilization standards			
	MMCF	**Tons**	**MMCF**	**Tons**
D. Fuelwood	7.97		7.97	
E. **Projected Wood Sale Quantity (PWSQ)** (C+D)	**153.97**		**153.97**	

Standards (FW-FORPROD-STD)

01. Timber harvest on lands not suitable for timber production shall occur only to meet ecological desired conditions or to protect other multiple-use values for salvage, sanitation, public health, or safety. See Suitability of Lands in Chapter 3.

02. Timber shall not be harvested on lands where soil, slope, or other watershed conditions may be irreversibly damaged by harvest activities, as identified in project specific findings. See also standards and guidelines for FW-SOIL and FW-WTR.

03. Timber shall be harvested only where protection is provided for bodies of water, fish, wildlife, recreation, and aesthetic resources. See also standards and guidelines for FW-WTR, FW-CON, FW-SNAG, FW-SPDIV, FW-REC, and FW-SCENE.

04. To maintain forest cover, timber harvest shall only be used when there is a reasonable assurance of restocking within 5 years after final planned activities have been completed. Suitable timberlands impacted by high-severity disturbance that renders forested stands understocked shall be reforested in a timely manner. The adequate level of restocking shall be prescribed in a silviculture prescription for a project, which will specify the minimum number, size, distribution and species composition of regeneration needed based on the objectives and desired conditions for the plan area and project. See also FW-FOR-DEN-DC, FW-FOR-COMP-DC, and FW-FOR-STR-DC.

05. Silvicultural treatments shall not be selected based solely on their ability to provide the greatest dollar return or output of timber.

06. Openings created by the application of even-aged or two-aged regeneration harvest methods shall be limited to a maximum size of 40 acres. Where units larger than 40 acres are considered to help achieve ecological desired conditions, harvest openings larger than 40 acres may be permitted on an individual timber sale basis after 60 days public notice and review by the regional forester. This limitation does not apply to areas harvested as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm.

07. Even-aged regeneration harvest, including clearcutting, shelterwood, seedtree, and other types of even-aged cuts, shall be used only where it has been determined to be the method most appropriate to achieve desired conditions for vegetation, wildlife habitat, scenery, and other resources. See also FW-FOR-DEN-DC, FW-FOR-COMP-DC, FW-FOR-STR-DC, FW-CON, FW-SNAG, FW-SPDIV, and FW-SCENE. Rationale and determinations shall be based on an interdisciplinary review and documented in the project record.

08. Timber harvest units shall be shaped and blended to the extent practicable with the natural terrain.

Guidelines (FW-FORPROD-GDL)

01. Even-aged regeneration harvests of stands on lands suitable for timber production should not occur until the stands have generally reached a minimum of 95 percent of culmination of mean annual increment measured in cubic feet. This does not preclude the use of thinning or other intermediate stand improvement treatments, or salvage/sanitation harvesting of timber stands that are substantially damaged by fire, windthrow, or other catastrophic event or that are in imminent danger of insect or disease outbreaks. This also does not apply to the harvest of trees on lands not suitable for timber production or the harvest of trees using uneven-aged systems that do not regenerate even-aged stands. Exceptions may be made after consideration of overall multiple uses other than timber production including:

- Cutting related to research or experimental purposes, or
- Meeting ecological desired conditions for structure and species composition, or
- Improving wildlife habitat, rangelands, or recreation resources.

Management Approach (FW-FORPROD-MAPR):

01. Silvicultural systems intending to maintain or restore ecological integrity plan components may include intermediate silvicultural tending treatments, including but not

limited to commercial and precommercial thinning, improvement cuttings, sanitation/salvage, prescribed fire tree planting, pruning, site preparation or mechanical fuel reduction. Traditional silvicultural systems such as even-aged, two-aged, and uneven-aged systems may be used to manage forest vegetation, as well as new silvicultural systems such as individuals, clumps, and openings and free selection.

Rangelands, Forage, Livestock Grazing (RNG)

Introduction

Rangelands provide much of the forage for permitted livestock grazing. They include a wide variety of ecosystems, such as natural grasslands, shrublands, and riparian and wetland plant communities, including marshes and wet meadows. Rangelands and forestlands (also referred to as grazing lands) provide forage for wildlife, permitted livestock, recreation stock, and wild horses, as well as habitat for a wide variety of plant species, including rare or unique plant species and communities. Grazing lands and associated plant communities also provide important watershed values, such as soil protection, high quality water storage and slow release, and biodiversity. Other intrinsic values associated with rangelands include maintenance of open space, visual beauty, and areas for recreational activities.

Livestock grazing is a historical use that still resonates with the western culture of the region. The ranching industry remains an important part of the local community, culture, and economy. Grazing on public land is often an integral component of overall ranch operations and continues to be a viable use of vegetation on national forests. National Forest System lands permitted for livestock grazing contribute to economic diversity, while supporting cultural values and a traditional local lifestyle. Fees collected from permitted livestock grazing contribute to county receipts and are reinvested into range improvements by both the permittee and the Forest Service through local materials purchases and maintenance. Targeted grazing for vegetation management or control using livestock is addressed in the FW-VEGNF section.

Desired Conditions (FW-RNG-DC)

Desired conditions for non-forested habitat (such as shrublands, grasslands, meadows, riparian areas, and wetlands) are outlined in the FW-VEGNF, FW-INV, and the FW-WTR DC sections of this plan and are not repeated here.

01. Native plant species and plant communities dominate rangelands, and the vegetation represents a variety of plant species and community compositions. The diversity of functional and structural groups contributes beneficially to soil and site stability, hydrologic function (such as the ability to capture, store, and safely release precipitation), and energy flow.

02. Non-native grass species may be present, but do not destabilize ecological process or function. Examples of non-native species include but are not limited to annual grasses such as most bromes, some ryegrasses and bluegrasses, or perennial grasses such as Kentucky bluegrass or smooth brome. Ground cover percentages by functional group (grasses, shrubs, forbs, trees) in rangelands are within reference community ranges specified in the relevant Natural Resources Conservation Service Ecological Site Descriptions.

03. Rangeland ecosystems retain their essential processes and functions. Rangeland plant communities can recover from disturbances within the natural range of variability, relative to current ecological potential. Native cold-season bunchgrasses such as Idaho fescue and bluebunch wheatgrass sensitive to persistent grazing pressure, increase or maintain their abundance.

04. The full range of potential natural vegetation is maintained to support plant and animal diversity including pollinators and other invertebrates, and robust ecological function.

05. Rangelands produce plant communities that are a variety of heights, sizes, and continuity of cover that result in mosaic fire spread and severity.

06. Grazing allotments provide sustainable forage that maintains or moves toward ecological integrity for grazing permitted livestock that contribute socially, culturally, and economically to local ranching operations and communities. See also FW-LOCCOM-DC.

07. Vacant and forage reserve allotments may be analyzed and authorized for grazing use to provide temporary permitted livestock grazing opportunities, especially when active allotments are rested for ecological needs.

08. Livestock grazing is distributed across the landscape to ensure appropriate forage utilization throughout the allotment as well as reduce livestock impacts to riparian areas, supported by the location of range improvements.

Scale

Forest-wide.

Objectives (FW-RNG-OBJ)

01. Provide resource conditions that support current term and temporary grazing permits on authorized active and vacant allotments up to 232,390 animal unit months (AUM), and seek opportunities to expand use as appropriate recognizing that allotment site-specific conditions may require adjustments in permitted or annually authorized animal unit months (for example wildland fire, drought, vacant allotment conversions to active or forage reserve allotments, or vacant allotment closures for other resource purposes).

Malheur NF: Currently managed at 104,095 AUMs annually

Umatilla NF: Currently managed at 46,621 AUMs annually

Wallowa-Whitman NF: Currently managed at 81,673 AUMs (this does not include AUMs authorized in the Hells Canyon National Recreation Area) annually

02. Restore or maintain the ecological integrity of the native plant communities.

    Malheur NF: 20,000 acres annually

    Umatilla NF: 16,000 acres annually

    Wallowa-Whitman NF: 20,000 acres annually

Standards (FW-RNG-STD)

See also relevant direction in FW-WTR-STD, SPDIV, VEGNF, MA 3A, and MA 4.

Guidelines (FW-RNG-GDL)

See also relevant direction in FW-WTR-STD, SPDIV, VEGNF, MA 3A, and MA 4.

01. To ensure adequate forage where current resource conditions are unable to support native species, beneficial and perennial existing non-native plants such as intermediate wheat grass may be appropriate forage species when they have limited or no effects on native species to dominate the landscape.

02. To meet project objectives, grazing strategies should be used to support specific hazardous fuels reduction and preparation for prescribed fire treatments where appropriate. Grazing after prescribed fire should be managed to achieve desired conditions.

03. To promote recovery of desired vegetation conditions, unplanned burned areas should be evaluated to determine appropriate use and timing of livestock grazing re-entry, site preparation for future treatments, and fine fuels management.

04. To maintain or restore the desired composition, structure, and function of plant communities on grasslands, shrublands, woodlands, and forests, as well as healthy riparian conditions that contribute to other resource desired conditions, forage use by livestock should be managed within the inherent capability of the site.

05. To allow desirable plants time to recover following livestock grazing and to retain sufficient photosynthetic material for future growth and reproduction, grazing systems should be designed so that plants are generally not grazed more than once a season, not

grazed the same time every year, and not during the entire vegetative growth period (season-long grazing).

06. To allow forage plants to maintain vigor, root development, and soil cover, general upland forage utilization by all ungulates should range from 35 to 55 percent, depending on the ecological condition of the vegetation, timing and duration of use, and other resource values in the area. Ecological vegetation condition should be determined by a rangeland health assessment or data collection.

07. To maintain shrub health and reproduction capability, upland shrub utilization of annual leader growth or other agency accepted monitoring protocol should not exceed 40 percent as determined by a science-based method.

Management Approach (FW-RNG-MAPR)

01. Consider deferment or rest for one or more growing seasons following fire depending on burn severity and recovery of forage species, which would be determined at the project level.

02. Measures to assess ecological integrity could include new range improvements that contribute to rangeland vegetation improved acres, invasive plant acres treated, seeding, prescribed burning acres, and implementation of allotment NEPA decisions to be recorded as annual monitoring acres, collected with long-term Condition and Trend (C&T) upland monitoring and Multiple Indicator Monitoring (MIM) riparian monitoring.

03. Consider additional options to increase AUMs through range improvements and targeted grazing to expand use as appropriate.

Land Special Uses (LSU)

Introduction

The Forest Service provides and manages a wide range of non- recreation special use permits that authorize the occupancy and use of National Forest System lands. Authorizations may come through a permit, term permit, lease, or easement, which allows occupancy, use, rights of way, or other privileges of agency land. The authorization is granted for a specific use of the land for a specific period of time. Private individuals, organizations, companies, governmental entities, and educational institutions hold special use authorizations for wide variety of uses. Lands special uses include roads, dams, water systems, utility corridors, communication sites, and other private or commercial uses that cannot be accommodated off National Forest System lands.

Desired Conditions (FW-LSU-DC)

01. Opportunities are available to authorize a wide variety of lands special uses which consider ecological, social, and economic desired conditions within the plan area while maintaining consistency with law, regulation, and policy.

Scale

Forest-wide

Guidelines (FW-LSU-GDL)

01. Permit stipulations should be considered for new and modifications to existing land special use authorizations if needed to maintain or move towards achieving desired conditions across the planning area.

Minerals, Energy, Geology (MEG)

Introduction

National forests contribute to an adequate and stable supply of mineral and energy resources while continuing to sustain the land's productivity for other uses and its capability to support biodiversity. Mineral resources include locatable minerals, such as gold, chromium, silver, and other precious and base metals, leasable energy minerals, such as oil, natural gas, and geothermal resources; and saleable minerals, such as sand, gravel, and other rocks used in the construction and landscaping industry.

Numerous laws, regulations, and policies govern locatable, leasable, and saleable mineral operations on National Forest System lands. The Forest Service encourages mineral and energy development by working with claimants, lease holders, and permit holders to ensure access to mineral and energy resources while ensuring effects to surface resources are mitigated.

Desired Conditions (FW-MEG-DC)

01. Exploration, development, and production of mineral and energy resources contribute to the social and economic needs of local communities and the nation.

02. Reasonable access provides for exploration and production of locatable and leasable mineral resources.

03. Mineral and energy exploration, development, and production operations contribute to social and economic sustainability and provide for ecological integrity and diversity of surface resources including endangered species, species of conservation concern, water quality, and cultural resources.

Scale

Forest-wide.

Standards (FW-MEG-STD)

01. New road construction and facilities for mineral operations shall only be constructed with prior approval of a notice of intent, plan of operations, or surface use plan and shall be designed and located to mitigate impacts to surface resources.

02. Collection of vertebrate fossils from National Forest System lands shall only be authorized under permit.

Guidelines (FW-MEG-GDL)

01. To mitigate impacts to threatened and endangered species apply standard lease terms, lease notices, stipulations, best management practices, and other mitigation. For further direction for hydroelectric developments, see also FW-WTR-GDL-02.

02. To provide adequate protection to surface resources, mineral exploration and production activities should mitigate effects.

Management Approach (FW-MEG-MAPR)

01. Coordinate with the Bureau of Land Management as appropriate. Implement the Malheur and Umatilla National Forests 1997 oil and gas leasing record of decisions standard lease terms, lease notices, stipulations, best management practices, and other mitigation to support desired conditions and other plan components.

Water Beneficial Uses (WTRUSE)

Introduction

Surface water and groundwater sources on the Blue Mountains National Forests provide ecosystem services which support state-designated beneficial uses of water. Beneficial uses in Oregon and Washington include providing habitat, recreation, domestic water, and energy and agricultural outputs. By providing for beneficial uses, ecosystem services help to sustain human populations in and around rural communities, towns and cities in Oregon and Washington by contributing to the economy and quality of life.

Desired Conditions (FW-WTRUSE-DC)

01. Stream flows are of sufficient quantity and quality, consistent with natural flow regimes and future climatic conditions, to contribute to human uses and ecosystem needs which support beneficial uses of water as defined by Washington and Oregon. See also FW-

WTR-DC-03, FW-TRSPT-DC-01, FW-RECDEV-DC-04, FW-RECSUP-DC 01 – 03, FW-RNG-DC-01, 02 and 04 – 06, FW-MEG-DC-03, FW-LAND-DC-01

Scale

Watershed to subbasin.

Objectives (FW-WTRUSE-OBJ):

Please refer to FW-WTR-OBJ-01

Standards (FW-WTRUSE-STD):

Please refer to FW-WTR-STD-01, FW-MEG-STD-01, MA3A-RMA-STD-01, 02 and 03

Guidelines (FW-WTRUSE-GDL):

Please refer to FW-WTR-GDL-02, FW-TRSPT-GDL-01, and 02, FW-RECDEV-GDL-02, FW-LSU-GDL-01, FW-MEG-GDL-02, MA3A-RMA-GDL-02 and 14

Management Approach (FW-WTRUSE-MAPR)

01. Forest management follows state law as it exercises its federally reserved water rights, maintains existing permitted water rights, and looks for opportunities to acquire new permitted water rights to support multiple uses in the national forest.

02. Forest management seeks to make the most efficient use of existing water sources to benefit the public and multiple uses in the national forest and supports the water conservation goals of Washington, Oregon, and local counties.

    Please refer to FW-WTR-MAPR-05, FW-MEG-MAPR-01, and MA3A-RMA-MAPR-01.

Landownership (LAND)

Introduction

Management of National Forest System lands is important to provide for the protection of resource uses to meet the needs of the nation now and in the future. Surveying national forest boundaries, maintaining posted property lines, and defending public lands from trespass or encroachment are activities that maintain the integrity of the National Forest System. The national forest has inholdings (non-federal lands surrounded by National Forest Systems lands) or near inholdings (non-federal lands not surrounded by National Forest Systems lands) within the confines of the national forest boundaries.

Land adjustment methods include exchange, conveyances, purchase, donation, right-of-way, and conservation easement acquisition. Under land adjustment programs, the Forest

Service acquires and consolidates key tracts of non-federal land to conserve valuable natural habitat, reduce the risk of permanent development in sensitive areas, and enhance public access and recreational opportunities. The Forest Service also conveys lands, or interest in lands, through specific disposal authorities. These lands or interests are typically administrative sites no longer needed for National Forest purposes, or lands that have lost National Forest character.

Easements may be held by the United States and administered by the Forest Service across non-national forest system land. Land adjustments are used to secure permanent road and trail rights-of-way (easements) to assure the protection, administration and use of National Forest System lands and resources.

Desired Conditions (FW-LAND-DC)

01. National Forest System lands are consolidated and provide reasonable access and efficiency of land management while protecting resource values.

02. All National Forest System roads and trails that access National Forest System lands have legal access or a documented right-of-way.

03. Boundary lines and property corners are easily locatable.

Scale

Forest-wide.

Management Approach (FW-LAND-MAPR):

01. Integrate survey, marking, posting, and maintenance of property and boundary lines to standard into project planning.

02. Integrate identification and inventory of title claims, encroachments and trespass into project planning.

03. As unauthorized occupancy is identified, forest staff recommends prompt and objective actions to halt, to cause removal, and to recover damages within current program capacities.

04. As unresolved title claims and encroachments are identified, they are processed equitably and promptly within current program capacities.

05. As road and trail easements are considered, reciprocal right-of-way opportunities are explored if appropriate.

06. As opportunities arise, landownership adjustments emphasize the following : (a) consolidation of National Forest System lands, (b) net reduction in property lines, (c)

acquisition of lands in federally designated areas, (d) acquisition of lands needed for administrative or research purposes, (e) adjustments that would benefit attainment of forest plan desired conditions, (f) adjustments that resolve landowner conflicts, and (g) adjustments that would otherwise be clearly in the public interest. See also FW-SPDIV.

Chapter 3. Management Area Plan Components

Introduction

Management areas broadly describe areas where general management intent is similar. The purpose of management areas is to provide consistent guidance for similar portions of National Forest System landscapes when implementing or continuing management activities. Management areas in this plan generally range from minimal to no human development in MA 1 to extensive human development in MA 5. All management areas are displayed in Table 12 and full descriptions for each area are presented after the table.

Forest-wide plan components in Chapter 2 apply to each resource across the entire national forest, including each management area. Plan components for a management area may differ from forest-wide guidance by:

- Constraining an activity where forest-wide direction does not,
- Constraining an activity to a greater degree than forest-wide direction, or
- Providing an exception to forest-wide direction, when forest-wide direction would otherwise conflict with the management emphasis of the management area.

Overlap can occur between management areas. For example, a Research Natural Area (MA 2B) may overlap with a congressionally designated wilderness area (MA 1A). In situations where management areas overlap, the more restrictive plan components generally apply.

Table 12: Blue Mountains National Forests existing management areas, name, and acreage or mileage.

Management Area and Name	Malheur	Umatilla	Wallowa-Whitman	Total acres unless indicated as miles
1A –Wilderness Area	82,460	304,039	373,098	759,597
1B – Recommended Wilderness Area	0	0	0	0
1C – Wilderness Study Area	0	0	2,370	2,370
1D – Wild, Scenic, and Recreation River (Includes Designated, Eligible, and Suitable Rivers)	38.4	179.3[1]	170.2[1]	370.7 miles[1]

Management Area and Name	Malheur	Umatilla	Wallowa-Whitman	Total acres unless indicated as miles
1E – Nationally Designated Trail	8.8	29.8	33	71.6 miles
2A – Inventoried Roadless Area*	189,375	277,287	255,497	722,159
2B – Research Natural Area	11,068	10,949	7,993	30,010
2C – Botanical Area	145	746	0	891
2D – Geological Area	323	416	0	739
2E – Historical Area	13	1,174	0	1,187
2F – Scenic Area	12,830	31,382	0	44,212
2G – Scenic Byways and All-American Road	13	51	85	149 miles
2H – Starkey Experimental Area	0	0	27,296	27,296
2I – Murderers Creek Wild Horse Territory	73,609	0	0	73,609
2J – National Natural Landmark	0	0	1,085	1,085
3A – Riparian Management Area (300/150/100-foot buffer)	192,900	237,500	362,500	792,900
3B – Municipal Watershed	532	20,300	24,141	44,973
4 – General Forest	1,228,873	678,493	893,687	2,801,053
5 – Developed Site and Administrative Area	2,200	7,500	7,700	17,400

[1]Because the Grande Ronde Designated Wild and Scenic River is part of the administrative boundary and administration is shared between the Umatilla and Wallowa-Whitman National Forests, mileage is displayed equally for each of the forests; however, miles are only included once in the "Totals" column.

* We are aware of the pending rules change regarding inventoried roadless areas and will analyze those in the EIS alternatives as those changes are developed

Designated Areas. Management areas may include congressionally designated areas or administratively designated areas. Congressionally designated areas are established through a formal act of Congress. These include wilderness area, wilderness study area, wild and scenic river, and national historic trail (Management Areas 1A, 1C-1E). Congressionally designated area acres have been recalculated using the most current geographic information systems technology. No additions or subtractions to any congressionally designated area have been made since the 1990 Forest Plans were signed. Acres of private land inclusions are not included in any wilderness area acre calculations.

Administratively designated areas are established through administrative procedures by federal agencies. Forest plans may propose new areas; however, they are formally established separately after the forest planning process is completed. Forest plans may include specific plan components to preserve the unique characteristics of an area. The following types of administratively designated areas occur on or across the Blue Mountains: scenic areas; historical, geological, and botanical areas; research natural areas; municipal watersheds; scenic byways; inventoried roadless areas; and nationally designated trails (Management Areas 2A-2J).

Designated areas that have a separate plan may include forest plan components. All plans for designated areas are nested under and included within this overarching land management plan.

Management Area Descriptions and Plan Components

MA 1A Wilderness Area (DWA)

Introduction

The Wilderness Act of 1964 established a system of wilderness areas across the United States. These areas are to be administered for the use and enjoyment of the American people and for the preservation of their wilderness character. Agency direction for the management of wilderness is found in Forest Service Manual 2320.

There are seven designated wilderness areas within the Malheur, Umatilla, and Wallowa-Whitman National Forests (excluding the Hells Canyon National Recreation Area) that were established by legislative acts, including the Oregon and Washington Wilderness Acts (1984). Table 13 displays acreage of these wilderness areas, the North Fork John Day Wilderness crosses forest boundaries between the Umatilla and Wallowa-Whitman National Forests. Management plans for individual wilderness areas remain in place, and if plan components conflict, the more restrictive will apply.

Table 13: Designated wilderness areas for the Blue Mountains National Forests

Wilderness Area Name[1]	Acres
Malheur National Forest	
Monument Rock	13,049
Strawberry Mountain	69,411
Total	82,460
Umatilla National Forest	
North Fork John Day	107,088
North Fork Umatilla	20,213
Wenaha-Tucannon	176,738
Total	304,039
Wallowa-Whitman National Forest	
Eagle Cap	352,035
Monument Rock	7,173
North Fork John Day	13,890
Total	373,098

[1]Wilderness area acres within the HCNRA are not included in this table.

Desired Conditions (MA1A-DWA-DC):

01. Designated wilderness areas exhibit primitive qualities where geologic and ecological processes are influenced by natural succession and disturbance processes such as fire. Diverse native vegetation, water, and aquatic and terrestrial species are in a sustainable, resilient, and balanced condition.

02. Primitive and unconfined landscapes provide visitors high degrees of remoteness and outstanding opportunities for solitude, promote self-reliance, and offer relatively high degrees of risk and challenge. Recreation use and influence are not overtly apparent to other visitors.

Standards (MA1A-DWA-STD):

01. Management activities within wilderness areas shall preserve wilderness character as required by the Wilderness Act, as well as each wilderness area's enabling legislation and individual management plan. Administrative authorizations for prohibited uses, including use of motor vehicles, motorized equipment, and mechanical transport or installations shall be limited to the minimum necessary for the purposes of the Wilderness Act of 1964 and valid existing rights.

MA 1B Preliminary Administratively Recommended Wilderness Area (RWA)

Introduction

Lands in MA 1B have been determined suitable for inclusion in the National Wilderness Preservation System and have been recommended for wilderness designation consistent with regulations at 36 CFR 219.7(c)(2)(v). A recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Until a decision is made by Congress, these areas will be managed to protect and maintain the social and ecological characteristics that provide the basis for wilderness recommendation. Table 14 displays the areas and acreages for the preliminary administratively recommended wilderness areas.

Table 14: Blue Mountains National Forests Preliminary Administratively Recommended Wilderness

Preliminary Administratively Recommended Wilderness Area Name	Acres
Malheur National Forest	
None	0
Total	0
Umatilla National Forest	
None	0
Total	0

Preliminary Administratively Recommended Wilderness Area Name	Acres
Wallowa-Whitman National Forest	
None	0
Total	0

Desired Conditions (MA1B-RWA-DC):

01. Preliminary administratively recommended wilderness areas exhibit primitive qualities where geologic and ecological processes are influenced by natural succession and disturbance processes. Diverse native vegetation, water, and aquatic and terrestrial species are in a sustainable, resilient, and balanced condition. See also FW-REC.

02. Primitive and unconfined landscapes provide visitors high degrees of remoteness and outstanding opportunities for solitude, promote self-reliance, and offer relatively high degrees of risk and challenge. Recreation use and influence are not overtly apparent to other visitors.

Standards (MA1B-RWA-STD):

01. Proposed uses that compromise wilderness eligibility prior to congressional designation shall not be authorized (subject to valid existing rights) to preserve wilderness characteristics for which the areas were recommended. Pre-existing authorized, non-conforming uses may continue so long as they do not impair the area's wilderness characteristics.

Guidelines (MA1B-RWA-GDL):

01. If fire actions are required within preliminary administratively recommended wilderness areas, minimum impact strategies and tactics that protect wilderness characteristics should be applied, unless more direct attack is needed to protect human life, adjacent property or mitigate risks to responders.

MA 1C Wilderness Study Area (WSA) (Wallowa-Whitman National Forest only)

Introduction

The 14,655-acre Homestead Wilderness Study Area (WSA) on the Wallowa-Whitman National Forest contains 7,654 acres of land managed by the Forest Service and 7,001 acres of neighboring land managed by the Bureau of Land Management. Of the 7,654 acres managed by the Forest Service, there are 2,370 acres of the Homestead WSA within the Wallowa-Whitman National Forest Plan Area.

Congress has not yet acted on the study, so the acres remain under WSA designation. Wilderness values and resources will be protected until Congress either designates the area as wilderness or releases it from consideration.

Desired Conditions (MA1C-WSA-DC):

01. The Homestead Wilderness Study Area provides opportunities for primitive recreation where natural processes dominate the landscape.

02. A wilderness study area exhibits primitive qualities where geologic and ecological processes are influenced by natural succession and disturbance processes. Diverse native vegetation, water, and aquatic and terrestrial species are in a sustainable, resilient, and balanced condition.

03. Primitive and unconfined landscapes provide visitors high degrees of remoteness and outstanding opportunities for solitude, promote self-reliance, and offer relatively high degrees of risk and challenge. Recreation use and influence are not overtly apparent to other visitors.

Standards (MA1C-WSA-STD):

01. To preserve wilderness characteristics for which the area is being studied, proposed uses that compromise wilderness eligibility prior to congressional designation shall not be authorized (subject to valid existing rights). Pre-existing authorized, non-conforming uses may continue so long as they do not impair the area's wilderness characteristics.

MA 1D Wild, Scenic, and Recreation Rivers (Includes Designated, Eligible, Suitable Rivers) (WSR)

Introduction

This management area applies to river segments that have been designated as part of the Wild and Scenic Rivers System under the authority of the Wild and Scenic Rivers Act, as amended (1968) and the Oregon Omnibus River Act (1988) (Table 15). It also applies to rivers identified as eligible or suitable for designation (Table 16 and Table 17).

The Act requires that a detailed study report be prepared for all rivers mandated for study under Section 5(a) of the Wild and Scenic Rivers Act, as amended, and for all other rivers identified by the Forest Service as eligible for inclusion in the National Wild and Scenic Rivers System (Sec. 5(d)(1) of the Act). Section 5(d)(1) study rivers found eligible are to be protected pending a suitability determination (as outlined in the Act and in Appendix G). Land management agencies must protect section 5(d)(1) study rivers found suitable for inclusion in the National Wild and Scenic Rivers System for their free-flowing condition, water quality, and outstandingly remarkable values. The existence of low dams, diversion

works, or other minor structures at the time any river is proposed for inclusion in the National Wild and Scenic Rivers System does not automatically disqualify it for designation, but future construction of such structures is not allowed. allowed. On the Blue Mountains National Forests multiple rivers have been designated by Congress as wild and scenic. Table 15 shows the number of river miles classified as wild, scenic, or recreational by forest. Management plans for individual designated rivers remain in place, and if management plan components conflict with land management plan components, the more restrictive will apply. The plan revision process identified no rivers as eligible on the Malheur National Forest and nine rivers on the Umatilla National Forest as eligible for inclusion in the National Wild and Scenic Rivers System (see Table 16). In 1996 and 1997 the Wallowa-Whitman National Forest conducted suitability analyses and found three rivers to be suitable for inclusion into the National Wild and Scenic Rivers System, see Table 17.

Table 15: Miles of designated wild and scenic rivers on the Blue Mountains National Forests

River Name[1]	Wild (mi)	Scenic (mi)	Recreational (mi)
Malheur National Forest			
Malheur River	7.1	5.0	0.0
North Fork Malheur River	0.0	26.3	0.0
Total miles for Malheur NF	**7.1**	**31.3**	**0.0**
Umatilla National Forest			
Wenaha River	19.0	0.0	0.0
Grande Ronde River[3]	17.0	0.0	0.2
North Fork John Day River[3]	24.2	9.8	3.8
Total miles for Umatilla NF	**60.2**	**9.8**	**4.0**
Wallowa-Whitman National Forest[2]			
Eagle Creek	4.6	5.2	14.9
Grand Ronde River[3]	17.0	0.0	0.2
Joseph Creek	7.3	0.0	0.0
Imnaha River	13.1	0.0	0.0
Lostine River	5.4	0.0	11.9
Minam River	41.3	0.0	0.0
North Fork John Day River[3]	1.8	0.0	10.1
North Powder River	0.0	6.1	0.0
Total miles for Wallowa-Whitman NF	**90.5**	**11.3**	**37.1**

[1.] Mileages in this table include only those miles within the Blue Mountains National Forests administrative boundaries that are owned and managed by the Blue Mountains National Forests.

[2.] Miles within the Hells Canyon National Recreation Area are not included in this table.

[3.] The Grande Ronde and North Fork John Day rivers are listed above for both the Umatilla and Wallowa-Whitman National Forests as administration is shared. Mileage for the North Fork John Day River is divided within the table to reflect the mileage within and administered by each national forest. The Grande Ronde River is part of the administrative boundary between the Umatilla and Wallowa-Whitman National Forests, mileage is displayed equally for each of the national forests.

Table 16: Miles eligible for wild and scenic river inclusion on the Blue Mountains National Forests

River Name[1]	Wild (mi)	Scenic (mi)	Recreational (mi)	Potential Outstandingly Remarkable Values
Umatilla National Forest				
Bear Creek	4.6	0.0	0.0	Fisheries
Butte Creek/West Fork Butte Creek	13.9	0.0	0.0	Scenery
Desolation Creek	0.0	0.0	21.5	Recreation, botanical
Lookingglass Creek	0.0	7.9	0.0	Hydrological
North Fork Desolation Creek	0.0	0.0	6.8	Botanical
North and South Fork Wenaha River	26.3	0.0	0.0	Scenery, fisheries, botanical
Sheep Creek (in Washington)	0.0	0.0	0.5	Scenery, botanical
South Fork Desolation Creek	0.0	8.9	0.0	Fisheries, botanical
Tucannon River	9.1	4.6	1.2	Recreation, fisheries, cultural/historical, botanical/ecological
Total miles Umatilla NF	53.9	21.4	30.0	

[1]Mileages in this table include only those miles within the Blue Mountains National Forests administrative boundaries that are owned and managed by the Blue Mountains National Forests.

Table 17: Miles suitable for wild and scenic river inclusion on the Blue Mountains National Forests

River Name[1]	Wild (mi)	Scenic (mi)	Recreational (mi)	Potential Outstandingly Remarkable Values
Wallowa-Whitman National Forest				
Dutch Flat Creek	5.3	0.0	0.0	Scenery, recreation, geological, hydrological, botanical
East Fork Eagle Creek	8.9	0.0	6.6	Scenery, recreation, fisheries, geological, cultural
Five Points Creek	0.0	12.1	0.0	Scenery, fisheries, wildlife
Total miles Blues National Forests	14.2	12.1	5.0	

[1]Mileages in this table include only those miles within the Blue Mountains National Forests administrative boundaries that are owned and managed by the Blue Mountains National Forests.

Desired Conditions (MA1D-WSR-DC):

01. Eligible, suitable, and designated wild and scenic rivers retain their free flowing character. Water quality and outstandingly remarkable values are protected and enhanced. Development and access levels are consistent with the classification of the stream or stream segment as designated (or deemed suitable or eligible in the case of river segments that are not designated).

Standards (MA1D-WSR-STD):

01. Management activities in designated wild and scenic river corridors shall protect and enhance their free-flowing character, water quality and outstandingly remarkable values for which the river was designated.

Management Approach (M1DA-WSR-MAPR):

01. Management direction for activities proposed in designated wild and scenic river is found in individual comprehensive river management plans.

MA 1E Nationally Designated Trail (DESTRL)

Introduction

The National Trail System Act (1968) authorized the creation of a national trail system comprised of National Recreation Trails, National Scenic Trails, and National Historic Trails. These trails are included in the listing of specially designated areas because of their scenic, recreational, and historic value. Table 18 displays the length of the nationally designated trails within the Blue Mountains National Forests. This management area includes the nationally designated trails themselves and does not include surrounding National Forest System land.

Table 18: Nationally designated trails within the Blue Mountains National Forests

Trail Name	Length (miles)
Malheur National Forest	
Arch Rock National Recreation Trail	0.5
Cedar Grove National Recreation Trail	0.8
Malheur River National Recreation Trail	7.5
Total miles Malheur NF	**8.8**
Umatilla National Forest	
Jubilee Lake National Recreation Trail	2.6
North Fork John Day National Recreation Trail	23.4
South Winom Creek National Recreation Trail	3.8
Total miles Umatilla NF	**29.8**
Wallowa-Whitman National Forest	
Elkhorn Crest National Recreation Trail	21.9
High Wallowa National Recreation Trail	1.2
Oregon Trail National Historic Trail	6.0
Nez Perce National Historic Trail	3.9
Total miles Wallowa-Whitman NF	**33.0**

Desired Conditions (MA1E-DESTRL-DC):

01. The trails and associated resources are identified, documented, and interpreted for the public where appropriate. Signage contributes to the user experience and resource interpretation where appropriate.

02. Nationally designated trails are well maintained and are upgraded where necessary to minimize resource damage while providing a safe, consistent surface. Maintenance that minimizes resource damage includes, but is not limited to, improvements to drainage structures, repairs to tread surfaces, re-routing of trails away from sensitive areas, or signage to encourage proper trail user behavior.

03. Users have opportunities for inspiration, challenge and solitude as well as kinship with other trail users and interactions with people past and present who have shaped the special places along the trails.

04. The high scenic, recreational, and historic value of nationally designated trails is evident.

05. Nationally designated trails that cross boundaries between jurisdictions are managed collaboratively, providing a seamless user experience.

Guidelines (MA1E-DESTRL-GDL):

01. Management activities should not reduce or impair the scenic, historic, and recreational values and qualities for which the trail was designated.

Management Approaches (MA1E-DESTRL-MAPR):

01. Nationally designated trails are managed according to the direction in their respective trail management plans. For example: the Nez Perce National Historic Trail Comprehensive Management Plan (USDA Forest Service et al., 2021).

MA 2A Inventoried Roadless Area (IRA)

Introduction

Inventoried Roadless Areas (IRA) provide ecological integrity and a broad range of recreation opportunities.

The roadless rule (36 CFR 294) defines roadless area characteristics and includes prohibitions on road construction, road reconstruction, and timber cutting, sale, or removal. The prohibitions and restrictions established in the rule are not subject to reconsideration, revision, or recission in forest plan revision or project planning. Roadless area maps, or any subsequent update or revision of those maps, are held at the National headquarters of the Forest Service.

Management Area 2A includes the following inventoried roadless areas on the Malheur (Table 19), Umatilla (Table 20), and Wallowa-Whitman National Forests (

Table 21). Inventoried roadless areas that cross forest boundaries (for example Jumpoff Joe) are displayed for each forest with associated acres by forest.

Table 19: Inventoried Roadless Areas for the Malheur National Forest

Malheur National Forest*	
Aldrich Mountain	4,924
Baldy Mountain	6,416
Cedar Grove	114
Dixie Butte	12,208
Dry Cabin	12,272
Flag Creek	7,716
Fox Creek	5,846
Glacier Mountain	20,661
Greenhorn Mountain	15,936
Jumpoff Joe	3,889
Malheur River	7,282
Mcclellan Mountain	21,165
Myrtle Silvies	11,679
Nipple Butte	11,354
North Fork Malheur	18,066
Pine Creek	5,436
Shaketable	6,763
Utley Butte	9,698
Silver Creek[1]	7,949
Malheur Total	**189,375**

[1]On Ochoco National Forest but administered by Malheur National Forest and included in Malheur National Forest acreage totals.

*We are aware of the pending rules change regarding inventoried roadless areas and will analyze those in the EIS alternatives as those changes are developed.

Table 20: Inventoried Roadless Areas for the Umatilla National Forest

Umatilla National Forest*	
Asotin Creek	16,417
Grande Ronde	12,285
Greenhorn Mountain	11,189
Hellhole	60,901
Horseshoe Ridge	5,991
Jaussaud Corral	5,535
Jumpoff Joe	5,516
Lookingglass	4,859

Umatilla National Forest*	
Meadow Creek	4,882
Mill Creek Watershed	24,539
North Mount Emily	4,394
Potamus	5,382
Skookum	7,693
South Fork Tower	16,562
Spangler	5,935
Taytáy Creek	4,047
Texas Butte	6,852
Tower	52
Upper Tucannon	12,485
W – T Three	1,700
Walla Walla River	34,360
Wenatchee Creek	15,311
Willow Springs	10,398
Umatilla Total	**277,287**

*We are aware of the pending rules change regarding inventoried roadless areas and will analyze those in the EIS alternatives as those changes are developed.

Table 21: Inventoried Roadless Areas for the Wallowa-Whitman National Forest

Wallowa-Whitman National Forest	
Beaver Creek	12,973
Boulder Park	12,141
Castle Ridge	8,370
Deadhorse	10,690
Dunns Bluff	7,18
Grande Ronde	5,639
Greenhorn	131
Hellhole	487
Homestead	2,288
Huckleberry	11,234
Hurricane Creek	1,588
Joseph Canyon	24,272
Lake Fork	16,007
Little Creek	2,814
Little Eagle Meadows	6,984
Little Sheep	5,238
Marble Point	6,873
Monument Rock	5,749
Mount Emily	8,420
North Mount Emily	752

Wallowa-Whitman National Forest	
Reservoir	13,641
Sheep Divide	8,776
Taytáy Creek	3,480
Tope Creek	9,237
Twin Mountain	58,496
Upper Catherine Creek	6,446
Upper Grande Ronde	11,723
Wildhorse	331
Wallowa-Whitman Total	**255,497**

*We are aware of the pending rules change regarding inventoried roadless areas and will analyze those in the EIS alternatives as those changes are developed.

Desired Conditions (MA2A-IRA-DC):

01. Natural ecological integrity, processes, and conditions predominate. Lands in this management area have high quality or undisturbed soil, water, and air; sources of public drinking water; diversity of plant and animal communities; habitat for species listed under the Endangered Species Act, species of conservation concern, and other species that depend on large and undisturbed areas of land.

02. Motorized trails and existing designated roads within Inventoried Roadless Areas are maintained for motorized vehicles appropriate to their assigned maintenance level.

Standards (MA2A-IRA-STD):

01. Lands within inventoried roadless areas shall be managed consistent with the Roadless Area Conservation Rule to provide lasting protection for inventoried roadless areas and roadless area characteristics.

MA 2B Research Natural Area (RNA)

Introduction

Research Natural Areas are part of a national network of ecological areas designated in perpetuity for research and education and/or to maintain biological diversity on National Forest System lands. Research Natural Areas are principally for non-manipulative research, observation, and study of environment and ecosystems in their natural state. The Malheur National Forest has four designated and five proposed RNAs (Table 22). The Umatilla National Forest has three designated and four proposed RNAs (Table 22). The Wallowa-Whitman National Forest has five designated and 12 proposed RNAs (Table 22).

Areas listed here as proposed were developed as part of Oregon Natural Area Plan of 2015 or other plans that are outside of this revision process. There are no newly proposed areas as part of this review.

Table 22: Research natural areas for the Blue Mountains National Forests

Area Name	Acres[3]	Status[5]
Baldy Mountain	3,860	Proposed
Canyon Creek	741	Designated
Dixie Butte	335	Proposed
Dry Mountain[1]	2,272	Designated
Dugout Creek	911	Designated
Shaketable	385	Designated
Silver Creek[1]	802	Proposed
Stinger Creek[1]	1,655	Proposed
Strawberry Mountain	107	Proposed
Total acres - Malheur National Forest	**11,068**	**-**
Birch Creek Cove	411	Proposed
Kahler Creek Butte (formerly Kelly Creek Butte)	84	Proposed
Mill Creek Watershed[4]	7,424	Proposed
Pataha Bunchgrass	67	Designated
Rainbow Creek	570	Designated
Vinegar Hill	424	Proposed
Wenaha Breaks (formerly Elk Flats-Wenaha Breaks)	1,969	Designated
Total acres – Umatilla National Forest	**10,949**	**-**
Clear Creek Ridge	637	Proposed
Craig Mountain Lake	172	Proposed
Glacier Lake	102	Proposed
Haystack Rock	425	Designated
Horse Pasture Ridge	342	Designated
Indian Creek	1,003	Designated
Charles Grier Johnson Jr. (formerly Cougar Meadow)	130	Proposed
Lake Fork[2]	223	Proposed
Mount Joseph	705	Proposed
Nebo[2]	1,693	Proposed
Point Prominence	365	Proposed
Standley	742	Proposed
Gerald S. Strickler (formerly Government Meadow)	185	Designated
Sturgill	139	Proposed
Tenderfoot Basin	891	Proposed
Vance Knoll	192	Designated
West Razz Lake	47	Proposed
Total acres – Wallowa-Whitman National Forest	**7,993**	**-**

[1.] Dry Mountain designated RNA and the proposed RNA's Silver Creek and Stinger Creek are managed by the Malheur National Forests but exist within the proclaimed boundary of the Ochoco National Forest.

[2.] Acres outside the plan area (HCNRA) are not included in this table.

[3.] Acres in this table reflect outcomes from GIS analysis completed in April of 2025.

[4.] This proposed research natural area is also a designated municipal watershed.

[5]Areas listed here as proposed are not proposed as part of this plan revision, they were developed as part of the separate Oregon Natural Area Plan of 2015 or other plans that are outside of this revision process.

Desired Conditions (MA2B-RNA-DC)

01. Ecological processes that support the functional and structural patterns of Research Natural Area ecosystems are present and functioning to sustain the species and ecological conditions for which the Research Natural Area was designated or proposed.

Management Approach (MA2B-RNA-MAPR)

01. Designated and proposed Research Natural Areas are cooperatively managed with the Pacific Northwest Research Station.

02. Activities in Research Natural Areas are guided by Forest Service Manual 4063 – Research Natural Areas**.** Additional guidance can be found in individual establishment records.

03. Authorize uses and activities as necessary to maintain, restore or enhance the values for which the area was designated.

MA 2C Botanical Area (BOT)

Introduction

Botanical Areas contain specimens, groups of plant colonies, or plant communities that are significant because of form, color occurrence, habitat location, life history, ecology, variety, or other features. They are designated as a special recreation area to protect and manage these values for public use and enjoyment. Table 23 displays Botanical Areas on the Malheur and Umatilla National Forests.

Table 23. Botanical areas on the Blue Mountains National Forests

Area Name	Acres	Status
Fergy Spruce Grove	29	Designated
Cedar Grove	116	Designated
Total acres - Malheur National Forest	**145**	**-**
Charley Creek	41	Designated
Ruckel Junction	9	Designated
Karl Urban	499	Designated
Shimmiehorn Canyon	197	Designated
Total acres- Umatilla National Forest	**746**	**-**

Desired Conditions (MA2C-BOT-DC):

01. Botanical Areas are managed principally for recreation use substantially maintaining the characteristics and values for which they were designated.

Management Approach (MA2C-BOT-MAPR):

01. Activities in Designated Botanical Areas are guided by Forest Service Manual 2372. Additional information, including the values for which each area was designated, is included in their individual Designation Orders.

02. Authorize uses and activities as necessary to maintain, restore or enhance the values for which the area was designated.

MA 2D Geological Area (GEO)

Introduction

Geological Areas include areas with outstanding formations or unique geological features of the earth's development such as caves, fossils, dikes, cliffs, or faults. They are designated as a special recreation area to protect and manage these values for public use and enjoyment.

Table 24 displays Geologic Areas on the Blue Mountain National Forests.

Table 24: Geologic areas on the Blue Mountains National Forests

Area Name	Acres	Status
Malheur National Forest		
Magone Lake	282	Designated
Tex Bridge	41	Designated
Total acres - Malheur National Forest	**323**	
Umatilla National Forest		
Big Sink	416	Designated
Total acres - Umatilla National Forest	**416**	

Desired Conditions (MA2D-GEO-DC):

01. Geological Areas are managed principally for recreation use and substantially maintain the characteristics and values for which they were designated.

Management Approach (MA2D-GEO-MAPR):

01. Activities in Geological Areas are guided by Forest Service Manual 2372. Additional information, including the values for which each area was designated, is included in their individual Designation Orders.

02. Authorize uses and activities as necessary to maintain, restore or enhance the values for which the area was designated.

MA 2E Historical Area (HIST)

Introduction

Historical Areas include areas with a significant site, or a concentration of sites, buildings, structures, or objects united historically or prehistorically by plan or physical development. Memorial areas are included in this definition. They are designated as a special recreation area to protect and manage these values for public use and enjoyment.

The established Historical Areas within the Blue Mountains National Forests are shown in Table 25.

Table 25: Historical areas on the Blue Mountains National Forests

Area Name	Acres	Status
Malheur National Forest		
Sumpter Valley Railroad	13	Designated
Total acres - Malheur National Forest	**13**	**-**
Umatilla National Forest		
Greenhorn	90	Designated
Olive Lake - Fremont Powerhouse	1,001	Designated
Target Meadows	83	Designated
Total acres - Umatilla National Forest	**1,174**	**-**

Desired Conditions (MA2E-HIST-DC):

01. Historical Areas are managed principally for recreation use and substantially maintain the characteristics and values for which they were designated.

Management Approach (MA2E-HIST-GDL):

01. Activities in Historical Areas are guided by Forest Service Manual 2372. Additional information, including the values for which each area was designated, is included in their individual Designation Orders.

02. Authorize uses and activities as necessary to maintain, restore or enhance the values for which the area was designated.

MA 2F Scenic Area (SCEN)

Introduction

Scenic Areas contain outstanding natural beauty and are designated as a special recreation area to protect and manage these values for public use and enjoyment.

There are two designated scenic areas within the Blue Mountains National Forests. Vinegar Hill-Indian Rock Scenic Area crosses forest boundaries between the Malheur and the Umatilla National Forests (Table 26) and the other, Grande Ronde Scenic Area, is solely on the Umatilla National Forest.

Table 26: Scenic areas within the Blue Mountains National Forests

Scenic Area Name	Acres	Status
Vinegar Hill-Indian Rock Scenic Area	12,830	Designated
Total acres – Malheur National Forest	**12,830**	**-**
Vinegar Hill-Indian Rock Scenic Area	22,238	Designated
Grande Ronde Scenic Area	9,144	Designated
Total acres - Umatilla National Forest	**31,382**	**-**

Desired Conditions (MA2F-SCEN-DC):

01. Scenic Areas are managed principally for recreation use and substantially maintain the characteristics and values for which they were designated.

Management Approach (MA2H-SCEN-MAPR):

01. Activities in Designated Scenic Areas are guided by Forest Service Manual 2372. Additional information, including the values for which each area was designated, is included in their individual Designation Orders.

02. Authorize uses and activities as necessary to maintain, restore or enhance the values for which the area was designated.

MA 2G Scenic Byways and All-American Road (SCENBWY)

Introduction

The National Scenic Byways Program is a part of the U.S. Department of Transportation. The program is a grassroots, collaborative effort established to help recognize, preserve, and enhance selected roads throughout the U.S. The U.S. Secretary of Transportation recognizes certain roads as All-American roads or national scenic byways based on one or more of the following characteristics: archeological, cultural, historic, natural, recreational, or scenic quality. The purpose of the scenic byways program is to create a distinctive collection of designated roads, their stories, and treasured places by creating a unique travel experience

and enhanced local quality of life through efforts to preserve, protect, interpret, and promote the intrinsic qualities of designated byways.

A summary of scenic byways and All American Roads on the Blue Mountains National Forests is displayed in Table 27. Each of the scenic byways has additional mileage beyond the national forest boundaries.

Table 27: Scenic byways and All American Roads within the Blue Mountains National Forests

Scenic Byway Name	Length (miles)	Designation
Malheur National Forest		
Journey Through Time Scenic Byway	13	State
Total	**13**	
Umatilla National Forest		
Blue Mountain Scenic Byway	48	State
Elkhorn Scenic Byway	3	State
Total	**51**	
Wallowa-Whitman National Forest		
Blue Mountain Scenic Byway	2	State
Hells Canyon Scenic Byway	10	National
Journey Through Time Scenic Byway	21	State
Elkhorn Scenic Byway	52	State
Total	**85**	

Desired Conditions (MA2G-SCEBWY-DC):

01. Scenic byways connect communities with the surrounding natural environment.

02. Constructed features contribute to the attractiveness of the landscape or highlight the intrinsic qualities for which byways were designated.

03. Signs, kiosks, and other exhibits provide interpretive, educational, and safety information along scenic byways and in adjacent recreation sites.

Guidelines (MA2G-SCEBWY-GDL):

01. Management activities should not reduce or impair the scenic, historic, and recreational values and qualities for which the scenic byway was designated.

Management Approaches (MA2G-SCEBWY-MAPR)

01. Corridor management plans provide direction for meeting and enhancing the intrinsic qualities for which byways were designated.

MA 2H Starkey Experimental Forest and Range (EXFOR) (Wallowa-Whitman National Forest only)

Introduction

The Starkey Experimental Forest and Range (Starkey) was administratively designated in 1940 as an Experimental Range. The 1946 amendment recognized the opportunity for forest management studies as well. The current designated area is approximately 27,051 acres. Starkey is the primary field location for scientific study of the effects of deer, elk, and cattle on ecosystems. The research project on ungulates (hoofed mammals) is conducted jointly by the USDA Forest Service Pacific Northwest (PNW) Research Station and the Oregon Department of Fish and Wildlife. Other research at Starkey includes studies on forest management, wildlife, plants, and recreation. Starkey and all its activities are administered cooperatively by PNW Research Station and the Wallowa-Whitman National Forest.

Management Approach (MA2H-EXFOR-MAPR):

01. Activities in Starkey are guided by Forest Service Manual 4060 Research Facilities and Areas. The Pacific Northwest Research Station is responsible for all research and usage activities on the Starkey Experimental Forest and Range. The Station Director reviews and concurs with management activities proposed within Starkey and has final authority for approval of all management activities. Additional information, including the purpose for Starkey's establishment, is included in the Establishment Record.

02. Forest practices, such as livestock grazing, fuels reduction, prescribed fire, and timber harvest, may be conducted in support of research. Depending on research objectives, studies vary from nonmanipulative studies at small scales, to commercial timber harvesting across multiple stands. Research can include testing of novel prescriptions and management approaches and may result in a higher level of uncertainty of effects than is expected in other management areas. Activities and projects may occur on Starkey that are not consistent with achieving forest-wide desired conditions. A wide variety of land uses and human activities occur on Starkey. Uses and activities are managed to protect the facilities and meet research needs. The recreation opportunity spectrum class for the Starkey Experimental Forest is roaded natural, however closure orders may be issued to support research needs.

MA 2I Murderer's Creek Wild Horse Territory (WHB) (Malheur National Forest only)

Introduction

The Murderers Creek Wild Horse Territory (Territory) was administratively designated in 1972. It is part of the Murderers Creek Wild Horse Territory and Management Area which includes USFS, BLM, state administered, and private lands. This area is now collectively referred to as the Murderers Creek Joint Management Area managed jointly under the Murderers Creek Wild Horse Plan or future joint plan. Land management plan direction for Management Area 2I is applicable to 73,609 acres of National Forest system land within the boundary of the Malheur National Forest, Murderers Creek Wild Horse Territory.

Desired Conditions (MA2I-WHB-DC)

01. A biologically and genetically viable wild horse population supported by healthy ecosystems, essential ecological processes, and land stewardship activities, reflects the diversity, quantity, quality, and capability of natural habitats.

02. Maintain the Murderers Creek wild horse herd within the determined appropriate management level and to meet big game population needs based on levels agreed upon between the Forest and Oregon Department of Fish and Wildlife.

Guidelines (MA2I-WHB-GDL):

01. To provide free movement of horses, livestock infrastructure should be managed or adjusted to limit horse movement barriers in coordination with permitted livestock management.

Management Approach (MA2I-WHB-MAPR):

01. Refer to the Wild Free-Roaming Horses and Burros Act of 1971, as amended by the Federal Land Policy and Management Act of 1976 and the Public Rangeland Improvement Act of 1978. These acts direct the protection and management of wild horses on public lands.

02. Refer to the Murderers Creek Wild Horse Joint Management Area Plan created with the Bureau of Land Management. This plan guides management of the territory, providing an appropriate management level for the wild horse herd and a herd management plan containing population, habitat, and monitoring objectives.

MA 2J National Natural Landmark (NNL)

Introduction

The National Natural Landmarks Program is administered by the National Park Service to recognize and encourage the conservation of sites that contain outstanding biological and geological features. The Mount Howard-East Peak National Natural Landmark was administratively designated by the Secretary of Interior within the Wallowa-Whitman National Forest in 2016. The 1,084 acre area includes outstanding examples of montane grassland habitats and exceptional botanical diversity which support endemic and rare plant species.

Desired Conditions (MA2J-NNL-DC)

01. Natural ranges of ecological and botanical conditions are present and these characteristics enhance scientific and educational values.

Management Approach (MA2J-NNL-MAPR)

01. Activities in Designated National Natural Landmarks are guided by FSM 2300 Recreation, Wilderness and Related Resource Management, in Chapter 2370 Special Recreation Designations in Section 2372. Additional information, including the values for which the area was designated, can be found in the landmark Designation Memo and Evaluation Report.

02. Authorize uses and activities as necessary to maintain, restore or enhance the values for which the area was designated.

MA 3A Riparian Management Area (RMA)

Introduction

Riparian Management Areas include portions of watersheds where water quality and aquatic and riparian-dependent resources receive primary emphasis and where special management direction applies. RMAs are designated for all permanently flowing streams, lakes, wetlands, seeps, springs and intermittent streams, and unstable sites that may influence these areas. Management of RMAs focuses on ecological processes and conditions within and contributing to the physical and ecological health, function, and resiliency of these areas. Management activities within them contribute to moving towards, meeting, or maintaining desired conditions.

The following characteristics for each waterbody category would be used to determine riparian management area widths at the project-level. A line officer may decide to use the default numeric widths instead of performing project-level refinements that result in larger

widths. Watershed Analysis (Appendix A) is required to inform projects proposing narrower widths.

Category 1 - Fish-bearing streams: Riparian Management Areas (RMAs) 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 floodplain, or to the outer edges of riparian vegetation, or to a 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. A site potential tree height is the average maximum height of the tallest dominant trees for a given site class.

Category 2 - Perennially flowing non-fish-bearing streams: RMAs 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 floodplain, or to the outer edges of riparian vegetation, or to a 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.

Category 3 - Natural lakes and ponds: RMAs 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 distance equal to the height of two site-potential tree, or 300 feet slope distance from the edge of the wetland greater than 1 acre or the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest.

Constructed ponds and reservoirs, and wetlands greater than 1 acre, excluding stock and mining ponds RMAs 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 distance equal to the height of one site-potential trees, or 150 feet slope distance, whichever is greatest.

Category 4 - Seasonally flowing or intermittent streams, wetlands, seeps and springs less than 1 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 RMAs will 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, extending from the edges of the stream channel to a distance equal to the height of one site-potential tree, or

100 feet slope distance, whichever is greatest. A site-potential tree height is the average maximum height of the tallest dominant trees for a given site class. Intermittent streams are defined as 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 physical criteria.

Desired Conditions (MA3A-RMA-DC)

Refer to Water Quality and Aquatic Ecosystems (WTR) section in Chapter 2 Forest-wide Plan Components that complement RMAs.

01. The species composition, age class distribution, and structural diversity of native plant communities in riparian management areas provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and supply amounts and distributions of down wood and fine particulate organic matter sufficient to sustain physical complexity and stability. See also FW-SNAG-DC.

02. Riparian Management Areas feature key processes and conditions that function consistent with local disturbance regimes, including slope stability and associated vegetative root strength, wood delivery to streams, input of leaf and organic matter to aquatic and terrestrial systems, solar shading, microclimate, and water quality.

03. Riparian Management Areas provide stream habitat and ecological conditions (e.g., bank stability, substrate size, pool depths and frequencies, channel morphology, large wood size and frequency) capable of supporting self-sustaining populations of native and desired non-native aquatic and riparian-dependent plant and animal species, including species at risk. See also FW-SPDIV-DCs.

04. The transportation system has minimal impacts on Riparian Management Area conditions through reduced hydrologic connectivity of roads to streams, lower sediment delivery to streams, reduced road impact to floodplains, and restored aquatic organism passage, where transportation infrastructure affects these features.

05. Livestock grazing of riparian vegetation is managed to retain sufficient plant cover, rooting depth and vegetative vigor to protect streambank and floodplain integrity against accelerated erosional processes and allow for appropriate deposition of overbank sediment.

06. Riparian area meadows are dominated by obligate and facultative wetland plants appropriate to the hydrology of the site such as riparian hardwoods, native forbs,

grasses, sedges, rushes, and rich bryophyte communities that contribute to the diversity of animal species and support riparian ecosystems.

Scale

Within the RMA widths described above, considering the condition of riparian areas at spatial scales most relevant to project implementation: river basin (6-digit hydrologic unit, HU), subbasin (8-digit HU), watershed (10-digit HU), and subwatershed (12-digit HU). Minimum scale desired conditions apply to is subwatershed. Scale may be changed to watershed or subbasin level if justified as more appropriate through project analysis.

Objectives (MA3A-RMA OBJ)

01. Maintain or restore riparian management area habitat conditions through active vegetation and floodplain management, such as planting, seeding, silvicultural thinning, use of fire, floodplain reconnection, changes to livestock distribution, or invasives species removal.

Malheur NF: 6,000 acres per decade

Umatilla NF: 4,000 acres per decade

Wallowa-Whitman NF: 6,750 acres per decade

Standards (MA3A-RMA-STD)

01. Herbicides, insecticides, piscicides, other toxicants, and other chemicals shall be applied only to maintain or restore aquatic and riparian resources and native riparian or aquatic communities, unless otherwise prohibited.

02. Mine waste with the potential to generate hazardous material (as defined by Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)) shall not be stored within RMAs and/or areas where groundwater contamination is likely. The exception is temporary staging of waste during abandoned mine cleanup.

03. Aerial application of chemical retardant, foam, or other fire chemicals shall not be authorized within 300 feet (slope distance) of any waterway (including but not limited to perennial streams, intermittent streams, lakes, ponds, identified springs, reservoirs, vernal pools, wetlands, and peatlands). This includes open water that may not be mapped as such on avoidance area maps and intermittent streams with surface water at the time of retardant use. Exceptions include cases where human life or public safety is threatened, and chemical retardant use could be reasonably expected to alleviate that threat.

04. Authorizations shall be designed to avoid livestock trampling of federally-listed threatened or endangered fish redds.

Guidelines (MA3A-RMA-GDL)

01. To maintain riparian resources, channel conditions, and fish habitat, water drafting sites should be located and managed to minimize adverse effects on stream channel stability, sedimentation, temperature, and in-stream flows. If possible, locate new water drafting sites where fish are not present.

02. To maintain water quality, refueling or storage of petroleum products should be avoided, when possible, within 100 feet of perennial streams and lakes. Refueling should occur with appropriate containment equipment and a spill response plan in place.

03. To protect water, aquatic, and riparian resources, new landings, designated skid trails, staging, and decking should not occur in RMAs, unless they are associated with projects designed to maintain or restore RMA conditions or needed to manage adjacent upland areas that are otherwise inaccessible. These features should be of minimum size, be located outside the active floodplain, and lessen negative effects to large wood recruitment, bank integrity, stream shade, and sediment levels.

04. To protect the integrity of class 1 and 2 stream channels, yarding activities, should include protective measures such as but not limited to full suspension or frozen ground operations.

05. To protect water, aquatic, and riparian resources, new permanent and temporary roads and trails should not be constructed within riparian management areas unless no other practical alternative exists.

06. To protect water, aquatic, and riparian resources, fill material, side-cast material, or organic debris should not be placed in RMAs except where needed to construct or replace stream crossings, or for stream restoration projects.

07. To accommodate the 100-year flood and its bedload and wood, where physically feasible, new or replaced permanent stream crossings should be designed appropriately. 100-year flood estimates will reflect the best available science regarding potential future changes in precipitation patterns.

08. To prevent the diversion of streamflow out of the channel and down the road in the event of crossing failure, where physically feasible, construction or reconstruction of stream crossings should be designed appropriately. Where avoidance is not possible, road design should divert streamflow back into the channel in the shortest distance possible with appropriate armoring or other protective features for surfaces and slopes.

09. To restore or maintain conditions for aquatic species, construction or reconstruction of stream crossings should provide and maintain passage for all life stages of native and desired non-native aquatic species and for riparian-dependent organisms where

connectivity has been identified as an issue. Crossing designs should reflect the best available science regarding potential future changes in precipitation patterns affecting peak and low flow conditions.

10. To protect aquatic species at risk, fish passage barriers should be retained where they serve to restrict access by undesirable nonnative species and are consistent with restoration of habitat for native species.

11. To maintain floodplain values and lower the risk of flood loss, new facilities or infrastructure should not be constructed within channel migration zones. If some facilities must occur in channel migration zones locate and design them to minimize impacts on floodplains and downstream values at risk that in the event of a flood could be threatened by detached infrastructure and associated debris.

12. To reduce grazing management activities in riparian management areas that are negatively affecting aquatic resources, management practices should include measures to alleviate negative effects or relocate these activities to other areas or use during a less sensitive time.

13. To protect water, aquatic, and riparian resources, locate new livestock handling and/or management facilities outside the RMAs, unless facilities do not prevent or retard attainment of aquatic and riparian desired conditions or in situations where this is infeasible.

14. To protect water, aquatic, and riparian resources, new and existing special uses authorizations should include actions that result in maintenance or restoration of those conditions and processes. These authorizations may include water diversion or transmission facilities such as pipelines and ditches, energy transmission lines, roads, hydroelectric, and other surface water development proposals.

15. To protect water, aquatic, and riparian resources, mineral operations should locate structures, support facilities, and roads outside RMAs. Where no alternative exists, locate and manage structures, facilities and roads to minimize effects upon aquatic and riparian desired conditions. When structures, support facilities, and roads are no longer required for mineral activities, they should be restored or reclaimed to achieve aquatic and riparian desired conditions.

16. To protect water, aquatic, and riparian resources, new saleable mineral activities such as sand and gravel extraction should not be authorized within RMAs unless no alternatives exist or if the action(s) would not retard or prevent attainment of aquatic and riparian desired conditions.

17. To protect water, aquatic, and riparian resources, temporary fire facilities (e.g. incident bases, camps, wheelbases, staging areas, helispots, fueling stations, and other centers) for incident activities should be located outside RMAs unless no practical alternative exists.

18. To protect water, aquatic, and riparian resources, direct ignition in RMAs should not occur within 100 feet of perennial streams and lakes. An exception would be where excessive fuel loads require strategically placed direct ignitions to ensure fire effects are within prescription.

Management Approach (MA3A-RM-MAPR)

01. To maintain or restore aquatic and riparian vegetative and stream conditions over time, ensure the viability of aquatic species, contribute to the recovery of ESA listed species, and facilitate attainment of state water quality standards, consider the following annual livestock use and disturbance indicators and approaches:

    - Livestock use indicators and levels are established based on the vegetative ecological seral status, informed by the best available science such as end-of-season stubble height from 10 to 15 cm (4 to 6 inches) along the greenline**.**
    - Not all indicators may apply to a particular site. For example, stubble height is a meaningful indicator for lower gradient streams where herbaceous vegetation plays an important role in stabilizing streambanks. It is generally less useful for steeper gradient channels, where channel morphology is controlled and stabilized by coarse substrates such as rock.
    - Not all numeric values may apply to a particular site if the site is not ecologically capable of producing vegetation that the indicator could be applied to, such as sites with short grasses or grass-like plants**.**
    - Apply other annual use indicators such as riparian forage utilization, streambank alteration, or woody browse utilization as appropriate.
    - If progress isn't made toward long term desired conditions, and livestock grazing is the cause, adjust short term (annual) indicators.

02. To support long-term riparian function, consider silvicultural practices and timber harvest that reduce fuel loading and fire risk.

MA 3B Municipal Watershed (MWTR)

Introduction

Municipal supply watersheds are recognized as management areas (FSM2540) as their management intensity and timing differ from other areas under forest-wide direction. Forest-wide direction for beneficial use of water is found in Chapter 2, Water Beneficial Use (WTRUSE), and apply to areas such as springs on National Forest System lands that supply water to rural communities.

The land management plan does not provide an exhaustive list of guidance and requirements created by agreements between municipalities and the U.S. Government. Management of municipal supply watersheds included in this Management Area (Table 28) is guided by agreements with individual municipalities.

Table 28: Designated municipal watersheds in the Blue Mountains National Forests

National Forest	Watershed	Acres	Municipality
Malheur	Byram Gulch Municipal Watershed	278	Canyon City, OR
Malheur	Long Creek Municipal Watershed	254	Long Creek, OR
Total		**532**	
Umatilla	Mill-Creek Municipal Watershed	20, 300	Walla Walla, WA
Total		**20,300**	
Wallowa-Whitman	Baker City Municipal Watershed (multiple streams)	9,140	Baker City, OR
Wallowa-Whitman	La Grande City Municipal Watershed (Beaver Creek)	15,001	LaGrande, OR
Total		**24,141**	

Malheur National Forest:

- Byram Gulch Municipal Watershed (278 acres) supplies water for domestic use for the town of Canyon City, Oregon. Established by a 1926 Agreement with the Secretary of Agriculture.
- Long Creek Municipal Watershed (254 acres) supplies water for domestic use for the town of Long Creek, Oregon. Established by a 1937 Agreement with the Secretary of Agriculture.

Umatilla National Forest:

- The Mill-Creek Municipal Watershed (20,300 acres) is the only municipal watershed on the Umatilla National Forest that supplies water to the city of Walla Walla, WA, established by the US Secretary of Agriculture in 1918.

Wallowa-Whitman National Forest:

- Baker City Municipal Watershed (multiple streams) (9,140 acres) supplies water for domestic use for the town of Baker City, Oregon. Established in 1912 and supplemented with 1991 Memorandum of Understanding and 2014 Baker City Watershed Management Plan.

- La Grande City Municipal Watershed (Beaver Creek) (15,001 acres) supplies water for domestic use for the town of LaGrande, Oregon. Established in 1935.

Desired Conditions (MA3B-MWTR-DC)

01. National Forest system lands in municipal supply watersheds provide water that meets or exceeds applicable state water quality standards.

Scale

Watershed to subbasin.

Standards (MA3B-MWTR-STD):

See also: FW-WTR-STD-01, MA3A-RMA-STD-01, 02 and 03.

Guidelines (M3B-MWTR-GDL):

See also: FW-WTR-GDL 02, FW-TRSPT-GDL 01 – 02, FW-LSU-GDL 01, FW-MEG-GDL 02, MA3A-RMA-GDL-02 and 14.

Management Approach (M3B-MWTR-MAPR):

01. Forest management includes consideration of documents in place such as agreements, management plans, and MOUs with municipalities.

02. Municipal Watershed Management Areas are considered forest Community Protection Areas as described in the LMP. Relevant management considerations apply. See also FW-WF-GDL-02 and FW-WF-MAPR-07.

03. To support watershed resiliency, consider silvicultural practices and timber harvest that reduce fuel loading and fire risk.

See also: FW-WTR-MAPR–05, FW-MEG-MAPR 01, MA3A-RMA-MAPR-01 and 02.

MA 4 General Forest (GENFOR)

Introduction

General forest areas are managed to meet a variety of ecological, economic, and human needs. All the lands identified as suitable for timber production are contained within MA 4. A wide variety of vegetative structure and composition is present, with some showing

the effects of past management activities and others showing the effects of predominantly natural forces, such as wildfire, insects, and disease. These lands often display high levels of management activity and associated roads. Visitors expect to see other people and evidence of human activities.

Desired Conditions (MA4-GENFOR-DC)

01. General forest contributes to the variety of native plant communities and the composition, structure, and patterns defined in the forest-wide desired conditions. While the landscape is predominantly natural in appearance, there are some locations where the vegetation composition, structure, density or pattern is altered to meet short- or long-term management objectives that move the landscape towards the forest-wide desired conditions. The area is maintained through ecological processes, as well as management activities that provide important economic benefits to communities. This management area contributes important habitat for aquatic, plant and wildlife species that benefit from functional habitat.

02. The management area supplies a variety of dispersed or developed summer and winter recreational activities. Recreational use in MA4 is generally dispersed or located at minimally developed recreation sites (See FW-RECDIS introduction). Facilities (whether Forest Service or permitted) are those necessary to provide public or resource benefit or provide for safety and are typically at lower development scales.

MA 5 Developed Site and Administrative Area (DEVSITE)

Introduction

Developed site and administrative area include, but are not limited to, ski areas, developed campgrounds, airstrips, recreation residences, conifer seed orchards, administrative sites, communication sites, and utility corridors. Other land management plan standards and guidelines may not be met to meet the defined purpose of the developed sites and administrative areas.

Desired Conditions (MA5-DEVSITE-DC)

01. Developed sites, administrative areas, and permitted uses are generally limited in extent and maintained to meet their designated purpose and occur as a place or feature on the landscape.

02. Administrative facilities and adjacent lands are safe, efficient, cost-effective, and are maintained at a function and use level that meets management needs. Facilities meet all applicable health, safety, and accessibility standards. The level of development of administrative areas, adjacent lands, and infrastructure, such as water and power systems, is based on need and is appropriate to support the site or area.

03. Infrastructure design promotes employee, permit holder, and visitor safety and accessibility for all users. Facilities are maintained to provide a safe and suitable work and visitor environment. Grounds, landscaping, and natural vegetation are maintained in a safe condition free of hazards. The appearance is neat, orderly, and complementary to the surrounding landscape setting.

04. Administrative facilities complement and harmonize with natural settings of the surrounding area. Structures, signage, and other constructed elements blend with the surrounding landscape setting and reflect the style and character inherent in the local environment, where possible. For example, structures in mountainous, timbered landscapes have steep rooflines and broad eaves and use materials that match or are found nearby, such as stone and heavy timbers.

05. Wildfire protection strategies are considered for vegetation treatments within administrative areas which may conflict with ecological desired conditions. In these instances, the vegetation condition allows for safe and effective suppression activities while conserving natural soil and hydrological conditions to the fullest extent practicable.

Objectives (MA5-DEVSITE-OBJ)

01. Administrative facilities projects involving replacement of existing or installation of new outdoor light fixtures incorporate fixture designs that reduce or minimize light pollution or impacts to dark skies without compromising the safety of visitors and employees.

    Malheur NF: 25 percent per decade

    Umatilla NF: 25 percent per decade

    Wallowa-Whitman NF: 25 percent per decade

Guidelines (MA5-DEVSITE-GDL)

01. To prevent establishment of unwanted plant species, provide ground cover, and to stabilize the soil surface, developed sites and administrative areas should use native plants and seeds, when available, after construction or ground-disturbing maintenance activities requiring revegetation. See also FW-INV-MAPR-02.

02. To provide a safe environment for employees and forest visitors, hazard trees, snags, and down wood that pose a safety threat should be removed. In these instances, desired vegetation conditions in this management area provide safe, efficient, and continued use consistent with the purpose of the developed site.

Management Approach (MA5-DEVSITE-MAPR)

01. Consider partnerships, agreements, or other arrangements for occupation and use of buildings and facilities when the Forest Service no longer has a need to occupy them.

02. Facility master plans are used and updated periodically to determine the need and to prioritize maintenance for administrative facilities. Maintenance decisions are made based on the approved facility master plans.

03. In situations where forest wide plan components conflict with developed site and administrative area (MA 5) plan components, compromise is addressed at the project level and the priority is achieving the developed site purpose. The most restrictive plan components may not apply to meet the defined purpose of MA5 – Developed Sites and Administrative Areas.

04. When developing projects to protect sites including but not limited to ski areas, developed campgrounds, airstrips, recreation residences, conifer seed orchards, administrative sites, communication sites, and utility corridors, consider reducing risks as appropriate in surrounding landscapes.

Management Area Maps

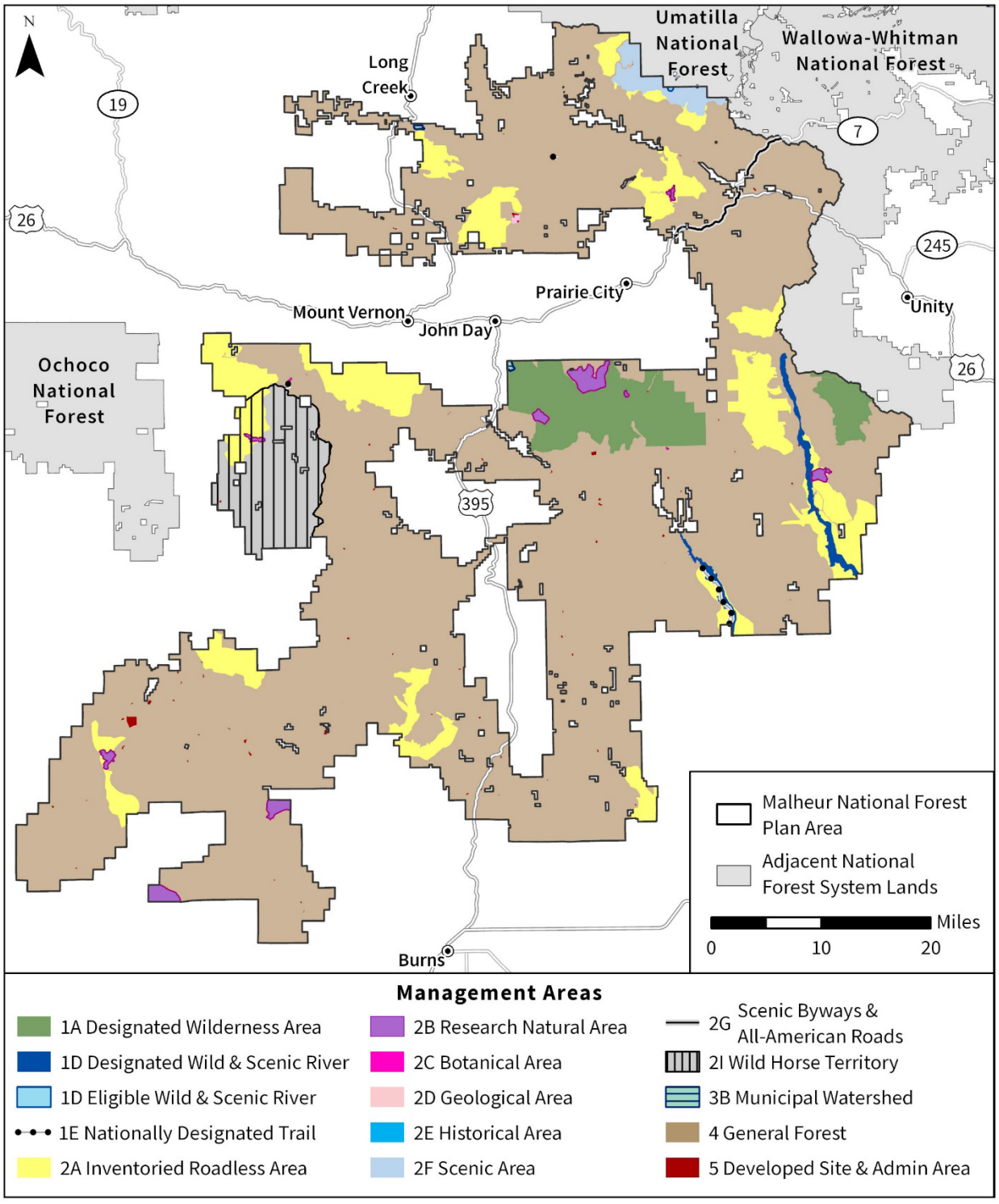


Figure 6. Malheur National Forest Management Area Map

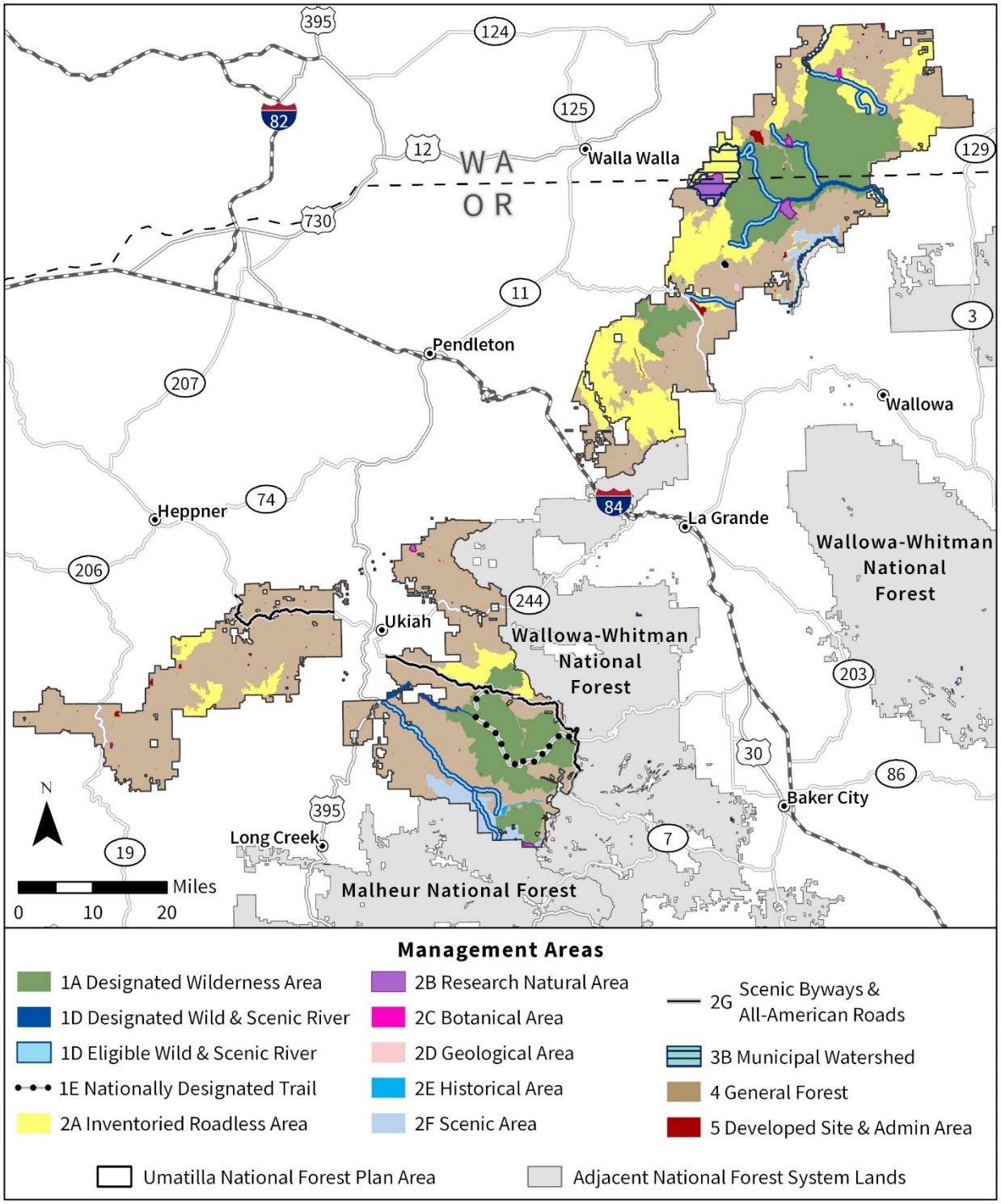


Figure 7. Umatilla National Forest Management Area Map

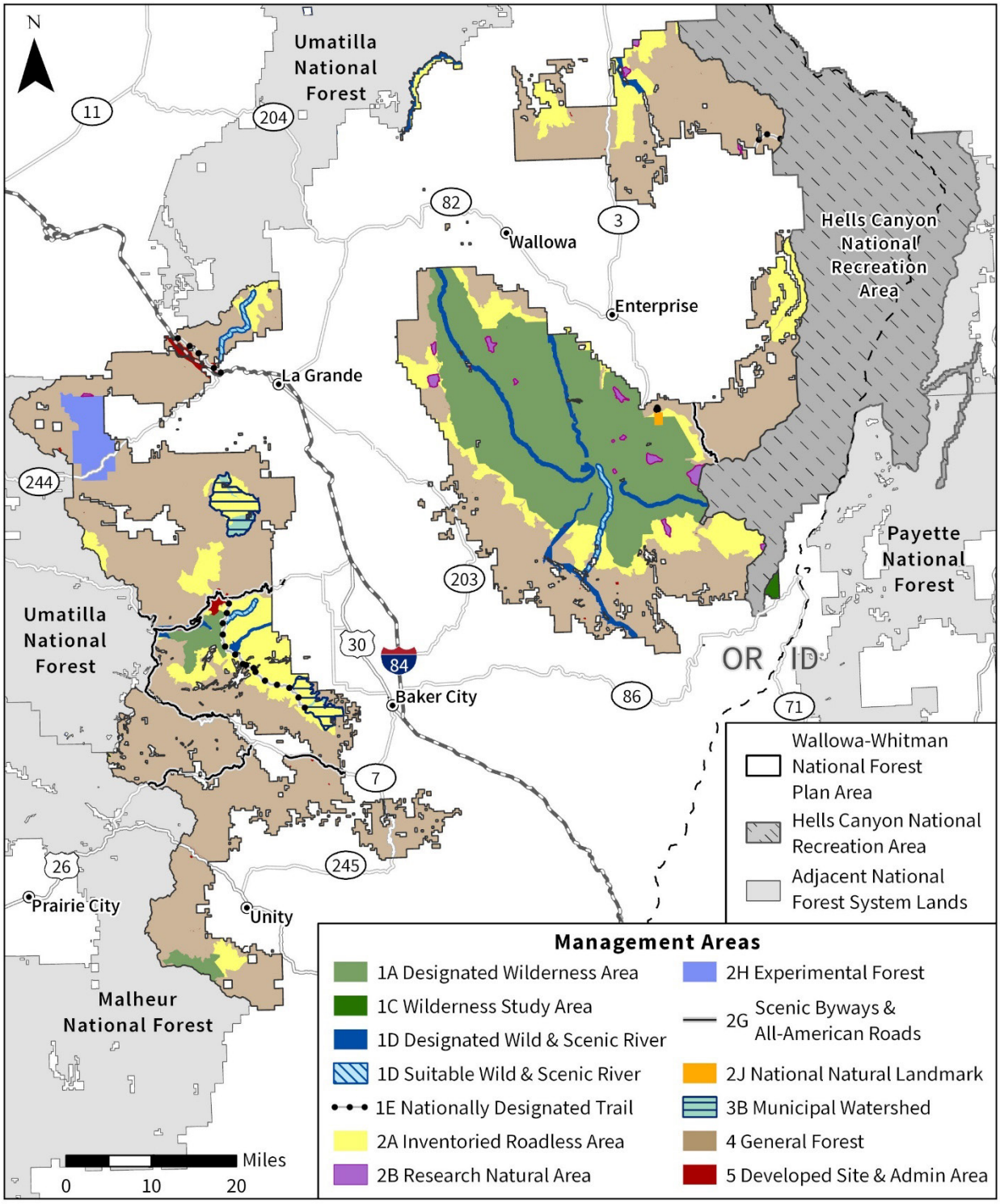


Figure 8. Wallowa-Whitman National Forest Management Area Map

Suitability of Lands

An area may be identified as suitable for uses that are compatible with desired conditions and objectives. An area may also be identified as not suitable for uses that are not compatible with desired conditions and objectives. Identification of an area as suitable or not suitable for a use provides guidance for project and activity decision making and not a commitment nor a final decision approving projects and activities.

Identification of suitability of lands is not required for every resource or activity. Identifying suitability in a particular area may be refined and more appropriately addressed at the project level.

Management areas are used in this land management plan to identify the suitability of use or activity as displayed in Table 29.

1A –Wilderness Area
1B – Recommended Wilderness Area
1C – Wilderness Study Area
1D – Wild, Scenic, and Recreation River
(Includes Designated, Eligible, and Suitable Rivers)
1E – Nationally Designated Trail
2A – Inventoried Roadless Area
2B – Research Natural Area
2C – Botanical Area
2D – Geological Area
2E – Historical Area
2F – Scenic Area
2G – Scenic Byways and All-American Road
2H – Starkey Experimental Area
2I – Murderers Creek Wildhorse Territory
2J – National Natural Landmark
3A – Riparian Management Area
3B – Municipal Watershed
4 – General Forest
5 – Developed Site and Administrative Area

Table 29: Suitability matrix for management areas

Use or Activity	1A	1B	1C	1D Wild	1D Scenic	1D Rec	1E	2A***	2B *	2C	2D	2E	2F	2G	2H	2I	2J	3A	3B**	4	5
Timber production	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	N	N	S/ N	S	N
Timber harvest	N	N	N	N	S	S	S	S	S	S	S	S	S	S	S	S	N	S	S	S	S
Mechanical fuel treatment	N	N	N	N	S	S	S	S	S	S	S	S	S	S	S	S	N	S	S	S	S

S designates use or activity as suitable. Refer to desired conditions, standards, and guidelines for each management area and/or use for specific guidance.
N designates use or activity as not suitable. Refer to desired conditions, standards, and guidelines for each management area and/or use for specific guidance.
* For any activities in MA 2B-RNA coordinate with the Pacific Northwest Research Station.
** All activities in municipal watersheds are dependent on the agreement for management of the watershed between the Forest Service and the municipality.
***We are aware of the pending rules change regarding inventoried roadless areas and will analyze those in the EIS alternatives as those changes are developed.

Chapter 4. Monitoring Program

Introduction

Monitoring is the systematic process of collecting information to evaluate effects of actions or changes in conditions or relationships (36 CFR 219). For land management purposes, this monitoring program collects and analyzes repeated observations or measurements to evaluate changes in natural resource, social, and/ or economic conditions and progress toward implementing the land management plan (LMP). Under the 2012 planning rule, monitoring forms the basis for continuously improving the LMP by providing information to reduce uncertainty by testing relevant assumptions, tracking relevant conditions over time, measuring management effectiveness, and evaluating the effects of management practices (36 CFR 219.12).

Monitoring Program Objectives

The monitoring program is developed as part of the LMP. Informed by the assessment and implemented after plan decision, it includes monitoring questions and associated indicators designed to evaluate the status of selected LMP plan components, specifically, their effectiveness and appropriateness in maintaining or achieving the desired intent of the plan. Qualitative or quantitative indicators are selected to detect measurable, meaningful changes in key resource characteristics. Evaluating this information supports adaptive management by helping Forest managers assess if change is warranted in four areas: 1) our management actions – how the Forest implements the plan, 2) the plan components, 3) the monitoring program, or 4) in the plan assessment.

This monitoring program includes monitoring questions and indicators related to the categories listed below [36 CFR 219.12(a)(5); (FSH 1909.12 Section 32.13f)].

1. The status of select watershed conditions.
2. The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.
3. The status of focal species to assess the ecological conditions required under 36 CFR 219.9 (Diversity of plant and animal communities).
4. The status of a select set of the ecological conditions required under 36 CFR 219.9 to contribute to the recovery of federally listed threated and endangered species, conserve proposed and candidate species and maintain a viable population of each species of conservation concern.

5. The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.
6. Measurable changes in the plan area related to stressors that may be affecting the plan area.
7. Progress toward meeting the desired conditions and objectives in the plan, including providing for multiple use opportunities.
8. The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land (16 U.S.C. 1604(g)(3)(C); 36 CFR 219.12(a)).
9. Social, economic, and cultural sustainability must be addressed in the monitoring program.

A biennial monitoring evaluation report, based on the data results of this monitoring program, provides a written summary evaluating the progress or maintenance of selected plan components. This evaluation supports the rationale for determining if change is warranted in the four areas described above. If change is warranted, Forests can make adaptive management recommendations designed to better achieve or maintain the intent of the selected plan components. The biennial monitoring evaluation report is not a decision document; rather, it is available to the public for comment and provided to the Forests' responsible officials for their consideration of the adaptive management recommendations.

The first biennial monitoring evaluation report will be available to the public two years following publication of the LMP Record of Decision. Each biennial report includes an evaluation for each monitoring question regardless of the data availability or data collection interval; in cases where data are not available or ready for evaluation, the report will disclose when data may be available for subsequent reports.

Potential Changes to this monitoring program

Changes to the monitoring program constitute an important part of adaptive management and can improve evaluations and management. For example, changes to indicators may be warranted when selected indicators do not permit meaningful evaluation of plan components or if changed conditions on the ground result in the need to add or modify a monitoring question or selection of plan component(s) to assess through the monitoring program.

A change to the monitoring program made outside of the plan revision process can be accomplished through the administrative change process and does not require an amendment to the LMP. Changing a monitoring question or an indicator is considered a substantive change to the monitoring program and may be made only after notice to the public (with a 30-day comment period) of the intended change and consideration of

public comment; refer to 36 CFR 219.16(c)(6) for public notice procedures. Other, non-substantive changes to the plan monitoring program require only advance notice, with no requirement to respond to public comment; however, the responsible official shall consider any received comments on the proposed modifications.

Monitoring program content and development

The LMP monitoring program (Table 30. Monitoring Program for Ecological Integrity and Table 31. Monitoring Program for Social and Economic Sustainability) lists 1) selected plan components to evaluate, 2) monitoring questions about the plan components, and 3) relevant indicator(s) to answer monitoring questions when assessing the plan components. Every monitoring question links to one or more desired conditions, objectives, standards, or guidelines, but not every plan component has a corresponding monitoring question.

This monitoring program includes 13 monitoring questions to evaluate 20 selected plan components that represent the current adaptive management needs of the Forests. In turn, the Forests' adaptive management needs determined the type of monitoring questions asked; these include three main types of monitoring:

Effectiveness Monitoring. Monitoring to determine whether resource objectives were met.

Effectiveness monitoring, alongside implementation monitoring, is a critical component of an adaptive management approach to land and resource management. Comparing monitoring results with expected results might indicate a need to initiate, intensify, or alter management actions.

Implementation Monitoring. Monitoring actions implemented on the Forest to determine if planned management activities occurred and if the activities occurred in the planned location, time, and extent.

Surveillance Monitoring. Designed to document resource change through time; this type of monitoring is not tied to specific predictions of how a resource will respond to management or environmental stressors.

A monitoring implementation guide (not required by the 2012 planning rule) may be developed following completion of the LMP. This guide provides more detailed information and methodology on how to implement the monitoring program – and may include monitoring protocols, frequency, data sources, storage, analysis protocols, and evaluation considerations.

Selection of plan components for the LMP monitoring program

The scope, scale, and priorities for the monitoring program are at the discretion of the Forests and can vary from question to question based on each Forest's adaptive management need, best available science, specificity of issues, and the financial and technical capabilities of the Forests. The following seven considerations shape the selection of plan components, questions, and indicators for this monitoring program:

1. There is concern about the magnitude of departure (difference) between the current condition and desired condition,
2. There is concern about achieving or maintaining plan components for reasons other than departure,
3. There is a concern about an aspect of data uncertainty used in the assessment or analysis (FSH 1909.12 Section 32.1, 32.11),
4. Actions or events occur frequently or at larger scales and the consequences to a resource are great.
5. Plan components contribute to a distinctive role or characteristic of the plan area (FSH 1909.12 Sec. 32.1).
6. There is desire to confirm assumptions (FSH 1909.12 Section 32.1, 32.11),
7. Monitoring some aspect of a plan component is required by law.

Ecological integrity of Systems

Ecological systems and associated focal species[1] have not yet been determined for the monitoring program at this time.

Species habitat conditions

Evaluations of plan components for species diversity and species at risk occur through monitoring their habitat (ecological conditions required for recovery and persistence of these species) – see 36 CFR 219.12(a)(5)(#s 1 and 4). Monitoring species presence/ absence or population trends is not required to demonstrate that suitable habitat conditions and quantities are available for the species.

Monitoring questions are designed to assess the status of the plan components – not of the species. For instance, indicators for these questions may include those tracking,

1. ***Changes to key habitat characteristics*** – e.g., when there is concern about the ability to maintain, restore, or achieve desired conditions for the ecological integrity needed for a species or group of species or

2. ***Management actions or naturally occurring events resulting in changes to key habitat characteristics for at-risk or special interest species*** – e.g., when there is

[1] Focal species. A small subset of species whose status permits inference to the integrity of the larger ecological system to which it belongs and provides meaningful information regarding the effectiveness of the plan in maintaining or restoring the ecological conditions to maintain the diversity of plant and animal communities in the plan area. Focal species would be commonly selected on the basis of their functional role in ecosystems. (36 CFR 219.19 Definitions)

concern or uncertainty about the effects of an action or event to the habitat for a species or group of species.

Drivers and Stressors

System drivers and stressors (dominant ecological processes and disturbance regimes, including stressors like wildland fire, invasive species, and drought) were identified for the plan area during the assessment phase. Drivers and stressors impact ecosystem services; for instance, the timing or duration of drought may influence water-based recreation opportunities or changes in snowpack may affect winter recreation. When system drivers and stressors function at unexpected rates or magnitudes, adjusting management strategies and tactics may be warranted.

Surveillance questions in this monitoring program directly track 1) changes in drivers and stressors (for example, MON-WF-01: fire regimes and MON-WF-02: fire severity), 2) as well as changes to resource key characteristics that are influenced by the drivers and stressors (for example, MON-FOR-01: vegetation composition and structure; MON-REC-01: visitor use; MON-RNG-01: rangeland conditions). Changes to the above indicators over time provide information to evaluate if adaptive management actions are warranted for the maintenance and implementation of the selected plan components [see 36 CFR 219.12(a)(5)(#6)].

Data sources and coordination with other monitoring

Information for this LMP monitoring program comes primarily from existing data sources and existing resource-specific monitoring programs occurring at varying scales conducted by the agency (National Forest Service, State and Private Forestry, Forest Service Research and Development) at project, program, unit, regional, national, or other broader scales. Examples include the Regional Broader Scale Monitoring Strategies, Forest Inventory and Analysis program, National Visitor Use Monitoring Program, and Watershed Condition Framework. This monitoring program also incorporates data from other monitoring programs conducted by collaborators and partners (for example, tribes, universities, partners, and other government and non-government entities).

This plan monitoring program does not comprehensively include nor replace other monitoring requirements or guidance that Forests need to conduct. There may be monitoring requirements, direction, or collaboration from biological opinions; project NEPA; regional or national law, policy, or guidance; or partnership agreements that Forests also participate in.

Monitoring Program for the Malheur, Umatilla, and Wallowa-Whitman National Forests

Table 30. Monitoring Program for Ecological Integrity

Question #	Resource Category *(Question Category*)*	Plan Component (s)	Monitoring Item Identifier	Monitoring Question	Indicator(s)
1	**Soils:** Soil Condition *(C.2, 8)*	FW-SOIL-DC-01 FW-SOIL-STD-02 FW-FORPROD-STD-02	**MON-SOIL-01** Question Type: *Surveillance*	What is the status of soil conditions within management activity areas?	**Proportion** of surveyed activity area in compliance with FW-SOIL-STD-02 (*post treatments*).
2	**Fire and Wildland Urban Interface**: Fire Management *(C.6, 7)*	FW-WF-OBJ-01	**MON-WF-01** Question Type: *Implementation*	What fire management actions have been accomplished to support desired conditions and objectives?	**Fuel Treatments** • Planned or natural ignition (*acres*) • Treatments to reduce impacts to community protection area or value at risk (*acres*)
3	**Fire and Wildland Urban Interface**: Fuels treatment effectiveness *(C. 6, 7)*	FW-WF-OBJ-01	**MON-WF-02** Question Type: *Effectiveness*	Are fuel reduction actions effective in controlling and changing fire behaviors of wildfires that subsequently burn project areas after fuels treatment?	**Fire behavior and control**: • High, med, low severity • Fuel treatment units with wildland fires burned through • Burned treatment units that change fire behavior • Burned treatment units that controlled wildland fire
4	**Aquatic, Riparian, Wetland, and Water Quality:** Aquatic	MA3A-RMA-DC-03	**MON-WTR-01** Question Type: *Surveillance*	What is the integrity of aquatic ecosystem conditions?	**In watersheds with aquatic ESA critical habitat:** • Residual pool depth (*meters*)

Question #	Resource Category *(Question Category*)*	Plan Component (s)	Monitoring Item Identifier	Monitoring Question	Indicator(s)
	Ecosystem Integrity for Species at risk *(C. 1, 2, 4)*				• Riparian cross-section data (*species and percent cover*)
5	**Forested Vegetation:** Vegetation Composition, Structure, Density *(C. 2, 6)*	FW-FOR-DEN-DC-02 FW-FOR-CMP-DC-02 FW-FOR-STR-DC-01	**MON-FOR-01** Question Type: *Effectiveness*	How are vegetation management actions contributing to the maintenance and movement towards desired conditions for forests composition, structural stages, density, and disturbance patterns?	**Vegetation key characteristics** • Vegetation treatments (*acres, locations, treatment types)* • Species composition *(proportion of each dominant tree species by potential vegetation group*) • Forest structural stages (*percentage by upland forest potential vegetation group*) • Stand density (*percentage (Low, Moderate, High) by upland forest potential vegetation group*) • Mortality (*acres with severity Low, Moderate, and High - by damage agent and tree species*)
6	**Non-Forested Vegetation:** Non-Forested Management Actions *(C. 2, 7)*	FW-VEGNF-OBJ-01 FW-VEGNF-OBJ-02 FW-VEGNF-OBJ-03	**MON-FOR-02** Question Type: *Implementation*	What management actions have occurred to achieve objectives for non-forested habitat types?	**Non-forested vegetation management** • Completed non-forested projects *(#, project footprint acres, type of project, locations)*

*Please refer to the nine categories of questions listed in Monitoring Program Objectives section above [36 CFR 219.12(a)(5); (FSH 1909.12 Section 32.13f)].

Table 31. Monitoring Program for Social and Economic Sustainability

Question #	Resource Category (Question Category*)	Plan Component(s)	Monitoring Item Identifier	Monitoring Question	Indicator(s)
7	**Transportation Infrastructure:** Trail Maintenance *(C. 5, 7)*	FW-TRSPT-OBJ-02	**MON-INFR-01** Question Type: *Implementation*	What trail maintenance management actions have occurred to achieve trail maintenance objectives for FW-TRSPT-OBJ-02?	**Trail Maintenance** • Completed trail maintenance actions *(miles)* • Completed projects improving drainage, water crossings, and trail layout *(#, type of action, locations)*
8	**Recreation:** Recreation Opportunity Spectrum Classes *(C. 5, 7)*	FW-REC-DC-03	**MON-REC-01** Question Type: *Surveillance*	Are a range and variety of recreation opportunities provided for the public?	**Visitor Use** • Recreation activity participation type • Visitation site days • Visitor Satisfaction
9	**Recreation:** Developed Recreation *(C. 5, 7)*	FW-RECDEV-GDL-02	**MON-REC-02** Question Type: *Implementation*	Are developed recreation improvements designed to reduce resource impacts or improve resistance to anticipated threats?	**Developed Recreation Management** • Completed developed recreation sites projects reducing or improving threats or impacts *(#, type of action, location)*
10	**Recreation:** Scenic Integrity *(C. 5, 7)*	FW-SCENE-DC-04 FW-SCENE-GDL-01	**MON-REC-03** Question Type: *Effectiveness*	Are design features included in NEPA decisions achieving intended outcomes of the scenic integrity objectives as provided in scenic integrity objectives?	**Scenic Integrity Objectives (SIO):** A. achieved B. not achieved C. trending up D. trending down E. can't be determined at this time F. other
11	**Forest Products:**	FW-FORPROD-OBJ-01	**MON-ECON-01**	To what extent are sawlogs meeting utilization standards and	**Timber Management**

Question #	Resource Category (Question Category*)	Plan Component(s)	Monitoring Item Identifier	Monitoring Question	Indicator(s)
	Timber Management *(C. 7, 9)*		Question Type: *Implementation*	timber other than sawlogs (non sawlogs) provided to the local economy?	• Annual Million Board Feet offered for sale of sawlogs meeting utilization standards compared to sustained yield limits • Average annual volume of harvest of wood products other than sawlogs (non sawlogs)
12	**Rangelands, Forage, Livestock Grazing:** Grazing permits *(C. 2, 6)*	FW-RNG-OBJ-01	**MON-RNG-01** Question Type: *Implementation*	What number of permitted AUMs are annually authorized with grazing permits that contribute socially, culturally, and economically to local ranching operations and communities?	• Annual animal unit months (AUMs) • Grazing authorizations *(# active & allotment names)*
13	**Rangelands, Forage, Livestock Grazing: Rangeland Health Management Actions** *(C. 2, 7)*	FW-RNG-OBJ-02	**MON-RNG-02** Question Type: *Implementation*	What management actions have occurred to restore or maintain the ecological integrity of the native plant communities?	**Rangeland vegetation management** • Completed restoration or management actions for native plant community ecological integrity within grazing allotments (acres) • Acres of invasive annual grass treated (acres) • Prescribed burn (acres) • Seeding (acres)

*Please refer to the nine categories of questions listed in Monitoring Program Objectives section above [36 CFR 219.12(a)(5); (FSH 1909.12 Section 32.13f)].

Glossary

Abbreviations and Acronyms

AOP	Aquatic Organism Passage
AUM	Animal Unit Month
ARCS	Aquatic Restoration Conservation Strategy
BMP	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act CFR Code of Federal Regulations
DBH	Diameter at breast height
ESA	Endangered Species Act
FEMAT	Forest Ecosystem Management Assessment Team
FSH	Forest Service Handbook
FSM	Forest Service Manual
GDE	Groundwater Dependant Ecosystem
GIS	Geographic Information Systems
GTR	General Technical Report
HCNRA	Hells Canyon National Recreation Area
HUC	Hydrologic Unit Code
HRV	Historical Range of Variability
ICS	Interagency Coordinators Subgroup
INFISH	Inland Native Fish Strategy
MAL	Malheur National Forest
MMBF	Millions of Board Feet

NFS	National Forest System
NMFS	National Marine Fisheries Service
NHD	National Hydrologic Data Set
NRCS	Natural Resource Conservation Service
NRIS	National Resource Information System
NWFP	Northwest Forest Plan
OR DEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Widlife
PACFISH	Pacific Anadromous Fish Strategy
PIBO	PACFISH-INFISH Biological Opinion
RMA	Riparian Management Area
ROS	Recreation Opportunity Spectrum
TMDL	Total Daily Maximum Load
UMA	Umatilla National Forest
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USDI	U.S. Department of Interior
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WCF	Watershed Condition Framework
W-W	Wallowa-Whitman National Forest
WUI	Wildland-Urban Interface

Terms and Definitions

A-E

Anadromous fish: Fish that spend their early life in freshwater, move to the ocean to mature, and then return to freshwater to reproduce.

Active floodplain: Active floodplain is defined as the area bordering a stream inundated by flows at a surface elevation defined by two times the maximum bankfull depth.

Active restoration: The deliberate activities related to restoration. As an example, this might include seeding native grasses and planting native scrubs and trees. See term Passive restoration for contrast.

Assessment: The identification and evaluation of existing information to support land management planning. Assessments are not decision-making documents, but provide current information on select topics relevant to the plan area, in the context of the broader landscape (2012 Planning Rule).

Aquatic (and riparian) health: Aquatic and riparian habitats that support animal and plant communities that can adapt to environmental changes and follow natural evolutionary and biogeographic processes. Healthy aquatic and riparian systems are resilient and recover rapidly from natural and human disturbance. They are stable and sustainable, maintaining their organization and autonomy over time, and are resilient to stress. In a healthy aquatic/riparian system, there is a high degree of connectivity from headwaters to downstream reaches, from streams to floodplains, and from subsurface to surface. Floods can spread into floodplains, and fish and wildlife populations can move freely throughout the watershed. Healthy aquatic and riparian ecosystems also maintain long-term soil productivity. Mineral and energy cycles continue without loss of efficiency. (https://www.fs.fed.us/r6/icbemp) [section 1]

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. (https://www.blm.gov/or/plans/wopr/exrmp/coosbay/glossary.html)

Channel migration zone: The area along a river within which the channel(s) can be reasonably predicted to migrate over time as a result of natural and normally occurring hydrological and related processes when considered with the characteristics of the river and its surroundings.

Channel migration zones are those areas with a high probability of being subject to channel movement based on the historical record, geologic character and evidence of past

migration. It should also be recognized that past action is not a perfect predictor of the future and that human and natural changes may alter migration patterns. Consideration should be given to such changes that may have occurred and their effect on future migration patterns.

Coarse filter management: Land management that addresses the needs of all associated species, communities, environments and ecological processes in a land area (see fine filter management.) (FS People's Glossary of Eco Mgmt Terms).

Community Protection Areas: Any area where the built environment meets wildfire prone areas. Places where wildland fire can move between natural vegetation and the built environment and result in negative impacts on the community. Community Protection Areas are often nested within established Wildand Urban Interfaces (WUIs):

For at-risk communities that have not yet designated their WUIs as part of a Community Wildfire Protection Plan, the HFRA has a default definition of WUI (Section 101(16)(B (ii)). It is an are:

Extending 1/2 mile from the boundary of an at-risk community.

OR

Extending 1 1/2 miles from the boundary when other criteria are met—for example, a sustained steep slope, a geographic feature that could help when creating an effective firebreak, or Condition Class 3 land.

OR

Adjacent to an evacuation route. There is no distance limitation for evacuation routes.

Connectivity: The arrangement of habitats that allows organisms and ecological processes to move across the landscape. Patches of similar habitats either are close together or linked by corridors of appropriate vegetation. The opposite of fragmentation. (https://www.fs.fed.us/r6/icbemp) [p. 33]

Connectivity (of habitats): The degree in which habitat patches are connected.

Cultural control: The establishment of or maintenance of competitive vegetation, use of fertilizing, mulching, prescribed burning, or grazing animals to control or eliminate invasive plants.

Danger tree: See Hazard Tree defnition.

Detrimental Soil Conditions: Management-caused soil disturbance in vegetation management areas that persists on the landscape for an extended period of time unless restoration actions are taken and is severe and extensive enough to reduce soil productivity and/or the ability of the land to provide desired goods and services.

Development scale: A classification system for recreation sites that distinguishes the degree of site amenities and alteration present. Development scales range from 0 (no Forest Service investment or amenities) to 5 (designed developed site with significant Forest Service investment and delineation). Reference FSH 2309.13, sec. 10.5 and 10.8.

Disturbance regime: A description of the characteristic types of disturbance on a given landscape; the frequency, severity, and size distribution of these characteristic disturbance types; and their interactions. Disturbance regime refers to the spatial and temporal dynamics of disturbances over a longer time period.

Down wood: Woody material derived from tree or shrub limbs, boles and roots in various stages of decay that is larger than three inches in diameter and longer than 3 feet.

Ecological health: The state of an ecosystem in which processes and functions are adequate to maintain diversity of biotic communities commensurate with those initially found there.

Ecosystem health: A condition where the parts and functions of an ecosystem are sustained over time and where its capacity for self-repair is maintained, such that goals for uses, values, and services of the ecosystem are met. (https://www.fs.fed.us/r6/icbemp)

Ecological integrity: The quality or condition of an ecosystem when its dominant ecological characteristics (for example, composition, structure, function, connectivity, and species composition and diversity) occur within the natural range of variation and can withstand and recover from most perturbations imposed by natural environmental dynamics or human influence (36 CFR 219.19).

Ecological seral status: A seral stage is a specific vegetation community occurring on a site at some point in time. It is an intermediate stage found in ecological succession in an ecosystem advancing towards its climax community.

Seral stage (status) forested vegetation: a stage of secondary successional development (secondary succession refers to an ecological process of progressive changes in a plant community after stand-initiating disturbance). Four seral stages are recognized: early seral, mid seral, late seral, and potential natural community (Hall et al. 1995).

Early Seral: clear dominance of early-seral (‘pioneer’) species (western larch, ponderosa pine,

lodgepole pine, etc.) is present; PNC species are absent entirely, or found only in very low numbers.

Mid Seral: PNC species are increasing in a forest composition as they actively colonize a site; PNC species are approaching equal proportions with early-seral species.

Late Seral: PNC species are now dominant, although long-lived, early-seral tree species (ponderosa pine, western larch) may still persist in a plant community.

Potential Natural Community (PNC): biotic community that will presumably be established and maintained over time under present environmental and climatic conditions; early- or mid-seral species are scarce or absent in a plant composition.

Ecological site potential: The capacity of an area to support a specific type and amount of vegetation. The potential of a site is directly correlated with the type of soil, topography and climate that exists for a given area.

Effectiveness monitoring: Long term monitoring collected to determine the effectiveness of actions in meeting or moving toward desired conditions. (FSM 2200-2024-1, section 2205)

Epiphytic lichen: Lichens are symbiotic organisms, consisting of a fungus living with one or more photosynthetic partners (an alga, cyanobacterium, or others). Epiphytic lichens are generally “tree dwelling” and are are found on branches, leaves, trunk and other surfaces. Epiphytes anchor themselves to a tree, but do not obtain water or other nutrients directly from it. (Gen. Tech. Rep. PNW-GTR-988).

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

Evolutionary significant unit (ESU): A group of salmon or trout populations that is a distinct population segment. Scientists established two criteria for evolutionary significant units: 1) the population must show substantial reproductive isolation; and 2) there must be an important component of the evolutionary legacy of the species as a whole.

F-O

Facultative plants: Plants that occur usually (estimated probability more than 67 percent to 99 percent) in wetlands, but also occur (estimated probability 1 percent to 33 percent) in nonwetlands (USCO Wetlands Delineation Manual).

Federally listed species: species listed by a federal agency as threatened or endangered as per the requirements of the Endangered Species Act.

Fine-filter management: Management that focuses on the welfare of a single or only a few species rather than the broader habitat or ecosystem (see coarse filter management). (FS People's Glossary of Eco Mgmt Terms)

Fire regime: The pattern, frequency, and intensity of the bushfires and wildfires that prevail in an area over long periods of time. It is an integral part of fire ecology, and renewal for certain types of ecosystems. A fire regime describes the spatial and temporal patterns and ecosystem impacts of fire on the landscape, and provides an integrative approach to identifying the impacts of fire at an ecosystem or landscape level.

Focal Species: A small subset of species whose status permits inference to the integrity of the larger ecological system to which it belongs and provides meaningful information regarding the effectivness of the plan in maintaining or restoring the ecological conditions to maintain the diversity of plant and animal communities in the plan area. Focal species would be commonly selected on the basis of their the functional role in ecosytems.

Greenline: The greenline as defined by Winward (2000) is the “first perennial vegetation that forms a lineal grouping of community types on or near the water’s edge.” The Multiple Indicator Monitoring (MIM) protocol is used to measure annual streambank alteration, stubble height, cover, and woody browse along or adjacent to the “greenline”.

Green tree replacement: a reserve tree; a tree, pole-sized or larger, retained in either a dispersed or aggregated manner following either a mechanical harvest or intermediate commercial treatment.

Hazard tree: A tree or its parts that pose a risk of injury or damage to people or property and exceeds the risk tolerance of the responsible manager. Hazard trees are sometimes referred to as danger trees in policy, OSHA documents, and other field guides. For the purposes of this document, the two terms are interchangeable.

Herbicide: A chemical pesticide designed to control or destroy plants, weeds, or grasses (EPA glossary).

Hyporheic zone: The hyporheic zone is a region beneath and lateral to a streambed, where there is mixing of shallow groundwater and surface water. The flow dynamics and behavior in this zone (termed hyporheic flow) is recognized to be important for surface water/groundwater interactions, as well as fish spawning, among other processes.

Implementation Monitoring. Short-term monitoring to collect information used to determine if actions are implemented as designed and if those actions achieved the annual effect expected. Items which may be documented through implementation monitoring include but are not limited to: actual use (livestock numbers and days), condition of range improvements, forage utilization levels, and wildlife observations. (FSM 2200-2024-1, section 2205)

Insecticide: A pesticide compound specifically used to kill or prevent the growth of insects (EPA glossary).

Landscape: A collection of biophysical elements and ecosystem types that occupy relatively large (100,000 to 10,000,000 acres) contiguous areas (Hunter 1996, Concannon et al. 1999).

Large Trees: Trees that are grand fir over 30-inches diameter at breast height or trees of any other species over 21 inches diameter at breast height

Leasable minerals: Minerals that may be leased to private interests by the federal government. Leasable minerals include oil, gas, geothermal resources, and coal. FEMAT glossary

Legacy Trees: Trees are trees that remain following prior disturbance that are older and larger than the average trees in the general area.

Long-term recovery: Amount of time needed to achieve desired conditions for watershed function (overall properly functioning watershed conditions), through natural processes, in the absence of management. This maximum timeframe at minimum shall not be slowed by actions, and may be accelerated as a consequence of an action. Overall, positive effects of a project on watershed function would be projected to last as long, or longer, than the duration of short-term adverse effects and continue to promote recovery of natural watershed function and processes overall once short-term adverse effects are no longer occurring.

Maintain: To produce no change in the existing conditions of a resource relative to their condition status; that is, properly functioning, functioning at risk, or not functioning properly. Conditions that are maintained are neither restored nor degraded, but remain essentially the same as the existing condition. The term

"maintain" can apply to any condition indicator at the appropriate scale, but those scales need to be identified. Degrade applies when actions change the existing condition to one that is measurable.

Mass wasting: A collective term for all gravitational or downslope movements of weathered rock debris

Mitigation: Modifications of actions taken to avoid impacts by not taking a certain action or parts of an action;

- minimize impacts by limiting the degree or magnitude of the action and its implementation;
- rectify impacts by repairing, rehabilitating, or restoring the affected environment;
- reduce or eliminate impacts over time by preservation and maintenance operations during the life of the action; or,
- compensate for impacts by replacing or providing substitute resources or environments.

Monitoring: A systematic process of collecting information to evaluate changes in actions, conditions, and relationships over time and space or progress toward meeting desired conditions or plan objectives. (FSM 1905)

Municipal supply watershed: A watershed that serves a public water system as defined in the Safe Drinking Water Act of 1974, as amended (42 U.S.C. section 300f, et seq.); or as defined in state safe drinking water statutes or regulations.

Natural historical fire regime: Fire regimes describe the historical ecological role of fire in creating and maintaining vegetation communities for a period before Euro-American settlement activities and active fire suppression began. Fire regimes, or more generally, disturbance regimes, are a key component of historical range of variability (HRV) characterizations for forest and vegetation types.

Natural ignition fire: A wildfire occurring within nature and without the influence of humans or machinery. Natural ignition sources include: lightning strikes, volcanic activity, spontaneous combustion, friction, and concentrated sunlight.

Natural range of variation: The variation of ecological characteristics and processes over scales of time and space that are appropriate for a given management application. In contrast to the generality of historical ecology, the natural range of variation concept focuses on a distilled subset of past ecological knowledge developed for use by resource managers; it represents an explicit effort to incorporate a past

perspective into management and conservation decisions (adapted from Weins et al. 2012). The pre-European influenced reference period considered should be sufficiently long, often several centuries, to include the full range of variation produced by dominant natural disturbance regimes such as fire and flooding and should also include short- term variation and cycles in cycles of warm-dry and cool-moist climatic period. The natural range of variation is a tool for assessing the ecological integrity and does not necessarily constitute a management target or desired condition. The natural range of variation can help identify key structural, functional, compositional, and connectivity characteristics, for which plan components may be important for either maintenance or restoration of such ecological conditions.

Obligate species: A plant or animal that occurs only in a narrowly defined habitat such as tree cavity, rock cave, or wet meadow. FEMAT glossary

Old forest: Old forests are ecosystems distinguished by a relative abundance of old trees and related structural attributes. Old forest encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics which may include tree size, accumulation of large dead woody material, number of canopy layers, species composition, and ecosystem function. The age at which stands reach the old forest stage and the specific structural attributes that characterize the old forest stage varies by forest type, site conditions, and disturbance regime. Measurable criteria for these attributes have been established for the major forest cover types by the Pacific Northwest Region of the Forest Service (USDA Forest Service 1993). These structure based definitions incorporate minimum numbers of trees per acre of minimum qualifying age ranging from 150 to 200 years as well as minimum sizes of 21 to 31 inches for several forest types common to this area. Depending largely on the natural disturbance regime, old forest may occur in a single-story stage, called "old forest single-story (OFSS)," or as a multi-storied stage, called "old forest multi-storied (OFMS)." Old forest multi-story (OFMS): This stage of old forest includes multiple age classes and canopy layers, along with large, old trees. Decaying fallen trees may also be present that leave a discontinuous overstory canopy. Overstory diameters are generally greater than 20 inches. Old forest single-story (OFSS): This stage of old forest typically results from low- intensity surface fire. This structure class can include multiple age classes, but generally only includes one main overstory strata. Large, old trees are common. Decaying fallen trees may also be present that leave a discontinuous overstory canopy. Overstory diameters are generally greater than 20 inches.

Old Trees: Have distinct features indicating ages of generally 150 years or older.

Operations: All functions, work, and activities in connection with prospecting, exploration, development, mining or processing of mineral resources and all uses reasonably incident thereto, including roads and other means of access on lands subject to the regulations in this part, regardless of whether said operations take place on or off mining claims. 36 CFR 228.

P-R

Passive restoration: Allowing a site to self-restore through natural processes. See term Active restoration for contrast.

Pesticide: Substances or mixture there of intended for preventing, destroying, repelling, or mitigating any pest. Also, any substance or mixture intended for use as a plant regulator, defoliant, or desiccant (EPA glossary).

Piscicides: A piscicide is a chemical substance which is poisonous to fish. The primary use for piscicides is to eliminate a dominant species of fish in a body of water, as the first step in attempting to populate the body of water with a different fish. They are also used to combat pariasitic and invasive species of fish.

Planned ignition: The intentional initiation of a wildland fire by a hand-held, mechanical, or aerial device where the distance and timing between ignition lines or points and the sequence of igniting them is determined by environmental conditions (weather, fuel, topography), firing technique, and other factors that influence fire behavior and fire effects (see prescribed fire).

Prescribed burn or prescribed fire: A wildland fire originating from a planned ignition to meet specific objectives identified in a written, approved, prescribed fire plan for which National Environmental Policy Act requirements (where applicable) have been met prior to ignition (see planned ignition).

Prescription: A planned sequence of treatments designed to change current stand structures to one that meets management goals.

Priority watershed: Priority watersheds are 12-digit hydrologic unit watersheds established under the agency's Watershed Condition Framework process as the focus for investments in the short term (5 to 7 years) for maintenance or restoration of watershed conditions (soil and hydrologic functions supporting aquatic ecosystems). Appendix A under Programatic Framework heading has a detailed description of Watershed Condition Framework.

Productivity: The capacity of National Forest Systems lands and their ecological systems to provide the various renewable resources (such as timber) in certain amounts in perpetuity. In land management, productivity is an ecological term, not an

economic term (36 CFR 219.19)

Rare plant: A plant species that may be scarce because the total population of the species may have just a few individuals, or be restricted to a narrow geographic range, or both. Some rare plants occur sparsely over a broad area. Other rare plants have many individuals, but these are crowded into a tiny area; in some cases, a single county or canyon. A third kind of rare plants are those with both few individuals AND a narrow geographic range: these are the very rarest plants.

Recovery plans: Plans describing the steps needed to restore a species to ecological health.

Recreation Opportunity Spectrum (ROS) Classes:

- **Primitive** settings encompass large, wild, and predominately unmodified landscapes. Their size and configuration create remoteness from the sights and sounds of human activities, management, and development. Signs and other structures are minimal and constructed of rustic, native materials. Motorized travel does not occur. Encounters with other users is very low, offering visitors the opportunity for solitude, self-reliance, closeness with nature, challenge, risk, and discovery. Many primitive settings coincide with designated wilderness areas in which mechanized equipment is not present. Additional primitive settings may also occur outside of wilderness areas. Mechanized travel and motorized equipment may occur in non-wilderness primitive settings.

- **Semi-Primitive Nonmotorized** settings are characterized by predominantly natural or natural appearing landscapes. The size of these areas facilitate distance from more heavily used and developed areas, creating a sense of remoteness. Interaction with other users is low. These settings provide opportunities for self-reliance and utilizing wildland skills. Motorized vehicles are not present, while mountain bikes and other mechanized equipment may be present. Although some roads may be evident, they do not dominate the landscape. Vehicular use is infrequent. Occasional administrative use occurs on these roads for the purpose of natural and cultural resource protection and management.

- **Semi-Primitive Motorized** settings are characterized as predominately natural or natural appearing backcountry settings. Motorized travel by off-highway vehicles or high-clearance vehicles occurs on designated routes and areas. Motorized routes are typically maintenance level 0-2 roads or motorized trails, offering a high degree of self-reliance, challenge, and risk in exploring these large backcountry settings. Mountain bikes, other mechanized

equipment, and nonmotorized uses are also present. Limited rustic facilities are present for the purpose of visitor safety, sanitation, and resource protection.

- **Roaded Natural** settings are characterized by predominately natural-appearing settings, with moderate sights and sounds of human activities and development. The overall perception is one of naturalness. Evidence of human activity varies from area to area and may include improved highways and high-maintenance-level roads, developed campgrounds and other recreation sites, small resorts and summer homes, and evidence of other multiple uses and management activities, such as livestock grazing, timber harvesting, mining, watershed restoration activities, and oil and gas operations. Roads, motorized equipment, and vehicles are common in this setting. Nonmotorized uses are also present. The density of use is moderate except at developed sites, where concentrations of use are higher. Regulations pertaining to user behaviors are common but generally less restrictive than those in the rural and urban ROS classes.

- **Rural** settings are characterized as modified natural environments. While these landscapes often contain geometric patterns created by management activities, there is a dominant sense of open greenspace, typically characterized as pastoral farm and ranch lands. Facilities are common and may include resorts and summer home complexes, administrative sites and work centers, and highly developed campgrounds, interpretive sites, trailheads, picnic areas, and other recreation facilities. The sights and sounds of human activity and management are readily evident, and the level of interaction with other users ranges from moderate to high.

- **Urban** settings are characterized as highly modified landscapes, dominated by structures and other infrastructure. Clustered facilities contain amenities for user convenience and comfort. There is a preponderance of onsite regulations that direct and limit the behavior of visitors. Very high and concentrated use levels are common. These settings are typically small in overall size and not common on National Forest System lands. Large ski areas, visitor centers, and resorts are sometimes classified as urban ROS settings.

Redds: A redd is a depression created by a female fish to lay her eggs. The fish selects a site with flow that maintains the bed free from excess silt and allows water to percolate through the gravel.

Reference condition: A set of selected measurements or conditions of unimpaired or minimally impaired waterbodies characteristic of a water body type in a region. A standard

or benchmark for a river monitoring program that measures physical and/or biological integrity.

Refugia: Locations and habitats that support populations of organisms that may be limited to small fragments of their previous geographic range (i.e., endemic populations). FEMAT glossary

Resilience: The ability of an ecosystem to maintain diversity, integrity, and ecological processes following a disturbance. (FS People's Glossary of Eco Mgmt Terms)

Resiliency: The degree to which the system can be disturbed and recover to a state where processes and interaction function as before (Holling 1973 in Reeves et al. 1995).

Resilient: The ability of an ecosystem and its component parts to absorb, or recover from the effects of disturbances through preservation, restoration, or improvement of its essential structures and functions and redundancy of ecological patterns across the landscape. FSH 1909.12 Zero Code -Definitions

Restore: Generally applies when the existing conditions are outside the range of desired conditions and actions are specifically designed and implemented to move towards desired conditions for one or more at risk or inpaired resources in a watershed.

Retard attainment: Applies when an actions effects, individually or in combination with other actions or natural disturbances, measurably slows the natural rate of recovery towards the desired conditions.

Riparian-dependent resources: Resources that are dependent upon the habitat conditions (cool, shady, moist) that occur in riparian areas.

Riparian ecosystem: An ecosystem that is a transition between terrestrial and aquatic ecosystems. It includes the vegetation communities associated with rivers, streams, lakes, wet areas and their associated soils that have free water at or near the surface. An ecosystem whose components are directly or indirectly attributed to the influence of water (https://www.fs.fed.s/r6/icbemp).

Riparian habitat: Areas adjacent to rivers and streams with a differing density, diversity, and productivity of plant and animal species relative to nearby uplands.

S-U

Salable minerals: High volume, low value mineral resources, including common varieties of rock, clay, decorative stone, sand, and gravel.

Short-term adverse effects: Duration and spatial extent of adverse effects to individual

parameters and overall watershed condition, relative to natural rates at which desired conditions for watershed function in the watershed would otherwise be achieved, would be determined by the project hydrologist or fish biologist. Short-term adverse effects may occur when their implementation would either immediately or eventually help create restored watershed functions and conditions that would inherently last longer than the duration of the short-term adverse effects and become relatively self-sustaining through natural processes in the absence of continued management activity. Determining short-term effects to individual parameters for the sake of long-term recovery of overall watershed function will need to be determined project-by- project based on best-available science and professional judgement by hydrology and fisheries specialists.

An example of short-term adverse effects that would not be detrimental to longer-duration watershed function would be when elevated sediment inputs and accumulation associated with a project site would be expected to fully flush out during the first fall, winter, or spring high flows after project completion, and site restoration conservation measures would be expected to prevent future project related sediment inputs into the stream (National Marine Fisheries Service 2013).

Clean Water Act total maximum daily loads for temperature and sediment, where they exist, also help define short-term adverse effects for specific watersheds in the planning area. As an additional example, fish passage projects may have blocked fish passage for up to a few weeks during removal and upgrade of a structure that seasonally blocks passage, with the goal of improving fish passage for many years to come (National Marine Fisheries Service 2013).

As a last example, for streams listed for temperature under the Clean Water Act, where total maximum daily loads for temperature do not exist yet, short-term project effects in streams listed as 303d for temperature would not be allowed to exceed temperature levels established as beneficial uses for salmonid species, specifically temperature levels that support the life histories and habitat usage by bull trout. For salmon and steelhead where they are present, short-term effects from invasive plant control were defined in the National Marine Fisheries Service regional biological opinion for aquatic restoration (NMFS 2013) as being no more than 10 percent of the acres in an riparian habitat conservation area in any one 6th hydrologic unit code watershed in a given year.

Site potential: A measure of resource availability based on interactions among soils, climate, hydrology, and vegetation. Site potential represents the ighest ecological status an area can attain given no political, social, or economic constraints. It defines the capability of an area, its potential, and how it functions. (https://www.fs.fed.us/r6/icbemp)

Site potential tree: A tree that has attained the average maximum height possible given site conditions where it occurs. FEMAT glossary

Site potential tree height: The average maximum height of the tallest trees (200 years or older) for a given site class.

Site productivity: The combined effect of physical and climate properties, soil depth, texture, nutrient load, precipitation, temperature, slope, elevation, and aspect, on vegetation growth of a specific area of land.

Spatial: Related to or having the nature of space. (https://www.fs.fed.us/r6/icbemp)

Species at risk: Defined in two groups 1)Federally recognized threatened, endangered, proposed, and candidate species; and 2) Species of conservation concern. (2012 Planning Rule and Forest Service Handbook (FSH 1909 Chapter 12.5)

Soil function: Various processes that occur in the soil or at the soil surface and enable the soil to sustain biological productivity, maintain environmental quality, and promote plant and animal health.

Soil quality: The capacity of the soil to function within its surroundings to sustain biological productivity, maintain or enhance hydrologic function and water quality, and preserve overall environmental quality.

Soil productivity: The capacity of a soil to produce a certain yield of crops or other plants with a specified system of management. Note: Under extensive management inherent productivity equals soil productivity, unless the soil resource has been degraded.

Stand density: The degree to which an area is occupied by trees and the intensity by which trees are competing for site resources (Tappeiner 2007).

Stand initiation (SI): Structural stage of young stands that develop following a stand- replacing disturbance such as wildfire or a regeneration timber harvest. Growing space is typically reoccupied rapidly by vegetation that either survives the disturbance or colonizes the area. Forest vegetation within these stands literally survive the disturbance above ground, or initiate growth from their underground roots or from seeds stored on-site. Colonizers also disperse seed into disturbed areas, the seed germinates nand then new seedlings establish and develop. A single canopy layer of young trees is typically present in this stage. Average dominant tree diameters are usually less than five inches.nStem exclusion: Structural stage is usually created when vigorous, fast growing trees that compete strongly with one another for available light and moisture occupy the growing space. Because trees are taller and the growing space is fully occupied, establishment of new trees is generally precluded by a lack of sunlight or moissture. Individuals that compete

unsuccessfully are often stressed or die. These stands typically only have one dominant layer. Average overstory tree diameters usually range from 5 to 20 inches.

Targeted grazing: The application of a specific kind of livestock at a determined season, duration, and intensity to accomplish defined vegetation or landscape goals. Examples of these goals include: invasive plant control, fire risk reduction, and wildlife habitat enhancement. Targeted grazing is the carefully controlled grazing of livestock to accomplish specific vegetation management objectives. (RMRS-GTR-292 2012, and Launchbaugh and Walker 2006)

Temporal: Related to time. (https://www.fs.fed.us/r6/icbemp)

Temporary road: A road or trail necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road or a forest trail and that is not included in a forest transportation atlas (36 CFR 212.1).

Two-aged management: The application of a combination of actions that results in the creation of stands in which trees are of essentially two age classes. The resulting stands may be two-aged or tend towards an uneven-aged conditon as a consequence of both an extended period of regeneration establishment and the retention of reserve trees (green tree replacements) that may represent one or more age classes. Clearcut with reserves, shelterwood with reserves, or seed tree with reserves are cutting methods that produce two-aged stands. Cuts in two-aged systems are a form of even-aged management and must comply with National Forest Management Act limitations for even-aged regeneration harvests.

Understory reinitiation: Understory reinitiation stage (UR): Structural stage forming as the forest continues to develop and new age classes of trees establish as individual overstory trees die or are removed. The original trees no longer occupy all of the growing space. Regrowth of understory vegetation then occurs, and trees begin to develop in vertical layers. This stage typically contains multiple layers and multiple tree sizes. Average tree overstory diameters range from 5 to 20 inches.

Uneven-aged management: The application of a combination of actions needed to simultaneously maintain continuous high-forest cover, recurring regeneration of desirable species, and the orderly growth and development of trees through a range of diameter or age classes to provide a sustained yield of forest products. Cutting is usually regulated by specifying the number or proportion of trees of particular sizes to retain within each area, thereby maintaining a planned distribution of size classes. Cutting methods that develop and maintain uneven-aged stands are single-tree selection and group selection.

Unstable and potentially unstable lands: The unstable land component includes lands that 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 in turn will affect aquatic ecosystems, including streams, seeps, wetlands, and marshes. (https://www.fs.fed.us/r6/icbemp)

Unplanned ignition: The initiation of a wildland fire by lightning or unauthorized or accidental human-caused fire (see wildland fire).

V-W

Values-at-risk: Those ecologic, social, and economic assets and resources that could be impacted by fire or fire actions. Examples include life, property, structures, natural and cultural resources, community infrastructure, public support, economic opportunities such as tourism, and air quality. (2016 Risk terminology primer. Gen. Tech. Rep. RMRS-GTR-349)

Watershed: The entire region drained by a waterway (or into a lake or reservoir). More specifically, a watershed is an area of land above a given point on a stream that contributes water to the streamflow at that point.

- The drainage basin contributing water, organic matter, dissolved nutrients, and sediments to a stream or lake. (FEMAT, IX-39)
- Any area of land that drains to a common point. A watershed is smaller than a river basin or subbasin, but it is larger than a drainage or site. The term generally describes areas that result from the first subdivision of a subbasin, often referred to as a "fifth-field watershed." (Ecosystem Analysis at the Watershed Scale v 2.2, p. 25)
- The entire region drained by a waterway (or into a lake or reservoir). More specifically, a watershed is an area of land above a given point on a stream that contributes water to the stream flow at that point.

Watershed condition classes: Watersheds are rated as Class 1, 2, or 3.

- Class 1 Condition (Functioning Properly): Watersheds exhibit high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.
- Class 2 Condition (Functioning at Risk): Watersheds exhibit moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential

condition.

- Class 3 Condition (Impaired Function): Watersheds exhibit low geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Watershed Restoration Action Plan: A plan developed to restore or maintain watershed condition for each priority watershed based on detailed field assessments by interdisciplinary teams. The Watershed Restoration Action Plan outlines specific problems that affect watershed condition and identifies the projects that are essential to addressing those problems, as well as timeframes, partners, and funding sources for these projects.

Water development: A water transmission, storage, or diversion facility.

Wetlands: Those areas 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.

Wildfire: A naturally-caused wildland fire (for example, lightning) or human-caused fire, and considered an emergency management situation.

Wildland fire: A general term describing any nonstructural fire that occurs in the wildland. Wildland fires are categorized into two distinct types: Planned (Prescribed fires) – (see prescribed fire definition). Unplanned – (see unplanned fire definition).

Wildland Urban Interface (WUI): See Community Protection Area

Appendix A: Aquatic and Riparian Conservation Strategy

Strategy

The regional Aquatic and Riparian Conservation Strategy (USDA, 2018) is a synthesis and refinement of three existing aquatic strategies: the Northwest Forest Plan (NWFP)-Aquatic Conservation Strategy (ACS) (USDA and USDI 1994a and 1994b); Interim Strategies for Managing Anadromous Fish-Producing Watersheds in Eastern Oregon and Washington, Idaho, and portions of California (PACFISH, USDA and USDI 1995a); and the Inland Native Fish Strategy (INFISH, USDA and USDI 1995b).The unified strategy intended to build upon prior successes, reflect new science and policy, incorporate lessons learned, and address ongoing issues and new needs. It also combines ecosystem and landscape perspectives to provide a management strategy to be applied over a broad, heterogeneous area of national forests in OR and WA and those portions of northern CA that are within the Northwest Forest Plan area. It focuses first and foremost on broad-scale aquatic resource conservation and protection, coupled with strategically focused active restoration in priority areas (USDA, 2005).

Derived from the regional strategy, the Aquatic and Riparian Conservation Strategy (ARCS) for the Blue Mountains National Forests is comprised of several elements: Key Watersheds, Riparian Management Areas (Chapter 3), Watershed Analysis, Watershed Restoration, and Monitoring and Adaptive Management (figure 1). Interaction of all five elements at the watershed and landscape-scales provides the basis for watershed, aquatic, and riparian ecosystem management and restoration. These elements work together and complement each other to achieve the goal of appropriately distributed watershed conditions. They will not achieve desired results if implemented alone or in limited combination (FEMAT 1993, USDA and USDI 1994a and 1994b). As such, they are designed to be applied in an integrated fashion.

The ARCS will be implemented through plan components and other plan content. Specifically, elements of ARCS are incorporated into a suite of plan components to meet desired conditions, provide a means of measuring progress towards achieving or maintaining desired conditions (objectives), constrain activities (standards, guidelines) to ensure protection of physical and biological resources, and identify areas where certain activities are or are not generally appropriate (suitability of lands). Other plan content such as management approaches, key watersheds, watershed analysis, watershed restoration, and monitoring are important in implementing the ARCS.

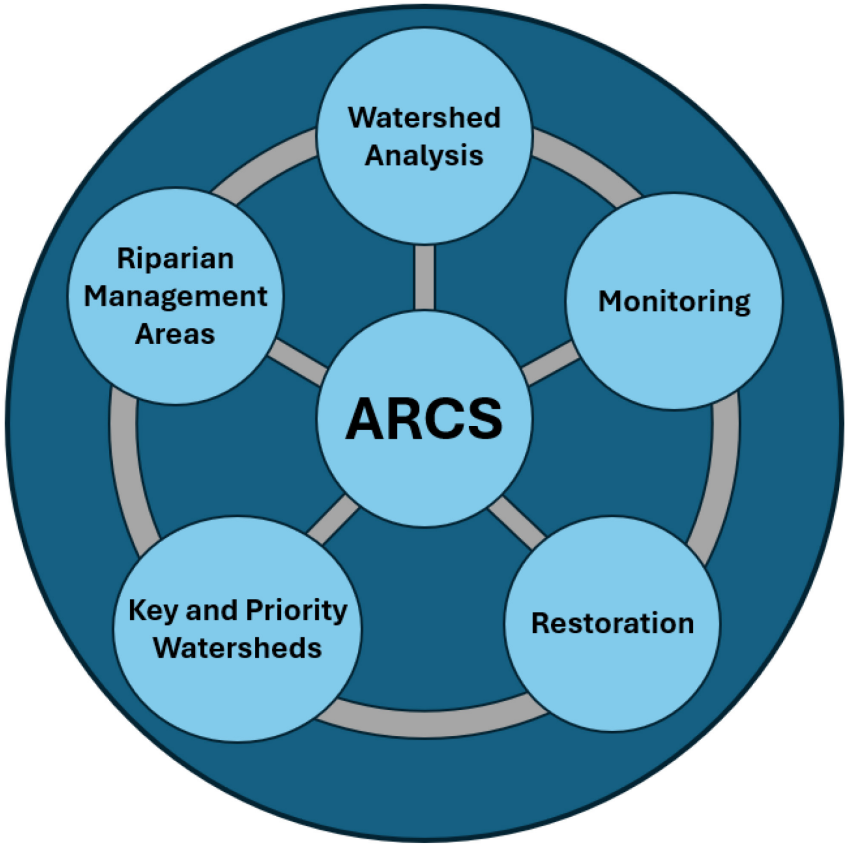


Figure 1: The five primary elements of ARCS for the Blue Mountains.

Expectations and Limitations

The ARCS is intended to prevent degradation of aquatic and riparian ecosystems and to restore the ecological processes responsible for creating those ecosystems and providing high-quality water over broad landscapes (USDA and USDI 1994b). However, it is built upon the knowledge that watersheds and the aquatic habitat that they contain are dynamic systems and that conditions are variable over time (Reeves 2006). Processes that control the routing and distribution of water, wood, sediment and nutrients shape aquatic and riparian habitats and result in a distribution of aquatic system conditions shaped by natural and human-caused disturbance (Naiman et al. 1992).

It has been proposed that a complete or near complete range of aquatic habitats can be maintained if anthropogenic disturbance are compatible with the natural disturbance regime to the extent possible and further that when natural disturbances do occur that the transfers of organic (wood) and inorganic (sediment) materials to streams are not impeded (Bisson et al. 1997). The occurrence of natural disturbance (fire, floods, debris flows) implies that habitat conditions vary at any given scale so that it is not expected that all watersheds nor all habitats within a given watershed will always be in good condition. However, comparison of

habitat conditions in the Blue Mountains National Forests to reference conditions suggests the need for maintained or restored aquatic habitat conditions at broad scales.

Implementation of the ARCS is expected to substantially contribute to the recovery of federally listed fish, including anadromous salmon and trout, by increasing the quantity and quality of freshwater habitat (FEMAT 1993). It is also expected to significantly contribute toward attainment of Clean Water Act goals of protecting and restoring the quality of the nation's waters. By itself, however, it is not expected to prevent the listing of species or distinct population segments or enable their full recovery, primarily because factors off National Forest System land often strongly influence populations, particularly those that are migratory. For federally listed migratory fish, factors outside the responsibility of federal land managers contribute to the status and trends of populations. These include the condition of freshwater and estuarine habitats, harvest in commercial and recreational fisheries, management of main stem dams, and the effects of hatchery practices and introductions (National Research Council 1996). Similar limitations apply to water quality.

Key Watersheds

Key Watersheds are designated based upon their condition and their importance to aquatic and riparian species and/or for providing water for human communities. Key Watershed networks are intended to be established at the ESU/Recovery unit scale for specific threatened or endangered or other valued aquatic and riparian-dependent species, and/or areas that provide high-quality water important to these populations and/or their habitats downstream, in order of relative priority. If these established areas are sufficiently replicated, thoughtfully positioned across the landscape, and connected, they contribute to the resiliency of populations of aquatic, terrestrial, and riparian-dependent species as stochastic events impact populations and communities in various patches of the landscape through time. These watersheds, generally 10-digit HUs, help inform aquatic conservation and restoration over long-timeframes (i.e., multiple decades to a century or more). The following sections (Watershed Analysis and Watershed Restoration) incorporate Key Watersheds.

Watershed Analysis

Background

Assessments, which covered the Blue Mountains National Forests, were conducted before the forest plans were revised to identify the need to change plan direction and to inform the development of plan components. This section pertains to watershed analysis, which is conducted at finer spatial scales (generally subbasins to subwatersheds, 8-12 digit hydrologic units) as historically used to inform plan implementation, after they have been developed, amended, or revised.

Through implementation of the existing aquatic strategies in the 1990s and early 2000s, watershed analyses have been completed for the majority of National Forest System lands within the plan area. Consequently, future work will largely focus on efficiently updating, as needed, a portion of those existing analyses to better reflect current watershed conditions and trends, new issues latest science and policy, and current opportunities.

Purpose

Watershed analysis is an interdisciplinary analysis of the status and trends of watershed and aquatic ecosystem conditions, including key state-designated beneficial uses of water (for example, municipal water supply), and the hydrologic, geomorphic, and biological processes that strongly influence them. This important component of the Aquatic and Riparian Conservation Strategy (ARCS) of the Blue Mountains National Forests' land management plan provides consistent, mid-scale information that serves as a foundation for plan implementation through the development of strategic and integrated programs and projects that protect and restore aquatic resources, while enabling informed and sustainable resource use and management. These analyses combined with monitoring and evaluation, provide the context and foundation to adaptively execute the other components of the ARCS, including management of riparian management areas, implementation of watershed restoration, and compliance with plan components.

Watershed analysis is intended to guide plan implementation by providing decision-makers and others: (1) information to identify activities that would maintain watershed and aquatic and riparian ecological conditions or move them towards desired conditions; and (2) the context for developing projects and evaluating their consistency, via the National Environmental Policy Act process, with plan direction (desired conditions, objectives, standards, and guidelines associated with watershed and aquatic resources). This includes ensuring that management activities in key and priority watersheds and riparian management areas restore or maintain aquatic and riparian resources.

Through identification of actions needed to avoid or minimize adverse effects and/or restore ecosystem conditions and processes, watershed analysis is also intended to enable protection and recovery of listed species and their habitats and to facilitate efficient project-level conferencing and consulting under section 7 of the Endangered Species Act. Similarly, it should enable protection and restoration of water quality and the full range of beneficial uses of water identified by the states and Tribes under the Clean Water Act.

Watersheds to be Analyzed

The Blue Mountains National Forests estimated the number of new or updated watershed analyses expected to be completed during the life of the land management plans and identified a set of potential watersheds for which this work will be a priority. Criteria for selecting potential watersheds for analysis included: (1) watersheds that have been identified

as priority watersheds under the Watershed Condition Framework; (2) watersheds that support listed species or contains designated critical habitat; and (3) watersheds wherein management activities are likely to occur that may substantially affect aquatic resources (for example, due to their inherent nature, location, timing or scale).

Watershed analyses will generally be conducted or updated prior to or as part of the process of developing watershed restoration action plans for priority watersheds.

Line Officer Role

The desired outcome is an efficient, effective analysis that provides a better understanding of watershed structure and function and a set of recommendations that help inform future actions within and around the watershed. To achieve this intent, line officers should guide analysis teams throughout the analysis process, ensuring that the analysis focuses on the most critical issues and questions and that the scope, type, and level of analysis is aligned with management needs and available financial resources and staff. This is critical to avoiding common pitfalls observed in previous analyses, which included unconstrained scope and level of detail.

Analysis Process

The watershed analysis process, as described in the federal guide to watershed analysis (Regional Ecosystem Office 1995), includes 6 steps to be conducted in an interdisciplinary process:

1. Characterizing the study watershed
2. Identifying important water and aquatic resources and key management issues and questions associated with them.
3. Describing current resource conditions and trends and the dominant biophysical processes (natural and human caused) responsible for them.
4. Comparing and contrasting those conditions with applicable reference conditions
5. Synthesizing and interpreting that information.
6. Identifying opportunities and making management recommendations to maintain or restore watershed and aquatic resources when those conditions are consistent with or trending towards desired conditions or otherwise to maintain or restore those resource conditions. It is generally based on existing information, although new information may be needed in some situations.

The watershed (10-digit hydrologic unit) or subwatershed (12-digit hydrologic unit) is the primary scale of the analysis. However, since relevant issues, ecological conditions, and

dominant biophysical processes often occur at both broader and finer scales, components of the analysis may need to be conducted at a subbasin scale, while others may need to be addressed at a subwatershed or finer scale. Still others (for example, habitat connectivity between and within watersheds) may need to be evaluated at multiple scales. The challenge is to efficiently analyze the interaction of multiple processes operating at multiple spatial and temporal scales and incorporate relevant findings into a concrete watershed conservation and management strategy. The topics to be covered in a watershed analysis generally include (1) hydrologic and geomorphic processes; (2) vegetation; (3) disturbance regimes; (4) transportation systems; (5) water quality; (6) aquatic and riparian species and habitats; and (7) human uses.

Updating Existing Watershed Analyses

As previously described, most future work will involve updating existing analyses rather than conducting entirely new ones. The process for updates is similar to the analysis process described above, except that updates should be narrowly focused on refreshing, refining, or augmenting only those critical components of the existing documents that do not reasonably address current issues and questions, adequately characterize current resource conditions and trends, align with current science and policy, or reflect contemporary management opportunities.

Line officers should define the scope of these updates and the financial and staff resources available to support them, after considering the recommendations of an interdisciplinary team that has critically reviewed the existing analyses.

General Products

The products of a watershed analysis generally include all or a subset of the following, depending on the scope of the analysis:

- A summary of the status and trajectory of watershed conditions, aquatic and riparian-dependent resources and their habitat, water quality, and key state-designated beneficial uses of water.
- A description of the key historic and ongoing processes (natural and human caused) responsible for those conditions and trends.
- An assessment of the status and trends of the watershed with respect to general forest-wide desired conditions at applicable scales (subbasin, watershed, or both) and any specific desired conditions for riparian management areas.
- Any recommended adjustments to the default, forest-wide widths for riparian management areas as necessary.

- A recommendation for retaining or changing the status of the watershed with respect to the Key Watershed network (e.g., adding or removing the watershed from the network)

- Specific opportunities for managing, protecting, and restoring the watershed and its key resource values. This includes identification of areas within the watershed that are particularly important and activities that could be taken or avoided to protect and restore watershed conditions while achieving other socioeconomic objectives.

- A strategic framework for implementing restoration opportunities. This includes a ranked list of Candidate priority subwatersheds (12-digit hydrologic unit) to consider restoring via the National Watershed Condition Framework process, the general type and scope of critical restoration treatments, their general location and priority, and any major considerations for timing and completion of restoration work.

- A completed watershed restoration action plan for Watershed Condition Framework priority subwatersheds per the national template, as appropriate.

- Significant information gaps and the inventories, monitoring, and/or analyses needed to address those gaps, and their relative priority.

- A list of key monitoring questions and indicators.

These products should be informed by and aligned with the major objectives, strategies, and tactics included in other relevant restoration and recovery plans (for example, Endangered Species Act recovery plans, state restoration plans for impaired waters). Specific map and tabular products may include all or a subset of the following, depending on the scope of the analysis:

- Perennial and intermittent streams, fish habitats (including key spawning and rearing areas, critical habitat, etc.), and any major barriers to fish passage.

- Other special aquatic habitats (side channels, ponds, associated wetlands, etc.) of particular importance.

- Groundwater-dependent ecosystems (including springs) and important groundwater recharge zones.

- Key beneficial uses of water.

- Major water rights and uses.

- The quality, quantity, and timing of stream flows and areas and processes that strongly influence them.
- Any water-quality limited stream segments.
- Available stream and water quality inventory and monitoring results, including those from the PACFISH-INFISH biological opinion, applicable stream temperature monitoring and assessment programs, the regional stream survey program, and other relevant programs.
- Key and/or Priority watersheds in the analysis area.
- Riparian management areas, including unstable areas.
- Key geomorphic features and processes strongly influencing watershed conditions and resources.
- Current and historic forest and rangeland vegetative conditions.
- Wildfire risks relevant to aquatic and riparian resources.
- Potential impacts and risks that the road network poses to watershed conditions and aquatic resources.
- Known and high-risk sites for aquatic and riparian invasive species.
- Projected future changes in stream flows, stream temperatures, aquatic biota, or vegetative conditions relevant to aquatic resources.
- A listing of priority restoration treatments, including the location or general area and relative priority and any major considerations for timing and completion of restoration work.

Relationship with Project and Watershed Planning and Landscape Analysis

Watershed analysis is best conducted separate from project-level planning and the National Environmental Policy Act process. Its results are used to identify projects ready for implementation and its analysis can be used to prepare National Environmental Policy Act analyses, particularly purpose and need statements and existing conditions. A watershed analysis more thoroughly informs decisions.

Sometimes contemplated large-scale vegetation management projects spanning multiple watersheds require an analysis that helps to understand resources and their interaction with a broader perspective. The watershed analysis approach described here can be applied at broader scales if needed.

Where feasible, watershed analysis should inform the watershed restoration process, as specified in the Watershed Restoration section of this appendix. Specifically, these analyses can guide selection of priority watersheds and development of watershed restoration action plans via the Watershed Condition Framework process. It can also inform potential complexities or limiting factors for other proposed or contemplated management activities.

Documentation

Watershed analyses should be a concise synthesis of key information about resource conditions and trends and the recommended management strategies and actions to address them. Line officers should define their scope and review and approve final products. These analyses should be kept in the record and be readily available for use. Supporting geospatial data should also be retained as part of the record. Watershed analyses are not federal actions leading to a decision and do not require National Environmental Policy Act analysis and documentation.

Analysis Resources

Many resources, as described below, are available to support watershed analysis.

Existing Analyses

Much of the watershed analysis process involves the integration and synthesis of existing information. Therefore, identification and review of existing analyses is a critical step in the process. Information from the following documents should be reviewed and synthesized during the analysis process and be used to guide other components of the analysis, as appropriate given the scope of the analysis:

- Results of step A (assessment) of the National Watershed Condition Framework.
- Existing watershed analyses.
- Status reviews and assessments and recovery plans for threatened, endangered, or sensitive species.
- State assessments and management plans associated with water quantity and quality,
- Results of broad-scale status and trend monitoring programs (for example, PACFISH-INFISH biological opinion).
- Transportation analyses.
- Relevant broad-scale environmental analyses.

Watershed analyses are intended to address issues at finer scales than land management plan revision processes, primarily at the watershed scale. However, some of the existing information may only provide context for how conditions in a subbasin or watershed compare with other subbasins or watersheds. Other existing data and reports, however, may provide information about specific conditions within the analysis watershed. Some other sources may do both.

Forty-seven watershed analyses that have been completed by the Malheur, Umatilla, and Wallowa-Whitman National Forests between 1994 and 2006 covering 56 individual watersheds (hydrologic unit code 10). Completed watershed analyses encompass 3.6 million acres of 5.5 million acres of the Blue Mountains National Forests. Approximately 1.8 million acres, or 33 percent of the area don't have completed watershed analysis in the plan area - 859,500 acres (47 percent) are within wilderness or inventoried roadless areas. After accounting for wilderness and roadless areas, 83 percent of National Forest System acres have completed watershed analyses in the plan area.

Parts of 64 watersheds in the Blue Mountains National Forests are without a completed watershed analysis. Of these, 23 have less than 10,000 acres of National Forest System lands. Of the 41 watersheds with more than 10,000 National Forest System acres, 16 have 50 percent or more of National Forest System area in wilderness or roadless areas. Including the Hells Canyon National Recreation Area, only 17 percent of Blue Mountains National Forests within existing roadless or wilderness areas have been the subject of a watershed analysis.

In addition to the completed watershed analyses, at least four broad-scale analyses of watershed and aquatic and riparian habitat conditions have been conducted for areas encompassing watersheds in the plan area. The Pacific Northwest Region (Region 6) assessed basin-scale watershed and habitat conditions in identifying region-wide restoration priorities (USDA Forest Service 2005). Separate analyses were conducted by individual national forests, to assess watershed, riparian, and aquatic habitat conditions and establish priorities for restoration. Watershed, riparian, and habitat conditions were re- assessed, along with population status and distribution of four selected surrogate species (bull trout, steelhead, chinook salmon and, redband trout) in order to determine watersheds with the greatest restoration potential and best remaining aquatic habitat conditions for use in prioritizing watersheds for restoration. Most recently, watershed conditions were assessed on each national forest using the nationally mandated watershed condition framework, or Watershed Condition Framework (USDA Forest Service 2011).

Analysis Guides

Existing guidebooks, such as "Ecosystem Analysis at the Watershed Scale: Federal Guide for Watershed Analysis" (Regional Ecosystem Office 1995), provide a logical, structured

and organized approach to conducting watershed analyses. Analysis teams are thus encouraged to use relevant components of this guidebook to direct their work. Components of these guidebooks that are beyond the scope or level of detail decided by the line officer should be disregarded.

Datasets and Analysis Tools

Numerous datasets, models, and other analysis tools are available to assist in conducting watershed analysis. Each has different capabilities and strengths and limitations, which need to be critically evaluated prior to their application. Use of these tools should be focused on filling important information gaps needed to address the key management questions identified early in the analysis process.

Available models can simulate a variety of watershed processes, including surface erosion and mass wasting; stream shade, heat loading, or both to streams; large wood recruitment; and fluvial and floodplain processes. In addition, existing models can be used to characterize a variety of road-related impacts to watersheds and aquatic ecosystems.

The following datasets are generally available across the region and should be considered for use in the analysis, as needed.

- National Hydrography Dataset and Watershed Boundary Dataset
- Regional fish distribution and fish passage databases
- USGS streamflow monitoring
- Streamflow modeling (for example, variable infiltration capacity model)
- Region 6 physical and biological stream survey data and reports
- Historic surveys and photos
- National Watershed Condition Assessment
- PACFISH-INFISH biological opinion data and analyses
- Stream temperature monitoring and modeling (for example, NorWeST products)
- State and federal habitat and population monitoring programs
- Recovery plans and status reviews and assessments
- State and federal water quality monitoring
- State lists of water-quality limited streams (303-d list)
- Water rights and uses database
- Surface water diversion database

- Terrestrial ecological unit inventory
- Topographic data (for example, digital elevation models)
- Aerial photographs
- Existing and potential vegetation
- National forest transportation systems
- Rangeland condition assessments and monitoring
- Regional aquatic and riparian invasive species database
- Other relevant datasets (snow, flow regimes, stream temperatures, soil-drought)

Typically, these data sources can and should be complemented with local information for the analysis area (for example, localized road condition inventory).

The products of broad-scale status and trend monitoring, particularly the PACFISH- INFISH biological opinion datasets, can be used to inform analysis of specific watersheds. For example, as a starting point for watershed analysis, analysis teams can consider how upslope and in-channel conditions and trends for a particular watershed fit within the distribution of conditions and trends across all reference (least disturbed) and managed watersheds within a larger area (e.g. subbasin, basin, national forest). This, together with the watershed-specific information described below, can enable analysis teams to more completely and accurately assess watershed and aquatic habitat conditions, their likely trajectories, the reasons those conditions exist (for example, natural disturbance or human impacts), what actions might be warranted in the watershed, and generally how and where they should be implemented. This two-tiered approach, involving broad-scale status and trend assessment and monitoring across many watersheds to identify spatial and temporal patterns, coupled with more detailed, process-based analysis of specific watersheds to identify the causes of these patterns and management needs and opportunities, is consistent with the recommendations of Lisle et al. 2014. While “reference conditions” are quite useful in describing potential environmental conditions and providing a tool for diagnosing current status and trends, they may not always equate to desired conditions. First, while they may characterize the “best available” and perhaps the “best attainable conditions based on current data and information, they do not necessarily represent “natural” or “pristine conditions” because all watersheds have been impacted by human activities to some degree (for example, fire suppression). As such, our understanding of true “natural conditions” is limited. In addition, these conditions need to be assessed in the context of the species, issue, or process of interest to holistically understand whether deviation from reference condition is ecologically meaningful. As described by Montgomery and MacDonald (2002), in-channel data are best viewed as one set of diagnostic indicators of watershed and aquatic habitat condition. To inform

management decisions, it is important to understand the reasons for these conditions and what, if any, actions are needed to address them. This is a challenge because channel conditions are highly variable over space and time and can result from multiple pathways and processes influenced by both natural conditions and human impacts (Lisle et al. 2014). Thus, evaluation of reach-level channel data requires more than simple comparisons with data from reference sites. Such evaluations should use qualitative and quantitative data and information to characterize the current state of the system and the dominant natural and human-caused processes that control key variables of interest. This will generally involve consideration of the location of the reaches in the channel network, regional and local biogeomorphic context, controlling influences such as sediment supply and transport capacity, riparian vegetation, the supply of in-channel flow obstructions, and disturbance history (MacDonald and Montgomery 2002).

Watershed Restoration Strategy

Background

Watershed restoration to benefit aquatic and riparian-dependent resources and water quality is an integral element of the Aquatic and Riparian Conservation Strategy (ARCS) of the Blue Mountains National Forests' land management plan. Restoration, in concert with other ARCS elements, contributes to protection and recovery of those resources. Collectively, the intent of restoration and the strategy as a whole is to provide for ecologically healthy watershed, riparian, and aquatic ecosystems, as defined by the aquatic and riparian desired conditions. The phrase "ecologically healthy" refers to functions affecting biodiversity, productivity, biochemical, and evolutionary processes that are adapted to the environmental conditions in a given region (Karr et al. 1986; Karr 1991).

Watershed protection and restoration is designed to facilitate the recovery of watershed functions and related physical, biological, and chemical processes to promote recovery of riparian and aquatic composition, structure, and ecosystem function. Restoring the health and resiliency of selected watersheds will help ensure that the network of ecologically healthy watersheds remains well represented and distributed over time.

Watershed protection and restoration is a catalyst for initiating ecological recovery (FEMAT 1993). Restoration efforts will be comprehensive, addressing both protection of existing functioning aspects of a watershed and restoration of degraded or compromised aspects. It may not be possible to restore every watershed, and some restoration actions may only have limited success because of an extensive level of degradation. The effectiveness of restoration efforts is not likely to be extensive or immediately visible for some time. At the watershed scale, it may take an extended period (decades or longer) to observe the full effects of treatments. Even longer timeframes may be necessary to see changes at the regional scale.

Effective restoration at the watershed scale is a complex undertaking. Restoration programs require diagnosing watershed conditions and processes, identifying primary disturbance regimes (past, present, and future), and the ability to locate, design, and implement integrated treatments to achieve the desired, watershed-scale response. To be effective, these programs need to (1) target root causes of water quality, habitat and ecosystem change; (2) tailor restoration actions to local potential of the systems; (3) match the scale of restoration to the scale of the problem; and (4) be explicit about expected outcomes (Beechie et al. 2010). They also need to effectively prioritize and schedule restoration projects.

Implementation of the restoration component of the ARCS is to be accomplished through passive and active restoration, implemented with partners across whole watersheds. Use of strategic, programmatic framework described below will maximize the effectiveness of this work.

Passive and Active Restoration

Both passive and active restoration are needed to successfully restore watersheds (Roni et al. 2002). Passive restoration involves the protection, natural recovery, or both of watersheds and aquatic and riparian ecosystems. It is applied at the landscape scale as intended to enable ecosystems to accommodate or to resist and recover from large-scale disturbances, such as fire, floods, and debris flows as well as chronic disturbances. Passive restoration involves planning and implementing various resource management programs and activities (for example, fuels and timber management, recreation) in a way that maintains watershed and habitat conditions when they are in good condition and facilitates their recovery when they are not.

Active restoration involves implementation of integrated projects specifically designed to restore or accelerate recovery of specific ecosystem processes or to minimize threats to those processes. Active restoration is generally applied using integrated treatments (for example, fish passage, addressing sedimentation from roads, riparian and upslope vegetation treatment, instream habitat improvement, restoration of stream flows) that are strategically applied at multiple, priority sites within a watershed. It is focused and applied on a more limited scale (for example, specific sites in candidate key and priority watersheds) than passive restoration.

Active restoration should be prioritized to emphasize the protection and/or retention of existing high-quality habitat and water and naturally functioning watersheds and ecosystems. This is accomplished by identifying and treating major risk factors (for example, unstable roads or poorly located and drained roads, certain invasive plants and animals, major obstructions to physical and biological connectivity) threatening ecosystem integrity and likely to adversely influence existing conditions. Identification, prioritization, and integrated treatment of watersheds with limited loss of function and condition are also a

priority. These watersheds will likely serve as the next generation of refugia for fish and other aquatic-riparian biota and provide high-quality water in the future. Their selection should consider the extent of habitat degradation and the degree to which their natural diversity and ecological processes are retained (Reeves et al. 1995). Active restoration programs should consider and complement recovery plans for fish, water quality, and other riparian-dependent species. Watershed analyses will be critical to identify key ecological processes influencing watershed condition and function and will be important in identifying specific protection, treatment objectives or both. In cases where the full recovery of watershed functions and processes is not possible (for example, mixed ownerships without coordinated restoration opportunities, major dams and diversions for hydropower or other developments that influence large, important, or both portions of the floodplain or stream channel), mitigation treatments may be needed. These should incorporate design features to benefit aquatic and riparian-dependent resources. Proper management of Riparian Management Areas (RMAs, see Management Area 3A in Chapter 3) are a key element of both passive and active restoration. In some cases, for example, activities within these areas simply need to be managed in ways that protect these systems or to allow them to recover via natural processes. In other cases, active management (e.g., via vegetation management or stream or floodplain restoration) may be necessary to accelerate attainment of desired conditions.

Whole Watershed Approach and Partnerships

Water resources such as clean, cold water and healthy fish populations know no jurisdictional boundaries. To successfully fulfill agency responsibilities to maintain and restore these resources, work should be implemented across boundaries with willing neighbors and other partners in restoration. Restoration should be designed and implemented at the watershed scale. Treatment objectives and activities on National Forest System lands should be coordinated with other resource programs and with restoration on other ownerships. Watershed-scale restoration is an interdisciplinary effort requiring close coordination and working partnerships among multiple resource programs, other agencies, Tribal governments, watershed councils, adjacent landowners, collaborative groups, and other stakeholders and partners. Interdisciplinary skills provide both operational and technical capacity for implementing comprehensive watershed protection and restoration programs. Coordination and partnerships are essential to effectively address community and watershed-scale restoration needs and opportunities. Coordination also enhances skill and funding sources needed to sustain multi-year programs.

Programmatic Framework

In 2005, the Pacific Northwest Region began implementing a regional aquatic restoration strategy (USDA Forest Service 2005), providing a framework for the organization and implementation of restoration activities for the region. The intent of the PNW aquatic

restoration strategy is to maintain or restore watershed and aquatic and riparian habitat conditions at the regional scale, through both passive and active restoration. The PNW aquatic restoration strategy consists of three parts: 1) goals and objectives and actions, 2) program framework, and 3) restoration components. The goals, objectives, and actions section identify restoration goals and actions needed to achieve them. The program framework is the foundation of the strategy. It is a comprehensive, integrated restoration plan for the region, enhancing teamwork, coordination, and consistency across the program. The restoration components are groups of activities used to implement various program elements, including resource support activities, aquatic and riparian resource assessment, cooperation between state and federal salmon and watershed recovery programs, and technical support to the field.

Classifying Watershed Condition

Classification of watershed condition is the first step of the Watershed Condition Framework process. This classification is based on a standardized assessment of subwatersheds (12-digit hydrologic unit) across an entire national forest, using multiple condition indicators and attributes.

Additional details are provided in the Watershed Condition Classification Technical Guide (USDA Forest Service 2011b) and / or subsequent updates to that document. Results of broad-scale monitoring (e.g., AREMP and PIBO) should inform these classifications.

Prioritizing Watersheds for Restoration

The purpose of prioritization is to maximize the efficiency and effectiveness of the restoration program by focusing resources towards work in the most important watersheds. Forests may identify a long-term Key Watershed network. Due to capacity limitations, however, watershed-scale restoration work cannot be implemented across the entire Key Watershed network at one time or even during the life of a land management plan. Therefore, Forests will identify a smaller number of Priority Watersheds as the focus for near-term (e.g., 5-7 year timeframe) restoration. Priority watersheds are specified at the subwatershed (12-hydrologic unit) scale following the Watershed Condition Framework process. In general, they are a subset of the broader, longer-term Key Watershed network. Exceptions include situations where unique issues and restoration opportunities occur in areas outside of the Key Watershed network (e.g., unique partnerships, opportunities to address connectivity issues at larger scales). Priority watersheds are expected to change during the life of the land management plan as restoration objectives and actions are completed.

Developing Watershed Restoration Action Plans

Watershed restoration in the late 1980s and 1990s often focused on site-scale actions scattered across the landscape. As the practice evolved over the last several decades, it has become increasingly clear that, to be effective, restoration programs must implement a wide range of projects that address multiple impacts and threats at a watershed scale. This needs to be done in a phased and coordinated manner (Roni et al. 2002). Thus, after identifying potential Watershed Condition Framework priority watersheds, national forests will use watershed analyses, other assessments and monitoring to identify the full suite of essential restoration projects needed to restore the ecological conditions and processes in those areas at a whole watershed scale. This could include restoration of fish passage barriers, road system improvements or adjustments, stream and floodplain reconstruction, dam removal, restoration of instream flows, invasive species control, vegetation management and many other actions. This suite of essential projects should be designed to achieve specific and explicit restoration needs and objectives for the watershed, address the root causes (rather than symptoms) of degradation, be fit to the local ecological potential of the watershed and ecosystem, and be of sufficient scope and scale to address these problems (Beechie et al. 2010). In particular, water availability, stream flows and stream temperature should be considered. Identified restoration project should also be informed by and generally consistent with any applicable recovery plans for federally listed aquatic species, state water quality restoration plans, or both.

Per the Watershed Condition Framework, these projects, their general location, estimated costs, interested partners, and other information will be documented in a watershed restoration action plan for each Watershed Condition Framework priority watershed. In the preparation of watershed restoration action plans, consideration must be given to restoration actions located off National Forest System lands when those projects are essential to the restoration of the watershed and benefits national forest resources (for example, facilitating the upstream passage of rare fish species from private land onto National Forest System lands by implementing a passage project on downstream private lands).

Implementing Integrated Projects

Once a watershed restoration action plan is developed, essential restoration projects are implemented in a logical, phased, and coordinated way. For example, restoration of habitat connectivity is often one of the first restoration actions that should be completed in a watershed (Roni et al. 2002).

As described previously, restoration projects should be done in an interdisciplinary manner. Also, close coordination with other agencies, Tribal governments, watershed councils, adjacent landowners, collaboratives, and other stakeholders and partners is essential.

Tracking Restoration Accomplishments

Implementation of restoration actions will be tracked for individual essential restoration projects, as identified in a watershed restoration action plan for each Watershed Condition Framework (WCF) priority watershed. These will be recorded in corporate databases. In addition, once all essential projects are completed, per the Watershed Condition Framework, the watershed is considered to have been improved or restored. Similarly, this status is tracked in agency databases. Restoration project areas not specified as priority watersheds are also recorded in agency databases.

Monitoring, Verification and Adaptive Management

Monitoring and adaptive management are essential to ensuring the success of resource protection and restoration. As such, national forest units will incorporate monitoring and adaptive management as fundamental components of their passive and active restoration programs, as described in this section. In addition, implementation, effectiveness, and/or validation monitoring should be incorporated into project plans. Information gained from that monitoring should be shared to facilitate mutual learning and adaptive management.

Monitoring of the ARCS includes 3 components:

- Broad-scale aquatic and riparian status and trend
- Site-scale aquatic resource protection/passive restoration
- Site-scale aquatic resource active restoration

Broad-scale monitoring

This monitoring component focuses on the status and trend of aquatic and riparian conditions on National Forest System lands across the Interior Columbia River Basin. Resource status and trends are evaluated at subregional or provincial scales using monitoring protocols and analysis approaches developed by the PACFISH/INFISH Biological Opinion Monitoring Program (PIBO) program since the early 2000s. PIBO collects data for over 2,225 sites including randomly located and pre-selected sites. These data include attributes for stream habitat, riparian vegetation, aquatic macroinvertebrates, and stream temperature. Data are analyzed and summarized in key publications such as Roper et al. (2019) and Roper et al. (2022).

Site-scale monitoring of aquatic resource protection/passive restoration

This monitoring focuses on determining whether Standards and Guidelines for water quality and aquatic habitats, including Best Management Practices, are being implemented and are effective. Monitoring is conducted via 42 monitoring protocols covering virtually all agency actions, including management of fire and fuels, vegetation, roads, recreation, minerals, grazing, chemical uses, and water uses. Observations are made at individual project sites by

interdisciplinary teams and scored against standard criteria for implementation and effectiveness. Each national forests completes monitoring at 14 sites every two years. Results and needed adaptive management actions are summarized in reports over the same two-year period.

Site-scale monitoring of active restoration

The final monitoring component focuses on the implementation and effectiveness of active restoration projects specifically intended to improve aquatic resources. This monitoring is conducted as part the Watershed Condition Framework process. Two restoration projects are identified for monitoring during the development of a Watershed Restoration Action Plan for a priority watershed. Site-specific monitoring plans are developed and implemented to assess the implementation and effectiveness of the projects based on project objectives and expected outcomes during the monitoring period. Reports describe what worked well, whether problems occurred and why, and recommendations for changes to design or implementation of similar projects in the future. They also identify any needs or opportunities for more detailed data-driven monitoring or research to address critical uncertainties.

Appendix B: Proposed and Possible Actions

Proposed and possible actions refer to the activities that national forest staff anticipate occurring over the lifespan of the land management plan. These actions reflect the multiple-use opportunities or resource management programs that the staff expects to provide (36 CFR 219.7 (f) and (1)). They summarize the types of projects that may take place to maintain or move the national forests toward desired conditions.

Since the plan is a strategic document that provides general management guidance, the following items outline program strategies anticipated during the next 15 years.

The list of proposed and possible actions is not exhaustive, nor do these represent final decisions. Instead, they are projections of potential future activities within program areas that typical constitute the annual work plan for a national forest.

Ecological Integrity

Fire

Planned and natural ignition fire is managed to address excess fuels and restore the ecosystem processes essential in maintaining resilient landscapes. Fires are managed using current science, modern decision tools, and collaborative decision making. Prescribed fires are considered effective fuels management tool for restoring and maintaining fire-adapted systems; therefore, planned (prescribed) fire may be used in all management areas covered in this plan. Safety of fire personnel and the public is the highest priority. Actions related to treatment of fuels may include the following:

- Planned ignitions in any management area, as well as areas in the wildland-urban interface.
- Mechanical treatments, including commercial timber sales and noncommercial treatments, to reduce fuels.
- Natural ignitions may be monitored and managed for the contributions to achieving desired conditions as well as safety and fire suppression considerations.

Invasive Species

Proposed and Possible actions for invasive species and other undesirable species (terrestrial and aquatic plants and animals) strive to maintain areas free of invasive species or reduce their distribution to small areas, thereby limiting or eliminating their impacts on the viability

of native and desired nonnative species. Actions related to invasive species treatments may include:

- Using an array of tools (chemical, biological, manual, mechanical, and cultural) to suppress, contain, control or eradicate invasive species.
- Providing education and outreach programs designed to increase awareness of invasive species.
- Implementing preventative measures (such as pre- and post-work equipment sanitation, requiring certified weed-free seed and hay, or sequencing of activities) through annual operating instructions, permitting, contracting, and other national forest administrative processes.
- Collaborating with other agencies and entities to replace nonnative aquatic species with natives.
- Cooperating with Oregon and Washington State agencies, counties, local governments and other organizations to support a successful invasive species management program.

Aquatic and Riparian Ecosystems

Activities include both passive and active restoration to maintain and restore habitat and ecological conditions capable of supporting ground and surface hydrologic function and self-sustaining populations of native riparian-dependent plant and animal species. Passive restoration is the broad-scale, natural recovery of aquatic ecosystems and includes implementation of best management practices and designation of riparian management areas. Active restoration includes targeted management activities with the intention of restoring specific processes that restore aquatic and riparian habitat function. Activities for active restoration may include:

- Adding large woody debris to selected stream reaches to restore stream channel function and stability.
- Planting riparian vegetation for bank stability and shade.
- Treating invasive species to maintain or restore riparian and aquatic ecosystem function.
- Road system improvements or adjustments in riparian areas to maintain or restore watershed health and reduce sediment delivery to the aquatic ecosystem.
- Silvicultural and fuels treatments to enhance riparian structure and reduce fire risk.
- Treating upland roads to reduce water interception.

- Replacing or removing culverts to restore passage for native species, where appropriate, and to restore hydrologic function and sediment transport.
- Installing riparian area fencing.

Forested Vegetation

Vegetation management includes those activities that actively move vegetation towards desired conditions. Vegetation management might include activities that would maintain or increase representation of early seral, shade-intolerant, drought- and fire-tolerant, or insect- and disease- resistant species, and dominance types. Dominant vegetation types managed for may vary over time with forest and non-forest types appropriate for future conditions increasing in their distribution and proportion based on site specific conditions. Activities also could treat areas to maintain or improve forest resilience, natural diversity, and productivity, and to reduce negative impacts resulting from nonnative organisms. Specifically, the following types of actions may occur:

- Thinning forested and riparian stands to maintain or improve forest health and to produce a positive trend towards historic densities, composition, and structure.
- Regeneration of vegetation to mimic historic community composition and structure using a variety of silvicultural prescriptions.
- Planting blister rust resistant western white pine or whitebark pine.
- Pruning western white pine to reduce vulnerability to white pine blister rust.
- Pruning trees to reduce dwarf mistletoe infections.
- Girdling overstory trees infected with dwarf mistletoe to prevent spread to understory host trees.
- Maintaining or restoring rare plant habitat and unique ecological communities.
- Planting shade-intolerant, fire-adapted, drought resistant species.
- Managing stands to retain or move towards old forest characteristics.
- Treating invasive terrestrial plant species.
- Treating insects and diseases using integrated pest management techniques.

Wildlife

Successfully managing for habitats that will maintain viable populations of all native and desirable nonnative wildlife species requires a combination of minimizing threats while providing an adequate amount, quality, and distribution of habitat to meet species needs. Providing habitat that is within the historical range of variability will largely be achieved by

meeting the desired condition for other resources such as forest vegetation, rangeland, soil, and water quality. Activities might include:

- Prescribed burning within forest understories to maintain or restore wildlife habitat.
- Harvest of shade-tolerant trees to restore historical habitat conditions and associated surrogate species.
- Restoring wetland and riparian habitat to restore populations of amphibians.
- Utilize vegetation management and other activities to improve distribution of elk and encourage elk to remain on public lands.
- Treating invasive plant species to improve forage for wildlife.
- Planting vegetation for riparian dependent wildlife species.
- Removing unnecessary rangeland fencing to reduce mortality to wildlife.

Social and Economic Sustainability

The public expects a diversity of uses from National Forest System lands. Social well-being contributes to resilience in national forests by fostering public use patterns and restoration strategies that help support human communities, livelihoods, cultures, and social values. Actions within the national forest contribute to outputs and opportunities that support community infrastructure and may include:

- Contributing to and supporting local jobs and labor income within the counties surrounding the national forest through anticipated outputs associated with management activities such as forest products and grazing.
- Coordinating management plans and activities with state, county, local and Tribal governments.

Tribal Rights and Culturally Significant Foods

The Forest Service has certain legal responsibilities to American Indian Tribes that are clarified in statutes, executive orders, and enacted case law that is interpreted for the protection and benefit of federally recognized American Indian Tribes. Activities associated with American Indian Tribes may consist of:

- Continued habitat management of traditional use areas and development of management plans for ongoing consultation through a cooperatively established communication policy.

- Cooperatively established policy for continued access and acquisition of forest products for each federally recognized Tribe with historical or treaty interest for cultural uses.
- Ongoing government-to-government and staff consultation for each federally recognized Tribe with historical or treaty interests in National Forest System lands, through a cooperatively established communication policy.

Transportation Infrastructure

Road actions serve to maintain and improve the national forest transportation system to enhance recreation opportunity, provide administrative access for resource management, and reduce negative impacts on ecosystems and natural and cultural resources. Actions may include:

- Supporting permanent road construction and temporary road reconstruction actions.
- Implementing measures (such as education, signage, law enforcement, or seasonal road closures) to discourage encroachment of motorized vehicles into non-motorized areas.
- Conducting annual road maintenance on existing roads and implementing emergency repairs necessitated by natural events.

Recreation

Actions to support developed, dispersed, and backcountry recreation provide for a variety of recreational opportunities on the national forest. Possible recreation Actions may include the following:

- Implementing trail construction, reconstruction, maintenance, and relocation projects.
- Using volunteers and partners for trail maintenance.
- Implementing construction and reconstruction of facilities such as parking areas, toilets, trailheads, information kiosks, fishing access, and boating access points.
- Maintaining and upgrading facilities such as campgrounds, picnic areas, toilets, and parking lots.
- Maintaining and modifying dispersed recreation sites to reduce or eliminate impacts to natural and cultural resources.
- Providing special use permits for commercial recreation opportunities (such as resorts, ski areas, outfitters and guides, and special events).

- Providing recreational rental cabin and lookouts for public use.

Scenery

Actions to support and enhance scenic resources may be accomplished through maintenance, restoration, or enhancement of the natural landscape through use of the vegetation, wildlife and the aquatic and riparian tools and techniques.

Cultural Resources

Cultural resource actions ensure that significant archaeological and historical resources are identified, protected, and preserved for the benefit and enjoyment of the public and future generations. Heritage resources activities may consist of:

- Conducting surveys to identify significant sites, and follow-up actions necessary to protect, stabilize, or salvage sites.
- Identifying and evaluating heritage resources for the National Register of Historic Places.
- Stabilizing, rehabilitating, restoring, and stewarding heritage resources.
- Conducting deferred maintenance to historic facilities.
- Promoting heritage values through public education, outreach, and interpretative programs.
- Conducting scientific and historic research on heritage.

Forest Products

The supply of timber outputs contributes to a local forest products industry. Forest product actions may include:

- Using various harvest methods for timber production and tree cutting to achieve vegetation desired conditions and contribute to the local and regional economy.
- Salvaging dead or dying timber.
- Gathering of firewood, huckleberries, and other special forest products.

Rangeland, Forage, and Livestock Grazing

The annual amount of grazing that occurs within the national forest varies due to resource conditions and livestock markets. National forest staff adjusts the amount and timing of use based on forage utilization guidelines or other constraints. Activities may consist of:

- Continuing to permit livestock grazing.

- Completing environmental analyses, updating allotment management plans, using adaptive management to protect and manage allotment resources, while sustaining permitted livestock grazing.
- Building fences, constructing and maintaining water developments, managing invasive plants, implementing deferred or rest-rotation grazing systems, and improving livestock distribution.
- Working with permittees, states, counties, Tribes, and other organizations to maintain or improve rangeland conditions.

Land Special Uses

The National Forest System lands program emphasizes land acquisitions that protect and enhance identified management resource needs. The program also pursues opportunities to consolidate land ownership, decrease management conflicts, increase management efficiencies, secure and mark property boundaries, and secure rights-of-way to meet administrative and public needs. Special use permits provide a wide range of recreation and non-recreation special use permits that authorize the occupancy and use of National Forest System lands. Lands and special use program actions may include:

- Maintaining landlines and actions associated with adjusting national forest ownership through purchases, exchanges, or other conveyances.
- Permitting uses (such as easements), structures (such as communication towers), outfitters and guides, and special events.
- Implementing strategic land acquisitions.
- Issuing right-of-way authorizations.

Minerals, Energy, Geology

Minerals on the national forest include leasable energy minerals, saleable minerals, and locatable minerals. Mineral administration activities may consist of:

- Facilitating the orderly exploration, development, and production of mineral and energy resources within the National Forest System on lands open to these activities or on withdrawn lands consistent with valid existing rights.
- Processing mineral applications, operating plans, leases, licenses, permits, and other use authorizations efficiently and in a timely manner. Interacting with applicants and operators according to the principles of customer service.
- Planning for, providing, and maintaining access to and reasonably incident occupancy of National Forest System lands for mineral resource activities. Un-authorized occupancy and use is appropriately addressed.

- Restoring ecosystems and watersheds affected by past mining practices.
- Providing geologic expertise and scientific information necessary for sustained forest management and for watershed health and restoration.
- Managing and protecting paleontological resources.
- Administering through special use application and report, for free-use disposals.
- Establishing community pit areas to provide sources of mineral materials for small volume and noncommercial users.
- Disposing of mineral materials from community sites and common-use areas by negotiated sale or free-use permit.

Appendix C: Preliminary SCC List

The 2012 Planning Rule (36 CFR 219) defines a species of conservation concern (SCC) as:

"A species, other than a federally recognized threatened, endangered, proposed or candidate species, that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species' capability to persist over the long-term in the plan area" (36 CFR 219.9).

Revised Land Management Plans must be designed to sustain or restore habitat for SCC populations and ensure, to the extent possible, that these species can remain on the landscape over the long term. Stated simply, Land Management Plans help us maintain conditions that provide SCCs with the habitat they need to persist in the Plan area.

Below you will find the lists of potential SCC that are being considered. This list changes throughout the planning process as best available science is considered. Species rationales are available on the Blue Mountains Forest Plan Revision website https://www.fs.usda.gov/r06/umatilla/planning/species-conservation-concern in the Plan Revision Document Library, Species of Conservation Concern section.

Malheur National Forest

Preliminary Species of Conservation Concern - (105)

TAXONOMIC GROUP	SCIENTIFIC NAME	COMMON NAME
BIRDS	*Aegolius funereus*	Boreal owl
BIRDS	*Empidonax traillii*	Willow flycatcher
BIRDS	*Gymnorhinus cyanocephalus*	Pinyon jay
BIRDS	*Melanerpes lewis*	Lewis's woodpecker
BIRDS	*Picoides dorsalis / tridactylus*	American Three-toed woodpecker
BIRDS	*Psiloscops flammeolus*	Flammulated owl
BIRDS	*Sialia mexicana*	Western bluebird
BIRDS	*Sphyrapicus nuchalis*	Red-naped sapsucker
BIRDS	*Strix nebulosa*	Great gray owl
FISH	*Catostomus platyrhynchus*	Mountain sucker
FISH	*Entosphenus tridentatus*	Pacific lamprey
FISH	*Oncorhynchus clarkii lewisi*	Westslope cutthroat trout
FISH	*Oncorhynchus mykiss gairdneri*	Inland Columbia Basin redband trout
FISH	*Oncorhynchus mykiss* pop. 18	Oregon Great Basin redband trout
INVERT-BIVALVE	*Anodonta californiensis*	California floater
INVERT-BIVALVE	*Gonidea angulata*	Western ridged mussel
INVERT-BUMBLEBEE	*Bombus occidentalis*	Western bumble bee
INVERT-SNAIL	*Colligyrus depressus*	Harney Basin duskysnail
INVERT-SNAIL	*Juga caerulea*	Blue Mountain Juga
INVERT-SNAIL	*Pristinicola hemphilli*	Pristine springsnail

TAXONOMIC GROUP	SCIENTIFIC NAME	COMMON NAME
MAMMALS	*Brachylagus idahoensis*	Pygmy rabbit
MAMMALS	*Corynorhinus townsendii*	Townsend's big-eared bat
MAMMALS	*Martes caurina*	Pacific marten pop1
MAMMALS	*Myotis thysanodes*	Fringed myotis
MAMMALS	*Ovis canadensis*	Bighorn sheep
BRYOPHYTE	*Anoectangium aestivum*	Open container moss
BRYOPHYTE	*Anomobryum julaceum*	Slender silver moss
BRYOPHYTE	*Bryum calobryoides*	Beautiful Bryum
BRYOPHYTE	*Campylium stellatum*	Yellow stary fen moss
BRYOPHYTE	*Hygrohypnum cochleariifolium*	Ear leaf hygrohypnum
BRYOPHYTE	*Hypnum lindbergii*	Lindberg's Hypnum
BRYOPHYTE	*Hypnum pratense*	Meadow Hypnum
BRYOPHYTE	*Meesia uliginosa*	Swamp thread moss
BRYOPHYTE	*Mnium blyttii*	Blytt's leafy moss
BRYOPHYTE	*Orthotrichum euryphyllum*	Broad leaved bristlemoss
BRYOPHYTE	*Orthotrichum holzingeri*	Holzinger's bristlemoss
BRYOPHYTE	*Polytrichum strictum*	Hummock haircap
BRYOPHYTE	*Preissia quadrata*	Narrow mushroom-headed liverwort
BRYOPHYTE	*Pseudoleskeella tectorum*	Rooftop Leske's moss
BRYOPHYTE	*Racomitrium depressum*	Rockmoss
BRYOPHYTE	*Schistidium cinclidodonteum*	Long leaf bloom moss
BRYOPHYTE	*Schistidium tenerum*	Slender bloom moss
BRYOPHYTE	*Tortula mucronifolia*	Smooth leaf moss
BRYOPHYTE	*Tritomaria exsecta*	Cut notchwort
LICHEN	*Schaereria dolodes*	Tricky Lecidea
FUNGI	*Rhizopogon abietis*	False truffle
FUNGI	*Sparassis crispa*	Western cauliflower
VASCULAR PLANT	*Achnatherum pinetorum*	Pinewoods needlegrass
VASCULAR PLANT	*Adiantum pedatum*	Aleutian maidenhair fern
VASCULAR PLANT	*Allium punctum*	Dotted onion
VASCULAR PLANT	*Antennaria corymbosa*	Meadow pussy-toes
VASCULAR PLANT	*Asclepias cryptoceras* ssp. *davisii*	Davis's milkweed
VASCULAR PLANT	*Asclepias fascicularis*	Narrowleaf milkweed
VASCULAR PLANT	*Asclepias speciosa*	Showy milkweed
VASCULAR PLANT	*Astragalus diaphanus* var. *diurnus*	South Fork John Day milk-vetch
VASCULAR PLANT	*Astragalus tegetarioides*	Bastard kentrophyta
VASCULAR PLANT	*Boechera hastatula*	Hells Canyon rockcress
VASCULAR PLANT	*Boechera paddoensis*	Mt. Adams rockcress
VASCULAR PLANT	*Botrychium ascendens*	Upward-lobed moonwort
VASCULAR PLANT	*Botrychium crenulatum*	Crenulate moonwort
VASCULAR PLANT	*Botrychium lunaria*	Moonwort
VASCULAR PLANT	*Botrychium minganense*	Gray moonwort
VASCULAR PLANT	*Botrychium montanum*	Mountain grape-fern
VASCULAR PLANT	*Botrypus virginianus*	Rattlesnake fern
VASCULAR PLANT	*Callitriche trochlearis*	Wheel fruited water-starwort
VASCULAR PLANT	*Calochortus longebarbatus* var. *peckii*	Peck's mariposa-lily
VASCULAR PLANT	*Calyptridium roseum*	Rosy pussypaws

TAXONOMIC GROUP	SCIENTIFIC NAME	COMMON NAME
VASCULAR PLANT	*Carex heteroneura* var. *epapillosa*	Different nerve sedge
VASCULAR PLANT	*Carex idahoa*	Idaho sedge
VASCULAR PLANT	*Carex scirpoidea* ssp. *stenochlaena*	Alaskan single-spiked sedge
VASCULAR PLANT	*Castilleja viscidula*	Sticky paintbrush
VASCULAR PLANT	*Chamaecyparis nootkatensis*	Alaska yellow-cedar
VASCULAR PLANT	*Cryptantha simulans*	Pine woods cryptantha
VASCULAR PLANT	*Cymopterus nivalis*	Snowline spring-parsley
VASCULAR PLANT	*Erythranthe inflatula*	Disappearing monkeyflower
VASCULAR PLANT	*Ipomopsis tenuituba*	Rydberg's gilia
VASCULAR PLANT	*Juncus hemiendytus* var. *abjectus*	Least rush
VASCULAR PLANT	*Juncus hemiendytus* var. *hemiendytus*	Dwarf rush
VASCULAR PLANT	*Listera borealis*	Northern twayblade
VASCULAR PLANT	*Lomatium tarantuloides*	Spider biscuitroot
VASCULAR PLANT	*Luina serpentina*	Colonial luina
VASCULAR PLANT	*Lupinus lepidus* var. *cusickii*	Cusick's lupine
VASCULAR PLANT	*Mimulus washingtonensis* var. *washingtonensis*	Washington monkeyflower
VASCULAR PLANT	*Minuartia nuttallii* ssp. *fragilis*	Nuttall's sandwort
VASCULAR PLANT	*Ophioglossum pusillum*	Adder's-tongue
VASCULAR PLANT	*Phacelia minutissima*	Dwarf phacelia
VASCULAR PLANT	*Piptatheropsis exigua*	Little ricegrass
VASCULAR PLANT	*Pleuropogon oregonus*	Oregon semaphore grass
VASCULAR PLANT	*Polemonium viscosum*	Skunk polemonium
VASCULAR PLANT	*Polyctenium fremontii*	Fremont's combleaf
VASCULAR PLANT	*Polygonum gabrielae*	Gabriela's knotweed
VASCULAR PLANT	*Polystichum lemmonii*	Lemmon's hollyfern
VASCULAR PLANT	*Polystichum munitum*	Common sword fern
VASCULAR PLANT	*Potamogeton robbinsii*	Flatleaf pondweed
VASCULAR PLANT	*Potentilla versicolor* var. *darrachii*	Darrach's cinquefoil
VASCULAR PLANT	*Rhodiola integrifolia* ssp. *integrifolia*	Alpine sedum
VASCULAR PLANT	*Rotala ramosior*	Lowland toothcup
VASCULAR PLANT	*Salix glauca* ssp. *glauca* var. *villosa*	Glaucus willow
VASCULAR PLANT	*Salix nivalis*	Snow willow
VASCULAR PLANT	*Senecio sphaerocephalus*	Mountain-marsh butterweed
VASCULAR PLANT	*Silene scouleri* ssp. *scouleri*	Scouler's catchfly
VASCULAR PLANT	*Swertia perennis*	Swertia
VASCULAR PLANT	*Thelypodium eucosmum*	Arrow-leaf thelypody
VASCULAR PLANT	*Triglochin palustris*	Slender bog arrowgrass
VASCULAR PLANT	*Utricularia minor*	Lesser bladderwort

Umatilla National Forest

Preliminary Species of Conservation Concern - (133)

TAXONOMIC GROUP	SCIENTIFIC NAME	COMMON NAME
AMPHIBIANS	*Ascaphus montanus*	Rocky mountain tailed frog
BIRDS	*Aegolius funereus*	Boreal owl
BIRDS	*Empidonax traillii*	Willow flycatcher
BIRDS	*Melanerpes lewis*	Lewis's woodpecker
BIRDS	*Picoides albolarvatus*	White-headed woodpecker
BIRDS	*Picoides dorsalis / tridactylus*	American Three-toed woodpecker
BIRDS	*Psiloscops flammeolus*	Flammulated owl
BIRDS	*Sialia mexicana*	Western bluebird
BIRDS	*Sphyrapicus nuchalis*	Red-naped sapsucker
BIRDS	*Strix nebulosa*	Great gray owl
FISH	*Catostomus platyrhynchus*	Mountain sucker
FISH	*Cottus marginatus*	Margined sculpin
FISH	*Entosphenus tridentatus*	Pacific lamprey
FISH	*Oncorhynchus clarkii lewisi*	Westslope cutthroat trout
FISH	*Oncorhynchus mykiss gairdneri*	Inland Columbia Basin redband trout
INVERT-BIVALVE	*Anodonta californiensis*	California floater
INVERT-BIVALVE	*Gonidea angulata*	Western ridged mussel
INVERT-BUMBLEBEE	*Bombus occidentalis*	Western bumble bee
INVERT-SNAIL	*Cryptomastix hendersoni*	Columbia Gorge oregonian
INVERT-SNAIL	*Megomphix lutarius*	Umatilla megomphix
INVERT-SNAIL	*Pristiloma idahoense*	Thinlip tightcoil
INVERT-SNAIL	*Pristinicola hemphilli*	Pristine springsnail
INVERT-SNAIL	*Radiodiscus abietum*	Fir pinwheel
MAMMALS	*Antrozous pallidus*	Pallid bat
MAMMALS	*Brachylagus idahoensis*	Pygmy rabbit
MAMMALS	*Corynorhinus townsendii*	Townsend's big-eared bat
MAMMALS	*Euderma maculatum*	Spotted bat
MAMMALS	*Myotis thysanodes*	Fringed myotis
MAMMALS	*Ovis canadensis*	Bighorn sheep
BRYOPHYTE	*Barbilophozia lycopodioides*	Greater pawwort
BRYOPHYTE	*Bruchia bolanderi*	Bolander's pygmymoss
BRYOPHYTE	*Campylium stellatum*	Yellow stary fen moss
BRYOPHYTE	*Harpanthus flotovianus*	Great mountain flapwort
BRYOPHYTE	*Herzogiella seligeri*	Seliger's stump moss
BRYOPHYTE	*Lophozia gillmanii*	Gillman’s notchwort
BRYOPHYTE	*Oncophorus wahlenbergii*	Wahlenberg’s spur moss
BRYOPHYTE	*Ptilidium pulcherrimum*	Lovely fuzzwort
BRYOPHYTE	*Tortula mucronifolia*	Smooth leaf moss
LICHEN	*Chaenotheca chrysocephala*	Gold-cupped pin
LICHEN	*Chaenotheca subroscida*	Yellow pruina pin
LICHEN	*Collema curtisporum*	Needle-spored jelly lichen
LICHEN	*Collema quadrifidum*	Four-spored jelly lichen
LICHEN	*Leptogium teretiusculum*	Terete jelly lichen
FUNGI	*Albatrellus avellaneus*	Nut-brown Albatrellus

FUNGI	*Albatrellus flettii*	Blue knight
FUNGI	*Boletus pulcherrimus*	Red-pored bolete
FUNGI	*Polyozellus atrolazulinus*	Blue chanterelle
VASCULAR PLANT	*Achnatherum richardsonii*	Richardson's ricegrass
VASCULAR PLANT	*Allium campanulatum*	Sierra onion
VASCULAR PLANT	*Allium dictuon*	Blue mountain onion
VASCULAR PLANT	*Antennaria corymbosa*	Meadow pussy-toes
VASCULAR PLANT	*Asclepias fascicularis*	Narrowleaf milkweed
VASCULAR PLANT	*Asclepias speciosa*	Showy milkweed
VASCULAR PLANT	*Astragalus arthurii*	Arthur's milk-vetch
VASCULAR PLANT	*Astragalus conjunctus* var. *conjunctus*	Idaho milk-vetch
VASCULAR PLANT	*Astragalus cusickii* var. *cusickii*	Cusick's milk-vetch
VASCULAR PLANT	*Astragalus diaphanus* var. *diaphanus*	Transparent milk-vetch
VASCULAR PLANT	*Astragalus misellus* var. *misellus*	Pauper milk-vetch
VASCULAR PLANT	*Boechera cascadensis*	Cascade rockcress
VASCULAR PLANT	*Boechera davidsonii*	Davidson's rockcress
VASCULAR PLANT	*Bolandra oregana*	Oregon bolandra
VASCULAR PLANT	*Botrychium crenulatum*	Crenulate moonwort
VASCULAR PLANT	*Botrychium hesperium*	Western moonwort
VASCULAR PLANT	*Botrychium lunaria*	Moonwort
VASCULAR PLANT	*Botrychium minganense*	Gray moonwort
VASCULAR PLANT	*Botrychium montanum*	Mountain grape-fern
VASCULAR PLANT	*Botrychium paradoxum*	Twin-spiked moonwort
VASCULAR PLANT	*Botrychium pedunculosum*	Stalked moonwort
VASCULAR PLANT	*Botrypus virginianus*	Rattlesnake fern
VASCULAR PLANT	*Calamagrostis tweedyi*	Tweedy's reedgrass
VASCULAR PLANT	*Calochortus longebarbatus* var. *longebarbatus*	Long-bearded mariposa-lily
VASCULAR PLANT	*Calochortus macrocarpus* var. *maculosus*	Green-band mariposa-lily
VASCULAR PLANT	*Cardamine holmgrenii*	Holmgren's bittercress
VASCULAR PLANT	*Carex cordillerana*	Cordilleran sedge
VASCULAR PLANT	*Carex micropoda*	Pyrenaean sedge
VASCULAR PLANT	*Carex praeceptorum*	Teacher's sedge
VASCULAR PLANT	*Carex saxatilis*	Russet sedge
VASCULAR PLANT	*Castilleja viscidula*	Sticky paintbrush
VASCULAR PLANT	*Coptis occidentalis*	Western goldthread
VASCULAR PLANT	*Cryptantha grandiflora*	Clearwater cryptantha
VASCULAR PLANT	*Cryptantha simulans*	Pine woods cryptantha
VASCULAR PLANT	*Cypripedium fasciculatum*	Clustered lady's-slipper
VASCULAR PLANT	*Dracocephalum parviflorum*	American dragonhead
VASCULAR PLANT	*Epipactis gigantea*	Giant helleborine
VASCULAR PLANT	*Erigeron disparipilus*	White cushion erigeron
VASCULAR PLANT	*Eriogonum thymoides*	Thyme-leaved buckwheat
VASCULAR PLANT	*Hierochloe odorata*	Hairy sweetgrass
VASCULAR PLANT	*Ipomopsis tenuituba*	Rydberg's gilia
VASCULAR PLANT	*Isoetes minima*	Midget quillwort
VASCULAR PLANT	*Juncus hemiendytus* var. *abjectus*	Least rush
VASCULAR PLANT	*Juncus hemiendytus* var. *hemiendytus*	Dwarf rush

VASCULAR PLANT	*Juncus howellii*	Howell's rush
VASCULAR PLANT	*Juncus kelloggii*	Kellogg's rush
VASCULAR PLANT	*Listera borealis*	Northern twayblade
VASCULAR PLANT	*Lomatium pastorale*	Meadow lomatium
VASCULAR PLANT	*Lomatium rollinsii*	Rollins' lomatium
VASCULAR PLANT	*Lomatium tarantuloides*	Spider biscuitroot
VASCULAR PLANT	*Lupinus lepidus* var. *cusickii*	Cusick's lupine
VASCULAR PLANT	*Melica smithii*	Smith's melicgrass
VASCULAR PLANT	*Muhlenbergia glomerata*	Marsh muhly
VASCULAR PLANT	*Oenanthe sarmentosa*	Pacific Water-parsley
VASCULAR PLANT	*Pellaea breweri*	Brewer's cliff-brake
VASCULAR PLANT	*Pellaea bridgesii*	Bridges' cliff-brake
VASCULAR PLANT	*Penstemon pennellianus*	Blue Mountain penstemon
VASCULAR PLANT	*Penstemon wilcoxii*	Wilcox's penstemon
VASCULAR PLANT	*Persicaria punctata*	Dotted smartweed
VASCULAR PLANT	*Phlox multiflora*	Many-flowered phlox
VASCULAR PLANT	*Phlox solivagus*	Lonely phlox
VASCULAR PLANT	*Polygonum austiniae*	Austin's knotweed
VASCULAR PLANT	*Polystichum lemmonii*	Lemmon's hollyfern
VASCULAR PLANT	*Potamogeton praelongus*	White-stem pondweed
VASCULAR PLANT	*Potamogeton robbinsii*	Flatleaf pondweed
VASCULAR PLANT	*Potentilla versicolor* var. *darrachii*	Darrach's cinquefoil
VASCULAR PLANT	*Pyrrocoma hirta* var. *sonchifolia*	Sticky goldenweed
VASCULAR PLANT	*Pyrrocoma scaberula*	Rough pyrrocoma
VASCULAR PLANT	*Rhodiola integrifolia* ssp. *integrifolia*	Alpine sedum
VASCULAR PLANT	*Ribes oxyacanthoides* ssp. *irriguum*	idaho gooseberry
VASCULAR PLANT	*Ribes wolfii*	Wolf's currant
VASCULAR PLANT	*Rorippa columbiae*	Columbia cress
VASCULAR PLANT	*Rupertia physodes*	forest scurfpea
VASCULAR PLANT	*Salix farriae*	Farr's willow
VASCULAR PLANT	*Salix nivalis*	Snow willow
VASCULAR PLANT	*Senecio sphaerocephalus*	Mountain-marsh butterweed
VASCULAR PLANT	*Silene scouleri* ssp. *scouleri*	Scouler's catchfly
VASCULAR PLANT	*Spartina pectinata*	Prairie cordgrass
VASCULAR PLANT	*Struthiopteris spicant*	deer fern
VASCULAR PLANT	*Suksdorfia violacea*	Violet suksdorfia
VASCULAR PLANT	*Swertia perennis*	Swertia
VASCULAR PLANT	*Thelypodium eucosmum*	Arrow-leaf thelypody
VASCULAR PLANT	*Trifolium douglasii*	Douglas' clover
VASCULAR PLANT	*Trifolium plumosum* ssp. *plumosum*	Plumed clover
VASCULAR PLANT	*Trollius albiflorus*	American globeflower
VASCULAR PLANT	*Valeriana edulis*	Tobacco root

Wallowa-Whitman National Forest

Preliminary Species of Conservation Concern – (174)

TAXONOMIC GROUP	SCIENTIFIC NAME	COMMON NAME
AMPHIBIANS	*Ascaphus montanus*	Rocky mountain tailed frog
AMPHIBIANS	*Rana luteiventris*	Columbia spotted frog
BIRDS	*Aegolius funereus*	Boreal owl
BIRDS	*Empidonax traillii*	Willow flycatcher
BIRDS	*Leucosticte tephrocotis wallowa*	Wallowa rosy finch
BIRDS	*Melanerpes lewis*	Lewis's woodpecker
BIRDS	*Picoides albolarvatus*	White-headed woodpecker
BIRDS	*Picoides dorsalis / tridactylus*	American Three-toed woodpecker
BIRDS	*Pinicola enucleator*	Pine grosbeak
BIRDS	*Psiloscops flammeolus*	Flammulated owl
BIRDS	*Sialia mexicana*	Western bluebird
BIRDS	*Sphyrapicus nuchalis*	Red-naped sapsucker
BIRDS	*Strix nebulosa*	Great gray owl
FISH	*Catostomus platyrhynchus*	Mountain sucker
FISH	*Entosphenus tridentatus*	Pacific lamprey
FISH	*Oncorhynchus clarkii lewisi*	Westslope cutthroat trout
FISH	*Oncorhynchus mykiss gairdneri*	Inland Columbia Basin redband trout
INVERT-BIVALVE	*Gonidea angulata*	Western ridged mussel
INVERT-BUMBLEBEE	*Bombus occidentalis*	Western bumble bee
INVERT-BUTTERFLY	*Euphydryas gillettii*	Gillett’s checkerspot
INVERT-BUTTERFLY	*Ochlodes yuma*	Yuma skipper
INVERT-SNAIL	*Cryptomastix hendersoni*	Columbia Gorge oregonian
INVERT-SNAIL	*Fisherola nuttalli*	Shortface lanx
INVERT-SNAIL	*Fluminicola fuscus*	Columbia pebblesnail (Ashy pebblesnail)
INVERT-SNAIL	*Megomphix lutarius*	Umatilla megomphix
INVERT-SNAIL	*Pristiloma idahoense*	Thinlip tightcoil
INVERT-SNAIL	*Pristiloma wascoense*	Shiny tightcoil
INVERT-SNAIL	*Pristinicola hemphilli*	Pristine springsnail
INVERT-SNAIL	*Radiodiscus abietum*	Fir pinwheel
MAMMALS	*Antrozous pallidus*	Pallid bat
MAMMALS	*Corynorhinus townsendii*	Townsend's big-eared bat
MAMMALS	*Euderma maculatum*	Spotted bat
MAMMALS	*Myotis thysanodes*	Fringed myotis
MAMMALS	*Ovis canadensis*	Bighorn sheep
BRYOPHYTE	*Anomobryum julaceum*	Slender silver moss
BRYOPHYTE	*Bruchia bolanderi*	Bolander's pygmymoss
BRYOPHYTE	*Campylium stellatum*	Yellow stary fen moss
BRYOPHYTE	*Harpanthus flotovianus*	Great mountain flapwort
BRYOPHYTE	*Hygrohypnum alpinum*	Alpine brook moss
BRYOPHYTE	*Hypnum lindbergii*	Lyndberg’s Hypnum
BRYOPHYTE	*Hypnum pratense*	Meadow Hypnum
BRYOPHYTE	*Jungermannia polaris*	Arctic flapwort
BRYOPHYTE	*Lophozia gillmanii*	Gillman’s notchwort
BRYOPHYTE	*Meesia uliginosa*	Swamp thread moss

BRYOPHYTE	*Mielichhoferia elongata*	Elongate copper moss
BRYOPHYTE	*Mnium blyttii*	Blytt's leafy moss
BRYOPHYTE	*Orthotrichum euryphyllum*	Broad leaved bristlemoss
BRYOPHYTE	*Orthotrichum pellucidum*	Pale bristlemoss
BRYOPHYTE	*Peltolepis quadrata*	Shieldscale liverwort
BRYOPHYTE	*Preissia quadrata*	Narrow mushroom-headed liverwort
BRYOPHYTE	*Ptilium crista-castrensis*	Knight's plume moss
BRYOPHYTE	*Schistidium cinclidodonteum*	Long leaf bloom moss
BRYOPHYTE	*Tortella tortuosa* var. *tortuosa*	Frizzled crisp moss
LICHEN	*Collema curtisporum*	Needle-spored jelly lichen
LICHEN	*Dermatocarpon polyphyllizum*	Stippleback
LICHEN	*Evernia divaricata*	Mountain oakmoss
LICHEN	*Hypogymnia tuckerae*	Tucker's tubelichen
LICHEN	*Leptogium teretiusculum*	Terete jelly lichen
LICHEN	*Peltigera cinnamomea*	Cinnamon Dog Pelt
LICHEN	*Peltigera lepidophora*	Scaly Pelt
LICHEN	*Solorina spongiosa*	Socket lichen
LICHEN	*Tholurna dissimilis*	Arboreal urn lichen
FUNGI	*Albatrellus avellaneus*	Nut-brown Albatrellus
FUNGI	*Albatrellus flettii*	Blue Knight
FUNGI	*Catathelasma ventricosa*	Fungus
FUNGI	*Polyozellus atrolazulinus*	Blue chanterelle
FUNGI	*Rhizopogon abietis*	False truffle
FUNGI	*Rhizopogon subclavitisporus*	Subclavate false truffle
VASCULAR PLANT	*Achnatherum nevadense*	Nevada needlegrass
VASCULAR PLANT	*Achnatherum richardsonii*	Richardson's ricegrass
VASCULAR PLANT	*Achnatherum wallowaense*	Wallowa ricegrass
VASCULAR PLANT	*Allium campanulatum*	Sierra onion
VASCULAR PLANT	*Allium geyeri* var. *geyeri*	Geyer's onion
VASCULAR PLANT	*Allium punctum*	Dotted onion
VASCULAR PLANT	*Antennaria corymbosa*	Meadow pussy-toes
VASCULAR PLANT	*Asclepias cryptoceras* ssp. *davisii*	Davis's milkweed
VASCULAR PLANT	*Asclepias fascicularis*	Narrowleaf milkweed
VASCULAR PLANT	*Asclepias speciosa*	Showy milkweed
VASCULAR PLANT	*Asplenium viride*	Green spleenwort
VASCULAR PLANT	*Astragalus conjunctus* var. *conjunctus*	Idaho milk-vetch
VASCULAR PLANT	*Astragalus robbinsii* var. *alpiniformis*	Wallowa milk-vetch
VASCULAR PLANT	*Boechera davidsonii*	Davidson's rockcress
VASCULAR PLANT	*Boechera hastatula*	Hells canyon rockcress
VASCULAR PLANT	*Boechera paddoensis*	Mt. Adams rockcress
VASCULAR PLANT	*Bolandra oregana*	Oregon bolandra
VASCULAR PLANT	*Botrychium ascendens*	Upward-lobed moonwort
VASCULAR PLANT	*Botrychium campestre*	Prairie moonwort
VASCULAR PLANT	*Botrychium crenulatum*	Crenulate moonwort
VASCULAR PLANT	*Botrychium hesperium*	Western moonwort
VASCULAR PLANT	*Botrychium lineare*	Slender moonwort
VASCULAR PLANT	*Botrychium lunaria*	Moonwort
VASCULAR PLANT	*Botrychium paradoxum*	Twin-spiked moonwart
VASCULAR PLANT	*Botrychium pedunculosum*	Stalked moonwort
VASCULAR PLANT	*Bupleurum americanum*	Bupleurum

VASCULAR PLANT	*Calochortus longebarbatus* var. *longebarbatus*	long-bearded mariposa-lily
VASCULAR PLANT	*Calochortus macrocarpus* var. *maculosus*	Green-band mariposa-lily
VASCULAR PLANT	*Calyptridium roseum*	Rosy pussypaws
VASCULAR PLANT	*Cardamine holmgrenii*	Holmgren's bittercress
VASCULAR PLANT	*Carex atrosquama*	Blackened sedge
VASCULAR PLANT	*Carex capillaris*	Hairlike sedge
VASCULAR PLANT	*Carex concinna*	Low northern sedge
VASCULAR PLANT	*Carex gynocrates*	Yellow bog sedge
VASCULAR PLANT	*Carex media*	Intermediate sedge
VASCULAR PLANT	*Carex micropoda*	Pyrenaean sedge
VASCULAR PLANT	*Carex nardina*	Spikenard sedge
VASCULAR PLANT	*Carex pelocarpa*	Dusky sedge
VASCULAR PLANT	*Carex praeceptorum*	Teacher's sedge
VASCULAR PLANT	*Carex retrorsa*	Retrorse sedge
VASCULAR PLANT	*Carex saxatilis*	Russet sedge
VASCULAR PLANT	*Carex subnigricans*	Dark alpine sedge
VASCULAR PLANT	*Castilleja flava* var. *rustica*	Rural paintbrush
VASCULAR PLANT	*Castilleja fraterna*	Fraternal paintbrush
VASCULAR PLANT	*Castilleja rubida*	Purple alpine paintbrush
VASCULAR PLANT	*Chlorocrambe hastata*	Spearhead
VASCULAR PLANT	*Cryptantha grandiflora*	Clearwater cryptantha
VASCULAR PLANT	*Cryptantha simulans*	Pine woods cryptantha
VASCULAR PLANT	*Cryptogramma stelleri*	Steller's rockbrake
VASCULAR PLANT	*Cypripedium fasciculatum*	Clustered lady's-slipper
VASCULAR PLANT	*Diphasiastrum complanatum*	Ground cedar
VASCULAR PLANT	*Draba cyclomorpha*	Wallowa draba
VASCULAR PLANT	*Dracocephalum parviflorum*	American dragonhead
VASCULAR PLANT	*Epipactis gigantea*	giant helleborine
VASCULAR PLANT	*Erigeron disparipilus*	White cushion erigeron
VASCULAR PLANT	*Eriogonum scopulorum*	Cliff buckwheat
VASCULAR PLANT	*Eriogonum thymoides*	Thyme-leaved buckwheat
VASCULAR PLANT	*Erythranthe hymenophylla*	Membrane-leaved monkeyflower
VASCULAR PLANT	*Geum rossii* var. *turbinatum*	Slender-stemmed avens
VASCULAR PLANT	*Ipomopsis tenuituba*	Rydberg's gilia
VASCULAR PLANT	*Juncus hemiendytus* var. *hemiendytus*	Dwarf rush
VASCULAR PLANT	*Juncus triglumis* var. *albescens*	Three-flowered rush
VASCULAR PLANT	*Kobresia myosuroides*	Bellard's kobresia
VASCULAR PLANT	*Kobresia simpliciuscula*	Simple kobresia
VASCULAR PLANT	*Lipocarpha aristulata*	Aristulate lipocarpha
VASCULAR PLANT	*Listera borealis*	Northern twayblade
VASCULAR PLANT	*Lomatium erythrocarpum*	Red-fruited lomatium
VASCULAR PLANT	*Lomatium filicinum*	Basalt desert parsley
VASCULAR PLANT	*Lomatium greenmanii*	Greenman's desert-parsley
VASCULAR PLANT	*Lomatium pastorale*	Meadow lomatium
VASCULAR PLANT	*Lomatium tarantuloides*	Spider biscuitroot
VASCULAR PLANT	*Lupinus sabinianus*	Sabin's lupine
VASCULAR PLANT	*Melica smithii*	Smith's melicgrass
VASCULAR PLANT	*Myosurus clavicaulis*	Mousetail
VASCULAR PLANT	*Ophioglossum pusillum*	Adder's-tongue

VASCULAR PLANT	*Packera porteri*	Porter's butterweed
VASCULAR PLANT	*Pediocactus nigrispinus*	Snowball cactus
VASCULAR PLANT	*Penstemon pennellianus*	Blue Mountain penstemon
VASCULAR PLANT	*Phacelia minutissima*	Dwarf phacelia
VASCULAR PLANT	*Phlox mollis*	Soft phlox
VASCULAR PLANT	*Phlox multiflora*	Many-flowered phlox
VASCULAR PLANT	*Pinus flexilis*	Limber pine
VASCULAR PLANT	*Platanthera obtusata*	Small northern bog-orchid
VASCULAR PLANT	*Poa wallowensis*	Wallowa bluegrass
VASCULAR PLANT	*Polemonium viscosum*	Skunk polemonium
VASCULAR PLANT	*Polyctenium fremontii*	Fremont's combleaf
VASCULAR PLANT	*Polygonum parryi*	Parry's knotweed
VASCULAR PLANT	*Potamogeton praelongus*	White-stem pondweed
VASCULAR PLANT	*Primula cusickiana*	Cusick's primrose
VASCULAR PLANT	*Pyrrocoma scaberula*	Rough pyrrocoma
VASCULAR PLANT	*Rhodiola integrifolia* ssp. *integrifolia*	Alpine sedum
VASCULAR PLANT	*Ribes wolfii*	Wolf's currant
VASCULAR PLANT	*Rubus bartonianus*	Bartonberry
VASCULAR PLANT	*Salix farriae*	Farr's willow
VASCULAR PLANT	*Salix nivalis*	Snow willow
VASCULAR PLANT	*Salix wolfii*	Wolf's willow
VASCULAR PLANT	*Saxifraga adscendens* ssp. *oregonensis*	Wedge-leaf saxifrage
VASCULAR PLANT	*Silene scouleri* ssp. *scouleri*	Scouler's catchfly
VASCULAR PLANT	*Stuckenia filiformis* ssp. *alpina*	Northern slender-leaved pondweed
VASCULAR PLANT	*Swertia perennis*	Swertia
VASCULAR PLANT	*Townsendia montana*	Mountain townsendia
VASCULAR PLANT	*Townsendia parryi*	Parry's townsendia
VASCULAR PLANT	*Trifolium douglasii*	Douglas' clover
VASCULAR PLANT	*Trollius albiflorus*	American globeflower
VASCULAR PLANT	*Pyrrocoma hirta* var. *sonchifolia*	Sticky goldenweed
VASCULAR PLANT	*Valeriana edulis*	Tobacco root

Appendix D: Scenic Integrity

Scenic integrity is a measure of how well a landscape maintains its natural appearance and visual qualities. Very high to high scenic integrity indicates minimal visible disruption to the landscape's natural character, while lower scenic integrity suggests more noticeable alterations. Scenic integrity objectives do not constrain management activities in and of themselves; rather they help guide the design and implementation of projects to minimize visual impacts and contribute to the overall desired condition for the landscape.

Scenic Character Descriptions

Malheur National Forest

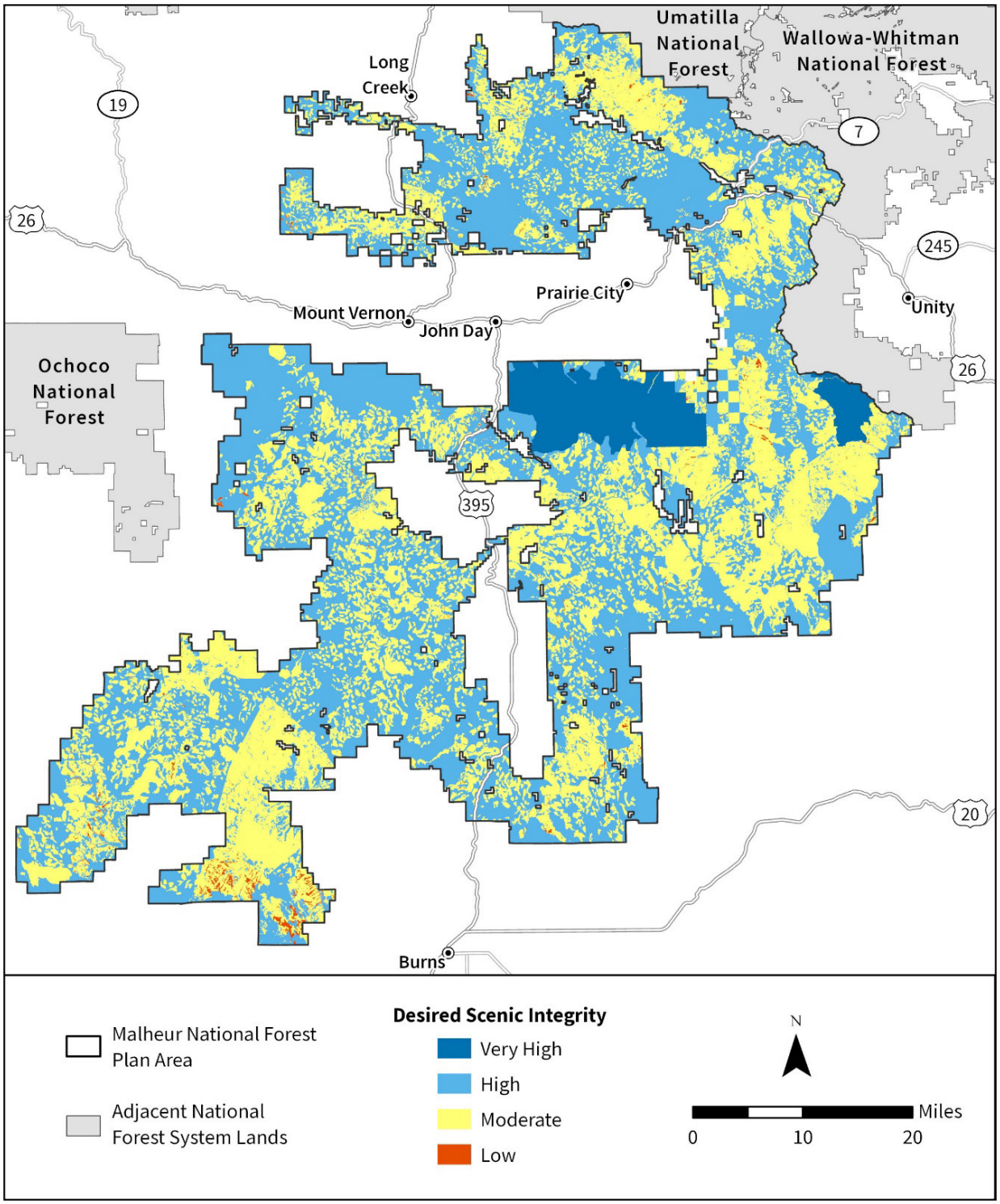
The Malheur National Forest is in eastern Oregon, midway between the borders of Washington, Idaho and Nevada. The Strawberry Mountain Range, part of the Blue Mountains, extends east to west through the center of the forest. This range splits the Forest into two geologic provinces, the Columbia Basin to the north and the Great Basin to the south. Elevations range from 3,900 feet at the forest boundary south of Mount Vernon, Oregon to just over 9,000 feet on the high peaks and backbones of the Strawberry and Aldrich Mountain ranges. The scenic qualities attract thousands of visitors every year. Grasslands, foothills, mountains, canyons and valleys provide a unique combination of landforms and topography. Grasslands, sage and juniper, forests of pine, fir and other tree species form a scenic vegetative mosaic. Landscapes vary with deep river canyons layered with gently sloping upland benches that are vertically cut by steep, V-shaped drainages, and rocky outcroppings. Heavy timbered stringers and hidden natural treasures including alpine lakes and meadows, ponds, reservoirs and flowing rivers and streams provide aesthetic recreational settings throughout the area.

Umatilla National Forest

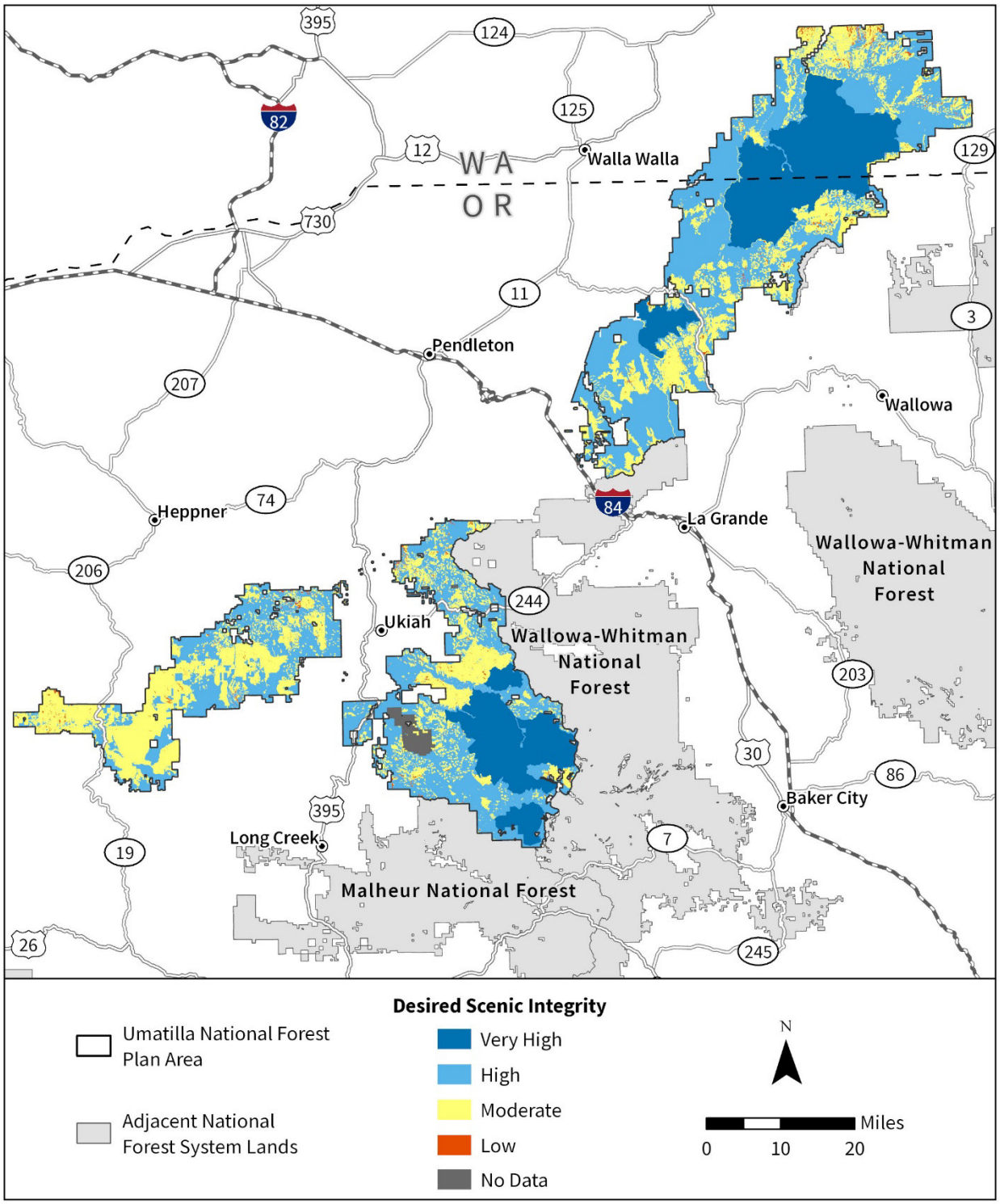
The Umatilla National Forest is in northeastern Oregon and southeastern Washington. The forest is divided roughly in halves by Interstate Highway 84. The north half extends into Washington and is bordered partially on the west by the Umatilla Indian Reservation and on the southeast flank by the Wallowa-Whitman National Forest. The south half is bordered on the east by the Wallowa-Whitman National Forest and on the south by the Malheur National Forest. The geologic history of the area has shaped the landscape into a unique combination of landforms and vegetative patterns. The Forest has some mountainous terrain but most of the area has V-shaped valleys separated by narrow ridges or plateaus. Deep river canyons separate steep timbered cliffs which rise to grass covered plateaus. The landscape includes heavily timbered slopes, grassland ridges and benches and bold basalt outcroppings with elevations ranging from 1,600 feet to 8,000 feet.

Wallowa-Whitman National Forest

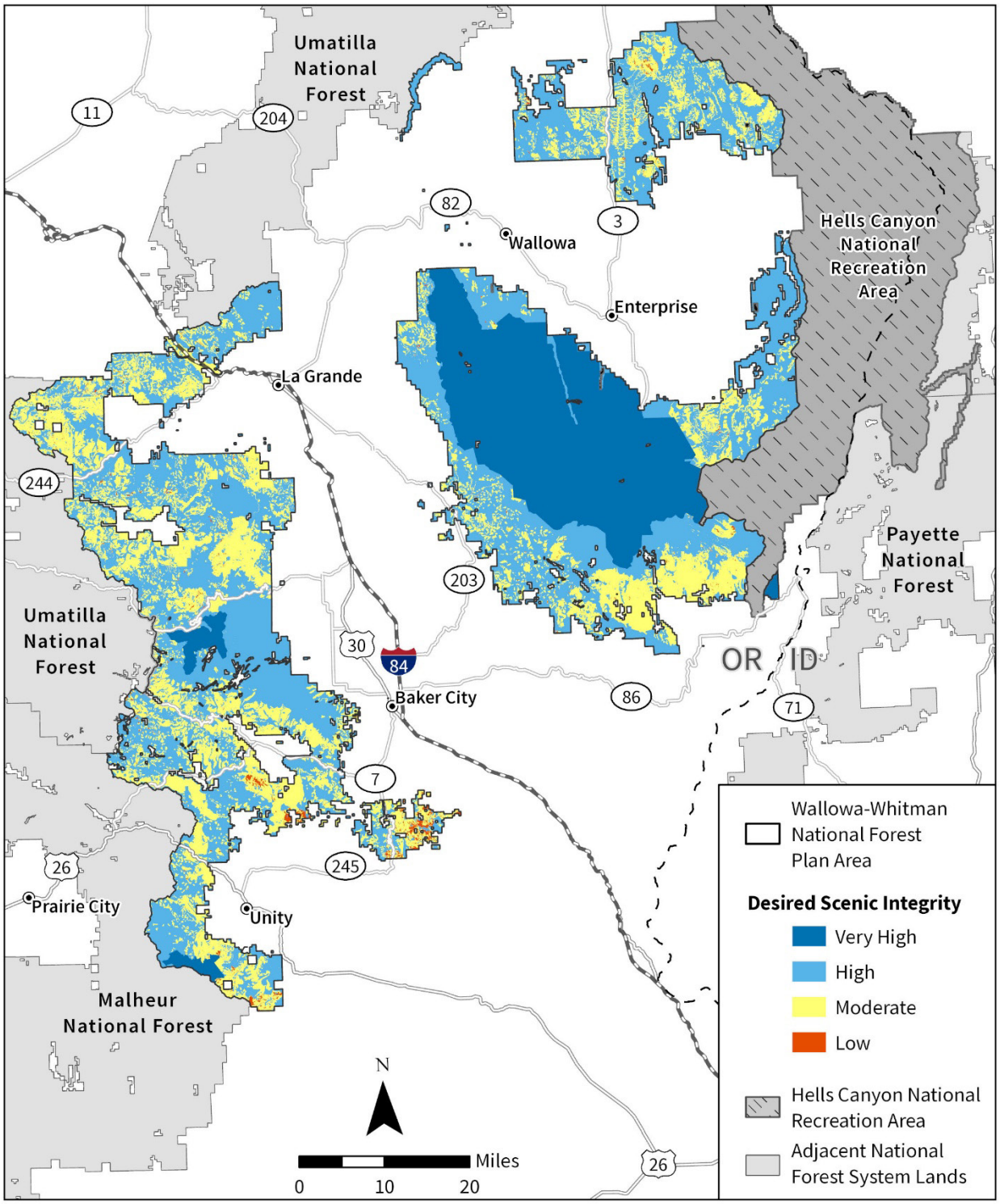
The Wallowa-Whitman National Forest is in the northeastern corner of Oregon and the west central edge of Idaho. The complex geological history of the area including floods, volcanic eruptions, landslides, and erosion has shaped the landscape into a unique combination of landforms and vegetative patterns. Elevations range from less than 2,000 feet at the bottom of Hells Canyon, the deepest gorge in North America, to nearly 10,000 feet at the top of the Wallowa Mountains in Oregon and the Seven Devils Mountains in Idaho. The landscape varies with deep river canyons layered with gently sloping upland benches that are vertically cut by steep, V-shaped drainages. Rocky outcroppings and high peaks of about 9,000 feet protrude along the backbone of the Elkhorn, Wallowa, and Wenaha Mountain ranges. This combination of geology and topography produces a distinctive, mosaic pattern of dense, heavily forested slopes interspersed with open, rugged shrublands and grasslands. Sparse scattered ponderosa pine and junipers dot the landscapes. Hidden natural treasures including alpine lakes and meadows, ponds, reservoirs and flowing rivers and streams provide aesthetic recreational settings throughout the area.



Map 1. Desired Scenic Integrity for the Malheur National Forest



Map 2. Desired Scenic Integrity for the Umatilla National Forest



Map 3. Desired Scenic Integrity for the Wallowa-Whitman National Forest

Appendix E: Recreation Opportunity Spectrum

The Recreation Opportunity Spectrum (ROS) is the Forest Service's management tool to define, classify, allocate and manage desired recreation settings and opportunities. The Forest Service is required to use ROS as a means to subdivide a forest by desired physical, social and managerial characteristics to provide a setting for compatible recreation activities. Recreation planning and ROS are based on the premise that people want variety or diversity in recreation opportunities. The ROS defines recreation settings and categorizes them into six distinct classes: primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, rural, and urban. Each class provides a different setting and opportunities to engage in activities that result in different user experiences. These ROS classes are defined in the glossary under Recreation Opportunity Spectrum Classes.

The ROS establishes expectations and informs the management of settings when making decisions on facility and infrastructure design and development. ROS does not eliminate or allow a specific activity in and of itself but informs decisions on overall management of settings. Management activities that do not affect the overall recreational setting of an area are not necessarily constrained by the ROS class assigned to that area. For example, habitat restoration work could be implemented in an area with a desired ROS class of primitive provided that after implementation, the overall setting characteristics (physical, social and managerial) remain largely unchanged, (see the ROS Class definitions in the glossary).

In the Blue Mountains National Forests, desired ROS class(es) were assigned to each management area which describe the desired recreational settings within the management area. See Desired ROS Class Table (Table 32) in Appendix E and Management Area Maps (Figure 6 through Figure 8).

Many management areas incorporate a range of desired ROS classes. Activities or site-specific projects proposed in these management areas should be consistent with existing ROS class(es) in the project area as practicable. When a project or activity would cause a shift from the existing ROS class(es), the change should be analyzed and documented in the project record and the new ROS class should be reflected in the ROS inventory for the forest. See FW-REC-MAPR-03.

Table 32: Desired ROS Classes by Management Area

Individual management areas often have a range of types of uses. ROS does not eliminate, restrict, or allow a specific activity in and of itself but informs decisions on overall management of recreational opportunities and settings.

	Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
1A –Wilderness Area	X					
1B – Recommended Wilderness Area[2]	X	X				
1C – Wilderness Study Area	X					
1D – Wild, Scenic, and Recreation River						
Wild[2]	X	X				
Scenic[2]		X	X			
Recreational[2]			X	X		
1E – Nationally Designated Trail	Depends[1]					
2A – Inventoried Roadless Area[2*]		X	X			
2B – Research Natural Area[2]	X	X	X	X		
2C – Botanical Area[2]		X	X	X	X	
2D – Geological Area[2]		X	X	X	X	
2E – Historical Area				X		
2F – Scenic Area[2]			X	X		
2G – Scenic Byways and All-American Road	Depends[1]					
2H – Starkey Experimental Area			X			
2I – Murderers Creek Wildhorse Territory[2]		X	X			
2J – National Natural Landmark	X					
3A – Riparian Management Area	Depends[1]					
3B – Municipal Watershed[2]	X	X	X			
4 – General Forest[2]		X	X	X		
5 – Developed Site and Administrative Area[2]				X	X	

[1]Desired ROS classes for management areas 1E (National Trail), 2G (Scenic Byway), and 3A (Riparian Management Area) depend on, and ultimately correspond with the desired ROS class through which these corridors pass.

[2]Incorporates a range of desired ROS classes. All lands are assigned a desired ROS class based on physical, social and managerial characteristics. See Management Area Map (Figure 6 through Figure 8).

*We are aware of the pending rules change regarding inventoried roadless areas and will analyze those in the EIS alternatives as those changes are developed.

Appendix F: Wilderness Evaluation

The Forest Service must identify and evaluate lands that may be suitable for inclusion in the National Wilderness Preservation System and determine whether to recommend to Congress any such lands for wilderness (2012 Planning Rule, 36 CFR 219.7(c)(2)(v)) through a four step process. Only Congress has the authority to designate wilderness areas.

The first step, **Inventory**, divides the Malheur, Umatilla and Wallowa-Whitman National Forests into areas that can then be **Evaluated** (step 2) for their wilderness characteristics including manageability. Some of these areas, or portions thereof, will be **Analyzed** in step 3 in one or more alternatives in the planning process. Finally, the Forest Supervisors **may Recommend** (step 4) areas for Wilderness designation.

The Draft Blue Mountains Wilderness Evaluation Report, and maps are available on the Blue Mountains Forest Plan Revision website https://www.fs.usda.gov/r06/umatilla/planning/wilderness-recommendation-process in the Plan Revision Document Library, Wilderness Recommendation Process section.

For more information, please see the MA 1B Preliminary Administratively Recommended Wilderness Area (RWA) section in Chapter 3. Management Area Plan Components, in this document.

Appendix G: Wild and Scenic River Eligibility

Introduction

This report summarizes the process that the Malheur, Umatilla, and Wallowa-Whitman National Forests (Blue Mountain NFs or Forests) have undertaken for identifying the eligibility of rivers for inclusion in the National Wild and Scenic Rivers System.

Background

The 2012 Forest Service Planning Rule specifically requires that during plan revision, the eligibility of rivers must be identified unless a systematic inventory has been previously completed and documented and there are no changed circumstances that warrant additional review (36 CFR 219.7(c)(2)(vi)).

A detailed description of the study process can be found in Forest Service Land Management Planning Handbook 1909.12, Chapter 80. Eligibility studies are completed with a finding that each river is eligible or not, and with each eligible river segment assigned a preliminary classification.

Existing Designated Rivers

Across the Blue Mountains NFs, there are 11 rivers that have already been designated by Congress as Wild and Scenic Rivers. Of those 11 rivers, 145 miles are classified as wild, 58 miles as scenic, and 47 miles as recreational rivers.

Rivers designated by Congress are part of the National Wild and Scenic River System and are shown in Tables 1, 2, and 3, respectively.

Table 1. Existing designated wild and scenic rivers[1] for the Malheur National Forest in miles

River Name	Wild	Scenic	Recreational	Outstandingly Remarkable Values
Malheur River	6.7	7.0	0.0	Scenery, geology, wildlife, history
North Fork Malheur River	0	25.5	0.0	Scenery, geology, wildlife, fish
Totals	**6.7**	**32.5**	**0.0**	

1. Mileages in these tables include total river miles including those outside forest administrative boundaries and are derived from legislative language and/or the most recent mileages reported in river plans (or "Comprehensive River Management Plans").

Table 2. Existing designated wild and scenic rivers[1] for the Umatilla National Forest in miles

River Name	Wild	Scenic	Recreational	Outstandingly Remarkable Values
Wenaha River	18.7	2.7	0.15	Recreation, scenery, wildlife, fish
Grande Ronde River[2]	17.4	0	1.5	Recreation, fish, wildlife, scenery
North Fork John Day River[3]	24.3	10.5	8.9	Scenery, recreation, fish, wildlife, history
Totals	**60.4**	**13.2**	**10.55**	

1. Mileages in these tables include total river miles including those outside forest administrative boundaries and are derived from legislative language and/or the most recent mileages reported in river plans (or "Comprehensive River Management Plans").
2. The Grande Ronde River is included in both the Umatilla and Wallowa-Whitman National Forest tables and mileage totals as administration is shared. The Grande Ronde River forms part of the administrative boundary between the Umatilla and Wallowa-Whitman National Forests.
3. The North Fork John Day River is included in both the Umatilla and Wallowa-Whitman National Forest tables as administration is shared. Mileage for the North Fork John Day River is divided within the table to reflect the mileage within and administered by each national forest.

Table 3. Existing designated wild and scenic rivers[1] for the Wallowa-Whitman National Forest[4] in miles

River Name	Wild	Scenic	Recreational	Outstandingly Remarkable Values
Eagle Creek	4.5	6.0	18.4	Fish, recreation, scenery, history/culture, geology, paleontology
Grande Ronde River[2]	17.4	0.0	1.5	Recreation, fish, wildlife, scenery
Joseph Creek	8.6	0.0	0.0	Scenery, recreation, geology, fish, wildlife, history/culture
Imnaha River	15.0	0.0	0.0	Scenery, recreation, fish, wildlife, history/culture, botany
Lostine River	5.0	0.0	11.0	Scenery, recreation, fish, wildlife, botany
Minam River	41.9	0.0	0.0	Scenery, recreation, geology, fish, wildlife
North Fork John Day River[3]	3.5	0	6.9	Scenery, recreation, fish, wildlife, history
North Powder River	0.0	6.4	0.0	Recreation, scenery
Totals	**95.9**	**12.4**	**37.8**	

1. Mileages in these tables include total river miles including those outside forest administrative boundaries and are derived from legislative language and/or the most recent mileages reported in river plans (or "Comprehensive River Management Plans").
2. The Grande Ronde River is included in both the Umatilla and Wallowa-Whitman National Forest tables and mileage totals as administration is shared. The Grande Ronde River forms part of the administrative boundary between the Umatilla and Wallowa-Whitman National Forests.
3. The North Fork John Day River is included in both the Umatilla and Wallowa-Whitman National Forest tables as administration is shared. Mileage for the North Fork John Day River is divided within the table to reflect the mileage within and administered by each national forest.
4. Hells Canyon National Recreation Area (HCNRA) is not part of the project area, therefore miles within the HCNRA are not included in this table.

Study Process

The Blue Mountain NFs followed the study process outlined in Forest Service Handbook 1912.09, Chapter 80.

Study Area

The study area for this report includes the area within the Malheur, Umatilla, and Wallowa-Whitman National Forests administrative boundaries but may include continuous segments of rivers that extend beyond administrative boundaries.

Region of Comparison

The region of comparison is defined as that which serves as a basis for meaningful comparative analysis; it may vary depending on the value being considered. Typically, a 'region' is defined on the scale of an administrative unit, a portion of a state, or an appropriately scaled physiographic or hydrologic unit. Overall, the comparative scale used for this study is the Blue Mountains national forests (Malheur, Umatilla, Wallowa-Whitman) and the larger surrounding Columbia River Basin. That is, the rivers on the Blue Mountain NFs were not only compared to one another but also compared to rivers in the broader Columbia River Basin. However, for some river-related values additional comparative scales were used and are described in specific criteria listed under Step 4.

Step 1 – Compile and review the results of previous studies.

Generally, river segments do not need to be studied again for eligibility unless changed circumstances warrant additional review of eligibility. In addition, river segments previously determined 'suitable' or 'not suitable' do not need to be reevaluated unless changed circumstances warrant consideration of a change in river status. All rivers previously studied for eligibility on the Malheur and Umatilla National Forests were reviewed and rivers previously studied for suitability on the Wallowa-Whitman National Forest were assessed for changed circumstances.

Step 2 – Complete a systematic forest-wide inventory of rivers.

A systematic inventory of named rivers was created for each of the Blue Mountains NFs. Summaries and details are provided below.

Step 3 – Determine which of the rivers in the inventory are free-flowing.

An initial assessment of the rivers' free flow status was completed by answering the following question: Is the river segment flowing in a natural condition without impoundment, diversion, straightening, rip rapping, or other modification of the waterway? Bridges and culverts are allowed and may or may not affect the segment's free-flowing nature.

Step 4 – Identify eligibility by determining which of the rivers in the inventory have one or more outstandingly remarkable values.

The determination that a river area contains outstandingly remarkable values (ORV) is a professional judgment based on objective, comparative, and scientific information.

To be "outstandingly remarkable," a river related value must be a unique, rare, or exemplary feature when compared with similar values from other rivers within the region of comparison. Only one such value is needed for eligibility.

While the spectrum of resources that may be considered is broad, all values should be directly river related. River values should meet at least one of the following criteria:

a. Be located in the river or on its immediate shore lands (generally within 1/4 mile on either side of the river),

b. Contribute substantially to the functioning of the river ecosystem, or

c. Be river-dependent and owe their location or existence to the presence of the river.

The following criteria were considered to establish whether one or more outstandingly remarkable values are present. In most cases, on-the-ground knowledge was used in developing the assessment of outstandingly remarkable values.

Scenery

- Is there a high degree of landscape diversity?
- Has the landscape been modified?
- Is the scenic value unique to the region?

Recreation

- Are the recreation opportunities unique enough to attract visitors from outside the geographic region and would visitors be willing to travel long distances to do so?
- Are interpretive opportunities exceptional?
- Are there opportunities for national or regional competitive events?

Wildlife

- Does the river contain nationally or regionally important populations of wildlife species?
- Are there known populations of unique or federal- or state-listed wildlife species?
- Are there known populations of candidate, threatened, endangered, and sensitive species?
- Is the diversity of species unique to the region?
- Does the river corridor provide exceptionally high quality unique habitat or a critical link in habitat conditions for wildlife of national or regional significance or federal- or state-listed or candidate, threatened, endangered, and sensitive species?
- Is the diversity of habitat unique to the region?

Fish

- Is the river a nationally or regionally important producer of resident and/or anadromous fish species?

- Does the river contain wild stocks and/or federal- or state-listed threatened, endangered, or sensitive species?
- Is the diversity of species or habitat unique to the region?
- Does the river provide or have the potential to provide exceptionally high-quality habitat for indigenous fish species?

Culture/History

- Does the river corridor contain known occupation sites used by Native Americans that are unusual, have exceptional human-interest value, have national or regional importance for interpreting pre-history, are or have been used for sacred purposes, or listed or eligible for listing on the National Register of Historic Places?
- Does the river corridor contain known site(s) or feature(s) associated with a significant event, important person, or cultural activity from the past that was rare or unusual? Of particular importance are sites or features that are listed in, or eligible for inclusion in the National Register of Historic Places.

Geology/Hydrology

- Does the river contain an example(s) of rare or unusual geologic or hydrologic features?

Botany/Ecology

- Does the river corridor contain nationally or regionally important populations of indigenous plant species that are rare or unique or significant populations of federal- or state-listed or candidate threatened, endangered, or sensitive species?
- Is the diversity of plant communities unique?

Step 5 – Assign preliminary classification.

The preliminary classification of a river found to be eligible is based on the condition of the river and the development level of adjacent lands as they exist at the time of the study. An eligible river can have multiple segments each classified differently.

FSH 1909.12, Chapter 80, Section 82.8, Exhibit 01 provides the classification criteria for wild, scenic, and recreational rivers. "Department of the Interior and Agriculture Interagency Guidelines for Eligibility, Classification and Management of River Areas," published in the Federal Register (Vol. 47, No. 173; September 7, 1982, pp. 39454-39461) provides the following additional information:

"There are several points to keep in mind when reading and applying the preliminary classification criteria:

- It is important to understand each criterion, but it is more important to understand their collective intent. Each river segment and its immediate environment should be considered as a unit. The most natural rivers will be preliminarily classified wild; those somewhat less natural, scenic, and those least natural, recreational.
- Generally, only conditions within the river area determine preliminary classification; however, occasionally conditions outside the river area, such as developments that could impact air and water quality, noise levels, or scenic views within the river area, may influence preliminary classification.
- For the purpose of preliminary classification, a river area may be divided into segments. Each segment, considered as a whole, will conform to one of the classifications. In segmenting the river, the assessment should take into account the management strategies necessary to administer the entire river area and should avoid excessive segmentation.
- The Wild and Scenic Rivers Act provides no specific guidance on water quality for scenic and recreational rivers. However, the Clean Water Act has made it a national goal that all waters of the United States be made fishable and swimmable and provides the legal means for upgrading water quality in any river which would otherwise be suitable for inclusion in the system. Therefore, rivers will not necessarily be excluded from the system because of poor water quality at the time of study, provided a water quality improvement plan exists or is being developed in compliance with applicable state and federal laws. Although each classification permits certain existing development, the criteria do not imply that additional inconsistent development is permitted in the future. The classification criteria provide uniform guidance for professional judgment, but they are not absolute. Therefore, there may occasionally be exceptions to some of the criteria. For example, if the assessment finds that strict application of the classification criteria would not provide the most appropriate preliminary classification for a specific river segment, the recommendation may consider an exception to the classification criteria."

Previous Studies

Malheur National Forest and Umatilla National Forest

Rivers previously studied for eligibility were evaluated and results are included in the summaries and details provided below.

Wallowa-Whitman National Forest

Eleven rivers have been studied for suitability, including all or portions of the Big Sheep Creek, Dutch Flat Creek/Van Patton Creek, East Fork Eagle Creek, Five Points Creek, Killamacue/Rock Creek, Granite Creek, North Fork Catherine Creek, Sheep Creek, Swamp

Creek, Upper Grande Ronde River, and the Snake River. Suitability study results were documented in two final legislative environmental impact statements, the Dutch Flat Creek, Killamacue Creek, and Rock Creek Wild and Scenic River Study Report and EIS (1996) and the Wild and Scenic River Study Report and Final Legislative Environmental Impact Statement for Eight Rivers Administered by the Wallowa-Whitman National Forest (1996). Three rivers were determined suitable for inclusion within the National Wild and Scenic River System: Dutch Flat Creek, East Fork Eagle Creek, and Five Points Creek.

Eligibility Details

Malheur National Forest

All river studies and reviews completed in 1995, 1997, 2005 and 2010 were reviewed in 2025.

Table 4. Rivers previously studied on the Malheur National Forest that are now ineligible

River Name	Original Study and Finding	ORVs	Re-study and Finding	Explanation/Changed Circumstances
Little Malheur River	1995 Study Ineligible	None	2010 Review Ineligible	A 2010 review did not find any changed circumstances that would change the ineligible finding from 1995.
Big Creek	1995 Study Eligible	Fisheries	1997 Study, 2010 Review Ineligible	Re-evaluated in 1997 study. **Fisheries was not found to be ORV** citing, "Several other rivers already designated W&S which provide similar fisheries ORVs, and it was not necessary to pursue eligibility status." A 2010 review did not find changed circumstances that would change the ineligible finding from 1997.
Lake Creek	1995 Study Eligible	Scenery, Wildlife, Heritage	2005 Study, 2010 Review Ineligible	Re-evaluated in 2005 after a wildfire had burned over 3000 acres of the Lake Creek watershed. Most of the vegetation diversity found prior to the fire no longer existed. Based on the changes wrought by fire, **scenery was not found to be an ORV**. The 1995 Study found wildlife habitat and population to be an ORV, citing "the diversity of habitat for sandhill cranes, upland sandpipers, and long bill curlews is unique to the region." In 2005, wildlife habitat and population diversity were re-evaluated. "Although the Logan Valley area in general provides high quality wildlife species habitat and diverse wildlife populations, the wildlife resource is NOT necessarily directly river-related or uniquely tied to the stream corridor. The finding was changed; **wildlife was not found to be an ORV**. The 1995 Study found heritage to be an ORV. A 2010 review of the previous studies concluded, "Although the area has a variety of interesting and important cultural sites and links, they are not stream dependent or necessarily within the stream corridor." The finding was changed; **heritage was not**

River Name	Original Study and Finding	ORVs	Re-study and Finding	Explanation/Changed Circumstances
				found to be an ORV. As a result, the eligible finding from the 1995 study was changed to ineligible.
Camp Creek	1995 Study Ineligible	None	1997 Study, 2010 Review Ineligible	The finding that fisheries is not an ORV was upheld in the 1997 re-evaluation citing "several other rivers already designated as W&SR, which provide similar fisheries outstanding remarkable values and that it was not necessary at this time to pursue W&SR eligibility status for tributaries to the Middle Fork John Day River based on fisheries values." In a 2005 study, an interdisciplinary team (absent a fish biologist) recommended adding fisheries as an ORV due to the listing of steelhead trout as a T&E species. Subsequent reviews by a fisheries biologist in a 2010 review found that a change in listing status of fish species was not enough to warrant a change to the 1995 and 1997 findings that fisheries is not an ORV. The original finding of ineligible was upheld.
Big Boulder Creek	1995 Study Eligible	Fisheries	1997 Study, 2010 Review Ineligible	Re-evaluated in 1997 study. **Fisheries was not found to be an ORV** citing, "Several other rivers already designated W&S which provide similar fisheries ORVs, and it was not necessary to pursue eligibility status" and the river was found ineligible. In a 2005 study, an interdisciplinary team (absent a fish biologist) recommended upholding the original "eligible" finding from the 1995 Study. Subsequent reviews by a fisheries biologist in a 2010 review found that a change in listing status of fish species was not enough to warrant a change to the 1997 finding of ineligible.
Granite Boulder Creek	1995 Study Eligible	Fisheries	1997 Study, 2010 Review Ineligible	Re-evaluated in 1997 study. **Fisheries was not found to be an ORV** citing, "Several other rivers already designated W&S which provide similar fisheries ORVs, and it was not necessary to pursue eligibility status." A 2010 review did not find changed circumstances that would change the ineligible finding from 1997.
Butte Creek	1995 Study Eligible	Fisheries	1997 Study, 2010 Review Ineligible	Re-evaluated in 1997 study. **Fisheries was not found to be an ORV** citing, "Several other rivers already designated W&S which provide similar fisheries ORVs, and it was not necessary to pursue eligibility status." A 2010 review did not find changed circumstances that would change the ineligible finding from 1997.
Vinegar Creek	1995 Study Eligible	Fisheries	1997 Study, 2010 Review Ineligible	Re-evaluated in 1997 study. **Fisheries was not found to be an ORV** citing, "Several other rivers already designated W&S which provide similar fisheries ORVs, and it was not necessary to pursue eligibility status." A 2010 review did not find changed circumstances that would change the ineligible finding from 1997.

River Name	Original Study and Finding	ORVs	Re-study and Finding	Explanation/Changed Circumstances
South Fork Long Creek	1995 Study Eligible	Scenery	2005 Study, 2010 Review Ineligible	Re-evaluated in 2005 and found, "while the stream provides interesting vegetative and landform contrasts, and few human intrusions, the views are common to other rivers in the region and better represented in those streams. The scale of the stream's features is smaller and less significant when compared to designated streams of a similar character and are not considered to be rare or unusual in nature. The views are attractive, but not exemplary." **Scenery was not found to be an ORV**. A 2010 review did not find changed circumstances that would change the ineligible finding from 2005.
Murderer's Creek	1995 Study Eligible	Scenery, Heritage	2005 Study, 2010 Review, 2025 Review Ineligible	The 1995 Study found scenery to be a "tentative" ORV with a caveat that the area would be re-reviewed by a landscape architect to determine if scenery values were unique to the region rather than the local area. Scenery valued were re-evaluated in 2005 and found, "while the stream provides interesting vegetative and landform contrasts with no human intrusions, the views are common to other rivers in the region and better represented in those streams. The scale of the stream's features is smaller and less significant when compared to designated streams of a similar character and are not considered to be rare or unusual in nature. The views are attractive, but not exemplary." **Scenery was not found to be an ORV.** The 1995 Study found heritage resources (cultural values) as an ORV citing "surveys conducted in the Lower Murderers Creek corridor, as well as ethnographic information attests to both historic and prehistoric use of this area. Lower reaches of Lower Murderers Creek on State/BLM have significant village sites. Lower reaches and tributaries to Lower Murderers Creek contain significant rock art. The area also contains features associated with the Bannock War." The 2005 study did not recognize heritage as an ORV. Further review by a Forest Archeologist in 2010 re-affirmed the 1995 finding of a cultural/heritage ORV. In 2025, due to the inconsistencies in documentation, a District Heritage Program Manager reviewed Murderers Creek for cultural/heritage ORVs citing "one possible location associated with the Bannock War was identified south of the analysis area along South Fork Murderers Creek outside of the forest boundary. No known sites or rock art associated with the Bannock War were identified within the Murderers Creek corridor. The types of cultural resources identified in the area are common within the Malheur National Forest and eastern Oregon." **Cultural/heritage resources were not found to be outstandingly remarkable**. As a result, the eligible finding from the 1995 study and 2010 review was changed to ineligible.

River Name	Original Study and Finding	ORVs	Re-study and Finding	Explanation/Changed Circumstances
Middle Fork John Day River	1988 Study, 1990 Forest Plan Eligible	Fisheries	2005 Study, 2010 Review Ineligible	In 2005, the fisheries habitat and population diversity of Middle Fork John Day River were re-evaluated due to a 1998 federal listing for bullhead trout and a 1999 listing for steelhead trout at T&E. Although fisheries values were present in the Middle Fork John Day River, they are also present in the North John Day River, an already designated W&S River. The values are similar, and not rare, unique or unusual on a regional scale, and **they are not found to be an ORV**. A 2010 review did not find changed circumstances that would change the ineligible finding from 2005.

Umatilla National Forest

In 1996 the Umatilla National Forest conducted eligibility studies on many rivers including 14 rivers identified in a 1991 settlement agreement between the forest and American Rivers and Oregon Rivers Council. These 1996 studies were re-evaluated in 2005 and 2010. All findings from the 1996 studies were re-affirmed. The studies found the following rivers not eligible.

- Clear Creek - not free-flowing.
- Granite Creek - not free flowing, does not possess outstandingly remarkable values.
- North Fork Umatilla River, South Fork Umatilla River, Shimmiehorn Creek, South Fork Cable Creek, North Fork Meacham Creek, and South Fork Walla-Walla River - do not possess outstandingly remarkable values.

Table 5. Eligible wild and scenic river summary with preliminary classification for the Umatilla National Forest

Description of Segment	Preliminary Classification (miles)	Summary of Outstandingly Remarkable Values
Bear Creek From the headwaters to confluence with Tucannon River	Wild – 4.6	FISH - Bear Creek contains native Chinook, bull trout and steelhead, which are federally listed as threatened under the Endangered Species Act. Bull trout populations in the Tucannon River watershed are considered isolated and unique. Habitat is limited but pristine. The assessment finds the fisheries habitat and populations to be outstandingly remarkable values.
Butte Creek/West Fork Butte Creek From headwaters to confluence with the mainstem Wenaha River	Wild – 13.9	SCENERY - The Wenaha River and surrounding Wenaha - Tucannon Wilderness, including Butte Creek and West Fork Butte Creek, is recognized nationally for its scenic qualities. The mosaic of vegetation and stark ruggedness of the landscape contribute to an exceptional scenic quality. Scenery qualifies as an outstandingly remarkable value.

Description of Segment	Preliminary Classification (miles)	Summary of Outstandingly Remarkable Values
Desolation Creek The mainstem of Desolation Creek from the confluence of the north and south forks to the confluence with the North Fork John Day River	Recreational – 21.5	RECREATION - Combined amenities of a large, big game population, good roaded access to trailhead locations, adjacency to large, remote backcountry areas and desirable campsites within the river corridor make this a desirable destination. Conditions of the river-related setting make recreation an outstandingly remarkable value. BOTANY - Regionally unique and rare plant species have been identified in Desolation Meadow. The river corridor displays a broad range of botanic diversity due to its size and broad change in elevation. The ecological diversity is exceptional and exhibits outstandingly remarkable values for botany and plant ecology.
Lookingglass Creek From the unnamed tributary in section 3 near Bald Mountain lookout to the forest boundary	Scenic – 7.9	HYDROLOGY - The impact that the springs near Summer Creek have on the water quantity and quality is rare in the Blue Mountains. The temperature and condition of the water that enters the river course from this source provides the foundation for fisheries resources in the creek. Lookingglass Springs is visually impressive with the flow of the springs gushing from the bank and riverbed growing forty-fold over a distance of a couple of hundred yards. The hydrology of Lookingglass is an outstandingly remarkable value.
North Fork Desolation Creek Headwaters to confluence with Main Desolation Creek	Recreational – 6.8	BOTANY - Regionally unique and rare plant species have been identified in the meadows along the river corridor, which displays a broad range of botanic diversity due to its size and broad change in elevation. The ecological diversity is exceptional and exhibits outstandingly remarkable values for botany and plant ecology.
North Fork Wenaha and South Fork Wenaha River North Fork Wenaha from headwaters to confluence with mainstem Wenaha River, and South Fork Wenaha from headwaters to confluence with mainstem Wenaha River	Wild – 26.3	SCENERY - The Wenaha River and surrounding Wenaha - Tucannon Wilderness is recognized nationally for its scenic qualities. The mosaic of vegetation and stark ruggedness of the landscape contribute to an exceptional scenic quality. Scenery qualifies as an outstandingly remarkable value. FISH – The Wenaha River system contains native Chinook, bull trout, and steelhead, which are listed as threatened under the Endangered Species Act. Bull trout populations are considered as one of the healthiest in the Grande Ronde subbasin. The habitat is pristine. The assessment finds the fisheries habitat and populations to be outstandingly remarkable values. BOTANY - The large elevational range, little disturbance to bank vegetation, and presence of old forest habitat are special attributes. The area contains outstandingly remarkable value botanic resources.

Description of Segment	Preliminary Classification (miles)	Summary of Outstandingly Remarkable Values
South Fork Desolation Creek Headwaters to confluence with main Desolation Creek	Recreational – 0.5	SCENERY - Sheep Creek Falls is a scenic location that specifically attracts visitors to this area and has been long noted for its unusual vegetation. Flora accompanied by rock walls of overhanging moss and spring water creates an aesthetic environment and scenery within the corridor is special and unique. Scenery qualifies as an outstandingly remarkable value. BOTANY - The plant communities are unusually diverse and represent some uncommon species. The Sheep Creek Falls refugia is a botanical Special Interest Area and is a recreation attraction. The area contains outstandingly remarkable value botanic resources.
South Fork Desolation Creek Headwaters to confluence with main Desolation Creek	Scenic – 8.9	FISH - Isolated fish populations in the upper portion have significance as a genetic resource and the lower portion provides spawning habitat for steelhead, Chinook, redband trout, and Columbia River bull trout. The diversity of habitat is unique to the region. The populations and habitat comprise an outstandingly remarkable value of fisheries. BOTANY - Regionally unique and rare plant species have been identified in the high elevation meadows along the river corridor. The river corridor displays a broad range of botanic diversity due to the fire-dependent ecosystems. The ecological diversity is exceptional and exhibits outstandingly remarkable values for botany and plant ecology.
Tucannon River From headwaters to the Tucannon Guard Station	Wild – 9.1, Scenic – 4.6, Recreational – 8.7	RECREATION - Because of this river setting, most use originates outside the local area. The river-related environment is the focal attraction, particularly attractive to visitors seeking sightseeing, camping, fishing, wildlife viewing, photography, hiking, and other outdoor activities in a natural appearing landscape. Camp Wooten instills a lifelong allegiance to the corridor for many youths. Potential interpretive opportunities are varied and could reach a wide audience. Conditions of the river-related setting make recreation an outstandingly remarkable value. FISH - Each drainage has some distinct genetic traits. Endangered and sensitive listed fish are present, and the complex habitat is exemplary. The populations along with the habitat comprise an outstandingly remarkable value for fisheries. CULTURE/HISTORY - The Tucannon River corridor has a long history of settlement, resource use, and recreation and some historic evidence exists. Early maps show homesteads, a sawmill, schoolhouse, trail system, roads, telephone lines, camps, and a ranger station. Interpretation may enhance the value of recognized heritage resources. The presence of old structures, along with the likelihood of other historic finds, make the historic resource an outstandingly remarkable value.

Description of Segment	Preliminary Classification (miles)	Summary of Outstandingly Remarkable Values
		BOTANY/ECOLOGY - The general condition, health, and stability of the riparian vegetation is among the highest in the Blue Mountains. The plant community is unusually diverse representing some uncommon species. The complex riparian habitat is critical for survival of endangered and sensitive fish species. The area contains outstandingly remarkable value botanic resources.

Eligibility Review Summary

There are no eligible rivers on the Malheur National Forest.

Table 6. Eligible wild and scenic rivers on the Umatilla National Forest with preliminary classification in miles

River Name	Wild	Scenic	Recreational	Outstandingly Remarkable Values
Bear Creek	4.6	0.0	0.0	Fish
Butte Creek/West Fork Butte Creek	13.9	0.0	0.0	Scenery
Desolation Creek	0.0	0.0	21.5	Recreation, botany
Lookingglass Creek	0.0	7.9	0.0	Hydrology
North Fork Desolation Creek	0.0	0.0	6.8	Botany
North and South Fork Wenaha River	26.3	0.0	0.0	Scenery, fish, botany
Sheep Creek (in Washington)	0.0	0.0	0.5	Scenery, botany
South Fork Desolation Creek	0.0	8.9	0.0	Fish, botany
Tucannon River	9.1	4.6	8.7	Recreation, fish, culture/history, botany/ecology
Totals	**53.9**	**21.4**	**37.5**	

Suitability

The 9 eligible rivers on the Umatilla National Forest will not be studied for their suitability for inclusion in the National System as part of this plan revision. FSH 1909.12 CH 80 allows rivers to be studied for suitability at any time and in a separate study. However, the Plan will provide management direction to protect the free-flowing character, preliminary classification, and outstandingly remarkable values of eligible rivers until a decision is made on the future use of a river and adjacent lands through an Act of Congress or a determination that a river is not suitable.

Suitable Rivers and Not Suitable Rivers

Rivers previously studied for eligibility on the Umatilla National Forests have not been studied for suitability, therefore, no river segments have been determined ‘suitable’ or ‘not suitable’ on the Umatilla National Forest.

Rivers previously studied for suitability on the Wallowa-Whitman National Forest that were determined 'suitable' do not have changed circumstances that warrant consideration of a change in river status and therefore remain suitable.

Table 7. Suitable wild and scenic rivers for the Wallowa-Whitman National Forest in miles

River Name	Wild	Scenic	Recreational	Outstandingly Remarkable Values
Dutch Flat Creek	5.3	0.0	0.0	Scenery, recreation, geological, hydrological, botanical
East Fork Eagle Creek	9.0	0.0	6.6	Scenery, recreation, fisheries, geological, cultural
Five Points Creek	0.0	12.1	0.0	Scenery, fisheries, wildlife
Totals	14.3	12.1	6.6	

Rivers previously studied for suitability on the Wallowa-Whitman National Forest that were determined 'not suitable' (Big Sheep Creek, Killamacue/Rock Creek, Granite Creek, North Fork Catherine Creek, Sheep Creek, Swamp Creek, Upper Grande Ronde River, and the Snake River) do not have changed circumstances that warrant consideration of a change in river status and therefore remain not suitable.

Lists of rivers studied and found not eligible

Malheur National Forest

List of rivers studied on the Malheur National Forest that are not eligible:

Alder Creek
Anderson Creek
Antelope Creek
Armstrong Creek
Balance Creek
Basin Creek
Bear Creek
Bear Creek Drainage
Bear Creek (Middle Fork John Day River)
Beaver Creek
Beech Creek
Belshaw Creek
Big Boulder Creek
Big Cow Creek
Big Creek (Blue Mountain Ranger District)
Big Creek (Prairie City Ranger District)
Birch Creek
Blue Creek
Bluebucket Creek
Bosonberg Creek
Boulder Creek (Blue Mountain Ranger District)
Boulder Creek (Emigrant Creek Ranger District)
Bridge Creek
Buck Gulch
Bum Canyon
Butte Creek
Camp Creek
Camp Creek Drainage
Canyon Creek
Caribou Creek
Clear Creek
Coffeepot Creek
Cole Canyon
Corral Creek
Cottonwood Creek
Cow Creek
Coyote Creek
Crane Creek
Crawford Creek
Cress Creek
Crooked Creek
Cross Hollow
Cummings Creek
Dade Creek
Damon Creek
Drainages
Dans Creek
Davis Creek
Dead Cow Creek
Deadhorse Creek
Deadwood Creek
Deardorff Creek
Deep Creek
Deer Creek Drainage
Deerhorn Creek
Devine Creek
Diamond Dot Creek
Dixie Creek
Dollar Basin Creek
Dry Creek (Middle Fork John Day River)
Dry Creek (John Day River)
Dry Well Creek
Dugout Creek
Dunston Creek
East Fork Beech Creek
East Fork Canyon Creek
East Fork Deer Creek
East Fork Reynolds Creek
Elk Creek
Emigrant Creek
Fall Mountain to Moon Mountain
Fields Creek Drainage
Flat Creek
Fopian Creek
Foundation Creek
Fox Creek
Fraiser Creek
Gibbs Creek
Gorge Creek
Graham Creek
Granite Boulder Creek
Grub Creek
Gunther Creek
Hawkins Creek
Horse Creek
Horseshoe Creek
Huckleberry Creek
Hughet Valley Creek
Indian Creek
Isham Creek

Jack Creek
Jeff Davis Creek
Jungle Creek
Latigo Creek
Lewis Creek Drainage
Little Boulder Creek
Little Butte Creek
Little Cow Creek
Little Crane Creek
Little Malheur River
Lonesome Creek
Long Creek
Long Creek (Middle Fork John Day River)
Lower Murderers Creek
Lower Tributaries of Malheur River (Below Malheur Ford)
Lunch Creek
Middle Fork Canyon Creek
Middle Fork John Day River
Mill Creek (Middle Fork John Day River)
Morgan Creek
Mosquito Creek
Murdock Creek
Myrtle Creek
North Face of Wilderness
North Bear Valley tributaries
North Fork Elk Creek
North Slope of Aldrich
North West Corner of Wilderness
Pass Creek
Pearson Creek
Phipps Creek
Pine Creek (Malheur River)
Placer Gulch
Poison Creek
Ragged Creek
Rail Creek
Rail Creek
Rattlesnake Creek
Reynolds Creek
Riverside Gulch
Rosebud Creek
Ruby Creek
Sagehen Gulch
Sawtooth Creek
Scotty Creek Drainages
Shaw Gulch
Sheep Creek
Shirttail Creek
Short Creek
Silvies River
Silvies River (Below Seneca)
Sink Creek
Skagway Creek
Slide Creek
South Fork Elk Creek
South Fork Long Creek
South Fork Murderers Creek
Spoon Creek
Spring Creek
Spring Valley Creek
Wíwaanaytt Creek
River (previously Sq* Creek)
Starr Creek
Station Creek
Strawberry Creek
Summit
Summit Creek
Sunshine Creek
Swamp Creek
Thompson Gulch
Tincup Creek
Tureman Creek
Upper John Day River
Upper Murderers Creek
Upper Silvies Drainage
Upper South Fork John Day River
Utley Creek
Van Aspen Creek
Vance Creek Drainage
Venator Creek
Vincent Creek
Vinegar Creek
West Fork Deer Creek
West Myrtle Creek
West Side Aldrich Range
Whiskey Creek
Windfall Creek
Windlass creek

Umatilla National Forest

List of rivers studied on the Umatilla National Forest that are not eligible:

Alder Creek
Anderson Gulch
Backout Creek
Bacon Creek
Barnes Creek
Basin Creek
Battle Creek
Bear Gulch
Bear Wallow Creek
Beaver Creek
Beeman Creek
Big Creek
Big Hole Creek
Big Wall Creek
Big Willow Spring Creek
Bismark Creek
Bone Canyon Creek
Bowman Creek
Bridge Creek
Brown Creek
Bruin Creek
Brush Creek
Buck Creek
Bully Creek
Burnt Creek
Burnt Fork
Butcher Bill Creek
Butter Creek
Cabin Creek
California Gulch
Camas Creek
Camp Creek
Cane Creek
Caplinger Creek
Chilson Creek
Chute Gulch
Clear Creek
Cold Creek
Cold Spring Canyon
Colvin Creek
Congo Gulch
Coombs Creek
Copper Creek
Copple Creek
Corral Creek
Cougar Creek (Trout tributary)
Cougar Creek
Crooked Creek
Cross Canyon Creek
Dark Canyon Creek
Davis Creek
Day Canyon Creek
Deep Canyon Creek
Deep Saddle Creek
Deerhorn Creek
Deerlick Creek
Dickenson Creek
Ditch Creek
Dry Camas Creek
Dry Creek
Dry Fork Brown Creek
Dry Swale Creek
East Bologna Canyon Creek
East Fork Alder Creek
East Fork Big Creek
East Fork Butte
East Fork Clear Creek
East Fork First Creek
East Fork Indian Creek
East Fork Meadow Brook Creek
East Meacham Creek
East Phillips Creek
East Ten Cent Creek
Elbow Creek
Elk Creek
Ellis Creek
Fairview Creek
Faulkner Gulch
First Gulch
Fitzwater Gulch
Fivemile Creek
Frazier Creek
George Creek
Gilbert Creek
Gilson Creek
Glade Creek
West Fork Granite Boulder Creek
Granite Creek
Grassy Butte Creek
Graves Creek
Haden Creek
Harrington Creek
Henry Creek
Herren Creek
Hidaway Creek
Hinton Creek
Hog Creek
Hollywood Creek
Howard Creek
Huckleberry Creek
Indian Creek
Indian Tom Creek
Jaussaud Creek
Johnson Creek
Jones Canyon Creek
Jug Creek
Juniper Creek

Junkens Creek
Kahler Creek
Keating Creek
Kelsay Creek
King Creek
Lake Creek
Lane Creek
Lick Creek
Lightning Creek
Line Creek
Little Indian Creek
Little Kelsay Creek
Little Lookingglass Creek
Little Pearson Creek
Little Phillips Creek
Little Potamus Creek
Little Wall Creek
Little Wilson Creek
Long Canyon Creek
Lost Creek
Lovlett Creek
Low Creek
Mallory Creek
Martin Creek
Matlock Creek
Middle Branch North Fork Asotin Creek
McCarty Gulch
Meadow Brook
Meadow Creek
Meengs Canyon Creek
Melton Creek
Middle Fork Wilkins Creek
Milk Fork
Mill Creek
Moreland Canyon Creek
Mud Creek
Neeves Creek
No Name Creek
North Fork Asotin Creek
North Fork Bridge Creek
North Fork Cable Creek
North Fork Meacham Creek
North Fork Mill Creek
North Fork Ruby Creek
North Fork Touchet
North Fork Umatilla River
Olive Creek
One Trough Canyon Creek
Onion Creek
Oregon Gulch
Oriental Creek
Otter Creek
Owens Creek
Panjab Creek
Paradise Creek
Park Creek
Pearson Creek
Pedro Creek
Peep Creek
Phillips Creek
Pine Creek
Pole Creek
Porter Creek
Potamus Creek
Preacher Creek
Rabbit Creek
Rainbow Creek
Rancheria Creek
Randall Canyon Creek
Ranger Creek
Raspberry Creek
Road Canyon Creek
Rock Creek
Rough Canyon Creek
Ruby Creek
Rush Creek
Ryder Creek
Saddle Creek
Salmon Creek
Salsbury Creek
Scaffold Creek
Second Creek
Shaw Creek
Sheep Creek
Sheriff/Redhill Gulch
Shimmiehorn Creek
Shoofly Creek
Silver Creek
Simpson Creek
Skinner Creek
Skookum Creek
Slick Ear Creek
Smith Creek
Snake Creek
Snipe Creek
South Canyon Creek (West of Birch Creek)
South Canyon Creek (East Fork of Birch Creek)
South Fork Asotin Creek
South Fork Big Wall Creek
South Fork Cable Creek
South Fork Meadow Creek
South Fork Ruby Creek
South Fork Umatilla River

South Fork Walla Walla River
South Fork Wilkins Creek
South Martin Creek
Spangler Creek
Sponge Creek
Spring Canyon Creek
Spring Creek
Squaw Creek
Stahl Canyon Creek
Stalder Creek
Stanley Creek
Starveout Creek
Sulphur Creek
Sulphur Gulch
Swale Creek
Swamp Creek
Tamarack Creek
Ten Cent Creek
Texas Bar Creek
Third Creek
Thompson Creek
Thorn Creek
Three Trough Creek
Tiger Creek
Trough Creek
Trout Creek
Tucannon River (Above Panjab Creek)
Tucannon River (Above Sheep Creek)
Tucannon River (Below Panjab Creek)
Tupper Creek
Turkey Creek
Turpentine Creek
Two Spring Creek
Wagner Gulch
Warm Spring Creek
Welch Creek
Weller Creek
Wenatchee Creek
West Birch Creek
West Bologna Canyon Creek
West Fork Clear Creek
West Fork First Creek
West Fork Meadow Brook
West Fork Snipe Creek
West Ten Cent Creek
West Wenatchee Creek
Wheeler Creek
White Creek
Wildcat Creek
Wilkins Creek
Willow Creek (First tributary)
Willow Creek
Willow Spring Creek
Wilson Creek
Wineland Canyon Creek
Winom Creek
Wolesy Creek
Wolf Fork

Wallowa-Whitman National Forest

List of rivers studied on the Wallowa-Whitman National Forest (including those inside HCNRA) that are not eligible:

Alder Creek
Adam Creek
Adams Creek
Amelia Creek
Anchor Creek
Anthony Creek
Antone Creek
Aspen Creek
Aspen Fork
Auburn Creek
B C Creek
Baboon Creek
Baldy Creek
Ballard Creek
Balter Creek
Barney Creek
Basin Creek
Battle Creek
Bean Creek
Bear Creek
Beaver Creek
Beaver Dam Creek
Beaverdam Creek
Beecher Creek
Bennet Creek
Bernard Creek
Big Canyon Creek
Big Creek
Big Elk Creek
Bills Creek
Billy Creek
Billy Jones Creek
Birch Creek
Bitter Creek
Blackmore Creek
Blind Creek
Blowout Basin Creek
Bluch Creek
Blue Creek
Bob Creek
Bobcat Creek
Boulder Creek
Boundary Creek
Bowman Creek
Bradley Creek
Bridge Creek
Broady Creek
Brush Creek
Buck Creek
Bull Creek
Bull Run Creek
Bullrun Creek
Burn Creek
Burnt Creek
Cabin Creek
Cache Creek
Camp Creek
Canal Creek
Carrol Creek
Chalk Creek
Channel Creek
Chaparral Creek
Cherry Creek
Chesnimnus Creek
Chicken Creek
China Cap Creek
China Creek
Clarks Creek
Clarks Fork
Clear Creek
Cliff Creek
Cold Spring Creek
College Creek
Conundrum Creek
Cook Creek
Copper Creek
Cornet Creek
Corral Creek
Cottonwood Creek
Cougar Creek
Courtney Creek
Cove Creek
Cow Creek
Cracker Creek
Crane Creek
Crawfish Creek
Crazyman Creek
Crevice Creek
Crow Creek
Cub Creek
Cunningham Creek
Davis Creek
Deadman Creek
Dean Creek
Deep Creek
Deer Creek
Dempsey Creek
Denny Creek
Devils Farm Creek
Devils Run Creek
Ditch Creek
Dixie Creek
Dobbin Creek
Doc Creek
Dodson Creek
Doe Creek
Double Creek
Dove Creek

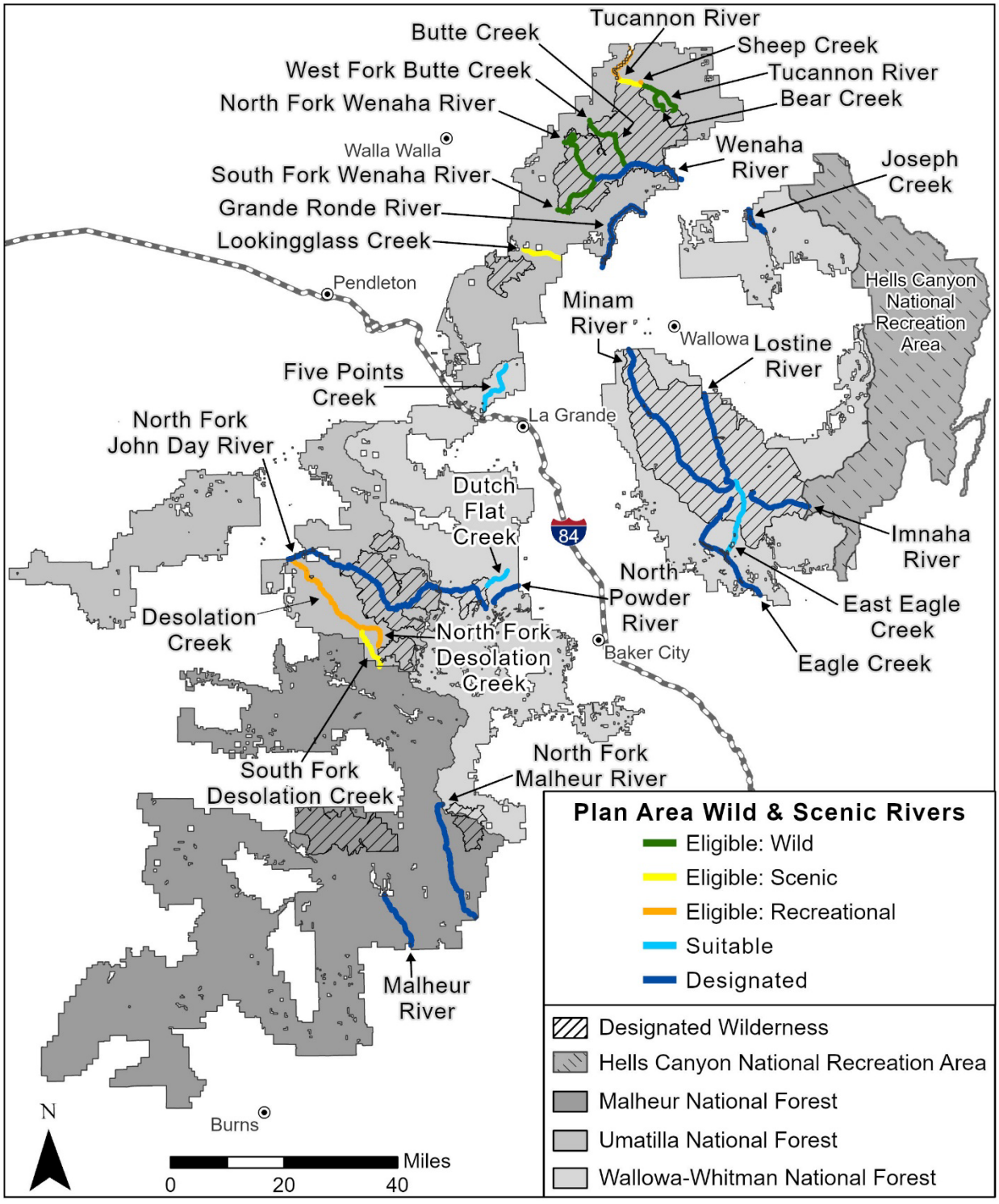
Doyle Creek
Dry Creek
Dug Creek
Dunlap Creek
Dunn Creek
Dutch Creek
East Camp Creek
East Fork Alder Creek
East Fork Boundary Creek
East Fork Broady Creek
East Fork Clear Creek
East Fork Elk Creek
East Fork Goose Creek
East Fork Grande Ronde River
East Fork Horse Creek
East Fork Little Fly Creek
East Fork Miners Creek
East Fork Peavine Creek
East Fork Pine Creek
East Fork Pole Creek
East Fork Sheep Creek
East Fork Tamarack Creek
East Fork Wallowa River
East Lostine River
East Pine Creek
East Sheep Creek
Elk Creek
Elkhorn Creek
Erin Creek
Ethel Creek
Evans Creek
Fake Creek
Fall Creek
Falls Creek
Ferguson Creek
Fir Creek
Fireline Creek
First Creek
Fish Creek
Fish Lake Branch
Fly Creek
Forshey Creek
Fox Creek
Freezeout Creek
Fruit Creek
Fuller Creek
Garden Creek
Garwood Creek
Geiser Creek
Gimlet Creek
Glendenning Creek
Goat Creek
Goat Rock Creek
Gold Creek
Gold King Creek
Goodrich Creek
Goose Creek
Gowing Creek
Greenhorn Creek
Grizzly Creek
Grouse Creek
Grove Creek
Gumboot Creek
Gutridge Creek
Hat Creek
Heady Creek
Hells Canyon Dam Creek
Herman Creek
Highrange Creek
Hiltsley Creek
Hog Creek
Holbrook Creek
Holcomb Creek
Homestead Creek
Hominy Creek
Hoodoo Creek
Hope Creek
Horse Basin Creek
Horse Creek
Horseheaven Creek
Horseshoe Creek
Huckleberry Creek
Hudson Creek
Hunsaker Creek
Hurricane Creek
Indian Creek
Indiana Creek
Irondyke Creek
Jackknife Creek
Jerry Creek
Jim Creek
Jim Fisk Creek
Jimmy Creek
Johnson Creek
Jones Creek
Kane Creek
Keeler Creek
Kettle Creek
King Creek
Kirby Creek
Kirkwood Creek
Klopton Creek
Kurry Creek
Lackey Creek
Lake Basin Creek
Lake Creek
Lake Fork Creek
Lamb Creek
Larkspur Creek
Last Chance Creek
Lawrence Creek
Ledge Creek
Lee Creek
Leep Creek
Lick Creek
Lightening Creek
Limber Creek

Limber Jim Creek
Lime Creek
Limepoint Creek
Line Creek
Little Antone Creek
Little Bear Creek
Little Buck Creek
Little Cracker Creek
Little Dean Creek
Little Deep Creek
Little Eagle Creek
Little Elk Creek
Little Fir Creek
Little Fly Creek
Little Granite Creek
Little Kettle Creek
Little Marble Creek
Little Meadow Creek
Little Mill Creek
Little Minam River
Little Pop Creek
Little Pot Creek
Little Salmon Creek
Little Sheep Creek
Log Creek
Long Creek
Long Prong Creek
Lookout Creek
Lost Horse Creek
Lost Valley Creek
Loyd Creek
Lupine Creek
Lynch Creek
Mahogany Creek
Marble Creek
Marion Creek
Marr Creek
McAlister Creek
McCubbin Creek
McCully Creek
McCully Fork
McGraw Creek
Meadow Creek
Medicine Creek
Metzler Creek
Middle Fork Big Sheep Creek
Middle Fork Burnt River
Middle Fork Clark Creek
Middle Fork Imnaha River
Middle Fork Pine Creek
Middle Sister Creek
Middle Trail Creek
Middle Willow Creek
Mill Creek
Miner Basin Creek
Miners Creek
Mitáat Hiwéelece Creek (previously Sq* Creek)
Mosquito Creek
Mud Creek
Mud Spring Creek
Muir Creek
Murphy Creek
Murray Creek
Nelson Creek
North Fork Anthony Creek
North Fork Burnt River
North Fork Dry Creek
North Fork Imnaha River
North Fork Jim Creek
North Fork Klopton Creek
North Fork Lightening Creek
North Fork Limber Jim Creek
North Fork North Powder River
North Fork Pine Creek
North Fork Rock Creek
North Fork West Camp Creek
North Fork Wolf Creek
North Minam River
North Sister Creek
North Temperance Creek
North Trail Creek
Norway Creek
O'Brien Creek
Okanogan Creek
Old Man Creek
Old Timer Creek
Olive Creek
Onion Creek
Owl Creek
Oxbow Creek
Packsaddle Creek
Paddy Creek
Panter Creek
Papoose Creek
Park Creek
Pasture Creek
Patrick Creek
Pe’ískit Creek (previously Sq* Creek)
Peavine Creek
Petticoat Creek
Pine Creek
Pinus Creek
Pleasant Valley Creek
Poison Creek
Pole Bridge Creek
Pole Creek
Pop Creek
Pot Creek
Powder River

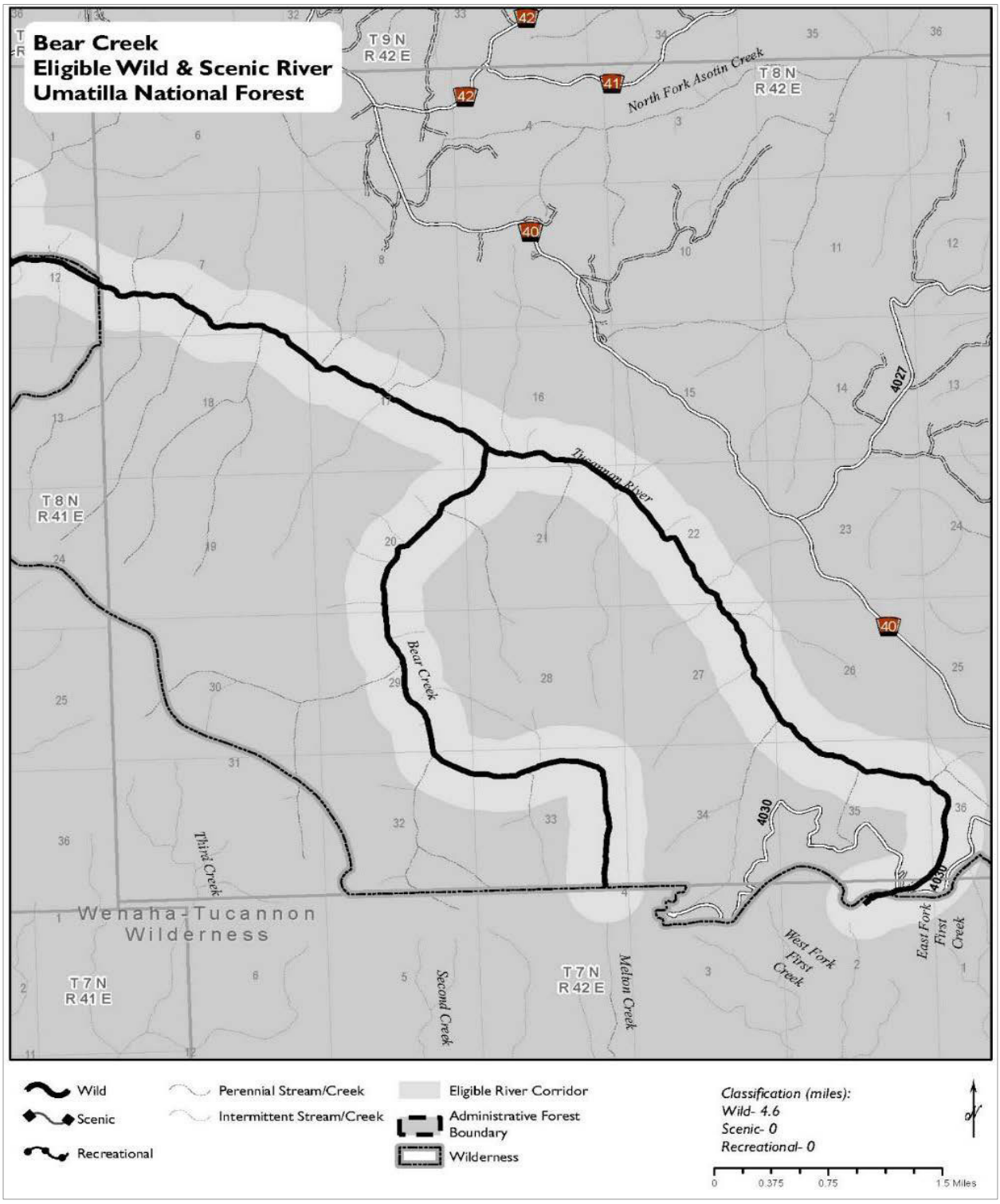
Pumpkin Creek
Puzzle Creek
Rattlesnake Creek
Redmont Creek
Rhodes Creek
Roger Creek
Roland Creek
Rough Creek
Royal Purple Creek
Rush Creek
Saddle Basin Creek
Saddle Creek
Salmon Creek
Salt Creek
Sand Creek
Saw Pit Creek
Sawmill Creek
Sawpit Creek
Schleur Creek
Scotch Creek
Second Creek
Shamrock Creek
Shanghai Creek
Sheep Creek
Silver Creek
Simmons Creek
Skookum Creek
Skull Creek
Sled Creek
Sleepy Creek
Slim Creek
Sluice Creek
Smith Creek
Snake River
Snell Creek
Snow Fork Creek
Soldier Creek
Somers Creek
South Fork Beaver Creek
South Fork Boulder Creek
South Fork Burnt River
South Fork Durham Creek
South Fork Spring Creek
South waqímataw Creek (previously South Fork Sq* Creek)
South Fork West Camp Creek
South Sister Creek
South Trail Creek
Spring Creek
Steamboat Creek
Steep Creek
Stevens Creek
Storm Creek
Stud Creek
Sturgill Creek
Sucker Creek
Sullivan Creek
Sumac Creek
Summit Creek
Sutton Creek
Swamp Creek
Tamarack Creek
Temperance Creek
Tepee Creek
Third Creek
Thorn Creek
Thorn Spring Creek
Thorny Creek
Thorp Creek
Three Creek
Threemile Creek
Thirtytwo Point Creek
Tope Creek
Trail Creek
Trinity Creek
Trouble Creek
Trout Creek
Tryon Creek
Tulley Creek
Tunnel Creek
Turner Creek
Twin Basin Creek
Twin Bridge Creek
Twin Creek
Twin Mountain Creek
Two Bit Fork
Two Color Creek
Two Corral Creek
Two Creek
Twobuck Creek
Tyee Creek
Union Creek
Vaughn Creek
Velvet Creek
Wallowa Creek
waqímataw Creek (previously Sq* Creek)
Waterfall Creek
Weaver Creek
Webfoot Creek
weelikéecet Creek (previously Sq* Creek)
West Camp Creek
West Chicken Creek
West Creek
West Eagle Creek
West Fork Boundary Creek
West Fork Broady Creek
West Fork Burnt River
West Fork Deep Creek
West Fork Goose Creek
West Fork Lake Creek
West Fork Lightening Creek

West Fork McGraw
Creek
West Fork Peavine Creek
West Fork Pine Creek
West Fork Wallowa River
West Trinity Creek
Wild Sheep Creek
Wildcat Creek
Williams Creek
Willow Creek
Wilson Creek
Wind Creek
Wing Creek
Wolf Creek
Yreka Creek

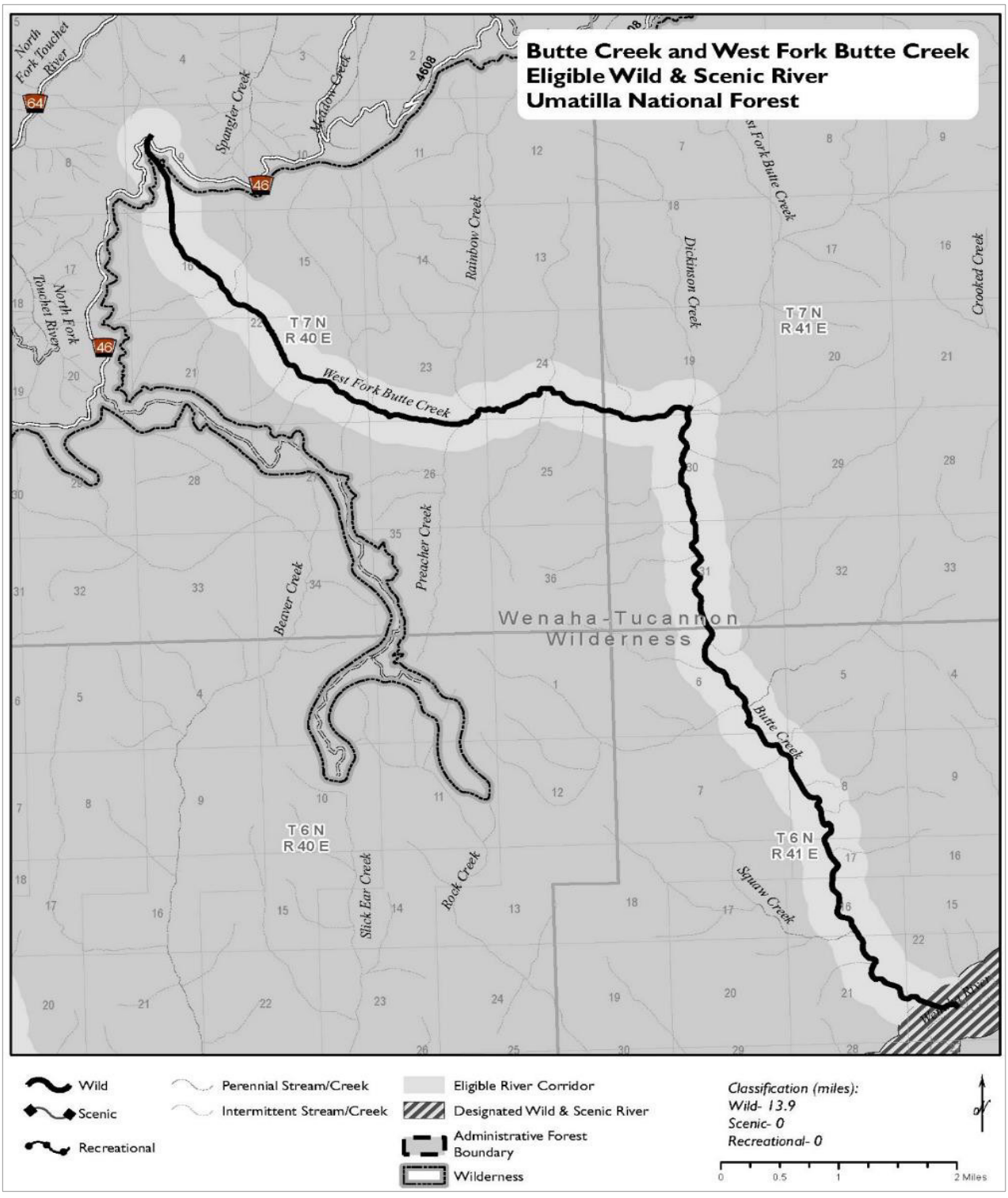
Wild and Scenic River Maps



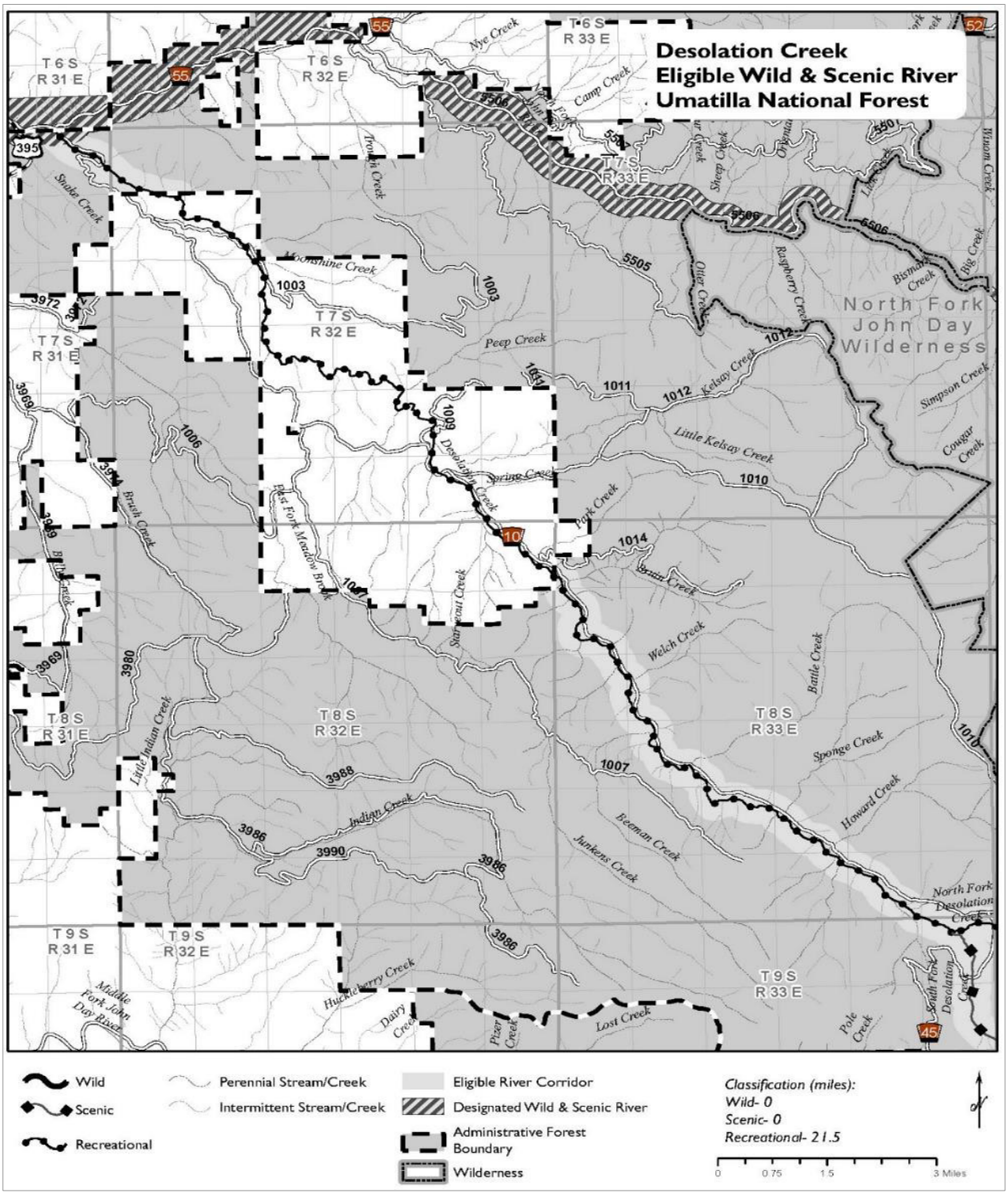
Map 1. Designated Wild and Scenic Rivers for Blue Mountains National Forests



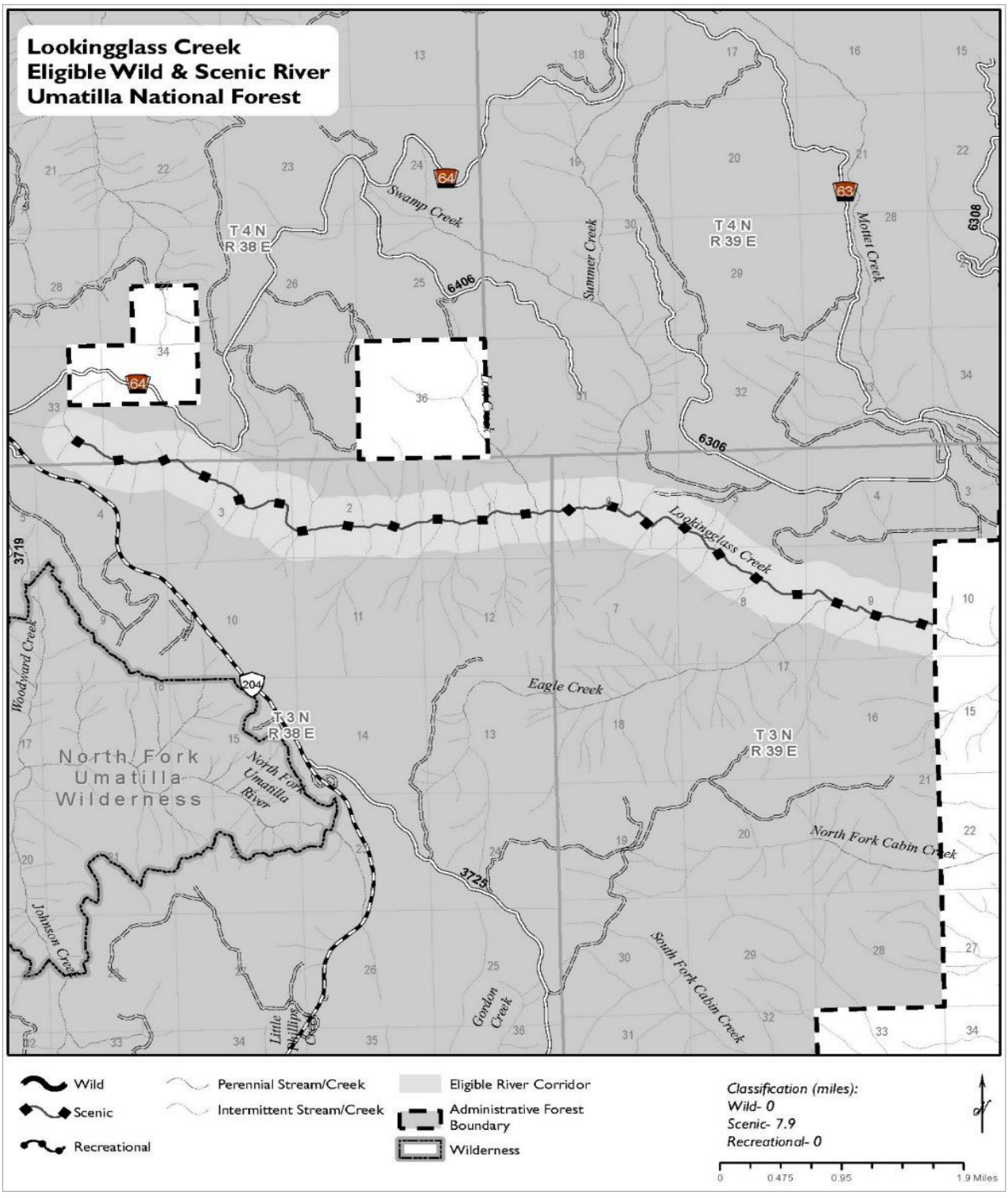
Map 2. Bear Creek *eligible* wild and scenic river, Umatilla National Forest



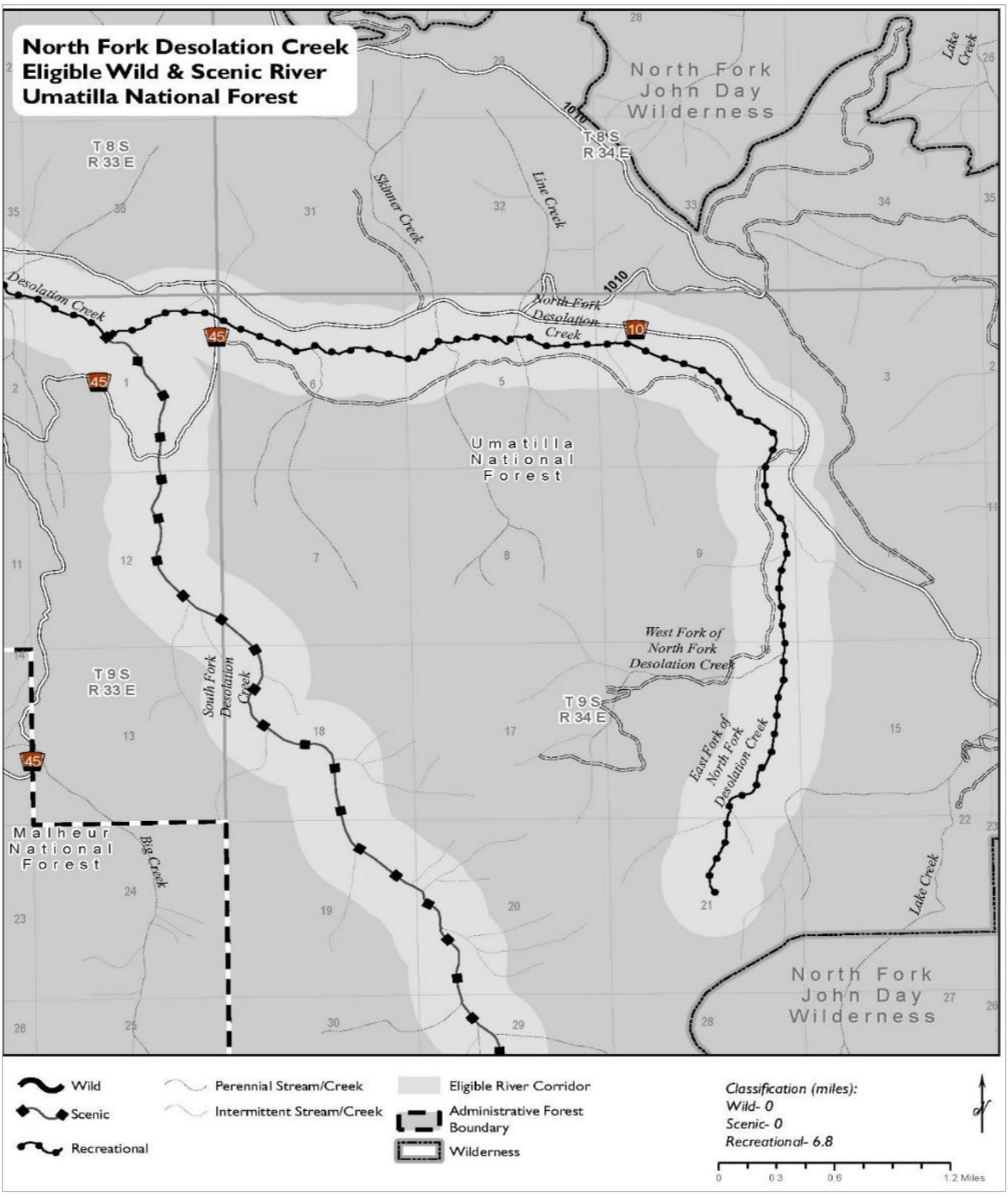
Map 3. Butte Creek and West Fork Butte Creek *eligible* wild and scenic river, Umatilla National Forest



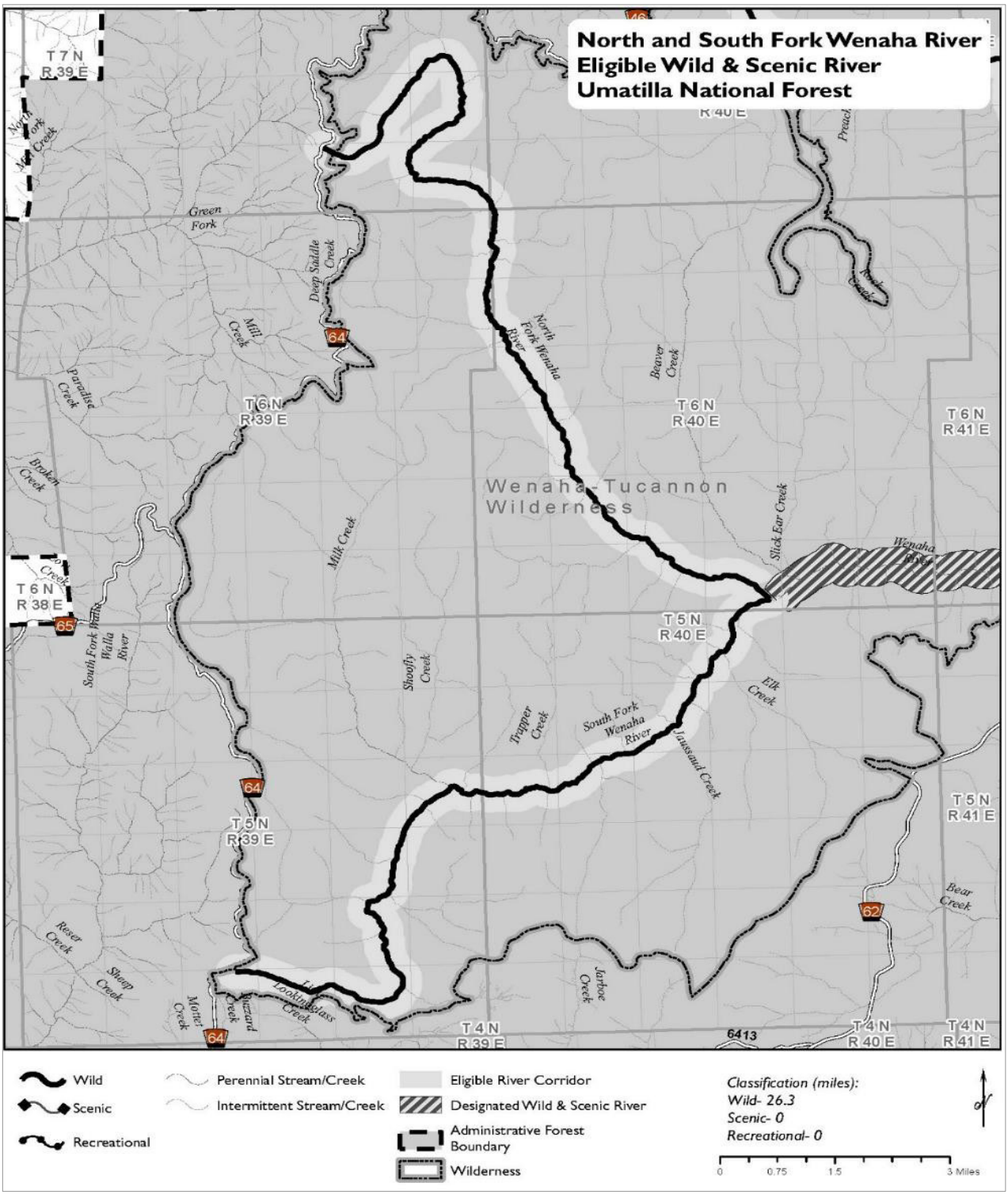
Map 4. Desolation Creek *<u>eligible</u>* wild and scenic river, Umatilla National Forest



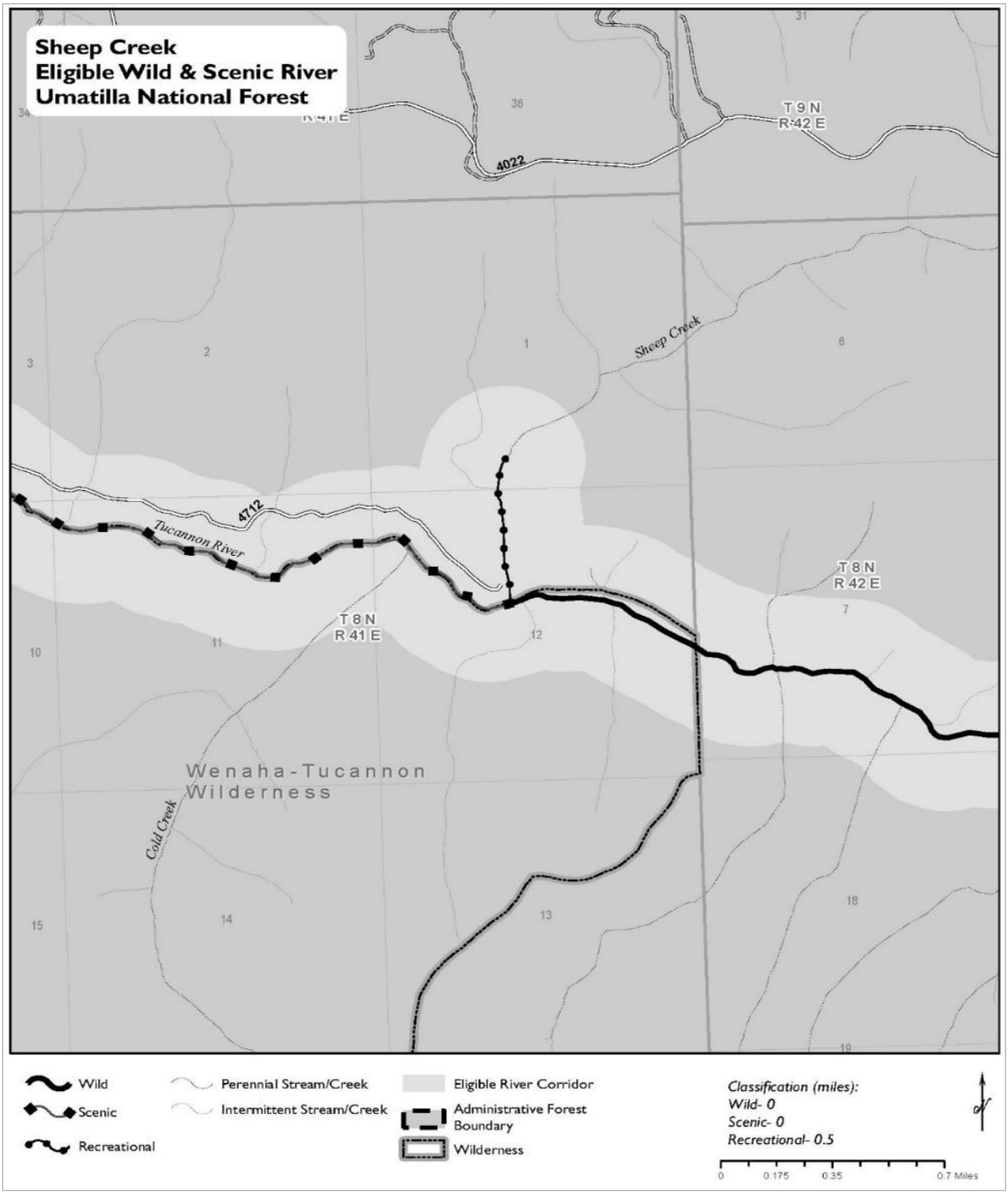
Map 5. Lookingglass Creek *eligible* wild and scenic river, Umatilla National Forest



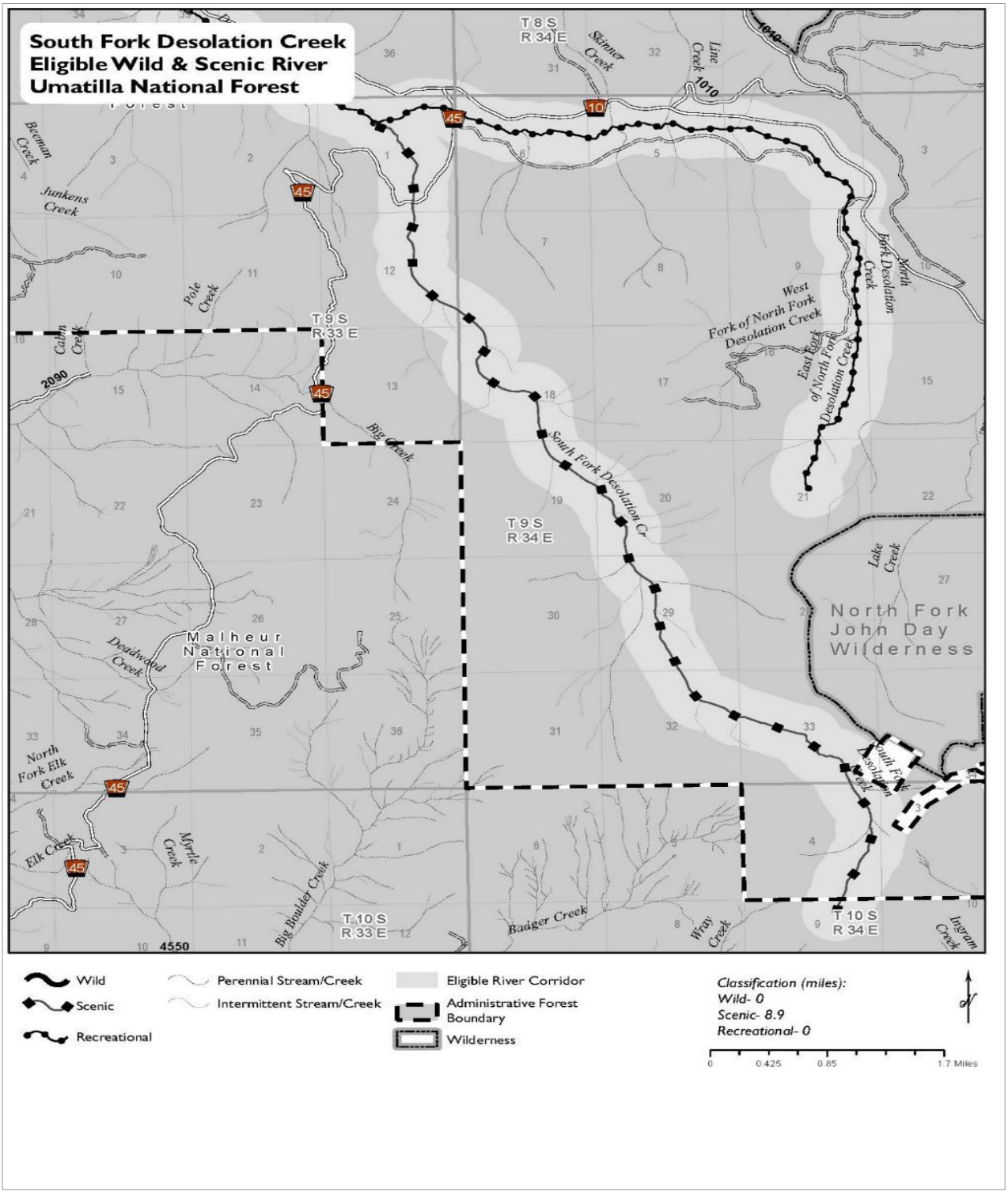
Map 6. North Fork Desolation Creek *eligible* wild and scenic river, Umatilla National Forest



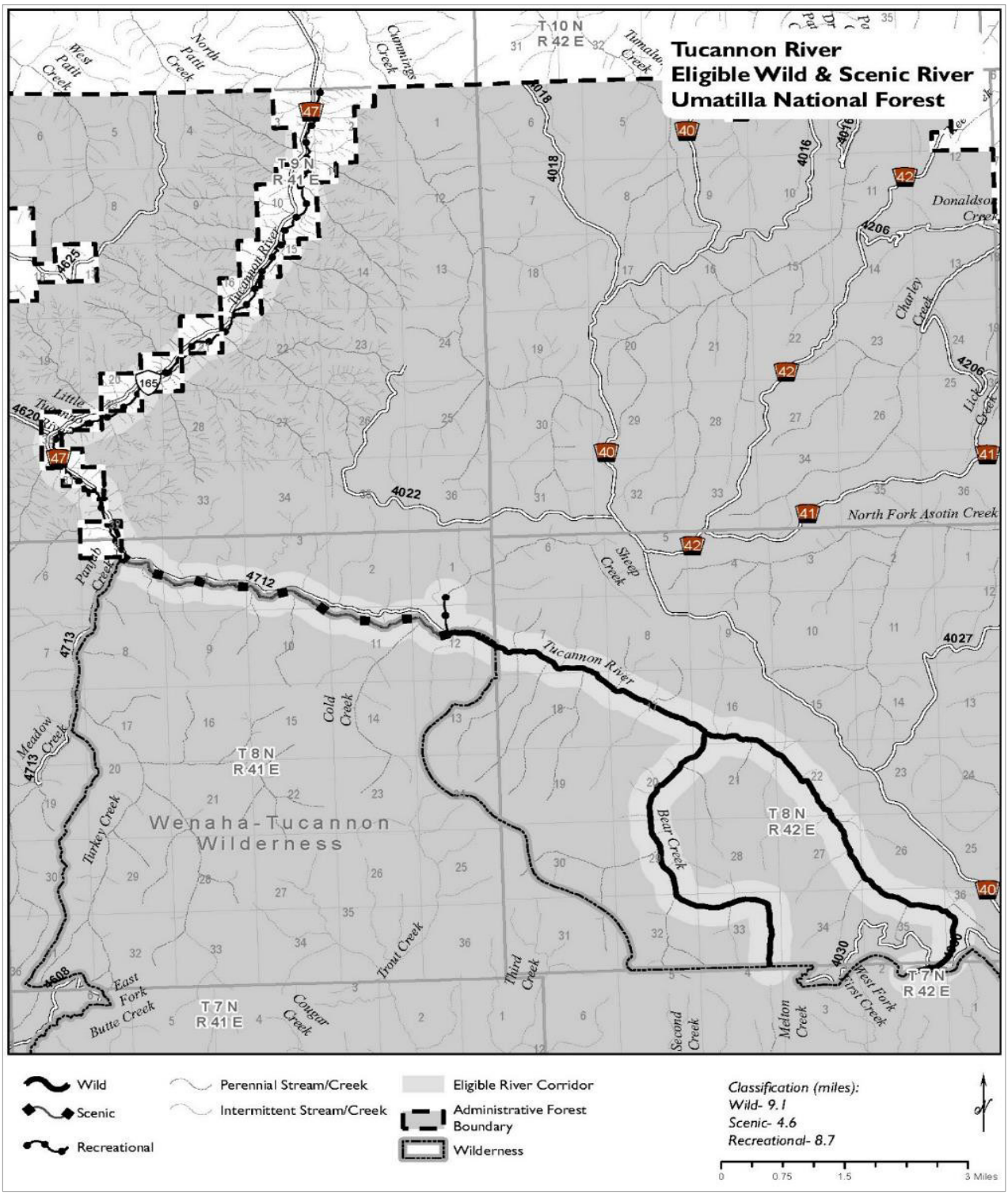
Map 7. North and South Fork Wenaha River *eligible* wild and scenic river, Umatilla



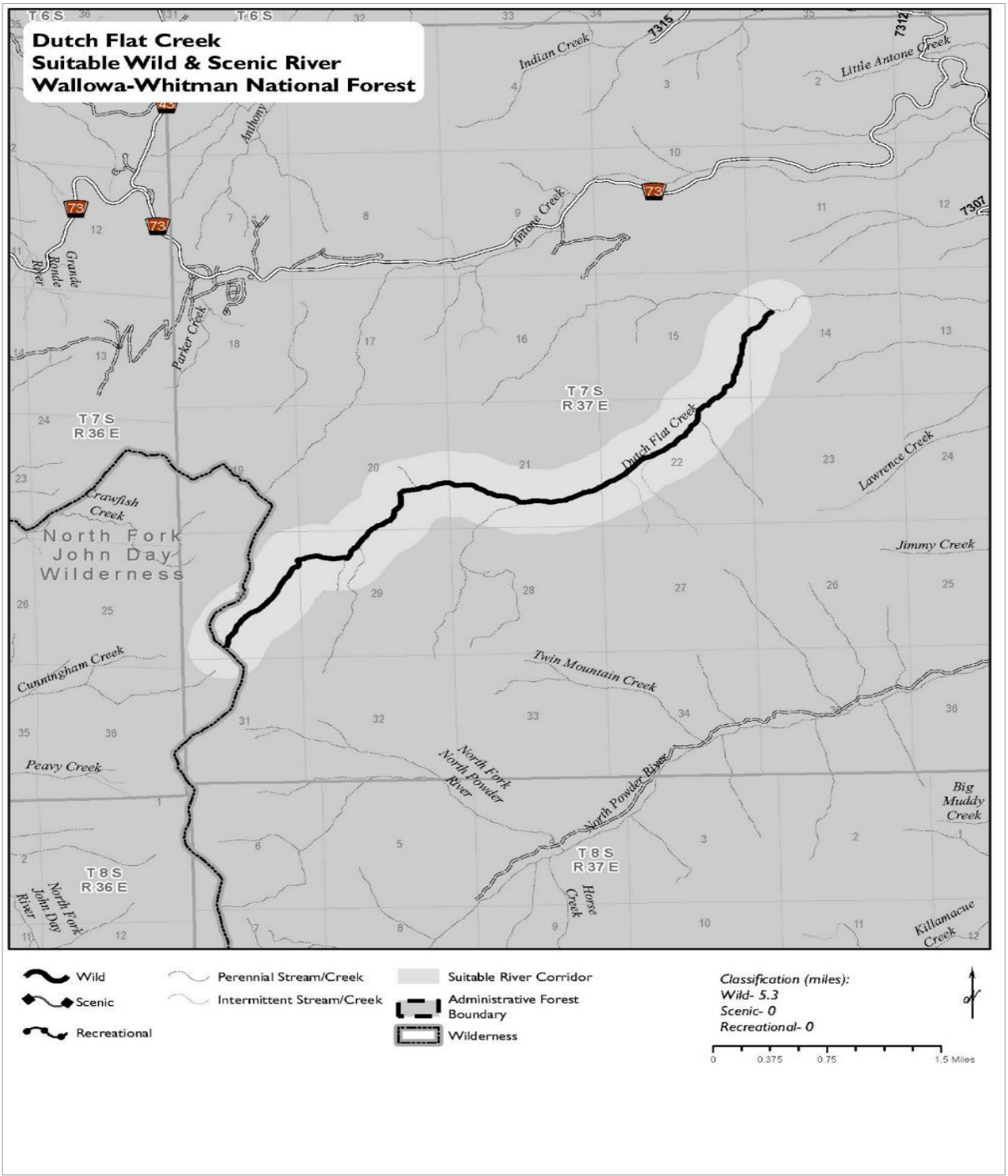
Map 8. Sheep Creek *eligible* wild and scenic river, Umatilla National Forest (in Washington)



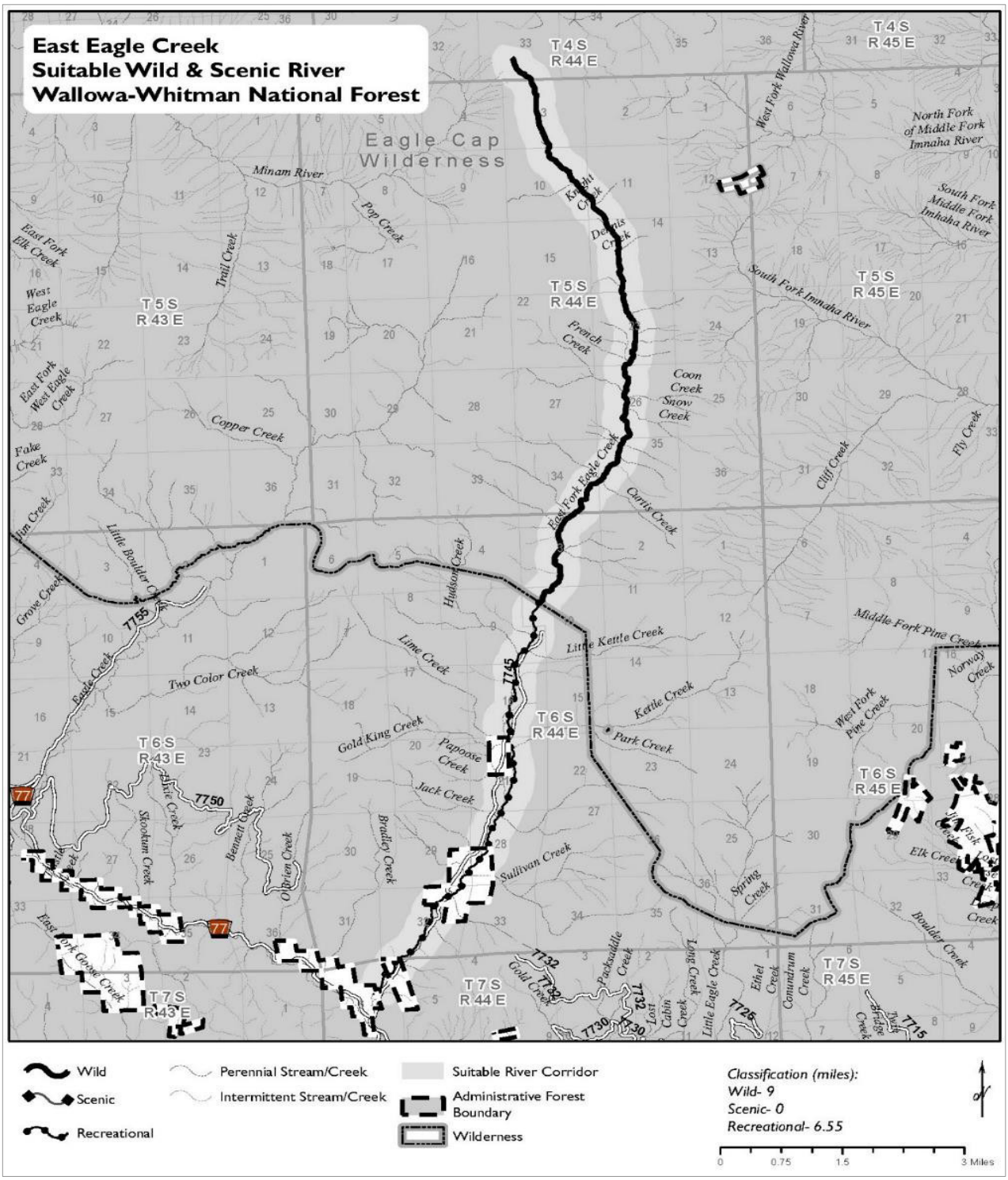
Map 9. South Fork Desolation Creek *eligible* wild and scenic river, Umatilla National Forest



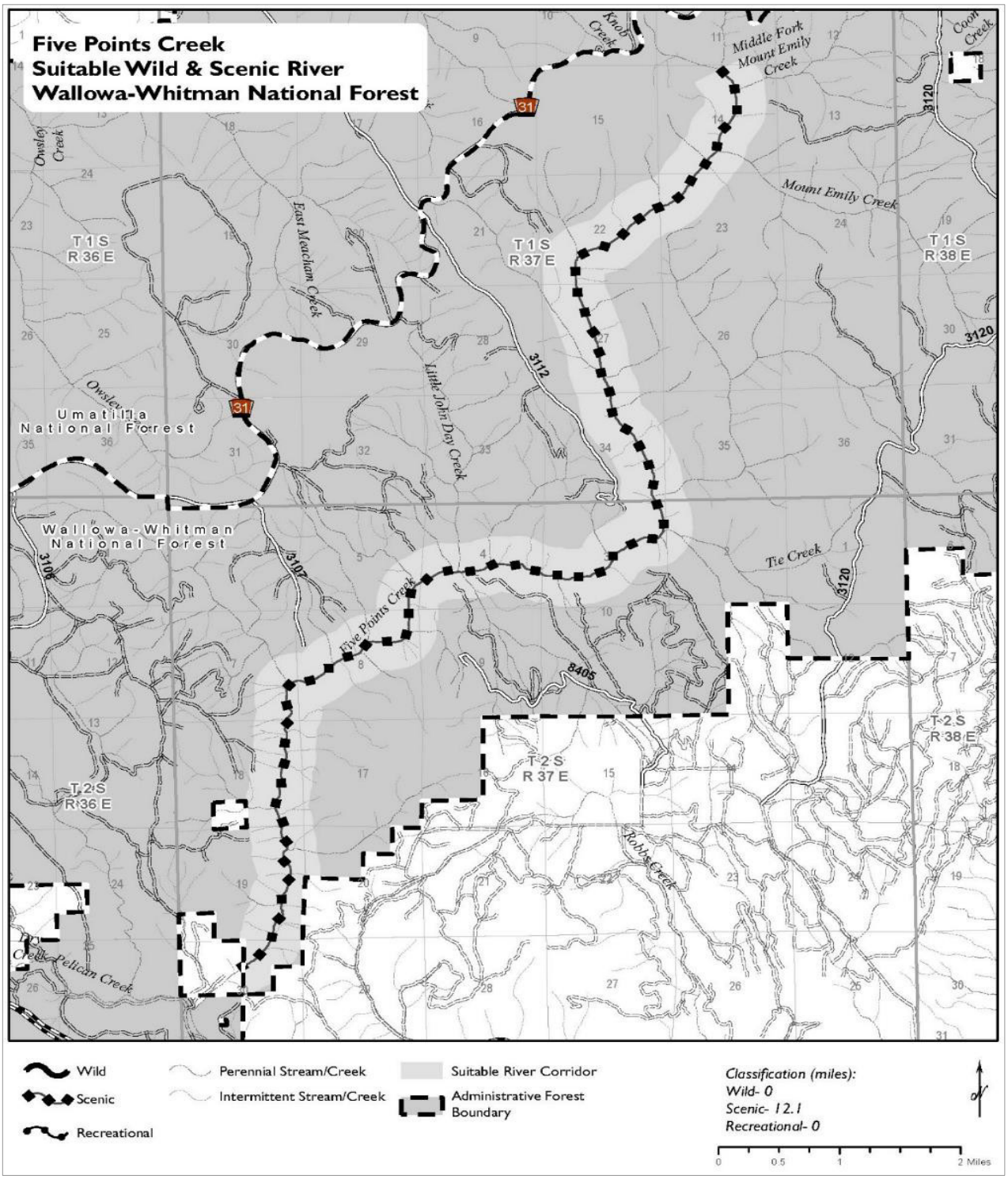
Map 10. Tucannon River *eligible* wild and scenic river, Umatilla National Forest



Map 11. Dutch Flat Creek *suitable* wild and scenic river, Wallowa-Whitman National Forest



Map 12. East Fork Eagle Creek *suitable* wild and scenic river, Wallowa-Whitman National Forest



Map 13. Five Points Creek *suitable* wild and scenic river, Wallowa-Whitman National Forest National Forest