August 2005 DRAFT

COOS DISTRICT

IMPLEMENTATION PLAN

This implementation plan describes the management approaches and activities that Coos District (Elliott State Forest) will pursue in order to carry out the Elliott State Forest Management Plan and the Elliott State Forest Habitat Conservation Plan. The Elliott State Forest implementation plan guides forest management for all forest resources on Coos District from fiscal years 2007 through 2017.

The main headings in this plan are listed below. A detailed table of contents begins on the next page.

IP.1 District Overview

IP.1.1 Land Ownership

The Elliott State Forest is located primarily in the Oregon Coast Range with some scattered tracts in the Klamath Mountains. Coos Bay and North Bend are the closest cities to the southwest of the Elliott State Forest, with Reedsport the closest town to the northwest. The forest is a contiguous block of land about 18 miles long (north to south), and about 16 miles wide (west to east). The Umpqua River is located immediately north of the forest. To the west, the Elliott State Forest extends within six miles of the ocean. On the east, it extends about 21 miles inland. The contiguous Elliott State Forest covers approximately 93,000 acres, mostly located in Coos and Douglas Counties.

In addition to the main block of the Elliott State Forest, the Elliott State Forest manages approximately 3,700 acres of scattered Common School Forest Lands located in Coos, Curry and Douglas Counties. These scattered tracts are distributed across a broad geographic area ranging from the California border to just north of the Umpqua River, and from the Pacific Ocean to Winston in the interior Umpqua River valley.

Approximately 91 percent of the state forest lands in the Elliott State Forest are Common School Forest Lands, owned by the State Land Board, with the remaining 9 percent owned by the Board of Forestry.

Table 1. Coos District Acres, by County and Ownership

County	Board of Forestry	Common School	Total Acres
Coos	7,147	53,205	60,352
Douglas	1,783	32,852	34,635
Curry	0	2,035	2,035
Total Acres	**8,930**	**88,092**	**97,022**

IP.1.2 Land Management Classification System

The Oregon Department of Forestry land management classification system (LMCS) acreage breakdown is shown in Tables 2 and 3. Table 2 shows the classified acres in each of the three stewardship classes. Table 3 shows the acres in both the Focused Stewardship and Special Stewardship subclasses.

The land management classification system includes some overlapping classifications, defined as areas where two or more classifications occur on the same parcel of land. Overlap may occur within classifications or between classifications. For example, the subclasses of Aquatic and Riparian Habitat, and Visual, can occur at the same point on

the landscape. Where overlaps occur between classifications, the resource requiring the highest level of protection will determine the management approach. Also, overlapping classifications cause the double counting of acres. As a result, if the acres shown in the tables below were totaled, the total would be greater than the actual number of acres in the district. Table 1 above shows the actual acres in the district.

Table 2. Elliott State Forest Acres, by Stewardship Class and Fund

Classification	BOF	CSL	Total Acres
Special Stewardship	2,308	20,624	22,932
Focused Stewardship	10,054	120,829	130,883
General Stewardship	8,118	76,380	84,498

Table 3. Elliott State Forest Acres, Focused and Special Stewardship Subclasses

	Focused	Special
Administrative Sites	99	-
Aquatic and Riparian Habitat	-	4,920
Cultural Resources	-	1
Deeds	-	-
Domestic Water Use	-	-
Easements	-	-
Energy and Minerals	-	2
Operationally Limited	-	2,041
Plants	-	-
Recreation	-	763
Research/Monitoring	80	-
Transmission	5	-
Visual	3,512	1,357
Wildlife Habitat	127,186	13,848

IP.1.3 History

(Excerpts from the *ESF Forest Management Plan* pages 1–3 through 1–6)

The Elliott State Forest (ESF), which consists of about 96 percent of the state land managed by Coos District, holds the honor of being Oregon's first state forest. Officially established in 1930, today it is well known for producing high-quality timber, recreational opportunities, and habitat for fish and wildlife species.

Prior to its official creation, 84 percent of the ESF was public domain or national forest land administered by the U.S. Forest Service. All other state forests in Oregon were predominantly owned by private landowners.

Oregon has suffered two catastrophic events in the last 150 years that affected the ESF: the Coos Bay Fire of 1868, and the Columbus Day Storm of 1962. The healthy, growing forest and thriving wildlife populations today show the forest's ability to recover from catastrophic disturbances. Despite the fire and windstorm, the ESF currently has the oldest timber stands found in any of Oregon's state-owned forests.

Native Americans, including the Coos and Umpqua tribes, originally lived in the area that is now the ESF and its surrounding area (Beckham 2001). Trappers were the earliest Euro-American presence, moving up and down the coast between northern California and Fort Clatsop in Astoria, Oregon from the 1820s to the 1840s.

Early descriptions of the ESF area mention vast stands of Douglas-fir, western hemlock, western redcedar, Port Orford cedar, and large stands of Sitka spruce. Settlers also sighted stands of red alder, willow, and maple along the rivers and streams.

The earliest known fires in the ESF area include a large fire of unknown size in 1770 along the eastern ridge of the ESF, and another large fire of unknown size in 1840 along the northeast portion of the ESF. These fires left most of the area that is now ESF untouched.

The historic Coos Bay Fire of 1868 burned 90 percent of the area that is now the ESF. It is believed that the fire started near Scottsburg from a settler's clearing fire, in an area known as Greenacres. The fire burned westward along the north bank of the Umpqua River until it jumped the river near the mouth of Mill Creek. From there, it burned in a southwesterly direction, burning almost all of the ESF area except for the southeast portion and small parts of the northwest portion.

The origin of the ESF goes back to 1859, when the Oregon Territory became the State of Oregon. At that time, the federal government made Oregon the first state to receive two sections for each township in the state. Oregon was to use these lands to finance schools. The land grant amounted to about 3.5 million acres of grazing and forest lands, called Common School Lands.

In order to turn the isolated parcels of Common School Forest Lands into one manageable block of state-owned forest land, State Forester Francis and Governor Oswald West decided to trade the state parcels inside the National Forests with the

federal government for one large block of federal land. This block of land became Oregon's first state forest.

The new ESF was to be managed as a demonstration forest for private landowners, to show the value of investing in forest management. However, the year the ESF was officially dedicated, 1930, was the first bad year of The Great Depression. Although the Oregon Legislature placed the State Forester in charge of administering the forest, they gave him no funds to complete the work. Despite the forest's potential to produce timber, formal management did not commence.

In 1940, Coos County deeded 6,500 acres of tax-delinquent forest land adjacent to the ESF to the Board of Forestry. In return, Coos County was to receive 63.75 percent of the revenue from these lands.

Before the 1950s, the timber market was sluggish, and timber prices remained low. The Oregon Department of Forestry set up only two timber sales, at the request of a mill owner. The mill owner paid about $2 per thousand board feet for stumpage. By the end of World War II, demand and prices for timber increased significantly.

In 1962, the historic Columbus Day Storm had a major impact on ESF management. In just a few hours, the storms blew down about 100 million board feet of timber. Most of the blowdown was in the western half of the forest, where few roads existed because the trees were younger. To salvage the timber before it rotted, many miles of roads had to be quickly built. Nearly one-third of the 550 miles of road that exist today in the forest were built in the early 1960s to salvage blowdown . Foresters cut an additional 200 million board feet of timber to get to the blowdown, increasing the total to 300 million board feet of timber harvested in a short amount of time.

An additional 7,000 acres of Common School Forest Lands were added to the ESF through exchanges of isolated state parcels for privately owned land within or next to the forest. These acquisitions helped make the forest a contiguous block, making it easier to manage.

The ESF now includes over 93,000 acres of forest lands south of the Umpqua River, and east of Tenmile Lakes. Another 4,000 acres of scattered tracts in Coos, Curry and Douglas Counties are managed by the ESF and included in this plan. A majority of the timber in the forest is 90 to 160+ years old. Douglas-fir is the dominant species, with minor amounts of western hemlock, western redcedar, red alder, and bigleaf maple. The ESF contains an estimated 2.7 to 3.0 billion board feet of mature timber. Based on a recent analysis by M.B.&G. of the ESF State Forest, and expanding the results to cover all 97000 acres, it is estimated that Coos District forest lands have a value of from $327 to $566 million. The actual value would most likely be in the upper end of this range.

IP.1.4 Physical Elements

[Excerpts from the *ESF Management Plan* pages 2–9 through 2–74.]

IP.1.4.1 Geology and Soils

The Elliott State Forest (ESF) is located in the southern portion of the Oregon Coast Range physiographic province. The underlying rocks of the Coast Range province are classified as early Eocene period. The deep marine basin present at that time received massive quantities of sediment from the ancient Klamath Mountains located at the basin's southern end. The Tyee formation, which underlies most of the ESF, is believed to have been formed from massive underwater landslides. When this material settled, the heavier sand was deposited first, and then covered by the finer silt and clays. This process created the layered siltstone over sandstone rock that is visible in many of the deeper road cuts on the ESF. Subsequent periods of marine deposition, tectonic uplift, sea-level changes, and erosion have created the landforms visible on the ESF today.

IP.1.4.2 Topography

The topography on the Elliott State Forest is generally rugged and highly dissected with steep, narrow canyons, although the southeast part of the forest is less steep. The dissected landforms contain many ridges and swales. Across the forest, slopes face in all directions, with no dominant exposure. Elevations range from near sea level to 2100 feet above sea level.

IP.1.4.3 Water

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

IP.1.4.4 Climate

The Elliott State Forest (ESF) has a strong maritime influence from the nearby Pacific Ocean. As a result, temperature fluctuations are relatively moderate and rainfall amounts are high. The mean minimum January temperature on the ESF is approximately 32° F and the mean maximum July temperature is 76° F.

Recorded rainfall varies across the ESF. Rainfall averages 65 inches per year at lower elevations on the western edge of the forest, and reaches a high of 115 inches per year on the high, interior ridges. Rainfall declines slightly on the eastern side of the ESF, to 90

inches per year. Snowfall on the forest is normally light to moderate, both in amount and duration. There is no residual snowpack.

IP.1.4.5 Natural Disturbance

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

IP.1.5 Biological Elements

IP.1.5.1 Vegetation

Most of the Elliott State Forest (ESF) is located within the Oregon Coast Range Ecoregion. The Coast Range has precipitation levels and geology that make it unique compared to its neighbors, the Klamath Mountain and Willamette Valley Ecoregions. These qualities result in a unique combination of plants within the forest ecosystem. These plants provide habitat and forage, add organic matter to forest soils, and influence the micro-climate.

Conifer forest covers most of the land in the ESF. Before these lands became state forests, large fires killed or removed most of the older conifer forests. About one-half of the conifer stands on the ESF are more than 95 years old. Conifer species found in the forest are Douglas-fir, western hemlock, western red cedar, Sitka spruce, grand fir, and a small amount of pacific yew. Other types of vegetation dominate the remaining acres, including grass, brush, and various species of hardwood trees, such as alder and bigleaf maple.

IP.1.5.2 Insects and Disease

The current condition of the Elliott State Forest (ESF) can be ascertained partially by examining long-term trends in damage from major disturbance agents. The ESF does not have the widespread deterioration that has occurred in eastern Oregon forests as a result of fire suppression and high-grade logging. Aerial and ground surveys conducted during the past 50 years show little evidence of major pest outbreaks on the ESF. Substantial blowdown has occurred during periodic major winter storms.

Several diseases have reached noticeable levels of damage in recent decades. Swiss needle cast, the highly visible foliage disease of Douglas-fir, is causing serious growth decline over a large area along the west slope of the Coast Range. In northwest Oregon, growth reduction is severe enough on some sites that heavily infected young stands are being clearcut so more resilient multispecies stands can be planted. Though Swiss needle

cast affects some stands on the district, it has not become severe enough to modify silvicultural activities such as precommercial thinning. However, the amount of western hemlock and red cedar being planted has been significantly increased.

Laminated root rot, a native disease of conifers, has damaged Douglas-fir on some sites, but current management practices will stabilize or reduce unwanted effects of this disease.

Black stain root disease has reached epidemic proportions in some locations in southwest Oregon, but is found infrequently in Douglas-fir on the ESF.

Sudden oak death (SOD) is present on the south Oregon Coast but there are no known cases of SOD on state forest lands with the District.

Few insect problems occur in the mid- to late-successional Douglas-fir stands that are found on the ESF. The most significant pest is the Douglas-fir beetle, whose outbreaks follow major windthrow events. The Sitka spruce weevil continues to limit Sitka spruce management. The present lack of significant insect pests on the ESF contrasts with the situation in eastern Oregon where both bark beetles and defoliators are major pests of Douglas-fir. In eastern Oregon, the climate, overstocked stands, and periodic droughts are believed to be important factors in predisposing trees to insect damage.

Continued monitoring through aerial and ground surveys will provide early warnings of new problems, and gradually improve our ability to maintain a healthy forest.

IP.1.5.3 Fish and Wildlife

The Elliott State Forest (ESF) provides habitats for most native species found in forests in the Oregon Coast Range (Johnson and O'Neil 2001). Chapters 4 and 5 of the ESF Forest Management Plan describe the resource management strategies that will provide habitats that contribute to maintaining or enhancing native wildlife populations at self-sustaining levels, and contribute to properly functioning aquatic habitats for salmonids, and other native fish and aquatic wildlife.

Of the many wildlife species potentially found on the ESF, four species are listed as threatened or endangered under either (or both) federal and state Endangered Species Acts: the northern spotted owl, marbled murrelet, bald eagle, and the peregrine falcon. The presence of three of these species (northern spotted owl, marbled murrelet, and bald eagle) has been confirmed on the ESF. Some species are classified in various special designations such as candidate or sensitive categories.

Bald eagles (*Haliaeetus leucocephalus*) are found on or near the ESF year-round, and use the state forests and waters for nesting, foraging, and roosting. Since a pair of eagles often uses alternate nest sites, each nesting territory can include multiple nesting sites. In 2004, there were three occupied bald eagle nesting territories on the ESF.

The American peregrine falcon was removed from the federal threatened and endangered species list in 1999, but is still on the state list of endangered species. No active nest sites are currently known on the ESF.

The marbled murrelet, which was federally listed as threatened in 1992, is a seabird that nests on natural, moss covered platforms in mature and old-growth coniferous forests within 50 miles of the ocean. Surveys for marbled murrelets have been conducted on the ESF since 1992. In addition, research on the habitat characteristics of marbled murrelet nesting habitat on state forest lands including the ESF was conducted between 1993 and 1998 (Hamer Environmental 1996; Nelson and Wilson 2002). Through surveys and research, 11 nests were located and subcanopy behaviors were observed in many survey areas on the ESF. As of 2003, approximately 10,000 acres were protected in Marbled Murrelet Management Areas. There are additional acres of potential habitat in the ESF that have not been surveyed for marbled murrelets.

The northern spotted owl was listed as threatened by the USFWS in 1990. Surveys for spotted owls took place on the ESF and adjacent suitable habitat out 1.5 miles from the ESF between 1990 and 1993. In addition, research on the demographics, habitat use, and habitat characteristics of spotted owls on state forest lands, including the ESF, took place between 1993 and 1998 (Anthony et al. 2000a, 2000b; Tappeiner et al. 2000). In 1997 and 1998 only minimum estimates were obtained on the ESF because only previously known sites were surveyed. Over the five years of the study, there was an apparent loss of territories, which was experienced in a wide range across all ownerships, but the demographic study found that the rate of population change remained relatively steady. A density survey of all suitable spotted owl habitat on the ESF in 2003 was comparable to the 1996 density survey. In 2003, 12 pairs and 1 resident single spotted owl were located. However, 2003 experienced low productivity by spotted owls range-wide, including on the ESF, where none of the pairs reportedly reproduced.

The streams, rivers, lakes, and other water bodies on the ESF provide habitats for a variety of fish species. At least 30 species of fish use habitats in the plan area for part or all of their life history, or use habitats downstream from the state forest that may be influenced by state forest management.

Native salmonid species utilizing streams entirely or partially on the ESF include fall chinook salmon, coho salmon, chum salmon, winter steelhead, and resident populations of both anadromous and resident races of cutthroat trout. Native non-salmonid fishes include various species of lamprey, sculpin, dace, sucker, and others.

Anadromous salmonid populations have been generally depressed throughout western Oregon for a variety of reasons, including but not limited to, reduced ocean survival, reduced productivity of freshwater habitats, and sport and commercial harvest. In recent years, numbers of spawning adults on the ESF have increased likely due to favorable ocean conditions and a significant amount of in-stream habitat improvement projects conducted on ESF streams since the early 1990s. Resident cutthroat trout are widely distributed and appear stable, although special consideration is warranted for populations isolated above natural barriers. There is much less information about the status of non-salmonid species. Two species, the Pacific lamprey and Millicoma longnose dace, are of concern due to limited distribution, reduced abundance, and/or special habitat needs.

IP.1.6 Human Uses

IP.1.6.1 Forest Management

In past forest management plans the predominant land use was timber production, with 95 percent of Elliott State Forest (ESF) forests in this classification. The remaining acres were allocated to uses such as roads, stream buffers, inoperable terrain, watershed use, recreation use, service and transmission line use, scenic and protective conservancy, and non-commercial lands. Timber harvest was generally targeted to a sawlog market. Anticipated harvest ages for well-stocked stands ranged from age 30 to 45 years for young commercial thinning, with most clearcutting being done in stands from age 90 to 130 years.

During the six-year period from 1991 through 1996, the volume harvested on the ESF was heavily influenced by the northern spotted owl, which was federally listed as threatened in 1990, and the marbled murrelet, also listed as threatened in 1992. The average annual volume harvested during this period was 17.74 million board feet (MMBF). Because of the listing of the spotted owl, the State Land Board directed the Oregon Department of Forestry to prepare a new management plan for the ESF not based on "moving owl circles," but providing more certainty to the management of the ESF and the production of income. In addition, the Oregon Department of Forestry decided to pursue an incidental take permit (ITP) for spotted owls and marbled murrelets through a habitat conservation plan with the U.S. Fish and Wildlife Service (USFWS).

The HCP was approved in October 1995 and the new Elliott State Forest Management Plan was approved in 1994. The first timber sale plan implemented under the new management plan was the fiscal year 1995 plan (July 1, 1994, through June 30, 1995). The Oregon Department of Forestry estimated an annual harvest of approximately 28 million board feet per year. From fiscal year 1997 through 2005, the average annual harvest on the ESF was 28.69 million board feet.

That the volume for the last six years is above 28 million board feet is due to the variation in the volume per acre of the stands harvested. It is also due to harvest timing, an increase in young commercial thinning, and the thinning of two mature stands in a long rotation basin. It is not due to increasing the acres that were clearcut.

The increase from an average of 17.74 million board feet per year in the six-year period from 1991 through 1996, to an average of 28.69 million board feet per year during the 1997 through 2005 fiscal years, is an increase of 62 percent.

IP.1.6.2 Roads on State Forest Lands

The district's primary road network is an established system that has been in place for 40 to 60 years. It provides access for forest management activities, fire suppression, and public travel. Visions, guiding principles, and goals for managing the district's road network are discussed in the State Forest Program *Forest Roads Manual* (July 2000).

Roads are built or improved as projects on timber sales. They are designed and constructed to standards that provide for good road maintenance and safe log transportation. Main access roads are surfaced with rock to provide for all-weather use and to minimize impacts from rainfall and runoff. Secondary spur roads are built to the same maintenance standards but may have lesser specifications for width and surfacing. In many instances, secondary spurs are blocked off after a timber sale or other forest management activity is completed, in order to minimize disturbance of elk and deer and for other management reasons. These roads are still subject to road maintenance requirements unless they are legally closed or decommissioned by removing culverts and providing necessary long-term drainage. A significant portion of state forest land is accessed by roads that go through privately owned forest land. Legal easements are necessary in order to use these roads to haul logs from timber sales or for other forest management activities. The Oregon Department of Forestry (ODF) has acquired easements for many roads, and in some cases still needs to acquire easements. Depending on the district's needs and the private owner's desires, easements can be temporary or permanent, and either allow public use or allow only the agency's employees and contractors.

The Oregon Department of Forestry policy on forest roads states that roads will be developed and maintained to provide access for the sale of timber and other forest products, for timber management activities, for protection from fire, and for public access. It also states that forest roads will be designed, constructed, and maintained to meet or exceed rules of the Forest Practices Act. These rules set construction and maintenance standards intended to protect water quality, forest productivity, and fish and wildlife habitat. In addition to establishing the policy, the Oregon Department of Forestry *Forest Engineering Roads Manual* sets road standards, gives design guidelines, sets an excavation and appraisal policy, and provides a wide variety of specifications and costs (ODF 2000).

The district's total system of mainline roads, collector spurs, and minor spurs currently consists of about 550 miles of single-lane roads with turnouts. A portion of the district's mainline roads were built in the late 1930s and 1940s by the Civilian Conservation Corps (CCC). The remaining mainlines and collector spurs were primarily built in the 1960s and 1970s to access timber sale units. Over the past twenty years, many of these roads have been upgraded and now have improved width, alignment features, rock surfacing, and drainage structures that provide for water management and fish passage. This road system will be maintained and expanded over time as necessary to access future harvest operations.

Elliott State Forest roads and private roads with easements are maintained under a road maintenance contract or by contractors as a requirement of a timber sale contract. District personnel monitor road use, determine maintenance needs, and develop maintenance plans. These plans include road surface maintenance (grading and rock application); ditch, waterbar and culvert maintenance; roadside vegetation control; storm monitoring; and damage repair.

In general, the district road network can be divided into the following categories and subcategories.

Open Road/Active Use—This category includes any road open for travel with a motorized vehicle. It includes permanent roads and also temporary roads that are currently in use or will be used in the near future. These roads are usually available for use at any time of the year. Use may be continuous or intermittent. Roads in this category require active maintenance and have a full maintenance obligation under the Oregon Forest Practices Act.

Restricted Access Road—Most roads identified as being suitable for decommissioning have been decommissioned.

This group includes two sub-categories of roads closed to vehicle use and requiring maintenance under the Oregon Forest Practices Act.

- Closed road—These roads have restricted access for part or all of the year. This involves placing a semi-permanent barricade at the start of the road. This barricade can be a gate, large boulders, stumps and logs, or a trench. This strategy does not significantly alter the nature of the road, and the obligation to maintain the road remains. Road maintenance needs and sediment loads are reduced due to the elimination of traffic-related wear.

- Partially Vacated road—Partial vacation involves barricading the road and installing minor drainage structures, which might include the construction of water bars or rolling dips. This strategy is best suited for roads that will be needed again after long periods (perhaps as much as 15 to 20 years) of inactivity. Ridge-top roads or other roads where drainage and sediment issues are negligible are good candidates. The nature of the road may be altered somewhat through the addition of waterbars and other drainage structures, but the obligation to maintain the road remains. Sediment loads are reduced due to the elimination of traffic-related wear, and road maintenance needs are greatly reduced.

Retired Road—This group includes two sub-categories of roads not available for vehicle use and not requiring maintenance under the Oregon Forest Practices Act.

- Fully Vacated road—Full vacation involves removing all stream crossing structures, installing maintenance-free drainage (outsloping, water bars, rolling dips, etc.), pulling back any sidecast material, seeding grass on disturbed soil, and barricading the road. The road is effectively “put to bed.” All access is prevented, and there is no maintenance obligation. Cross-drain culverts may be left in place but will not be considered as a functional drainage feature.

- Abandoned road—These roads are no longer used or maintained but have not been formally vacated according to Oregon Forest Practices Act standards. These roads were generally constructed, used, and abandoned prior to the advent of the

FPA and are unavailable for use due to encroaching vegetation or road failures preventing vehicle use.

The roads in these last two categories are predominantly short spur roads and some collector spur roads. These roads are closed to reduce or minimize vandalism, dumping, operational conflicts, road wear, water quality impacts and maintenance costs.

The Open and Restricted Access Roads have been classified into three separate road use standards as defined in the *Forest Roads Manual* (July 2000), pages 3-6 and 3-7. These standards provide guidance on how roads are constructed, improved, and maintained, and are defined below:

Low Use Standard—These are individual short spur roads designed primarily for pickups and log trucks. Low use roads generally provide access to a single harvest unit. Their use is short term and may be temporary. They may be seasonal or open year-round. Use may be heavy during periods of log hauling but minimal at other times.

Medium Use Standard—These are longer spur roads designed primarily for pickups and log trucks. Medium use roads may provide access to several harvest units, and are often referred to as collector spurs. They may be seasonal or open year-round. Their use is more permanent.

High Use Standard—These are longer roads designed for all types of traffic, including large equipment. High use roads are generally permanent, can be used year-round and provide access to large areas. They are referred to as mainline roads.

The following table shows the approximate number of miles by road use standard:

Table 4. Coos District Road System

Road Use Standards	Miles
Low Use	277
Medium Use	160
High Use	113
Total Miles	**550**

A Road Hazard Assessment survey was conducted on the forest in 1996–1997. This information was gathered in order to identify areas of concern, prioritize needed repairs, and plan road management activities. This survey did not include enough detailed information about the road system to be useful for the long term. Therefore, another detailed inventory consistent with Oregon Department of Forestry *Forest Roads Manual (ODF, July 2000)* will be conducted during this 10-year implementation plan period. The following information has been gathered through GIS and a portion of the road hazard assessment.

- Approximately 57 percent of the roads are located on ridgetops. 33 percent of the roads are located mid-slope, and only 10 percent are in the valley bottoms or streamside.

- 52 percent of the active and restricted access roads on the forest are surfaced to an all-weather standard. A large portion of the remaining roads have had surfacing applied in the past, but will not support all-weather traffic at present.

- The forest has 22 permanent rock stockpile locations. This rock is primarily used for the maintenance of the surfacing on the mainline roads.

- There are approximately 16 miles of fully vacated road on the forest. There are also a few abandoned roads on the forest, which are not accounted for in the vacated miles total.

- There are around 2050 culverts installed across the roads in the forest. Of those, approximately 475 are located at stream crossings. 85 percent of the stream crossings are on non-fish bearing streams, and 12 percent are on fish-bearing streams. Eight of those fish-bearing stream crossings, that had barriers to fish passage, have been upgraded with fish passage pipes in the last few years. There are three remaining stream crossing sites to improve in management basin 11. One will be replaced with a bridge, the other two will be replaced with larger fish passage pipes.

- A large portion of the remaining non-stream crossing or ditch relief culverts are new. This is due to an aggressive road maintenance program that replaced old culverts or inserted new culverts where they were needed in order to disconnect ditch runoff.

- There are 18 bridges on the roads in the forest. One of these, a railcar bridge, is closed to traffic because it has been deemed unsafe. The remaining bridges are all in good shape.

The type and level of road activity that will occur during the planning period is discussed in Section 2, “Management Activities” and Section 4, “Management Basins.”

IP.1.6.3 Recreation

Recreation use within the Elliott State Forest (ESF) is concentrated in several small areas. The rest of the ESF has little recreation use. The heaviest use occurs on long holiday weekends in the summer, and during deer and elk hunting seasons in the fall. Most forest visitors are local residents who like the forest because it is undeveloped and relatively unregulated, with little competition for favorite sites. Future demand will be moderate for the recreation activities currently popular.

The ESF provides numerous areas for dispersed camping along roads and streams. Popular areas include Elk Creek and the West Fork of the Millicoma River. There are other sites spread throughout the forest with use levels varying widely. Bureau of Land Management operates the Loon Lake Recreation Area near the northeast border of the forest. This recreation area is one of the more popular destination sites in the Reedsport vicinity with an average of 70,000 to 80,000 visitors each year.

Some visitors to the ESF use old skid roads and trails for preseason scouting and hunting in off-highway and four-wheel drive vehicles. Most people use existing roads, many of which have been blocked off to regular vehicle activity. We also see some summer use of motorcycles and all-terrain vehicles.

Horse riding, hiking, picnicking, and mountain biking occur across the forest, but in lower to moderate levels. Hiking and mountain biking trails have not been developed, as use is fairly infrequent.

Winter steelhead fishing is popular on the West Fork Millicoma River. The Salmon Trout Enhancement Program (STEP) created an increase in steelhead fishing opportunities at the Millicoma Interpretive Center.

Most recreational hunting on the forest occurs during the big-game hunting season beginning in late August and continuing through November. Recreational shooting such as target shooting also occurs in the forest.

A small number of people use the forest for other specialized activities. Kayakers use the West Fork Millicoma River. Sightseers use the backcountry roads. School groups, universities, and forestry organizations also use the forest for various educational tours. The Millicoma Interpretive Center , which is managed by Oregon Department of Fish and Wildlife, gets especially heavy use from school groups.

IP.1.6.4 Scenic Resources

State Highway 38 is designated as scenic for the purpose of visual corridor management, and is adjacent to state forest lands in the Elliott State Forest (ESF). The visually sensitive corridor is defined as the area within 150 feet of the outermost right-of-way boundary along both sides of the highway. Special rules apply to timber harvest in this corridor. Due to public safety concerns due to landslides, a much wider area along this highway is off limits to any harvesting activities.

There are two state forest land management classifications used to designate areas for visual sensitivity. Where legal requirements or the management of visual resources dominates over the management of other resources, the lands are classified as Special Stewardship–Visual. Where the management of visual resources allows for integrated management of other resources, but is subject to legal restrictions, supplemental planning and/or modified management practices, the lands are classified as Focused Stewardship–Visual.

On private lands between the river and the ESF, the lower Umpqua River along Highway 38 and its immediate visual foreground is protected either by Department of Transportation-owned scenic buffers or by scenic statutes and Oregon Forest Practices Act rules. For areas farther back from the highway but still visible from the road, which are considered mid-ground scenic areas, many acres of the ESF are designated as Special Stewardship–Visual. This means that harvesting is only allowed to enhance the visual characteristics of the forested landscape and/or viewshed. The background areas adjacent to these lands are classified as Focused Stewardship–Visual. Management activities for these areas are adjusted for visual considerations.

IP.2 Management Activities

IP.2.1 Current Condition Analysis

The current stand condition is displayed in Figures 1 and 2 below, and in the second map in the **Map Section**.

Figure 1 shows the current stand structure, acreage, and percentage. The current stand structures on the ESF were determined by a combination of aerial photograph interpretation coupled with current forest inventory (OSCUR) and the newer stand level inventory (SLI) information. The SLI data has the best stand structure information (e.g., information on understory species composition, nonmerchantable tree species, layering, etc.).

Figure 2 shows the 2005 age distribution of the ESF, regardless of structure, by acreage and percentage.

Table 5. Forest Stand Structures

Early Structure
Intermediate Structure
Advanced Structure
Non-Silviculturally Capable/ Non Forest (NSC/NF)

Figure 1. 2005 Stand Structure, by Acres and Percent

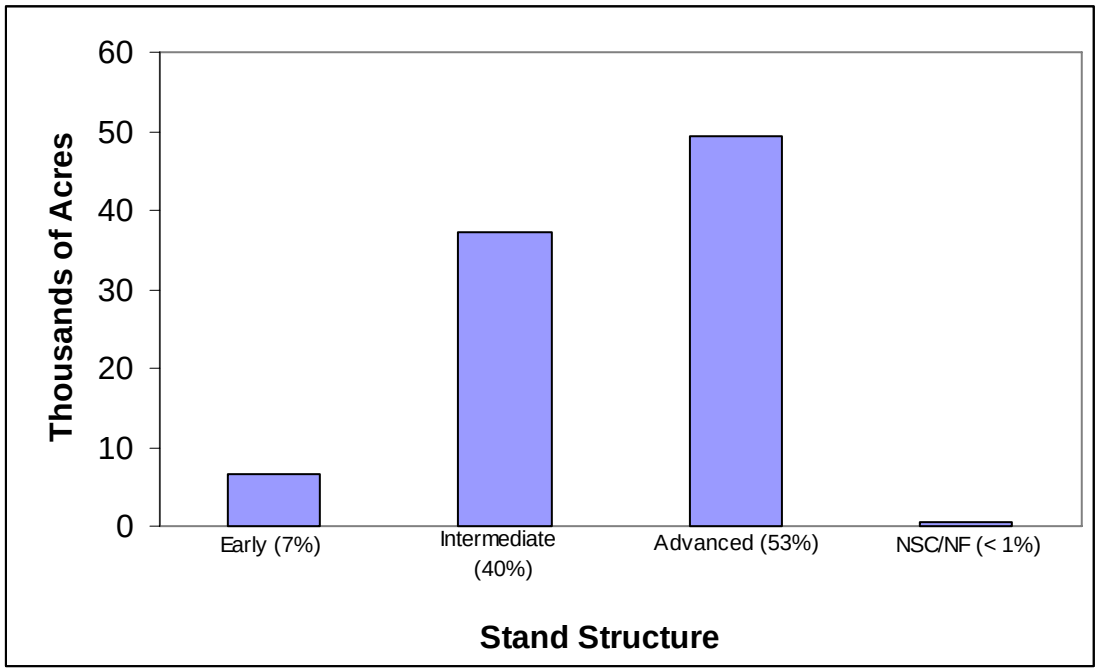

Figure 2. 2005 Stand Age Distribution, by Acres and Percent

Summary of Conifer Age Classes							
Age Class (Years)	0-25	26-55	56-85	86-115	116-145	146+	Total
Acres	28,346	16,585	5,226	22,263	23,316	2,110	97,022

IP.2.1.1 Stand Structures Interaction

The Current Condition Analysis and the Landscape Design sections of this implementation plan describe the amount of each of the identified forest stand types. As described in the forest management plan, the stand types represent only three points along a continuum of forest development. Three "stand" types were developed as a means to plan for and assess the development of the forest toward a range of "forest" types over time. Because the three types are only points along a continuum they do not express three specific habitat types nor are they perceived as discrete habitats by wildlife species. This is discussed in detail in Appendix C of the *Elliott State Forest Management Plan*.

As you think about the current condition and desired future conditions (DFC) descriptions as they relate to wildlife habitat keep in mind the following concepts and refer to Appendix C in the *Elliott State Forest Management Plan* for more detail.

In an attempt to describe how wildlife may view the forest, they seem to "see" three fundamental patch types. Table 6 below compares these three patch types to the stand types described in the forest management plan.

Table 6. Comparison between Landscape Patch Types and Stand Types

Landscape Patch	Stand Type
Young forest	Early Structure
Pole-sized forest	Intermediate Structure
Mature forests	Intermediate and Advanced Structures

Thus, as you examine the current and DFCs described by the stand types, it is important to think about combinations and aggregations of different stand types that function together to provide the benefits for each of the three broad patch types that wildlife use.

The entire array of all stand types has not been depicted because it is virtually impossible to predict how each stand on the landscape will develop over the next several decades. By focusing on where we anticipate the development of advanced structure stands, it provides the local manager with the blueprint for the management prescriptions necessary to move the landscape in the desired direction. Future adjustments will undoubtedly have to be made as natural disturbances, insects and disease, or other factors result in some stands not developing in accordance with management plans.

IP.2.1.2 Hardwoods

When forest management activities started on the Elliott State Forest (ESF) in the 1950s, the forest was predominantly Douglas-fir with a minor component of other conifers (mainly hemlock and very small amounts of red cedar and Sitka spruce). On most ESF timber sales the volume of these other conifers has usually been less than 5 percent. An

estimate of hardwoods on the forest when management began would be somewhat less than 10 percent of the acreage, with much of this being in riparian areas. Most of the riparian hardwoods are red alder with lesser amounts of big leaf maple and myrtle. A higher amount of red alder is located in the Marlow Creek drainage which was railroad logged in the 1920s–1930s. Significant amounts of myrtle exist on south slopes in the western half of the forest. Other native hardwoods include very small amounts of bitter cherry, cascara, madrone, chinquapin, and dogwood.

Under the Elliott State Forest Management Plan, a significant hardwood component will be located in riparian areas and T&E Cores, and in other areas of the forest designated as Advanced Structure. In addition, hardwoods will be retained as an important component of green tree retention, with a particular emphasis on the less abundant myrtle and big leaf maple which are especially important to wildlife. In addition, a certain amount of red alder that exists in current plantations and that will seed into new regeneration harvests will be retained in these stands. Overall, the strategy for hardwoods is to retain about the same amount and species composition as the forest had at the beginning of the implementation of this forest management plan. Approximately ten percent of the forest is in hardwood stands. Hardwood stands are defined as having at least 70 percent of the canopy composed of hardwoods.

IP.2.1.3 Early Structure

Early Structure covers 6,530 acres or 7 percent of the district. The desired future conditions (DFC) target for early structure is 5–15 percent. This structure is currently characterized by young, even-aged Douglas-fir plantations resulting from clearcut harvests occurring over the last 15 years. These stands have two main trajectories: the first is a young clearcut harvest where high densities will be maintained throughout the life of the stand with the primary purpose being revenue production. The second trajectory is to Advanced Structure. Stands with this trajectory will have several thinnings to promote diverse stand structure. Some Early Structure stands will be designated for an Advanced Structure trajectory, but for many this designation will wait unitl after they reach intermediate structure.

IP.2.1.4 Intermediate Structure

The Intermediate Structure accounts for 37,313 acres or 40 percent of the district. The desired future conditions (DFC) target for Intermediate is 35–45 percent. This structure is characterized by the closed crowns of the overstory trees which prevent light from reaching the majority of the forest floor. This low light level precludes the natural regeneration of both brush and shade tolerant tree species, thus leaving the forest floor sparsely vegetated. Overstocking results in competition for light, water, and nutrients often leaving the stand susceptible to insects, disease, wind, or fire. Of all the structure types, this type is least used by wildlife species, especially those requiring more complex habitats.

In the Elliott State Forest, this stand type is typically in the 16–65 year old age class. Most conifer stands in this stand type are the result of planted and managed stands. This type also encompasses mature forest types that do not have the structural components of advanced structure. Hardwood stands in this stand type, on the other hand, are naturally regenerated. A portion of stands in this class are mixtures of managed stands with areas of low stocking that naturally regenerated in alder. Intermediate stands will have two potential pathways. The first path is to a clearcut harvest as intermediate structure and the second path is to Advanced Structure. Those stands designated for clearcut harvest will not usually be thinned. Clearcut harvest will occur in the 40–50 year age range to maximize return. The remaining stands designated for Advanced Structure will require one or more thinnings.

IP.2.1.5 Advanced Structure

The Advanced Structure currently covers 53 percent or 49,439 acres. The desired future conditions (DFC) target for Advanced Structure is 40–60 percent. The Advanced Structure stand type is the result of continued growth and development of the intermediate stand and is therefore more complex in vertical canopy arrangement. In addition, the vertical layering offers a diverse array of habitat niches for more complex shrub and herb communities as well as wildlife species. Most of the Advanced Structure is the result of the 1868 Coos Bay fire, and is from 120–130 years old. A portion of the Advanced Structure, mostly located in the Marlow creek drainage, is in the 65 year age class, and developed after early logging in the 1920s–1930s. A small portion of the Advanced Structure is considered old growth, and have been designated as conservation areas. For this plan, Advanced Structure stands have at least 20 trees per acre of 18 inches or larger DBH (diameter breast height) and 100 feet or more in height. At least ten of those are at least 24 inches DBH. Understory trees average 30 feet in height. Unless located in conservation areas, Advanced Structure will be designated for clearcut harvest when a surplus is attained in the basin.

IP.2.1.6 Non-Silviculturally Capable

Non-silviculturally capable (NSC) lands do not comprise a significant acreage, about 517 acres are in this classification. These lands are characterized by geologic and hydrologic conditions unsuitable for the commercial growth and harvest of forest tree species. Geologic conditions include rock cliffs, talus slopes, rock slopes and outcroppings, and other substrate conditions incapable of supporting commercial tree species (i.e., serpentine soils). Hydrologic conditions include floodplains, marshes, beaver ponds, and other aquatic conditions that prevent the growth of trees. These lands provide for plant and animal communities not associated with the other forest structures. These lands are not considered part of the commercial forest land base and will not be managed for the growth and harvest of forest tree species.

IP.2.2 Management Activities in Each Stand Type

This section describes the various management activities and the effects of management for each structure type.

IP.2.2.1 Early Structure

Management practices for Early Structure stands will be applied in order to obtain the greatest value of this structure (rapid tree growth, big-game forage, wildlife habitat, etc.). These stands have the potential for two main trajectories, depending on current and future landscape designs. One trajectory is to a young stand final harvest. Stands on this trajectory will carry high volumes to the intermediate structure and at age 40–50 they will be clearcut harvested to contribute toward the district's volume and revenue targets. The other trajectory is to Advanced Structure. Stands on the Advanced Structure trajectory may receive one or more thinnings and may attain this structure type by age 65. All current and future clearcut harvests are designed to retain a specified level of live trees, snags, and down wood. These structural components in the young plantation will assure proper function of early stands throughout their growth and development.

Reforestation

Reforestation promptly follows all clearcut harvests and patch cuts down to one acre, depending on the stand objective. Spacing, species, and stock types depend on the site-specific conditions and availability. Site preparation (clearing of planting spots), vegetation management (control of brush and grass), and tree protection (big-game repellant) activities will be undertaken in conjunction with stand establishment and maintenance. Site-specific prescriptions may include herbicide treatments, manual release, slash burning, or mechanical site preparation.

Precommercial Thinning

Precommercial thinning (PCT) is a density management practice that thins closely spaced trees, including small and defective young trees or competing vegetation, in order to provide more water, light, and nutrients for the healthy residual trees. In addition, PCT increases the amount of light thus increasing the amount of herbaceous vegetation and browse species required by big game, while maintaining vigorous tree growth. Stands scheduled for early clearcutting may not receive a PCT. PCT will be done when and where it is determined to be cost effective.

Fertilization

Broadcast fertilization may be beneficial in portions of the district, where the site would show the greatest benefit in growth increase. As time and resources are available, a rate of return analysis will be conducted for this stand management opportunity. Stands scheduled for young clearcuts will be the most likely candidates for fertilization.

IP.2.2.2 Intermediate Structure

Partial Cut

Past management experience has found that most intermediate stands respond very well to partial cutting. Not only do the residual trees grow faster, but also complex structures and diverse habitats develop more rapidly with the creation of snags, down wood, and a shade-tolerant conifer understory. The effects of partial cutting improve forest health through increased stand vigor, and lower susceptibility to damage from insects, disease, fire, and windthrow. This management option also produces timber, revenue, and enhancements to other resources like scenic and wildlife resources. Most stands on an Advanced Structure trajectory will be thinned, unless they already have low densities.

Younger intermediate stands will develop towards advanced structure after one or more partial cuts (20–30 percent relative density). Snag creation within the younger intermediate stands is not planned. It is anticipated that approximately two snags per acre will develop as a result of logging operations, windthrow, and natural mortality. Existing cull logs and large down wood will be left on site. It is anticipated that the target for large down wood will not be reached until later commercial entries.

Older intermediate stands, scheduled for an Advanced Structure trajectory, that have been left too dense for too long may be partial cut to encourage growth in the understory. Stands in this category generally have smaller crowns, are less vigorous, and may take a longer time to respond to the additional light and nutrients available after the partial cut than younger intermediate stands. In this case however, partial cutting will be used to promote growth and development of the understory layers rather than accelerated overstory development.

In partial cutting intermediate stands, opportunities to increase stand complexity (i.e., minor tree species retention, diameter limit harvests, small gap creation, etc.), and initiate understory development (i.e., underplanting) will be explored based on the condition of the stand- and site-specific conditions.

Fertilization

Broadcast fertilization may be beneficial in portions of the district, where the site would show the greatest benefit in growth increase. As time and resources are available, a rate of return analysis will be conducted for this stand management opportunity. Stands scheduled for young clearcuts will be the most likely candidates for fertilization.

Clearcut

In order to maintain a variety of age classes and stand structures throughout the forest some intermediate stands will be clearcut harvested to help maintain the forest within the range of 5–15 percent in early structure. These harvests will also contribute to the production of revenue.

IP.2.2.3 Advanced Structure

Partial Cut

Partial cutting may be necessary in Advanced Structure for stand structure maintenance, particularly if the management basin has a deficit in its Advanced Structure. Partial cutting would only be required in stands that would revert to an Intermediate Structure without thinning.

In maintaining Advanced Structure, opportunities to initiate additional understory development (i.e., underplanting) may be explored based the stand and site specific conditions.

Clearcut

In order to maintain a variety of age classes and stand structures throughout the forest some advanced structure stands will be clearcut harvested to help maintain the forest within the range of 5–15 percent in early structure. These harvests will also contribute to the production of revenue. As basins achieve advanced structure targets required in the management plan, advanced structure stands surplus to the target will be scheduled for clearcut harvest.

IP.2.3 Proposed Management Activities

Table 7 below summarizes proposed management activities for Fiscal Years 2007 to 2017. The activities below are not all inclusive and may change based on district priorities and budget levels. The acreages refer to the annual activities planned through the Annual Operations Plan (AOP) process.

IP.2.3.1 Silvicultural Activities

Partial cutting and clearcutting will take place in Intermediate and Advanced Structure. Modeling indicates that the harvest levels shown below in Table 7 should produce, on average, between 40 and 45 million board feet per year.

Table 7. Estimated Annual Silvicultural Activities for Fiscal Years 2007 to 2017

Activity	Estimated Annual Acreages
Partial cut	400–1500 acres [2]
Clearcut	600–850 acres [3]
Reforestation	
- Initial Planting	600–850 acres
- Interplanting	0–30 acres
- Underplanting	0–5acres
Precommercial Thinning	70–560 acres[1]
Fertilization	0–3000 acres[1]

1. The acres shown represent a range dependent on annual workloads and budget levels.
2. The average annual partial cut harvest is estimated at 945 acres. Partial cut (PC) harvests are used to move stands to Advanced Structure or to maintain current Advanced Structure. Partial cutting will be done as necessary to meet FMP and HCP objectives, including silvicultural objectives.
3. The average annual clearcut harvest is estimated to be 780 acres. Harvest acreage and volume will fluctuate depending on the volume per acre of stands being harvested.

Specific actions are identified and scheduled in the Annual Operations Plan (AOP). As outlined in the *Elliott State Forest Management Plan* on pages 4–70 and 4–71, geotechnical specialists will provide the initial slope stability hazard and risk assessment for commercial forest operations in the AOP. This assessment will allow for proper consideration of alternatives in order to achieve the best decision for the resource and to avoid, minimize, or mitigate identified risks.

IP.2.3.2 Roads

The desired future condition of the road system is one that provides access for fire protection, forest management and public access, while minimizing the overall density of roads on the landscape and the potential impacts to other resources. During the planning period, four types of road activities will be accomplished:

- **Construction—**New roads will be constructed to provide access to future timber sales.

- **Improvement—**Existing roads will be upgraded to meet current and future needs, correct unsatisfactory conditions, meet desired road standards and prevent environmental damage.

- **Maintenance**—Road maintenance will be performed as necessary to minimize adverse environmental impacts, ensure continued forest access, protect investments and comply with the Oregon Forest Practices Act.

- **Vacating**—Roads that are temporary or that are determined to not be a component of the permanent transportation system will be vacated (or closed).

Guidance for achieving the desired condition will come from the *Forest Roads Manual* (ODF, July 2000) The majority of Level I and Level II transportation planning required by the *Forest Roads Manual (ODF,* July 2000) has already taken place across the district during the development of the district's current forest road network. Level III transportation planning will be conducted in conjunction with the development of annual operation plans and timber sale design. As road activities are planned, the following issues will be considered:

- **Location—**New roads will be located to the greatest extent possible on ridge tops or near the ridge tops where slopes are relatively gentle. Roads will not be located on steep slopes or in high risk areas unless risk analysis determines that the probability of failure (and that the risk of resource damage in the event of failure) is low. This risk analysis will involve the department's Southern Oregon Area geotechnical specialist. Roads will be designed to the minimum width necessary to accommodate the planned road use.

- **Surfacing—**High use standard roads will be surfaced with hard rock to a depth sufficient to allow all-weather use. Medium and low use standard roads may also be surfaced with hard rock where road use is permanent and surfacing is necessary to support planned management activities. Some temporary roads may not be surfaced and used only during dry weather then closed upon completion of use. A "winter–wet weather option" may be included in timber sales. This option precludes unnecessary rocking expense for units logged in the dry season, but allows a way for purchasers to log during the wet season. This option is included to prevent the rocking of spur roads for units logged in dry weather and to maximize the bids obtained. It enables a purchaser to log in wet weather, but requires them to pay for constructing the necessary drainage system and for the additional rock required. Purchasers of Elliott State Forest clearcuts frequently use this option.

  During the first half of the implementation plan period district staff, with help from the staff engineer, and others, will locate and develop a sandstone quarry. The rock from this quarry will be used for surfacing on low volume ridge top spur roads where there are no sedimentation concerns. This rock will also be used for base rock which will be capped with hard rock.

- **Drainage—**Drainage structures will be installed as necessary to provide proper drainage and minimize delivery of sediment to streams. New stream-crossing structures will be designed to pass a peak flow that at least corresponds to the 50-

year return interval. New stream-crossing structures in Type F (fish-bearing) streams will be designed to allow the migration of juvenile and adult fish during conditions when fish movement in the stream normally occurs.

- **Excess sidecast—**Roads will be assessed to identify sites that present a significant risk of sidecast failure with a significant risk of resource damage. These sites will be reconstructed to minimize the risk.

- **Road maintenance—**Purchasers of timber sales will be responsible for maintenance on active roads within the timber sale areas. Maintenance on all other district roads will be performed by a road maintenance contractor. Landslides and washouts will be repaired if they will not cause additional instability. If repairs would cause additional instability, then consideration will be given to vacating the road and/or relocating access. Key elements of road maintenance include:

  – **Inventory—**A detailed road inventory will be initiated, completed and updated on an ongoing basis to reflect any road improvements or changes to the road system. Major elements of the inventory include assessments of road drainage, surfacing, stability and vegetation conditions. Information will be used to identify risks and prioritize road maintenance and road improvement needs.

  – **Identification**—Road signs are placed to identify roads and facilitate the use of the road system by forest visitors. Road signs and district maps provide valuable information for personnel conducting forest management activities, members of the public using the roads to access recreational opportunities, and emergency services. Signs will be maintained and replaced as necessary.

  – **Inspection—**Roads will be inspected on an annual basis or more frequently, depending on the level of road use or as specific conditions warrant.

  – **Planning—**Using information from the inventory and inspections, a maintenance operations plan will be developed, which will include the necessary maintenance activities.

  – **Storm patrols—**Within personnel safety parameters, roads will be monitored during significant storms. Post-storm patrols will inspect damage sites. Procedures include damage assessment, reporting and repair estimates.

- **Managed Access—**Roads will be assessed to identify segments that could be blocked to restrict access for the purpose of mitigating potential resource damage, or reducing maintenance costs. Roads blocked to restrict access may be re-opened as access is required. Blocked roads will remain accessible to the public for non-motorized travel (hiking, biking, horse riding) with the exception of areas in

active operations. Low-use roads may be vacated after use (culverts removed, waterbars installed, and blocked) if they are spur roads that access timber stands where no operations will occur for 10 years or more. Abandoned roads will also be vacated if assessment determines a resource risk and that the project is operationally feasible. Road vacating will include:

- Removing culverts and re-establishing original stream channels.
- Pulling back old excessive side cast material.
- Waterbarring subgrades and running surfaces.
- Grass seeding running surfaces, cut and fill slopes.
- Blocking access to vehicles.

Potential Road Activities

To accomplish the district's silvicultural objectives, it is estimated that between 15 and 35 miles of new road construction and between 183 and 219 miles of road improvement will be necessary over the entire district during the planning period. Road construction and improvement identified in this plan will be primarily achieved through project work connected with timber sales. Additional details can be found in Section 4, "Management Basins."

No new mainline (high-use) roads will be required. Approximately 70 percent of the roads to be constructed will be low-use standard access roads as needed to provide access to timber sale areas. The medium use roads make up the remaining 30 percent, and in most cases, will be used for numerous forest management activities over the next several decades.

Most of the newly constructed or improved unsurfaced roads providing access to the harvest units will be partially or fully vacated during the planning period. Between 20 and 50 miles of road will be vacated or closed during the planning period. Potential road activities are summarized in Table 8.

Table 8. Road Activities for the Coos District from Fiscal Year 2007 through Fiscal Year 2017, by Road Classification and Miles

	Low Use	Medium Use	High Use
Current Miles of Road	277 miles	160 miles	113 miles
New Road Construction	11–26 miles	4–9 miles	0 miles
Road Improvement	55–66 miles	110–131 miles	18–22 miles

Road Closure and Vacation	15–40 miles	5–10 miles	0 miles
Estimate Miles of Road in 2017	270–280 miles	172–185 miles	113 miles

IP.2.3.3 Recreation

As described on page 5-62 of the *Elliott State Forest Management Plan* the ESF will continue to provide recreation opportunities that are consistent with the current recreational activities on the forest. This includes providing dispersed and undeveloped recreation opportunities such as hunting, fishing, camping, viewing and other activities that are compatible with active forest management. Recreational use of the forest will be managed to minimize adverse impacts on other resources, such as water quality, as well as to accommodate a wide variety of existing uses while minimizing conflicts among user groups. The feasibility of making improvements to existing recreation sites will be determined on a site by site basis. Specific actions will be identified and scheduled in the AOP.

Public Safety and Law Enforcement

The district currently has a cost share agreement with the Coos County Sheriff, to provide patrol, enforcement and investigation services on the Coos County portion of the ESF. The entire forest is patrolled by the Oregon State Police.

IP.2.3.4 Aquatic Resources: Stream Enhancement Projects

Stream habitat enhancement projects will be considered on a site-specific basis as a part of the annual operation development process. Specific projects on identified streams will be finalized in a cooperative effort between district personnel, Oregon Department of Fish and Wildlife (ODFW) biologists, and local watershed councils. ODFW and the watershed councils will provide input on the actual design and location of enhancement work. The Oregon Department of Forestry will verify feasibility, provide necessary materials and or in-kind support, appraise the cost of work, prepare and co-administer the stream enhancement contracts and submit project completion reports as appropriate.

Anticipated projects include placement of logs in streams to create pools, replacement of stream crossing structures (i.e., culverts) that block or impede fish passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and or road vacation. Appendix B will be used to guide the prioritization of enhancement activities.

IP.2.3.5 Cultural Resources

As the cultural resources management program is being developed, new or known sites will be encountered by Oregon Department of Forestry field staff in carrying out management plans and activities. A system will be developed to provide guidance in recognizing, recording, and protecting sites for this implementation period. This system

will identify procedures best carried out at the intermediate planning level (management basin) and at the annual planning level (activity area or site).

Much of the work necessary to accomplish the cultural resource strategies has already occurred through recent statewide planning efforts. It is anticipated that the remaining work called for by these strategies will be completed during the initial 10-year implementation period.

IP.2.3.6 Energy and Mineral Resources

Oregon Department of Transportation (ODOT) has plans to develop their Charlotte Creek Quarry located at the mouth of Charlotte Creek. This quarry is about 10 acres and is adjacent to Elliott State Forest (ESF) on all but the north side. Plans include a sale or exchange of about 30 to 40 acres of Elliott State Forest land adjacent to and south of the ODOT quarry due to access and development needs. ODOT owns forest land adjacent to the NE corner of the Elliott near highway 38 that may be suitable in an exchange.

The Oregon Department of Forestry has plans to develop sandstone quarries within the ESF to provide base rock and rock for the running surface of low volume ridge top spurs where the delivery of sediment to fish-bearing streams is not a concern. In this planning period between 1 and 4 of these quarries will be developed.

IP.2.3.7 Lands and Access

The Elliott State Forest will develop a land acquisition and exchange plan that identifies potential consolidation and divestment opportunities. In carrying out this strategy, the district will review and update acquisition and exchange opportunities, establish priorities, and implement specific transactions by following procedures and reviews as outlined in State Land Board and Board of Forestry policies and rules.

The majority of Coos District's ownership boundaries have been surveyed and posted by district engineering personnel in past years. Nevertheless, there is a continuous need to conduct survey work in order to reestablish and maintain district property corners and boundaries. An inventory of property corners and lines has been in place for many years and is updated periodically as required. The district's corner maintenance program provides a check on the integrity of property corners and their accessories. When deficiencies exist that affect the perpetuity of a property corner, restoration efforts are employed. Site visits to property corners also involves GPS data collection. This data is used to upgrade GIS land ownership overlays.

Land survey activities conducted on the Coos District are accomplished by district engineering personnel. The establishment, reestablishment and maintenance of property corners and lines will be prioritized and scheduled through the AOP.

IP.2.3.8 Scenic Resources

Areas have been identified that are sensitive to visual impacts from management activities. These are areas adjacent to or seen from major highway corridors designated as visually sensitive by the Oregon Forest Practices Act or areas with established, high public use vistas.

A full array of silvicultural treatments, harvest methods, and logging systems will be considered for use when planning operations in these areas. These methods include various degrees, combinations and shapes of regeneration harvesting, patch cuts, commercial thinnings, and partial cuts.

Some visually sensitive areas, in which timber harvest would significantly impact visual quality, will be managed so that the growing and harvesting of trees and other incompatible resource uses will be secondary to the visual values.

IP.2.3.9 Plants

The Oregon Department of Forestry protects listed plant species in accordance with the state and federal Endangered Species Acts (ESAs). Known sites are mapped, and listed species that occur, or are suspected to occur on state forests are identified, with the lists continually updated in consultation with the Oregon Department of Agriculture and the Oregon Natural Heritage Program.

During plan implementation, the Oregon Department of Forestry will determine if listed species occur, or are likely to occur on lands where management activity is planned. If so, the district will determine if the proposed action is consistent with the conservation program for the listed species established by the Oregon Department of Agriculture.

The three species that are likely present on the Elliott State Forest (ESF) are Bensonia, tall bugbane, and Howell's montia. Bensonia has been found above 2,500 feet at Signal Tree, above Camas Valley. Tall bugbane is found in lowland Douglas-fir forests with maple and sword fern. There are known populations on adjacent Bureau of Land Management lands. Howell's montia is found on moist lowland areas in vernally wet sites.

These three species are on the State Candidate list. The remaining plants have a low probability of being present on the ESF, although the Oregon Natural Heritage Program plant list is reviewed annually for updated information regarding changes in ranges and habitats.

The Oregon Department of Forestry is not aware of any other federally listed threatened or endangered plant species that are likely to occur on the ESF.

***Bensoniella oregona* (Bensonia)** **Status: State Candidate**

> Found in wet meadows and moist streamside sites in Pre-Cretaceous meta-sedimentary rock at elevations above 2,500 feet. Known at Signal Tree above Camas Valley, the northern-most location with lowest elevation confirmed.

***Cimicifuga elata* (tall bugbane)** **Status: State Candidate**

Found in lowland Douglas-fir forests with maple and sword ferns.

***Montia howelia* (Howell's montia)** **Status: State Candidate**

Found in moist lowland areas, vernally wet sites, often on compacted soil <400 meters in elevation.

IP.2.3.10 Special Forest Products

Special forest products include a variety of plant products, other than timber, that are collected or harvested for personal or commercial purposes. On the Elliott State Forest (ESF), the following special forest products have been sold, or permits issued for their collection: brush leases for sword fern, salal, and huckleberry. To date, these products have had little value to forest managers or landowners, so development and management has been minimal. The current ESF program for special forest products is to respond to public inquiries and demands for these products.

The brush leases are the main special forest product on the ESF. About 10 leases are usually active at all times during the year. Forest managers charge $30 for a year's use of 320 acres, generating a total of about $400 annually.

Most firewood is generated from timber harvest activities. Approximately 500 free use woodcutting permits are given to the public each year, allowing people to cut firewood for their personal use. However, due to the current practice of leaving down wood across the harvest unit after logging, little wood is available for firewood use.

IP.3 Landscape Design Overview

The Elliott State Forest (ESF) provides a continuum between the intensely managed industrial lands to the south and southwest, and the lightly managed federal lands to the north. The landscape design detailed in the Elliott State Forest Management Plan in Chapter 5 and Appendix C consist of the following principles: a functional arrangement of three land-use types; intensive commodity production areas, conservation areas with little resource use and areas managed for Advanced Structure.

> *The triad does not suggest an equal allocation of land use types. Exact values in each sector must come from case-specific analyses (Seymour and Hunter 1999). This approach reflects the fact that not every piece of ground must function as suitable habitat all the time to maintain viable populations. The key questions focus on the proportion and spatial arrangement of the three types that give a reasonable probability of maintaining diversity through time. On the other hand, some ecological functions must be sustained on every piece of ground, especially those related to soils, nutrient cycling, and the interactions between land and*

water that regulate hydrologic flows and produce clean water, for example in riparian habitats along perennial streams.

Corridors, patch types, patch sizes and patch placement are the primary tools used to attain a functional arrangement of the three land types. The primary driver for the landscape design in each basin, and in the forest as a whole, is the Advanced Structure percentage requirement for each basin in conjunction with the locations of the T&E cores. Basins with a lower Advanced Structure requirement will be managed more intensively for commodity production. Locations of connective areas and patches become more significant. Basins with a higher Advanced Structure requirement will have more habitat, and thus more natural connectivity through the basin. Basins will not be stand alone entities; the landscape design will provide connectivity of basins with each other for a functional arrangement throughout the forest.

The district intends to achieve the desired future conditions (DFC) stand structure array by arranging planned harvest units so that T&E (threatened and endangered) cores develop connectivity. Patches of Advanced Structure habitat will tend to be rounded in shape. Specific Early Structure and Intermediate Structure stands will be labeled as trajectory stands, targeted to develop into future Advanced Structures. The selection of those stands will include specific site conditions and stand qualities as well as placement to attain basin landscape goals. The T&E cores will provide the cornerstone for connectivity of Advanced Structures.

The development of the DFC is a broad scale, long term endeavor. To achieve the DFC, a variety of silvicultural prescriptions will be applied to stands selected for Advanced Structure. In the long term, the ESF will have areas that develop into Advanced Structures that have layered qualities with multiple conifer and hardwood species. Large snags and down wood will be common throughout the Elliott. Advanced structure stands will help provide connection with T&E cores. Commodity oriented stands of all structure types will be arrayed across the landscape. This arrangement of stand types will have the capacity of shifting in location so that Advanced Structure stands may be harvested as trajectory stands develop into a surplus of Advanced Structure.

IP.4 Management Basins

IP.4.1 Management Basin Overview

Table 9 lists the total basin acreage, conservation area acreage and Advanced Structure Target percent in each management basin.

Table 9. ESF Management Basins

Management Basin Name	Number	Acres	Conservation Area Acres	Advanced Structure Target %
Mill Creek	1	5,356	2726	50
Charlotte-Luder	2	6,422	2637	40
Dean Johanneson	3	7,296	1357	50
Scholfield Creek	4	4,990	999	60
Big Creek	5	7,823	1499	50
Benson-Roberts	6	7,417	1865	60
Johnson Creek	7	6,322	1022	60
Palouse Larson	8	6,541	1760	50
Henry Bend	9	8,284	2534	30
Marlow-Glenn	10	6,512	1772	30
Millicoma Elk	11	10,873	2648	50
Trout Deer	12	11,314	3154	40
Ash Valley	13	4,132	1252	50
Scattered Tracts	14	3740	1347	35
District Total		97,022	26,572	47

IP.4.2 Basin Descriptions

The proposed management activities described below are for the planning period from fiscal years 2007 through 2017. Activities already under contract or in the fiscal year 2006 AOP may take place during the planning period, but will not be counted toward the planning period objectives. Activities planned in the final years of the planning period will most likely be completed after fiscal year 2017, but will be counted as planning period objectives. Amounts of precommercial thinning, and fertilization depend on fiscal

budget levels and the results of a financial analysis using FPS (Forest Projection and Planning System by Jim Arney). Management basins are both numbered and given a place name.

IP.4.2.1 Basin 1—Mill Creek

This management basin is approximately 5,356 acres and is located in Coos and Douglas Counties in the northeastern corner of the forest in the Umpqua River watershed. Stands in this management basin are typical of the Elliott State Forest, composed of a mix of structures from Early to Advanced.

The Mill Creek management basin has a number of unique land classifications. Mostly focused around the Mill Creek corridor, this basin contains land designated as Special-Operationally Limited, Special-Visual, and Focused Visual. This basin has lands designated as public safety and Special-Visual near Highway 38. Focused-Recreation lands are designated adjacent to the Loon Lake Recreation Area, which is managed by the Bureau of Land Management. The majority of these areas with unique land use classifications share coverage with T&E core areas. In addition, Mill Creek management basin shares its eastern boundary with a variety of landowners, including the Bureau of Land Management, private industrial forestland, and other private landowners. Lastly, the Mill Creek management basin has two scattered tracts located approximately one mile east of the main body of the Elliott State Forest.

There are two T&E (threatened and endangered) cores located within this basin, totaling 2098 acres. Most of the T&E cores are a result of marbled murrelet occupation, although there are two active owl centers within this basin. In addition, one bald eagle pair has a primary and an alternate nest site within a T&E core area along Mill Creek and the Umpqua River.

The major streams in the Mill Creek management basin are Mill Creek, Footlog Creek, Camp Creek, Double Barrel Creek, Puckett Creek, and Cold Creek. No domestic water sources are located in this basin, but a few do exist within close proximity to the ESF boundary.

The Umpqua watershed region provides prime habitat for coho salmon, steelhead, and resident and sea-run cutthroat trout. Portions of Footlog Creek in particular qualify as high-quality stream habitat. Mill Creek has a natural fish passage barrier located below the confluence with Cold Creek, in the south end of the basin below Loon Lake. No anadromous fish use is possible upstream of this gradient barrier.

Table 10 summarizes the current stand condition, the estimated post implementation stand condition, and the desired future condition for the Mill Creek management basin.

Table 10. Basin 1—Mill Creek: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	4	33	63	0
Post Implementation Plan Condition[1]	10	33	57	0
Desired Future Condition	10	40	50	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures. The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern Spotted Owl (Lower Mill pair site, Upper Mill pair site).
- Marbled Murrelet activity observed in the northern portion of the basin in T&E cores along drainages of lower Mill Creek
- Coho salmon and steelhead trout in Footlog and Camp Creeks.
- Bald Eagle nest sites (Footlog, West Scottsburg).
- Opportunities for in-stream habitat restoration (Footlog Creek).

Desired Future Condition and Landscape Design

This basin has a target of 50 percent advanced structure. As seen in Table 10, this basin currently has an excess of advanced structure in the first decade. Due to the lack of intermediate stands, there will be limited recruitment of stands into advanced structure for a number of decades. The primary method to develop advanced structures in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities

Table 29 summarizes the harvest and Table 30 the road management activities for the Mill Creek management basin.

Stream Enhancement Projects—With direction from the Oregon Department of Fish and Wildlife (ODFW), the district plans to conduct stream enhancement projects. Anticipated projects include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish

passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams and accumulating logs for the stream placement stockpile. Other projects will occur with the coordination of Oregon Department of Fish and Wildlife and local watershed councils. According to the ESF watershed analysis, Footlog Creek has been identified as a candidate for future habitat restoration opportunities.

Recreation—Recreation in the Mill Creek management basin is typically centered on the Loon Lake Recreation Area, which is adjacent to the southern boundary of this basin. This area provides opportunities for camping, hiking, boating, swimming, and fishing. Additionally, dispersed camping sites exist along Douglas County Road #3 as well as up Sock Creek road. Hunting opportunities also exist within this basin. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.2 Basin 2—Charlotte Luder

This management basin is approximately 6,422 acres and is located in Douglas County in the northern part of the forest in the Umpqua watershed. Stands in this management basin are typical of the Elliott State Forest, composed of a mix of age structures from Early to Advanced. The Charlotte Luder management basin comprises a large portion of the northern Elliott State Forest Boundary. This boundary is adjacent to or near highway 38 and is designated as Special-Visual, and Special–Operationally Limited, (public safety). These areas share some coverage with T&E (threatened and endangered) core areas. In addition, this basin has some lands designated as Focused-Visual.

There are no owl centers identified within this basin. This basin has six T&E core areas totaling 850 acres. Five of the core areas are within the basin and one is shared with an adjacent basin. A bald eagle site is located near the north central boundary of this basin and is contained within the Indian Charlie core area.

Major streams in the Charlotte Luder management basin are Indian Charlie Creek, Charlotte Creek, and Luder Creek. There are no known domestic water sources located within this basin, but several are located just outside the forest boundary along Highway 38.

The Umpqua watershed region provides prime habitat for coho salmon, steelhead, and resident and sea-run cutthroat trout. Charlotte Creek is known to have a high density of juvenile coho salmon. Additionally, portions of Charlotte Creek and Luder Creek are considered to be high-quality streams and provide opportunities for in-stream habitat restoration.

Table 11 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Charlotte Luder management basin.

Table 11. Basin 2-Charlotte Luder: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	0	18	82	0
Post Implementation Plan Condition[1]	13	17	70	0
Desired Future Condition	10	50	40	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures. The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (No activity centers are located in this basin).
- Marbled murrelets: Significant detections have been documented mostly in the southern part of the basin and are primarily located within existing T&E core areas.
- Coho salmon and steelhead trout in Charlotte and Luder Creeks.
- Bald eagle nest site (Indian Charlie).
- Opportunities for in-stream habitat restoration (Charlotte and Luder Creeks).

Desired Future Condition and Landscape Design

This basin has a target of 40 percent advanced structure. As seen in Table 11, this basin currently has an excess of advanced structure in the first decade. Due to the lack of intermediate stands, there will be limited recruitment of stands into advanced structure for a number of decades. The primary method to develop advanced structures in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities —

Tables 29 and 30 summarize the harvest and road management activities for the Charlotte-Luder management basin.

Stream Enhancement Projects—With direction from the Oregon Department of Fish and Wildlife (ODFW), the district plans to conduct stream enhancement projects. Anticipated projects include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation

or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams and accumulating logs for the stream placement stockpile. Other projects will occur with the coordination of the Oregon Department of Fish and Wildlife and local watershed councils. Both Charlotte and Luder Creeks have been identified in the Elliott State Forest watershed analysis to possess future stream restoration opportunities.

Recreation—Recreation in this basin is mostly hunting and camping. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.3 Basin 3—Dean Johanneson

This management basin is within the Umpqua watershed, is approximately 7,296 acres and is located in Douglas County.

The Dean Johanneson management basin is located in the northern part of the forest. Forests in this management basin are typical of the Elliott State Forest, composed of a mix of structures from Early to Advanced, although the last clear cut harvest activities occurred in the early 1990s. A portion of this basin, 726 acres, is Board of Forestry land. The remainder belongs to the State Land Board. Twenty six acres of land along the lower end of Dean Creek is classified as Special–Wildlife Habitat) and is under agreement to the Oregon Department of Fish and Wildlife for producing forage for elk. There are also two small areas of land classified as Special–Operationally Limited (public safety) located on the northeastern end of this basin. The Dean Johanneson management basin shares a boundary on the north end with both private industrial forestland and the Bureau of Land Management.

There is one active owl center within the basin. There are three T&E (threatened and endangered) cores in the Dean Johanneson basin, two within the basin and one shared with an adjacent basin for a total of 450 acres.

The major streams in this basin are Hakki Creek, Dean Creek, and Johanneson Creek. No known domestic water sources are located within this basin. However, several exist just outside the forest boundary in the Dean Creek area. There are homesites within a half mile of the forest boundary along Dean and Johanneson Creeks.

The Umpqua watershed region provides prime habitat for coho salmon, steelhead, and resident and sea-run cutthroat trout. In this basin, both Dean Creek and Johanneson Creek have been identified as possessing high-quality habitat in some areas.

Table 12 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Dean Johanneson management basin.

Table 12. Basin 3—Dean Johanneson: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	0	42	58	0
Post Implementation Plan Condition[1]	5	39	56	0
Desired Future Condition	10	40	50	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures. The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (Dean Creek pair site).
- Marbled murrelets: Significant detections of marbled murrelets have been documented mostly in the northeastern part of the basin and are primarily located within existing T&E core areas.
- Coho salmon and steelhead trout in Dean and Johanneson Creeks.
- Opportunities for in-stream habitat restoration (Dean and Johanneson Creeks).

Desired Future Condition and Landscape Design

This basin has a target of 50 percent advanced structure. As seen in Table 12, this basin currently has an excess of advanced structure in the first decade. Due to the lack of intermediate stands, there will be limited recruitment of stands into advanced structure for a number of decades. The primary method to develop advanced structures in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities

Tables 29 and 30 summarize the harvest and road management activities for the Dean Johanneson management basin.

Stream Enhancement Projects—With direction from the Oregon Department of Fish and Wildlife (ODFW), the district plans to conduct stream enhancement projects. Anticipated projects include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation

or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams and accumulating logs for the stream placement stockpile. Other projects will occur with the coordination of Oregon Department of Fish and Wildlife and local watershed councils. Both Dean Creek and Johanneson Creek are candidates for future restoration opportunities, according to the Elliot State Forest watershed analysis.

Recreation—This basin will retain its qualities for dispersed recreation potential.

IP.4.2.4 Basin 4—Scholfield Creek

This management basin is located in the Umpqua watershed, is approximately 4,990 acres and is located in Douglas County.

The Scholfield basin is in the western portion of the forest. Forests in this management basin have been managed as long rotation basins since 1995. No recent clearcutting has taken place in this basin. The basin is composed of a mix of intermediate and advanced structures, there is currently no early structure.

This basin has two T&E (threatened and endangered) cores with a total of 345 acres entirely within the basin. The smaller of the two T&E cores is the result of marbled murrelet occupancy. The other T&E core is centered around the only northern spotted owl activity center within the basin. The major streams in this basin are Scholfield, Alder, Miller and Dry Creeks. These streams are fish-bearing (coho salmon, steelhead, and cutthroat trout) with Scholfield being an important Coho spawning stream.

There are no domestic water sources located in this basin. There are four homesites within a half mile of the Elliott State Forest along Scholfield Creek.

Table 13 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Scholfield management basin.

Table 13. Basin 4—Scholfield Creek: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	0	54	46	0
Post Implementation Plan Condition[1]	0	49	51	0
Desired Future Condition	10	30	60	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures.

The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (Wind Creek pair site).
- Marbled murrelets: Significant detections of marbled murrelets have been documented in the southeastern portion of the basin and are located within the existing T&E core.
- Coho salmon and steelhead trout. Scholfield, Alder, Miller and Dry Creeks are coho salmon and steelhead producing streams.
- Opportunities for in-stream habitat restoration (Scholfield, Alder and Dry Creeks).
- Wind Ridge old-growth stand.

Desired Future Condition and Landscape Design

This basin has a target of 60 percent advanced structure. As seen in Table 13, this basin currently has a deficit of advanced structure in the first decade. The primary method to develop advanced structures in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities

Refer to Tables 29 and 30 for proposed management activities.

Stream Enhancement Projects—Stream enhancement projects within the basin may include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation. The Elliott State Forest watershed analysis will be used as a guide to establish project priorities. According to the watershed analysis, the lower portion of Schofield Creek, as well as Alder, Miller and Dry Creeks have moderate to low levels of existing large wood and would be good candidates for additional restoration projects.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams, and accumulating logs for the stream placement stockpile. Other projects will occur with the coordination of Oregon Department of Fish and Wildlife (ODFW) and local watershed councils.

Recreation—Recreation in this basin is mostly dispersed hunting and camping. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.5 Basin 5—Big Creek

This management basin is located in the Tenmile Lakes basin, is approximately 7,823 acres and is located in Coos and Douglas Counties.

Big Creek basin is in the western portion of the forest. No recent clearcutting has taken place in this basin. The basin is composed of a mix of intermediate and advanced structures, there is only 1 percent in early structure.

There are three owl activity centers within the basin. This basin has two T&E (threatened and endangered) cores, one entirely within the basin and one shared with an adjoining basin. Approximately 520 acres are in T&E cores with 11 acres set aside for a myrtle grove conservation area along Murphy Creek near the western basin boundary. The T&E cores are the result of owl activity centers and marbled murrelet occupancy. According to the ESF watershed analysis, streams in the Tenmile watershed encircling the Big Creek watershed are important for coho salmon because of high-quality rearing habitat found within them and in downstream waters, particularly Tenmile Lakes. The major streams in the Big Creek basin are Murphy Creek, Big Creek, Alder Fork, Noble Creek, and Alder Gulch. All of these are fish-bearing and have populations of coho salmon, steelhead, and cutthroat trout. Big Creek and Alder Creek have claims on in-stream water rights. Big Creek and Alder Creek have homesites within a half mile of the forest boundary. There are no domestic water sources located in this basin.

Table 14 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Big Creek management basin.

Table 14. Basin 5—Big Creek: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	1.	40	59	0
Post Implementation Plan Condition[1]	8	37	55	0
Desired Future Condition	10	40	50	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures.

   The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (Alder Creek pair site, Murphy Creek pair site, and Noble Creek resident single site).
- Marbled murrelets: Significant detections of marbled murrelets have been documented mostly in the central and eastern part of the basin and are primarily located within existing T&E core areas.
- Coho salmon and steelhead trout in Murphy, Big, Alder Gulch, Noble, and Alder Fork Creeks.
- Murphy Creek basin–Reference and monitoring basin for Tenmile Lakes TMDL and Water Quality Management Plan.
- Myrtle grove conservation area along Murphy Creek.
- Opportunities for in-stream restoration (Murphy, Big, Alder, Noble and Alder Fork Creeks.

Desired Future Condition and Landscape Design

This basin has a target of 50 percent advanced structure. As seen in Table 14, this basin currently has an excess of advanced structure in the first decade. Due to the lack of intermediate stands, there will be limited recruitment of stands into advanced structure for a number of decades. The primary method to develop advanced structures in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities

Tables 29 and 30 summarize the harvest and road management activities for the Big Creek management basin.

Stream Enhancement Projects—Stream enhancement projects within the basin may include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation. The Elliott State Forest watershed analysis will be used as a guide to establish project priorities. According to the watershed analysis, Big Creek and Murphy Creek have moderate to low levels of existing large wood.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams, and accumulating logs for the stream placement stockpile. Other projects will occur with the coordination of Oregon Department of Fish and Wildlife (ODFW) and local watershed councils.

Recreation—Recreation in this basin is mostly dispersed hunting and camping. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.6 Basin 6—Benson Roberts

This basin is in Tenmile Lakes basin, is approximately 7,417 acres, and is located in Coos County. The Benson–Roberts basin is in the western portion of the forest. No recent clearcutting has taken place in this basin. The basin is composed of a mix of intermediate and advanced structures, with a small component of early structure.

There are two owl activity centers within the basin. This basin has four T&E (threatened and endangerred) cores totaling 1,102 acres. Two of the smaller cores are the result of marbled murrelet occupancy while the two larger cores are primarily for northern spotted owls.

The major streams in this basin are Benson and Roberts Creeks that have populations of coho salmon, steelhead and cutthroat trout. Barn Gulch and Salmon Gulch are also good producers of coho salmon. There are two homesites within a half mile of the ESF boundary along Benson Creek. There are no domestic water sources located in this basin.

Table 15 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Benson Roberts management basin.

Table 15. Basin 6—Benson Roberts: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	3	36	61	0
Post Implementation Plan Condition[1]	7	33	60	0
Desired Future Condition	10	30	60	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures. The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (Roberts Creek pair site and Benson Creek pair site).
- Marbled murrelets: Significant detections of marbled murrelets have been documented mostly in the central and eastern part of the basin and are primarily located within existing T&E core areas.
- Coho salmon and steelhead trout in Roberts and Benson Creeks.
- Opportunities for in-stream restoration (Roberts and Benson Creeks).

Desired Future Condition and Landscape Design

This basin has a target of 60 percent advanced structure. As seen in Table 15, this basin currently has an excess of advanced structure in the first decade. Due to the lack of intermediate stands, there will be limited recruitment of stands into advanced structure for a number of decades. The primary method to develop advanced structures in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities

Tables 29 and 30 summarize the harvest and road management activities for the Benson Roberts management basin.

Stream Enhancement Projects—Stream enhancement projects within the basin may include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation. The Elliott State Forest watershed analysis will be used as a guide to establish project priorities. According to the watershed analysis, Benson, and Roberts Creeks have moderate to low levels of existing large wood.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams, and accumulating logs for the stream placement stockpile. Other projects will occur with the coordination of Oregon Department of Fish and Wildlife (ODFW) and local watershed councils.

Recreation—Recreation in this basin is mostly dispersed hunting and camping. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.7 Basin 7—Johnson Creek

This management basin is approximately 6,322 acres and is located in Coos County.

The Johnson Creek basin is in the western portion of the forest. Forests in this management basin have been managed as long rotation basins since 1995. No recent clearcutting has taken place in this basin. The basin is composed of a mix of intermediate and advanced structures, there is currently no early structure.

There is one owl activity center within the basin. This basin has two T&E (threatened and endangered) cores within the basin totaling 269 acres. One of the T&E cores is the result of marbled murrelet occupancy and the other is for northern spotted owls. The major coho, steelhead and cutthroat trout streams in this basin are Robertson Creek, Adams Creek, Hatchery Creek, Johnson Creek and South Fork Johnson Creek. According to the Elliott State Forest watershed analysis, streams in the Tenmile watershed including the Johnson Creek watershed are important for coho salmon because of the high-quality rearing habitat

found within them and in downstream waters. Streams in this basin contain very good spawning habitat for salmonids.

There are two homesites within a half mile of the ESF, but no domestic water sources located in this basin.

Table 16 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Johnson Creek management basin.

Table 16. Basin 7—Johnson Creek: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	0	42	63	0
Post Implementation Plan Condition[1]	0	39	61	0
Desired Future Condition	10	30	60	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures. The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (Johnson Creek pair site).
- Marbled murrelets: Significant detections of marbled murrelets have been documented in the southeastern part of the basin and are located within existing T&E core areas.
- Coho salmon and steelhead trout in Robertson, Hatchery, Adams, Johnson and South Fork Johnson Creeks.
- Opportunities for in-stream habitat restoration (Robertson, Hatchery, Adams, Johnson and South Fork Johnson Creeks).

Desired Future Condition and Landscape Design

This basin has a target of 60 percent advanced structure. As seen in Table 16, this basin currently has an excess of advanced structure in the first decade.

Proposed Management Activities

Tables 29 and 30 summarize the harvest and road management activities for the Johnson Creek management basin.

Stream Enhancement Projects—Stream enhancement projects within the basin may include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation. The Elliott State Forest watershed analysis will be used as a guide to establish project priorities. According to the watershed analysis, Johnson Creek has moderate to low levels of existing large wood. Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams, and accumulating logs for the stream placement stockpile. Since this basin does not have a clearcut harvest objective for the first decade, opportunities to complete projects associated with timber sales will be minimal. Other projects will occur with the coordination of Oregon Department of Fish and Wildlife (ODFW) and local watershed councils.

Recreation—Recreation in this basin is mostly dispersed hunting and camping. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.8 Basin 8—Palouse Larson

This management basin is approximately 6,541 acres and is located in Coos County, in the southwestern portion of the forest. Forests in this management basin are typical of the Elliott State Forest (ESF), composed of a mix of age structures from Early to Advanced. 422 acres are in public safety reserves. There is 11 percent (1085 acres) of Board of Forestry Land in this basin. This region of the forest is susceptible to Swiss needle cast.

This basin has four T&E (threatened and endangered) cores entirely within the basin comprising 642 acres. Three of the T&E cores are the result of marbled murrelet occupancy while the other surrounds the one active owl site in the basin. The major streams in this basin are the Sullivan Creek, Larson Creek and Palouse Creek all of which contain populations of coho, steelhead and cutthroat trout. Anadromous fish are unable to access the portion of Kentuck Creek that is in the Elliott due to a falls at the Kentuck quarry. There are no domestic water sources located in this basin. There are several homesites within a half mile of the ESF.

Table 17 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Palouse Larson management basin.

Table 17. Basin 8—Palouse Larson: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	4	44	52	0
Post Implementation Plan	10	37	53	0

Condition[1]				
Desired Future Condition	10	40	50	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop advanced structures.

   The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (Palouse Creek pair site).
- Marbled murrelets: Significant detections of marbled murrelets have been documented mostly in the central and southern part of the basin and are primarily located within existing T&E core areas.
- Coho salmon and steelhead trout in Sullivan, Larson, and Palouse Creeks.
- Opportunities for in-stream restoration (Sullivan, Larson, and Palouse Creeks).
- Long-term in-stream and riparian restoration projects on Palouse Creek.
- Swiss needle cast.

Desired Future Condition and Landscape Design

This basin has a target of 50 percent advanced structure. As seen in Table 17, this basin currently has a small surplus of advanced structure in the first decade. There will be limited recruitment of stands into advanced structure for a number of decades. The primary method to develop advanced structures in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities

Refer to Tables 29 and 30 for proposed management activities.

Stream Enhancement Projects—Stream enhancement projects within the basin may include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation. The Elliott State Forest watershed analysis will be used as a guide to establish project priorities. According to the watershed analysis, Larson and Sullivan Creeks have moderate to low levels of existing large wood.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams, and accumulating logs for the

stream placement stockpile. Other projects will occur with the coordination of Oregon Department of Fish and Wildlife (ODFW) and local watershed councils.

Recreation—Recreation in this basin is mostly dispersed hunting and camping. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.9 Basin 9—Henry Bend

This management basin is approximately 8,284 acres and is located in Coos County.

This basin is in the southwestern portion of the forest. Forests in this management basin are typical of the Elliott State Forest (ESF), composed of a mix of age structures from Early to Advanced. 390 acres are in public safety and 145 acres are private property. There is 18 percent (1733 acres) of Board of Forestry Land in this basin. This region of the forest is susceptible to Swiss needle cast and there are areas west of this basin that are infected. There are two progeny sites at the lower end of the 2000 road that were established around 1970–1972 as part of a genetic improvement program. Their original purpose was to select favorable genetic traits and begin producing seedlings for operational outplanting in the forest. That purpose has been fulfilled many years ago and there are seed trees growing in the J.E. Schroeder Seed Orchard that have these selected traits. This seed orchard produces all the genetically improved seed needed for operational outplanting on the ESF.

There are no owl activity centers within this basin. This basin has six T&E (threatened and endangered) cores totaling 924 acres and all are entirely within the basin. Most of the T&E cores are the result of marbled murrelet occupancy.

The major streams in this basin are the West Fork Millicoma River and the Totten, Daggett, Schumacher, and Eleven Creeks. These streams contain coho, steelhead and cutthroat trout. There are two pump chances that have a water use permit. Trail Butte Reservoir and Schumacher Creek have water use permits and are used for Forest Management. Portions of the slopes above the West Fork Millicoma are designated in the Special–Visual land classification.

The Millicoma Interpretive Center is a fish hatchery and educational outreach facility on the West Fork Millicoma River operated by the Oregon Department of Fish and Wildlife. Salmonids including chinook, steelhead, and coho salmon are spawned, reared, and acclimated at this facility to support fishery programs

This basin’s main stream, the West Fork Millicoma, is a large stream critical to much of the anadromous fish species on the ESF. This waterway is important in providing habitat for good numbers of coho salmon.

Table 18 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Henry Bend management basin.

Table 18. Basin 9—Henry Bend: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	14	44	42	0
Post Implementation Plan Condition[1]	12	46	42	0
Desired Future Condition	10	60	30	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures. The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- There are no northern spotted owl centers within this basin.
- Marbled murrelets: Significant detections of marbled murrelets have been documented throughout the basin and are primarily located within existing T&E core areas.
- Coho salmon and steelhead trout in the West Fork Millicoma River and Totten, Daggett, Schumacher, and Eleven Creeks.
- Opportunities for in-stream habitat restoration (West Fork Millicoma River and Totten, Daggett, Schumacher, and Eleven Creeks).
- Millicoma Interpretive Center water sources for hatchery operations.

Desired Future Condition and Landscape Design

This basin has a target of 30 percent advanced structure. As seen in Table 18, this basin currently has an excess of advanced structure in the first decade. The primary method to develop advanced structure in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities

Refer to Tables 29 and 30 for proposed management activities.

Stream Enhancement Projects—Stream enhancement projects within the basin may include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks),

road closure and/or road vacation. The Elliott State Forest watershed analysis will be used as a guide to establish project priorities. According to the watershed analysis, Daggett Creek, Schumacher Creek, Totten Creek and the West Fork of the Millicoma have moderate to low levels of existing large wood.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams, and accumulating logs for the stream placement stockpile. Other projects will occur with the coordination of Oregon Department of Fish and Wildlife (ODFW) and local watershed councils.

Recreation—Recreation in this basin is mostly dispersed hunting and camping. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.10 Basin 10—Marlow Glenn

This management basin is approximately 6,512 acres and is located in Coos and Douglas Counties.

This basin is in the south to southeastern portions of the forest. Forests in this management basin are typical of the Elliott State Forest (ESF), composed of a mix of age structures from Early to Advanced. This basin is highly unique in regards to site diversity, it is split into three sections across the southern area from the southwest to the southeast. Thirty eight acres are in public safety reserves. There is a considerable amount of Board of Forestry Land in this basin (36 percent or 3383 acres). The Heritage Grove is a surviving mature Douglas-fir and western hemlock stand from the 1868 Coos Bay Fire and is designated as a conservation area because of its unique status. This site is approximately 72 acres and is located in the Silver Creek drainage in the southeastern corner of the forest.

There are three owl sites within this basin. This basin has nine T&E (threatened and endangered) cores totaling 1089 acres. Six are entirely within the basin and three are shared by adjoining basins. Most of the T&E cores are the result of marbled murrelet occupancy, however, three are primarily for owl sites.

The major anadromous streams in this basin are Marlow Creek, Y Creek and Fourmile Creeks. Silver Creek, Howell Creek, Cedar Creek, Glenn Creek and West Fork Glenn Creek are above waterfall barriers at Golden and Silver Falls State Park and only contain resident cutthroat trout. There is a population of chum salmon in Marlow Creek immediately downstream of the forest boundary. There are no domestic water sources located in this basin. There are numerous home sites within a half mile of the ESF.

Table 19 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Marlow Glenn management basin.

Table 19. Basin 10—Marlow Glenn: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	10	57	33	0
Post Implementation Plan Condition[1]	12	48	40	0
Desired Future Condition	10	40	30	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop advanced structures.

   The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (Fourmile Creek pair site, Marlow Creek pair site and West Glenn Creek pair site).
- Marbled murrelets: Significant detections of marbled murrelets have been documented throughout the basin and are primarily located within existing T&E core areas.
- Coho salmon and steelhead trout in Marlow, Y, Piledriver, and Fourmile Creeks.
- Chum salmon in Marlow Creek.
- Resident cutthroat trout reside in streams above the falls barrier at Golden and Silver Falls State Park.
- Opportunities for in-stream habitat restoration (Marlow, Y, Piledriver, and Fourmile Creeks).

Desired Future Condition and Landscape Design

This basin has a target of 30 percent advanced structure. As seen in Table 19, this basin currently has a surplus of advanced structure in the first decade. The primary method to develop advanced structures in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities

Refer to Tables 29 and 30 for proposed management activities.

Stream Enhancement Projects—The fact that much of this basin lies above the natural barrier of Golden and Silver falls will be taken into account when planning projects. Stream

enhancement projects within the basin may include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation. The Elliott State Forest watershed analysis will be used as a guide to establish project priorities. According to the watershed analysis, lower Marlow Creek has moderate to low levels of existing large wood.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams, and accumulating logs for the stream placement stockpile. Other projects will occur with the coordination of Oregon Department of Fish and Wildlife (ODFW) and local watershed councils.

Recreation—Recreation in this basin is mostly dispersed hunting and camping. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.11 Basin 11—Millicoma Elk

This management basin is the second largest on the Elliott State Forest (ESF) with about 10,873 acres and is located mostly in Coos County. A very small portion along the north and east edge of the basin is located in Douglas County. Forests in this management basin are typical of the ESF, composed of a mix of age structures from Early to Advanced.

There is one owl center within this basin. This basin has six T&E (threatened and endangered) cores totaling 1,355 acres or about 12 percent of the basin. Two of these cores are located entirely in this basin and four are shared with adjoining basins. Most of the T&E cores are the result of marbled murrelet occupancy.

This basin is situated in the upper reaches of the West Fork Millicoma River. The major streams in this basin are the West Fork Millicoma River and Fish, Panther, Kelly, Cougar, Elk, Hidden, Crane, and Skunk Creeks. There are no domestic water sources located in this basin.

The streams in this basin are prime spawning and rearing habitat for coho, steelhead, and cutthroat. There is a fish ladder located on Elk Creek which was recently improved for fish passage.

Table 20 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Millicoma Elk management basin.

Table 20. Basin 11—Millicoma Elk: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	11	34	55	0
Post Implementation Plan	15	37	48	0

Condition[1]				
Desired Future Condition	10	40	50	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures. The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (Panther Creek resident single site).
- Marbled murrelets: Significant detections of marbled murrelets have been documented throughout the basin and are primarily located within existing T&E core areas.
- Coho salmon and steelhead trout in the West Fork Millicoma River and Fish, Panther, Kelly, Cougar, Elk, Hidden, Crane, and Skunk Creeks.
- Opportunities for in-stream habitat restoration (West Fork Millicoma River and Fish, Panther, Kelly, Cougar, Elk, Hidden, Crane, and Skunk Creeks).
- Land use classifications include Special-Recreation in several locations along upper West Fork Millicoma River and along Elk Creek. Other features worthy of protection consideration include the Cougar Pass Lookout situated at the 7000/7700 road junction and the microwave relay station located on Elk Peak on the 1720 road, both classified as Special-Administrative Sites.

Desired Future Condition and Landscape Design

This basin has a target of 50 percent advanced structure. As seen in Table 20, this basin currently has a surplus of advanced structure in the first decade. Due to a lower number of intermediate stands, there will be limited recruitment of stands into advanced structure for a number of decades. The primary method to develop advanced structures in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities

Tables 29 and 30 summarize the harvest and road management activities for the Millicoma Elk management basin.

Stream enhancement Projects—There have been many projects done over the last 10 years to restore and improve salmon habitat on the West Fork Millicoma River and on the Cougar, Fish, Kelly, Elk, Panther, Skunk, Hidden, and Crane Creeks. These include large wood placement, rootwad placement, fish passage improvements, vacating roads and closures, and voluntary riparian tree retention. With direction from Oregon Department of Fish and Wildlife, the district plans to continue stream enhancement projects. Anticipated

projects include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation. A large pipe arch just below the mouth of Cougar Creek will be replaced by a bridge in a cooperative project with Coos Watershed Association. The ESF watershed analysis will be used as a guide to establish project priorities. According to the watershed analysis, Cougar Creek and the West Fork Millicoma have moderate to low levels of existing large wood.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding or directionally felling large wood into streams, and accumulating logs for the stream placement stockpile. Other projects will be accomplished in cooperation with Oregon Department of Fish and Wildlife (ODFW) and local watershed councils.

Recreation—Recreation in this basin is mostly dispersed hunting and camping. Campsites along the upper West Fork Millicoma River and Elk Creek are frequently used by hunters and recreationists. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.12 Basin 12—Trout Deer

This management basin is the largest basin on the Elliott State Forest (ESF) totaling about 11,314 acres. Approximately 83 percent of the basin is located in Coos County, with the northern part in Douglas County. Forests in this management basin are typical of the ESF, composed of a mix of age structures from Early to Advanced. There is also 184 acres classified as Special-Visual, Special-Recreation, and Special-Operationally Limited, a progeny research study area, and the 7 acre Elkhorn Ranch private in-holding along the West Fork Millicoma River. The remaining General Stewardship category is 9,443 acres.

There are no active owl centers located in this basin. This basin has 1,670 acres in six T&E cores areas totaling about 15 percent of the basin. Three of these cores are located entirely in this basin and three are shared with adjoining basins. Most of the T&E cores are a result of marbled murrelet occupancy.

This basin is situated in the middle reach of the West Fork Millicoma River. The major streams in this basin are West Fork Millicoma River and Trout, Beaver, Shake, Buck, Joe's, Otter, Deer, and Knife Creeks. There are no domestic water sources located in this basin. This basin is entirely surrounded by state ownership.

The streams in this basin are prime spawning and rearing habitat for coho, steelhead, and cutthroat. There have been many projects done over the last 10 years to restore and improve salmon habitat on the West Fork Millicoma River and on the Joe’s, Otter, Deer, and Knife Creeks. These include large wood placement, rootwad placement, fish passage improvements, road vacation (Deer Creek and Knife Creek Roads) and closures, and voluntary riparian tree retention.

Recreation—In this basin, recreation is mostly dispersed hunting and camping. Campsites along the middle reaches of the West Fork Millicoma River are frequently used by hunters

and recreationists. An improved recreation area has been developed in the Elkhorn Ranch area consisting of a campground loop, firepits, and picnic tables.

Table 21 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Trout Deer management basin.

Table 21. Basin 12—Trout Deer: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	18	35	47	0
Post Implementation Plan Condition[1]	19	39	42	0
Desired Future Condition	10	50	40	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures. The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (No active owl centers are located in this basin).
- Marbled murrelets: Significant detections of marbled murrelets have been documented primarily in the north and central part of the basin and are primarily located within existing T&E core areas.
- Coho salmon, and steelhead trout in West Fork Millicoma River and in Trout, Beaver, Shake, Buck, Joe's, Otter, Deer and Knife Creeks.
- Opportunities for in-stream restoration (West Fork Millicoma River and Trout, Beaver, Shake, Buck, Joe's, Otter, Deer and Knife Creeks).
- Land use classifications include Scenic Conservancy, and Forest Park–Recreation Use concentrated primarily along the 8100 road and 8000 roads adjacent to the West Fork Millicoma River. There is also a progeny tree research area along the 7300 road. Other noteworthy features include multiple low water crossings across the West Fork Millicoma River along the 8100 road and a weather station along the 9360 road just west of Elkhorn Ridge.

Desired Future Condition and Landscape Design

This basin has a target of 40 percent advanced structure. As seen in Table 21, there is a surplus of advanced structure in the first decade. The primary method to develop advanced

structures in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention. The majority of the intermediate stand structure is concentrated in stands 30 years old and younger.

Proposed Management Activities

Tables 29 and 30 summarizes the harvest and road management activities for the Trout Head management basin.

Stream Enhancement Projects—Stream enhancement projects within the basin may include placement of logs in streams to create pools and retain spawning gravels, replacement of stream crossing structures (i.e., culverts) that block fish passage, relocation or redesign of improperly located roads, stabilization of sediment sources (i.e., cut banks), road closure and/or road vacation. The Elliott State Forest watershed analysis will be used as a guide to establish project priorities. According to the watershed analysis, the West Fork Millicoma River and Deer, Otter, Joe's, Trout, Buck, and Shake Creeks and have moderate to low levels of existing large wood.

Individual projects may be completed as part of timber sale contracts when appropriate. Examples of these are yarding large wood into streams, and accumulating logs for the stream placement stockpile. Other projects will occur with the coordination of Oregon Department of Fish and Wildlife (ODFW) and local watershed councils.

Recreation—The basin will retain its qualities for dispersed recreation potential. There are no plans at this time for expansion or improvement of the Elkhorn Ranch camp area.

IP.4.2.13 Basin 13—Ash Valley

This management basin is approximately 4132 acres and is located in Coos and Douglas Counties.

The Ash Valley management basin is located in the southeastern corner of the forest. Stands in this basin are typical of the Elliott State Forest (ESF), composed of a mix of age structures from Early to Advanced. This basin has several areas that fall under special land use classifications including public safety, Focused-Visual, Special-Recreation, Special-Operationally Limited, Special-Visual,. Most of these areas share coverage with T&E core areas and are located on the eastern edge of the basin near Loon Lake. The Ash Valley management basin shares an eastern and southern boundary with the Bureau of Land Management, private landowners, and industrial forestland owners.

There are two owl centers within the basin. Five T&E (threatened and endangered) core areas are in this basin totaling 736 acres or about 19 percent of the basin. All core areas are located entirely within the basin. There is also one active bald eagle nest site located along Loon Lake.

The major creeks in the Ash Valley management basin are Little Salander Creek, Salander Creek, Baker Creek, and Bickford Creek. These creeks and other small tributaries drain

either into Loon Lake or Lake Creek, both of which are located just to the east of the ESF boundary. There is one domestic water source located within this basin in the Ash Valley School tract. Several other water sources (domestic and irrigation) are located just outside the forest boundary.

Because of both a gradient barrier on Mill Creek and an additional natural fish passage barrier near the north outlet of Loon Lake, the streams of the Ash Valley management basin are not potential habitat for anadromous fish. Instead, resident cutthroat trout are the primary stream inhabitants.

Table 22 summarizes the current stand condition, the estimated post implementation plan stand condition, and the desired future condition for the Ash Valley management basin.

Table 22. Basin 13—Ash Valley: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	11	43	46	0
Post Implementation Plan Condition[1]	10	44	46	0
Desired Future Condition	10	40	50	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures. The time it takes to develop Intermediate stands into Advanced is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls (Salander Creek pair site, Tom Fool pair site).
- Marbled murrelets: Significant detections of marbled murrelets have been documented in the northwestern part of the basin and are located within existing T&E core areas.
- No salmon or steelhead are present in this basin. Resident cutthroat trout are present in Silver, Little Silver, Lake, and Bickford Creeks.
- Bald eagle nest site (Loon Lake)
- There are no opportunities for in-stream habitat restoration for salmon or steelhead.
- Potential visual impacts from Loon Lake and the recreation area.

Desired Future Condition and Landscape Design

This basin has a target of 50 percent advanced structure. As seen in Table 22, this basin currently has a deficit of advanced structure. The primary method to develop advanced

structures will come through partial cutting intermediate stands, although some stands in the intermediate category may develop advanced structure without intervention.

Proposed Management Activities

Tables 29 and 30 summarize the harvest and road management activities for the Ash Valley management basin.

Stream Enhancement Projects —This district has no immediate plans to conduct stream enhancement projects in this basin. No streams in the Ash Valley management basin have been targeted for future stream restoration projects.

Recreation—Recreation in the Ash Valley management basin is typically centered on the Bureau of Land Management (BLM) Loon Lake Recreation Area, which is adjacent to the northern boundary of this basin. This area and basin provides opportunities for camping, hiking, boating, swimming, and fishing. Additionally, dispersed camping sites exist along Douglas County Road #3. Hunting opportunities also exist within this basin. The basin will retain its qualities for dispersed recreation potential.

IP.4.2.14 BASIN 14—Scattered Tracts

This management basin is approximately 3,740 acres and is located in Coos, Douglas and Curry Counties. Forests in the scattered tracts range from typical coast range Douglas-fir to Sitka spruce stands, knobcone pine stands, and redwood. Age structures range from Early to Advanced.

The scattered tracts contain most of the land in the district designated as Non-Silviculturally Capable and SUV (steep, unique, or visual). The scattered tracts share boundaries with a variety of landowners, including the Bureau of Land Management, USFS private industrial forestland, and other private landowners.

There are no T&E (threatened and endangered) cores among the scattered tracts. Several of the tracts have spotted owls within 1.2 miles of state ownership. Some have significant wetlands, native grass prairies, and possibly California Pitcher plants.

The major streams in the scattered tracts are the Elliott, Tom Folley, North Fork Floras, Buzzard Butte Canyon, West Fork Cow, Salmon, and Iron Creeks. Some of these streams contain coho salmon and steelhead while others likely have only resident populations of cutthroat trout.

Table 23 summarizes the current stand condition, the estimated post implementation stand condition, and the desired future condition for the scattered tracts.

Table 23. Basin 14—Scattered Tracts: Current Condition, Post Implementation Plan Condition, and Desired Future Condition, by Stand Structure and Percentage

	Early	Intermediate[2]	Advanced	NSC
Current Condition	0%	52%	48%	0
Post Implementation Plan Condition[1]	8%	48%	44%	0
Desired Future Condition	15%	45%	40%	0

1. These are estimates that may differ from the actual conditions significantly.
2. After partial cutting intermediate stands, it takes about 10–25 years to develop Advanced structures.

   The time it takes to develop Intermediate stands into Advanced Structure is variable and depends on many factors, including (but not limited to): snag and down wood recruitment; development of trees greater than 18 and 24 inches in diameter.

Key Resource Considerations

- Northern spotted owls. Several of the tracts are within 1.2 miles of known spotted owl sites with one having an owl site very near to the property line.
- No marbled murrelet surveys have been conducted for the scattered tracts. Murrelet use is unknown at this time but is likely in some locations.
- Coho salmon and steelhead trout in Tom Folley Creek, and possibly Elliott and Cedar Creeks.
- Osprey nest sites <1 mile from property boundary.
- Possible location of California Pitcher plant in Cedar Creek tract.
- Significant wetlands in South Slough tract.
- Native grass prairies in Carlton Creek tract.

Desired Future Condition and Landscape Design

This basin has a target of 40 percent Advanced Structure. As seen in Table 23, this basin currently has an excess of Advanced Structure in the first decade. The primary method to develop advanced structure in this basin will come through partial cutting intermediate stands, although some stands in the intermediate category may develop Advanced Structure without intervention.

Proposed Management Activities

Tables 29 and 30 summarize the harvest and road management activities for the Scattered Tracts.

Stream Enhancement Projects—Due to the dispersed nature of these tracts, the opportunities for stream enhancement projects are limited and will be assessed on a site by site basis.

Recreation—The scattered tracts will retain opportunities for dispersed recreation.

IP.4.3 Information Summary for All Management Basins

Table 24 shows the current and DFC for stand structures for each management basin and for the Coos District.

Table 24. Summary: Current Condition (CC) and Desired Future Condition* (DFC), by Stand Structure and Percentage

Management Basin	Acres	NSC/ Non-Forest**		Early		Intermediate		Advanced Structure	
		CC	DFC	CC	DFC	CC	DFC	CC	DFC*
Mill	5,356			4%	10%	33%	40%	63%	50%
Charlotte-Luder	6,422			0%	10%	18%	50%	82%	40%
Dean Johanneson	7,296			0%	10%	42%	40%	58%	50%
Scholfield	4,990			0%	10%	54%	30%	46%	60%
Big Creek	7,823			1%	10%	40%	40%	59%	50%
Benson-Roberts	7,417			3%	10%	36%	30%	61%	60%
Johnson Creek	6,322			0%	10%	37%	30%	63%	60%
Palouse Larson	6,541			4%	10%	44%	40%	52%	50%
Henry's Bend	8,284			14%	10%	44%	60%	42%	30%
Marlow-Glenn	6,512			10%	10%	57%	60%	33%	30%
Millicoma Elk	10,873			11%	10%	34%	40%	55%	50%
Trout Deer	11,314			18%	10%	35%	50%	47%	40%
Ash Valley	4,132			11%	10%	44%	40%	46%	50%
Scattered Tracts	3,740			0%	15%	52%	45%	48%	40%
District Total	**97,022**			**7%**	**10%**	**40%**	**43%**	**53%**	**47%**

* The DFC will be achieved by the end of the HCP period (50 years).

** NSC/Non-Forest (Non-Silviculturally Capable and Non-Forest lands). Non-Silviculturally Capable lands are not capable of growing forest tree species (defined in OAR 629-035-0040). Non-Forest lands are those areas, greater than 5 acres, that are maintained in a permanently no forest condition (example include district offices, work camps and large power line right-of-ways).

The district-wide total for each stand structure type falls within the stand structure ranges in the *Elliott Forest Management Plan and Habitat Conservation Plan* and as shown below in Table 25.

This implementation plan will move stands toward the desired future conditions (DFC) while maintaining options for future landscape design considerations. The DFC will provide a range of stand structures that will meet habitat requirements for a full assortment of native plant and animal species. It is estimated that the DFC can be achieved in 50 years for all management basins.

IP.5 Elliott Watershed Analysis Implementation Plan

A watershed analysis of the Elliott State Forest was completed in 2004. In February of 2005 a working group consisting of individuals from Salem Oregon Department of Forestry staff, Oregon Department of Forestry Coos District staff, Charleston Oregon Department of Fish and Wildlife staff, and Coos Watershed Association staff, and Tenmile Basin Partnership staff met to plan the implementation of the Elliott State Forest watershed analysis. Appendix B documents the recommendations of this work group that are planned for completion in this 10 year implementation plan. By this reference the Elliott State Forest watershed analysis implementation plan is made a part of the district implementation plan. Please see Appendix B for the details.

IP.6 Expected Outputs and Habitat Achievements

The vision outlined in Chapter 3 of the *Elliott State Forest Management Plan* is to create a landscape with a broad range of forest structures and native tree species, and to encourage the recruitment of structural diversity components within stands, such as snags and large down wood. In this vision for the forest, snags and down logs are located in all stand types. While the forest maintains a general balance of structures, each individual stand is continuously changing throughout time. This shifting mosaic of forest structures maintains healthy and vigorous stands, contributes to the diversity of plant communities and wildlife habitats, and enhances overall biodiversity throughout the forest.

Table 25 summarizes the current stand condition, the estimated post-implementation plan (IP) stand condition and the desired future conditions (DFC) for the Elliott State Forest.

Table 25. Anticipated Stand Structure Development by 2057

	NSC	Early	Intermediate	Advanced Structure
Current Condition	<1%	7%	40%	53%
After IP Period[1]	<1%	10%	38%	52%
DFC	<1%	10%	43%	47%

1. These are estimates that may differ from the actual conditions significantly.

Partial cutting will be the primary silvicultural activity to move stands from intermediate to Advanced Structures. Some intermediate stands will receive multiple partial cut entries on about 20 year intervals to develop the components of an Advanced Structure stand.

The harvest levels proposed in this implementation plan will contribute toward the desired future structure targets as outlined in Table 25.

Clearcutting will be the primary activity to create the early stand structure. Stands will be selected for clearcutting by the following criteria:

- Stands in poor forest health condition (e.g., diseased stands greater than 5 acres).
- Stands surplus to the stand structure targets.
- Stands that are not reasonable silvicultural candidates for development into Advanced Structure. Typically these stands are overstocked with a low likelihood of responding positively to partial cutting.

- Stands in a location on the landscape that cannot effectively be managed or are not designated for Advanced Structure development.

The AOP will include a projection of how the planned silvicultural activities in a given fiscal year will contribute toward meeting desired future conditions (DFC) goals.

Table 26 shows the annual partial cut and clearcut objective for the implementation plan period. Additional information about the harvest objectives and their calculation can be found in Appendix A. Table 27 shows the estimated annual habitat achievements for partial cuts and clearcuts based on the harvest objectives shown in Table 26. Fiscal years run from July 1 to June 30. For example, FY2007 begins July 1, 2006, and ends June 30, 2007.

Table 26. Annual Partial Cut and Clearcut Harvest Objectives, by Volume and Acres after FY 2007

Partial Cut		Clearcut		Total
Acres	**MMBF**	**Acres**	**MMBF**	**MMBF**
400–1500	4–16	600–850	27–38	40–45

Table 27. Estimated Annual Habitat Achievements for Partial Cuts and Clearcuts for Fiscal Years 2008 to 2018.

Harvest Type	Structure Development (acres)	Snag Retention[1] (snags)	Down Wood Recruitment[2] (thousand cubic feet)	Green Tree Retention[3] (trees)
Clearcut	N/A	1200–1700	180–255M	3000–4265
Partial Cut	400–1500	0	40–150M	NA

1. Snag retention levels—younger partial cuts may not include snag creation; older partial cuts will have a target of 1 or 2 snags per acre, and clearcuts 2 snags per acre.
2. Down wood recruitment levels—average of 100 cubic feet per acre in partial cuts, and average of 300 cubic feet per acre in clearcuts.
3. Green tree retention level—average of 5 trees per acre

Table 28 shows the current and planned timber sale acres that may remain under contract after July 1, 2007.

Table 28. Summary of Current and Planned Timber Sales

Harvest Type	Clearcut Acres	Partial Cut Acres
FY 2005	652	0
FY 2006	525	0
FY 2007	525	0

The AOPs for Fiscal Years 2005, 2006 and 2007 were approved prior to the final adoption of the Elliott State Forest Management Plan by the Oregon Board of Forestry and the approval of the Elliott State Forest Habitat Conservation Plan. These operation plans also occurred prior to the time frame of this implementation plan, although the contracts extend into the implementation period.

Table 29. Estimated Harvest Management Activities by Management Basin

Management Basin Number	Net Acres of Clearcut Harvest [1]	Net Acres of Commercial Thinning[2]	Acres of Precommercial Thinning
1	260-347	140-525	50-400
2	870-1160	104-390	50-400
3	398-531	240-900	50-400
4	0[3]	292-1095	50-400
5	625-833	360-1350	50-400
6	409-545	340-1275	50-400
7	0[3]	364-1365	50-400
8	463-617	172-645	50-400
9	614-818	376-1410	50-400
10	497-663	344-1290	50-400
11	836-1115	428-1605	50-400
12	831-1108	580-2175	50-400
13	167-222	208-780	50-400
14	263-350	52-195	50-400
Decade Totals	6,232-8,309	4,000-15,000	700-5600

1. The range of clearcut acres is to insure that Coos District can meet legal mandates to produce revenue. Clearcut harvest volume in mature stands averages about 50 MBF/acre, whereas in young stands it averages about 25 MBF/acre. If the clearcut acreage for mature stands is reduced for some reason, then increased clearcutting of young stands may be necessary (while meeting all FMP/HCP requirements).
2. The range of thinning acres is to help insure that Coos District will meet legal mandates to produce revenue. Because logging costs for thinning are about 300 percent greater than for clearcut harvesting, it is important to only thin when essential. The wide range helps insure that the district will not have to thin acres unnecessarily. It also enables the district to thin during the best time frame.
3. Clearcut in these basins is not excluded if it can be done under the terms of the FMP/HCP.

Table 30. Proposed Road Management Activities by Management Basin

Management Basin Number	Miles of Road Construct-ion	Miles of Road Improve-ment	Miles of Road Closure and Vacation
1	2–4	9–13	3–5
2	1–3	4–6	2–4
3	1–2	8–12	4–6
4	1–2	12–14	5–7
5	2–4	14–16	6–8
6	1–3	15–17	7–9
7	1–2	9–12	8–9
8	1–2	11–14	7–9
9	1–3	18–20	8–10
10	1–2	20–24	10–12
11	1–2	19–21	6–8
12	1–3	27–30	8–12
13	0–1	14–16	3–4
14	1–2	3–4	1–2
Total	**15–35**	**183–219**	**78–105**

IP.7 Appendix A, References

Bureau of Land Management and United States Forest Service. 1994. Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of The Northern Spotted Owl: Attachment A to the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl.

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IP.8 APPENDIX B, Elliott Watershed Analysis Implementation, July 11, 2005

This document is a follow-up of the Elliott State Forest watershed analysis project. The significant results or recommendations from the report supplied by the contractors are listed below by chapter. Each result is discussed and an Oregon Department of Forestry action is attached. For the purposes of this watershed implementation plan all of the significant results listed in Chapter 11 have been moved back to the chapter for that respective topic.

IP.8.1 Chapters 1, 2 and 3

Chapters 1, 2 and 3 defines scope and intention of the project; gives an overview and context of the physical setting and features of the project area; and describes the historical context of both natural disturbances and human impacts.

ODF Action

Because these three chapters are designed to be context and history they have no specific action items. They will however, function as a background knowledge base to be applied during operational and strategic planning at all levels. These chapters also serves as "institutional memory" to ensure that knowledge is not lost as employees leave for other jobs or retire.

IP.8.2 Chapter 4—Stream Flow and Water Quantity

Item 1) Report result/conclusion/information
Water yield; i.e., peak flow, seasonal flow, appears to be unaffected by current management.

Discussion
The report contained no reason to change current management.

ODF Action

- Continue current management related to these issues for future planning.

Item 2) Report result/conclusion/information
Fish Cr. Study showed that there is no easy or reliable means to predict if a tributary has summer flow. The only practical solution is a field survey.

Discussion
The report contained no reason to change current management. Summer flow and stream origin information is needed to plan management activities.

ODF Action

- Coos District will continue stream classification surveys for perennial type N and location of stream origins.

Item 3) Report result/conclusion/information
There are many "pump chance" waterholes that need a water use permit filed with Water Resource Dept.

Discussion
The report listed 98 pump chances that need to be registered. This was discussed with the contractor and researched by the Oregon Department of Forestry and under current laws these pump chances do not need to be registered.

- If the pump chance is an unimproved location where water can be had in an emergency then it does not need to be registered. (Under ORS 537.141 the following uses are exempt from needing a water right: **Fire control:** the withdrawal of water for use in, or training for, emergency fire fighting. No notification needed. **Forest management:** activities such as slash burning and mixing pesticides are exempt from a water right. To be eligible for the exemption, a user must notify the Water Resource Department and the Oregon Department of Fish and Wildlife and must comply with any restrictions imposed by the Water Resource Department relating to the source of water that may be used.)

- If the pump chance is an improved structure that impounds water then it may need to be registered. See ORS 537.400 for requirements.

ODF Actions
- Check to see if the improved structures on Oregon Department of Forestry land fit the criteria under ORS 537.400 and ORS 537.141. The Oregon Department of Forestry checked reservoirs recently, 12 licensed; only need to get Howell Ridge waterhole (reservoir) licensed {Coos District will check this location against ORS 537.400 requirements}

- Coos District will consult with Coos Forest Protection Association about protection needs, specifically, what is the adequate number and proper location of reservoirs? In particular, does the 1100 road have adequate waterholes?

- If any of the current reservoirs are not needed then Coos District will make decision about rehab opportunities.

Item 4) Report result/conclusion/information
Contractor recommends a program to publicize the need for adjacent landowners to register their water right so Oregon Department of Forestry can better manage around them

Discussion
Having surrounding landowner water rights registered can have both operational and public relations dimensions. To make timber harvest planning more efficient and ensure compliance with state water laws, the Forest should continue using field investigations to determine the presence of legal and illegal water diversions within proposed harvest units. There does not seem to be a need for a detailed Forest wide evaluation of water diversions along the Forest fringe.

This discussion is broken into three categories, two have sub-categories:

- Domestic users with intakes on ODF-managed Common School Lands
  - Does the user have an easement over ODF managed land?
- Domestic users with intakes on ODF-managed Board of Forestry Lands
  - Does the user have an easement over ODF-managed land?
- Domestic users with intakes 3000 feet down stream of any ODF-managed lands

If the Oregon Department of Forestry knows about a water right they can manage accordingly. If the water use is not registered then it is problematic if it can be protected. According to statute a stream is considered a type D stream only when it has been issued a permit by the Water Resource Department. Type D streams have more Forest Practice restrictions than a type N. If a stream is type F and type D then it is regulated as a type F.

ODF Actions

- Coos District will work with the local watershed councils and other groups to inform and educate the public about how registering water rights can protect the landowner's interests.
- Users that do not have a registered water right but have a diversion within the Forest will be contacted by the Coos District to encourage them obtain a water use permit and easement.
- Coos District will consult with DSL and write policy and guidance on how to handle intakes on Common School lands. Three questions need to be decided: Do water rights get granted? Do easements get granted? Is there a fee for either of the above?
- Coos District will consult with BOF and write policy and guidance on how to handle intakes on BOF lands. Three questions need to be decided: Do water rights get granted? Do easements get granted? Is there a fee for either of the above?
- Coos District will create a GIS layer with all known diversion points (legal and illegal) on or near Oregon Department of Forestry managed land.
- Coos District will check Oregon Department of Forestry FMP stream protection guidance to ensure that requirements in the FMP exceed that required 3000 feet upstream of a type D.

IP.8.3 Chapter 5—Water Quality

Item 1–4) Report result/conclusion/information

- Comparisons of Oregon Department of Fish and Wildlife (ODFW) and Department of Environmental Quality (DEQ) shade measures found ODFW measure about 10 percent higher than DEQ.
- Model of shade vs. temperature found 2.4° F increases in temp for every 10 percent of Oregon Department of Fish and Wildlife shade loss for this drainage and distance.
- Distance from drainage divide explained 74 percent of temperature variance in this drainage.
- Distance from drainage divide and Oregon Department of Fish and Wildlife shade explained 89 percent of temperature variance in this drainage.

Discussion
This information is important in the background knowledge base to be applied during operational and strategic planning at all levels.

ODF Action

- As base knowledge these items no specific actions associated with them. They will be shared with Monitoring section (Jeff Brandt) and Aquatic & Riparian section (Liz Dent).

Item 5) Report result/conclusion/information
Evidence shows that building or retaining gravel substrate in bedrock streams can lower stream temperature.

Discussion
To gain more information on this subject, stream temperature data should be collected after stream enhancement structures are placed to retain gravel.

ODF Action

- Coos District will continue to support large wood placement efforts to trap gravel.
- Coos District will continue to work with watershed councils to monitor effectiveness of large wood placement.
  - Coordinate with ODF Monitoring section to see if study is warranted.
  - Coordinate with ODF Aquatic & Riparian section to see if study is warranted.

Item 6) Report result/conclusion/information
No streams in the Umpqua region of the Forest have temperature data.

Discussion
In order to have a Forest-wide understanding of water temperature in streams, the Forest should monitor temperature in selected streams of the Umpqua region so that data are

available for all three regions of Elliott State Forest. A data collection effort to fill this data gap should be undertaken.

ODF Action

- Collect temperature data in Umpqua basin; the Coos Watershed Council expressed interest to conduct this effort. Coordinate this effort with Liz Dent in Aquatic & Riparian section.

Item 7) Report result/conclusion/information
New data and studies from other locations show the Tenmile basin has lower annual suspended sediment loads than other locations in the Coast Range.

Discussion
The report gives no reason to change current management. To prepare for upcoming TMDL study of sediment and nutrient in Tenmile Lakes by DEQ, the Forest should conduct an inventory of remaining discrete sources of sediment along roads within basin.

ODF Actions

- During road surveys (RIMS) in that basin Oregon Department of Forestry will document any potential new sediment sources.

- Coos District will continue to work with partners on TMDL issue.

Item 8) Report result/conclusion/information
Studies on herbicide toxicity combined with typical spraying practices used in the Elliott State Forest indicate a very low risk of harm to fish.

Discussion
The risk is very small and the information surrounding herbicide use is well documented. A small monitoring study on the forest during a normal application could confirm low risk for local conditions. In anticipation of possible restriction on the use of 2,4-d and triclopyr, the Forest should investigate brush control plans that include substitute herbicides.

ODF Action

- Coordinate with Liz Dent in Aquatic & Riparian section to see if study is warranted.

- The Coos District will continue to follow herbicide usage guidelines and prepare for any changes that result from the review of pesticides by U.S. Environmental Protection Agency (EPA).

IP.8.4 Chapter 6—Erosion and Sediment

Item 1) Report result/conclusion/information
Oregon Department of Forestry should build a database of shallow rapid landsliding to track locations and extent. Also, Oregon Department of Forestry should examine roads identified as having a large number of landslides in the 1997–1998 Forest-wide inventory.

Discussion
Roads with high numbers of landslides include the 2800, 5240 and 5500 in analysis basin #4 (Umpqua) and the 5730, 5420, 4500 and 2580 Road in analysis basin #5 (Tenmile region)

ODF Action:

- Coos District will ensure that road system is monitored frequently enough to correct problems in a timely manner per Oregon Department of Forestry Forest Road Manual and via the road information management system (RIMS)
- Coos District will standardize a process for documenting landslides.

Item 2) Report result/conclusion/information
There is a need to quantify abundance of large wood in steep draws so as to gain better understanding for management. The Oregon Department of Forestry should also explore strategies for providing steep draws with wood over time so that future landslides are capable of delivering sufficient amounts of large wood as well as gravel to fish-bearing stream.

Discussion
The Oregon Department of Forestry agrees there is a need to quantify abundance of large wood in steep draws. This should measure large wood in steep draws with stands of various ages and management histories. This would provide Elliott State Forest managers with tools to understand current and future large wood within draws and how wood levels in fish-bearing streams are influenced by landslides delivering this wood to streams over time. The FMP tree retention guidelines already take this into consideration but more information should be sought.

ODF Action

- Coos District may collect large wood data during surveys to identify stream origins and classification as seasonal or perennial. The district needs to consult Oregon Department of Forestry Monitoring staff on this before taking action. This work may be more appropriate for a research group to do.

Items 3) Report result/conclusion/information
To increase the amount of coarse material in streams, the Elliott State Forest should reexamine the current practice of piling or removing landslide deposits from the site and instead, look for opportunities to place logs, boulders, and gravel in the nearby stream as the road is being cleared.

Discussion
Placement of anything in streams is dependent on permits and time of the year. Most landslides that block roads happen at times outside of instream work periods.

ODF Action
- Coos District will consult with Oregon Department of Fish and Wildlife to see if it is possible to develop a plan that can address this problem. If a plan can be devised then each basin will probably need a plan.

Item 4) Report result/conclusion/information
Oregon Department of Forestry should improve the resolution and quality of digital elevation data.

Discussion
The quality of digital elevation data could be improved by following the recommendation in the Robison et al. (1999) and Roering et al. (2003). LiDAR signals that are suitably processed into high-resolution DEMs can provide this information. Despite the lack of this information, Oregon Department of Forestry practices as implemented provide for detailed site examination and treatment that overcome many of the limitation of the existing DEM.

ODF Action
- ODF will investigate the cost effectiveness of LiDAR.
- ODF will investigate performing a pilot project on small area.
- ODF will continue current practices while DEM data is improved.

Item 5) Report result/conclusion/information
Oregon Department of Forestry should collaborate with entities such as Oregon State University (OSU) and the state climatologist office to improve precipitation data and maps for the forest.

Discussion
The PRISM models generated by the state climatologist should be integrated into the official 50-year discharge maps to better evaluate runoff for culvert sizing and other hazard evaluations.

ODF Action
- ODF will contact state climatologist to coordinate cooperation with Oregon Department of Fish and Wildlife (ODFW) watershed councils in mapping rainfall intensity/duration.

Item 6) Report result/conclusion/information
Based on 1997–1998 survey results, the following roads would most benefit from a program to upgrade ditch relief culverts throughout their length to insure that their diameter, spacing, and discharge points meet current best management practices:

⇒ 1000 Road along Marlow Creek (Millicoma R. 5th field).
⇒ 1600 Upper Elk Creek Road (Millicoma R. 5th field).

- ⇒ 2300 Road along Trout and Beaver Creeks (Millicoma R. 5th field).
- ⇒ 5000 Road along Scholfield Ridge (Lower Umpqua R. 5th field).
- ⇒ 6000 Road along Charlotte Ridge (Lower Umpqua R. 5th field).
- ⇒ 8000 Road along Joes Creek and the W.F. Millicoma River (Millicoma R. 5th field).
- ⇒ 9000 Road along Elk Creek (Millicoma R. 5th field).

Discussion
A great deal of road improvement work has been accomplished on the Elliott State Forest since the 1997–1998 survey was completed. It is difficult without updated information to determine the extent to which ditch relief culverts have remedied problems identified in the 1997–1998 survey.

ODF Action
- Coos District staff will field check these roads to determine if any are still problems.
- If problems have not been remedied, Coos District will schedule the work in either short term or long term work plans.

Item 7) Report result/conclusion/information
Roads where partial or full paving is an option to provide chronic sediment production benefits include:

- ⇒ 1000 Road along Marlow Creek (Millicoma River 5th field).
- ⇒ 8000 Road along the West Fork Millicoma River (Millicoma River 5th field).
- ⇒ 9000 Road along Elk Creek (Millicoma River 5th field).

Discussion
On roads where wet hauling is infeasible or undesirable—and continued high maintenance costs are incurred for repeated gravelling—paving may become a more cost-effective option for reducing road surface derived fine sediments delivery to streams. There are possible places where paving may be the best mechanism to reduce chronic sediment delivery into these high-quality salmon streams. A cost-benefit analysis coupled with future needs assessment is needed to make decisions.

ODF Action
- Coos District staff will field check these roads to determine problems.
- Coos district will make a decision for each of these roads based on technical information, cost effectiveness and future needs.
- If needed, Coos District will schedule the work in either short term or long term work plans.

Item 8) Report result/conclusion/information
A few roads in the Elliott State Forest (ESF) have a legacy of road-related hazards (see Table 6-22) but are still crucial to ESF for its transportation network. Roads to be evaluated for upgrade include:

⇒ 0400 Road along Puckett Creek (Mill Creek 5th field)
⇒ 2000 Road on Allegany side around the 2.0–2.5 mile markers
⇒ 3000 Road along Sullivan Ridge
⇒ 3300 Road along Daggett Creek
⇒ 3400 Road along Larson Ridge
⇒ 3500 Road above Palouse Creek
⇒ 7400 Road along Fish Creek (WF Millicoma 5th field)
⇒ 7500 Road along Footlog Creek (Mill Creek 5th field)

Discussion
Some of these roads have been recently upgraded or are planned for upgrade. The primary concern for these roads is their legacy of sidecast construction that results in periodic slides from fill failure.

ODF Action
- Coos District staff will field check these roads to determine if any are still problems.
- If problems still have not been remedied, Coos District will schedule the work in either short term or long term work plans.

Item 9) Report result/conclusion/information
A few roads in the Elliott State Forest have such a concentration of road-related hazards (see Table 6-21) that closure and/or relocation may be the preferable management action. These roads include:

⇒ 0100 Road along Charlotte Creek (Lower Umpqua 5th field)
⇒ 0200 Road along Luder Creek (Lower Umpqua 5th field)
⇒ 0900 Road along Johanneson Creek (Lower Umpqua 5th field)
⇒ 7600 Road along Cougar Creek (WF Millicoma 5th field)
⇒ 8100 Road along the W.F. Millicoma River (W.F. Millicoma 5th field)

Discussion
The Oregon Department of Forestry should evaluate whether these roads can be brought up to current standard or whether the amount of work needed exceeds their value.

ODF Action
- Coos District staff will field check these roads to determine work needs and costs.
- Coos District will make a decision for each of these roads based on technical information, cost effectiveness and future needs.
- Based on decision above, Coos District will schedule the work in either short term or long term work plans.

Item 10) Report result/conclusion/information
Four major roads along high-quality fish-bearing streams have been closed by the Oregon Department of Forestry. These include:

⇒ Big Creek Road (Tenmile Lakes 5th field).
⇒ Johnson Creek Road (Tenmile Lakes 5th field).
⇒ Deer Creek Road (Millicoma R. 5th field).
⇒ Knife Creek Road (Millicoma R. 5th field).
⇒ Crane Creek Road (Millicoma R. 5th field).

Discussion
Inspection of a past closure in Crane Creek showed that the work was incomplete. The closed Crane Creek road needs additional culvert removal, fill pullback, and re-vegetation to reduce sediment delivery hazards. The status of other closures is not yet fully known, but should be inspected and any needed remedial measures implemented.

ODF Action

- Coos District staff will field check these roads to determine if any are still problems.
- If problems still have not been remedied, Coos District will schedule the work in either short term or long term work plans.

Item 11) Report result/conclusion/information
The 1997–1998 forest-wide road survey emphasized identifying stream crossing culvert sites that posed a catastrophic sediment delivery risk. Subsequent to those surveys, much road improvement work has been completed. However, the 1997–1998 surveys are noticeably lacking on information about chronic sediment yield. As part of this assessment, road surveys in the Elk Creek watershed were updated by the Coos Watershed Association. The results of this partial study indicated that chronic sediment yields could be determined, and management options developed, if roads are re-surveyed using current protocols.

New road surveys and survey protocols need to better assess hydrologic connectivity downslope of all drainage outfalls. It cannot be established through the existing survey data that there is strong connectivity of ridgeline and sideslope roads draining to fluvial channels via debris torrent tracks.

Discussion The analysis team recommends that Oregon Department of Forestry conduct or fund a resurvey of Forest roads beginning with those mainline roads listed in Table 6-22 as having high ditch length, steep road/steep slope and road position hazard levels. Additional priority could be given to those roads identified for improvement through paving and/or the addition of ditch relief culverts. An alternate prioritizing strategy would be to survey high hazard sites based on criteria found in the recent Forest Practice Technical Notes (ODF 2003b, 2003c, and 2003d) and identifiable through the GIS process used for this chapter.

Action

- Coos District staff will field check these roads to determine if any are still problems.
- If problems still have not been remedied, Coos District will schedule the work in either short term or long term work plans.

Item 12) Report result/conclusion/information

While road use intensity changes reflecting the pattern of forest management operations, use levels is a critical data requirement for understanding the effects of roads on watersheds. The analysis team recommends that the Oregon Department of Forestry consider cost-effective strategies to obtain this information for use in their new road inventory database.

Discussion
An important factor governing sediment wash from road surfaces is the level of use intensity accrued on wet surfaces. This factor and the degree of surface breakdown between precipitation events govern the transport and supply of road fines to fish-bearing streams. High use intensity on wet roads proximal to streams typically produces the least desirable stream water quality. Unfortunately, the use intensity and spatial patterns can be quite irregular and difficult to assess due to lack of data and dynamic nature of the harvest unit access routes.

ODF Action
- Coos District will investigate how to monitor road use level.
- Coos District will ensure that road system is monitored frequently enough to correct sediment problems in a timely manner per the Oregon Department of Forestry Forest Road Manual & via Road Information Management System (RIMS)
- Coos District will schedule work to remedy any identified problems.

IP.8.5 Chapter 7—Riparian Vegetation and Large Wood

Items 1-4) Report result/conclusion/information
- Modeled down wood recruitment and resulting wood levels for various riparian make-ups. GIS layers created as a tool for future use.
- Current abundance of wood instream was generally unrelated to amount of large wood 200 years from now.
- Riparian conditions defined future wood levels
- 200-foot buffers vs. 150 buffers made no difference until after 330 years stand age.
- Establishing conifers farther than 50’ from stream had small short-term effect but large positive long-term effect.

Discussion
Some of this information is useful as background information. Other data is of a general nature and by its nature modeling is imprecise at a site-specific basis. When working at a site-specific scale the Oregon Department of Forestry will use on-the-ground information to assess riparian vegetation.

ODF Actions
- ODF will add background information to knowledge base.

- Coos District will use site-specific surveys when planning riparian prescriptions
- Coos District will use buffer tree data from timber sales to document the sufficiency of current buffer strategy (NWOA Riparian Strategy).

Items 5) Report result/conclusion/information
Contractors created a tool for estimating downstream extent of landslide travel.

Discussion
The Oregon Department of Forestry will take contractor tool into account when making determination but tool is still an estimator so the Oregon Department of Forestry geotech will still be responsible for landslide determinations.

ODF Action
- Coos District will use Oregon Department of Forestry geotech in developing the implementation plan in relation to delivery of Large Wood to type F streams.

Items 6) Report result/conclusion/information
After investigation, there is no feasible way to automatically determine landslide input forest-wide via GIS.

Discussion
Landslide input is best handled in small areas using manual mapping methods in consultation with Oregon Department of Forestry geotech.

ODF Action
- Coos District will use Oregon Department of Forestry geotech for landslide consultations.

Items 7) Report result/conclusion/information
Contractors provided an 8-step process to prioritize stream segments according to likelihood of delivering large wood and boulders during landslides.

Discussion
?

ODF Action
- Coos District will consult with the Oregon Department of Forestry geotech on 8-step process from the report. Discuss obstacles to implementation given current framework. The District will make a decision whether to integrate 8-step process into stream prioritization process.

Items 8) Report result/conclusion/information
Review of Oregon Department of Fish and Wildlife (ODFW) habitat survey data shows inconsistencies and therefore a need to work with ODFW on quality control of habitat surveys.

Discussion
This is an issue for Oregon Department of Fish and Wildlife that has already been resolved.

ODF Action

- Oregon Department of Forestry put the contractor and the appropriate Oregon Department of Fish and Wildlife personnel in contact to exchange data and resolve inconsistencies.

Items 9) Report result/conclusion/information
District needs to explore ways to enhance conifer survival on edges of clear-cut units next to stream buffers.

Discussion
Conifer survival adjacent to stream buffers is lower than average but still within target stocking rates. Some of the cited problems are a legacy of past practices, newer practices have solved those particular problems.

ODF Action

- Continue with current practices

IP.8.6 Chapter 8—Aquatic Organisms and Habitats

Item 1) Report result/conclusion/information
To better understand the extent of culvert-related obstacles, the Elliott State Forest (ESF) should increase efforts to identify all streams used by fish. Consider focusing first on those unexamined streams falling into the medium size class. ESF should continue to remove, replace, or modify the few remaining culverts blocking fish migration. Consider focusing first on sites where the culvert blocks the greatest length of potential fish habitat

Discussion
The report examines data about populations and habitats of various fish species. It also discusses limiting factors in habitat.

ODF Actions

- Coos District will coordinate with Oregon Department of Fish and Wildlife to determine top priority basins to survey for fish presence, and then complete these basins first.
  - Coos District will consolidate fish presence data on same GIS layer.
  - Coos district will continue to replace or modify fish blocking culverts.

Item 2) Report result/conclusion/information
To address the near term shortage of instream wood, the Oregon Department of Forestry should continue to add large wood to streams currently deficient.

Discussion
In channel wood placement could concentrate on two opportunity areas: operational and strategic. Operational restoration would focus within or near active timber sales in conjunction with that sale. Strategic actions would target specific low gradient reaches that have the potential for high-quality habitat but limited in channel wood. The Oregon

Department of Forestry should focus on stream segments that have few conifers in the stream side forest to supplement future instream wood and where the cost of placing logs are low (near a road). Consider focusing first on streams with a bankfull width of less than 40 feet and increase effectiveness by using logs with attached rootwads or logs with lengths at least twice the bankfull width. Actions could concentrate on stream segments with year round flow that are less confined by steep hillslopes or adjacent roads.

ODF Actions

- The Coos District will continue to use the AOP process to identify potential locations for in stream LWD placement locations.
- Coos District will develop a list of stream reaches (by basin) for future placement sites and to assist with grant funding opportunities (based on suitable criteria)
- Coos District will continue to work with local watershed councils on stream enhancement.

IP.8.7 Chapter 9—Terrestrial Wildlife

Report result/conclusion/information
The report gives an overview of wildlife issues and summarizes the few wildlife studies available on the Elliott State Forest.

Discussion
This topic is well covered in the FMP. The more in-depth discussion is appropriate for HCP and/or FMP documents. The discussion in the report enhances general knowledge with background and guidelines.

Action

- No specific actions at this time.

IP.8.8 Chapter 10—Rare and Exotic Plants and Tree Diseases

Item 1) Report result/conclusion/information
The report gives a general recommendation to continue with current practices for rare plants.

Discussion
This confirms current practices so managers can plan future actions. This process for rare plant management is also well covered in the FMP.

Action

- Continue current practices for rare plant management.

Item 2) Report result/conclusion/information
The report gives suggestions on noxious weed control and recommends development of a weed control policy.

Discussion
Managers can use suggestions in planning for control of noxious weeds. It is agreed that the Oregon Department of Forestry needs a policy on noxious weed control.

ODF Action
- ODF will develop noxious weed policy as part of FMP implementation plan.

IP.8.8.1 Chapter 11—Synthesis

This chapter provides a quick overview of the document and acts as an "executive summary." The findings of the preceding chapters are listed and it outlines key recommendations. It also attempts to show ways to balance various issues during management.

Report result/conclusion/information
[See above for each chapter by topic.]

IP.9 Map Section

1. **Coos District Overview**
   - **– Elliott State Forest**
   - **– Scattered Tracts**

2. **Coos District: Current Condition Stand Structure**
   - **– Elliott State Forest**
   - **– Scattered Tracts**

3. **Coos District: DFC Stand Structure**
   - **– Elliott State Forest**
   - **– Scattered Tracts**