

# Elliott State Forest Management Plan and Habitat Conservation Plan Update

January 19, 2007

## **I. Background and Summary**

Planning for revision of the Elliott State Forest Management Plan (Elliott FMP) and the Elliott State Forest Habitat Conservation Plan (HCP) began in early 2000. The primary driver for the revision was the pending expiration of the marbled murrelet Incidental Take Permit (ITP) in October 2001. The Oregon Department of Forestry (ODF) organized a Core Planning Team, and a Steering Committee, which includes representation from ODF, the Division of State Lands, Department of Justice, Oregon Department of Fish and Wildlife (ODFW), the Coos County Commission, and the South Coast Education Service District. Coos District Forester Jim Young is leading the Core Planning Team, and Southern Oregon Area Director Dan Shults chairs the Steering Committee. The Core Team's role is to lead and coordinate revision of the Elliott FMP and HCP using a collaborative planning process. The Steering Committee provides policy and strategic guidance for the planning effort.

In August 2000, ODF reported to the State Land Board on Elliott HCP revision alternatives. The Land Board agreed with the Steering Committee's recommendation to pursue development of a multi-species HCP for the Elliott State Forest. The purpose of the HCP is to minimize and mitigate the effects of the authorized incidental take of covered species associated with forest management. At a minimum, the revised Elliott HCP is intended to cover the northern spotted owl, marbled murrelet, and bald eagle. Other species at risk for listing that are known to inhabit the Elliott State Forest, and for which there is suitable scientific knowledge, are also being considered for inclusion in the revised HCP.

Given that this approach extended beyond October 2001 (the expiration date for the original ITP for the marbled murrelet), ODF resumed protocol murrelet surveys for timber sales in 1999, to assure that individual marbled murrelets are protected in compliance with the federal Endangered Species Act. As murrelet-occupied stands are identified, significant portions of these areas become off limits for harvesting indefinitely. Annually about 25 percent of proposed sales on the Elliott State Forest are impacted by murrelet occupancy. The spotted owl portion of the ITP is still in place and management of the forest is proceeding in accordance with the owl HCP.

In 2001 draft guiding principles and resource management goals for the plan were developed, and information and data was gathered for use in the planning process. This included habitat and species surveys, a socioeconomic analysis and forest modeling. Public meetings were held to gather input about issues the public believes are important to address in the revision process. Preliminary work was also started to develop a watershed assessment that will provide scientific background information for the planning process and for future management of the forest.

In 2002 the planning team narrowed the focus of the revision effort from a broad array of eight conceptual management scenarios that were modeled by Dr. John Sessions of Oregon State University (OSU) in the fall of 2001. Three key concepts identified from the modeling were incorporated in development of the draft landscape strategy. Those concepts are 1) reserves for protection of important habitat; 2) revised aquatic/riparian strategies; and 3) use of stand structure concepts in defining habitat.

In 2003 the Core Team developed and wrote the first draft of an Integrated Landscape Strategy designed to meet legal mandates for revenue production while providing a level of habitat for native species that will comply with the federal Endangered Species Act. The team also continued work on modeling the draft strategies, collaborating with Dr. Sessions and incorporating updated inventory data into the model. Concepts for six other comparative management scenarios were also identified. A peer review of the draft strategies was conducted at the end of 2003 and early 2004.

In April of 2004 the peer review of the FMP strategies was reconciled and completed. In May the first draft of the FMP was completed and public input sought at three public meetings in Salem, Roseburg and Coos Bay. Refinement of the harvest model continued with improved spatial layers and development of a new yield table using the most recent inventory data. HCP negotiations with the federal services (United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS)), began in September and work on a draft District Implementation Plan was initiated. A contractor was hired in late 2004 to write the Environmental Impact Statement (EIS) and assist the agencies through the National Environmental Policy Act (NEPA) process.

In January 2005 a Cost/Benefit Analysis comparing state management of the Elliott to sale of the forest to private interests was completed. Direction to conduct the study was included in a budget note from the 2003 Legislature. This analysis is being used as a benchmark for the economic outputs of the revised FMP/HCP. The initial step in the NEPA process began with scoping meetings in May 2005 in cooperation with the EIS contractor and the federal services. The final draft of the FMP and initial drafts of the HCP and District Implementation Plan (IP) were made available for review and comment at public meetings in September 2005. HCP negotiations with the federal services and work with the EIS contractor continued through 2005.

In early 2006 the Board of Forestry and the State Land Board approved continued development of a revised multi-species HCP consistent with the final draft FMP. Considerable progress was made in 2006 regarding HCP negotiations with the federal services with substantial agreement on HCP strategies being reached in May. In June 2006, a draft HCP was delivered to the EIS contractor for analysis in the draft Environmental Impact Statement (DEIS). The DEIS along with the draft HCP is expected to go out for a 60-day public review in May 2007. The remainder of the NEPA process will run through early 2008 with a decision on approval of the HCP by the federal services, Board of Forestry and the State Land Board anticipated for February 2008.

## **II. Key Planning Documents**

### ***A. Forest Management Plan***

The Steering Committee finished reviewing the draft FMP at its March 2005 meeting. Final edits were made in early summer and the final draft of the FMP was completed by the planning team in September 2005. The final draft FMP was available for public review and comment at public meetings held in Coos Bay and Roseburg in September 2005. As in previous comment periods, a wide range of views were expressed from protecting fish and wildlife resources to harvesting more to provide revenue for the Common School Fund. In early 2006 the Board of Forestry and the State Land Board approved continuing development of the revised multi-species HCP consistent with the final draft FMP.

### ***B. Implementation Plan***

The district has developed a draft of the 10-year Implementation Plan (IP) for the revised FMP/HCP. The timber team foresters used harvest model outputs to help them identify harvest levels for each management basin in the forest. They were able to identify harvest units (clearcut and thinning) that approximately match the model outputs for the first 20 years. Though the IP is a 10-year plan, the foresters located harvests for the first 20 years and “looked ahead” to the third decade to make sure that planned harvest levels are available. The draft IP was made available in September 2005 to help provide detail on FMP implementation for the public review of the FMP. An updated IP will be completed in the spring of 2007.

### ***C. Habitat Conservation Plan***

Focused meetings with the federal services began in September 2004 to work out the detailed strategies in the HCP. These strategies are based on the revised FMP but contain information that is more specific to the species being proposed for coverage. Those species are the northern spotted owl, marbled murrelet, bald eagle and 17 other species that are not currently listed but are at risk for future listing. The negotiation team for ODF and the federal services have reached agreement on the key strategies for owls, murrelets and for aquatic/riparian areas. The next step is analyzing the impacts of all strategies through the EIS document. A draft of the HCP was made available to the EIS contractor in June 2006 for analysis in the EIS. The draft HCP will be made available to the public along with the DEIS in the spring of 2007.

#### ***D. Environmental Impact Statement***

A contractor (Jones & Stokes) was hired in late 2004 to write the EIS and help the department through the NEPA process. Jones & Stokes is a large environmental consulting company that has previous experience in forest HCP's as well as other types of projects requiring environmental analysis through the NEPA process.

Scoping meetings were held on May 24-26, 2005 at Roseburg, Coos Bay and Salem. This was essentially the first step in the NEPA process and helped identify the alternatives that will be analyzed in the HCP and EIS. A draft EIS is anticipated for May 2007 and a final EIS in November 2007. Assuming that the timeline does not need to be extended, the incidental take permit (ITP) would be issued in early 2008.

#### ***E. Implementing Agreement***

A final piece of the process will be developing an implementing agreement between the State and the federal services. The Department of Justice will work with the planning team and federal solicitors to complete this agreement before the ITP is issued.

#### ***F. Cost/Benefit Analysis***

In January 2005 Mason, Bruce & Girard delivered the Elliott Cost/Benefit Analysis per the 2003 Legislature's budget note to DSL and ODF. The report analyzed likely revenue and values under management scenarios for several types of potential purchasers and compared those values with the revised FMP/HCP outputs under state ownership. The report found that the revised FMP/HCP outputs were in the middle of the range of outputs that could be expected under private ownership. This report will provide a benchmark for the State Land Board to compare with the expected economic outputs of the revised FMP/HCP. The planning team is using the Cost/Benefit Analysis as a benchmark for the economic outputs of the revised FMP/HCP.

### **III. Roles of the State Land Board and Board of Forestry in the Plan Approval Process**

The management agreement with the State Land Board and Department of State Lands requires that the forest management plans for Common School Forest Lands be approved by the Land Board. This will be done by administrative decision through the Land Board's regular meeting process. By approving the plan, the Land Board will set the harvest level for the Common School Land portion of the planning area.

Under the provisions of OAR 629-035-0030, the Board of Forestry (BOF) will approve the management plan for Elliott BOF lands by adopting the plan as an administrative rule. Since statute prohibits the Board of Forestry from setting harvest levels, a separate implementation plan will be approved by the State Forester. This plan will reflect the Common School Forest Land harvest level adopted by the Land Board, and specify the harvest level for BOF lands.

Both the Land Board and Board of Forestry will need to approve submittal of the Habitat Conservation Plan to the federal services. The current timeline for requesting State Land

Board and Board of Forestry approval of the FMP and HCP, is early 2008. This would be followed by the issuance of the ITP.

## **IV. Elements of the Planning Process**

### ***A. Guiding Principles and Resource Management Goals***

Draft guiding principles and resource management goals were developed for the plan in 2001, based on the existing principles and goals in the 1995 plan and those developed for ODF's NW plan.

### ***B. Habitat and Species Surveys***

In 2001 and 2002, a number of surveys were conducted to collect important data that will be used in the planning process and will be helpful in negotiations with the federal services.

Surveys for non-listed species were used to develop a list of species of concern that may be covered in the HCP, and to help provide a baseline for future monitoring.

- Winter and summer aquatic habitat surveys were conducted by ODFW on Elliott streams that had not been previously surveyed.
- Amphibian surveys were conducted to determine species presence and abundance, and to help determine how management actions may affect their location on the landscape.
- Songbird and pileated woodpecker surveys were conducted to determine presence on the forest.
- Bat boxes were installed on bridges in the Elliott to help determine species presence.
- Pilot radar surveys for marbled murrelets were conducted to collect some initial information on flyways and high use areas in the forest. From this study it was determined that radar could not be used to identify individual high use murrelet areas for planning purposes, but it may be useful for long-term monitoring of murrelet populations.

### ***C. Research and Studies***

ODF also has recent research information specific to the Elliott State Forest on both the spotted owl and marbled murrelet. This information is being used in the revision process.

- A demographic and population study of spotted owls was conducted between 1993 and 1998 with a final report issued in 2000. A spotted owl density study was also conducted in 2003. The 2003 density study found that the spotted owl numbers on the forest were about the same as in 1996 and that barred owls have displaced at least one pair of spotted owls. None of the spotted owls on the Elliott nested in 2003.
- A murrelet habitat characterization study was conducted between 1995 and 1999, with a final report issued in 2002. This report provides specific information on the type of habitat used by marbled murrelets.

- A study of predicted and actual marbled murrelet habitat was conducted in 2002 and 2003 as part of the strategy development process. The purpose was to determine whether District staff can identify and map high-quality murrelet habitat through interpretation of aerial photos. Statistical analysis in the study indicates that identification of this habitat can be done through aerial photo interpretation. This information is being used in designing the landscape strategy for the revised HCP.
- The District also has a substantial amount of information about murrelets gained from protocol surveys since 1999, when surveys were resumed to clear timber sales.

#### ***D. Socioeconomic Analysis***

A socioeconomic analysis was completed in September 2001, by ODF, OSU and consultant economists to assess the economic and social effects of the management of the Elliott State Forest. These effects were examined on both a local and regional basis. The report includes information on the value of timber harvest on the Elliott to the local and regional economies, and on the value and amount of recreational use on the forest. Some of the key findings of the study were:

- Southwest Oregon has a larger percentage of workforce in wood processing than the state as whole – 17%.
- Timber industries account for 10% of personal income in Coos County.
- Visitors to the Oregon Coast play an important role in Coos County's economy.
- Hunting is an important recreational activity on the Elliott.
- One million board feet of timber harvested from the Elliott State Forest generates between 11 and 13 jobs in southwest Oregon with an average wage of approximately \$32,000, and generates additional proprietors' and property owners' income to owners of southwest Oregon businesses.
- 37% of Elliott harvests go to mills in Coos County.

#### ***E. Watershed Assessment/Analysis***

Watershed analysis for the Elliott State Forest began in 2001 and was completed in 2003. The analysis organizes and describes existing information on the forest, identifies data gaps, identifies broad patterns of cause and effect, and provides a scientific information base to help achieve the resource management goals for the forest.

Information in the analysis is being used to support the FMP/HCP strategies and will be used for adaptive management after the plans are approved. Review and comment on the draft documents included ODF, ODFW and DEQ technical specialists as well as local watershed association representatives. Overall the analysis found that the forest is being effectively managed to address key issues affecting, wildlife and water quality. A number of opportunities were also identified that would further protect and improve stream, riparian and upslope habitats. These types of projects have been incorporated into the District's draft 10-Year Implementation Plan.

## ***F. Forest Modeling***

In 2002, the Core Team examined a broad array of conceptual management scenarios for the Elliott, with the help of spatial forest modeling done in collaboration with Dr. John Sessions of Oregon State University. Eight models were developed that represented a wide range of possible management scenarios. They ranged from an emphasis on conservation to an emphasis on timber production.

The Core Team analyzed the outputs from the spatial models to help narrow the focus of the planning effort and identify strategies that will best accomplish the resource goals for the forest. From this analysis, the Steering Committee identified three concepts for the Core Team to include in the planning effort: 1) reserves for protection of important habitat; 2) revised aquatic/riparian strategies; 3) use of stand structure concepts in defining habitat.

Using the three concepts, the Core Team developed a draft Integrated Landscape Strategy. This draft strategy was modeled to help determine how well the strategies will achieve the goals for the forest. Initial model runs of the draft landscape strategy were done in early 2004. Inventory data being used in the model is good quality, with much of the existing data collected since 2000. A new yield table incorporating the latest Stand Level Inventory data for the Elliott was developed in collaboration with a contractor and incorporated into the model in early 2005.

In 2006 the draft Integrated Landscape Strategy, and several of the original management scenarios were selected as alternatives in the revised HCP and updated with spatial data. One additional scenario was developed in 2006 in response to public scoping comments for the EIS. Outputs from these models are being used by the EIS contractor to analyze effects of the HCP alternatives in the EIS.

ODF also modeled two versions of take avoidance in 2006 to help inform decision-makers in the HCP development process. One management scenario applied ODF take avoidance policies for both the northern spotted owl and the marbled murrelet. The second take avoidance scenario assumed delisting of the marbled murrelet and applied ODF take avoidance policies for the northern spotted owl. These two take avoidance scenarios will be analyzed by the EIS contractor separately from the EIS.

## ***G. Landscape Strategy Development***

The Core Team developed an Integrated Landscape Strategy using the three key concepts identified by the Steering Committee. The concepts in the revised plan are similar to the 1995 Elliott plan, but differ in the identification of management basins, the location and amount of reserve areas, riparian strategies and the definition for owl and murrelet habitat. (*See Appendix A for more detail.*)

## **H. Scientific Review**

A scientific peer review process began in the fall of 2003 to ensure that the revised strategies will meet the plan goals for wildlife and fisheries.

Eight individual scientists reviewed the draft landscape strategies and submitted their comments to ODF for evaluation and reconciliation. Reviewers were recommended by the Core Team and approved by the Steering Committee based upon the area of expertise of the individual scientist. Well-respected, notable and credible members of the scientific community were selected for this process.

Reconciliation of the comments was completed in April 2004. Generally the reviewers thought the strategies in the plan were reasonable but felt that more detail was needed to fully examine whether the strategies would meet the plan goals. Given the strategic nature of the FMP, that level of detail was provided in the HCP and District Implementation Plan (IP). Reviewers also offered a number of suggestions for clarifying the document. Overall, the review process was valuable and resulted in a number of adjustments to the strategies reflecting the peer review comments.

### **I. Public Involvement**

#### **1. To Date**

In January and February of 2001, public meetings were held in Coos Bay, North Bend, Roseburg, and Salem to find out what citizens think is important in managing the Elliott State Forest. The meetings used a "listening post" format, where opinions were sought from participants in an informal setting. All comments were recorded and are being considered by ODF in the revision process.

Environmental, economic, and social issues surfaced during the meetings. Comments coming from the local communities of Coos Bay and North Bend focused on economic aspects of the forest. A larger number of comments about the environment came in meetings in Salem and Roseburg.

Updates of the planning process have been conducted in other local forums such as watershed associations, Society of American Foresters meetings, Douglas Timber Operator meetings, Rotary Club, County Commission meetings, the Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians, the Coquille Indian Tribe, and the Governor's Rural Policy Advisory Committee. As part of the public involvement process, contact with these and other interest and stakeholder groups will continue at key points in the process.

The September 2002 edition of "*Expectations*," an Elliott planning newsletter, asked for comments from the public about the three key concepts that the planning team proposed for use in strategy development. About 200 comments were received, most on form letters provided through interest group websites. Many of the comments were very broad, but a number of comments specific to the three key concepts were received that were useful in strategy development.

In June 2004 public meetings were held in Salem, Coos Bay and Roseburg to present information on the draft FMP strategies and to obtain public input. The meetings were lightly attended but numerous comments were received both during the meetings and as written comments later in the comment period. The comment period was extended from 30 to 60 days to allow time for the public to obtain copies of the draft FMP and submit their comments. A wide variety of comments were received ranging from increasing harvest to produce more revenue for the Common School Fund to decreasing harvest and emphasizing environmental values and recreation. A number of comments expressed agreement with the plan's integrated approach to providing an appropriate balance of economic, environmental and social values. Many of the comments were consistent with concepts and strategies already in the FMP. Reconciliation of the comments was completed by the Core Team in September 2004. Relevant comments were used to refine the draft FMP.

In May of 2005 public scoping meetings for the NEPA process were held in Roseburg, Coos Bay and Salem. In general, attendance was light with about 20 attendees each at Roseburg and Coos Bay. Just two individuals attended the Salem meeting. Similar to the 2004 meetings on the FMP, comments ranged from emphasizing economic values to emphasizing environmental and social values. Since these meetings were a part of the NEPA process, some of the more lengthy comments focused on the need to meet the NEPA standards for process. All comments will be evaluated for themes and issues to be addressed in the EIS. In addition, the comments will help shape the alternatives evaluated in the HCP and EIS.

In September 2005, public meetings were held in Roseburg and Coos Bay to get input on the "package" of the draft FMP, HCP and IP. These three documents together provide a comprehensive picture of the management proposal and its implementation. A newspaper insert was placed in the Coos Bay and Roseburg papers to provide information about the meetings and the planning process. In total, about 35 people attended the two meetings. Written comments were also accepted during a 45-day comment period that ended on October 21, 2005. Some 40 individuals or groups submitted written comments ranging from harvesting less and emphasizing fish and wildlife protection, to harvesting more and producing more revenue for the Common School Fund and counties. Some comments advocated that a balance of forest values be considered in the revised plan. The planning team reconciled these comments and developed a summary. The department's response was sent to those that commented and was posted on the department's website. Though some edits and clarifications were made, no substantive changes to the FMP were identified as a result of the comments.

## ***2. Upcoming***

As needed, the Core Team will conduct additional public meetings, updates or workshops for the revision process. At a minimum there will be opportunities through the NEPA process for public comment on the draft and final EIS. Updates on the revision process through the planning newsletter "Expectations" and continued contact with various interest and stakeholder groups will be ongoing as needed through the remainder of the planning process.

### ***J. USFWS and NOAA Fisheries Involvement in the Planning Process***

The federal Services have been involved at various points throughout the process. Biologists from the Services have been in regular attendance at the Core Team meetings to provide input from their perspective and to maintain a connection with the planning process. A good working relationship exists among the Core Team and federal biologists. HCP negotiation meetings with the federal services began in September 2004 and will be ongoing as the NEPA process continues through 2007.

### ***K. Environmental Analysis (NEPA Process)***

Obtaining an Incidental Take Permit (ITP) through approval of the HCP requires going through the NEPA (National Environmental Policy Act) process. This includes public scoping, developing a draft EIS, public review, a final EIS and obtaining a favorable Record of Decision. Negotiations with the federal services on the new HCP are also a part of this process. A contractor was hired in late 2004 to write the EIS and help the agencies through the NEPA process. Assuming a successful outcome, the NEPA process will continue to early 2008 when the ITP is expected to be issued.

## **V. Timeline**

### September 2005

- Public meetings/comments on draft FMP/HCP

### January and February 2006

- Board of Forestry / State Land Board approved continued development of the HCP consistent with the final draft FMP

### June 2006

- Draft HCP provided to EIS contractor

### May 2007

- Draft EIS and HCP available for comment

### November 2007

- Final EIS available to public

### February 2008

- Final approval of HCP by SLB / BOF

### February 2008

- ITP issuance

## Appendix A

### Proposed Landscape Strategy

The forest will be managed to meet the legal mandates and trust obligations of state-owned lands through a landscape strategy that is balanced across both the regional and forest levels. It will be managed for integrated resource values, including biological diversity, at both the landscape and stand levels.

The basic concepts of the revised strategies are similar to the 1995 strategies but reflect a different spatial distribution as well as different amounts of areas designated for advanced structure development. The results of the revised landscape strategies are anticipated to be similar but not identical to the existing FMP/HCP in terms of resource protection, but economic outputs are expected to increase. Model outputs of the revised strategies will be compared with other conceptual models to help determine if forest outputs are within an acceptable range. The Mason, Bruce and Girard, Cost/Benefit Analysis will be used as a benchmark for economic outputs.

Habitat areas known to be important for owls and murrelets were identified throughout the forest and identified as T&E (Threatened and Endangered species) cores. Possible locations for development or maintenance of advanced structure to provide connectivity among the T&E cores were also identified based on existing habitat conditions.

#### *A. Conservation Areas*

The revised plan uses the term *conservation areas* instead of reserves, to denote that some limited management such as road maintenance, wildfire control and public safety activities can occur in these areas. Provision for these activities was also made in areas referred to as reserves in the 1995 plan. For the revised plan, T&E core areas based primarily on owl and murrelet habitat and use were identified and mapped and make up the greatest amount of conservation areas. These are functionally equivalent to the existing 1995 Habitat Conservancy Areas and Marbled Murrelet Management Areas, however, the location and amount of these areas has changed. The revised locations are based upon ODF's owl and murrelet research, murrelet habitat mapping by the Coos District, protocol murrelet survey information, and other local knowledge of the forest. Additional conservation areas include riparian, scenic areas and steep areas related to public safety similar to the 1995 plan.

#### *B. Forest Structure*

The 1995 plan uses age to define habitat. However, age alone is not necessarily a good surrogate for habitat quality. Some of the stands on the Elliott that are 120 years old lack the structural diversity needed for owl or murrelet habitat. Some that are less than 80 years old do have structural components that are being used by owls and murrelets. The revised FMP/HCP uses stand structure to define habitat instead of age.

Three terms are used in the revised plan to describe the broad stand structure types of the forest - *early structure* (young), *intermediate structure* (mid-age) and *advanced structure* (older). Early structure refers to the relatively open stage of forest development following a disturbance such as clearcut harvest. As the canopy closes and trees fully occupy the site, the stand transitions to intermediate structure. Progressively the stand will develop large trees and more diverse vertical structure with shade tolerant trees and shrubs in the understory. As these characteristics develop, the stand will transition to advanced structure. The definition for advanced structure includes characteristics such as species, diameter, basal area, understory trees, snags and down wood.

Thirteen management basins based on watershed boundaries are identified and assigned a target percentage of the basin to be maintained in advanced structure. This strategy will provide connectivity among T&E cores. To arrive at the initial percentage targets for advanced structure in each basin, Core Team and District personnel identified potential advanced structure areas based on existing information about habitat and use by spotted owls and marbled murrelets. However, the exact location of advanced structure stands will be determined by the District at the implementation planning level.

Other than T&E cores, advanced structure within each management basin is not confined to a specific location. Before regeneration harvest of advanced structure in a basin can occur, more than the target level of advanced structure must be present within the basin. Because Conservation Areas are set aside from timber harvest and contain valuable habitat for a variety of species, they are considered to be advanced structure at the beginning of the plan. Areas of older timber that lack vertical structure and are unlikely to develop this type of structure in a reasonable amount of time would generally be targeted for harvest before more diverse stands. Regeneration harvest of some intermediate stands will also occur during the term of the plan. Commercial thinning can occur throughout the basin, including in Conservation Areas if it will hasten the development of advanced structure in those areas.

### ***C. Aquatic/Riparian Strategies***

The aquatic/riparian strategies developed during ODF's NW State Forests planning process will be used in the revised FMP/HCP. The strategies are designed to maintain or restore the key ecological functions of aquatic, riparian, and upland areas that directly influence the freshwater habitat of aquatic species.

Riparian Management Area (RMA) size is based on one site-tree height and is measured in horizontal distance from the channel migration zone. Tree retention and management standards depend on whether the stream is classed under Forest Practices standards as small, medium or large, whether the stream is perennial or intermittent, and whether or not it is fish-bearing.

Roads will be managed to keep as much forest land in a productive condition as possible, prevent water quality problems and maintain adequate fish passage where roads cross fish-bearing streams.

Slope stability is addressed in two complementary ways. The first is through the integrated landscape strategies, which will maintain at least 85 percent of the forest in advanced or intermediate structure through time. As part of the integrated strategies, the aquatic/riparian strategies are also designed to address slope stability by providing for important biological functions in riparian areas and through carefully planned and constructed roads.

The second way in which slope stability is addressed is through site-specific evaluation during harvest planning, using input and advice from ODF geotechnical specialists and ODFW, and applying specific operating procedures for the site.

#### ***D. The Landscape View***

The landscape design is based on maintaining stand structure types within specific percentage ranges of the forest. Advanced structure would range between 40-60 percent of the forest, including 20-30 percent of the forest in conservation areas for T&E cores, riparian areas, and steep, unique or visual areas. Intermediate structure would range between 25-55 percent of the forest. Early structure would range between 5-15 percent of the forest.

In comparing the revised plan and the 1995 plan, the revised plan has 20-30 percent in conservation areas and 70-80 percent available for regular management activities. The 1995 plan has 23 percent in reserves and 77 percent available for regular harvest activities. Long-term, the revised plan will have 40-60 percent of the forest in advanced structure. The 1995 plan would eventually have 52 percent of the landscape in 80-year or older forest (owl habitat is defined as age 80+ in the 1995 plan).

#### ***E. Differences and Similarities between Revised and 1995 Plans***

##### **1. Differences**

- Management basins based on sixth and seventh field watersheds instead of owl home ranges.
- Revised aquatic/riparian strategies.
- Use of structural characteristics to define habitat instead of age.

##### **2. Similarities**

- Conservation areas for T&E habitat areas, riparian areas and steep, unique or visual areas.
- Advanced structure outside of T&E cores not confined to specific location by Forest Management Plan. Areas targeted for advanced structure development to be identified in Implementation Planning process.
- Connectivity among T&E cores provided by maintaining a percentage of each basin in advanced structure.
- For regeneration harvesting of advanced structure to occur within a basin, there would need to be more than the target level of advanced structure in that basin. Conservation Areas are considered to be advanced structure at the beginning of the plan.