

Chapter 6

Implementation



Chapter 6 discusses the standards and guidance for implementation of the *Elliott State Forest Management Plan*. Included in this chapter are guidelines for implementation planning and asset management, processes for monitoring and adaptive management, and opportunities for ongoing public involvement in FMP implementation.

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Implementation Guidelines

Responsibilities

The district forester is responsible for implementing all aspects of this FMP. The key areas of responsibility are the management strategies for all resources, district monitoring projects, and district public involvement.

The special projects coordinator is responsible for coordination within the district. Key areas of responsibility include coordinating the development of the IP, AOPs, monitoring priorities and projects, periodic operational reviews, and information exchange.

The geotechnical specialist, wildlife biologist, silviculturist, monitoring coordinator, and public use coordinator are responsible for providing technical assistance to district personnel in the development of the IP, AOPs, and monitoring plans. They are also responsible for providing technical assistance to district personnel for field reviews, and for both landscapewide and site-specific recommendations on specific management activities. They may also have specific responsibilities for monitoring and research projects.

Administrators and technical specialists are responsible for providing guidance and direction on statewide program issues. They also may have specific responsibilities as identified in the FMP.

Plan Scope and Duration

The FMP provides management direction for all CSFLs and BOFLs managed by the Coos District. This includes the Elliott State Forest proper, as well as tracts of state forestlands, totaling 97,022 acres, scattered throughout Coos, Curry, and Douglas counties. This FMP supersedes and replaces the 1994 *Elliott State Forest Management Plan* (Oregon Department of Forestry 1994a).

For several reasons, the FMP is anticipated to endure for a decade or longer. First, the FMP is a goal-driven plan. The plan strategies will be most effective if applied over the long term, and in an adaptive management context. Second, the strategies give field managers substantial flexibility in using existing or new approaches to meet the goals. Monitoring and adaptive management information will be used to incorporate changes necessary to successfully implement the strategies. Third, the State Land Board, BOF, and the public will have access to periodic updates through monitoring reports and IPs that will describe how the FMP is being applied and provide insight into how well the goals are being met. These updates will be key to the State Land Board's determination as to whether portions of the plan should be amended or if a new FMP should be developed.

Implementation Priorities

Funding level for FMP implementation will vary based on cyclical economic trends and approval of budget level by the State Land Board. Over the long term, it is likely that funding levels will support the management activities necessary to meet the FMP goals. However, funding may be limited at times. For this reason, activities are prioritized as follows:

- Activities necessary to achieve the constitutional mandate for CSFLs
- Legally or contractually required activities
- Full implementation of all strategies and monitoring plans

The IP and AOPs will identify the activities that will be pursued within given time periods based on the anticipated funding levels.

District Implementation Plan

A district IP will be developed that contains more detailed information on achievement of the desired future condition, implementation of the landscape design guidelines, and provision for the structural habitat components at the landscape level. The IP will describe:

- The current stand structure amounts and distribution on the district, and the location of any specific habitats for species covered in this FMP.
- The desired future condition for each management basin in the district, in a regional context, and how this array is arranged across the district landscape to meet the landscape design strategy.
- The proposed management activities for the given time period necessary to progress toward the identified stand complexity array and landscape design, as well as the goals for structural habitat components.
- The land management classifications that have been applied to lands in the district to reflect the management approaches and strategies adopted in the FMP and described in the IP. This will include areas designated as RMAs, monitoring controls, or specific habitat areas identified for threatened or endangered species.
- The specific management activities, outputs, and achievements anticipated for the next 10-year period. Activities will reflect the harvest level set for CSFLs by the State Land Board, and specify the harvest level for BOFLs approved by the State Forester. This will include:
 - Annual activity ranges for specific silvicultural operations during the 10-year period (e.g., acres of regeneration harvest and partial cut per year).
 - Estimates of the acres of stand structures that will increase or decrease in stand complexity through the identified management activities.

- Estimates of the amounts of each structural habitat component that the ODF expects to be created through the identified management activities.

Implementation planning is an ongoing process in which ODF personnel will organize resource information, identify and coordinate management activities, and assess progress toward meeting the goals identified in the FMP. District personnel apply the goals and strategies provided by the FMP to stand and forest conditions within specific watersheds or groups of watersheds that comprise identified management basins. Stand management activities are then identified for the foreseeable future (a variable amount of time, but approximately 10 years) based on the specific opportunities and constraints inherent to each management basin.

Information from each management basin is then used to develop the district IP. The IP integrates district operations, and is used in the development of AOPs and budgets. Information derived from watershed analysis is prioritized for implementation, and will be incorporated into the district IP as appropriate.

Land Management Classification System

Concurrent with the development of the IP, the district will apply the Land Management Classification System in a manner that is consistent with the goals of this FMP. The Land Management Classification System is described in Chapter 2, under “Land Base and Access.”

Public Involvement and Revision Process

The initial district IP and the associated land management classifications will be available for public review and comment for a 90-day period prior to consideration for approval by the Director of the DSL and the State Forester.

An IP that undergoes major revisions will be available for public review and comment for a 30-day period prior to consideration for approval of the revision by the Director of the DSL and the State Forester.

The following circumstances will be considered major revisions:

- Revisions that result in proposed major changes to the forestland management classifications as defined in OAR 629-035-0060.
- Revisions that propose changes to the annual harvest level ranges of more than 25 percent based on combined acreage of regeneration and partial harvests. Changes must be consistent with the harvest level approved by the State Land Board.

Additional details on the public involvement process can be found later in this chapter.

State Forests Monitoring Program Strategic Plan

The *State Forests Monitoring Program Strategic Plan* (Strategic Plan) was approved in 2002 (Oregon Department of Forestry 2002). While this plan primarily focuses on research and monitoring related to the *2001 Northwest Oregon State Forests Management Plan* and the *2001 Southwest Oregon State Forest Management Plan* (Oregon Department of Forestry 2001a and 2001c), the objectives apply to Elliott State Forest and Eastern Oregon forestlands as well.

The Strategic Plan describes the approaches and activities that the ODF will undertake over the course of the initial 10-year implementation period to assess compliance with and effectiveness of the resource management strategies described in the FMP. The Strategic Plan guides research and monitoring programs in the plan area during the initial implementation period.

The objectives of the monitoring program are:

- To determine that state forests are managed to achieve an appropriate balance of social, economic, and environmental benefits to the people of Oregon.
- To determine whether FMP programs and strategies are implemented as stated.
- To determine whether FMP programs and strategies result in anticipated habitat or other conditions for the species of concern.
- To assist the adaptive management process by providing information on the species of concern, testing critical assumptions in the FMP, and by providing a learning opportunity to refine management decisions to better meet plan objectives.

Monitoring will provide information to assess the implementation and effectiveness of the management strategies and to evaluate fundamental assumptions that form the planning basis for the FMP. The evaluation of these fundamental assumptions will focus on the development of specific monitoring projects to determine if the strategies are achieving their objectives.

The specific objectives of the Strategic Plan are:

- To describe how implementation monitoring will evaluate achievement of the management strategies, to provide information for internal staff reports and for annual reports to the USFWS and NOAA Fisheries, as well as other governmental entities.
- To provide a framework to aid in prioritizing and developing specific monitoring projects to assess the effectiveness of the management strategies.
- To describe how these monitoring activities will help assess the validity of key assumptions that underlie the management approaches or strategies.
- To describe the funding mechanisms and level of commitment to monitoring during the initial 10-year implementation period.

Annual Operations Plans

AOPs will describe the actual projects the district will pursue to implement the FMP for a fiscal year. Management activities may include harvest operations; road construction, improvement, or vacating; reforestation and young growth management; and aquatic habitat restoration. AOPs are developed by the district and must be consistent with the longer term district IP. Resource specialists from both the ODF and the ODFW will have an opportunity to provide input to the AOPs.

The AOPs will be submitted to the district forester for approval. The district forester will consider any written comments from resource specialists and the public before approving or denying approval of an AOP. Once the AOP is approved, the ODF has the authority to implement the AOP.

Asset Management Guidelines

The Elliott State Forest is a tangible asset of the people of Oregon. The revenues derived from the forest are paid to the CSF and the counties and local taxing districts where the forest is located. The forest and its rich resources provide both an ecological and economic foundation for local communities and the southwestern Oregon region.

“Assets,” as they are discussed in this section, are confined to the tangible resources and infrastructure (forest roads and related improvements) on state forestlands. This section provides a brief description of forest assets, explains the guidelines for efficient and effective management of the assets, and discusses the anticipated outcomes in terms of the value of the assets if the guidelines are implemented through time.

Description of Key Forest Assets

Lands

The plan area contains approximately 97,022 acres of CSFLs and BOFLs. Approximately 90.6 percent of these lands are CSFLs. These lands have the potential to produce resource values from timber, fish and wildlife, recreation, and a variety of other forest uses. Maintenance of this land base as productive and sustainable forests is essential to maintaining and enhancing the overall asset value of these lands.

Various analyses have estimated the value of these lands (Department of State Lands and State Land Board 1995, Department of State Lands and Oregon Department of Forestry 2005). The most recent is a cost/benefit analysis completed in 2005 by Mason, Bruce & Girard, Inc., a forest management consulting company. This analysis estimated the market value of the CSFLs of the main block of the Elliott State Forest—some 84,000 acres. Several types of prospective purchasers or investors were identified, each with certain requirements for investment return. The potential market price for the 84,000 acres of CSFLs identified in the analysis ranged from \$265 million to \$489 million. Assuming a similar inventory and land allocation for the 93,000 acres in the main block of the Elliott State Forest, the value can be estimated at \$293 million to \$541 million. Applying the same assumptions for the full 97,022 acres of the Elliott State Forest, including the scattered tracts, the potential market value for the planning area would be \$306 million to \$565 million.

Forest Products

The timber stands in the Elliott State Forest are an asset to the CSF, and the state, counties, and local taxing districts. Management of the timber asset includes an investment of time, dollars, and resources to realize the forest’s ability to generate sustainable timber harvest and revenue over the long term. Investments include direct expenses in young stand management activities such as precommercial thinning and fertilization, and direct expenses in forest infrastructure such as roads and bridges.

Overall planning and long-term management also involves indirect expenses, such as forest inventory and GIS systems, research projects, and monitoring projects.

The timber resources are renewable and sustainable, and the forest's revenue-generating potential therefore is viewed in a long-term context.

Fish and Wildlife

The Elliott State Forest provides habitat for many species of native wildlife. In this role, it has both direct and indirect social, cultural, and economic benefits for local communities and for the citizens of Oregon. Populations of several big-game species (deer, elk, and bear) support a recreational hunting industry with significant local and regional economic benefits. To manage this asset, it is important to maintain forest conditions that provide habitats to support harvestable levels of game species.

Populations of trout, salmon, and steelhead are another key asset, and support a large recreational fishing industry with significant economic and social benefits. To maintain this asset, it is critical to make investments that will maintain or restore properly functioning aquatic habitats. Investments in this area also contribute to improved availability of these same species to support commercial fishing interests offshore.

A variety of other wildlife species have value for non-consumptive uses such as wildlife viewing. As such, there is a tangible asset value in maintaining diverse habitats that contribute to sustainable population levels for these species.

Recreation

State forestlands have significant tangible and intangible value as a source of recreational opportunities. In addition to the recreational value of the fish and wildlife resources, these forests support other recreational activities that provide social and economic benefits.

Hunting is the main recreation use on the Elliott State Forest. Activities such as hiking, nature viewing, sightseeing, and dispersed camping are expected to become more popular in the future. The Elliott State Forest has limited off-road driving opportunities, but those activities must be managed to avoid potential conflict with other forest uses. Even with continued growth of recreational activities on the forest, use is expected to be moderate because of the steep terrain, distance from major metropolitan areas, and relative lack of access.

Water Resources

The waters that flow from the state forestlands are another major asset to local communities. These streams and rivers support key populations of fish and provide recreational opportunities.

To maintain the asset value of the water resources, it is important to protect and maintain high levels of water quality.

Forest Roads and Related Infrastructure

Integrated forest management to achieve the goals of this FMP requires a high quality, well-maintained system of forest roads and associated infrastructure. The Elliott State Forest currently contains approximately 550 miles of active forest roads, ranging from mainline access roads serving large areas for a variety of uses to short spur roads that may only receive intermittent use for specific purposes. Related infrastructure includes 18 bridges and 1,800 culverts. In aggregate, these forest roads and their related infrastructure represent a significant investment in state forestlands that has occurred over time, and has accrued significant asset value. Cost effective design, construction, and maintenance of forest roads is essential to protecting this investment and to achieving the resource goals of the FMP.

Guidelines for Asset Management

Maintaining and/or enhancing the value of the assets described in this FMP is fundamental to maintaining the ability of the forestlands to provide for sustainable timber and revenue, and to produce the other resource values. The asset management guidelines below are derived from language in the Oregon State Constitution, statutes and rules, DSL Asset Management Plan, BOF policy, and ODF policy.

Implementation of the FMP will be consistent with these guidelines to ensure that the asset value of the forest is maintained or enhanced through implementation of the FMP. The guidelines are as follows:

- Conduct active management, in a sound environmental manner, to provide a sustainable, even-flow of timber harvest and revenues to the CSF, counties, and local taxing districts.
- Conserve forestlands by maintaining the state forestland base.
- Maintain a land exchange and acquisition program that actively pursues acquisitions and exchanges as a means of consolidating state forestlands for management efficiencies, economic values, or enhanced stewardship practices.
- Maintain a budgeting and financial management system that ensures that revenues derived from these state forestlands are sufficient to cover the ODF's costs of implementing this FMP.
- Prioritize and undertake investments in stand management activities, such as precommercial thinning and fertilization, which are designed to increase timber quality and/or quantity and enhance wildlife habitat values.
- Maintain key investments in the development and protection of forest infrastructure, such as roads, bridges, and recreational trails and facilities.
- Maintain key investments in information systems such as forest inventory and GIS systems, to support overall FMP implementation and contribute to assessing the value of assets over time.

- Prioritize and undertake investments in research and monitoring projects, to ensure the success of adaptive forest resource management.
- Develop strategic plans for addressing identified critical forest health issues to minimize the effect of insect and disease on the timber asset.
- Implement marketing strategies designed to maximize the value received for products sold from state forestlands.
- Implement timber accountability strategies and systems to ensure that the state and other beneficiaries receive anticipated revenue from the sale of timber and other products.
- Grow and harvest trees to produce timber, revenues, jobs, and habitat for fish and wildlife.

Summary of Anticipated Outcomes from Implementing the Asset Management Guidelines

In addition to generating the annual revenues, which are detailed in the district IP, the base asset value of the land and timber is expected to increase as a result of implementing this FMP.

This increase in asset value is expected to result from several factors:

- Increasing bare land values in the southwest Oregon region.
- Increasing standing timber volume and average stand value in these forests as average stand age and size increase through time. This will be accomplished through active density management (precommercial thinning and partial cutting) and investments in other cost-effective silvicultural treatments.
- Increasing value of facilities and infrastructure (e.g., roads, bridges, and other infrastructure investments) on state forestlands.
- Increasing ability of these lands to provide direct and indirect economic benefits associated with diverse wildlife habitats, properly functioning aquatic systems, broad recreational opportunities, and high levels of water quality.

Implementation of the FMP's strategies is expected to result in significant revenue to the CSF, and the state, counties, and local taxing districts. The district IP provides details on anticipated revenues, associated expenses, and the resulting net income expected.

Adaptive Forest Resource Management

The following key concepts provide the foundation for adaptive forest resource management as it is described in this FMP:

- Adaptive management is a system of decision-making that recognizes that ecosystems and society are always changing.
- 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 process that includes a strong monitoring program.
- Adaptive management requires a well-defined framework for dealing with change.

Basic Concepts for Adaptive Management

Concept 1: Adaptive management is a system of making, implementing, and evaluating decisions that recognizes that ecosystems and society are always changing. It is a systematic, rigorous approach for learning from actions, improving management, and accommodating change (Holling 1978; Lee 1993; Nyberg 1998; Walters 1986).

In the OARs that govern state forest management, adaptive management is defined as a scientifically-based, systematically structured approach that tests and monitors management plan assumptions, predictions, and actions, and then uses the resulting information to improve management plans or practices (OAR 629-035-0000 to 0110). It is the goal of the ODF, through the application of adaptive management techniques, to continually improve management policies and practices by learning from the outcomes of operational programs. Adaptive management requires managers and decision-makers who are willing to learn by doing, and who acknowledge that making mistakes is part of learning.

Adaptive management involves:

- Explicitly recognizing that there is uncertainty about the outcome of management activities.
- Deliberately designing management policies or plans to increase understanding about the system and to reveal the best way of meeting objectives.
- Carefully implementing the policy or plan.
- Monitoring key response indicators.

- Analyzing the outcomes, considering the objectives and predictions.
- Incorporating results into future planning decisions.

Concept 2: Adaptive management is not a replacement for decision-making at any level, but a system for making better decisions.

Adaptive management is more than simply altering objectives and practices in response to new information. It is a formal, rigorous approach to management in which activities are treated as opportunities for generating information about the system being managed. Often, with traditional approaches to management, learning is haphazard, and improvements in management are slow and incremental, because of inadequate or inappropriate monitoring, and failure to incorporate results into future planning and decision-making.

Although adaptive management has many benefits, it is not a universal remedy. It can help resolve disagreements stemming from gaps in knowledge, but it cannot resolve conflicts over values. Similarly, it can help managers respond to changes in values, but it cannot predict them. Adaptive management is a way to learn how to manage consistently within an overall vision, but it is not a process for developing that vision.

Adaptive management cannot eliminate surprise events (Hilborn 1987). Managers can deal with surprises only by expecting the unexpected, by modifying management when surprises occur, and by implementing plans that do not foreclose management options. Adaptive management does not eliminate uncertainty; it helps managers deal with it.

Adaptive management is not a replacement for research. Among other roles, research can lead to better predictions and hypotheses about the effects of management activities. Such information is particularly valuable when social, budgetary, or ecological constraints dictate that management apply a single treatment everywhere.

Finally, adaptive management does not relieve decision-makers and managers of the obligation to proceed with caution when the risk and cost of negative outcomes are high, for example, when an activity is highly likely to cause irreversible ecological damage.

In summary, adaptive management is not much more than common sense, but common sense is not always in common use (Holling 1978). Pilot projects, test modeling, and market surveys are all ways that adaptive management is used in other professions. These techniques can be extended to natural resource management, with the inclusion of environmental considerations, and the integration of systematic and rigorous assessment and planning processes.

Concept 3: Successful adaptive management requires a well-designed process, including a strong monitoring program.

The following six main elements of adaptive management will be applied as this FMP is implemented.

1. Assess problems
2. Design experiment and monitoring plans
3. Implement plans
4. Monitor
5. Evaluate outcomes
6. Adjust activities and policies

The framework formed by these six elements (see Figure 6-1) is intended to encourage a thoughtful, disciplined approach to management, without constraining the creativity that is vital to dealing effectively with uncertainty and change. In practice, some of the steps will overlap, some will have to be revisited, and some may be better done in more detail than others. All of the steps are essential to adaptive management. Omission of one or more will hinder the ability to learn from management actions. In addition, to build a knowledge base, it is crucial to document the key elements of each step and communicate the results, especially for long-term projects.

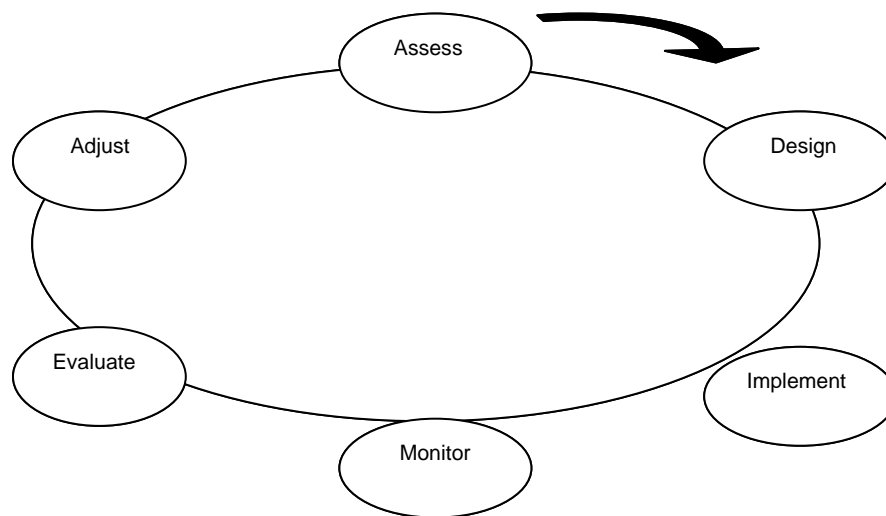


Figure 6-1. The Six Steps of Adaptive Management

These elements are discussed briefly in the following sections. Although these elements describe a framework that is useful for a broad range of management activities, in this case, the framework is applied to the development of management experiments to test the Strategies of Sustainable Forest Ecosystem Management in the FMP. Management experiments range from relatively small-scale, short-term operations on a unit, to long-term tests of silvicultural prescriptions at multi-watershed scales.

Step 1: Assessment

Define the scope of the management problem (e.g., a particular stand structure type), synthesize existing knowledge about the system, and identify potential outcomes of alternative management actions. Make predictions about outcomes to assess which actions are most likely to meet management objectives.

This step sets boundaries on the spatial and temporal scales and the range of factors to be considered, by defining the following parameters:

- The breadth of factors considered (e.g., timber production, biodiversity)
- The depth of detail
- The spatial scale and resolution (e.g., stand, landscape, bioregion)
- The time scale and resolution (e.g., 20 years, one rotation, 500 years)

During the exploration and forecasting process, key gaps in understanding the system are identified. These gaps may limit the ability to predict outcomes.

Management experiments focus on the questions for which the expected value of information is high. Once uncertainties and key questions have been identified, hypotheses can be developed to test assumptions about management actions (Underwood 1995). To make effective decisions, managers need information beyond whether a treatment results in a particular effect; they also need to know:

- The magnitude of a response to a management activity
- The response over a range of conditions
- The reason for a particular response

Step 2: Design

Design experiments and related monitoring plans that are informative and provide reliable feedback.

The ODF intends to use a mix of active and passive approaches. In many instances, a range of management actions will be compared. It may be worthwhile to evaluate several designs, one of which may be a passive design in which only the “best” alternative is tested. In some situations, actions will be tested in a small-scale pilot project before being tested on a larger scale, to narrow the range of plausible actions and refine methodologies. In situations or areas in which the risk of damage is high and irreversible, managers may decide to postpone any management intervention until research and trials in less vulnerable areas provide more information.

In the design of the management experiments, it is important to select indicators that are relevant to the objectives and responsive to management actions. Indicators are measurable attributes of system behavior that allow evaluation of management options and, eventually, assessment of outcomes. Indicators should be selected so that some respond in the short term, some in the medium term, and others in the long term, and at different spatial scales (e.g., site, landscape, region) (Holling 1978; Noss 1999; Walters

1986). Careful selection of response indicators goes hand in hand with development of the monitoring protocol, which should specify the following items (see also “Step 4: Monitor”):

- Type and amount of baseline (pre-treatment) data required
- Frequency, timing, and duration of monitoring
- Indicators to be monitored at each interval
- Appropriate spatial scales for monitoring different indicators
- Designated responsibility for undertaking different aspects of monitoring

It is important to plan how the data will be managed and analyzed (e.g., access, analysis, interpretation, storage). Managers will need to define the intensity and degree of response in an indicator that will trigger a change in management actions or objectives.

Adjustments should reflect the trade-off between the costs of acting if preliminary results later prove to be incorrect, and the costs of not acting if they later prove to be correct. A system should be established to communicate results and information.

For the FMP, research will be conducted to obtain information needed to inform decisions, and will include several different approaches, as described below.

- **Replicated Management Experiments**—Rigorous experimental design is important for distinguishing between alternative hypotheses and characterizing cause-and-effect relationships between management activities and observed outcomes.
- **Non-replicated Management Experiments**—For many problems in forest management, particularly large-scale disturbances, replication is often impractical or impossible. Although managers may be able to replicate treatments on a small scale, extrapolating the results to the large scale at which many management actions occur can be uncertain.
- **Other Sources of Information**—Although well-designed management experiments may be the most powerful way to discriminate between alternative hypotheses, it is sometimes impossible or impractical to design experiments at an operational scale, in an operational setting. In such cases, other sources of information will be used to help identify the most likely hypotheses and best policies, and interpret outcomes. Such information sources include:
 - Results from research on ecosystem processes
 - Extrapolation of results from small-scale experiments
 - Descriptive or observational studies
 - Retrospective studies of past management activities
 - Observation of natural variability, rather than deliberate manipulation
 - Local knowledge
 - Expert opinion

Step 3: Implement

Implement experiments and monitoring as designed. Decide when and what types of deviations are acceptable. Ensure that these circumstances are clear and accepted by all involved. Monitor implementation, and document any deviations from the plan.

Step 4: Monitor

Measure environmental characteristics and conditions over an extended period of time, to determine status or trends in various aspects of environmental quality.

Monitoring is often neglected, but it is critical to adaptation and improvement. Monitoring assesses the effects of management activities on indicators. This information allows managers to evaluate the effectiveness of alternative actions, adjust hypotheses, and take appropriate corrective action. Monitoring can also determine if actions were implemented as planned, and may detect surprising events.

The challenge is to clearly understand why monitoring is an important activity, to decide which characteristics to measure, to determine what information these characteristics indicate, and to use that information to make better informed management decisions.

For the FMP, monitoring is organized into three categories.

- **Implementation Monitoring**—This category of monitoring is used to determine if the objectives, standards, guidelines, and management practices specified in the FMP are being accomplished. The sometimes synonymous **compliance monitoring** is used to determine if specified actions or criteria are met. Implementation/compliance monitoring asks the question, “Are we doing what we said we would do?”
- **Effectiveness Monitoring**—This type of monitoring is used to determine if the design and execution of the prescribed management practices are achieving the goals, objectives, and desired future conditions stated in the FMP. Every management decision is intended to achieve a given set of future conditions. Effectiveness monitoring can be used to compare existing conditions to both past conditions and the desired future conditions to describe the overall progress or success of the management activities. Effectiveness monitoring asks, “Are the management practices producing the desired results?”
- **Validation Monitoring**—Validation monitoring is used to determine whether data, assumptions, and coefficients used to predict outcomes and effects in the development of the FMP are correct. Validation monitoring seeks to verify the assumed linkages between cause and effect. Validation monitoring asks, “Are the planning assumptions valid, or are there better ways to meet planning goals and objectives?”

These types of monitoring are not mutually exclusive, nor are they conducted in a linear progression. Validation and effectiveness monitoring are most powerful when used in

combination. A well-designed monitoring program is statistically credible, cost-effective, and practical.

When conducted in conjunction with good experimental design and appropriate data analysis, monitoring allows managers to:

- Determine whether practices are meeting objectives
- Improve understanding of the mechanisms that underlie ecosystem function and change (to test alternative hypotheses)
- Determine the effect of management actions on the ecosystem
- Identify thresholds and anticipate shifts in the state of the ecosystem

Step 5: Evaluate

Analyze data and compare actual results to the forecasts made in Step 1, “Assessment.” The evaluation should explain why outcomes occurred, and should include recommendations for future action.

Predicted responses to alternative treatments and how those responses will affect future management activities should be documented when the management experiment is designed. These feedback loops will provide a framework to guide change. Outcomes can be the result of the management activity, or of some unanticipated factors, or both. Negative or unexpected outcomes can be just as informative as positive, predicted outcomes. All results must be documented and communicated.

Step 6: Adjust

Verify or update the hypotheses used to make the initial forecasts, and adjust management actions as necessary. Review the objectives, and adjust as necessary to ensure that they remain consistent with overall goals and values.

It should be specified at the outset how information will be used to adjust management to facilitate timely and appropriate application of new information, and also to ensure that the monitoring program answers questions relevant to management decisions.

Predetermined quantitative or qualitative changes in key indicators should trigger predetermined changes in management activities or guidelines. These trigger points should be defined for a variety of time frames, so that changes in management are not unnecessarily delayed by indicators with long response times. Preliminary data can serve as early warning signals that trigger adjustments in management to avoid irreversible detrimental changes. The size of these adjustments should reflect a balance between the reliability of the data and the potential cost of not adjusting activities.

Additional information on adjusting management activities or objectives is presented later in this chapter, under the heading “Strategies for Implementing Adaptive Management.” A number of methods can be used to document plans and communicate results, including written progress and final reports, presentations, seminars, field trips, informal discussions, and posters.

Finally, managers and team leaders have a critical leadership role in encouraging the conditions that facilitate adaptive management. Institutional environment and individual attitudes are as critical to effective adaptive management and learning as the actual steps followed (see Senge 1990). In an atmosphere that is conducive to long-term learning, mistakes are recognized as the price of innovation, and are treated as opportunities to learn. Incentives to improve are greater than the fear of failure, there is less demand for quick fixes, and people are explicitly rewarded for innovation and learning.

Concept 4: Adaptive management requires a well-defined framework for evaluating change.

The FMP must be implemented using a scientifically-based, systematically structured approach that tests and monitors management plan assumptions, predictions, and actions, and then uses the information to improve management plans or practices. Monitoring and research must be linked to the process through hypothesis development, information gathering, analysis, and reporting.

Technical specialists and field managers must evaluate results and make recommendations for change to the appropriate decision-makers. Proposed changes may involve minor adjustments in management practices, or they may require significant changes at policy and planning levels.

There are four planning levels at which change may be proposed, considered, and initiated:

1. FMP level
2. District IP level
3. AOP level
4. Management activity level

The FMP level demands the broadest review and most rigid approaches before change is allowed, whereas the management activity level requires the least review and provides the simplest avenue to change.

The range of decisions that will be made, how they will be made, and who will make them are described in more detail in the strategies that follow.

Strategies for Implementing Adaptive Management

The following actions will be taken to ensure a strong adaptive approach for forest management in the context of the FMP.

Strategy 1: Implement an adaptive management process and framework that provides for change at the appropriate planning level and in a timely manner.

The range of decisions that will be made, how they will be made, and who will make them are described in Tables 6-1 and 6-2, and discussed in more detail in the text below.

When ODF managers and staff receive new information, they recommend changes to the appropriate official for each of the four planning levels, as shown in Table 6.2. This official makes the final decision. At all four levels, various sources of information can trigger change: public input, monitoring information, research information, and operational input.

Evaluating Change through Planning Processes

The FMP's success will depend on timely changes in strategies, approaches, and prescriptions in accordance with new knowledge. As new information is available, it must be evaluated in the context of the guiding principles, goals, and strategies of the FMP.

As Tables 6-1 and 6-2 show, decisions on change will be made by different people or groups at different levels. For example, if research or monitoring information shows that the forest stand type percentages in Sustainable Forest Ecosystem Management Strategy 1 should change by a substantial amount, a fundamental change in FMP strategies, this decision would be made by the State Land Board, BOF and State Forester, after a formal public involvement process.

Where the proposed change does not significantly alter the fundamental strategies, changes may be instituted by field personnel without a formal approval process. For example, field staff could make a decision to create snags by girdling trees instead of blasting out the tops.

Table 6-1. Assessing the Need for Change

Forest Management Plan (Long Term— 10 Years or More)	District Implementation Plan (Periodic—Maximum 10-Year Interval)	Annual Operations Plans (Annual)	Management Activities (As Appropriate)
Examples of What Might Change			
<ul style="list-style-type: none"> • Stand type percents • Arrangement • Harvest levels 	<ul style="list-style-type: none"> • Landscape design • Silvicultural approaches, i.e., sequence of treatments, etc. • Management opportunities and objectives 	<ul style="list-style-type: none"> • Approaches to meeting objectives, e.g., silvicultural prescriptions • Monitoring projects 	<ul style="list-style-type: none"> • Techniques for culvert installation, snag creation, etc.
Examples of Public Involvement			
<p style="text-align: center;">Formal</p> <ul style="list-style-type: none"> • State Land Board/BOF meetings • OAR process • Public meetings • Technical specialist or citizen input committees <p style="text-align: center;">Informal</p> <ul style="list-style-type: none"> • Voluntary participation in monitoring program • Regular reporting processes, including monitoring reports • Public submittal of information 	<p style="text-align: center;">Formal</p> <ul style="list-style-type: none"> • Public review and comment processes • Public meetings • Technical specialist or citizen input committees <p style="text-align: center;">Informal</p> <ul style="list-style-type: none"> • Voluntary participation in monitoring program • Regular reporting processes, including monitoring reports • Public submittal of information 	<p style="text-align: center;">Formal</p> <ul style="list-style-type: none"> • Review and comment period <p style="text-align: center;">Informal</p> <ul style="list-style-type: none"> • Voluntary participation in monitoring program • Regular reporting processes, including monitoring reports • Public submittal of information 	<p style="text-align: center;">Informal</p> <ul style="list-style-type: none"> • Voluntary participation in monitoring program • Regular reporting processes, including monitoring reports • Public submittal of information

Table 6-1 continued. Assessing the Need for Change

Forest Management Plan (Long Term— 10 Years or More)	District Implementation Plan (Periodic—Maximum 10-Year Interval)	Annual Operations Plans (Annual)	Management Activities (As Appropriate)
Examples of Monitoring			
<p style="text-align: center;">Framework</p> <p>Implementation</p> <ul style="list-style-type: none"> • Are we doing what we said we would do? <p>Effectiveness</p> <ul style="list-style-type: none"> • Are the management practices producing the desired results? <p>Validation</p> <ul style="list-style-type: none"> • Are the planning assumptions valid, or are there better ways to meet goals and objectives? 	<p style="text-align: center;">Identify and Implement Projects</p> <p>Projects:</p> <ul style="list-style-type: none"> • What is the condition of state forests based on stand type percentages and habitat availability? • Is active management promoting habitat development by moving stands toward advanced forest structures? • Are our silvicultural practices used to achieve forest structures sufficient to maintain a full array of forest products? • Is management helping to improve forest health on state forests? • Protocol development and implementation • Data gathering and analysis • Evaluation • Communication 		

Table 6-2. Decision-Makers for the Four Planning Levels

Planning Level		Who Decides
FMP	→	State Land Board/BOF
District IP	→	Director of DSL, State Forester
AOPs	→	District Forester
Management Activities	→	Management Unit Forester

Forest Management Plan

At this level, planning is typically at broad spatial and long temporal scales, and identifies general goals and strategies.

Information, decisions, and management in the FMP encompass landscape scales, policy concepts, and social, cultural, and environmental influences that may extend beyond state forestlands. These plans make forecasts for at least 10 years, and generally for 30 to 100 years or more. These plans are reviewed periodically and, at a minimum, at least every 10 years. Ten years or more is required to develop relevant monitoring information for these long-term forecasts.

What types of changes might occur at the FMP level?

Changes could occur in the FMP fundamental concepts and strategies. The FMP Strategies of Sustainable Forest Ecosystem Management that would require this level of evaluation address:

- Stand type percentages
- Stand characteristics and arrangement
- Structural habitat components
- Aquatic and riparian conservation strategies
- Upland management activities

Who makes the decision to change the FMP?

The State Land Board, BOF, Director of the DSL, and the State Forester will weigh the scientific, operational, and public information in a formal public process to determine changes to the FMP.

What will be the basis for recommending changes?

Monitoring projects will focus on the overall implications of the management strategies and assumptions in the FMP. This work will generally be long term and at broad

landscape scales that include many specific monitoring and research projects. This information will help guide changes in the strategies, objectives, and potentially even the goals of the FMP. For example, to determine if the FMP strategy on stand type percentages is successful, it will be necessary to determine if the percentages provide for the range of native species, if the habitat components provide the habitat as expected, and if the stand types and percentages provide functional habitat for the intended species.

What are the opportunities for public involvement in FMP changes?

Many opportunities will be offered for public involvement. Formal processes will include State Land Board and BOF meetings, FMP OAR hearings, public meetings and workshops, and public input or special interest committees. Less formal opportunities will exist for volunteer involvement in actual monitoring projects and comments on periodic monitoring reports.

District Implementation Plan

Changes at this level will occur over the whole planning area (district), and over time frames longer than one year, but no more than 10 years. The district IP determines how the FMP strategies will be implemented. These IPs include the management activities scheduled for the next 10 years and estimates of the district's progress toward the FMP goals. These IPs are reassessed periodically (at least every 10 years), or if some significant event occurs, or information is received that would significantly change the planned activities or approaches.

What types of changes might occur at the IP level?

Changes could be made to the long-term landscape design of stand types, anticipated sequence of stand treatments, the management opportunities that will be pursued over the next 10 years, and other elements. Changes to the actual strategies themselves will not be made at this level.

The following circumstances will be considered major revisions of an IP:

- Revisions that result in proposed major changes to the forestland management classifications as defined in OAR 629-035-0060.
- Revisions that propose changes to the annual harvest level ranges of more than 25 percent based on combined acreage of regeneration and partial harvests. Changes must be consistent with the harvest level approved by the State Land Board.

Who makes the decision to change the district IP?

The Director of the DSL and the State Forester, in consultation with appropriate other federal or state agencies, will weigh the economic, scientific, operational, and public information, when considering the initial approval and subsequent changes to the district IP.

What will be the basis for recommending changes?

Monitoring will focus on issues covered by the IP and issues relevant on the district. Areas of interest will include silvicultural pathways, and approaches used to develop structural components such as snags, remnant old growth trees, and other live trees.

The research and monitoring coordinator will organize the development of projects, interpretation of data, and proposals for change. Teams with appropriate technical and operational expertise will evaluate information and make proposals for change.

What are the opportunities for public involvement in IP changes?

Many opportunities will be offered for public involvement. Formal processes may include public meetings and workshops and technical specialist or citizen input committees. Less formal opportunities will exist for volunteer involvement in actual monitoring projects and comments on periodic monitoring reports.

An IP that undergoes major revisions will be available for public review and comment for a 30-day period prior to consideration for approval of the revision by the Director of the DSL and the State Forester.

Annual Operations Plans

AOPs identify all major forest management activities that are proposed for the next year, including silvicultural prescriptions, recreation projects, road construction and maintenance, stream restoration projects, and any other major projects. Monitoring information will be gathered about the short-term effects, implementation, and contribution of these activities toward FMP goals. This information will be used to effect change from year to year, at scales ranging from site-specific to districtwide.

What types of changes might occur at the annual operations planning level?

AOPs are specific action plans that describe specific projects. Silvicultural prescriptions, recreation projects, stream enhancement approaches, and other projects could be changed to improve outcomes. In the case of silvicultural prescriptions, examples might include thinning to lower densities or changing the mix of species being planted. For recreation, an example is a change in hiking or off-highway vehicle trail standards.

Who makes the decision to change AOPs?

The district forester will weigh the scientific, operational, and public information through the annual operations planning process, and then make changes and approve the AOPs. The operations planning process includes review by ODF staff and a variety of technical specialists.

What will be the basis for recommending changes?

Monitoring will focus on issues covered by AOPs. Areas of interest will include the assessment of silvicultural prescriptions, methods used in stream restoration projects, effectiveness of operational approaches, and techniques to develop or retain structural components such as snags, remnant old growth trees, and other live trees.

The district will work with the research and monitoring coordinator to develop necessary monitoring projects and interpret data from monitoring and research. The technical and operational evaluation team approach used at the FMP and IP levels will be used for many issues; however, the district may choose to initiate change based on local information that is soundly based.

What are the opportunities for public involvement in AOP changes?

AOPs are prepared by the district and will be made available for public comment prior to consideration for approval by the district forester. Other opportunities may exist for volunteer involvement in actual monitoring projects and comments on periodic monitoring reports.

Management Activities

Agency personnel learn and make changes on a daily basis in the forest. To achieve the best possible results, it is critical to adapt practices to new information and changing conditions. Frequently, professionals on the ground can identify improved techniques that can be used immediately to achieve better results. In addition, some changes can be incorporated into an ongoing project based on new information from monitoring and research, or from larger-scale information sources offering applicable and appropriate information.

What types of changes might occur at the management activity level?

At this level, change will generally involve adjusting specific techniques. Reasons might include learning a technique that will produce better results, or a more cost-effective way may be found to complete a particular job.

An example is the creation of snags from live trees. In this case, removing tree tops may have been the preferred method, but based on research or operational concerns, the decision may be made to girdle or inoculate trees instead. This decision does not affect the basic principle of developing snags, but merely changes the method.

Who decides to make changes at the management activity level?

Field supervisors will be responsible for weighing the scientific and operational advantages and disadvantages of changes and determining whether change is appropriate.

What will be the basis for recommending changes?

Change at the management activity level may occur without any formal process constraints.

What are the opportunities for public involvement at the management activity level?

These decisions are typical of the daily field work of natural resource professionals and are made within a tight time frame. Opportunities may exist for volunteer involvement in actual monitoring projects or in commenting on periodic monitoring reports.

Information Review

The research and monitoring coordinator is responsible for coordinating the development of monitoring projects, interpreting data from monitoring and research, and developing proposals for change. Throughout the year, information will be available from many sources, including ODF monitoring projects, research, operational feedback from the field, and the general public. The research and monitoring coordinator, together with ODF resource specialists and field administrators, will assess the information to determine key issues for the current year.

The research and monitoring coordinator will periodically assemble a review team or teams with appropriate technical and operational expertise to evaluate the body of information from research, monitoring, operational input, and the public, and to make proposals for change. This review team will provide guidance in identifying specific monitoring questions that are critical to evaluating the success of FMP strategies and identifying possible methods to address these questions. This group will also make recommendations for establishing technical work groups to develop monitoring projects for specific issues. The work groups will examine issues in more detail and make recommendations for monitoring or research projects and to develop or adapt methods, protocols, and reports for monitoring and accomplishment reporting.

Members of the review team will bring a strong understanding of what is necessary to make the FMP successful. Core members of the team will include representatives from among the assistant district foresters, area staffs, program, and technical specialists. Depending on the topic, the expertise on the team may vary to include experts from academic institutions, consultants, and county representatives.

The team will provide reports to the state forests program director, interpreting the available information and making recommendations for change.

Evaluation of Technical Information

Information evaluation or data analysis may be conducted by the team or some other group, as deemed appropriate by the research and monitoring coordinator. For evaluation and analysis, the goal is to explain the data and their weaknesses and strengths; identify triggers and thresholds for the data set and resource; reach conclusions; and make recommendations.

Triggers and thresholds are critical in determining if change is needed. In a complex ecosystem, triggers or thresholds are rarely achieved with unequivocal certainty. The analyst will have to decide if the information indicates a sufficient risk to the system, given normal variability and error in data collection. To add to the complexity, biological triggers may differ from social or political triggers and thresholds.

In these complex situations, risk assessment becomes a significant part of the adaptive process. Risk evaluation is a critical concept that links monitoring and research information to effective and efficient adaptive management decisions. In cases where the system or population is particularly sensitive or the risk is high, the thresholds for change will be lower and triggers more sensitive. Where risk to the resource is not as great,

thresholds may be higher and the triggers more demanding. More data may be needed to justify a change. Assessments of risk and resource sensitivity that affect thresholds and triggers will be presented to decision-makers along with recommendations.

Even during technical analysis, situations may arise where people will not agree on the interpretation of the data. A process will be developed for issue resolution, to help the team clearly articulate their concerns and differences and arrive at as much of a consensus as possible before offering their conclusions and recommendations. If technical issues cannot be resolved, the only option may be to include one set of technical information and recommendations, along with a report of the differing opinions expressed by the team.

Strategy 2: Develop and implement a monitoring program designed to evaluate the working hypotheses over time. Review and update a monitoring plan at least every 10 years.

The Application of Monitoring

Monitoring is an important step in the adaptive management process and is, therefore, a key element in the FMP. The basic principles of monitoring as it relates to adaptive management are presented earlier in this chapter. This section describes how monitoring will be used in the adaptive management strategies of the FMP.

OARs for state forest management (OAR 629-035-0000 to 0110) require FMPs to include general guidelines for “implementation, monitoring, research, and adaptive management” that describe “the approach for determining whether the strategies are meeting the goals of the FMPs; and, the process for determining the validity of the assumptions used in developing the strategies.” For this FMP, Guiding Principle 12 commits the ODF to using an adaptive management approach, with monitoring and research as part of that approach.

It will take many decades to fully implement the strategies described in Chapter 5 of this FMP, and to produce the desired future condition of stand types on the landscape. Over time, monitoring and research will indicate the extent to which the assumptions underlying the strategies are correct, and if the strategies are accomplishing their intended purpose. As monitoring provides feedback, the plan will be fine-tuned and improved through adaptive management (McAllister et al. 1998).

Monitoring Framework

Information from monitoring and research will be planned for and used to assess the following items:

- **Assumptions and Hypotheses**—Are the basic assumptions and hypotheses that support the strategies scientifically valid?
- **Resource Condition**—Can historic and current conditions serve as a basis for estimating desired future conditions and likely trajectories of changes in resources?

- **Ecological/Cultural Trends**—Are resources changing due to ecological, social, political, and economic influences outside the scope of the FMP’s management actions?
- **Management Actions**—How are the FMP’s strategies being implemented?
- **Management Effects**—How are the resources changing in response to management actions?

These questions serve as the basis for developing specific monitoring projects or research needs. As information becomes available from the monitoring program, as well as from researchers and others working on forest management issues, it will be evaluated to determine additional information needs and necessary changes to the management strategies.

The ODF will conduct implementation, effectiveness, and validation monitoring. Initially, the ODF will emphasize implementation and effectiveness monitoring. A more formal research effort may be necessary to evaluate the validity of the underlying assumptions of the management strategies. The ODF will help support the necessary research at selected research institutions.

The monitoring program must assess not only ecological processes and management activities, but also the cultural and economic circumstances linked to them. Therefore, monitoring projects must be designed to provide information to evaluate the integration of natural and social systems.

Projects will be developed around precise, well-focused monitoring questions that focus on specific information needs. Monitoring projects will be initiated as determined by requirements of the management experiments. Identification and definition of monitoring needs will be part of the decision analysis process during the “assess” and “design” phases of adaptive management.

Reporting and Information Management

A successful monitoring program requires acting on collected information in a timely manner. However, the availability of relevant, high quality data requires an organized system that must securely store, analyze, and report project results using the collected data.

Data Storage and Analysis

Because the FMP focuses on landscape issues and large-scale responses to management, primary responsibility for data storage and analysis will be at the program level. Data will be stored in a central database, to maintain data integrity and consistency. Data collected at the district or site-specific scale will be available in raw form for archiving and use at the district if desired. However, the general approach early in the monitoring program will be to provide analyzed information back to the districts. Data will be made easily accessible to the public, except for data that are exempt from disclosure under public records law (e.g., specific locations of threatened and endangered species).

Analysis will be conducted with appropriate analytical tools. Potential tools include spatial analysis, univariate and multivariate statistical analysis, trend analysis, and basic graphical analysis. Planning for analysis will occur during the project development phase rather than in reaction to the data gathered. The primary responsibility for coordinating and completing the analyses will be with the adaptive management team, as described under the heading, “Evaluating Change through Planning Processes.”

Reporting

Information, analysis, and recommendations for action will be presented in an annual report. Preparation of this report will be coordinated with other reporting requirements (e.g., reports to the State Land Board) so that a single report can satisfy more than one requirement. At a minimum, the report will present:

- Questions being addressed
- Project summaries
- Progress reports
- Preliminary results

This report will be the basis for determining the need to adapt management policies, biological or habitat goals, or monitoring activities. This report will be available to the State Land Board, the BOF, the public, and other state and federal agencies. Special project reports that stand alone may also be available, and monitoring program updates and project descriptions will be available on the ODF’s web site. As the monitoring program develops, reporting mechanisms will be refined and improved.

Coordination

In light of increased monitoring occurring within state, federal, and non-governmental organizations in the Pacific Northwest, coordinated efforts are critical to the success of the FMP. Coordination with regional monitoring programs, such as the federal *Northwest Forest Plan* and the *Oregon Plan for Salmon and Watersheds* (USDA Forest Service et al. 1994; Oregon Watershed Enhancement Board 2003) will help ensure the most efficient application of financial and human resources. Cooperation and exchange of information among programs will allow for a more extensive exploration of the effects of the landscape management objectives, and also for the generation of recommendations for adapting management or monitoring activities. Other forms of coordination include participation in multi-agency monitoring committees; contact, planning, and coordination with watershed councils; review, application, or modification of existing protocols; joint development of protocols with landowners, stakeholders, and other agencies; and data sharing.

Current Monitoring

Conditions on state forestlands have been monitored for many years. Resource specialists, such as the insect and disease program staff and the wildlife biologists, have conducted aggressive monitoring and research projects to stay abreast of issues such as

Swiss needle cast incidence and severity, and habitat protection and use for northern spotted owls and marbled murrelets. The state forests management program cooperates with the ODF's forest practices monitoring program, ODFW, OSU, federal agencies, and private landowners. The state forests management program will use these contacts and data sources to help establish a formally structured monitoring program. In the future, monitoring projects, data analysis, and storage needs will be included in the district IP and in an annual programwide monitoring report.

Strategy 3: Conduct a comprehensive review of the goals and strategies of this FMP every 10 years following adoption.

At the completion of the initial 10-year implementation period, and every 10 years thereafter, the ODF will compile a 10-year Implementation and Monitoring Report that summarizes management activities over the period, the results of monitoring and research efforts during that time, and any proposed changes to the FMP strategies to better meet the goals. In preparing this report, the ODF will collaborate with other agencies as necessary to obtain the best available information, and will support any major modifications proposed with information from independent scientific review. Examples of the types of issues that will be considered during the comprehensive review process include:

- The overall effectiveness of the strategies in progressing toward the desired future condition of stand types and a functional arrangement of those stands
- What we have learned about species responses to specific activities and to the stand structures, and the implications of that information to the FMP
- The status of developing habitat and the extent to which species are colonizing and using that habitat
- The ability of the ODF to meet the range of resource goals described in the FMP

Outcomes or recommended changes that evolve out of the 10-year comprehensive review will be implemented using the appropriate process, dependent on the significance of the change.

Public Involvement in Implementation

The ODF is committed to public participation in land management decisions (OAR 629-035-0080 and Guiding Principle 7). The guidelines in the Public Involvement Directive 0-5-1-210 (07/01, P.N. 941) describe the ODF's public involvement policies and procedures. Public participation in the development of this FMP is discussed in Chapters 1 and 2.

An effective public involvement program ensures that decisions are made with a full understanding of public concerns, and that those decisions are better understood and trusted by the people affected.

Early and Continuous Involvement

The benefits of public involvement cannot be achieved by means of a simple public notice and comment period once plans or projects are completed. The ODF prefers to involve the public early, so that concerns can be addressed as part of the planning process, rather than after the fact in a review or mediation. Early public participation is particularly important in the case of large-scale, complex projects or plans such as this FMP.

Appropriate Scale and Flexibility

The public involvement program should be appropriate for the scale and complexity of the project. A long-term, extensive public participation program is required for large-scale, complex projects that call for comprehensive evaluations.

Public involvement must be a flexible process, adapting to different sets of environmental issues and public concerns. The ODF will design and implement public involvement programs that match the needs of the project, and reflect the needs and preferences of people involved. Because public involvement is a dynamic process, the ODF may need to revise public participation plans when necessary.

Accountability and Timeliness

Participants in a public involvement process must be accountable for their actions. The ODF will ensure that the participation process is directly linked to the decision-making process. Participants should report back to their constituents in a fair and accurate manner, and follow through on any negotiated commitments. The ODF must ensure that members of the public have adequate time in which to review information and provide meaningful input. Stakeholders and other people involved should recognize that the decision-makers remain accountable for making the decision. Decision-makers should explain their decisions, clearly demonstrating how the public's input has been used, or explain why the results have not been incorporated in the decision.

Shared Process and Mutual Respect

Public involvement programs often bring together people representing a wide range of perspectives, opinions, and values. Participation in the process should be conducted in an atmosphere of mutual respect.

Public Involvement Techniques

Techniques should match needs. There is no single best public involvement technique. There are many techniques, and each may be effective in a particular set of circumstances or in response to the preferences of a particular public group. Specific techniques are presented in the *Public Involvement Directive*.

Public Involvement in the District Implementation Plan and Annual Operations Plans

Public involvement can provide local forest managers with additional information and ideas as they develop IPs and AOPs to achieve the goals of this FMP. Ongoing public involvement during implementation of this FMP is also critical to gaining public understanding, acceptance and support for local plans and operations.

Public involvement opportunities will be provided as district IPs, land management classifications, and AOPs are reviewed and approved. These opportunities will be designed to meet the following goals:

- To seek insight, opinion and data on planned management actions.
- To build understanding, acceptance and support for the forest management planning process and decisions.
- To offer information to the public about forest systems and forest stewardship.
- To provide the public with meaningful opportunities to comment and affect planning decisions at a time when public involvement can contribute positively to the planning decisions under consideration.

The district forester will be responsible for developing and implementing public involvement opportunities that will meet these objectives. At a minimum, the following opportunities will be provided:

District Implementation Plans—Prior to submitting the initial IP and the associated land management classification maps to the State Forester for approval, a 90-day public comment period will be in effect to gather public input. All public comments submitted in writing will be forwarded to the DSL Director and State Forester, along with the district forester’s recommended IP and land management classifications.

After input from the DSL Director, the State Forester shall approve, modify, or reject the recommended IP. If the recommended plan is modified, the modifications will be incorporated into the original IP and appropriate revisions made to land management

classifications. If the recommended IP is denied, the district forester shall prepare a revised or new IP and/or revised or new land management classifications as appropriate.

Prior to submitting a revised or new IP and/or revised or new land management classifications, after a previous denial, a 30-day public comment period will be in effect to gather public input. All public comments submitted in writing will be forwarded to the DSL Director and State Forester, along with the revised or new IP. After input from the DSL Director, the State Forester shall approve, modify, or deny this IP. The process described in this paragraph will be followed until approval of an IP is obtained.

Annual Operations Plans—The district forester must consult with the DSL as specified by contract, and consider any written comments from resource specialists and the public before approving or denying approval of an AOP.

