Blue Mountains
Revised Land Management Plan
DRAFT Part One: Vision

Version 3: May 12, 2006

Introduction

This part of the land management plan provides the overall vision for managing the Malheur, Umatilla, and Wallowa-Whitman National Forests. This section includes:

- Geographic Location and Setting – brief description of the general location and physical features of the area including land ownerships and counties.
- Historical Background – brief description of the history of the area.
- Role and Niche – the national forests' unique geologic, vegetative, aquatic, and terrestrial characteristics; major uses of forest resources, and primary social and economic contributions of the national forests to the surrounding area, region, and nation.
- Management Challenges – current and emerging challenges managers' face in managing resources to achieve and maintain the desired conditions.
- Operating Guidelines – basic working relationships and procedural requirements that the national forests will meet as they implement projects under the land management plan.
- Vision - brief narrative version of the desired conditions.
- Sustainability Framework – organizing principles used to develop the desired conditions in the context of sustainability.
- Desired Conditions – specific descriptions of the long-term ecological, social, and economic conditions and processes developed in the context of sustainability that are desirable as outcomes of land management.

Geographic Location and Setting

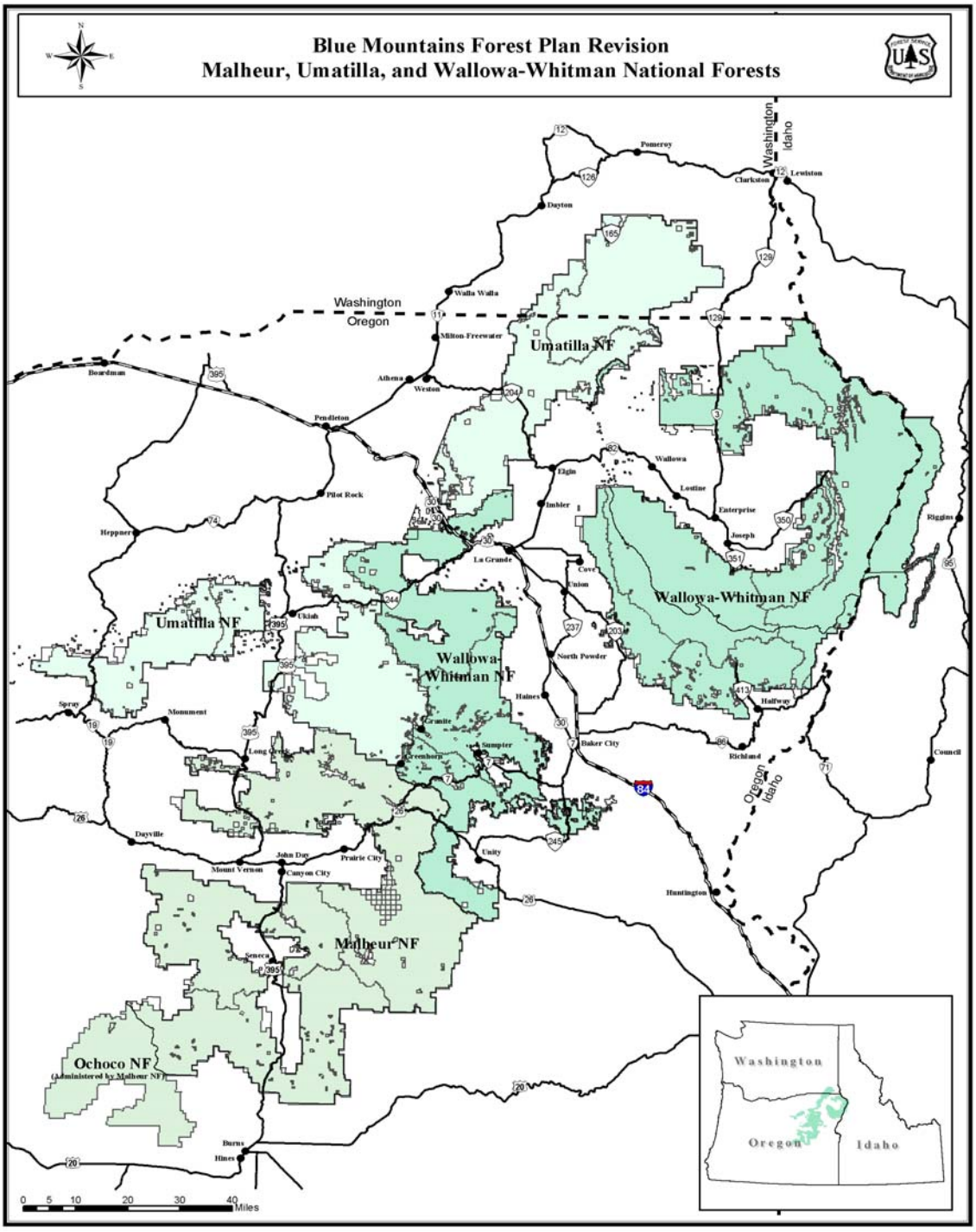
The national forests of the Blue Mountains total approximately 5.3 million acres in northeastern Oregon, southeastern Washington, and west-central Idaho. The majority of acreage is in Oregon (4.8 million acres) with about 136,000 acres in Idaho, and about 311,000 acres in Washington. They are administered through three Forest Supervisors' offices located in John Day, Pendleton, and Baker City, Oregon; and 15 field offices in Oregon, Washington, and Idaho.

The Malheur National Forest comprises 1.7 million acres in the southern Blue Mountains with forest headquarters in John Day, Oregon and district offices in Prairie City, John Day, and Burns, Oregon. The Malheur National Forest also manages a 240,000-acre portion of the adjacent Ochoco National Forest; which will be included in the Blue Mountains Land Management Plan Revision. The Malheur National Forest encompasses the headwaters of the Silvies, Malheur, and John Day Rivers which provide clean cold water for fish, wildlife, recreation, and agricultural needs. Elevations vary from about 4,000 feet to the 9,038-foot top of Strawberry Mountain. For more information on the Malheur National Forest, visit their website at *www.fs.fed.us/r6/malheur.*

The 1.4-million-acre Umatilla is the northern-most national forest in the planning area and is administered from Pendleton, Oregon with district offices located in Pomeroy and Walla Walla, Washington and Heppner and Ukiah, Oregon. Three wilderness areas, the Wenaha-Tucannon, the North Fork Umatilla, and the North Fork John Day comprise over 20 percent of the forest. The Umatilla National Forest website is located at *www.fs.fed.us/r6/uma/.*

Located on the eastern edge of the Blue Mountains, the Wallowa-Whitman National Forest is over 2.3 million acres and encompasses the Elkhorn and Wallowa Mountains as well as the Hells Canyon National Recreation Area (HCNRA) where the Snake River cuts the deepest river gorge in North America. Originally two national forests, the Wallowa and Whitman National Forests have been managed together since 1954 from Baker City, Oregon. The Whitman Unit is comprised of the Baker, Unity, and Pine Ranger Districts. The northern portion of the forest has district offices in La Grande and Enterprise, Oregon. In addition to the office in Enterprise, the HCNRA also has offices in Clarkson, Washington; Riggins, Idaho; and Oxbow, Oregon. The website for the Wallowa-Whitman National Forest is *www.fs.fed.us/r6/w-w.*

Figure 1: Vicinity Map



The diverse physiographic Blue Mountains Province borders the Snake River plain on the east, extends south into the Great Basin, west to the Columbia River plateau, and borders the Palouse prairie to the north. The west side of the Blue Mountains Province is characterized by several mountain ranges (the Ochoco Mountains, the Strawberry-Aldrich Range, the Greenhorn Mountains, and the Elkhorn Mountains). The Grande Ronde River Valley separates the western mountain ranges from the eastern portion, which is dominated by the Wallowa Mountains, the Seven Devils Mountains, and the canyon lands of the Snake, Grande Ronde, and Imnaha rivers (Baldwin 1964). The landforms include a complex series of foothills and mountains resulting from the erosion of volcanic parent material. Elevation ranges from subalpine summits above 9,000 feet to canyon bottoms below 2,000 feet. The majority of the province drains north to the Columbia River, with the southern half of the Malheur National Forest draining to the Great Basin. Major river basins include the Lower Snake, Middle Columbia, Oregon Closed Basins, John Day, and Middle Snake-Powder.

Historical Background

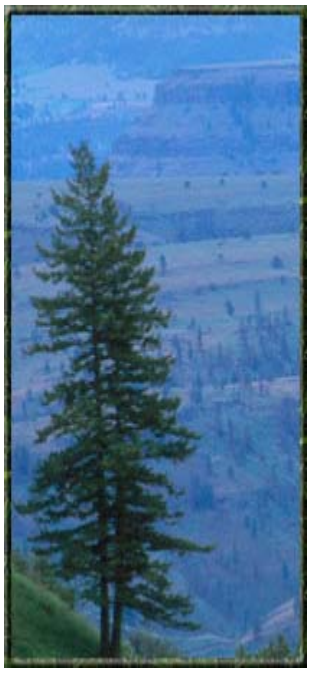
TO BE WRITTEN

Role and Niche

The national forests of the Blue Mountains are comprised of highly diverse landscapes of grassland, sage, juniper, deep river canyons, pine and sub-alpine forests, alpine lakes and meadows. The region's streams and rivers are recognized for their high quality fish habitat. Elk, mule, and whitetail deer inhabit the bunchgrass slopes, deep canyons, and heavily timbered stringers. Bighorn sheep and mountain goats are found along the steep canyon slopes and in higher elevation alpine areas. Several features of the Blue Mountains provide the three Forests with unique role in preserving the ecological, social/cultural, and economic values important to the area. Some of these features are listed below; these will be expanded in later versions.

Ecological

Blue Mountain Elk Initiative
Marine weather patterns
Malheur -John Day River is largest undamed river system in the nation
Malheur - Cedar Grove; an ecologically unique setting
Umatilla - Wildlife connectivity corridor/landbridge between the Rocky Mountains and Central Oregon
Umatilla and Wallowa-Whitman - Hells Canyon Bighorn Sheep Initiative
Wallowa-Whitman - Hells Canyon is the deepest river Gorge in the nation



Social / Cultural

Summer and Winter Recreation
American Indian tribes play a significant role in local history and culture
Malheur - Wild horses
Wallowa-Whitman - Eagle Cap in the largest wilderness in Oregon
Wallowa-Whitman – The Oregon Trail passes through the area
Wallowa-Whitman - Has one of the top snowmobile areas in the nation

Economic

Rural western culture and communities linked to natural resources
One of the more important mining districts in the state
Highly-valued recreation opportunities contribute to local communities
Providing high quality and ample quality water to local communities and agriculture

Management Challenges

Providing for the socially, economically, and ecologically sustainable management of the Malheur, Umatilla, and Wallowa-Whitman National Forests is affected by a complex set of factors. Sustaining the values and contributions provided by the forests depends on the ability to meet these challenges.

Changes in society include population growth, type and volume of recreation activities, land uses, and urban development as well as people's values, attitudes, and beliefs regarding public lands. An example of a changing social value is the increasing awareness and concern with linking stewardship activities to improved social and economic conditions of communities in the Blue Mountains. Natural resource management activities are increasingly planned and implemented with greater collaborative involvement and decision-making; reflecting people's expectation about how to be involved in land management planning processes. Discussions of the following management challenges were featured during public participation and collaboration activities:

- Broad and diverse public and social values
- Declining budgets and workforce
- Limited capacity for fuels management to reduce the threat of large fires
- Increasing private development within and adjacent to the national forests
- Increasing invasive species
- Increasing demands for forest products
- Increasingly diverse and expanding human use patterns
- Increasing public demands for goods, services, and experiences

Operating Guidelines

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Vision

TO BE WRITTEN

Sustainability Framework

The mission of the Forest Service is to sustain the health, diversity, and productivity of the nation's forests and grasslands in a manner that meets the needs of present and future generations (USDA 2004 Strategic Plan). The overall goal of management of the national forests is to sustain the multiple uses of its renewable resources in ways that best meet the needs of the public in perpetuity while maintaining the long-term productivity of the land.

Growing concern and demand for limited resources is causing increasing conflicts between users and their values. Sustainability is not possible when human needs or desires exceed the capacity of the environment to sustain us. Every acre of the national forests of the Blue Mountains can't provide for all of society's demands. The forests can meet some of the needs and some of the desires at some points in time. The range of possibilities necessarily means that human values are involved in the choices to be made and that public involvement and collaboration are needed.

Ultimately, sustainability requires choices to be made about what to sustain, for whom, at what cost, and how. How this is done is not necessarily a straightforward proposition. It needs to be based on the current, best understanding of ecological, social, and economic systems and needs. Some of these relationships are obvious, others are less obvious.

The vision for the national forests of the Blue Mountains is the framework for making these choices about sustainability. Three guiding sustainability principles provide the basis for determining a set of integrated, desired conditions that describe the vision:

1. **Ecological Integrity –** sustaining wholeness or completeness of ecosystems structure, composition, and processes
2. **Social Well-Being –** contributing to healthy, safe, and quality lifestyles through personal and community well-being
3. **Economic Well-Being –** enabling people to work, provide income for their families and lifestyle, accumulate capital, and provide economic wealth to the nation

The desired conditions describe the overall ecological, social, and economic attributes that characterize sustainability and how the forests are expected to look and function in the future when the land management plan has been successfully implemented. The following indicators have been selected to describe the desired ecological, social, and economic conditions for the Blue Mountains national forests. The indicators are intended to display how the forests will provide for *ecological integrity* while also contributing to the *social and economic well-being* of both the residents of communities within the Blue Mountains as well as forest users who reside outside of the Blue Mountains.

Ecological Integrity

1.1 Ecological Function

- 1.1.1 Wildland Fire
- 1.1.2 Insects and Disease
- 1.1.3 Watershed Function
- 1.1.4 Species Diversity
- 1.1.5 Productive Capacity

1.2 Ecological Structure and Composition

- 1.2.1 Structural Stages
- 1.2.2 Species Composition
- 1.2.3 Plant Abundance
- 1.2.4 Air Quality
- 1.2.5 Soil Quality
- 1.2.6 Water Quality
- 1.2.7 Landscape Patterns
- 1.2.8 Special Habitats

Social Well-Being

2.1 Social Capital

- 2.1.1 Community Resiliency
- 2.1.2 Land Ownership
- 2.1.3 Trust Responsibilities

2.2 Social and Cultural Values

- 2.2.1 Hunting, Fishing, and Gathering
- 2.2.2 Scenery
- 2.2.3 Interpretation and Conservation Education
- 2.2.4 Heritage Resources
- 2.2.5 Access and Use
- 2.2.6 Recreation
- 2.2.7 Sense of Place

Economic Well-Being

3.1 Economic Capital

- 3.1.1 Facilities & Infrastructure

3.2 Economic Production

- 3.2.1 Goods and Services

3.3 Economic Contribution

- 3.3.1 Interrelationships

Ecological integrity is described by ecological function, structure, and composition. Indicators of ecological function include disturbance processes (wildland, insects, and disease), watershed function, species diversity, and productive capacity of ecosystems. Ecological structure and composition is described by vegetation types and structural stages; species composition and plant abundance; and air, soil and water quality. Landscape patterns and special habitats are also indicators of sustainability across the Blue Mountains.

Social and economic well-being is framed by social capital; social and cultural values; economic capital; production and contributions of the national forests. Social capital is described by the relationship of the national forests to community resiliency, patterns of land ownership, and trust responsibilities to American Indian tribes. Indicators of social and cultural values include hunting; fishing; gathering;

scenery; interpretation and education; heritage resources; access and use; recreation; and how the national forests contribute to more intangible experiences of residents and visitors – their sense of place. Major economic indicators include facilities and infrastructure; production of goods and services from the national forests; and the interrelationships between the national forests and the social and economic needs of the surrounding areas.

Desired Conditions

The following desired condition descriptions are aspirations, not commitments, and may only be achievable over the long term. This set of indicators has been modified from (Wright and others 2002) based on input from the public as well as resource specialists from the Malheur, Umatilla, and Wallowa-Whitman National Forests. A brief background description of each indicator is provided, followed by the desired condition for that indicator, and a monitoring question that is intended to show how each indicator could be measured. The measures themselves will be developed at a later time. It is important to understand that not every indicator will be measured, even though all are measurable.

Ecological Integrity

1.1 Ecological Function

1.1.1 Wildland Fire

BACKGROUND: Fire suppression and other factors have created higher and more contiguous fuel loads across the landscape. Because of the build up of fuels, disturbance processes have been altered and fires are now more severe and intense than historic levels especially in the warm, dry forest types (Quigley and Arbelbide 1997).

The influx of people into the wildland-urban interface has, in many cases, created an increasing risk of wildfire. The amount, size, intensity of fires, and federal resources expended in the wildland-urban interface have increased since the 1980s (Hill 1999). Much of the private land within a quarter-mile of national forest land is classified as moderate-to-high risk to wildfire. In the past, a wildfire that might have been considered benign because of its location on forested lands can now quickly become a threat to homes, structures, and property.

DESIRED CONDITION: Fire occurs across the landscape and plays its natural ecological role in magnitude, frequency, and extent. The following table summarizes the desired condition ranges for wildland fire within the categories of fire intensity, fire frequency, percent of stand-replacing fire, and size within each biophysical setting of the landscape being analyzed.

APPROPRIATE MAGNITUDE, FREQUENCY, AND TIMING OF WILDLAND FIRE				
Biophysical Setting	**Fire Intensity**	**Frequency in Years**	**Percent of Stand-Replacing Fire**	**Size in Acres**
Whitebark pine forest	mixed	30-120	20-40	50-1,000
Cold forest	mixed-high	100-200	40-80	1,000-5,000
Moist forest	mixed	30-150	20-40	50-1,000
Dry ponderosa pine forest	low	5-10	5-10	50-1,000
Dry grand fir forest	low	15-25	10-25	50-1,000
Hot dry pine forest	low	10-20	5-20	50-1,000
Dry Douglas-fir forest	low	5-10	5-15	50-1,000
Juniper woodland	mixed	80-160	25-45	250-1,000
Cold shrubland	mixed	30-60	30-60	N/A
Moist shrubland	high	10-40	60-100	NA
Dry shrubland	mixed	75-125	20-60	NA
Cold herbland	high	30-80	55-100	NA
Moist herbland	mixed-high	20-40	20-70	NA
Dry herbland	low-mixed	5-20	40-80	NA
Cool-cold riparian forest	mixed -high	100-200	40-90	
Warm riparian forest	low-mixed	5-25	5-25	

Warm Riparian herbland	low-mixed	5-25	5-25	
Warm Riparian shrubland	low-mixed	5-25	5-25	
Cool/Cold Riparian herbland	mixed -high	100-200	40-90	
Cool/Cold Riparian shrubland	mixed -high	100-200	40-90	

Note: Ranges for desired conditions were derived from national fire regime condition class (FRCC) vegetation dynamics development tool (VDDT) modeling, national Landfire modeling, collaborative workshops, and professional experience that represent values within the estimated historic range of variability (HRV). Data measures for wildland fire were derived from protocols established by the national processes.

MONITORING QUESTION: Is wildland fire functioning at an appropriate magnitude, frequency, and extent?

1.1.2 Insects and Disease

BACKGROUND: Recent reports specific to the Blue Mountains such as *Forest Health on National Forest Lands in the Blue Mountains 1990-1996: Insects and Diseases* (Scott and Schmitt 1996). And *Forest Health Update: Five Years Later, Monitoring Report to the Forest Supervisor* (Fletcher 1996) have provided greater understanding of the long-term ecological implications of some past treatments which led to unanticipated large, landscape-level changes, and increased the awareness of the need to more fully integrate insect and disease management into the Revised Land Management Plan. Insect and disease measures are derived from national risk rating protocol.

At the subbasin level, there have been increases in susceptibility to Douglas-fir beetle and Douglas-fir mistletoe due to increased cover, connectivity, stand densities, and multi-layered canopies of Douglas-fir and grand fir (Hessberg 1999). In addition, the amount of area susceptible to annosum root disease and root rot has increased (Hessberg and others 1999).

The duration, extent, and severity of defoliator and bark beetle outbreaks have increased with the increased quality, uniformity, and continuity of fir host types (Hessberg and others 1999a). Landscapes (rather than patches) are susceptible to defoliator and bark beetle outbreaks (Hessberg and others 1994). There is a continued loss of whitebark pine due to blister rust.

DESIRED CONDITION: Endemic (normal) levels of insect and disease will fulfill the natural role of creating diverse landscapes and components such as hollow trees and snags. Stand conditions favor endemic populations that are within the natural range of variability.

MONITORING QUESTION: Are insect and disease processes functioning in a manner that fulfills the natural role of creating a diverse and sustainable landscape?

1.1.3 Watershed Function

BACKGROUND: Watershed function is a product of hillslope processes that control the routing of water, sediment, wood, and nutrients to stream channels. Recent science recognizes that watersheds and their channel and riparian networks are dynamic and that variable disturbance and flow regimes are responsible for the creation and maintenance of habitats and vegetative succession. Components of watersheds include hillslopes, flow regime, riparian areas, wetlands, stream channels, aquatic habitats, and water quality. Changes in any of these components can be used as indicators of overall watershed conditions. Watersheds in the Blue Mountains have a long history of land use dating to the time of European settlement that has altered watershed conditions. These impacts include the conversion of floodplain forests to agriculture, grazing by domestic livestock, mining, logging, and road construction. Changes in watershed management followed the listing of Columbia and Snake River salmon and steelhead and the implementation of PACFISH and INFISH guidelines in the 1990s. These guidelines for protection of anadromous and resident fish included the establishment of priority watersheds and designation of Riparian Habitat Conservation Areas (RHCAs).

DESIRED CONDITION: The watershed-scale processes that control the routing of water, sediment, wood, and organic material operate within ranges that provide a dynamic equilibrium among hillslopes, riparian forests, stream channels, and aquatic habitats resulting in an ecological system that is self-sustaining and highly valued for its ecological, social and economic characteristics at the watershed scale.

The distribution, diversity, and complexity of watershed and landscape-scale features, including natural disturbance regimes, provide aquatic and riparian ecosystems to which species, populations, and communities are uniquely adapted.

Spatial and temporal connectivity exists within and between watersheds, providing lateral and longitudinal connections between headwater tributaries, floodplains, wetlands, channel networks, and intact habitat refugia. These network connections provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent plant and animal species.

MONITORING QUESTION: Are the key processes that create and maintain aquatic and riparian habitats intact?

Hydrologic Function

BACKGROUND: Hydrologic function includes the ways (and rates) in which precipitation is converted to streamflow as well as properties of the flow regime, including the magnitude, frequency, duration, timing, and variability of streamflow. On hillslopes, the primary controls of hydrologic function are the type and density of vegetation and the physical properties of soils. Removal of vegetation or ground cover (by activities such as fire or timber harvest) and the construction of roads alters hydrologic pathways that can result in increased hillslope and stream channel erosion rates.

DESIRED CONDITION: The rates of watershed runoff, including water yield, timing, frequency, magnitude, and duration of runoff, are sufficient to create and maintain healthy and diverse populations of aquatic, wetland, floodplain, and riparian-dependent species and to maintain patterns of sediment, nutrient, and wood routing.

The flow regime is sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows are within the natural range of variability and similar to the regime in which the system developed.

The timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands are within the natural range of variability.

MONITORING QUESTION: Is the timing, magnitude, duration, and frequency of watershed runoff within the ranges that support aquatic and riparian-dependent species?

Riparian Function

BACKGROUND: Riparian areas generally consist of the areas bordering streams and rivers and are presently managed through the implementation of Riparian Habitat Conservation Areas (RHCAs). Riparian areas contribute to channel stability through the provision of root strength and wood to stream channels and banks. Riparian areas are also important contributors of shade that reduces water temperature and organic matter that forms the base of aquatic food webs. Recent science increasingly recognizes the role of riparian areas in regulating the routing and delivery of sediment, wood, and nutrients to larger streams.

DESIRED CONDITION: Riparian areas have a species composition, structural diversity, age class diversity, and extent that is characteristic of the setting in which they occur and the hydrologic and disturbance regimes in which they developed. The condition and composition of small habitat patches may change over small temporal and spatial scales but remains relatively constant at larger scales.

Riparian zones are capable of the functions normally attributed to them including, but not limited to, the provision of bank stability, wood, fine and particulate organic material, nutrients, shade, microclimate, winter and summer thermal regulation, and aquatic habitat complexity, diversity, and productivity.

MONITORING QUESTION: Is the riparian vegetation in terms of species composition, age class structure, species diversity, and land use impacts characteristic of the setting in which they occur?

Wetland Function

BACKGROUND: Wetlands are regulated under federal law by the Clean Water Act and through Executive Order 11990 (42 FR 26961 May 24, 1977), which requires federal agencies to limit or avoid activities that result in wetland impacts. Wetlands occur in a variety of settings and include numerous different types and are therefore an important contributor to biological diversity. Wetlands are also recognized for their role in protecting water quality, processing excess nutrients, and contributing to groundwater recharge, among other functions.

DESIRED CONDITION: The extent and diversity of wetland types is within the natural range of variability.

MONITORING QUESTION: Are the functions and values of wetlands being protected? Are wetland areas increasing or decreasing?

Stream Channel Function

BACKGROUND: Channel processes vary greatly with channel type and topographic position in the watershed. Small headwater (ephemeral) streams may comprise up to 70-80 percent of the channel length in any given watershed and are typically important sources of water, sediment, wood, and nutrients to larger streams.

DESIRED CONDITION: The physical integrity of the aquatic system, including shorelines, banks, and bottom configurations are in dynamic equilibrium with the flow and sediment regimes under which aquatic ecosystems have evolved. Channel morphology, structure, complexity, and diversity are in ranges that are characteristic of the local geo-climatic setting.

MONITORING QUESTION: Are stream channels in balance with their hydrologic and geomorphic setting in terms of bank stability, erosion, sediment transport, and channel morphology?

Aquatic Habitat Function

BACKGROUND: Aquatic habitats are shaped by a combination of physical and biological factors including streamflow variability, sediment transport, stream channel characteristics, riparian habitat characteristics, water quality, accumulation and processing of wood and other organic material, and the connectivity and spatial distribution of habitat types within channel networks.

DESIRED CONDITION: Aquatic habitats provide ecological conditions capable of supporting self-sustaining populations of native plant, invertebrate, and vertebrate riparian-dependent species. Habitat elements for native and anadromous fish include spawning and rearing habitat, substrate, pool habitat, winter habitat, migration corridors, cover, food, habitat complexity, water quality, refugia, and connectivity.

MONITORING QUESTION: Are aquatic habitats capable of supporting self-sustaining populations of aquatic species?

1.1.4 Species Diversity

BACKGROUND: The *National Forest Management Act* (NFMA) requires land management plans to provide for diversity of plant and animal communities based on the suitability and capability of the land area while meeting overall multiple-use objectives. The 2005 Planning Rule and associated Forest Service directives specify how to meet the diversity requirement. A hierarchical approach that analyzes for ecosystem diversity and species diversity (for terrestrial species) has been developed and is available as guidance within the Pacific Northwest Region. This approach aggregates species-of-conservation-concern by habitat. Habitat requirements for each species-of-conservation-concern (within a particular habitat group) are compared with the goal of selecting at least one species to serve as a "focal" species for that habitat group. More detailed information regarding "focal" species is found in Appendix XX.

DESIRED CONDITION: Habitat for native species, including threatened and endangered species, species-of-concern, and species-of-interest, is of sufficient quality, distribution, and abundance to contribute to populations and individuals' ability to interact and disperse.

Population strongholds exist for species listed or proposed for listing under the Endangered Species Act (ESA), state classified sensitive species, and narrow endemics. These strongholds provide high quality habitat for species, and support expansion and recolonization of species to adjacent watersheds. These areas conserve key demographic processes likely to influence the persistence of populations or metapopulations.

The integration of Tables XXX through XXX represents the desired habitat conditions for the terrestrial 'focal' species.

PLACEHOLDER FOR FOCAL SPECIES TABLES

MONITORING QUESTION: Are habitat conditions sufficient to sustain native populations of plants and animals?

1.1.6 Productive Capacity

BACKGROUND: The basic tenets of sustainability include 1) not using natural resources faster than they are produced or can be replaced, and 2) using natural resources without impairment of the long-term productive capacity of the ecosystems from which they are derived. Productive capacity is described in terms of the growth and accumulation of plant biomass (primary productivity) as well as the growth of animal species that use the products of primary productivity (secondary productivity). Key elements of productivity include the physical, chemical, and biological properties of soils which provide for vegetative growth and the accumulation and cycling of nutrients

The goods and services derived from ecosystems include functions such as flood control, waste removal, and the maintenance of air and water quality; renewable resources such as timber, water, and forage; and non-renewable resources such as oil and gas, coal, or precious metals.

Recent science recognizes that the sustainability of natural systems requires the preservation of the key processes under which those systems developed. For example, in aquatic systems, variability of the flow regime is responsible for the creation and maintenance of habitats, influences riparian establishment and succession, controls the routing of sediment, and regulates nutrient cycles. Fires regulate many of the same processes in terrestrial systems.

DESIRED CONDITION: The long-term productivity of ecosystems is sustained by the ecological processes under which these systems developed. Forest and rangeland ecosystems provide ecological goods and services for human consumption without diminishing their long-term productive capacity.

MONITORING QUESTIONS: Are the goods and services produced from the national forests within the long-term, sustainable capacity of the ecosystems?

1.2 Ecological Structure and Composition

1.2.1 Structural Stage

BACKGROUND: The desired condition will include desired ranges of structural stage abundance for each biophysical setting. Structure is an important component related to wildlife habitat, insect and disease, and wildfire hazard indices. Structural stages are described by Powell (1996) and Hessburg and others (1999), and are consistent with national vegetation classification standards.

Current data indicate a trend of decreasing acres of dry and moist old forest structure among the Blue Mountains national forests, primarily due to timber harvest and wildfire. Most of the reduction in late old structure and large trees occurred prior to the implementation of the Eastside Screens in 1993 (USDA

1995b). Since then, the only loss of old forest or large trees on national forest lands has been due to wind events or wildfire, and from a few timber sales.

Many changes to timber stand structure have occurred due to changes in disturbance regimes. Generally, timber stand diameters have decreased and the average timber stand density has increased. There has been an increase in the seedling stage and young multi-layered forests. There has also been a loss of large and medium trees across the landscape in stands not classified as late old structure. Patch size and amount of dry forest late old structure has decreased and isolation and fragmentation has increased.

DESIRED CONDITION: The distribution and abundance of structural stages creates conditions that are resilient, sustainable, and compatible with maintaining necessary disturbance processes. The following table summarizes the desired condition ranges for structural stages within each biophysical setting. See Appendix XX for more detailed explanations for data items in the table.

STRUCTURAL STAGES IN FORESTED ENVIRONMENTS (percent per structural stage)							
Biophysical Setting	**Post Disturbance**	**Stand Initiation**	**Stem Exclusion**	**Understory Reinitiation**	**Young Forest Multistory**	**Old Forest Multistory**	**Old Forest Single-story**
Whitebark pine forest		1-25	0-20	5-25	20-50	20-60	10-30
Cold forest		1-20	0-20	5-25	10-40	10-60	0-5
Moist forest		1-20	0-25	5-25	10-40	10-30	5-10
Dry Ponderosa Pine Forest		5-15	10-25	5-10	5-25	5-20	20-60
Dry Grand Fir Forest		5-15	5-20	1-10	5-25	5-20	15-55
Hot Dry Pine Forest		5-15	10-20	0-5	5-10	5-15	20-70
Dry Douglas-fir Forest		5-15	10-25	1-10	5-25	5-20	20-60
Juniper Woodland		5-15	5-20	0-5	5-10	5-15	20-70
Cool/Cold Riparian Forest							
Warm Riparian Forest							

MONITORING QUESTION: Does the landscape structure contribute to maintaining a resilient system?

1.2.2 Species Composition

BACKGROUND: The species composition within different biophysical settings can be directly correlated to wildfire hazard and insect and disease hazard. Measures for species composition follow the Society of American Foresters, Society of Range Management, and National Vegetation Classification standards. Many landscape and stand level species compositions have been modified by past logging of overstory ponderosa pine and western larch, fire suppression, grazing, and introduction of invasive plant species.

The ICBEMP observed many changes at the landscape level, and others have been identified at the subbasin level through watershed analysis including decreases in shrub and grasslands area. The distribution of aspen is decreasing and the recruitment of younger trees is declining due to conifer encroachment, browsing, and the exclusion of fire. Whitebark pine is also decreasing. At the subbasin level, there have been increases in distribution of Douglas-fir and grand fir (Hessberg 1999) on sites historically dominated by ponderosa pine. Juniper and conifer encroachment onto grassland, shrubland, and woodland types has also increased.

DESIRED CONDITION: The mix of species composition within the landscape creates conditions that are resilient, sustainable, and compatible with maintaining necessary disturbance processes. The following table summarizes the desired condition ranges for species composition within each biophysical setting. See Appendix XX for detailed data explanations.

SPECIES COMPOSITION IN FORESTED ENVIRONMENTS									
Biophysical Setting	**Juniper**	**Ponderosa Pine**	**Douglas-fir**	**Western Larch**	**Grand Fir**	**Lodgepole Pine**	**Subalpine Fir**	**Spruce**	**White Bark Pine**
Whitebark Pine Forest						0-10	0-10		60-100
Cold Forest				0-10	0-10	0-10	20-40	0-10	
Moist Forest		5-15	15-30	10-30	5-30	5-30	0-5	0-5	
Dry Ponderosa Pine Forest		80-100	0-5						
Dry Grand Fir forest		40-60	10-15	5-10	5-10	5-10			
Hot Dry Pine Forest	0-5	80-100							
Dry Douglas-fir Forest		40-60	40-60						
Juniper Woodland	100								
Cool/cold Riparian Forest									
Warm Riparian Forest									

SPECIES COMPOSITION IN GRASSLAND AND SHRUB SYSTEMS					
Biophysical Setting	**Early**	**Mid**	**Late**	**Potential Natural Community**	**Conifer**
All types	0-10%	40-60%	10-20%	0-10%	0-5%

MONITORING QUESTION: Does the species composition across the landscape contribute to maintaining a resilient system?

1.2.3 Plant Abundance

BACKGROUND: Plant abundance (stand density, canopy closure, trees per acre, or basal area) is an important component of wildland fire, insect and disease, and stand structure, and can be directly linked to hazard indices and product outputs.

Generally, forest stand diameters have decreased and the average forest stand density has increased. There has been an increase in the seedling stage and young multi-layered forests. The major changes over the last 10 to 15 years across the Blue Mountains may have reduced biodiversity and created a landscape condition dominated by dense, multi-layered stands, with tree species not well suited to the site, contributing to the potential for uncharacteristically severe and large disturbances such as wildfire, insects, or disease. These conditions could create an unsustainable system. The abundance of juniper has increased on many sites that were historically dominated by sagebrush.

DESIRED CONDITION: The following table displays desired percentages of plant abundance ranges for each biophysical setting and favored species within the landscape. See Appendix XX for detailed data explanations.

PLANT ABUNDANCE in FORESTED ENVIRONMENTS (Forested Stand Density Index (SDI) Values)			
Biophysical Setting	**0-50% of full stocking**	**50-75% of full stocking**	**75%+ of full stocking**
Whitebark Pine Forest	20-30% of the landscape	30-40% of the landscape	20-30% of the landscape
Cold Forest	0-30	30-60	30-60
Moist Forest	0-40	20-80	20-80
Dry Ponderosa Pine Forest	20-60	10-20	10-20
Dry Grand Fir Forest	10-40	10-40	10-40
Hot Dry Pine Forest	20-60	10-20	10-20
Dry Douglas-fir Forest	20-60	10-20	10-20
Juniper Woodland	20-40	20-40	20-40

Cool-cold Riparian Forest			
Warm Riparian Forest			

Note: Utilizing ranges published in Cochran and others 1996 and Powell 1999

PLANT ABUNDANCE in GRASSLAND and SHRUB UPLANDS (Canopy Closure)		
Biophysical Setting	**Canopy Closure**	**Canopy Closure**
	0-40%	40%+
All types	10-50% of landscape	40-80% of landscape

MONITORING QUESTION: Does plant abundance across the landscape contribute to maintaining a resilient system?

1.2.4 Air Quality

BACKGROUND: Federal and state standards include protection of air quality-related values in Class I Areas (wilderness areas over 5,000 acres that existed on or before August 1977 and the Hells Canyon National Recreation Area). Smoke from prescribed and wild fires is the primary air quality concern on the three Blue Mountains national forests. Smoke emissions from forests in the Blue Mountains are limited by agreement between the U.S. Forest Service and the Oregon Department of Environmental Quality to a total of 15,000 tons per year. This limit has not been exceeded since inception of the agreement in 1995.

DESIRED CONDITION: Air quality in the Blue Mountains is clean and not harmful to human health.

MONITORING QUESTION: Does air quality meet applicable state and federal standards?

1.2.5 Soil Quality

BACKGROUND: Soil quality is protected primarily through the implementation of soil quality standards and Best Management Practices. These standards include limits on disturbance resulting in soil compaction, displacement, rutting, and puddling which affect soil structure and the hydrologic characteristics and productivity of affected soils. Existing soil quality standards are generic in that they do not take into account local soil properties. As a result, these standards may be overly protective in some cases and not protective enough in others.

DESIRED CONDITION: The productivity of forest and range soils is maintained at levels that contribute to long-term sustainability of ecosystems.

PLACEHOLDER FOR SOIL QUALITY STANDARDS TABLE

MONITORING QUESTION: Do the physical, biological, and chemical properties of soils contribute to the long-term sustainability of forest ecosystems?

1.2.6 Water Quality

BACKGROUND: Water quality is regulated nationally under the Clean Water Act. The authority to set water quality criteria lies with individual states. Water quality criteria vary depending on the beneficial use of water (for example, the criteria for irrigation use, domestic use, and coldwater fisheries are all different). For streams in the Blue Mountains, the main water quality of concern is stream temperature.

DESIRED CONDITION: The physical, chemical, and biological integrity of surface and groundwater is sufficient to provide for human uses, and the needs of terrestrial and aquatic species.

MONITORING QUESTION: Do ground and surface waters on the national forests contribute high quality water for forest and off-forest beneficial uses?

1.2.7 Landscape Patterns

BACKGROUND: Landscape patterns determine how, where, and when vertebrate and non-vertebrate species successfully utilize a given area. Landscape patterns are dynamic and influenced by both

natural and human-induced disturbances. Forest patch size, distribution, and connectivity have changed from historical conditions. In roaded subbasins, forest patch densities are higher, average patch size is smaller, edge density is greater, landscape fragmentation has increased, and patch connectivity has decreased (Hessburg and others 1999).

DESIRED CONDITION: Landscape patterns are spatially and temporally diverse. The following table displays desired attributes for landscape patterns. See Appendix XX for detailed data explanations.

DESIRED RANGE OF PATCH SIZE (in Acres)					
Biophysical Setting	**Stand Initiation**	**Stem Exclusion**	**Understory Reinitiation & Young Multi-story**	**Old Forest Multi-story**	**Old Forest Single Story**
Whitebark Pine Forest	2-5	50-250	50-250	50-1000	50-1000
Cold Forest	1000-5000	1000-5000	1000-5000	1000-5000	10-50
Moist Forest	5-100	5-100	5-100	250-1000	5-100
Dry Ponderosa Pine Forest	1-5	500-1000	50-100	50-100	500-1000
Dry Grand Fir Forest	5-10	500-1000	25-150	25-150	500-1000
Hot Dry Pine Forest	1-5	500-1000	50-100	50-100	500-1000
Dry Douglas-fir Forest	1-5	500-1000	50-100	50-100	500-1000
Juniper woodland	5-100	5-100	5-100	5-100	100-500
Cool/cold Riparian Forest					
Warm Riparian Forest					

MONITORING QUESTION: Do landscape patterns contribute to maintaining a resilient system?

1.2.8 Special Habitats

BACKGROUND: Special habitats are unique groupings of living organisms and non-living attributes that are limited in geographic extent. A wide variety of special habitats occur across the Blue Mountains, although their condition and trend is not well understood. The 2005 Planning Rule identify the need for desired conditions and objectives for ecosystems and specialized habitats that are rare or otherwise at risk. Properly functioning special habitats are a key point of ecosystem sustainability.

DESIRED CONDITION: Special habitats such as snags, caves, cliffs, talus slopes, down logs, springs, seeps bogs, and hardwood stands are sustained in good condition and are prevalent on the landscape. Special habitats continue to be functional cornerstones of ecological integrity. The following tables display desired ranges of amounts for snags and down woody material in each biophysical setting.

DOWN WOODY MATERIAL					
Biophysical Setting	**0-12" Tons/acre**	**12"+ Tons/acre**	**Total Tons/acre**	**Pieces/acre >12" diameter**	**Lineal Feet/acre > 12" diameter**
Whitebark Pine Forest	0-3	3-7	4-10	15-20	120-160
Cold Forest	0-5	5-10	5-15	15-20	120-160
Moist Forest	0-5	5-15	2-20	15-20	120-160
Dry Ponderosa Pine Forest	0-2	2-8	3-10	3-6	20-40
Dry Grand Fir Forest	0-3	3-9	4-12	15-20	100-140
Hot Dry Pine Forest	0-2	2-4	2-6	3-6	20-40
Dry Douglas-fir Forest	0-2	2-8	3-10	3-6	20-40
Juniper Woodland	0-1	2-5	2-6	3-6	20-40
Cool-cold Riparian Forest					
Warm Riparian Forest					

SNAGS					
Biophysical Setting	**5-10" dbh***	**10-15" dbh***	**15-20" dbh***	**20"+ dbh***	**Total Trees/acre**
Whitebark Pine Forest		1-3	1-3	-	2-5
Cold Forest		1-3	1-3	1-5	2-10
Moist Forest		1-4	1-4	1-7	2-15
Dry Ponderosa Pine Forest		1-1.5	1-1.5	1-3	2-6
Dry Grand Fir Forest		1-3	1-3	1-3	2-9
Hot Dry Pine Forest		0-2	0-2	0-2	1-3
Dry Douglas-fir Forest		0-2	1-1.5	1-1.5	2-6
Juniper Woodland		0-1	1-2	1-2	2-3
Cool-cold Riparian Forest					
Warm Riparian Forest					

*dbh=diameter at breast height

OTHER HABITATS (by age class)				
Type	**0-50 years**	**50-100 years**	**100+years**	**% of Conifers**
Mountain Mahogany	40 %	30%	30%	<5%
Aspen	40%	30%	30%	<5%
Cottonwood	40%	30%	30%	-

MONITORING QUESTION: Are special habitats prevalent on the landscape and functioning properly?

1.2.9 Geological Resources

BACKGROUND: Geologic resources include sand and gravel, precious metals, and energy resources such as coal, oil, natural gas, and geothermal resources, all of which occur in the Blue Mountains. Oil and gas resources are known to occur in a sedimentary basin that underlies parts of the Umatilla National Forest. The potential extent of these resources is largely unquantified due to the great depth at which they occur and the difficulty of exploration through the overlying Columbia River basalts. Geothermal resources exist throughout the Blue Mountains but their development potential is somewhat limited by the fact that most do not occur near population centers. Prospecting and mining for gold began near Baker City, Canyon City, and Granite in the 1862 and has continued at varying levels to the present day. Quantities of chrome, silver, copper, and other metals have also been produced from mines in the Blue Mountains.

DESIRED CONDITION: Exploration, development, and production of mineral and energy resources contribute to the economic and social needs of the nation in a manner consistent with the sustainability of other forest resources.

MONITORING QUESTION: Is the exploration, development, and production of mineral and energy resources conducted in a manner that is consistent with the planning and management of other forest resources?

Social Well-Being

2.1. Social Capital

2.1.1 Community Resiliency

BACKGROUND: Community resiliency refers to the capacity of a community to adapt to changing conditions. Similar to ecological systems, highly resilient communities have more capacity and are more adaptable to change than lesser resilient ones.

Sustainable land management of the national forests is linked with resiliency of rural and tribal communities in the Blue Mountains. Local communities provide human capital (skills and knowledge),

social capital (institutions and connections among individuals, their social networks, and the collective value of these relationships), built infrastructure (roads and facilities on and adjacent to the national forests), and services (food, financial, and medical) to accomplish programs and policies related to achieving the desired conditions. They also provide the businesses, infrastructure, and services (food, beverage, and lodging) for the recreating public that travels to the forests and/or stays within the surrounding communities. Resilient communities can provide higher levels of human and social capital, built infrastructure, and services to contribute toward achieving the desired conditions (Brown 1999; Horne and Haynes 1999).

Changes in national and international economies as well as changes in regional and local public land management activities have had varying effects on communities in the Blue Mountains. For example, changes in county-level social and economic factors indicate that the gap between socioeconomic conditions for rural and urban areas is widening. In addition, the rural population is aging and replacing natural resource employment with lower-income retirees which is changing the composition of rural communities (State of Oregon 2003).

Some social and economic factors such as changes in school enrollment, public assistance claims, poverty rates, or seasonal unemployment are often overlooked in the broader trends in the area. Community resiliency provides one way to recognize and link natural resource management activities from the national forests to changes in social and economic well-being for communities in the Blue Mountains (USDA/USDI 2003).

DESIRED CONDITION: The national forests of the Blue Mountains contribute to the resiliency, cultural values, lifestyles and other amenities of local and tribal communities by providing a predictable and sustainable flow of goods and services while protecting the ecological integrity of ecosystems.

MONITORING QUESTION: Are local communities resilient?

2.1.2 Land Ownership

BACKGROUND: The emphasis of the lands program of the Forest Service is on opportunities to consolidate land ownership, decrease management conflicts, secure and mark land boundaries, and secure rights-of-way and easements for administrative use and public needs.

The three national forests in the Blue Mountains have completed land exchanges or purchases that have resulted in the exchange of approximately 12,500 acres of national forest land for 26,274 acres of non-federal lands since the current forest plans were implemented. Completion of the Blue Mountains Land Exchange, which involves approximately 18,000 acres of federal lands and 32,000 acres of non-federal lands, is pending and may change the land base of the three forests during the land management plan revision process.

DESIRED CONDITION: The pattern of land ownership in the Blue Mountains allows for efficient and cost-effective management of natural resources on public lands.

MONITORING QUESTION: Does the pattern of land ownership contribute to efficient management of public lands?

2.1.3 Trust Responsibilities

BACKGROUND: The national forests share in the federal government's overall trust responsibility to American Indian tribes where treaty or other legally defined rights apply to national forest lands. A significant portion of lands ceded by the Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs of Oregon, Confederated Tribes and Bands of the Yakama Indian Nation of the Yakama Reservation and the Nez Perce Tribe by virtue of the “Treaties of 1855” remains part of the public domain on the national forests in the Blue Mountains. These treaties have specific language recognizing detailed reserved rights for each tribe.

The Burns Paiute Tribe, Klamath Tribes, Shoshone-Bannock, Shoshone-Paiute Tribes of the Duck Valley Reservation, Fort McDermitt Paiute and Shoshone Tribes, Fort Bidwell Indian Community of

Paiute Indians, and the Joseph Band of Nez Perce-Colville Confederated Tribes maintain tribal interests with national forests through other instruments such as executive orders.

Increased communication between tribal governments and Forest Service line officers (forest supervisors and district rangers) has resulted in more projects being developed that focus on mutual benefit toward forest and watershed health and tribal cultural stability.

Staff-to-staff communications have increased and have led to an understanding of the significance and interconnectedness of treaty resources within tribal cultures. These relationships are also vital to protecting and managing ecological resources to honor, support, and respect cultural, spiritual, and community interests and to integrate these as fully as possible into the project design (USDA/USDI 2003).

DESIRED CONDITION: Treaty-ceded areas on the three national forests are available for tribal members to exercise their unique treaty rights. Trust resources (such as habitat conditions) contribute to tribal rights, interests, and cultures in a manner that promotes sustainability of the ecosystems.

MONITORING QUESTION: Are the national forests meeting their shared responsibilities to American Indian tribes?

2.2. Social and Cultural Values

2.2.1 Hunting, Fishing, and Gathering

BACKGROUND: The national forests provide non-commercial and recreational fishing, hunting or gathering opportunities for visitors and local residents. This use is important to local lifestyles in terms of providing opportunities to surrounding communities, family groups, or as traditional pursuits. Hunting, fishing, and gathering are linked to other indicators of social well-being, as well as several indicators of ecological integrity and economic well-being.

Big game hunting, relaxing, and gathering forest products (such as berries, mushrooms, and fuelwood) and most fishing take place in a variety of forest settings. The supply of semi-primitive recreation still exceeds the demand as predicted in the current forest plans, but some site-specific displacement of individual users may have occurred due to road closures. The issue most common to all dispersed use visitors is access and motorized use, including debate about density, maintenance, and closures of both roads and trails. One area of enhanced concern to the resource is the user conflicts that often occur in the heavily used riparian areas across the national forests.

DESIRED CONDITION: Opportunities for hunting, fishing, and gathering vary across the landscape. The national forests provide a mix of opportunities that are consistent with sustainable ecosystems and contribute to both local lifestyles and traditional visitor activities.

MONITORING QUESTION: Are opportunities for hunting, fishing, and gathering of non-commercial products contributing to meeting public demand consistent with sustainable ecosystems?

2.2.2 Scenery

BACKGROUND: Maintaining a natural appearing landscape is important to tourism and recreation opportunities and the quality of life for both visitors and local residents in and around the Blue Mountains. This indicator is closely related to other social indicators, and directly related to several indicators of ecological integrity such as Disturbance Processes.

No visual corridor management plans have been amended into the current forest plans. In scenic corridors and other areas where the emphasis was on retaining natural appearing conditions, the landscape may be at risk from ecological processes. In the long term, the landscape integrity may be compromised. Visitor use surveys indicate that visitors found components such as “scenery” and “condition of the environment” to be both highly satisfactory and highly important to their recreation experience across the Blue Mountains.

DESIRED CONDITIONS: Natural and man-made features provide landscape character and scenic integrity. Constructed features and landscape alterations complement landscape characteristics.

MONITORING QUESTION: Are scenic integrity objectives being met?

2.2.3 Interpretation and Conservation Education

BACKGROUND: Interpretive services provide programs that enhance public understanding of and appreciation for the natural and cultural resources of the national forests and their management in order to foster wise use and conservation.

Interpretive sites on the forests are closely connected with either special interest areas and/or scenic byways. They are most commonly classified as 'minor developed recreation sites'. Interpretive sites are important to forest visitors, and visitor surveys indicate that they are mostly satisfactory in both site condition and information content.

DESIRED CONDITIONS: Interpretation and conservation education programs are accurate and based on current science and research data. Programs convey clear messages and are organized around explicitly defined themes. The activities convey management goals and support the Forest Service mission. Visitor expectations are met and activities relate to site-specific resources and issues. Accessibility for visitors with disabilities is accommodated as appropriate. Safety messages are consistently included in interpretive programs and safety measures are taken for visitors participating in interpretation and education activities.

MONITORING QUESTION: Are interpretive opportunities on the forests informative, accurate, and readable? Do they match customer interests?

2.2.4 Heritage Resources

BACKGROUND: Much evidence of the past, such as artifacts and architecture, is extremely fragile and can be obliterated by relatively minor modifications of the ground surface. The resource is increasingly threatened by development, public use, and vandalism. Heritage properties and areas have not only local scientific interest and significance, but are elements of worldwide patterns and processes. This indicator is linked to ecological integrity indicators such as Disturbance Processes.

Strong educational and volunteer projects attract public participation in identifying and understanding heritage resources. Improved consultation processes with a variety of affected American Indian tribes have increased effectiveness and contributed towards development of a strong program in heritage resource management. Survey and monitoring activities are focused in areas where ground-disturbing activities are planned and the risk of site damage is highest.

While sites impacted by management activities are protected, many other historic and cultural sites have continued to deteriorate from neglect and vandalism. Current monitoring reports indicate that grazing and mining activities and unmanaged recreation (such as cross-country travel by off-highway vehicles) pose a high level of concern to heritage resources. Heritage resource managers are also concerned about the backlog of deferred maintenance and/or disposal of historic structures.

DESIRED CONDITIONS: The significant tangible features of sites or locations and other cultural and historic aspects that people value remain in context. Scientific study of the heritage resources is done to gain knowledge about past human behavior. As appropriate, the resources or sites are opportunities for interpretation and education so that the public may gain a better understanding and perspective of our heritage, by including socio-cultural values in an environmental context.

MONITORING QUESTION: Are important historic and pre-historic places and objects being properly managed?

2.2.5 Access and Use

BACKGROUND: Linked to the transportation aspect of economic well-being, high quality access is important in providing conditions that benefit visitors and national forest administration and do not degrade natural resources.

Changes in access across public lands affect uses and users on both private and public lands, since the system is connected to state, county, or local public roads and trails. Use of the Blue Mountains goes hand-in-hand with access to the national forests. One form of assessing this availability is related to road density and acres of national forest land accessible near roads. Many, but not all, forest recreation uses occur within a half-mile of roads. As roads deteriorate and are taken off the road system there are effects on recreation use.

DESIRED CONDITION: Motorized and non-motorized access and use the national forests provide a range of recreation and non-recreation opportunities, experiences, and challenges. Motorized and non-motorized use occurs on roads and trails, and in designated areas for cross-country travel. Use levels are within social and ecological capacity. Rights-of-way and easements provide adequate and legal access to national forest lands.

MONITORING QUESTION: Does the type and amount of access and use of national forest lands contribute to meetings the demand consistent with sustainable ecosystems?

2.2.6 Recreation

BACKGROUND: Recreation opportunities are provided to meet evolving socio-cultural needs over time and in conjunction with other resource uses. The quality of these opportunities or experiences is related to changing levels of use over time from local and non-local users.

The Blue Mountains provide opportunities from the more developed to the most primitive, primarily in a forest setting. Developed areas, such as resorts, ski areas, visitor centers, developed campgrounds, and boating facilities are highly valued by users. Natural settings offer opportunities for primitive activities such as backpacking, fishing, hiking, and wildlife viewing that attract many visitors.

Some developed sites have been downgraded to 'dispersed areas' and facilities have been removed. Developed sites at selected high use areas have been upgraded to meet standards set by the *Americans with Disabilities Act* (ADA). New forms of recreation have been accommodated through the cabin rental program and state and local partnerships with nordic skiers, snowmobile clubs, equestrian groups, and off-highway vehicle riders. Outside funding and partner organizations have been instrumental in increasing the diversity of recreation opportunities across the three national forests.

State surveys in Oregon identified funding priorities for major rehabilitation of outdoor recreation facilities and for winter recreation facilities. In Washington State, reports indicate that a growing demand is resulting in more reported crowding, increased specialization, user conflicts, and management actions to limit adverse impacts to access and activities. The top five most popular activities across the Blue Mountains involve developed facilities. The national forests serve as "backyards" to moderate population areas for activities that are not often available in the private sector.

DESIRED CONDITION: National forest settings provide a variety of recreation opportunities, activities, and experiences. The national forests provide high quality recreation opportunities in partnership with permit holders, private entities, nonprofit and volunteer groups, state, federal, and tribal partners.

MONITORING QUESTION: Does the supply of recreation settings and opportunities available on the three national forests contribute to meeting the demand?

2.2.7 Sense of Place

BACKGROUND: Social and cultural values provide an understanding of people's attitudes, beliefs, preferences, use patterns, and social and cultural history. A major component of the area's social and cultural values is the attachments people have to the national forests and the meaning they hold for these relationships – the sense of place. This phenomenon encompasses physical, emotional, and spiritual activities or attachments and supports peoples' ability to feel connected to the environment and create meaning of the world around them (Cheng, Kruger, and Daniels 2003). Consideration of sense of place is vital to managing for sustainability because management actions may change how people individually and collectively connect to and value the land.

Since 1990, various studies indicate the wide diversity of values for the Blue Mountains. For example, eastern Oregon residents indicate preferences for a quality place to live, outdoor recreation, and wildlife habitat (Brunson and others 1994). Many people relate to the national forests from diverse perspectives developed over many generations. For example, American Indians have a long history in the area and a close tie to the land. Miners, ranchers, loggers, hunters, anglers, and recreationists all have a strong sense of individual and collective identity and history.

These values are inseparable from the national forests as a whole and reflect a traditional 'way of life' that may have other social, ecological, or economic ties to community resiliency, employment and income, scenery, recreation, learning, historic, collecting forest products, and hunting and gathering uses and values. Belonging to or identifying with a group, engaging in family activities, and socializing with others connects people to the national forests, the past, and future generations. People also seek and maintain cultural and spiritual connections to the national forests to find sanctuary or gain a sense of renewal (USDA 2004b).

Most Oregon residents want a "balance of social, economic, and environmental benefits" (Davis, Hibbits, and McCaig 2001). Residents of the broader interior Columbia Basin reveal priorities (76 percent) for protecting watersheds, fish and wildlife habitats, endangered species, ecosystems, and wilderness (Haynes and Horne 1997). The American public agrees (84 percent) that "future generations should be as important as the current one" in decisions that affect public lands (Shields and others 2002). While many people support environmental protection as a social priority they are increasingly concerned with balancing costs to society (USDA 1996).

DESIRED CONDITION: The national forests provide a broad mix of settings in places that contribute to local residents and visitors' sense of diverse attachments to and value for the land.

MONITORING QUESTION: Do management decisions respect and protect the sense of place associated with the national forests?

Economic Well-Being

3.1. Economic Capital

3.1.1 Facilities and Infrastructure

BACKGROUND: Built capital such as roads and trails, recreational facilities, and other improvements contribute to the wealth and capital of the Blue Mountains national forests. Changes in the quantity or condition of these assets affect sustainability of the surrounding social and economic environment by affecting uses of the land. Capital investments and their management can greatly influence the short and long-term impact a national forest can have on local communities. The number, distribution, and condition of these facilities are important attributes of their quality and usefulness in meeting visitor demand.

Road maintenance funding is not adequate to maintain and sign roads to the current maintenance level objectives. There are potential environmental impacts from the road system that need to be prioritized and evaluated for future analyses at a lower (watershed or subwatershed) scale. High road densities in

some areas do not meet standards in the current forest plans. Road access may not be adequate for future management and public access needs.

The trail system on the national forests is comprised of non-motorized and motorized trails. Although there are limited opportunities for motorized recreation on system trails throughout the three national forests, this use is increasing both regionally and locally. Currently, due to trail widths, two-wheeled motorized use opportunities are greater than four-wheeled motorized use. Trail re-construction has been based on needs for increased public safety, compliance with riparian enhancement, or through implementation of wild and scenic river plans. Emphasis on keeping horse and hiker trails well maintained is strong and many partners provide volunteer labor. Combining motorized and non-motorized users at trailheads and along travel routes result in occasional conflicts. The majority of trails have numerous maintenance needs, due to the aging infrastructure. Trails are used differently and more heavily than the level for which they were originally designed.

Improvements to developed recreation sites have been made to reduce the deferred maintenance backlog, provide support to volunteer hosts, and to build or maintain facilities in compliance with the *Americans with Disabilities Act* (ADA). Facility infrastructure continues to have a backlog of deferred maintenance needs. Capitol improvement projects have upgraded some high use sites and agreements with other recreation providers and volunteer groups have resulted in improved sites at many locations.

Adaptation to new uses such as longer and wider recreational vehicles (RVs), off-highway vehicle (OHV) camping, and equestrian use is slow and may not meet the needs of current visitors. National standards for health and cleanliness, safety and security, recreation setting, responsiveness, and condition of facilities may not be met at all developed sites.

DESIRED CONDITIONS: Facilities, utility systems, roads, and trails are safe, efficient, and well maintained to meet resource management objectives and match the appropriate level of activity on the forest.

MONITORING QUESTION: Are transportation systems and facilities safe and consistent with management objectives?

3.2 Economic Production

3.2.1 Goods and Services

BACKGROUND: Many people rely on and receive tangible and intangible benefits from goods and services that flow from ecosystems. The national forests support ecological processes (such as soil productivity and species diversity) necessary for producing goods and services; provide goods and services including timber, biomass, fiber, special forest products, forage, fish, wildlife, fresh water, fuel wood, minerals, oil, gas, biochemical, and genetic resources; regulate ecosystem processes (for example climate, disease, water regulation and purification); and contribute cultural benefits (such as recreation and aesthetic experience, outfitter and guide services, learning, cognitive development and reflection, spiritual enrichment, sense of place, and heritage) (Millennium Ecosystem Assessment 2003). Both the quantity and quality of sustainable flows within the productive capacity of ecosystems is an important component of sustainability (USDA/USDI 2003).

Monitoring has focused primarily on tracking consumptive uses and indicates that the flow of goods and services has changed over the last decade. For example, although the current forest plans anticipated providing a consistent annual amount of timber (465 MMBF) to maintain stable local economies the average annual timber production (50-60 MMBF) has declined about 60 percent (USDA 2004a). Average annual domestic grazing permitted at 302,000 Animal Unit Months (AUMs) has also declined compared to the anticipated average annual permitted levels of 354,000 AUMs in the current forest plans, but at a slower rate.

DESIRED CONDITIONS: The national forests provide predictable and sustainable flows of goods and services that contribute tangible and intangible benefits to people within the productive capacity of ecosystems.

MONITORING QUESTION: Is the quantity and quality of goods and services flowing from the national forests predictable and sustainable over time?

3.3 Economic Contributions

3.3 Interrelationships

BACKGROUND: Local economies currently function within the larger economic systems of the states, the nation, and world. Linking the predictable and sustainable flows of goods and services that national forests in the Blue Mountains to contribute to economic conditions is necessary to understand how these interrelationships support industries, employment, income, infrastructure, and other economic factors in local communities for long-term sustainability (USDA/USDI 2003).

Employment is often regarded as one of the most critical dimensions and indicators of economic activity because it provides a key measure of local participation in ecosystem management, and points to local income generation. Understanding the degree to which local industries and workforce provides the basis for ecosystem management work for the national forests is important to understanding linkages and recognizing how these interdependencies can aid in sustaining and restoring ecological integrity of the forests (USDA/USDI 2003).

Changes within the industries, employment, and income in the area have been widely variable since the current forest plans were completed in 1990. For example, the value of total production from all industries in the area has increased by 42 percent since the early 1990s. The largest growth occurred in finance, insurance, and real estate followed by transportation, communication and public utilities and trade. The largest decline for industry sectors occurred in mining, logging contractors and sawmills (USDA 2004a).

Changes within industries have created widely variable changes in employment and income. Total employment (farm and non-farm) has increased about 19 percent since 1990 with approximately 130,000 people now employed in the planning area. Total earnings from employment have increased 38 percent overall. The highest increases in employment occurred for finance, insurance, and real estate. Logging contractors and sawmills experienced the largest declines in income (USDA 2004a).

DESIRED CONDITIONS: The production of predictable and sustainable flows of goods and services from the national forests contribute to employment, income, infrastructure, and other economic relationships. Economic factors and diversification opportunities contribute to the national forest's ability to achieve the desired conditions.

MONITORING QUESTION: Are goods and service produced from the national forests contributing to sustainable local communities?