

Executive Summary



This Executive Summary covers the key points from each chapter of the *Elliott State Forest Management Plan (FMP)*.

Reference citations are omitted from this Executive Summary.

Chapter 1. Purpose, History, and Planning

The FMP provides management direction for all Common School Forest Lands (CSFLs) and Board of Forestry Lands (BOFLs) managed by the Coos District. This includes the Elliott State Forest proper, as well as scattered tracts of state forest lands in Coos, Curry, and Douglas Counties, totaling 97,022 acres. In this FMP, all lands managed by the Coos District are referred to as the Elliott State Forest. This FMP supersedes and replaces the previous *Elliott State Forest Management Plan*.

This FMP takes a comprehensive, multi-resource approach to forest management, as did the 1994 FMP. It includes a description of each forest resource, information about its current condition, and management for each. The resource management goals and strategies are intended to achieve a proper balance among the resources through a system of integrated management. For example, the key set of management strategies seeks to concurrently produce revenue through harvesting of forest products, while maintaining and developing desirable fish and wildlife habitats and forest biological diversity.

Location—The Elliott State Forest is located in the Oregon Coast Range. Coos Bay and North Bend are the nearest cities to the southwest of the Elliott; Reedsport is the nearest town to the northwest. The forest is a contiguous block of land approximately 18 miles long (north to south) and 16 miles wide (west to east). The Umpqua River is located immediately north of the forest. To the west, the Elliott extends within six miles of the ocean. On the east, it extends approximately 21 miles inland, to the crest of the Coast Range. The contiguous Elliott State Forest covers 93,282 acres, mostly located in Coos and Douglas Counties.

In addition to the main block of the Elliott State Forest, the Coos District manages 3,740 acres of scattered CSFLs located in Coos, Curry, and Douglas Counties. These scattered tracts are distributed across a broad geographic area ranging from the California border to just north of the Umpqua River, and from the Pacific Ocean to Sutherlin in the interior Umpqua River valley.

Land Ownership—State forests were acquired in different ways, and the two types are owned by different entities within state government. Some state forest parcels were granted to the state by the federal government when Oregon became a state in 1859; these are the CSFLs, owned by the State Land Board. The BOFLs are lands owned by the Board of Forestry (BOF).

Each land ownership has its own set of legal and policy mandates. These mandates are discussed under “Land Base and Access” in Chapter 2, and also in Appendix D. The guiding principles in Chapter 3 provide more information about how state forests of both ownerships are managed under this FMP.

Most (90.6 percent, or 87,934 acres) of the state forest lands in the Coos District are CSFLs; the remaining 9.4 percent (9,088 acres) are BOFLs.

Origin of the Elliott State Forest—The origin of the Elliott State Forest dates back to 1859, when the Oregon Territory became the State of Oregon. At that time, the Admissions Act granted to Oregon sections 16 and 36 in every township, or lands in lieu of those if they were unavailable. Oregon was to use these lands to finance public schools. This land grant, the Common School Trust Lands (of which the current CSFLs are a subset), amounted to approximately 3.5 million acres.

Between 1859 and 1912, all but 130,000 acres of the forested lands passed out of state ownership by sale as a matter of policy. Approximately 70,000 acres of the remaining lands were scattered inside the newly established national forests in Oregon.

The Oregon Department of Forestry (ODF) was created in 1911. Its main purpose was to control forest fires, but it was also authorized to acquire forest land to manage. However, the ODF did not actually acquire any lands until legislative actions in 1925 and 1939 made it more feasible.

To turn the isolated parcels of CSFLs into one manageable block of state-owned forest land, State Forester Francis Elliott and Governor Oswald West decided to trade the state parcels inside the National Forests with the federal government for one large block of federal land. This block of land became Oregon's first state forest in 1930.

In 1940, Coos County deeded 6,500 acres of tax-delinquent forest land next to the Elliott to the BOF. Nearly 1,800 acres of BOFLs are also located in Douglas County, most of which was deeded by the county in the 1930's and 40's. In return, the counties were to receive two-thirds of the revenue from these lands. In the 1970s, a focused land exchange effort began that traded approximately 7,000 acres scattered parcels of state land for privately-owned land within or next to the forest.

Management Planning for State Forests—Management planning for Oregon state forests involves five main elements. As shown in Figure ES-1, planning begins with broad-scale, long-range planning, which may include a Habitat Conservation Plan (HCP). Intermediate level planning is done at the district level and is documented through district Implementation Plans (IPs). Annual Operations Plans (AOPs) and budgets (both biennial and annual) are designed to achieve the IP objectives for shorter periods of time (one or two years).

The long-range FMP provides overall direction for managing the state forests in the planning area. This FMP is guided by legal and policy mandates and administrative rules, which are described in Chapter 1.



Figure ES-1. Five Elements of Planning for Oregon State Forests

Chapter 2. Understanding the Forest – Planning and Resources

This chapter describes the process used to develop this FMP, and presents information about the forest resources.

Elliott State Forest Planning Process—During the late 1980s, there was growing concern about several wildlife species. The northern spotted owl (*Strix occidentalis*) was listed as a federal threatened species in 1990, and the marbled murrelet (*Brachyramphus marmoratus*) was listed as a federal threatened species in 1992. Previously, long-range plans for the Elliott State Forest were primarily timber management plans. In 1991, the State Land Board directed the ODF to work with the Oregon Department of Fish and Wildlife (ODFW), the Department of State Lands, and other state agencies to develop a new long-range FMP to address the entire forest ecosystem, consistent with the timber management contract between the State Land Board and the ODF.

A new FMP was approved for the Elliott State Forest in 1994; in 1995, a habitat conservation plan (HCP) for the northern spotted owl and the marbled murrelet was approved by the U.S. Fish and Wildlife Service (USFWS). The USFWS issued the ODF a 60-year Incidental Take Permit (ITP) for the northern spotted owl, and a six-year ITP for the marbled murrelet. The latter permit expired on October 3, 2001, and was the prime driver for revision of the FMP and HCP.

Revision of the 1994 FMP began in 2000 with the formation of a planning team and steering committee. The core planning team included both field and program staff from the ODF and representatives from the ODFW. The core team consulted many additional resource specialists. A steering committee provided policy direction to the core planning team, and a key link to program managers, the counties, and the State Land Board.

The FMP includes the following technical elements:

- **Guiding Principles**—The overall rules, goals, and responsibilities that guide the planning process
- **Resource Descriptions**—Information about the resource’s current status and future trends
- **Resource Management Goals**—The broad goals to be achieved through the management of each resource
- **Resource Management Concepts**—The concepts used to develop and support the strategies contained in the FMP
- **Resource Management Strategies**—A set of integrated strategies, including landscape management, aquatic and riparian, and forest health strategies; strategies for specific species of concern; and additional strategies for specific resources

Public Involvement—The planning team started a comprehensive public involvement process in 2000, and continued it throughout the planning process. Public involvement

included public meetings, newsletters, field tours, communication with local tribal leaders, and community outreach with a number of local groups.

A scientific review of FMP fundamental concepts and integrated strategies was conducted in late 2003 and early 2004 for the FMP's fundamental concepts and initial set of integrated strategies. Eight notable and credible scientists from a variety of fields participated in the review.

This FMP requires the approval of both the BOF and the State Land Board.

Resource Descriptions—The first step in forest management is a substantial one: to gain an understanding of the resources involved. Soil, water, air, lupines, bark beetles, owls, steelhead (*Oncorhynchus mykiss*), Douglas-fir (*Pseudotsuga menziesii*), Sitka spruce (*Picea sitchensis*), forest fires, and floods are just some of the aspects to be considered. The resource descriptions are a first step in the monumental task of fully comprehending the complexities of the resources in the Elliott State Forest.

This section of Chapter 2 provides summary information about the following resources:

- Agriculture and grazing
- Air quality
- Aquatic and riparian
- Climate
- Cultural resources
- Ecology and disturbance history
- Energy and minerals
- Fish and wildlife
- Forest health
- Geology, topography, soils, and geotechnical issues
- Land base and access
- Plants
- Recreation
- Scenic resources
- Social and economic resources
- Special forest products
- Timber

Following are summaries of some of the key resources.

Aquatic and Riparian—Water affects virtually every other resource: trees, plants, fish, wildlife, soils, and recreation. In the Elliott State Forest, aquatic and riparian resources include surface water (streams, lakes, and wetlands), groundwater and aquifers, riparian areas, water supply (for instream and out-of-stream uses), and water quality.

The Elliott State Forest drains into three major basins. The eastern and northern portions of the forest drain into the Umpqua River. The west side of the forest drains into the Tenmile Lake system. The West Fork Millicoma runs through the center of the forest toward the south and is part of the Coos River system. The Elliott State Forest contains parts of two lakes. Loon Lake, a popular recreation site has approximately 1 mile of shoreline on the Elliott. Elk Lake, also known as Gould's Lake is a small lake located within the forest on Elk Creek. Outside the Elliott State Forest, Tenmile Lake is influenced by waters draining from the forest.

Ecology and Disturbance History—Forests along the Oregon coast, including the Elliott State Forest, result from a typical progression of stand structures following large, relatively infrequent disturbance events and subsequent smaller, more frequent disturbances. Relatively recent, large-scale events such as the Coos Bay Fire (1868) and the Columbus Day Storm (1962) influenced the distribution, composition, and structure of vegetation across the forest. Small-scale disturbances caused by subsequent less severe fires, windstorms, disease, insects, and harvesting also significantly affect forest landscape characteristics.

Fire is the primary coarse-scale disturbance agent in the western hemlock (*Tsuga heterophylla*) zone of the Oregon coast. Historically, large fires have been important to the development of forests in the hemlock zone. The Coos Bay fire of 1868 burned 90 percent of the area that is now the Elliott State Forest.

The continuum of disturbance by wind is difficult to characterize. Wind can cause coarse-scale disturbances, such as the Columbus Day Storm of 1962, or fine-scale disturbances that are more chronic in nature. Depending on the intensity, large-scale wind disturbances can create even-aged stands or increase the complexity of stand structures.

Disease and insects combine with wind damage to create patchy stands. The interactions of wind, root disease, and bark beetles create canopy gaps, mix soils during tree uprooting, and increase structural and biological diversity in stands.

Landslides are a dominant erosion factor on steep, forested slopes in western Oregon. A landslide is the movement of a mass of soil, rock, and organic debris down slope. Floods are generally restricted to more predictable areas than fires or windstorms, and their magnitude and frequency of occurrence can be estimated for a given river.

Fish and Wildlife—The Elliott State Forest provides habitats for most native species found in forests in the Oregon Coast Range. Appendix E lists the native fish and wildlife species currently known or likely to exist in or adjacent to the Elliott State Forest. Approximately 221 species are included: 51 mammals, 116 birds, 24 amphibians and reptiles, and 30 fish.

Of the many wildlife species potentially found in the Elliott State Forest, four bird species are listed as threatened or endangered under either the federal or state Endangered Species Act (ESA), or under both ESAs. Coho salmon (*Oncorhynchus kisutch*) on the southern Oregon coast is listed under the federal ESA. Populations of some other fish species are candidates for listing.

- **Bald Eagle**—Federally and state listed as threatened in Oregon. In 2003, there were three occupied bald eagle (*Haliaeetus leucocephalus*) nesting territories in the Elliott State Forest.
- **Peregrine Falcon**—State listed as endangered in Oregon. No active peregrine falcon (*Falco peregrinus*) nest sites are currently known in the Elliott State Forest.
- **Marbled Murrelet**—Federally listed as threatened in Oregon. The marbled murrelet is a seabird that nests in mature or old growth coniferous forests within 50 miles of the ocean. As of 2003, approximately 10,000 acres were protected in Marbled Murrelet Management Areas (MMMA) in the Elliott State Forest. Additional acres of potential habitat have not been surveyed for marbled murrelets.
- **Spotted Owl**—Federally listed as a threatened species. Research on the demographics, habitat use, and habitat characteristics of spotted owls on state forest lands, including the Elliott State Forest, took place between 1993 and 1998. Although an apparent loss of territories occurred over the five years of the study, the rate of population change remained relatively steady, largely due to high survival and fecundity. A 2003 density survey of all suitable spotted owl habitat in the Elliott State Forest revealed an equivalent number of owl sites as the last similar survey in 1996.
- **Fish**—The streams, rivers, lakes, and other water bodies in the Elliott State Forest and scattered tracts provide habitats for a variety of fish species. At least 30 species of fish use habitats in the FMP area for part or all of their life history, or use habitats downstream from the forest that may be influenced by forest management. Coho salmon within the Oregon Coast evolutionarily significant unit (ESU) were listed as threatened in 1998. In 2004, Oregon Coast coho were delisted, but they are proposed for listing, with a final determination expected in 2005. Coho salmon in the Southern Oregon/ Northern California Coasts ESU are listed as threatened under the federal ESA. Scattered tracts in these areas may contain streams used by coho salmon.

Forest Health—Most definitions of a healthy forest are based on the premise that management objectives can be achieved only within the limits of an ecologically viable and sustainable ecosystem. The following concepts are common to most current definitions of forest health: 1) the forest can vigorously renew itself across the landscape and recover from a wide range of disturbances; 2) it provides for the human needs of values, uses, products, and services; and 3) it offers a diversity of stand structures that provide habitat for many native species and all essential ecosystem processes.

Key indicators of forest health include damage from biotic agents such as insects, diseases, and animals, as well as damage from abiotic stressors such as fire, weather extremes, and air pollutants. Evaluations must determine the level of change that indicates a significant forest health trend within the context of normal and historical variability.

Non-native (or “invasive”) species often require special measures such as eradication, quarantine, or direct suppression.

Recreation—Recreation use within the Elliott State Forest is concentrated in several small areas of the forest. The remainder of the forest has little recreation use. The heaviest use occurs on long holiday weekends in the summer, and during deer and elk hunting seasons in the fall. Most forest visitors are local residents who enjoy the state forest because it is undeveloped and relatively unregulated, with little competition for favorite sites.

Social and Economic Resources—In addition to timber harvest levels, other resources, costs, and issues such as forest health, aesthetics, recreation, biodiversity, livability, and other values play a role in economic analysis. An analysis titled “The *Elliott State Forest Management Plan* Revision: Connection to State and Local Economies” provides a detailed description of current local and state economic conditions and information for analyzing the short-term economic consequences of FMP strategies on local and state economies. The analysis showed that, in Coos County, wood products account for approximately 10 percent of personal income, as well as 17 percent of the employment in Douglas County. Each change in timber harvest from the Elliott State Forest of one million board feet (MMBF) is projected to affect 11 to 13 jobs in southwest Oregon, with an average annual wage of \$32,000.

Timber—The Elliott State Forest is an asset to the Common School Fund (CSF), counties, and local taxing districts. Prudent and careful management of the timber resource is an important theme in all planning and management of the forest. The primary objective for CSFLs is the generation of the greatest amount of revenue in the long-run for the CSF, consistent with sound techniques of land and timber management. Administrative rules require that BOFLs be managed in an environmentally sound manner to provide sustainable timber harvest and revenues to these government entities.

During the six-year period from 1991 through 1996, the volume harvested in the Elliott State Forest was heavily influenced by the presence of the northern spotted owl and the marbled murrelet (both federal threatened species, as stated above). The average annual volume harvested during this period was 17.74 MMBF. Harvest volume under the 1995 HCP has averaged approximately 28 MMBF.

Chapter 3. Guiding Principles, Vision, and Goals

Chapter 3 presents the guiding principles, forest vision, management goals, and monitoring assumptions. These values and goals set the overall direction for the FMP.

Guiding Principles—The FMP’s guiding principles, discussed in Chapter 3, are listed below.

- The FMP will recognize that the goal for CSFLs is the maximization of revenue to the CSF over the long term, consistent with sound techniques of land management. The goal for management of BOFLs is to secure the greatest permanent value to the citizens of Oregon by providing healthy, productive, and sustainable forest ecosystems, that over time and across the landscape provide a full range of social, economic, and environmental benefits to the people of Oregon.
- The FMP will be developed within the context of the Elliott State Forest as a managed forest.
- Economic, environment, and social values are important elements of sustainable forest management and are interdependent.
- The FMP will recognize that the forest is intended to be an important contributor to timber supply for present and future generations.
- The FMP will be comprehensive and integrated, taking into account a wide range of forest values.
- Lands will be identified and managed for long-term revenue production while providing for a sustained contribution to biological capability and social values. The FMP will recognize that trade-offs will exist between revenue-producing activities and non-revenue-producing activities.
- The FMP will examine opportunities to achieve goals through cooperative efforts with other agencies, user groups, or organizations.
- The FMP will be developed through a collaborative and cooperative process involving the State Land Board, the BOF, the public, local and tribal governments, and other resource management agencies (including the USFWS and NOAA Fisheries – collectively known as the “Services”).
- The FMP will be goal-driven.
- The FMP will view the Elliott State Forest in both a local and regional context.
- The FMP will consider the overall biological diversity of state forest lands, including the variety of life and accompanying ecological processes.
- The forest will be managed to meet state and federal ESAs while fulfilling the State Land Board’s responsibilities under the Oregon Constitution and the BOF’s statutory responsibilities.

- The ODF will employ an adaptive management approach to ensure that the best available knowledge is acquired and used efficiently and effectively in forest resource management programs.
- The FMP will satisfy the constitutional mandate for CSFLs, and will recognize that ecosystem and watershed health are among the goals of this FMP.
- The FMP will be designed to achieve a specific desired future condition across the landscape, and provide flexible strategies for achieving that condition without a highly prescriptive approach.

Forest Vision—The vision for the Elliott State Forest is a view of the future composition of the forest that is referred to in the FMP as the desired future condition. The management strategies in Chapter 5, as well as the district IP, describe how the forest will progress from the current forest condition toward the envisioned forest while meeting the purpose of the lands. The Elliott State Forest is a working forest that produces a sustainable timber harvest, generating jobs and revenue for the benefit of the state, counties, and local taxing districts. Diverse forest structures contribute to the range of fish and wildlife habitats necessary for all native species, and contribute to broad biological diversity. The Elliott State Forest provides a range of conditions to achieve the goals for all resources, and the strategies used to achieve these goals have substantial and broad scientific, stakeholder, and public support.

Resource Management Goals—Goals were developed for individual resources, in the context of legal and policy mandates for the management of state forests. The goals are general, non-quantifiable statements of direction. The management strategies in Chapter 5 describe how the ODF will achieve the goals.

Goals were developed for the following resources: agriculture and grazing, air quality, aquatic and riparian, cultural resources, energy and minerals, fish and wildlife, forest condition (health and ecology), land base and access, plants, recreation and scenic resources, social and economic resources, soils, special forest products, and timber. See Chapter 3 for the complete text of the management goals.

Working Hypotheses—The ODF’s understanding about forest systems is substantial, but incomplete. More is learned, on a continual basis, through monitoring and research. At the center of this FMP, and fundamental to the strong adaptive management framework included in this FMP, is a set of working hypotheses. These key working hypotheses are related to broader assumptions and beliefs, and are described in Chapter 3.

Chapter 4. Resource Management Concepts

Chapter 4 presents the resource management concepts underlying the management strategies to be implemented in the Elliott State Forest. Resource management is designed to generate an appropriate balance of economic, environmental, and social values from this state forest.

Basic Concepts for Managing the Elliott State Forest

The management approach for the Elliott State Forest synthesizes the knowledge from various disciplines, including forestry, fisheries, wildlife, and hydrology. This management approach seeks to meet the legal mandate for the land and achieve a broad range of resource goals that provide economic, social, and environmental benefits from the forest over time. In addition, this landscape approach manages forested ecosystems utilizing silvicultural tools that emulate natural disturbances to provide forest products, maintain forest health, and retain a high level of social value.

The basic concepts for managing the Elliott State Forest in this FMP focus on:

- Sustainable economic and social benefit
- Sustainable forest ecosystem management
- Integrated resource management

Sustainable Economic and Social Benefit—Providing economic and social benefit is essential to sustainable management of the forest. The concept that economic, environmental, and social values of the forest are interdependent is basic to the design of the FMP. All three elements of sustainable forest management are woven throughout the FMP and within the strategies.

The basic concepts for sustainable economic and social benefit in this FMP focus on:

- Legal mandates and trust obligations
- Predictable and dependable products and revenues
- Social benefit through forest management

Sustainable Forest Ecosystem Management—Sustainable forest ecosystem management is the application of silvicultural tools to attain the desired landscape condition that will meet the resource management goals of the FMP. Specifically, it is designed to produce and maintain an array of forest stand structures and habitats across the landscape in a functional arrangement that provides for the economic, social, and environmental benefits called for in the management direction for these lands. These benefits include a high level of sustainable timber harvest and revenue, diverse habitats

for native species, a landscape level contribution to properly functioning aquatic systems, and a forest that provides for diverse recreational opportunities.

The following five key concepts are the foundation for sustainable forest ecosystem management:

- Recognize the importance of forest disturbance regimes and stand development processes.
- Provide for biological diversity at the landscape level.
- Provide for biological diversity at the stand level.
- Provide for a diverse and healthy forest ecosystem through the principles of integrated pest management.
- Maintain properly functioning aquatic systems.

Integrated Resource Management—Integrated resource management designs and applies management practices to consider the effects and benefits of all forest resources such that those effects and benefits lead to achievement of the FMP goals over time and across the landscape. Integrated management does not treat all resources equally or provide for all resources on every acre at all times. The integrated resource management concepts combine a landscape-level approach with site-specific strategies for other resource values.

Chapter 5. Resource Management Strategies

The FMP presents a set of integrated strategies that are the basis for managing the forest landscape as a whole. They are designed to be applied through a system of active management that realizes a high level of timber production from these lands, and thus a high level of revenue to beneficiaries. The strategies are presented under the following headings:

- Strategies for Sustainable Economic and Social Benefit
- Strategies of Sustainable Forest Ecosystem Management
- Strategies to Integrate Resource Management

Strategies for Sustainable Economic and Social Benefit

The economic and social benefits of managing the Elliott State Forest are two important legs of sustainability; the third leg is environmental benefit, and all three are interdependent. To provide these benefits, it is essential to meet the legal mandates for managing these lands. These mandates include constitutional and statutory requirements related to the purpose of the lands, as well as other state and federal laws designed to protect environmental and biologic values.

1. Meet legal mandates and trust obligations.

The most fundamental of these mandates is to maximize revenue for the CSF, and to produce revenue for counties and local taxing districts. This mandate will be met primarily through regular timber harvest and marketing, along with the sale of special forest products. Other important legal mandates include complying with the Oregon Forest Practices Act and complying with state and federal ESAs.

2. Provide predictable and dependable products and revenues.

The economic outputs from this FMP were analyzed and identified during its development. It is essential that these outputs provide reliable revenues to the beneficiaries and meet the constitutional mandate to maximize revenue to the CSF. The harvest level in the FMP will be designed to meet these obligations by taking a long-term view of maintaining the productivity of the resource. The forest will be managed to produce a sustainable, even-flow harvest of timber, subject to economic, environmental, and regulatory considerations.

3. Provide social benefits and values through forest management.

Social benefits from this FMP include the production of commodities that result in a regular source of employment for the local and regional economy, products used by businesses of the forest industry, and revenue to support education and other public programs. Recreational opportunities will mainly be dispersed and undeveloped where compatible with other forest management activities. Management of the forest will produce diverse forest conditions valued by many people; these conditions include the existence of plants, fish, and wildlife for hunting, viewing, and collecting, and simply for the pleasure of knowing that these populations and habitats exist.

Strategies of Sustainable Forest Ecosystem Management

Current landscape design methodologies incorporate site history, natural disturbance regimes, and successional processes. In what is called a triad approach, three land use types are distinguished that can coexist at some level within a region without compromising the goal of sustaining biological diversity. The types are: 1) intensive commodity production areas, 2) areas with little or no resource use by people except low-intensity recreation, and 3) areas in which modest resource use is allowed (maintenance of diversity and ecosystem function takes precedence over commodity production). These three land use types are generally represented in this FMP: by: 1) stand structure types that are managed primarily for intensive commodity production and are in early and intermediate structure stages; 2) conservation areas that have little or no resource use; and 3) areas that are managed for advanced structure, where ecosystem function takes precedence over commodity production. The triad concept does not suggest an equal allocation of land use types.

1. Actively manage the Elliott State Forest for a diversity of stand structures across the landscape.

The planning area will be managed to achieve particular ranges of three stand structure types: early structure, intermediate structure, and advanced structure. The forest will be managed for a range of each of these stand types as indicated in Table ES-1.

Table ES-1. Landscape Design: Percent of the Elliott State Forest Allocated to Different Stand Structures

Advanced structure	40 to 60 percent
Intermediate structure	35 to 45 percent
Early structure	5 to 15 percent

Over time, stands located outside conservation areas will change across the landscape as early and intermediate structure stands mature and some advanced structure stands are harvested and regenerated. Specific decisions on the location and arrangement of stands outside the conservation areas will be made through the district implementation planning process.

2 Establish conservation areas to protect special resources.

Conservation areas are designed primarily to maintain habitats known to be important to threatened and endangered species, such as northern spotted owls and marbled murrelets. In addition, conservation areas may fulfill other functions, such as providing benefits to other species using these habitats, providing stepping stones of advanced structure between late-successional reserves on adjacent federal forest lands, maintaining unique or special habitats, contributing to diverse forest conditions, and providing reference areas when testing overall landscape strategies.

Several types of conservation areas are identified in this FMP:

- **Threatened and Endangered Species Core Areas (T&E Cores)**—These conservation areas are designed to protect specific wildlife habitat. They have been established based on current advanced structure conditions and known use by the northern spotted owl, marbled murrelet, and bald eagle.
- **Unique Habitats**—Some of these areas are classified as conservation areas partially because they represent habitats that ODF has determined are rare or unique on the landscape, but do not necessarily provide habitat for threatened and endangered species.
- **Riparian Management Stream Bank and Inner Zones**—Riparian Management Areas (RMAs) function to protect streams and riparian areas from disturbance; filter sediment from uplands; and supply food, cover, shade, and large woody debris. Riparian corridors provide diverse habitats and connectivity throughout the stream network of a watershed.
- **Other Special Resource Areas**—In addition to the special habitats described above, there are lands where little or no management is expected for reasons not associated with habitat values. These lands classified as steep, unique, or visual.

3. Design a functional arrangement of stand structures.

The district IP will include a landscape design to achieve the variety of patch types, sizes, and arrangements necessary to provide functional habitat for native species. These guidelines apply to all habitat types, from early to advanced structure. They include providing a variety of patch sizes, managing the extent of early structure and areas of high edge contrast adjacent to conservation areas, providing patches that are circular in shape to provide better interior habitat, and juxta positioning patches to maintain their interaction.

4. Actively manage to provide key legacy structural components outside of conservation areas.

This strategy presents approaches for managing post-harvest legacy components, including live trees, snags, and downed wood. Although these approaches were developed specifically for retention in clearcut harvest units, retention of these structures in all stand structure types provides valuable wildlife habitat and other ecological values. Individual stands may exceed or fall below these standards; however, it is expected that, on an AOP basis, harvested stands on average will meet these structural retention standards. Monitoring efforts will test the viability of these approaches over time.

5. Actively manage for a diverse and healthy ecosystem applying the principles of integrated pest management

- 5a. Actively manage the forest to maintain or improve forest health.**
- 5b. Detect and monitor pest populations, damage levels, and trends.**
- 5c. Use the Integrated Pest Management process to implement suppression or prevention actions when pest populations or damage exceed acceptable levels.**
- 5d. Assess and manage forest genetic resources.**
- 5e. Implement strategic plans to address insect and disease outbreaks.**
- 5f. Participate in research and cooperative programs that align with Elliott State Forest management objectives, to improve knowledge and actively enhance forest health and biodiversity.**
- 5g. Cooperate with other agencies and associations to prevent the introduction of non-native pests.**

6. Manage aquatic and riparian systems.

6a. Use watershed analysis to inform management decisions.

A watershed analysis for the Elliott State Forest was completed in October 2003. The purpose of the watershed analysis is to measure current resources and assist in improving the understanding of natural processes that influence fish habitat, wildlife habitat, and water resources throughout the Elliott State Forest. Consequences of human activities on these resources are also addressed through the analysis. Information in the watershed analysis will be considered and, as appropriate, applied through IPs. This current watershed analysis will be supplemented with additional resource information as data become available through future management activities and planning efforts.

6b. Apply management standards for aquatic and riparian management areas.

RMA adjacent to all streams will be maintained in accordance with the standards described in Chapter 5 of this FMP. RMA contains four zones: the aquatic zone, stream bank zone, inner RMA zone, and outer RMA zone. Determination of the applicable management standards is based on a stream classification system. Streams are grouped based on the presence or absence of certain fish species (Type F or Type N), and by size (estimated annual average flow). Small non-fish-bearing streams (Type N) are further classified according to flow pattern in normal water years, as perennial or seasonal. Some seasonal Type N streams are seasonal high energy streams or potential debris flow track reaches.

6c. Maintain or improve aquatic habitats.

The aquatic habitat maintenance or improvement strategies are intended to correct human-induced conditions in the forest that may contribute to aquatic habitat deficiencies, or that may limit desired aquatic habitat conditions. These strategies will increase the likelihood of attaining properly functioning aquatic habitat conditions in a timely manner, and will encourage forest conditions that create and maintain complex aquatic habitats on a self-sustaining basis. The Elliott Watershed Analysis will be used to help identify potential factors that could be contributing to undesirable aquatic habitat conditions.

6d. Apply alternative vegetation treatment to achieve habitat objectives in riparian areas.

The term “alternative vegetation treatment” refers to the application of silvicultural tools and management techniques in riparian management areas, using standards that differ from general riparian management standards, for the purpose of changing the vegetative community to better achieve the plan’s aquatic and riparian habitat objectives.

Potential projects include silvicultural treatments such as the conversion of hardwood stands to conifer species; selective removal of hardwoods from mixed-species stands and the establishment of shade-tolerant conifer seedlings; the creation of gaps in hardwood stands to establish conifer seedlings (shade-intolerant and shade-tolerant); and other similar practices not specifically described in the management standards for riparian areas. These projects will be implemented in a way that maintains diverse riparian plant communities (heterogeneity) at the landscape and basin scales, and that minimizes the potential for adverse effects to aquatic resources.

6e. Apply specific strategies to other aquatic habitats.

The management objectives for these waters are generally similar to the objectives for streams, but the specific prescriptions are sometimes different. The strategies for other aquatic habitats will maintain the productivity and hydrologic functions of these habitats, and contribute to conditions needed for the maintenance of other native wildlife species of concern.

6f. Manage slope stability.

Landslide and slope stability minimize the occurrence of management-induced slope failures and mitigate any potential negative impacts on aquatic and riparian habitats. This will be accomplished through application of risk-based management principles and best management practices. Minimizing road-related landslides and chronic erosion (sedimentation to streams) is fundamental to this objective. Hazard assessment and risk-based management for in-unit slides, and ensuring that large wood is available in the track of potential debris slides and torrents, will promote properly functioning conditions for future aquatic habitat inputs. Monitoring and hazard assessment, combined with adaptive management, will ensure that this objective is realized.

6g. Manage forest roads.

The road system will be managed to keep as much forest land in a natural, productive condition as possible; prevent water quality problems and associated impacts on aquatic resources; minimize disruption of natural drainage patterns; provide for adequate fish passage where roads cross fish-bearing streams; and minimize exacerbation of natural mass-wasting processes.

This strategy will be accomplished by using the Elliott Watershed Analysis to supplement the existing road inventory; by planning forest road design, construction, improvement and maintenance in accordance with processes and standards in the *Forest Roads Manual*; and identifying and prioritizing roads for closure and/or abandonment.

Strategies to Integrate Resource Management Across the Elliott State Forest

Chapter 5 also includes strategies for the following specific resources:

- Agricultural and grazing resources
- Air quality
- Cultural resources
- Energy and minerals
- Fish and wildlife
- Land base and access
- Plants
- Recreation
- Scenic resources
- Soils
- Special forest products

Chapter 6. Implementation

Chapter 6 describes guidance and standards for processes and activities that will be undertaken to implement the strategies.

Implementation Guidelines—This section describes who is responsible for implementing the FMP, and how implementation will be carried out. It discusses responsibilities, FMP scope, FMP duration, implementation levels based on funding, IPs, AOPs, and the team concept in implementation.

Asset Management—Assets are defined as the tangible resources and infrastructure on state forest lands.

- In 2005, the estimated market value of the Elliott State Forest and scattered tracts was between \$306 and \$565 million.
- Populations of deer, elk, and bear support a recreational hunting industry. Populations of trout, salmon, and steelhead support a recreational fishing industry. Both hunting and fishing have significant local and regional economic benefits.
- Hunting is the main recreation use in the Elliott State Forest. Growth of other recreational activities on the forest is expected to be moderate because of the steep terrain, distance from major metropolitan areas, and relative lack of access. These activities generate revenue for local and regional businesses.
- The waters that flow from the Elliott State Forest are a major asset to local communities. These streams and rivers support key populations of fish and provide recreational opportunities.
- Approximately 550 miles of active forest roads currently exist in the Elliott State Forest. These roads and their related infrastructure such as bridges and culverts have an estimated value of over \$58 million.

Implementation of FMP strategies is expected to result in significant revenue to the CSF, state, counties, and local taxing districts. In addition to generating annual revenue, the base asset value of the land and timber is expected to increase as a result of implementing this FMP.

Adaptive Forest Resource Management—Adaptive management is an approach to resource assessment and management that explicitly acknowledges uncertainty about the outcomes of management policies, and deals with this uncertainty by treating management activities as opportunities for learning how to manage more effectively. This section describes the concepts, process, and strategies of adaptive management; the importance of research and monitoring in obtaining the information necessary for decision-making; the role of stakeholders in adaptive management; and the process for dealing with changes in policies and practices when needed.

Adaptive Management Concepts—Adaptive management for state forests is defined as a scientifically based, systematically structured approach that tests and monitors FMP assumptions, predictions, and actions, and then uses the resulting information to improve

management plans or practices. Through the application of adaptive management techniques, the ODF will continually improve management policies and practices by learning from the outcomes of operational programs. Adaptive management requires that managers and decision-makers are willing to learn by doing, and to acknowledge that making mistakes is part of learning.

Adaptive management will include public participation, to identify and incorporate public concerns and values into the process.

The key concepts for adaptive management are:

- Adaptive management is a systematic, rigorous approach for learning from our actions, improving management, and accommodating change.
- Adaptive management is not a replacement for decision making at any level, but a system for making better decisions.
- Successful adaptive management requires a well-designed six-step process (including a strong monitoring program):
 - Problem assessment
 - Designing experiments and related monitoring plans
 - Implementing experiments and monitoring as designed
 - Monitoring over an extended period of time
 - Evaluating
 - Verifying or updating the hypotheses used, and adjusting management as necessary
- Adaptive management requires a well-defined framework for effecting change.

Strategies for Implementing Adaptive Management

Chapter 6 provides details on the following management actions to be taken:

Implement an adaptive management process and framework that provides for change at the appropriate planning level and in a timely manner.

Develop and implement a monitoring program designed to evaluate the working hypotheses over time. Review and update a monitoring implementation plan at least every ten years.

Monitoring is a key element in this FMP. Information from monitoring and research will be used to assess resource conditions and ecological and cultural trends, success in

carrying out the strategies, the effects of the strategies on resources, and the validity of the working hypotheses.

Initially, the ODF will emphasize implementation and effectiveness monitoring— (are we doing what we said we would do, and is it working?). Over time, the ODF will also perform validation monitoring (are the underlying assumptions of the management strategies correct?).

Conduct a comprehensive review of the goals and strategies of this FMP every ten years following adoption.

Public involvement in implementation—The ODF is committed to public participation in land management decisions. The public involvement program should be appropriate for the scale and complexity of the project. Chapter 6 describes details of public involvement in district IPs and AOPs.

Appendices

The FMP includes the following appendices:

- A. Glossary
- B. References
- C. Sustainable Forest Ecosystem Management Strategy Information
- D. Legal and Policy Mandates
- E. Wildlife and Fish Species Lists
- F. Wildlife Information
- G. Public Involvement
- H. Decadal Analysis of Management Scenarios

