City of Coos Bay
and
Coos Bay – North Bend Water Board

Watershed Management Plan

July 2012

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March 5, 2012

Jim Hossley, Director of Public Works and Development
City of Coos Bay
500 Central Avenue
Coos Bay, Oregon 97420

Ron Hoffine, Operations Director
Coos Bay - North Bend Water Board
P.O. Box 539
Coos Bay, Oregon 97420

Re: City of Coos Bay and Coos Bay – North Bend Water Board
Watershed Management Plan

Dear Mr. Hossley and Mr. Hoffine:

Submitted herewith is the Watershed Management Plan prepared by Stuntzner Engineering and Forestry, LLC for the City of Coos Bay and Coos Bay – North Bend Water Board. The Plan culminates several years of effort, combining data and resource information on the Pony Creek and Joe Ney Watersheds.

The Plan is organized in chapters that can be modified, amended and supplemented as conditions change. Likewise, the appendices are stand-alone sections that can be modified over time. The entire plan is a record of policies, information, maps, and history of management activities within the watershed. Recommended actions are incorporated throughout the document, with specific actions summarized in a 5-year work plan in the final chapter. This work plan should serve as a framework for coordinated annual activities for the near-term planning horizon.

Thank you for the opportunity to prepare this Watershed Management Plan on your behalf. We hope it exceeds your expectations.

Sincerely,

Greg Stone
Stuntzner Engineering and Forestry, LLC

CITY OF COOS BAY
AND
COOS BAY – NORTH BEND WATER BOARD

WATERSHED MANAGEMENT PLAN

- Revision Page –

Date	Revision	Person Responsible for Revision

CITY OF COOS BAY
AND
COOS BAY – NORTH BEND WATER BOARD

WATERSHED MANAGEMENT PLAN

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I. Executive Summary

This is a management plan for the City of Coos Bay and Coos Bay – North Bend Water Board managed forest lands located west and south of the City of Coos Bay. The lands comprise the watersheds for the Water Board's supply of drinking water for the cities of Coos Bay and North Bend and surrounding areas. The purpose of this plan is to provide the City of Coos Bay and Coos Bay – North Bend Water Board guidance for joint management of the Pony Creek and Joe Ney Watersheds. The Plan is intended to be a living document outlining Best Management Practices that will be updated from time to time as conditions change.

The principal watershed is the nearly 3,000-acre Pony Creek Watershed partially within the City of Coos Bay and adjacent to the unincorporated communities of Charleston, Barview, and Libby. The watershed includes two dammed reservoirs with storage capacities totaling 6,615 acre-feet, draining into Pony Slough. The Pony Creek Watershed includes 841 acres owned solely by the City of Coos Bay, and 1,900 acres managed by the Water Board.

Directly south of the Pony Creek Watershed is the Joe Ney Watershed. A ridge that includes Libby-McClain Road separates the two watersheds. The Joe Ney Watershed encompasses about 2,100 acres and includes an earthen dike and pumping facilities and pipeline for discharge into the Pony Creek Watershed. The water storage capacity behind the dike is approximately 120 acre-feet that drains into South Slough. The Water Board manages 244 acres of forestlands as well as the shallow flooded lands within the Joe Ney Watershed. Other lands are privately owned, the principal landowner being The Campbell Group. The City of Coos Bay does not own land within the Joe Ney Watershed.

This Plan establishes policy for management of the watersheds including water quality, timber production, sustainability, and joint watershed administration. Inasmuch as the watersheds are the primary sources of drinking water for the community, operations and activities in the watersheds that protect and enhance water quality are the highest priority.

Timber management including timber production is an important function of the watershed. Timber management is guided by Best Management Practices and the Oregon Forest Practices Act. Income opportunities from timber harvesting remain an important driver in decision-making processes. Well planned, well-managed timber harvesting is an important source of income for the City and Water Board on lands designated for production.

The timber on the watershed is variable in age and character. Of the 2,191 acres of timberlands, 1,031 acres are merchantable and 1,160 acres are classed as pre-merchantable. The remainder of the property is buffers, wetlands, reservoirs, and other lands. About 55% of the timber volume is Douglas fir, 35% Sitka spruce and hemlock, 5% cedars, and 5% alder and other hardwoods. The total growing stock volume of timber on the combined ownership is estimated in excess of 31 million board feet.

Three basic timber sale methods are discussed: the Lump Sum Sale, Recovery or Stumpage Sale, and Log Sale methods.

There is an economy of scale regarding the scope of timber harvest opportunities. Regardless of what sale method is used, higher volume sales are more efficient. Harvest units should be selected to optimize marketing opportunities and logging logistics.

Timber harvesting is integral to building a sustainable forest rotation. In a fully regulated forest, the classic age class distribution for sustained yield is an equal proportion of area for all ages of timber.

The forestland has been mapped into 92 timber units in the watershed. The units are categorized by age of timber and are shown on three tabulated lists in Appendix C, showing the various units as merchantable units, sapling stands, or reproduction stands.

Three strategies were considered as alternatives for a proposed harvest plan. The three alternatives are: (1) Area Regulation, (2) Accelerated Harvest and, (3) Delayed and Thinning. Area Regulation is recommended as the proposed harvest plan. A regular harvest schedule that follows a conservative, sustained yield approach with consistent cash flow is the basis for this recommendation. The Area Regulation alternative is generally the approach the City and Water Board has followed over the past 30 years or so. Elements of the proposed harvest plan are:

- Harvest are based on 40 to 50 year rotation
- Annual harvests will average approximately 40 acres
- Annual harvests will consist of approximately 1,300 MBF

Planning and conducting a timber sale, whether it is a City sale or a Water Board sale, involves joint collaboration with the two entities, usually with a consulting forester. The process should begin with a planning meeting to address market conditions and opportunities, ownership, unit(s) selection, length and cost of any new road to access a specific unit, water quality issues, sustainability issues, wildlife habitat issues, and watershed security.

Ancillary timber management activities are discussed including timber inventory, Loop Road maintenance, reforestation, salvage logging, fire protection, land surveys, disease control, invasive species control, herbicide use, animal damage, seed collection, thinning, pruning, and minor forest products.

This Plan will meet the certification requirements for the American Tree Farm System. It is recommended that the City and Water Board pursue certification through ATFS.

The Joe Ney and Pony Creek Watersheds are closed to public entry. There are seven gated accesses. The Water Board controls access through six gates; the Coquille Indian Tribe controls access through a gate on Spaw Lane.

Overall watershed management is the responsibility of the Coos Bay City Council and the Water Board, Board of Directors. Watershed administration is currently governed by the joint Coos Bay – North Bend Water Board and City of Coos Bay Timber Management Program. It was amended March 24, 1980 to address the construction of new roads into the watershed and how the roads will be paid for, as well as financial management, record keeping and accountability of the Water Board on behalf of the City. The amendment is often referred to as the Road Use Agreement. It is recommended that watershed administration as outlined in this Plan supersede a portion of the Road Use Agreement.

It is also recommended that the City and Water Board continue their cooperative management relationship and that the City and Water Board account for timber sale revenue and expenses separately on an enterprise basis. In addition, revenue and expenses for certain ancillary

timber management activities should be shared on a pro-rated basis according to ownership/managed land area of the activity or area of the watershed, as described.

It is recommended that the City and Water Board continue with or develop annual funding mechanisms to carry out watershed operations and maintenance activities. The funding amounts should align with a 5-Year Work Plan. A summary of recommended activities and budget costs are shown in Appendix N and discussed in more detail in Section X of this Plan. These costs exclude in-house costs for labor, equipment/vehicles, and materials for either the City or Water Board.

II. Introduction

A. Purpose of the Plan

The purpose of this Watershed Management Plan is to provide the City of Coos Bay and Coos Bay – North Bend Water Board guidance for joint management of the Pony Creek and Joe Ney Watersheds. Policy statements addressing water quality, timber production, sustainability of a multi-use forest, and watershed administration direct the City and Water Board in fulfilling their obligations and stewardship responsibilities.

Accurate resource information and comprehensive management policies are critical to ensure the responsible and long-term stewardship of these lands. Specifically, the Plan serves to:

- Provide a comprehensive policy framework to guide management decisions
- Inventory and assess property features, resources and conditions
- Describe resource management practices to be used
- Recommend cost effective actions to be undertaken for successful management of the watershed within the policy framework

The Plan is intended to be a living document outlining Best Management Practices that will be updated from time to time as conditions change. Many forest planning processes result in a range of alternative approaches that can be implemented. These kinds of plans analyze the relative advantages and disadvantages of each alternative.

B. Watershed History

Appendix A includes a brief history of the formation of the municipal water system from the late 1890's to about 1984. It was written by Phil A. Matson, former Water Board General Manager. In addition, old aerial photos and pictures on record at the Water Board office show the effects of timber harvest and fire in the watershed.

Water Board files include a number of Pony Creek and Joe Ney watershed management plans dating back into the 1970's. Local state service foresters and industrial foresters submitted the first plans, which were supplemented with coursework from Southwestern Oregon Community College providing several examples of management plans as part of class projects. A local consultant, Ted Ellingsen, prepared another plan. Evidence in one management plan called for the forest to be cut at the rate of $1/50^{th}$ of the acres per year (50-year rotation). Logging has been and continues to be a significant factor affecting the dynamics of the watershed.

Construction of the road around Upper Pony Creek Reservoir in the early 1980's positioned the City and Water Board to access timber via a high standard all-weather road. This road is referred to as the Loop Road. Some harvesting in the early 1980s was to generate funds for its construction. Capital funds from the Water Board were used to construct the Loop Road, and the City and Water Board executed an agreement whereby future timber receipts were to reimburse the Water Board for the construction costs. The agreement is entitled Addendum No. 1 to Water Board – City Timber Management Program Agreement and is often referred to as the Road Use Agreement. It is included in Appendix L.

Initial construction costs for the Loop Road are shared by formula outlined in the Road Use Agreement at 1/3 paid by the Water Program and 2/3 paid by the Timber Program. The Water Board has paid off the 1/3 Water Program portion. The 2/3 Timber Program portion is being paid off at $6 /MBF by the party using the road for harvest. The accounting of the Timber Program pay-off status is shown in Appendix B. The Ellingsen watershed management plan noted above and accompanying timber inventory was used in part to develop an amortization schedule for the agreement in recovery of Loop Road construction costs.

Some properties were acquired by the Cities of Coos Bay and North Bend and the Water Board around the perimeter of the Pony Creek Watershed to ensure control and protection of the lands draining into Pony Creek (Flanagan Mullen Corporation, 1978; Jorgensen, 1980; Gustafson, 1985; and Coquille Indian Tribe, 1995). Lands within the Joe Ney Watershed were acquired in 1984 from George Walker and in 1986 from F. Willis Smith and C. Wylie Smith.

Since the 1980s, logging has been conducted regularly in an orderly fashion, generally alternating harvest between City and Water Board managed properties, on an annual or bi-annual schedule. The most recent logging occurred on Water Board managed property in 2011. Appendix B also summarizes timber harvests since 1980.

In the early 1990s, the Water Board initiated a major water supply expansion project. The project included a substantial increase in the capacity of Upper Pony Creek Reservoir by constructing a new dam. This was a strategic plan that involved many disciplines and took several years to accomplish. The process was complicated and included permitting from local, state and federal agencies. As part of the project planning, the City and Water Board began a series of timber sales and Loop Road realignment projects. The merchantable timber below the new reservoir pool elevation was subsequently logged. Logging around the reservoir perimeter and within the new dam construction site resulted in award-winning recognition by the Oregon Department of Forestry in 2001.

The new Upper Pony Creek Dam was constructed in 2000 and 2001. The outcome of the permitting process included mandates for on-site and off-site mitigation to compensate for fish and wildlife habitat taken in the various phases of dam construction and raising the reservoir. New wetlands were constructed. Timberland of diverse age and species composition were set aside and designated as wildlife habitat, off-limits to timber production.

In the mid-1990s, City and Water Board staff discussed the idea of continued joint management on the watershed and the need to codify a plan. The plan was ultimately delayed until after the new dam was constructed. The City and Water Board initiated a land trade in 2000, effectively trading City-owned land between the Upper Pony Creek Reservoir and the Loop Road to the Water Board in exchange for other Water Board managed lands within the Pony Creek Watershed. The land trade was completed in 2005.

In 2006, the City and Water Board retained Stuntzner Engineering and Forestry, LLC to prepare a joint management plan for the Pony Creek and Joe Ney watersheds. The focus was to develop a management framework that would protect water quality, incorporate best science and best management practices, and guide future watershed management decisions.

C. Pony Creek and Joe Ney Watershed Descriptions

City owned and Water Board managed lands of the Pony Creek and Joe Ney watersheds encompass portions of the larger drainages of Pony Creek and Joe Ney Slough. The combined watersheds are often referenced as a single watershed throughout this Plan.

The lands comprise the watersheds for the drinking water supply for the cities of Coos Bay and North Bend and surrounding areas. The principal watershed is the Pony Creek Watershed partially within the City of Coos Bay and the adjoining unincorporated communities of Charleston, Barview, and Libby. The watershed includes two dammed reservoirs, Upper Pony Creek Reservoir with full pool elevation of 106 feet, and Merritt Lake with full pool elevation of 41 feet. The combined storage capacities of these reservoirs total 6,615 acre-feet. Pony Creek Reservoir and Merritt Lake drain into Pony Creek. The Pony Creek Watershed includes 841 acres owned directly by the City of Coos Bay, and 1,900 acres managed by the Water Board.

Directly south of the Pony Creek Watershed is the Joe Ney Watershed. A ridge that includes Libby Lane separates the two watersheds. Joe Ney Watershed encompasses about 2,100 acres and includes an earthen dike, pumping facilities and pipeline for discharge into the Pony Creek Watershed. Joe Ney Reservoir is full pool at elevation 9 feet and has storage capacity of about 275 acre-feet. The reservoir drains directly into South Slough. The Water Board owns 244 acres of Joe Ney forestlands as well as the lands adjacent to and beneath the reservoir. Other lands within the watershed are privately owned, the principal landowner being The Campbell Group. The City of Coos Bay does not own land within the Joe Ney Watershed.

Land areas within the watersheds can be categorized as Timber Lands, Oregon Forest Practices Act (FPA) Buffer, Environmental Impact Statement (EIS) Buffer, Wetlands, Reservoir, and Other. Table No. 1 outlines the various categories of lands under City of Coos Bay ownership and those lands managed by the Water Board.

Table No. 1
Watershed Area by Land Category

LAND CATEGORY	**PONY CREEK WATERSHED**		**JOE NEY WATERSHED**	
	City of Coos Bay Area, acres	**Water Board Area, acres**	**Water Board Area, acres**	**Total Area, acres**
Timber Lands				
Merchantable	423.3	607.6	0.0	1,030.9
Sapling	41.1	331.4	182.4	554.9
Plantation	337.4	206.5	61.4	605.3
Subtotal Timber Lands	801.8	1,145.5	243.8	2,191.1
FPA Buffer	27.2	73.5	151.7	252.4
EIS Buffer	0.0	194.1	0.0	194.1
Wetlands	1.7	13.1	0.0	14.8
Reservoir	0.0	309.4	51.1	360.5
Other	10.4	164.5	19.9	194.8
TOTAL	841.1	1,900.1	466.5	3,207.7

Lands available for timber production total 2,191 acres, or about 68% of the total watershed area. Merchantable stands are defined as timber 40 years and older; sapling stands are 26 to 39 years old; and plantation stands are 25 years old and younger. Appendix C summarizes these categories by unit number, age, and area. Rounding precision of the individual land areas of Appendix C result in a slight difference in the total areas shown in Table No. 1.

Oregon Forest Practice rules are codified in OAR 629, administered by the Oregon Department of Forestry. Statutory authority is found in ORS 527, commonly known as the Forest Practices Act. Both rules and statutes are referenced herein as the Forest Practices Act (see Appendix M). For logging operations, the FPA requires that undisturbed areas remain on either side of designated streams and reservoirs. Accordingly, the table above reflects FPA Buffers as 50-foot wide areas on either side of such designated streams and 100-foot wide areas around the perimeters of Joe Ney Reservoir and Merritt Lake. For purposes of this Plan, extensive uplands and low-lying areas contiguous to the reservoir at Joe Ney are categorized as FPA Buffer.

The Upper Pony Creek Dam constructed in 2000 and 2001 replaced an existing dam. Planning and governmental agency coordination for the project began in the early 1990s. An Environmental Impact Statement (EIS) was completed in 1999, subsequently followed by a permit allowing for the dam construction. The permit was conditioned, however, requiring additional areas (buffers) for wildlife habitat diversity in addition to buffers required as part of the FPA, for wildlife habitat diversity. These additional areas are reflected in the table above as EIS Buffers. This buffer is generally between the Loop Road and Upper Pony Creek Reservoir. It includes a 100-foot (more or less) wide strip around Upper Pony Creek Reservoir, an area set-aside for voles, several draws extending beyond the Loop Road, and an area extending south of the Loop Road that is seasonally inundated as part of the raised reservoir pool. These areas have been artificially manipulated in terms of vegetation and timber stocking density. The habitat is periodically monitored and may be modified to maintain the intended target habitat.

Five wetlands are encompassed within the Pony Creek Watershed. One is constructed within a spoils area that was required as mitigation to the construction of the Upper Pony Creek Dam. Three wetlands at the south end of the reservoir were created by the raised pool of the Upper Pony Creek Reservoir, and one wetland is on City property north of Merritt Lake. Wetlands are not definitively identified within the Joe Ney Watershed; areas contiguous to the reservoir are classified as FPA Buffer.

Reservoirs are the Upper Pony Creek Reservoir and Merritt Lake within the Pony Creek Watershed, and Joe Ney Reservoir within the Joe Ney Watershed. All reservoir areas are based on full pool elevations.

The category classed as ‘Other’ includes a portion of the Joe Ney estuary below the dike, an old dump site off Libby Lane, the City police shooting range, borrow sites and construction staging area used to construct the Upper Pony Creek Dam, power line easements, land containing the Water Board’s Clearwell at 575 Ocean Boulevard, the Water Board Service Center at 2305 Ocean Boulevard, and the Pony Creek Treatment Plant at 2315 Ocean Boulevard.

Maps in Appendix D show the categories of land described above.

D. Land Trade

In the course of planning and implementation throughout all phases of Upper Pony Creek Dam construction, the City and Water Board were willing collaborators. A number of issues related to

forest management and logging logistics became evident, however, and it was suggested the Water Board have control of those areas specifically impacted by the raised pool of the reservoir; that is, primarily the area below the realigned Loop Road. The City and Water Board finalized a land trade in 2005 that used the Loop Road as a boundary. A partition and boundary line adjustment was accomplished effectively transferring control of those impacted areas to the Water Board in exchange for a 40-acre parcel of timberland on the north end of the Pony Creek Watershed that has subsequently been logged and replanted. A map of the resulting land parcels is shown in Appendix E.

It should be noted that the various tax lots within the watershed are deeded under three ownerships: (1) City of Coos Bay, (2) cities of Coos Bay and North Bend and, (3) Coos Bay – North Bend Water Board. It is understood that properties deeded under the City of Coos Bay are owned and managed by the City of Coos Bay. Properties deeded under the cities of Coos Bay and North Bend as well as the Coos Bay – North Bend Water Board are managed by the Water Board.

E. General Mapping

The basis for mapping is from data supplied by National Agriculture Imagery Program (NAIP 2011). Using the NAIP photo as a base map, line data have been imposed including property boundaries, harvest units, streams and buffers and roads. The mapping is currently not linked to any attribute so the system is not a true geographic information system (GIS) database. An attempt has been made to convert all the line data to a common geo-referenced coordinate system, Universal Transverse Mercator (UTM) North American Datum 1983 (NAD 83). All area calculations default to this map basis. By using a standard geo-referenced coordinate system, new map layers such as contour lines and updated photos can be brought into the base as availability and the need arises. As would be expected, there are small differences between Coos County Assessor map areas and the areas indicated by the NAIP map base. Vertical datum is NAVD 88.

III. Policy Statements

This section establishes policy for the management of the Pony Creek and Joe Ney Watersheds. The four policy statements below are mutually endorsed by the City of Coos Bay Council and Coos Bay – North Bend Water Board of Directors.

A. Water Quality

The Pony Creek and Joe Ney Watersheds are the primary sources of drinking water for the community. Operations and activities in the watersheds that protect and enhance water quality are the highest priority.

B. Timber Production

The Pony Creek and Joe Ney Watershed forests will be managed to protect water quality and provide for sustainable income from forest products. Timber management shall be guided by Oregon Forest Practices statutes and rules, best management practices for municipal watersheds, and this watershed management plan.

C. Sustainability

A sustainable multi-use forest is envisioned as a community legacy. Operational practices shall be influenced by this policy including maintenance of mitigation areas developed for the expansion of the water supply, forest certification, and active control of disease and invasive species.

D. Joint Watershed Administration

Management of the Pony Creek and Joe Ney Watersheds to achieve policy goals will require coordinated administration by the City of Coos Bay and Coos Bay – North Bend Water Board. Administration will include jointly developed and funded operations and maintenance practices.

IV. Water Quality Protection

A. Source Water Assessment Report

The Oregon Department of Environmental Quality conducted assessments of public water systems throughout the state to provide information so that utility staff as well as consumers and community citizens could begin developing strategies to protect the sources of drinking water. The assessment for the Water Board is dated September 24, 2002 and entitled "Source Water Assessment Report for Coos Bay – North Bend Water Board". The report identified four potential contaminate sources within the watershed as shown in Table 2.

Table No. 2
Potential Sources of Watershed Contamination

Name	Potential Impacts
Pony Creek Reservoir	During major storm events, reservoirs may contribute to prolonged turbidity for downstream intakes for drinking water. Construction, fluctuating water levels, and heavy waterside use can increase erosion and turbidity in reservoir/drinking water source.
Electrical Transmission Lines	Construction and corridor maintenance may contribute to increase erosion and turbidity in drinking water supply. Over-application or improper handling of pesticides or fertilizers may impact drinking water supply.
Alders Acres RV Park	If not properly designed, installed, and maintained, sewer lines can impact drinking water, especially adjacent to a water body or within a 2-year time-of-travel for drinking water wells. Leaks or spills of automotive fluids or improperly managed septic systems and wastewater disposal may impact drinking water supply. Heavy usage along edge of water body may contribute to erosion, causing turbidity
Clear-cuts	Erosion from road construction and maintenance are the leading causes of turbidity into water sources. Cutting and yarding of trees may contribute to increased erosion, resulting in turbidity and chemical changes in drinking water supply. Over-application or improper handling of pesticides or fertilizers may impact drinking water supply.

The report also identified an old dump site north of the Joe Ney Reservoir intake as a potential contamination source. The Joe Ney Reservoir is described as a supplemental water supply. There are no regulatory requirements resulting from this source water assessment; however, it recommends that the Water Board assemble a team to assist in the development and implementation of a Drinking Water Protection Plan.

B. Best Management Practices for Municipal Watersheds

The American Water Works Association is the authoritative resource on safe drinking water. Publications by AWWA contain up-to-date practices of the industry. The publication "Watershed Management for Drinking Water Protection", prepared jointly in 2008 by the Australian Water Association and the American Water Works Association, sanctions the multiple-barrier approach in water supply and treatment. This publication includes general Best Management Practices (BMPs) applicable to the watershed including surveillance and monitoring.

BMPs for watershed water quality as impacted by forestry operations are regulated by the Oregon Department of Forestry through the Oregon Forest Practices Act.

C. Watershed Protection Rules

The following are general watershed protection rules specific to the Pony Creek and Joe Ney Watersheds. These rules apply to contractors, loggers, and others working or utilizing the watershed. These rules are in addition to BMPs and all other state and federal rules governing forestry operations.

- ✓ All necessary precautions shall be taken to prevent damage to the soil, stream banks, stream courses, and reservoirs.
- ✓ The contractor shall protect stream banks and streamside vegetation from damage and shall not fall or yard timber across certain designated streams.
- ✓ Fuel and oil trucks shall be used within the watershed only when necessary. Such trucks shall be parked outside the watershed overnight.
- ✓ The contractor shall avoid servicing and repair of equipment with fuel and oil near streams or reservoirs.
- ✓ The contractor shall provide a chemical toilet at the work site to be used by all personnel.
- ✓ The contractor shall construct, periodically inspect, and maintain cross drainage ditches or water bars on all secondary roads and trails.
- ✓ The contractor shall prevent muddy water from any work site or road from draining into a stream or reservoir.
- ✓ The contractor shall temporarily furnish his own lock on the main gate entry. All access shall be only through the main gates.
- ✓ The contractor shall acquaint himself with the limits of the property and not trespass on other property.
- ✓ The contractor shall thoroughly wash all logging and road building equipment prior to entering the watershed, especially the tires, wheels, and undercarriage.

V. Timber Management

A. Timber Production

1. Oregon Forest Practices Act and Buffers

The Oregon Forest Practices Act (FPA) was established in 1971 and became effective in 1972. The Act provides for oversight and rule making through the Oregon Board of Forestry. Enforcement of the rules is through the Oregon Department of Forestry (ODF). The Act applies to state and private forestland in Oregon. The provisions of the Act cover forest operations to provide protection for soil, water, air, fish, and wildlife as well as forest resources and are amended from time to time. A number of major changes to the FPA have occurred as society values have changed and the scientific basis for BMP's has grown. The initial standards of the 1971 Act set minimum provisions for reforestation, road construction and maintenance and streamside protection. The rules have evolved to become more comprehensive outlining standards for harvest operations, use of herbicides, additional protection of wetlands and water sources, revisions to road construction standards, enforcement procedures and provisions for civil penalties, and on-going revisions for resource protection. The most current FPA is included in Appendix M.

Oregon Forest Practices and EIS buffers in this Plan represent minimum 100-foot distance from the high water mark around the reservoir. A 100-foot wide buffer is also shown around the main stem of Pony Creek and major tributary streams. Marking in the field needs to consider practical aspects including topography and vegetation where it may be advisable to leave more than the minimum buffer. Rules and regulations change over time as does logging technology. Each unit and associated buffer should be considered individually on the ground.

2. Timber Volume Basis

Timber volumes were determined by a compilation of aerial photography interpolation with approximate property ownership boundaries, empirical cutout records, old cruise reports for the City and Water Board land trade, and a check cruise of the major merchantable timber types. Some older photos provided better detail and more contrast that helped define old roads and cutting boundaries, timber types, and property lines. Detailed timber cruises were not performed to estimate volumes for this plan. Some cursory fieldwork was performed as inspections and check cruises, and some property corners were found and noted on photos to affect more accurate mapping.

The photo base map identifies six broad volume classes of merchantable timber. The classes were assigned timber volumes based on cutout records from harvest in similar and near-by stands. The check cruise verified the order of magnitude of timber volumes and species mix within the six main classes of timber. The check cruise measured a total of 59 plots on the entire ownership. The combined standard error of the cruise sample is under 10%, which is adequate for planning purposes.

3. Timber Description

Timber on the watershed is variable in age and character. Of the 2,191 acres of timberlands, 1,031 acres are merchantable and 1,160 acres are classed as pre-merchantable. The

remainder of the property is buffers, wetlands, reservoirs, and other lands. A merchantable stand is mature timber available for final harvest or commercially thinning.

The overview cruise of the timber indicates about 55% of the volume is Douglas fir, 35% Sitka spruce and hemlock, 5% cedars, and 5% alder and other hardwoods. Some merchantable stands in the southeast part of the Pony Creek Watershed that were not cruised, however, contain considerably more alder. The condition of the timber is very good because it is relatively young without evidence of extensive rot, decay, damage or defects. The major defect appears to be broken tops resulting in forked and multiple stems.

Older merchantable timber within the watershed consists of wild stands that were naturally reforested after logging and burning. This timber is more or less consolidated around the watershed in three blocks. A good portion of the volume is southwest of Upper Pony Creek Reservoir, but substantial volume remains on the southeast and north side as well.

The total volume of merchantable timber on the combined ownership is estimated in excess of 31 million board feet. Merchantable trees range from 40 years old to 90 years old. The stands vary according to stand size, age and species mix. This diversity is an opportunity to target commodity sales based on market conditions. For example, some of the older, larger timber is below the Loop Road on the east side of Upper Pony Creek Reservoir. When markets are good for larger saw logs and veneer logs, these stands may be logged. Other stands contain a large hardwood component. These stands are situated around the southeast part of the Pony Creek drainage, north of Libby Road. They are relatively young and good candidates for conversion when the hardwood chip market improves.

About 25% of the timberland base consists of sapling stands. These are categorized as pre-mature timber, less than 40-years old. The character of this timber is mixed being composed of older plantations, primarily Douglas fir, with a large amount of alder and whitewood species. Some of the units planted in the late 1970's and 1980's are growing on flatter ground with good stocking. These stands are candidates for commercial thinning, at least on a trial or provisional test basis.

Approximately 28% of the timberland base consists of young plantations, all with very good stocking. For the most part these are units that have been reestablished since the 1980s. The most recent timber sales have been replanted with a mixture of species, selected from the appropriate seed zone and elevation. The mixture increases habitat diversity and mitigates impact from Swiss Needle Cast.

4. Timber Growth

The site quality on the watershed is fair to good. Site Index and Site Class estimate timber growth potential. Site Index is a measure of how tall a tree (for the subject species) is capable of growing to a given base age; usually 50 years or 100 years. For Douglas fir on the watershed, measurements indicate a 50-year Site Index range from 109 to 127 feet tall.

Site Class is a collection of Site Indices ranked from high to low with Class I being the best and Class IV being the worst. The watershed corresponds to a Site Class ranging from high Site III through mid Site II, a little better than average for Coos County in general. The yield from 50-year old timber on low to mid Site II is expected to be about 28 MBF per acre. Harvests from units during the past 30 years has averaged over 30 MBF per acre. Based on the net forested acres, current growing stock levels and a reasonable average growth rate of 3.25% per year for

50-year rotation, the watershed forest is capable of sustaining approximately 1,300 MBF annual harvest.

5. Soils

A detailed soils map prepared by U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) is included in Appendix F. Detailed descriptions and additional mapping of the individual soil types may be found in Soil Survey of Coos County, Oregon[1]. The Soil Survey reports that there are two broad classifications of forest soils on the ownership that fall into three soil series: Bandon and Bullards are in one group; the Templeton complex is the second group. All three series are rated fair to good for timber production. All three descriptions note the limitation to growth being the proximity to the Pacific Ocean with prevailing winter winds and resulting windthrow, the inference being commercial thinning should be conducted cautiously.

Bandon and Bullards soils are generally situated in the northwesterly part of the watershed are well drained, loamy and sandy soils formed in marine sediment on marine terraces. Marine sediment is accumulated in an ocean environment and later exposed while still in an unconsolidated state. These soils range from 25 to 600 feet in elevation. Slopes range from 0 to 50 percent. Annual precipitation ranges from 50 to 80 inches. Annual air temperatures range from 51 to 53 degrees Fahrenheit, and the frost-free period ranges from 200 to 240 days. Slow permeability, slope, and low fertility are limitations to intensive agriculture production. Generally, soils in these units are suited to timber production with productivity judged to be moderate to good.

Templeton soils dominate the southeasterly part of the watershed. These soils are formed in colluvium from sedimentary rock. Colluvium is a deposit of rock fragments and soil material accumulated at the base of steep slopes due to gravity. Slopes range from 0 to 75 percent. Temperature, growing season and precipitation are similar as described for the Bandon and Bullards soil types. Timber productivity is rated high with limitations related to compaction and erosion. It is recommended to use cable yarding systems when harvesting on these soils to prevent compaction and erosion.

The Soil Survey also reports that the soils within the watershed are suitable for timber production ranging from high Site III through mid Site II, and that 50-year-old Douglas fir may be expected to range from 105 to 120 feet tall. On-site measurements correspond very well to the Soil Survey.

All watershed soils have some engineering limitations regarding logging methods and road construction. These limitations refer to the use of equipment, year-round or seasonally, as a result of steepness of slope, wetness, and susceptibility of the soil to compaction. Each timber sale will require an analysis of the site conditions before proceeding with operations.

[1] *Soil Survey of Coos County, Oregon, July 1989, is a publication of the National Cooperative Soil Survey, a joint effort of the U.S. Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey.*

B. Timber Sales Methods

There are three timber sale methods applicable to this Plan. The methods are Lump Sum Sale, Recovery or Stumpage Sale, and Log Sale, and are discussed in detail below.

1. Lump Sum Sale

The lump sum sale method can include timber only or both land and timber, though it is unlikely a watershed timber sale would include land. This sale type pays the property owner for all the timber within a designated/marked area. The owner can be paid all of the money up front or with some type of payment schedule such as 1/3 initially, 1/3 at a given date, and 1/3 at the completion of logging. These contracts have a time limit for completion that can vary but is generally no longer than two years. The buyer hires their own logger and can merchandise the logs however they see fit. The owner typically retains a forestry consultant who prepares bid documents and contracts and reviews all logging operations. This type of sale does not involve the seller in log scale accounting and other items dealing with the sale of logs.

The lump sum sale requires a relatively intense cruise by the seller because the sale price is compared to the cruise volume. Bidders will likely perform an independent verification cruise, which takes them additional time and effort to prepare a bid. This type of sale is easier for the owner than the others, but is less popular with the timber buyer because it involves higher risk. This sale type also can limit the number of potential buyers because of the large amount of cash required up front.

2. Recovery or Stumpage Sale

The recovery or stumpage sale method is for the sale of timber only. The owner's forester cruises the timber for volume, species and grade. The seller prepares a prospectus of sale and submits the offering to potential purchasers. The bidder offers a value for which they will pay the owner for each thousand board feet (MBF) or ton for that species and grade of log removed from the property. The bids are evaluated on price and cruise breakdown by species and grade. Most often, these sales are sold on a "camp-run" basis where the owner is paid the same price for all merchantable log sorts and grades of that species. This is an efficient method when the timber volume is uniform without much variation between log grades. Average log lengths in the bids must be reviewed when using Scribner volumes because the average log lengths can affect the total volume.

The buyer hires the logger for this type of sale. The property owner is paid as the logs are removed and scaled. This sale type requires the same logging inspection as the lump sum sale in addition to inspecting the site after logging to ensure all merchantable material is removed. Log scale accounting is also needed to ensure that payments are accurate. The cruise required for the recovery sale is less intense because payment is on a per unit removed basis. Timber buyers like this sale type because of reduced risk and consistent cash flow.

3. Log Sale

The log sales method generally gives the highest return to the owner, but also requires the most management. The owner's forester cruises the timber, and bid documents are prepared and advertised to log buyers while the trees are standing. Log buyers offer bids on a camp-run basis or on a grade and sort basis where the price varies by the grade, sort, and species. The logger is selected by the owner through a competitive bid process, generally on a cost per MBF

or ton for cut timber. The logger cuts the logs to the bidder-specified merchantable lengths and the logs are trucked to the log buyer with the highest overall bid. To further optimize income for the owner, the forestry consultant will market logs to the best purchaser by sorting for various sizes, grades and species of logs.

The log sale method requires working with the logger to ensure that the logs are merchandised efficiently. This type of sale also requires in-depth log accounting. Because the owner is paying the logger, the owner has more control over logging practices and how the job is done. This works out well when the owner wants some extra roadwork or site development on the tract, or has some areas requiring partial cutting or special protection. Timber buyers also like this type of sale because of very little risk and consistent cash flow.

One particular type of log sale is the sale of log decks. This involves renting some space in a log yard, scaling, sorting/decking the logs by species and grade, and then advertising the decks to log buyers.

For recovery timber sales and log sales it is important to track loads leaving the property. Each truckload of logs is accounted for as it is shipped by using a set of sequentially numbered truckload tickets. A number of logs on each load must be branded with the timber owner's registered brand to identify the specific owner. The loader operator at the landing fills out a truck ticket for each load before it is shipped. The ticket identifies the sale name, date, brand, logger, trucker, species, and number of logs. Copies of individual tickets are distributed to logger, trucker, mill/log yard and, "book" or seller. Each of these have a reference to each load removed and is the basis for payment from the purchaser to the seller and from the seller to the logger and trucker. At the yard or mill, the logs are scaled for diameter and length, defect, grade, and sort. This information is recorded on individual scale sheets for each load. The scale sheets reference the truckload tickets and, for recovery and log sales, are used to determine the payment to the seller. Copies of these truck tickets, scale sheets and payments are reviewed by the forester to make sure that everything is accurate with regards to log purchase agreements and that logs are sent to the yard/mill offering the highest price.

All three sale methods above usually require some or all of the following services offered by a professional forester:

- Help the landowner select a unit to be harvested from among suitable alternatives based on market conditions and the owner's objectives.
- Evaluate and layout the state required Riparian Management Area buffers.
- Cruise the timber for volume and grade by species.
- Provide boundary line surveys to mark the exterior cutting boundaries.
- Apply for the necessary state operating notifications and consult with state and federal agencies about any sensitive environmental issues to be protected in the logging plan.
- Layout logging roads and harvest units and recommend logging systems.
- Prepare a sale bid package (prospectus and contract). The prospectus includes the cruise information, specific terms of the contract, a bid form and bidding procedure.
- Review insurance requirements of the contract.
- Mail bid offerings to potential purchasers.

- Receive and review bids and make sale recommendations. Return any bid deposits to the unsuccessful bidders.
- Review log purchase agreements and recommend who to sell the various species, grades and sorts.
- Recommend whether the buyer's hazardous materials spill, containment, and recovery methods plan meets the objectives set forth in this document and pursuant to industry standards.
- Subject to the location of the logging, the objectives of this plan and industry standards, make a recommendation on the submittal of a spill prevention control and countermeasures plan compliant with U. S. Environmental Protection Agency standards prepared by a registered professional engineer.
- Make recommendations regarding site preparation work before, during, and after logging. This could include whole tree yarding, slash piling, and burning of piles and scarification.
- Make recommendations on reforestation methods, seedling selection and contractors and prepare a reforestation bid package.
- Inspect and review the condition of truck roads and suggest maintenance as required.
- Review fire protection plan.
- Conduct site inspection during logging to review general logging practices, log utilization and bucking practices; ensure no timber trespass; inspect the quality and location of road building; check log brands and truck tickets; and inspect slash disposal.
- For log sales, follow the first few loads of logs into the mill yard and periodically thereafter to make sure that logs are sent to the correct mill. Work with fallers and log loaders to optimize log value (lengths, diameters, sorts, etc.).
- Have a periodic check scale performed by an independent, certified check scaler.
- Provide administration of the reforestation and site preparation work including ordering seedlings, scheduling transportation and temporary storage of seedlings, scheduling, and inspecting tree-planting work.
- Review sale accounting and verify accurate log payments.

C. Timber Harvest Considerations

1. Income Potential

Income opportunities from timber harvesting remain an important driver in decision-making processes. Well planned, well-managed timber harvesting is an important source of income for the City and Water Board on lands designated for production.

2. Harvest Areas

There is an economy of scale regarding the scope of timber harvest opportunities. This economy, or efficiency, is applied to the cost of preparing the sale as well as the cost of buying and logging the sale. There should be sufficient volume to recover fixed and variable costs such as cruising, advertising, contracting, bidding, administration, logging, reforestation and road construction. Regardless of the sale method used, higher volume sales are more efficient.

In some situations, it may be an advantage to sell more than one unit at a time. For example, the Water Board may sell a unit and the City another unit concurrently. Separate sale prospectuses and contracts would be prepared. The sales may or may not be sold to the same buyer. Cost efficiencies would be gained by having management consolidated in preparation and administration of logging activities, reforestation, and road maintenance.

In Southwest Oregon, the maximum clear-cut area established by the FPA is 120 acres. However, given the limited area of the watershed and, conservatively, any potential water quality impacts, clear-cut areas generally should not exceed 80 acres.

3. Alternate Harvest

The City and Water Board have traditionally alternated harvests so that a single timber sale occurs each year or every other year. It is recommended that this practice continue.

4. Road Alternatives

The following table includes a list of the benefits and detriments of using the Loop Road for timber harvest purposes.

Table No. 3
Loop Road Use Considerations

Benefits	Detriments
o Restricts access to one entry point, trespass is easier to control	o Proximity of road to reservoirs increases potential for erosion and sediment entering the reservoirs
o Use of existing gravel road eliminates need for alternate new construction, thereby minimizing erosion and sediment entering reservoirs	o Proximity of road to reservoirs increases risk of fuel spills entering the reservoirs
	o Increased traffic and associated hazards around the Water Board complex
	o Increased truck traffic on Ocean Boulevard

Research articles from Oregon State University indicate a significant amount of suspended sediment comes from roads near streams and lakes. Fine sediment results from traffic on the roads during the entire year; dust in the summer, mud in the winter. The sediment generated during the summer will not enter the water until a heavy rain the following fall. Peak turbidity can increase nearly threefold at each road crossing. At every crossing, sediment from the road and ditch line will run directly into the water if not diverted. The Loop Road crosses arms of Upper Pony Creek Reservoir nine times.

Secondary haul roads could be rocked for summer logging to minimize dust and fine sediments; however the potential for erosion entering the reservoir would still exist. This may be mitigated somewhat by rocking secondary roads higher on the landscape and avoid using the Loop Road.

There are currently seven gated accesses into the Pony Creek and Joe Ney watersheds. No new accesses are recommended as part of the proposed road plan. Temporary accesses are recommended to limit truck traffic near the reservoirs and maximize the use of the Loop Road. One of the temporary access points from Libby Lane was reconstructed with the City's 1997 Timber Sale. A second temporary access may need to be reconstructed for harvesting Units 12 through 15.

The following table shows estimated costs in 2011 dollars to fully road the watershed for timber harvesting. Road construction expenses are typically included with logging expenses at the time the timber is harvested. Road costs should be spread out over the harvest cycle. The proposed road plan with an example of forest road construction specifications is included in Appendix G.

Table No. 4
Road Construction Cost Estimates

Construction Type	Stations	$/Station	Total Estimate
Difficult Side Cast Construction	33.54	$ 800	$26,831
Moderate Side Cast Construction	344.51	$ 650	$ 223,930
Easy Side Cast Construction	144.61	$ 500	$ 72,306
Total	522.66		$ 323,066

5. Market

For this municipal timber, the working circle for log and timber sales is generally Coos, Curry and western Douglas counties. The range of mills extends from Reedsport to Brookings and along the Interstate 5 corridor at Roseburg, Dillard, and Glendale.

Markets fluctuate over time and there are seasonal trends. Mills typically pay a premium for winter logs. Different mills use a variety of species and log sizes to provide specific products from their facilities. Haul roads may be rocked and then extend the volume of rock as the sales program expands to take advantage of higher-value winter logs.

The timber on the watershed is prohibited from being exported in raw log form. The City adopted Ordinance No. 170 in May 1991; the Water Board adopted Resolution No. 201 in August 1991, subsequently revised with Resolution No. 210 in March 1993, prohibiting export of the timber. These resolutions are included in Appendix H.

6. Separation from Reservoir

Any harvest units adjacent to a reservoir would have the minimum required FPA buffer. Buffer width may be wider when it is advantageous to leave wildlife trees in the expanded buffer rather than scattered or clustered elsewhere in the unit.

7. Proximity to Neighbors and Open Access

When harvesting around the perimeter of the property, consideration should be given to prevent trespass onto the watershed from the adjacent tract or access road. The primary access point should be temporarily gated while logging is underway. Loggers may assign an on-site watchman to safeguard their equipment and provide a fire-watch monitor while operations are underway. Following logging the road should be barricaded or tank-trapped to prevent trespass.

Any logging along Libby Lane would be apparent to the public. Units that border Libby Lane should retain vegetation or other physical barrier along the right of way.

8. Windthrow

Timber on the watershed is subject to windthrow because of prevailing winter winds. Winter wind gusts can exceed 100 miles per hour. Laying out units strategically and not leaving timber exposed on ridges can minimize windthrow. The harvest units generally follow natural topography and include harvesting from the lower buffer up to and over the corresponding ridge or road system.

9. Meeting Silvicultural Objectives/Marketing

Timber harvesting is integral to building a sustainable forest rotation. Hoarding timber is not an indicator of sustainability. In a fully regulated forest, the classic age class distribution for sustained yield is an equal proportion of area for all ages of timber. This assumes that all timber grows at the same rate over all the forest and all harvest units are the same size. The presumption is that the most mature and valuable timber is always harvested and the unit is subsequently replanted. The next year or selected time interval, another stand in rotation reaches maturity and is available for harvest. The timber on the watershed is approaching this regulated condition with somewhat more area currently in mature timber. This allows for a cushion in getting the forest more regulated. The proposed harvest plan on the watershed recognizes that the forest is not fully regulated, however. Further, the growth potential is not equal across the forest, harvest units are not all the same size, and the mix of species is variable.

When to harvest is just as important as what and how much to harvest. The variability of merchantable stands in the watershed affords more flexibility in selecting harvest units as compared to a monoculture of one species, all the same size. On the other hand, mills are moving to smaller, uniform logs for raw material as the trend continues toward engineered wood products rather than sawn boards. Fewer mills in the region are currently capable of handling larger logs, resulting in increased costs to transport these logs to mills that can process them.

F. Proposed Harvest Plan

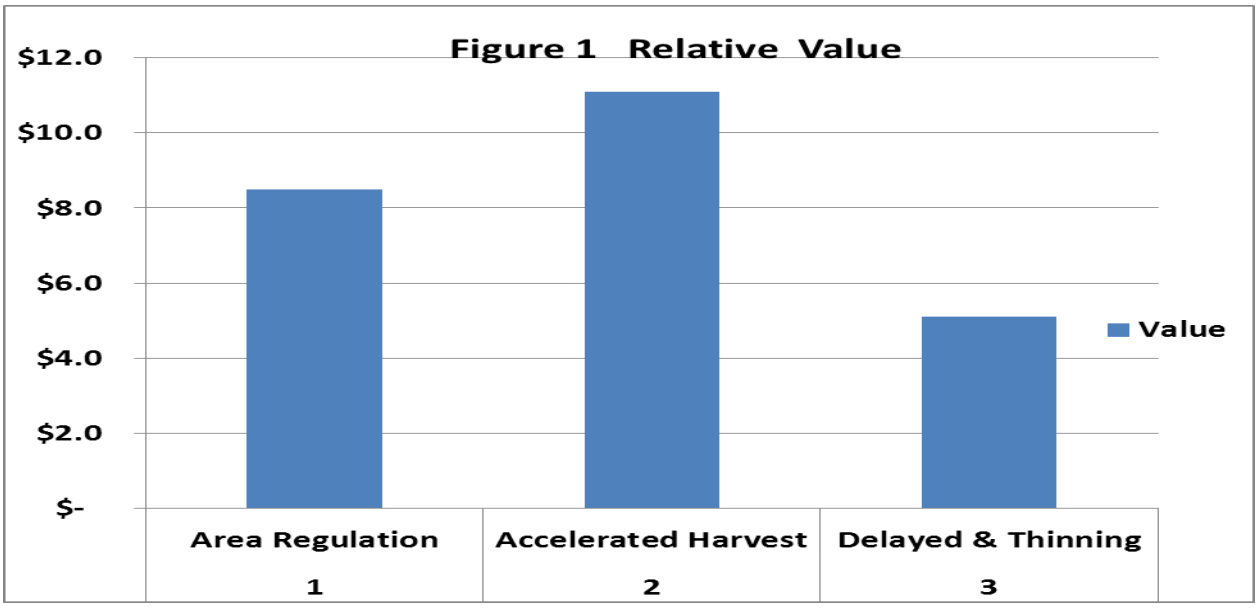
1. Strategy of the Plan

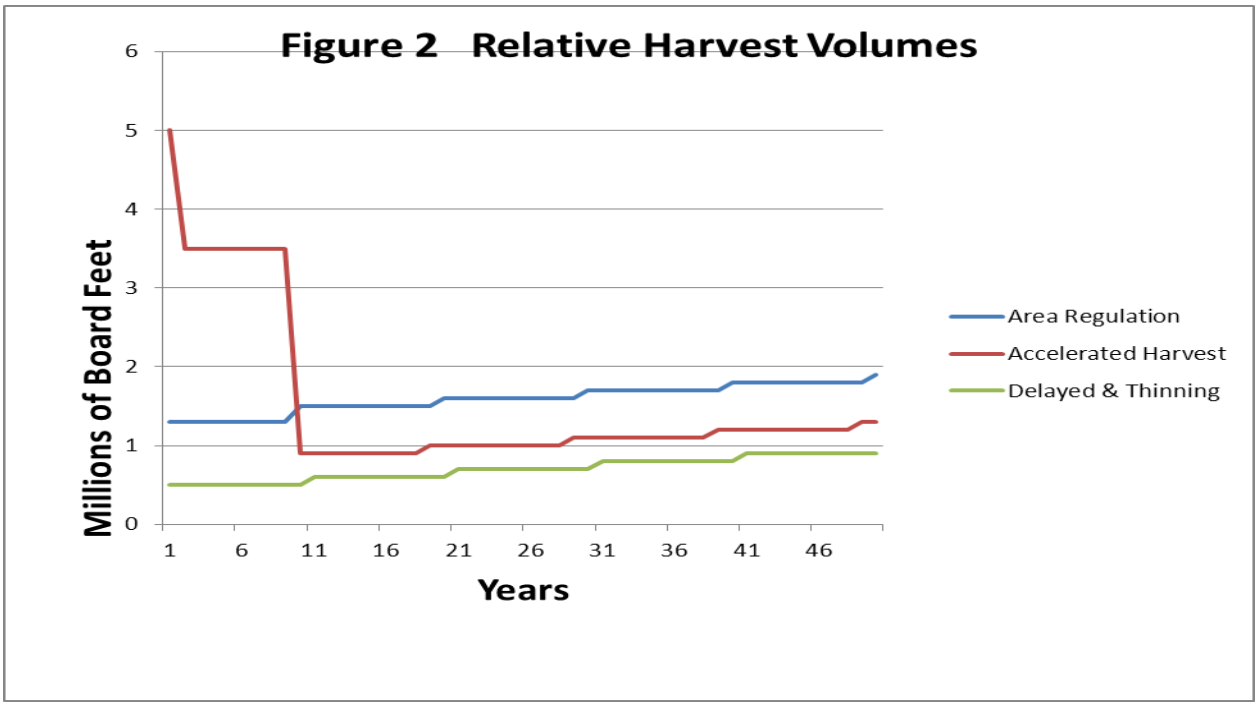
Three strategies were considered as alternatives for a proposed harvest plan: (1) Area Regulation, (2) Accelerated Harvest and, (3) Delayed and Thinning. Area Regulation is a conservative, sustained yield approach with a 50-year harvest/rotation schedule. The Accelerated Harvest alternative is the liquidation of the current crop of merchantable timber

rather quickly. The Delayed and Thinning alternative is a schedule of harvests incorporating commercial thinning and smaller patch-cut units. All three schedules could meet the policy statements for water quality, timber production, and sustainability outlined in Section III of this Plan.

A present worth analysis was performed utilizing 2011 dollars to compare the alternatives. The analysis began with an equal initial timber volume for each alternative and an equal discount rate, with the rate of harvest as the lone variable. The exercise indicated a range of present values from $5.2 million for the Delayed and Thinning alternative to $11.1 million for the Accelerated Harvest alternative. Area Regulation is mid-range at $8.5 million.

It is important to note that the analysis shows an order-of-magnitude value comparison of the three harvest alternatives rather than an accurate appraisal of the timber value. Figure 1 shows this relationship. Figure 2 shows the relative effect of timber harvest volumes over time.





Area Regulation is recommended as the proposed harvest plan with clear-cut units. A regular harvest schedule that follows a conservative, sustained yield approach with consistent cash flow to the seller is the basis for this recommendation. Actual cash flow is, of course, market based. The Area Regulation alternative is generally the approach the City and Water Board has followed over the past 30 years or so.

Elements of the proposed harvest plan are:

- Harvests are based on 40 to 50 year rotation
- Annual harvests will average approximately 40 acres
- Annual harvests will consist of approximately 1,300 MBF

The recommended harvest alternative allows flexibility to accelerate or defer harvests within a planning period. It does not include any harvest volume from commercial thinning or salvage operations. Commercial thinning should be considered on a case-by-case basis for targeted units.

2. Harvest Unit Descriptions

The harvest units are shown on two maps, the north portion and south portion of the watershed, in Appendix C. There are a total of 92 units, also categorized by age of timber as merchantable, sapling, or plantation stands. Mapped unit boundaries and road locations are approximate. The unit boundaries will be refined and modified pending further site inspection to take advantage of the natural topography. Each unit will be laid out in the field as it is included in a timber sale, incorporating physical and logistical constraints.

The harvest units offer a variety of timber species and types. For example, the units along the north portion of Upper Pony Creek Reservoir and just north of Libby Lane contain more hardwood volume as a percentage of the total stand. The remaining timber southwest of Upper

Pony Creek Reservoir contains proportionally more spruce. The largest concentration of Douglas fir volume and the best overall income-producing timber is on the east side of Upper Pony Creek Reservoir between the reservoir and Loop Road. The units are designed to be relatively large in size to result in harvests that are more efficient. Since the ground is broken and dissected, several units could be reduced in size and still be operational using the same road system.

3. Harvest Unit Decision Process

Planning and conducting a timber sale, whether it is a City sale or a Water Board sale, involves joint collaboration with the two entities, usually with a consulting forester. The process should begin with a planning meeting to address:

- ✓ Timber control, either City owned or Water Board managed. It is recommended that the City and Water Board alternate timber sales on an annual or otherwise agreed upon time basis.

- ✓ Unit(s) selection. The timber units should be selected from the inventory database with consideration given to timber age, species, volume and the corresponding markets. The database includes all categories of merchantable volume including older merchantable conifer, primarily hardwood stands, mixed conifer and hardwood stands, and those older plantations with some merchantable volume that may be candidates for commercial thinning. Market opportunities include confer saw timber, veneer, hardwood sawlogs, whitewood versus Douglas fir values, conifer, and hardwood pulp.

- ✓ The length and cost of any new road to access a specific unit. The initial cost is typically an expense against the subject timber sale, but the road may also be used for future sales. The allocation of these costs, long-term maintenance, or future reconstruction of the road should be discussed.

- ✓ Water quality issues. These include proximity of the sale and haul routes to reservoirs or streams, proximity of the sale to other recently harvested units, and size of the proposed harvest area with any resulting impacts.

- ✓ Sustainability issues. These include harvest area, timber volume, and the affect on other sales anticipated in the planning period and beyond.

- ✓ Wildlife habitat issues. These include habitat cover, type, diversity, structure, and connectivity with any resulting impacts on the FPA and EIS buffer areas addressed in this Plan.

- ✓ Watershed security.

- ✓ Other issues regarding overall watershed health.

G. <u>Ancillary Timber Management Activities</u>

1. Timber Inventory

The basis for many decisions on timber management, including timber growth and harvests, are dependent on the accuracy of a timber inventory database. Three important items within the

database are timber area, timber age and species, and site quality. Maintaining accurate age and species data is typically the highest priority for timber managers. The existing inventory is adequate for conservative planning purposes. However, it should be updated on an ongoing basis, especially for the sapling and plantation stands.

As timber is harvested, replanted areas are tallied as plantations and eventually mature from seedlings and saplings into pole-size stands. Foresters typically account for plantations based on the number of stems per acre by species. Reproduction inspections also make note of damaging agents such as deer, elk, or rodents, and disease and brush competition. Stands older than 25-years are classified as sapling stands and assessed on characteristics such as species, basal area, crown class, tree height and stems per acre. More inventory information is collected on pole stands because these trees are typically the fastest growing component of the forest. It is important to know how fast the forest is maturing to estimate future harvest opportunities.

2. Loop Road Maintenance

The Loop Road is an all-weather road maintained by brushing the road edges, adding replacement gravel and grading the travel surface, and keeping ditches and culverts open and draining. The work is generally performed by Water Board crews or, if performed by contractors, is overseen by Water Board staff.

The Water Board performs annual routine maintenance by formula outlined in the Road Use Agreement. The Water Board pays 1/3 of maintenance costs through the Water Program and the Timber Program pays 2/3 of maintenance costs from timber sales. Maintenance expenses are tallied per calendar year and are borne by the City or Water Board, whoever is conducting a sale that year. If no sales are conducted, or if the Loop Road is not used for hauling, the Water Board bears all maintenance costs that year. Additional maintenance for intense, short-term use during a logging operation is typically a contractual obligation of the timber purchaser or logger.

Loop Road maintenance costs totaled about $10,500 in 2011. The Timber Program was assessed two-thirds of these costs that year, or $7,000. The Timber Sale History in Appendix B includes a column for Loop Road maintenance costs. It is recommended that maintenance of the Loop Road continue as currently practiced.

3. Reforestation

Reforestation on the watershed has been by planting selected seedlings in the winter following harvest. Since herbicides are not routinely used for site preparation, it is essential that reforestation be accomplished promptly to eliminate competition with brush. Planting is usually undertaken from December through March while transplanted seedlings are dormant and the soil is wet. Planting may be curtailed temporarily if non-typical weather conditions occur such as wind, snow, or freezing or too warm temperatures. Planting expenses are currently about $400 per acre ($200 per acre for purchased seedlings, $150 per acre for labor, and $50 per acre for forestry consultant). Alder plantations are more expensive to establish because of extensive site preparation and higher initial planting costs.

Site preparation is important for seedling survival. It is sometimes necessary to perform work outside the scope of harvesting in order to provide the best environment for reforestation. Site preparation may use one or more of the following techniques: hand slashing, tractor

scarification, aerial or manual chemical applications, and burning. Site preparation should eliminate or reduce competing brush and provide the target number of spots to plant seedlings. The costs are variable according to the specific site. Generally, costs range from only a few dollars per acre upwards of $300 per acre on extremely difficult sites. Site preparation on the watershed usually consists of gross yarding and piling non-merchantable material and burning landings and piles.

Douglas fir is the primary species used for reforestation. It is also the most widespread species harvested across the watershed. Other commercial native species are included in reforestation such as Sitka spruce, Red cedar, Port Orford cedar, Grand fir, Hemlock and Alder. These species are typically planted based on the specific site and general seedling availability.

Reforestation prior to 1980 was not as successful as present practices. Some older units (although promptly reforested with good stock and planting methods) have not regenerated as successfully as more recent units. Brush control by hand treatment or other means was not used. Consequently, some areas are not currently well stocked with conifer. These marginally stocked areas and isolated slivers of timberland with diverse stand and species composition may be candidates for a variety of treatments. Opportunities may exist for pre-commercial or commercial thinning with adaptations for uneven aged management.

Reforestation of a site should be planned prior to beginning logging and include efficient site preparation as part of the logging operation. Typically, the logging or timber sale contract specifies some measure of clean logging, leaving the ground in a plantable condition. Site preparation includes accumulating logging debris and burning slash piles. Pre-planning for reforestation includes selecting and purchasing seedlings of a suitable species, size, and seed zone. Selecting a suitable planting contractor usually includes a bidding process from licensed farm labor contractors. Reforestation success depends on hiring good contractors not needing constant supervision. Finally, reforestation success requires an initial contract inspection and follow-up inspections at intervals to monitor seedling survival and to observe animal or other environmental damage. Promptly noting plantation problems allows quick action to remedy a situation. Plantation follow-up inspections should be made one year and five years after reforestation.

4. Salvage Logging

Opportunities to salvage timber may come up from time to time. Typically, a salvage opportunity captures timber volume following a natural catastrophe such as fire, insect damage or windstorm. The effort to salvage timber will depend on the accessibility, type, and volume of timber involved. There are no recommendations for salvage logging at this time.

5. Fire Protection

Both the City and Water Board receive fire protection for watershed lands by the Coos Forest Protective Association (CFPA). The CFPA has statutory authority to conduct inspections on forestland operations to monitor firefighting crew preparedness and equipment readiness. Logging operations and other "Notifications of Operation" involving power equipment in timberland inform CFPA of the activity and exposure to wildland fire. The CFPA is responsible for fire protection in the Coos District, one of three independent non-profit corporations that provide fire protection in the state. Typically, fire protection on forestlands is conducted by the Oregon Department of Forestry.

The Water Board is a member of the Association and pays the annual assessment fee for all lands within the watershed. The Forest Patrol Assessment fee for 2011-2012 is $2.2226 per acre. This assessment is billed directly by CFPA. Within the last two years, the Oregon Legislature has imposed an additional Administrative Cost Allocation on public landowners, currently in the amount of $0.3741 per acre. This administrative allocation is billed by Oregon Department of Forestry. The City is not a member of the Association and reimburses the Water Board for the City's share of the fees.

The highest exposure for wildland fire would be from an incident involving a logging operation. In this case, both the City and Water Board are initially covered from liability through the logging contract that both the City and Water Board have utilized through their forestry consultant and reviewed by their respective insurance agents and attorneys. The contract is intended to pass liability to the timber purchaser and/or logger as the operator. The operator is required to control any fire started by his operation or any fire coming onto the operation area from any cause. The operator is required to notify CFPA of any incident involving fire. Insurance limits specified in the logging contract are reviewed regularly in keeping with industry standards. The timber purchaser and/or logger would most likely cover initial fire suppression costs but the landowner is ultimately responsible for liability. The relationship between operator and landowner is detailed in ORS 477.064 through 477.120.

6. Land Surveys

Property land surveys are expensive but necessary for timber management. Many of the monuments along the perimeter of the property have been physically located and mapped, and most of the perimeter boundary has been marked on the ground. Land surveys would be necessary to re-monument the boundary along the ridge corresponding to the easterly property line. It is recommended that such land surveys be conducted only with timber sales and when needed. Some survey costs may be shared with the adjoining property owner.

7. Disease Control

a. Port Orford Cedar Root Disease

There is a significant amount of Port Orford cedar (POC) in both the Joe Ney and Pony Creek drainages. There is also evidence of POC root disease (Phytophthora lateralis) infecting pockets of these trees. POC is an important commercial species that should be managed in spite of limitations caused by the root fungus.

POC root disease is caused by an Oomycete or "water mold" and is spread by water-borne spores (zoospores) or resistant spores (chlamydospores) in contaminated soil. They are totally dependent on free water for infection and spread and cannot survive in dry soil. If hosts are absent for three to five years, the fungus apparently will die out.

Natural spread by zoospores is virtually all downslope or downstream in water moved by gravity. It can be spread naturally by wildlife, by moving infected seedlings or infected soil, by machinery or tires during road building or travel, and by logging activities.

There is currently a POC cooperative consisting of state, federal and private organizations that develops disease-resistant strains that may be cultured and ultimately propagated for out-planting on a large scale, commercially viable basis. This program is the Northwest Tree Improvement Cooperative, administered by Department of Forest Ecosystems and Society within the College of Forestry at Oregon State University.

It is recommended that the following site-specific items be implemented as a POC management strategy:

- ✓ Identify and map the known pockets of infected POC
- ✓ Identify disease resistant specimens in the watershed
- ✓ Plant disease resistant POC stock in areas absent of the root disease (hilltops, dry areas) and unfavorable to the root disease
- ✓ Kill or remove POC in high hazard sites such as along roadbeds, along streams, and in wet areas. Keep these areas, approximately 150 feet wide, free of cedar. This will prevent infestation of adjacent disease-free stands and to allow the pathogen to die by removing all hosts.
- ✓ Keep spacing of cedar such that the fungus cannot grow from tree to tree
- ✓ Close roads and restrict operations to reduce movement of infested soil
- ✓ Clean vehicles and equipment before entering or leaving specified areas to remove soil that may contain spores
- ✓ Plan harvest and road construction in the dry season

b. Swiss Needle Cast

Swiss Needle Cast is a naturally occurring fungal disease that affects Douglas fir trees of all ages. It is cyclic in occurrence and ranges from northern California to British Columbia, generally on the ocean side of the coast range. Some scientists attribute recent widespread outbreaks to planting off-site Douglas fir seedlings on sites that would more naturally support hemlock, spruce, or alder. The fungal pathogen damages individual tree needles by plugging the breathing pores (stomata) and disrupting the plant transpiration process. The fungus does not necessarily kill the tree but can retard growth by as much as 50% annually. Heavy infestations cause serious needle loss, retarding growth and allowing more sunlight to accelerate the growth of competing underbrush. Treatment is very expensive and includes

fungicides and applications of lime or sulfur. It is recommended that control of Swiss Needle Cast be limited to responsible reforestation by planting a mixture of species and selecting hearty, vigorous planting stock from the correct seed and elevation zone.

There is a cooperative consisting of state, federal and private organizations that conducts research on enhancing Douglas fir productivity and forest health in the presence of Swiss Needle Cast and other diseases in coastal forests. This cooperative is the Swiss Needle Cast Cooperative, administered by Department of Forest Science within the College of Forestry at Oregon State University.

8. Invasive Species Control

Initial control of invasive species is critically important on the watershed. The three most prominent invasive species are Scotch broom (*Cytisus scoparius*), Himalayan blackberry (*Rubus thyrsanthus*), and Gorse (*Ulex europaeus*). All three species are detrimental to timber production because they will crowd out existing trees and prevent new ones from establishing. More importantly, gorse is highly flammable and, if left unchecked, could result in wildland fire with catastrophic consequences. The location and area of infestation of these species should be reported to the Water Board when found on the watershed.

Scotch broom is a perennial evergreen shrub that grows three to 10 feet high. Other related non-native broom species include French broom and Portuguese broom. Broom has invaded the disturbed areas resulting from the construction of the Upper Pony Creek Dam. Other findings in the watershed are limited, though it is common to find starts in a new clear-cut area the following spring. Timely reforestation with robust conifer stands will generally help mitigate the broom and negate its spread.

Himalayan blackberry is a semi-evergreen shrub that can grow nearly 10 feet high with individual canes extending over 20 feet in a single season. Canes or stems are biennial. It cannot tolerate deep shade and are rare in dense forests stands except openings. Vigor and seed production decline as shade increases. Himalayan blackberry has not been found to be a problem in the watershed. As with Scotch broom, timely reforestation with robust conifer stands will overtake Himalayan blackberry and negate its spread.

Gorse is a perennial that grows one to nine feet tall. It is persistent, fast growing, and adapted to a wide range of environmental conditions. It is difficult to kill and reinfestation is a constant problem. High levels of natural oils in the plant make it highly flammable and an extreme fire hazard. Gorse is not a persistent problem in the watershed, however a few plants are occasionally found, generally along the Loop Road and power lines. The City and Water Board should collaborate on the method to kill gorse and aggressively act when plants are found.

To control the spread of invasive species, the following is recommended:

- ✓ All logging and road construction equipment entering the watershed shall be cleaned, especially the tires, wheels, and undercarriage.

- ✓ The presence of gorse must be reported immediately followed by immediate steps to eliminate the weed. It may be sprayed, pulled, dug, or cut, depending on its size and ground condition. If cut, herbicide may also be applied on the remaining stem surface. Care must be taken to not disturb the plant and subsequently spread seeds. The site

should be revisited after 30 days and again after 90 days to check on any regrowth and reapply the herbicide if needed.

- ✓ The presence of Scotch broom and Himalayan blackberry should be reported when found. These areas should be monitored for impact on the watershed. Cutting, removal, or poisoning the species should be considered on a case-by-case basis.

9. Herbicides Use

The safe and limited use of herbicides is an option for controlling vegetation on a case-by-case basis. This is often the most effective and economical method to control the spread of Gorse and Scotch broom and other non-native invasive plants. The Oregon Forest Practices Act regulates the application of herbicides on forestland. Labels clearly identify requirements for application rates and the conditions when they may be applied. There are varieties of effective herbicides that have been approved for use, some directly in water. Herbicide labels do not specifically address the application within municipal watersheds but usually have instructions for use near surface waters. Most products have statements such as not to apply directly to water. Herbicide formulations are evolving all the time as new patents are issued. Using the least amount of chemical to do an effective job, using a licensed contractor, and application according to label instructions can control the risk of herbicides getting into the surface or groundwater. Further control is maintained by using ground-based applicators such as backpack spray rather than helicopter application.

It is recommended that herbicides be used in the watershed on a case-by-case basis, strictly controlled, and in accordance with the Oregon FPA and herbicide labels.

10. Animal Damage

Animal damage on the watershed is not severe. The most apparent damage is to seedlings from deer and elk browse. Elk particularly can cause serious damage to newly planted units by trampling seedlings or pulling them out of the ground. Heavy browsing of terminal leaders often reduces initial seedling growth. Damage could occur such that units or portions of units may need to be replanted or supplemental planted.

Another problem may be Mountain beaver, *Aplodontia ruffa*. Mountain beaver is a muskrat-size rodent that lives in colonies, usually in moist draws and ravines. This nocturnal animal often clips newly planted seedlings in recent harvest units. Tubing seedlings with plastic Vexar netting is effective in keeping damage under control. Effective control can also be maintained by minimizing their habitat by adequately piling and burning all slash after logging. Mountain beaver can be trapped prior to planting. Often only local colonies are trapped, not entire units.

Bear damage is an increasing problem in Coos County but apparently not widespread on the watershed. Bear can cause damage to sapling and larger trees in the spring. They strip bark from trees to get to the sweet, underlying cambium. Once the bark is stripped, the tree is susceptible to decay and rot. The tree often dies outright if it is girdled. This most often occurs in the early spring before other food sources are available. Local damage can be very serious affecting entire drainages. Individual or sow-cub pairs can cause severe problems, killing or damaging more than half the trees in an area as large as several acres. Bears can be trapped and removed. Oregon Department of Fish and Wildlife should be contacted if bears become a real problem.

There are no specific recommendations for management of animal damage except young plantations should be monitored for seedling survival or growth problems and replanted if necessary.

11. Seed Collection

Varieties of forest seedlings are usually available from forest nurseries. Douglas fir seedlings can be ordered from wild, woods-run seed; and now more commonly, genetically improved seed from controlled orchard pollination. The seed used by nurseries is catalogued by source, seed zone, and elevation. Sometimes suitable seed or seedlings are unavailable for minor species such as alder, spruce, hemlock, red cedar, and Port Orford cedar. Seedling collection costs depend on the harvesting method of the cones and the number of cones available. It would not be unusual to spend between $2,500 and $5,000 to collect 100 bushels of cones over the course of a week.

There may be opportunities to collect local seed on the watershed from minor species during years with a good cone crop. Cone collection can be accomplished manually by climbing or falling the tree to harvest cones. Cone collectors often use a mechanical shear suspended from a helicopter to cut the cone-bearing top out of cone-laden treetops. In either case, cones are stripped from branches, then sacked and labeled for transport to one of several processing facilities. On arrival, the cone sacks are catalogued and assigned a unique identifying lot code. The sacks are allowed to dry until the lot is ready to be processed. Processing includes tumbling the cones in a heated processor to open the cone and extract the seed. Collected seed is cleaned and tested for viability prior to cold storage at the processing facility. Most forest seed remains viable up to ten years when stored under proper conditions although seed viability does decrease each year. The landowner can retain possession of the seed and sell it to the processor or other landowners. The cold storage facility sends seed to a contract nursery where it is germinated and planted in the seedbed. Most seedlings used for reforestation are two years old: one year in the seedbed and another year in a transplant bed.

There are no recommendations for seed collection in the watershed at this time.

12. Thinning

Pre-commercial thinning is a silvicultural practice used in young stands. Stands are usually between 12 and 20 years old when thinned. The intent is to improve growth on future crop trees by eliminating competition. Brush and inferior trees are cut leaving the future crop tree with better availability to light, space, water and nutrients. There is very good opportunity to increase timber growth on the watershed utilizing pre-commercial thinning since early vegetation control with herbicides is unlikely. Care must be taken in selecting future crop trees and avoiding damage to the residual stand. Using experienced, licensed and insured contractors and inspecting the work is recommended as quality control. Pre-commercial thinning expenses vary depending on the brush and topography. Costs range from $150 to $350 per acre.

Commercial thinning is not practiced on forestlands near the coast, headlands, or river valleys exposed to hurricane-force winter storms. The larger local industrial timberland owners have abandoned their practice of commercial thinning. One such timberland owner did try commercial thinning on the coastal-frontal strip with poor results. Residual trees were up-rooted or broke off the following winter.

Commercial thinning should be used in stands that are just approaching commercial size. Commercial thinning is a silvicultural practice to maintain high growth rates on residual growing stock with an attempt to capture volume on smaller suppressed trees that would otherwise not survive to final harvest. There needs to be enough volume removed to make the thinning profitable yet leave a vigorous stand of future crop trees. A key element to successful commercial thinning is selecting stands that will respond to treatment. Stands on accessible topography with a crown structure (green limbs) capable of surviving the shock of a thinning operation are good candidates. The crown structure should average over 30% of the total tree height to provide sufficient photosynthetic basis to continue rapid growth. Stands not susceptible to windthrow are also a prerequisite for consideration. Care is needed in selecting stands, however, because the soils on the watershed are inherently sandy and may not hold newly exposed trees during intense winter storms. Commercial thinning is usually undertaken in the late summer or fall during very dry conditions for ground based operations. This also affords the best time to avoid damage to residual trees while they are not actively growing.

It is recommended to begin and maintain pre-commercial thinning on stands planted since 1989. Commercial thinning operations are not recommended in the watershed or should be undertaken on a limited trial basis.

13. Pruning

Pruning is a practice used in young stands to improve the quality of the bottom log. The practice is usually undertaken when the stand starts to experience natural pruning by virtue of a closed canopy, shading and killing lower leaves and limbs. The practice could start as early as fifteen years or so and undertaken in periodic stages or 'lifts' during the course of several years. The goal would be to cut dead limbs from the bole allowing the tree to over-grow a sheath of clear wood in successive growing seasons. The operation would logically be applied to stands targeted for relatively longer rotations and the opportunity to accumulate clear wood. Pruning is not practiced extensively because the benefit is typically less than the cost.

There are no recommendations for pruning in the watershed.

14. Minor Forest Products

There is a market for minor forest products and forest health can be maintained if operations are managed carefully. Minor forest products such as salal, cedar boughs, fern, and huckleberry can be sold to a pre-qualified contractor under an exclusive, long-term contract. This concept can be successful if the contractor endorses the landowner's sustainability strategy. The contractor submits and the landowner approves an operating plan noting dates and times of operation, areas of planned work, and estimates of product value and quantities to be removed. The contractor can be self-policing and also help keep trespassers out.

The Water Board requested bids and sold minor forest products most recently in 1995. However, significant Water Board effort was needed to monitor the contractor and some damage to cedar trees occurred. The revenue was modest for the time spent managing the project, and Water Board staff believed that costs outweighed the benefit. Therefore, due to relatively low revenue gain and management effort, and the resulting risk of fire, tree damage, and introduction of invasive species and erosion, it is recommended that minor forest products not be pursued at this time.

VI. Forest Certification

Forest certification has become a popular credential for well-managed forests since the early 1990s. This has been driven by the public's interest in purchasing forest products from landowners demonstrating responsible forest management practices with regard to sustainability and environmentally healthy watersheds. There are three certifying systems discussed herein: the American Tree Farm System (ATFS), the Forest Stewardship Council (FSC), and the Sustainable Forestry Initiative (SFI).

American Tree Farm System was established in 1941, the first such certification system in the United States, when it recognized the environmental benefits of protecting and managing timberlands in a sustainable manner. The American Forest Foundation, a nonprofit conservation and education organization sponsors the ATFS.

ATFS has established standards and guidelines for timberland owners to manage Certified Tree Farms. Under these standards and guidelines, owners must develop a management plan based on strict environmental standards and pass an inspection by an ATFS volunteer forester every five years. Tree farms certified by ATFS are less than 5,000 acres. Several woodlot owners in southwest Oregon own and manage Certified Tree Farms. ATFS has recently reviewed and rewritten their standards and guidelines based on discussions and input from FSC, SFI, and other certifying agencies. Certification by ATFS is at no charge.

Forest Stewardship Council and Sustainable Forestry Initiative are currently recognized as the primary certification systems by the forest industry in North America. Forest Stewardship Council is a nonprofit organization with standards and guidelines for certification. Over 100-million acres in the U.S. and Canada are currently certified by FSC. Environmental organizations including Greenpeace, National Wildlife Federation, The Nature Conservancy, Sierra Club, and World Wildlife Fund support FSC certification. FSC standards and guidelines have evolved to reflect regional timber management practices in the Pacific Northwest.

Sustainable Forestry Initiative is a nonprofit organization that certifies timberland to standards and guidelines with over 135-million acres in the U.S. and Canada. It is affiliated with the American Forest & Paper Association, an industry trade group.

Both FSC and SFI systems require a comprehensive forest management plan, independent inspections by third party auditors, and rigorous reporting requirements. Both organizations periodically review their standards and guidelines to reflect changing conditions and an ever-increasing knowledge base of forest management. Once enrolled, the timberlands, operations, and reporting are regularly audited. Initial certification is estimated to cost between $8,000 and $10,000 payable to an independent third party team of auditors. Renewal fees are owed when the timberland and practices are re-inspected every five years.

Leadership in Energy and Environmental Design (LEED), developed by the U.S. Green Building Council, provides standards for environmentally sustainable construction. LEED currently recognizes wood certified only by FSC as meeting the standards for their building requirements. LEED met with other certifying agencies in November 2009 to review standards and guidelines and investigate endorsing certifications other than FSC. The comment and review period was closed in December 2010 with LEED's partners deciding not to endorse products certified other than by FSC.

The Program for the Endorsement of Forest Certification (PEFC) is a nonprofit organization promoting sustainable forest management through independent third-party certification. It is the world's largest umbrella organization endorsing world-wide forest certification systems. PEFC has recognized and endorsed SFI standards and guidelines as meeting their requirements since 2005. PEFC has recognized and endorsed the ATFS as meeting their certification requirements since January 2009.

Loggers receive training through the Oregon Professional Loggers (OPL) program, which is a copyrighted professional accreditation program of the Associated Oregon Loggers, Inc. Associated Oregon Loggers OPL program has been accepted by the American Logger's Council as being compliant with its national Master Logger Certification (MLC) program. Loggers accredited under the OPL program satisfy the requirements of the MLC program. Loggers accredited under these programs receive training in Oregon Forest Practices Act rules and regulations, best management practices, safety training, employment law and basic business acumen. The OPL/MLC program has been adopted by the Oregon SFI State Implementation Committee as the formal training program to meet the SFI requirements for trained, professional loggers. It is common for local mills to want either the land or loggers to be certified.

Professional foresters become certified through the Society of American Foresters after showing competency on a national examination. Follow-up continuing education is a requirement for professional forestry recertification.

Appendix I shows material printed from the Internet for four forest certification organizations. Also included in the appendix is an excerpt from Comparison of Two Forest Certification Systems and Oregon Legal Requirements. Three staff members at Oregon State University, College of Forestry, prepared the report. The report compares FSC and SFI relative to the Oregon Forest Practices Act. Websites for the certification organizations are:

www.sfiprogram.org www.fscus.org www.treefarmsystem.org www.pefc.org

It is anticipated that the market for wood products from certified forests will continue to increase. Forest certification for the watershed is recommended. Costs for FSC or SFI certifications cannot be justified at this time, however. This Plan will meet the certification requirements for ATFS with no other costs involved; therefore, it is recommended that the City and Water Board pursue certification through ATFS.

VII. Wildlife Habitat

Protected wildlife habitats within the watershed were identified or developed, and are currently maintained and monitored as part of the permit requirements for the construction of the Upper Pony Creek Dam in 2000 and 2001. These habitats, or buffers zone, are in addition to buffers required as part of the Oregon Forest Practices Act. The habitats are generally between the Loop Road and Upper Pony Creek Reservoir and include a 100-foot (more or less) wide strip around Upper Pony Creek Reservoir, a separate area set-aside area for voles, several draws extending beyond the Loop Road, and an area extending south of the Loop Road that is seasonally inundated from the raised reservoir pool. A 300-foot wide wildlife corridor also provides connectivity between the Pony Creek and Joe Ney Watersheds. The Water Board contracts with a local consulting firm in monitoring these habitats.

In addition to the permit-required habitats above, the FPA addresses wildlife protection measures in planning and operations related to forest activities. Forest operations other than timber harvest require planning and subsequent notification to the Oregon Department of Forestry prior to beginning the operations. These operations include road construction and maintenance, manual and herbicide brush control, and prescribed burning. When operations are near sensitive resources such as water, nest sites, and unstable slopes, ODF requires written plans to address protection of the sensitive resource.

Five wetlands are identified in the watershed. One is constructed within a spoils area that was required as mitigation to the construction of the Upper Pony Creek Dam. Three wetlands at the south end of the reservoir were created by the raised pool of the Upper Pony Creek Reservoir. One wetland is on City property north of Merritt Lake.

Appendix J includes selected pages related to wildlife habitats taken from the Water Board's "Draft Revised: Wildlife Management and Monitoring Plan" (Sol Coast, 2008). Habitats, wetlands, and the wildlife corridor are shown more extensively within this document. A map identifying the buffer zone is also included in Appendix J.

Different wildlife species have different habitat requirements. The watershed has a diversity of forest habitats and consequently a diversity of wildlife species. Forest practice rules and the Upper Pony Creek Dam permit requirements assure a richness of habitat types:

- Mixture of successional stages
- Edge effect with a mosaic of harvest units
- Unfragmented types
- Edges with low contrast
- Variety of vegetation layers within harvest units. This is especially true since herbicides have not been used for site preparation and a variety of brush species tend to grow in conjunction with the seedlings.

Large trees and dead and diverse forest structure (horizontal and vertical; age/class/specie mix) collectively account for wildlife habitat requirements. The watershed has a diverse assortment of timber species.

Food, water, and shelter are the cornerstones of wildlife habitat. Maintaining forest diversity promotes invertebrate and vertebrate diversity, and encourages life cycle and forest functions and values. A diverse, productive forest can enhance wildlife habitat.

It is recommended that the current wildlife management and monitoring practices related to the Upper Pony Creek Dam permit requirements continue. No other recommendations related to wildlife habitats are proposed.

VIII. Watershed Security

The Joe Ney and Pony Creek Watersheds are closed to public entry. There are seven gated road accesses into the watersheds. The Water Board controls access through six gates; the Coquille Indian Tribe controls access across tribal land to the westerly boundary of the Pony Creek Watershed.

Water Board gates each have available space for up to eight padlocks. Currently, padlocks on the gates are assigned as follows:

1. Pony Creek main gate at Water Board Service Center: Water Board, Pacific Power, Trees Inc., and City of Coos Bay.
2. Pony Creek Clearwell site gate on Ocean Boulevard: Water Board, Pacific Power, Trees Inc., Northwest Natural, and City of Coos Bay.
3. Pony Creek Chlorine Contact Basin site gate on Ocean Boulevard: Water Board.
4. Joe Ney main gate on Libby Lane: Water Board, Menasha Forest Products, Pacific Power, and Trees Inc.
5. Pony Creek pipeline gate on Libby Lane: Water Board.
6. Joe Ney pipeline gate on Libby Lane: Water Board.
7. West access to shooting range from the Coquille Indian Tribe access off Spaw Lane.

Access across Coquille Indian Tribe property to the westerly boundary of the watershed is through two gates. The initial gate is at the entry of tribal land on Spaw Lane in the Barview area. The second gate is at the property boundary of the Pony Creek Watershed.

A firearms shooting range operated by Coos Bay Police Department is situated along the Loop Road on the westerly side of the Upper Pony Creek Reservoir. The range was constructed in 1994 as part of a City/Water Board agreement. The police occasionally patrol the Loop Road as a condition for the construction and use of the shooting range. Other police departments use the range upon invitation by Coos Bay Police. Access into the shooting range is also available through Coquille Indian Tribe property via two gates described above.

Water Board staff patrols the Loop Road at least weekly.

'No Trespass' signs are posted by the Water Board on Libby Lane along the watershed boundary. These signs are often stolen or otherwise removed and must be replaced occasionally.

Appendix K includes a map showing the gated road accesses and the City/Water Board site access agreement for the shooting range.

It is recommended that patrols of the Loop Road continue as currently practiced and as outlined in the site access agreement.

IX. Watershed Administration

Overall watershed management is the responsibility of the Coos Bay City Council and Water Board of Directors. Day-to-day management of the watershed is performed by Water Board staff. The watershed is integral to water operations. Water Board facilities are located in or contiguous to the watershed and Water Board personnel are in the watershed almost daily.

Watershed administration is currently governed by the Coos Bay – North Bend Water Board and City of Coos Bay Timber Management Program. This undated document is included as Appendix L. It outlines joint management of the watershed timberlands as administered by the Water Board. The two parties agree to revenue sharing, following a plan or plan amendments, annual review of the prior year operations, record keeping, proposed annual work plan, and City involvement in planning and operations management. The Timber Management Program was amended March 24, 1980 to address the construction of new roads into the watershed, primary and secondary road construction standards, how the roads will be paid for, use fees, and maintenance. The amendment also addresses financial management, record keeping and accountability of the Water Board on behalf of the City. The amendment is often referred to as the Road Use Agreement. The status of the repayment of the initial Loop Road construction costs to the Water Board, as of December 31, 2011, is shown in Table 5.

Table No. 5
City and Water Board Road-Use Financial Status

Description	Paid by Water Board	Paid by City of Coos Bay	Totals
Shared Timber Program – original fund balance			$345,573.00
Shared Timber Program – amounts paid as of 12/31/11	$62,955.80	$56,198.62	$119,154.42
Shared Timber Program – remaining balance as of 12/31/11			$226,418.58

Operations management between the City and Water Board has been very cooperative. Forestry projects have been planned and managed together. More recently, the land owner/manager with the larger stake in the shared operation assumes project management control with costs pro-rated between the two entities. Income and expenses from timber sales is likewise pro-rated based on harvested timber volume or on area. It is recommended that the City and Water Board continue this management relationship.

It is also recommended that watershed administration continue as outlined in this Plan, that the City and Water Board administer independent enterprise programs for their respective entity, and that this Plan:

- Supersede the undated Timber Management Program referenced herein, specifically paragraphs 1 through 7;
- Retain paragraph 8 of Addendum No. 1 to the Water Board – City Timber Management Program Agreement dated March 24, 1980;
- Supersede paragraph 9 of Addendum No. 1 to the Water Board – City Timber Management Program Agreement dated March 24, 1980.

Further, it is recommended that:

- The City and Water Board account for timber sale revenue and expenses separately on an enterprise basis. The City should retain all revenue and pay all expenses related to timber sales on City owned lands. Similarly, the Water Board should retain all revenue and pay all expenses related to timber sales on Water Board managed lands.

- Revenue and expenses associated with ancillary timber management activities outlined in this Plan, including but not limited to timber inventory, reforestation, salvage logging, land surveys, disease control, invasive species control, animal damage control, seed collection, commercial and pre-commercial thinning, pruning, and harvests of minor forest products should be shared on a pro-rated basis according to ownership/managed land area of the activity.

- Revenue and expenses associated with ancillary timber management activities or other operations outlined in this Plan, including but not limited to consultant assistance with watershed planning, fire protection, forest certification, wildlife habitat protection, Loop Road or primary watershed road improvements, and watershed security improvements should be shared on a pro-rated basis according to total ownership/managed land area of the watershed. The City owns 841 acres and the Water Board manages 1,900 acres within the Pony Creek Watershed, therefore the shared basis within the Pony Creek Watershed should be 31% City/69% Water Board. The City does not own any lands within the Joe Ney Watershed, therefore the shared basis within the Joe Ney Watershed should be 0% City/100% Water Board.

- Staff labor, vehicle and equipment costs, and material costs expended as part of watershed operations and maintenance not otherwise accounted for in this Plan should be fully borne by the entity performing the work. That is, in-house costs for either entity should be incidental to other costs described above and its separate accounting and billing should not be necessary.

The City of Coos Bay maintains a line item in the Major Capital fund dedicated to timber plantation and maintenance, and budgets accordingly for timber sale management expenses. Copies of past and current budgets are available on the City of Coos Bay's website www.coosbay.org. The Water Board currently budgets for such expenses each year on an as-needed basis.

It is recommended that the City and Water Board continue with or develop annual funding mechanisms to carry out watershed operations and maintenance activities. The funding amounts should align with a 5-Year Work Plan as described in Section X. The preferred source of funds to establish a reserve account is revenues from a current or prior timber harvest.

X. 5-Year Work Plan

It is recommended that the City of Coos Bay and Water Board develop, fund, and implement certain activities outlined in this Plan on an on-going basis. A 5-year planning period is appropriate. Appendix N outlines the activities and schedule of the recommended 5-Year Work Plan. It should be reviewed annually and updated accordingly.

Appendix A

DEVELOPMENT OF A MUNICIPAL WATER SYSTEM
FOR THE
COOS BAY – NORTH BEND AREA

DEVELOPMENT OP A MUNICIPAL WATER SYSTEM FOR THE COOS BAY - NORTH BEND AREA

BY; PHIL A. MATSON

Written for Southwestern Oregon Community College class on Local History taught by Gertrude Currier March, 1984

DEVELOPMENT OF A MUNICIPAL WATER SYSTEM FOR THE COOS BAY-NORTH BEND AREA

Prior to the late 1890's settlers in the Coos Bay and North Bend areas obtained their water from individual or shared .wells, creeks or springs. But as the settlements grew larger, concern for a reliable water supply to serve the needs of the populace became more pressing. It is interesting to note that the chief concern at that time was not primarily for pure water for human consumption but for a ready supply for fire-fighting purposes.

On April 28, 1897, the town of Marshfield (now Coos Bay) reached an agreement with an H. Orchard, Esq., for the construction and maintenance of a water system for fire protection and other purposes and granted him a franchise for a period of thirty years. Then on September 18, 1897, the Flanagan Estates and E. G. Flanagan and James Flanagan together with Mr. Orchard and a Mr. Doty and Mr. Proctor formed an Oregon Corporation known as the Marshfield Water Company. Two years later the franchise originally granted to Mr. Orchard was assigned to the Marshfield Water Company. During the year 1903 the Company adopted Supplementary Articles of Incorporation and broadened its powers to include production and distribution of electric power and authorizing its expansion into North Bend and surrounding vicinity. In the following year, 1904, the Company was successful in acquiring a franchise to serve the North Bend area.

Apparently the Company was faced with needs for capital investment beyond its capabilities, for on October 31, 1906, we find that it was reorganized and the name changed to Coos Bay Water Company. Principal stockholders were James H. Flanagan, Manager; J. W. Bennett, President; and R. F. Williams. The Company had a capitalization of $250,000 and assumed all of the outstanding liabilities of its predecessor, Marshfield Water Company. The three major stockholders were all prominent citizens associated with the early day Flanagan and Bennett Bank. At about this same time the Company acquired the water rights to

Pony Creek from the source to its mouth. These rights were acquired from the Flanagan Estates. Pony Creek remains to this day the major water source for the area.

During the period of 1911 and 1912 the system was plagued by problems of impure, muddy water, the threat of a typhoid epidemic and a continual problem of dead animals in the reservoir. Many of these problems continued for several years. In what was probably an attempt to find a solution to the problems, a Mr. Ray H. Corey of Portland was hired as General Manager and Engineer. Mr. Corey served the Board for many years and was the designer of the Corey fire hydrant, many of which are still in service on water systems throughout the West, including this area. In 1913 and 1914 the Railroad Commission, which had jurisdiction over privately-owned water utilities at that time much as the Public Utilities Commissioner has today, was requested to approve a rate increase for the utility. After a long and difficult proceeding, the increase was granted along with a franchise extension. During this same period, the Reynolds Development Company transferred the system it had constructed earlier in Bunker Hill to the Coos Bay Water Company.

In 1914 the Company took a significant long-range step and filed for water rights on the West Fort of the Millicoma River. Although this source has still not been developed, extensive studies have been done on it through the years and it is recognized by those knowledgeable about water sources to hold the best promise for a solution to the long-range needs of the area. It is capable of supplying 100 million gallons per day of excellent quality water, an amount sufficient to meet the needs of the area even if all the wildest dreams of industrial development were to occur.

Problems of the system were so numerous and so aggravating that in 1915 the City of North Bend attempted to purchase the system, but the effort failed. J. W. Bennett died in 1916, ending a period of some nineteen years in which he controlled the area's water supply system.

During the years 1917 and 1918 customer satisfaction in North Bend was at a low ebb with continuous requests for better service and increased line pressures. Probably in a partial attempt to placate these complaints, the Company opened an office in North Bend in 1917, but it apparently did little to alleviate the water problems. During this period of time the asking price for sale of the system had increased rapidly from $39,000 in 1908, to $56,000 in 1911 and $145,000 in 1913. This price remained stable until about 1922 when it was up to $315,000.

In 1919, three years after the death of Mr. Flanagan, the system was sold to J. W. Teal and Associates of Portland. The officers were J. N. Teal, President; J. E. Montgomery of Marshfield, Vice-president; T. T. Bennett of Marshfield, Secretary-Treasurer; and R. H. Corey as Manager.

The construction of a treatment plant was recommended in 1921 and was the subject of continuing discussion for the next five years. Finally, construction on the plant was started in 1925 and it was finished in May of 1926 at a cost of $75,000. This plant is still in use, having been added to and remodeled over the years, but is now overdue for replacement. Preliminary estimates of the replacement cost exceed two and one-half million dollars. In 1922 the City of Marshfield purchased two thousand acres in the Pony Creek Watershed for ten dollars per acre and also attempted to purchase the water system. Though not success ful in their bid to buy the water system, they retained the land and still own it at the present time though it is managed for watershed purposes by the Coos Bay-North Bend Water Board. In 1922 Mr. Walter S. Chiene was the bookkeeper for the water system. He spent a long career with the system, leaving in 1928 to work for Coos-Curry Telephone Company, but returning after about ten years to manage the system.

A new tunnel through the ridge west of Pony Slough and north of Blossom Gulch was built in 1924 to carry water from Pony Creek to the main reservoir on the level bench about six blocks west of the head of Central Avenue. This tunnel cost $2,500 and is still in use today after a thorough rebuilding in the early 1960's.

In 1924 the water company had tried to purchase some three hundred acres from the City of Marshfield in order to build a reservoir and dam, but the City refused to sell. However, in 1925 the City did agree to sell three hundred and twenty-one acres to the Company for this purpose. The selling price was $30 per acre. The year 1925 saw many changes in the water system as a new office and warehouse were built at 264 South Broadway in Marshfield at a cost of $12,000, and the long-sought filter plant was begun by the California Water Company of San Francisco and Seattle. This plant was finished in May of 1926 at a cost of $75,000 and gave the area its first fully-treated water supply. This, together with the increased supply from the Pony Creek Reservoir, was a welcome relief to the area for in 1924 the area experienced its driest year in a fifty-year span, causing a severe water shortage, and what little water was available was quite muddy and unpalatable. It was at this time that a search for a new, better source was begun with locations at Coos River, Golden Falls and Brewster Valley under consideration.

It is interesting to note at this point that the filter plant is still in use, although having been doubled in size about 1950, and is currently planned for replacement. In addition, although the search for a new source begun in 1924 has been going on almost continuously since that time, Pony Creek still remains the major source, although in 1967 it was augmented by a system utilizing water from the sand dunes north of the Bay.

In 1926 the Company began installing meters on the customer service lines, and by May of 1927 over 1,000 meters had been placed in service. This began a big departure in the billing methods as prior to this the monthly charge had been a flat fee calculated by the number of faucets, sinks and bath facilities in each building. With the installation of meters the customer found that he was charged for actual water used and that conservation could affect his bill.

The year 1928 found another change in name and ownership of the Company as it became the Oregon-Washington Water Service Company, a subsidiary of the Federal Water Service Corporation of

New York. Mr. J. W. Helwick was the District Manager located in Portland.

A large forest fire in 1927 threatened the sawmill which was located adjacent to the filter plant and also posed a threat to the plant itself. Efforts to save the facility were successful, but the area of the water facilities was again threatened by the widespread forest fires present in September, 1936 at the time the City of Bandon burned.

Operation of the system continued under the new company pretty much as usual until 1939 when it became the Peoples Water and Gas Company owned by the Coos Bay Water Corporation, a company organized in Delaware. During the next six years the citizens of the area became more and more dissatisfied with the service provided by the Company. Water quality was very poor, outages became frequent and lengthy due to poor maintenance policies, and water shortages and pressure problems were common. Mr. Walter Chiene, who had returned to manage the local operation, was aware of the problem and sympathetic to the complaints of the customers but was unable to do much to overcome them as the policy of the Company appeared to be to take as much profit out of the system as possible by neglecting maintenance and allowing no investment in new facilities. This callous attitude led to the ill-fated attempt to form a public agency,, the Coos Bay Water District, to take over the system in 1945. When this District attempted to sell bonds with which to buy out the private company, bonding attorneys discovered that the District had been formed illegally in that it encompassed two cities^ and this was a violation of existing state statutes. Thus, Coos Bay Water Corporation found itself again operating the system in 1946. This legal impediment was removed by the State Legislature at the request of the area's political leaders, and a charter amendment election was held in both cities of Coos Bay and North Bend. The successful election created the Coos Bay-North Bend Water Board as a city-owned water utility with policy set by a four-member board with two members appointed by each city. Board members serve four-year terms. The election also authorized the sale by both cities of $250,000 in bonds to finance purchase and

upgrading of the private company's system or to install a competing system if the purchase could not be agreed upon. On April 7, 1947, the initial meeting of the Board was held and the system taken over. Walter Chiene was retained as the first manager, serving until his retirement in 1950. Upon Mr. Chiene's retirement, the Board hired Mr. C. V. Signor as the new manager. Mr. Signor served for thirteen years until his retirement in 1963 and was responsible for initiating many of. the policies and practices still in use today. He immediately set forth on a program of upgrading and enlarging the system, beginning the efforts to solve the many problems of the past. A very conservative individual, Mr. Signor thoroughly studied each question before making a decision and insisted on all employees, as public servants, being above reproach. In .1951 Mr. C. W. Heckard was hired as the Engineer and filled that capacity until Mr. Signor's retirement, at which time he became Manager. He remained in that position until July 1, 1983, when he retired. In 1965**Mr. Philip A. Matson was employed as the Office Manager, later promoted to Assistant Manager and Finance Director, and then served as Interim Manager from July 1, 1983, until November 4, 1983, when he was named as the fourth Manager in the history of the Board.

This completes the attempt to record the history of the development of the municipal water service in the Bay Area. The period from the founding of the Coos Bay-North Bend Water Board to the present will be the subject of a continuation of this history at a later date.

Bibliography;

All data contained herein is from the files of the Coos Bay-North Bend Water Board.

Appendix B

TIMBER SALE HISTORY

COOS BAY - NORTH BEND WATER BOARD & CITY OF COOS BAY

TIMBER SALE HISTORY

January 19, 2012

	TIMBER VOLUME			TIMBER REVENUE			LOOP ROAD LOAN REPAYMENT			TIMBER PROGRAM LOOP ROAD MAINTENANCE COST (CALENDAR YEAR ANNUAL)		
TIMBER SALE/ YEAR	**TOTAL VOL, MBF**	WB VOL, MBF	CITY VOL, MBF	**TOTAL REVENUE, $**	WB REVENUE, $	CITY REVENUE, $	**TOTAL REPAYMENT, $**	WB REPAYMENT, $	CITY REPAYMENT, $	**TOTAL TIMBER PROGRAM COST, $**	WB COST, $	CITY COST, $
	PULP WOOD MEASURED BY TON IS CONVERTED TO MBF AT 11 TONS/MBF						INITIAL LOOP ROAD CONSTRUCTION COST IS $345,573			TIMBER PROGRAM MAINTENANCE COST IS 2/3 OF TOTAL MAINTENANCE COST		
							LOAN REPAYMENT RATE IS $6.00 PER MBF					
1980	**2,124.00**	1,347.00	777.00	**$ 129,237.00**	$ 84,651.00	$ 44,586.00	**$ 12,742.00**	$ 8,080.00	$ 4,662.00	**$ 5,782.00**	$ 4,372.00	$ 1,410.00
1981	**2,176.00**	1,029.00	1,147.00	**146,329.00**	84,605.00	61,724.00	**13,058.00**	6,173.00	6,885.00	**6,222.00**	4,035.00	2,187.00
1982	**3,100.00**	823.00	2,277.00	**59,193.00**	20,593.00	38,600.00	**18,598.00**	4,938.00	13,660.00	**5,295.00**	2,702.00	2,593.00
1983	**80.00**	80.00	-	**1,322.00**	(474.00)	1,796.00	**274.00**	1,066.00	(792.00)	**1,974.00**	1,974.00	-
1988	**105.00**	105.00	-	**14,532.00**	14,532.00	-	**627.00**	627.00	-	**-**	-	-
1989/1990	**782.00**	-	782.00	**163,298.00**	-	163,298.00	**4,694.00**	-	4,694.00	**3,622.00**	1,297.00	2,325.00
1992	**1,297.00**	337.00	960.00	**322,606.00**	83,878.00	238,728.00	**7,784.00**	2,024.00	5,760.00	**-**	-	-
1993 (2 sales)	**577.00**	542.00	35.00	**319,513.00**	300,342.00	19,171.00	**3,460.00**	3,252.00	208.00	**1,211.00**	1,138.00	73.00
	413.00	-	413.00	**175,554.00**	-	175,554.00	**2,480.00**	-	2,480.00	**-**	-	-
1994	**799.00**	136.00	663.00	**517,742.00**	94,625.00	423,117.00	**4,796.00**	816.00	3,980.00	**2,179.00**	973.00	1,206.00
	-	-	-	**594.00**	594.00	-						
1997/1998	**1,437.00**	3.00	1,434.00	**657,654.00**	1,800.00	655,854.00	$0. Did not haul from Loop Road		-	$0. Did not haul from Loop Road		
	6.00	-	6.00	**3,263.00**	-	3,263.00	$0. Did not haul from Loop Road		-	$0. Did not haul from Loop Road		
2000	**1,906.16**	782.66	1,123.50	**967,811.00**	409,899.00	557,912.00	**11,437.00**	4,696.00	6,741.00	**1,408.00**	558.00	850.00
	69.51	-	69.51	**30,280.00**	-	30,280.00	**417.00**	-	417.00	**-**	-	-
2001	**407.15**	400.35	6.80	**120,022.56**	117,700.81	2,321.75	**2,442.90**	2,402.10	40.80	**9,742.00**	9,547.16	194.84
2001/2002 Helicopter Logging	**275.26**	244.26	31.00	**21,746.03**	18,913.03	2,833.00	**1,651.56**	1,465.56	186.00	**7,742.00**	6,890.38	851.62
2004	**1,077.00**	1,077.00	-	**286,026.49**	286,026.49	-	**6,462.00**	6,462.00	-	**-**	-	-
		Estimated total from cruise										
2006 K-Mart	**1,403.00**	38.00	1,365.00	**595,811.00**	15,836.67	579,974.33	$0. Did not haul from Loop Road			$0. Did not haul from Loop Road		
2006 Joe Ney	**502.00**	502.00	-	**152,024.46**	152,024.46	-	$0. Did not haul from Loop Road			$0. Did not haul from Loop Road		
2010	**2,339.00**	-	2,339.00	**735,419.75**	-	735,419.75	**14,034.00**	-	14,034.00	**4,090.00**	-	4,090.00
2011	**2,366.16**	2,366.16	-	**774,653.97**	774,653.97	-	**14,196.96**	14,196.96	-	**6,986.60**	6,986.60	-
TOTAL	**23,241.24**	**9,812.43**	**13,428.81**	**$ 6,194,632.26**	**$ 2,460,200.43**	**$ 3,734,431.83**	**$ 119,154.42**	**$ 56,198.62**	**$ 62,955.80**	**$ 56,253.60**	**$ 40,473.14**	**$ 15,780.46**
							$ 226,418.58	**Remaining Loan Balance**				

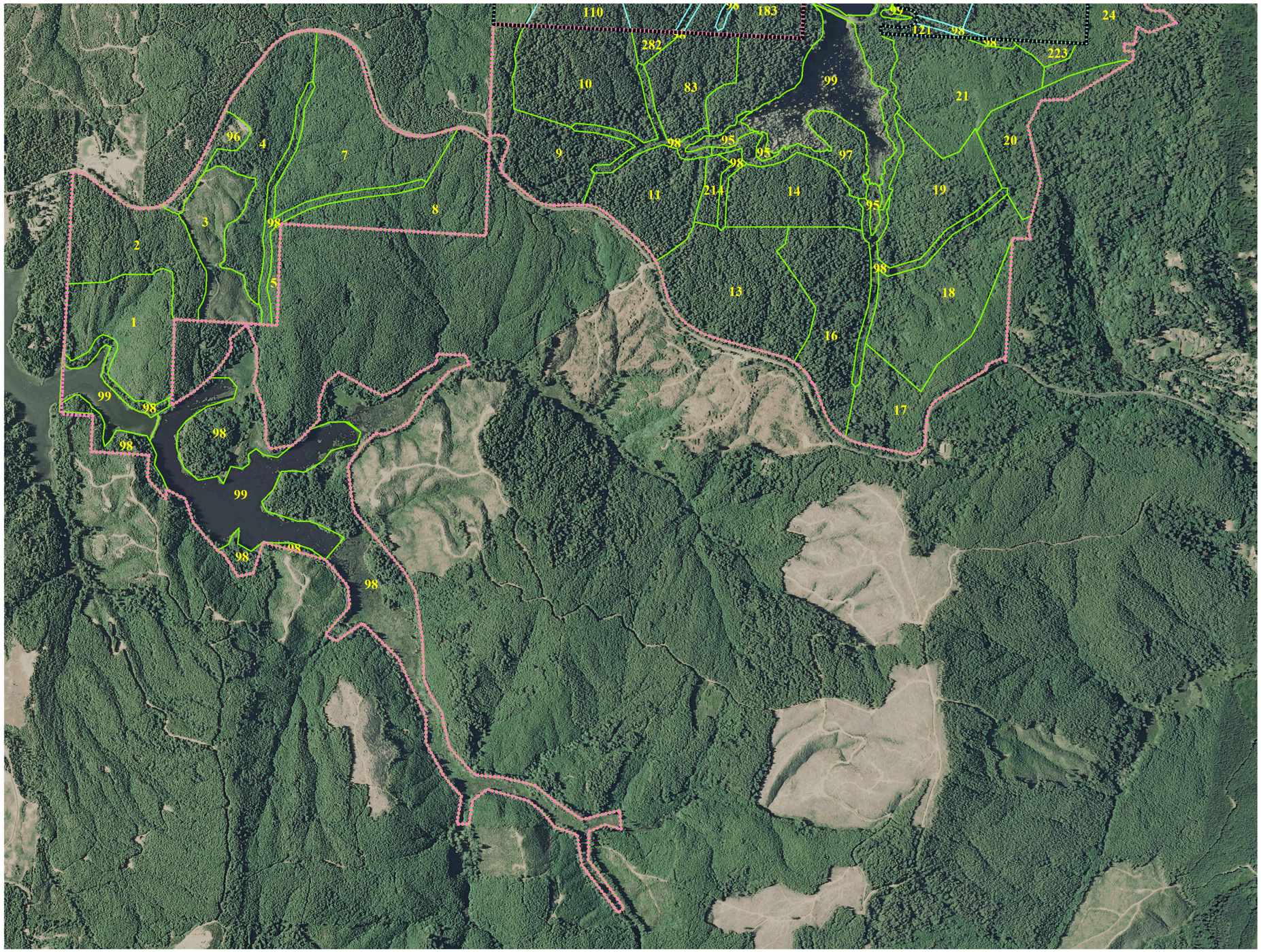
Appendix C

MAPS OF TIMBER UNITS:
PONY CREEK WATERSHED NORTH
PONY CREEK WATERSHED SOUTH

TABULATED SUMMARY OF UNITS C-1 THROUGH C-5

Pony Creek Watershed South

Stuntzner Engineering & Forestry, LLC
PO BOX 118 ~ 705 SOUTH 4TH STREET
COOS BAY, OREGON 97420
541-267-2872



All Ownership(by OWNERSHIP)
- 'CB'
- 'CBNBWB'

HARVEST UNITS(by OWNER)
- 'CB'
- 'WB'
- ORTHO_1-1_1N_S_OR011_2011_1.SID

N
W E
S

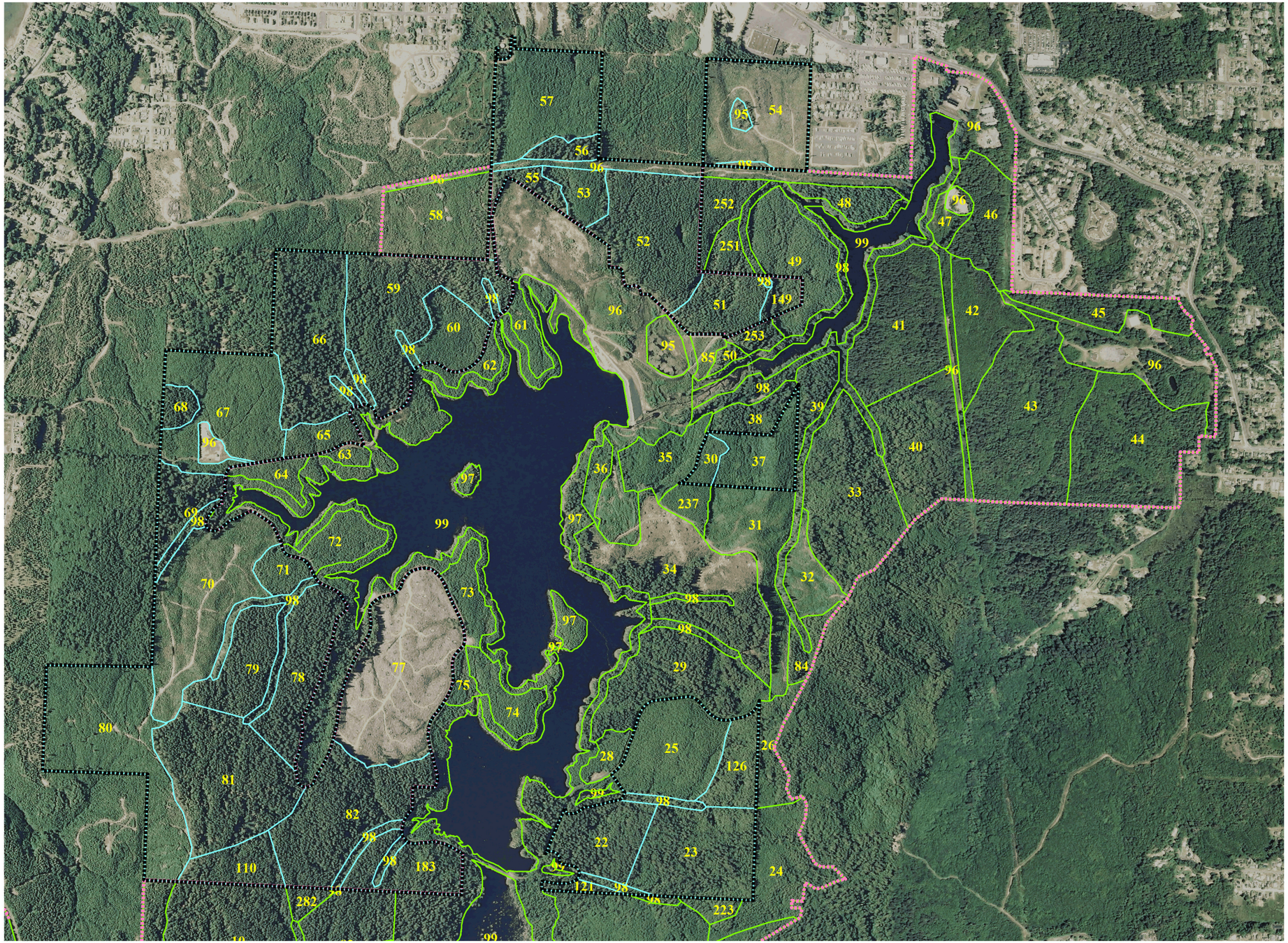
Scale = 1 : 1320.00 (In : Feet)

1320 0 1320 2640 3960 5280 6600 7920 9240 Feet

02-01-2012

Pony Creek Watershed North

Stuntzner Engineering & Forestry, LLC
PO BOX 118 – 705 SOUTH 4TH STREET
COOS BAY, OREGON 97420
541-267-2872



All Ownership(by OWNERSHIP)
- 'CB'
- 'CBNBWB'

HARVEST UNITS(by OWNER)
- 'CB'
- 'WB'
- ORTHO_1-1_1N_S_OR011_2011_1.SID

1320 0 1320 2640 3960 5280 6600 7920 9240 Feet

Scale = 1 : 1320.00 (In : Feet)

N W E S

01-31-2012

STAND_NO	DESCRIPTION	LOCATION	NET_ACREAGE	CB	WB
1	Sapling	JN	39.6		39.6
2	Sapling	JN	41.4		41.4
3	Plantation	JN	26.1		26.1
4	Sapling	JN	42.6		42.6
5	Sapling	JN	3.2		3.2
6	None				
7	Sapling	JN	55.6		55.6
8	Plantation	JN	35.3		35.3
9	Merchantable	PC	37.9		37.9
10	Merchantable	PC	46.0		46.0
11	Merchantable	PC	31.9		31.9
12	None				0.0
13	Merchantable	PC	55.6		55.6
14	Merchantable	PC	30.1		30.1
15	None				
16	Merchantable	PC	42.7		42.7
17	Merchantable	PC	38.7		38.7
18	Sapling	PC	53.7		53.7
19	Sapling	PC	37.2		37.2
20	Sapling	PC	23.0		23.0
21	Sapling	PC	45.5		45.5
22	Merchantable	PC	21.5	21.5	
23	Merchantable	PC	36.5	36.5	
24	Merchantable	PC	26.6		26.6
25	Plantation	PC	30.5	30.5	
26	Merchantable	PC	11.3		11.3
26	None				
28	Plantation	PC	5.7		5.7
29	Merchantable	PC	37.2		37.2
30	Plantation	PC	4.0	4.0	
31	Plantation	PC	29.0		29.0
32	Plantation	PC	11.3		11.3
33	Merchantable	PC	46.4		46.4
34	Plantation	PC	53.8		53.8
35	Plantation	PC	14.8		14.8
36	Sapliing	PC	4.8		4.8
37	Plantation	PC	17.2	17.2	
38	Merchantable	PC	8.7		8.7
39	Merchantable	PC	8.6		8.6
40	Merchantable	PC	34.7		34.7
41	Merchantable	PC	39.8		39.8
42	Sapling	PC	21.5		21.5
43	Sapling	PC	60.5		60.5

STAND_NO	DESCRIPTION	LOCATION	NET_ACREAGE	CB	WB
44	Sapling	PC	49.6		49.6
45	Merchantable	PC	15.5		15.5
46	Merchantable	PC	21.3		21.3
47	Sapling	PC	3.9		3.9
48	Merchantable	PC	8.9		8.9
49	Plantation	PC	27.6		27.6
50	Merchantable	PC	2.0		2.0
51	Merchantable	PC	15.9	15.9	
52	Merchantable	PC	40.9	40.9	
53	Sapling	PC	9.2	9.2	
54	Plantation	PC	37.1	37.1	
55	Merchantable	PC	6.9	6.9	
56	Merchantable	PC	5.2	5.2	
57	Plantation	PC	36.2	36.2	
58	Plantation	PC	28.7		28.7
59	Merchantable	PC	48.5	48.5	
60	Sapling	PC	14.8	14.8	
61	Plantation	PC	6.3		6.3
62	Sapling	PC	5.0		5.0
63	Sapling	PC	2.9		2.9
64	Sapling	PC	6.3		6.3
65	Sapling	PC	7.9	7.9	
66	Merchantable	PC	43.0	43.0	
67	Plantation	PC	41.0	41.0	
68	Merchantable	PC	4.7	4.7	
69	Merchantable	PC	12.6	12.6	
70	Plantation	PC	50.4	50.4	
71	Sapling	PC	6.9	6.9	
72	Sapling	PC	11.8		11.8
73	Plantation	PC	10.6		10.6
74	Plantation	PC	11.2		11.2
75	Plantation	PC	4.0		4.0
76	None				
77	Plantation	PC	60.3	60.3	
78	Merchantable	PC	26.4	26.4	
79	Merchantable	PC	21.0	21.0	
80	Plantation	PC	56.0	56.0	
81	Merchantable	PC	51.7	51.7	
82	Merchantable	PC	43.9	43.9	
83	Merchantable	PC	25.4		25.4
84	Merchantable	PC	6.2		6.2
85	Plantation	PC	3.5		3.5
95	WETLAND	PC	6.7		6.7

STAND_NO	DESCRIPTION	LOCATION	NET_ACREAGE	CB	WB
95	WETLAND	PC	3.3		3.3
95	WETLAND	PC	2.0		2.0
95	WETLAND	PC	1.7	1.7	
95	WETLAND	PC	1.1		1.1
96	SHOOTING RANGE	PC	3.3	3.3	
96	POWERLINE	PC	7.0	7.0	
96	WB COMPOUND	PC	38.4		38.4
96	SAND PIT	PC	2.2		2.2
96	CLEARWELL	PC	34.4		34.4
96	POWERLINE	PC	7.3		7.3
96	POWERLINE	PC	2.0		2.0
96	JOE NEY DUMP	JN	7.2		7.2
96	DAM SITE	PC	80.3		80.3
97	EIS BUFFER	PC	1.9		1.9
97	EIS BUFFER	PC	4.4		4.4
97	EIS BUFFER	PC	0.1		0.1
97	EIS BUFFER	PC	15.7		15.7
97	EIS BUFFER	PC	172.0		172.0
98	FPA BUFFER	PC	2.4	2.4	
98	FPA BUFFER	PC	1.9	1.9	
98	FPA BUFFER	PC	3.2	3.2	
98	FPA BUFFER	PC	1.1	1.1	
98	FPA BUFFER	PC	1.8	1.8	
98	FPA BUFFER	PC	1.2	1.2	
98	FPA BUFFER	PC	0.4	0.4	
98	FPA BUFFER	PC	2.8		2.8
98	FPA BUFFER	PC	1.1		1.1
98	FPA BUFFER	JN	12.4		12.4
98	FPA BUFFER	PC	9.1		9.1
98	FPA BUFFER	PC	3.0		3.0
98	FPA BUFFER	PC	11.4		11.4
98	FPA BUFFER	PC	1.7		1.7
98	FPA BUFFER	PC	1.6	1.6	
98	FPA BUFFER	PC	2.9	2.9	
98	FPA BUFFER	PC	0.1		0.1
98	FPA BUFFER	PC	8.6	8.6	
98	FPA BUFFER	PC	1.0	1.0	
98	FPA BUFFER	PC	1.2	1.2	
98	FPA BUFFER	PC	16.4		16.4
98	FPA BUFFER	PC	27.7		27.7
98	FPA BUFFER	JN	5.5		5.5
98	FPA BUFFER	JN	28.4		28.4
98	FPA BUFFER	JN	92.5		92.5

STAND_NO	DESCRIPTION	LOCATION	NET_ACREAGE	CB	WB
98	FPA BUFFER	JN	1.0		1.0
98	FPA BUFFER	JN	3.5		3.5
98	FPA BUFFER	JN	8.4		8.4
99	MERRITT LAKE	PC	30.4		30.4
99	UPCR	PC	0.9		0.9
99	UPCR	PC	0.6		0.6
99	UPCR	PC	39.6		39.6
99	UPCR	PC	237.9		237.9
99	RESERVOIR	JN	51.1		51.1
99	ESTUARY	JN	12.7		12.7
110	Merchantable	PC	12.8	12.8	
121	Sapling	PC	2.3	2.3	
126	Merchantable	PC	13.2	13.2	
149	Plantation	PC	4.6	4.6	
183	Merchantable	PC	18.6	18.6	
214	Merchantable	PC	5.0		5.0
223	Merchantable	PC	3.6		3.6
237	Sapling	PC	5.8		5.8
251	Merchantable	PC	5.9		5.9
252	Merchantable	PC	9.8		9.8
253	Merchantable	PC	4.2		4.2
282	Merchantable	PC	3.5		3.5
TOTALS			3,207.8	841.0	2,366.7

Appendix C-2
Pool of Merchantable Units

STAND_NO	Volume MBF		Acres	
	CB	WB	CB	WB
9	-	910		37.9
10	-	1,105		46.0
11	-	764		31.9
13	-	1,334		55.6
14	-	724		30.1
16	-	1,026		42.7
17	-	928		38.7
22	753	-	21.5	
23	767	-	36.5	
24	-	559		26.6
26	-	238		11.3
29	-	1,302		37.2
33	-	1,624		46.4
38	-	305		8.7
39	-	303		8.6
40	-	1,214		34.7
41	-	1,394		39.8
45	-	544		15.5
46	-	745		21.3
48	-	311		8.9
50	-	71		2.0
51	715	-	15.9	
52	1,840	-	40.9	
55	206	-	6.9	
56	156	-	5.2	
59	1,359	-	48.5	
66	1,205	-	43.0	
68	112	-	4.7	
69	251	-	12.6	
78	924	-	26.4	
79	736	-	21.0	
81	1,811	-	51.7	
82	1,535	-	43.9	
83	-	888		25.4
84	-	93		6.2
110	308	-	12.8	
126	276	-	13.2	
183	652	-	18.6	
214	-	120		5.0
223	-	76		3.6

Appendix C-2
Pool of Merchantable Units

STAND_NO	Volume MBF		Acres	
	CB	WB	CB	WB
251	-	265		5.9
252	-	441		9.8
253	-	187		4.2
282	-	123		3.5
TOTALS	13,606	17,592	423.3	607.6

Appendix C-3
Plantation Stands

STAND_NO	NET_ACREAGE	Birthday	CB	WB
3	26.1	2005		26.1
8	35.3	1990		35.3
25	30.5	1992	30.5	
28	5.7	1994		5.7
30	4.0	1990	4.0	
31	29.0	2005		29.0
32	11.3	2005		11.3
34	53.8	1985		53.8
35	14.8	1990		14.8
37	17.2	1989	17.2	
49	27.6	1994		27.6
54	37.1	2007	37.1	
57	36.2	1996	36.2	
58	28.7	1991		28.7
61	6.3	1994		6.3
67	41.0	1994	41.0	
70	50.4	2004	50.4	
73	10.6	1994		10.6
74	11.2	1992		11.2
75	4.0	1995		4.0
77	60.3	2012	60.3	
80	56.0	1993	56.0	
85	3.5	1995		3.5
149	4.6	1994	4.6	
TOTALS	605.3		337.4	267.9

Appendix C-4
Sapling Stands

STAND_NO	NET_ACREAGE	Birthday	CB	WB
36	4.8	1983		4.8
1	39.6	1976		39.6
2	41.4	1984		41.4
4	42.6	1983		42.6
5	3.2	1980		3.2
7	55.6	1977		55.6
18	53.7	1965		53.7
19	37.2	1960		37.2
20	23.0	1960		23.0
21	45.5	1970		45.5
42	21.5	1970		21.5
43	60.5	1970		60.5
44	49.6	1970		49.6
47	3.9	1970		3.9
53	9.2	1984	9.2	
60	14.8	1986	14.8	
62	5.0	1985		5.0
63	2.9	1980		2.9
64	6.3	1989		6.3
65	7.9	1994	7.9	
71	6.9	1980	6.9	
72	11.8	1989		11.8
121	2.3	1960	2.3	
237	5.8	1989		5.8
TOTALS	554.9		41.1	513.8

STAND_NO	DESCRIPTION	NET_ACREAGE	CB	WB
95	WETLAND	6.7		6.7
95	WETLAND	3.3		3.3
95	WETLAND	2.0		2.0
95	WETLAND	1.7	1.7	
95	WETLAND	1.1		1.1
	WETLAND Total	14.8	1.7	13.1
96	OTHER - SHOOTING RANGE	3.3	3.3	
96	OTHER - POWERLINE	7.0	7.0	
96	OTHER - WB COMPOUND	38.4		38.4
96	OTHER - SAND PIT	2.2		2.2
96	OTHER - CLEARWELL	34.4		34.4
96	OTHER - POWERLINE	7.3		7.3
96	OTHER - POWERLINE	2.0		2.0
96	OTHER - JOE NEY DUMP	7.2		7.2
96	OTHER - JOE NEY ESTUARY	12.7		12.7
96	OTHER - UPC DAM SITE	80.3		80.3
	OTHER Total	194.8	10.4	184.4
97	EIS BUFFER	1.9		1.9
97	EIS BUFFER	4.4		4.4
97	EIS BUFFER	0.1		0.1
97	EIS BUFFER	15.7		15.7
97	EIS BUFFER	172.0		172.0
	EIS BUFFER Total	194.1	0.0	194.1
98	FPA BUFFER	2.4	2.4	
98	FPA BUFFER	1.9	1.9	
98	FPA BUFFER	3.2	3.2	
98	FPA BUFFER	1.1	1.1	
98	FPA BUFFER	1.8	1.8	
98	FPA BUFFER	1.2	1.2	
98	FPA BUFFER	0.4	0.4	
98	FPA BUFFER	2.8		2.8
98	FPA BUFFER	1.1		1.1
98	FPA BUFFER	12.4		12.4
98	FPA BUFFER	9.1		9.1
98	FPA BUFFER	3.0		3.0
98	FPA BUFFER	11.4		11.4
98	FPA BUFFER	1.7		1.7
98	FPA BUFFER	1.6	1.6	
98	FPA BUFFER	2.9	2.9	
98	FPA BUFFER	0.1		0.1

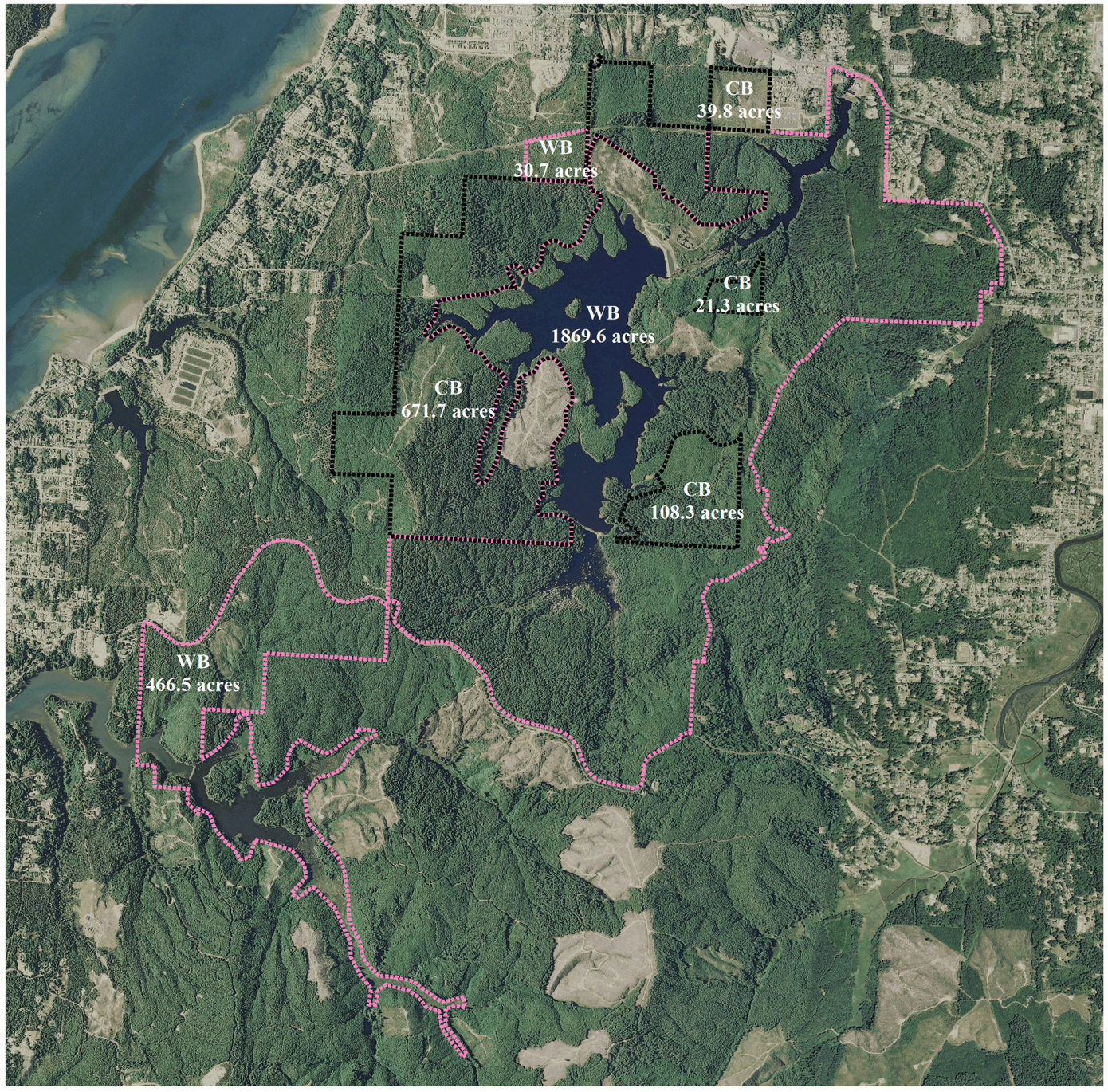
STAND_NO	DESCRIPTION	NET_ACREAGE	CB	WB
98	FPA BUFFER	8.6	8.6	
98	FPA BUFFER	1.0	1.0	
98	FPA BUFFER	1.2	1.2	
98	FPA BUFFER	16.4		16.4
98	FPA BUFFER	27.7		27.7
98	FPA BUFFER	5.5		5.5
98	FPA BUFFER	28.4		28.4
98	FPA BUFFER	92.5		92.5
98	FPA BUFFER	1.0		1.0
98	FPA BUFFER	3.5		3.5
98	FPA BUFFER	8.4		8.4
	FPA BUFFER Total	252.4	27.2	225.2
99	WATER - MERRITT LAKE	30.4		30.4
99	WATER - UPC RESERVOIR	0.9		0.9
99	WATER - UPC RESERVOIR	0.6		0.6
99	WATER - UPC RESERVOIR	39.6		39.6
99	WATER - UPC RESERVOIR	237.9		237.9
99	WATER - JOE NEY RESERVOIR	51.1		51.1
	WATER Total	360.5	0.0	360.5
TOTALS		**1,016.6**	**39.3**	**977.3**

Appendix D

OWNERSHIP MAP
AND
NON-FOREST AND BUFFERS MAP

Pony Creek Watershed Ownership

Stuntzner Engineering & Forestry, LLC
PO BOX 118 ~ 705 SOUTH 4TH STREET
COOS BAY, OREGON 97420
541-267-2872



All Ownership(by OWNERSHIP)

'CB'

'CBNBWB'

ORTHO_1-1_1N_S_OR011_2011_1.SID

N
W
E
S

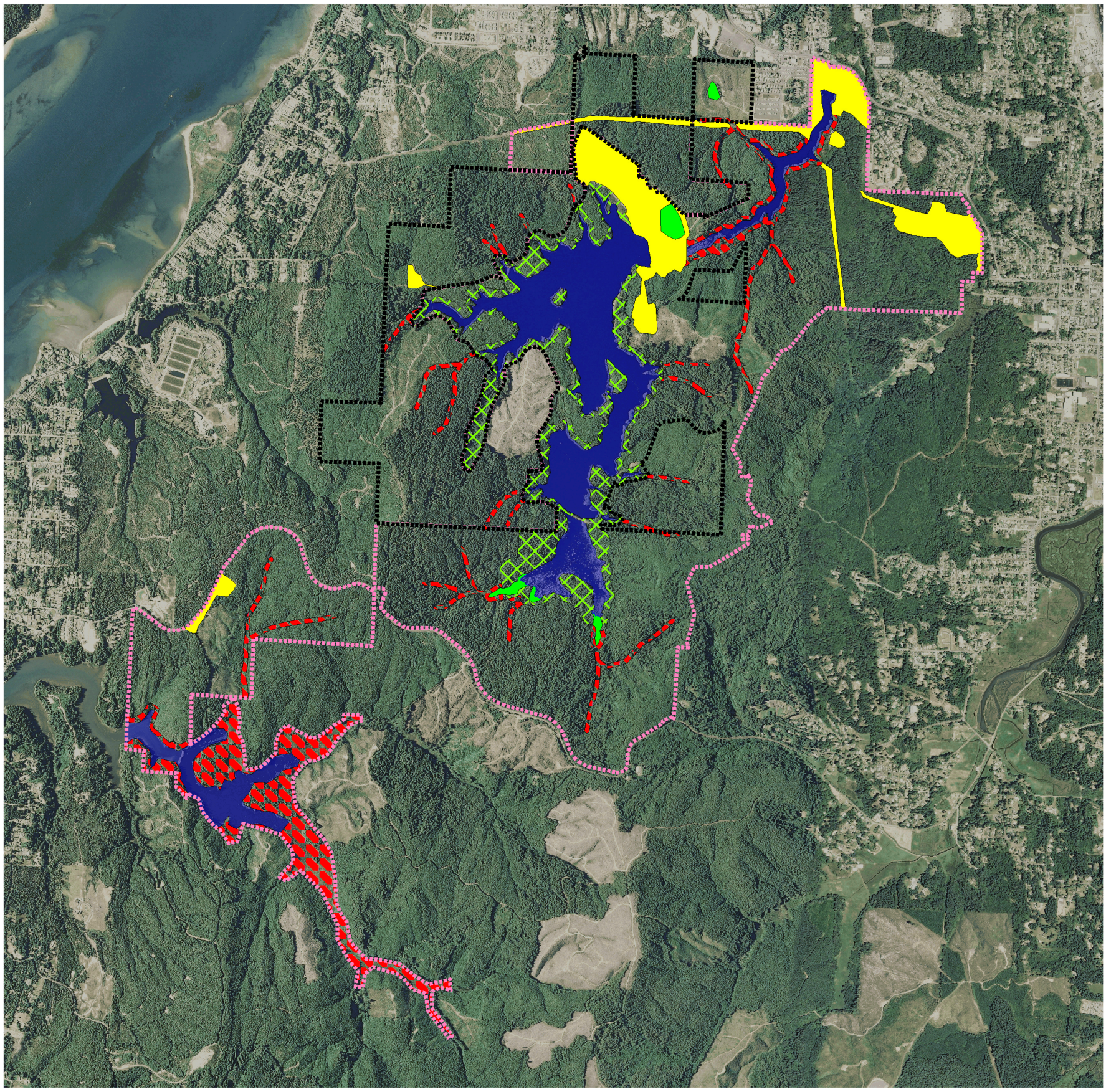
2640 0 2640 5280 7920 10560 13200 Feet

Scale = 1 : 2640.00 (In : Feet)

02-01-2012

Stuntzner Engineering & Forestry, LLC
PO BOX 118 ~ 705 SOUTH 4TH STREET
COOS BAY, OREGON 97420
541-267-2872

Pony Creek Watershed
Non Forest and Buffers



All Ownership(by OWNERSHIP)

- 'CB'
- 'CBNBWB'
- EIS_Buffer
- Forest_Prac. Buffers
- Other
- Water
- Wetland
- ORTHO_1-1_1N_S_OR011_2011_1.SID

N
W E
S

Scale = 1 : 2640.00 (In : Feet)

2640 0 2640 5280 7920 Feet

01-31-2012

Appendix E

FINAL PARTITION PLAT

P 2005 #11
CAB C-438

FINAL PARTITION PLAT

COOS BAY/NORTH BEND WATER BOARD LAND TRADE

LOCATED IN T.25S., R.13W., SEC.28,29,31,32,33
COOS COUNTY OREGON.

PREPARED FOR:

CITY OF COOS BAY – A MUNICIPAL CORPORATION
500 CENTRAL AVENUE
COOS BAY, OREGON 97420

CITY OF NORTH BEND – A MUNICIPAL CORPORATION
835 CALIFORNIA STREET
NORTH BEND, OREGON 97459

COOS BAY/NORTH BEND WATER BOARD
2305 OCEAN BLVD.
COOS BAY, OREGON 97420

PREPARED BY:

STUNTZNER ENGINEERING AND FORESTRY L.L.C.
705 S. 4TH STREET/P.O.BOX 118
COOS BAY, OREGON 97420

INDEX **SUBJECT**

PAGE 1: COVER SHEET
PAGE 2: PARTITION MAP
PAGE 3: SIGNATURE PAGE
PAGE 4: LINE TABLES – PARCEL #1
PAGE 5: LINE TABLES – PARCEL #2 (1 of 2)
PAGE 6: LINE TABLES – PARCEL #2 (2 of 2)
PAGE 7: LINE TABLES – PARCEL #3

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1990
RALPH E. DUNHAM
2443
EXPIRES 12/31/05

I DO HEREBY CERTIFY THAT THIS IS AN EXACT AND TRUE COPY OF THE ORIGINAL

Stuntzner Engineering & Forestry, L.L.C.
ENGINEERING • LAND SURVEYING • FORESTRY
PLANNING • WATER RIGHTS
705 South 4th St.
Post Office Box 118
Coos Bay, Oregon 97420
Phone: (541) 267-2872
Fax: (541) 267-0588

Drawn By:	Elvin Stingley	Date:	April 06, 2005
Checked By:	JLE	Drawing No.:	CBNBWB-Final
Designed By:	CDH	Revised:	
Job Name:	CBNB-Waterboard Land Trade	Sheet 1 of 7	

P 2005 #11

CAB C-438

Stuntzner Engineering & Forestry, L.L.C.

ENGINEERING • LAND SURVEYING • FORESTRY
PLANNING • WATER RIGHTS

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Coos Bay, Oregon 97420

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Checked By:	JLE	Drawing No.:	CBNBWB-Final
Designed By:	CDH	Revised:	
Job Name:	CBNB-Waterboard Land Trade	Sheet 2 of 7	

FINAL PARTITION PLAT

LOCATED IN T.25S., R.13W., SEC.28,29,31,32,33
COOS COUNTY OREGON.

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1990
RALPH E. DUNHAM
2443
EXPIRES 12/31/05

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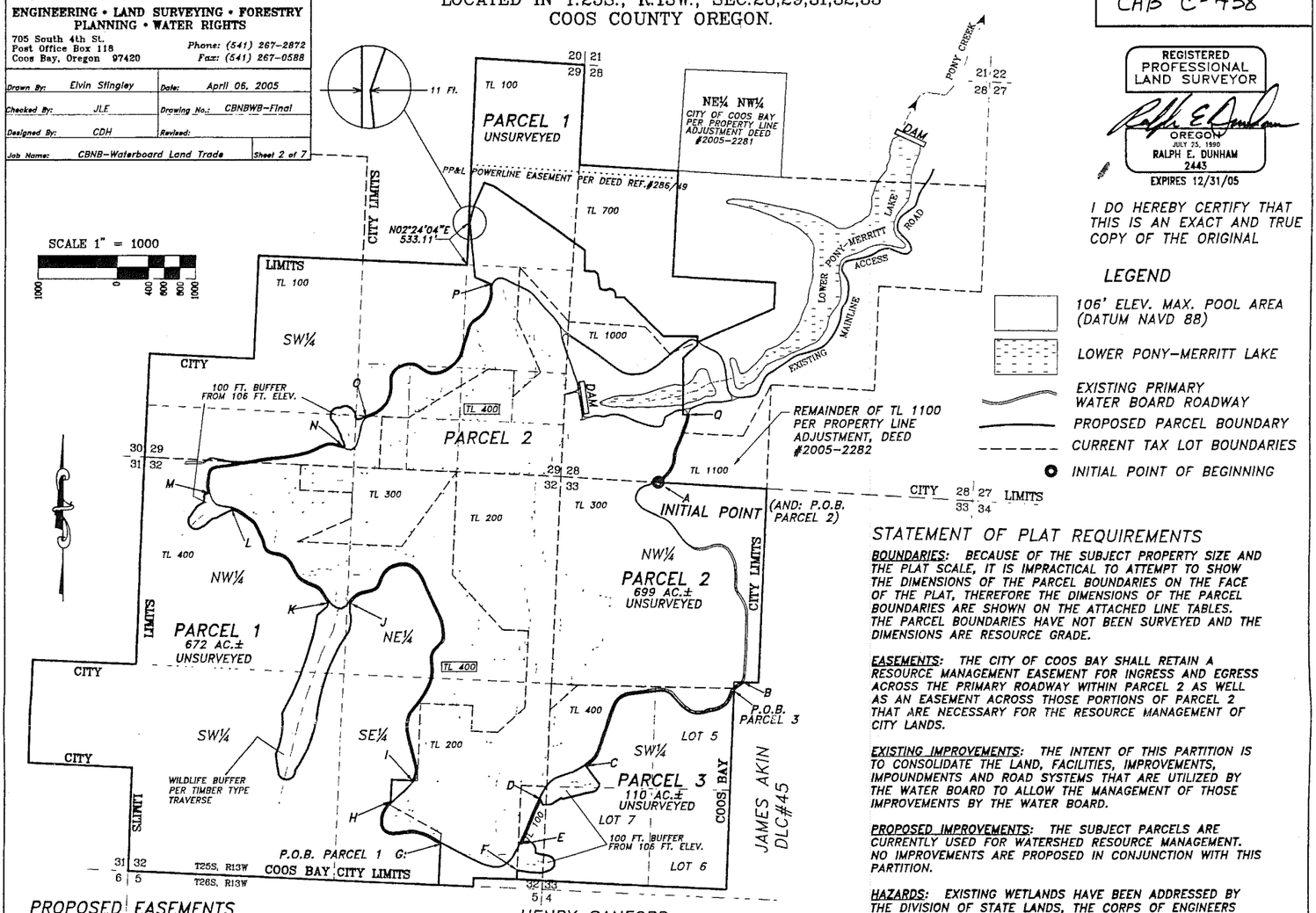

LEGEND

- 106' ELEV. MAX. POOL AREA (DATUM NAVD 88)
- LOWER PONY-MERRITT LAKE
- EXISTING PRIMARY WATER BOARD ROADWAY
- PROPOSED PARCEL BOUNDARY
- CURRENT TAX LOT BOUNDARIES
- INITIAL POINT OF BEGINNING

STATEMENT OF PLAT REQUIREMENTS

BOUNDARIES: BECAUSE OF THE SUBJECT PROPERTY SIZE AND THE PLAT SCALE, IT IS IMPRACTICAL TO ATTEMPT TO SHOW THE DIMENSIONS OF THE PARCEL BOUNDARIES ON THE FACE OF THE PLAT, THEREFORE THE DIMENSIONS OF THE PARCEL BOUNDARIES ARE SHOWN ON THE ATTACHED LINE TABLES. THE PARCEL BOUNDARIES HAVE NOT BEEN SURVEYED AND THE DIMENSIONS ARE RESOURCE GRADE.

EASEMENTS: THE CITY OF COOS BAY SHALL RETAIN A RESOURCE MANAGEMENT EASEMENT FOR INGRESS AND EGRESS ACROSS THE PRIMARY ROADWAY WITHIN PARCEL 2 AS WELL AS AN EASEMENT ACROSS THOSE PORTIONS OF PARCEL 2 THAT ARE NECESSARY FOR THE RESOURCE MANAGEMENT OF CITY LANDS.

EXISTING IMPROVEMENTS: THE INTENT OF THIS PARTITION IS TO CONSOLIDATE THE LAND, FACILITIES, IMPROVEMENTS, IMPOUNDMENTS AND ROAD SYSTEMS THAT ARE UTILIZED BY THE WATER BOARD TO ALLOW THE MANAGEMENT OF THOSE IMPROVEMENTS BY THE WATER BOARD.

PROPOSED IMPROVEMENTS: THE SUBJECT PARCELS ARE CURRENTLY USED FOR WATERSHED RESOURCE MANAGEMENT. NO IMPROVEMENTS ARE PROPOSED IN CONJUNCTION WITH THIS PARTITION.

HAZARDS: EXISTING WETLANDS HAVE BEEN ADDRESSED BY THE DIVISION OF STATE LANDS, THE CORPS OF ENGINEERS AND THE OREGON DEPARTMENT OF FISH AND WILDLIFE DURING THE PROCESS FOR EXPANSION OF THE RESERVOIR. NO OTHER HAZARDS HAVE BEEN IDENTIFIED ON THE SUBJECT PROPERTY.

STREET DATA: NO STREETS ARE BEING CREATED IN CONJUNCTION WITH THIS PLAT.

SURVEY DATA: THIS IS A NON-SURVEYED PLAT. EXTERIOR BOUNDARIES DESCRIBED BY THE ATTACHED TABLES ARE RESOURCE GRADE ONLY.

MONUMENTATION: MONUMENTATION IS NOT REQUIRED IN CONJUNCTION WITH THIS PLAT.

PROPOSED EASEMENTS

THE CITIES OF COOS BAY AND NORTH BEND (WATER BOARD) SHALL GRANT TO THE CITY OF COOS BAY AN ACCESS EASEMENT ACROSS ALL PORTIONS OF THE EXISTING PRIMARY WATER BOARD ROADWAY. THE PURPOSE OF THE EASEMENT IS TO PROVIDE ACCESS FOR INGRESS AND EGRESS TO ADJACENT CITY PROPERTY.

THE CITIES OF COOS BAY AND NORTH BEND (WATER BOARD) SHALL GRANT TO THE CITY OF COOS BAY AN ACCESS EASEMENT ACROSS WATER BOARD PROPERTY FOR THE PURPOSE PROVIDING INGRESS AND EGRESS TO CITY PROPERTY LOCATED IN THE NORTHEAST QUARTER (NE¼) OF THE NORTHWEST QUARTER (NW¼) OF SECTION 28 AS REFLECTED IN THIS PLAT.

PARCEL BOUNDARY DESCRIPTIONS

THIS PLAT IS UNSURVEYED. THE BEARINGS AND DISTANCES DESCRIBED ARE RESOURCE GRADE ONLY. THE TRUE BOUNDARIES OF PARCEL 1, PARCEL 2, AND PARCEL 3 ARE DESCRIBED BY ALIQUOT CALLS AND PHYSICAL FEATURES AS DESCRIBED BELOW: (REFER TO LINE TABLE SHEETS PG. 4-7)

ALIQUOT SEGMENTS

(A TO B): BEGINNING AT THE INTERSECTION OF THE NORTH (EASTERLY) EDGE OF THE NORTHWEST QUARTER (NW¼) OF SECTION 33, TOWNSHIP 25 SOUTH, RANGE 13 WEST OF THE WILLAMETTE MERIDIAN, COOS BAY OREGON, WITH THE EXTERIOR BOUNDARY OF THE EXISTING PRIMARY WATER BOARD ROADWAY; THENCE EASTERLY 1374 FEET, MORE OR LESS, ALONG THE NORTH LINE OF SAID NORTHWEST QUARTER (NW¼) TO ITS NORTHEAST CORNER; THENCE SOUTHERLY ALONG THE EAST LINE OF SAID NORTHWEST QUARTER (NW¼) TO THE NORTH LINE OF THE JAMES AKIN DONATION LAND CLAIM (DLC) #45; THENCE WESTERLY ALONG SAID NORTH LINE OF DLC#45 TO ITS INTERSECT WITH THE EXTERIOR BOUNDARY OF SAID PRIMARY WATER BOARD ROADWAY.

(F TO G): BEGINNING AT THE INTERSECT OF A 100 FOOT BUFFER OF THE 106 FOOT ELEVATION AS SHOWN BETWEEN POINTS E AND F WITH THE WEST LINE OF THE EAST HALF (E½) OF THE EAST HALF (E½) OF THE SOUTHEAST QUARTER (SE¼) OF THE SOUTHEAST QUARTER (SE¼) OF SECTION 32, TOWNSHIP 25 SOUTH, RANGE 13 WEST OF THE WILLAMETTE MERIDIAN, COOS COUNTY OREGON; THENCE SOUTHERLY 116 FEET, MORE OR LESS, ALONG SAID WEST LINE TO ITS INTERSECT WITH THE NORTH LINE OF THE HENRY SANFORD DONATION LAND CLAIM (DLC) #44; THENCE WESTERLY ALONG SAID NORTH LINE 548 FEET, MORE OR LESS, TO THE WEST LINE OF SAID DLC#44; THENCE SOUTHERLY 106 FEET, MORE OR LESS, ALONG SAID WEST LINE TO THE SOUTH LINE OF SAID SECTION 32; THENCE WESTERLY ALONG SAID SOUTH LINE TO THE SOUTHWEST CORNER OF THE SOUTHEAST QUARTER (SE¼) OF THE SOUTHEAST QUARTER (SE¼) OF SAID SECTION 32; THENCE NORTHERLY 524 FEET, MORE OR LESS, ALONG THE WEST LINE OF SAID SOUTHEAST QUARTER (SE¼) OF THE SOUTHEAST QUARTER (SE¼) TO ITS INTERSECT WITH THE EXTERIOR (SOUTHERLY) EDGE OF THE EXISTING PRIMARY WATER BOARD ROADWAY;

(H TO I): BEGINNING AT THE INTERSECTION OF THE EXTERIOR (WESTERLY) EDGE OF SAID EXISTING PRIMARY WATER BOARD ROADWAY WITH THE WEST LINE OF THE NORTHEAST QUARTER (NE¼) OF THE SOUTHWEST QUARTER (SW¼) OF THE SOUTHEAST QUARTER (SE¼) OF SECTION 32, TOWNSHIP 25 SOUTH, RANGE 13 WEST OF THE WILLAMETTE MERIDIAN, COOS COUNTY, OREGON; THENCE NORTHERLY ALONG SAID WEST LINE TO THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER (NE¼) OF THE SOUTHWEST QUARTER (SW¼) OF THE SOUTHEAST QUARTER (SE¼) OF SECTION 32; THENCE EASTERLY ALONG THE NORTH LINE OF SAID NORTHEAST QUARTER (NE¼) OF THE SOUTHWEST QUARTER (SW¼) OF THE SOUTHEAST QUARTER (SE¼) OF SECTION 32 TO ITS INTERSECT WITH THE EXTERIOR (WESTERLY) EDGE OF SAID PRIMARY WATER BOARD ROADWAY.

ROAD CALLS

THE SEGMENTS OF THE PARCEL 2 BOUNDARY CONSISTING OF THE EXTERIOR EDGE OF THE PRIMARY WATER BOARD ROADWAY. THE SEGMENTS OF THE PRIMARY ROADWAY THAT ACT AS A BOUNDARY FOR PARCEL 2 ARE LABELED AS FOLLOWS: SEGMENTS B-C, D-E, G-H, I-J, K-L, M-N, O-P, AND Q-A

100 FOOT OFFSET OF THE 106 FOOT ELEVATION

THE SEGMENTS OF THE PARCEL 2 BOUNDARY CONSISTING OF A 100 FOOT OFFSET OF THE 106 FOOT ELEVATION. THE 106 FOOT ELEVATION IS THE ESTABLISHED MAXIMUM POOL ELEVATION FOR THE RESERVOIR AT TOTAL CAPACITY AND THE 100 FOOT OFFSET IS INTENDED TO ACT AS A SHORELINE BUFFER AND IS ENTIRELY LOCATED OUTSIDE THE BOUNDARY OF THE 106 FOOT ELEVATION. THE SEGMENTS OF THE 100 FOOT OFFSET OF THE 106 FOOT ELEVATION THAT ACT AS A BOUNDARY FOR PARCEL 2 ARE LABELED AS FOLLOWS: AREAS C-D, E-F, L-M AND N-O

CONSTRUCTION LIMITS BOUNDARY

THE SEGMENT OF THE PARCEL 2 BOUNDARY CONSISTING OF A LINE SURROUNDING THE EXTERIOR BOUNDARY OF THE CONSTRUCTION LIMITS FOR THE BORROW AREA UTILIZED IN THE CONSTRUCTION OF THE WATER BOARD DAM PROJECT. THIS SEGMENT IS DESCRIBED BY BEARINGS AND DISTANCES CALLS AS REFLECTED IN THE LINE TABLE (SEGMENT P-Q).

MITIGATED WILDLIFE BUFFER

THE SEGMENT OF THE PARCEL 2 BOUNDARY CONSISTING OF A NEGOTIATED MITIGATION BUFFER INTENDED TO PROTECT A SPECIFIC HABITAT TYPE IDENTIFIED AS WHITE FOOTED VOLES. THIS SEGMENT WAS IDENTIFIED BY THE ALDER TIMBER TYPE BOUNDARY AS ESTABLISHED BY THE OREGON DEPARTMENT OF FISH & WILDLIFE (SEGMENT J-K).

P 2005 #11
CAB C-438

FINAL PARTITION PLAT

LOCATED IN T.25S., R.13W., SEC.28,29,31,32,33
COOS COUNTY OREGON.

PREPARED BY:
STUNTZNER ENGINEERING AND FORESTRY L.L.C.
705 S. 4TH STREET/P.O.BOX 118
COOS BAY, OREGON 97420

CO-APPLICANT/OWNERS:
CITY OF COOS BAY - A MUNICIPAL CORPORATION
500 CENTRAL AVENUE
COOS BAY, OREGON 97420

CITY OF NORTH BEND - A MUNICIPAL CORPORATION
835 CALIFORNIA STREET
NORTH BEND, OREGON 97459

COOS BAY/NORTH BEND WATER BOARD
2305 OCEAN BLVD.
COOS BAY, OREGON 97420

RECORD DEED:
DEED 167/471 DESCRIBES 11 PARCELS

BEARINGS AND DISTANCES:
STATE PLANE COORDINATE

ZONE DISTRICT:
WATERSHED (OP-2)

EXISTING EASEMENTS AND RESERVATIONS:

EFFECT OF EASEMENT, INCLUDING THE TERMS AND PROVISIONS THEREOF, IF ANY OVER SECTIONS 28 AND 29 AS DISCLOSED BY THE COOS COUNTY ASSESSOR MAPS:

- SOUTHERN OREGON COMPANY (MINERAL)
  JUNE 22, 1922
  BOOK: 87, PAGE: 265, DEED RECORDS
  COOS COUNTY, OREGON
- SOUTHERN OREGON COMPANY (EASEMENT)
  JULY 22, 1922
  BOOK: 87, PAGE: 265, DEED RECORDS
  COOS COUNTY, OREGON
- CITY OF MARSHFIELD (EASEMENT)
  OCTOBER 6, 1933
  BOOK: 119, PAGE: 530, DEED RECORDS
  COOS COUNTY, OREGON
- PACIFIC POWER & LIGHT COMPANY (EASEMENT)
  JUNE 28, 1961
  BOOK: 286, PAGE: 49, DEED RECORDS
  COOS COUNTY, OREGON

EFFECT, IF ANY, OF AGREEMENT FOR EASEMENT, MICROFILM REEL #96-04-0515, B.P.O.E. LODGE 1160, AND NORTH-PACIFIC INVESTMENTS LTD, MICROFILM REEL #96-04-0854, COOS COUNTY, OREGON.

EFFECT, IF ANY, OF AGREEMENT FOR EASEMENT, MICROFILM REEL #1999-13535 BETWEEN NORTH-PACIFIC INVESTMENTS LTD AND MAXINE TINDELL ETAL, COOS COUNTY, OREGON.

COUNTY CLERK'S CERTIFICATE:

I, COOS COUNTY CLERK, HEREBY CERTIFY THAT THIS PARTITION PLAT WAS RECORDED INTO THE COOS COUNTY RECORDS IN MICROFILM NO. 2005-8052, CABINET C, PAGE 438, RECORD OF PLATS, THIS 7TH DAY OF June 2005.

Terri Turi by Rebecca Vosh, Deputy — June 7, 2005
TERRI TURI — DATE

COOS BAY PLANNING ADMINISTRATOR'S CERTIFICATE:

I, COOS BAY PLANNING ADMINISTRATOR, HEREBY CERTIFY THAT THIS PLAT IS IN CONFORMITY WITH THE REQUIREMENTS OF THE CITY OF COOS BAY LAND DIVISION ORDINANCE.

Laura Barron — 5/18/05
LAURA BARRON — DATE

COOS BAY ENGINEERING DEPARTMENT CERTIFICATE:

I, COOS BAY ENGINEERING SERVICES COORDINATOR, HEREBY CERTIFY THAT THIS PLAT IS IN CONFORMITY WITH THE REQUIREMENTS OF THE CITY OF COOS BAY LAND DIVISION ORDINANCE.

Karen Turner — 5/17/05
KAREN TURNER — DATE

COOS COUNTY SURVEYOR'S CERTIFICATE:

I, KARLAS SEIDEL, HEREBY CERTIFY THAT THIS PLAT COMPLIES WITH THE REQUIREMENTS FOR ACCURACY AND COMPLETENESS AND THAT ALL MONUMENTS HAVE BEEN SET AND/OR AN AGREEMENT HAS BEEN EXECUTED TO ENSURE COMPLETION OF REQUIRED MONUMENTATION PURSUANT TO COUNTY ORDINANCE PROVISIONS.

Karlas E. Seidel — 6-7-05
KARLAS SEIDEL — DATE

COUNTY ASSESSOR'S CERTIFICATE:

I, COUNTY ASSESSOR, HEREBY CERTIFY THAT ALL AD VALOREM TAXES AND ALL SPECIAL ASSESSMENTS, FEES, OR OTHER CHARGES REQUIRED BY LAW TO BE PLACED UPON THE TAX ROLL WHICH HAVE BECOME A LIEN HAVE BEEN PAID OR WHICH WILL BECOME A LIEN DURING THE TAX YEAR HAVE BEEN PAID.

Barbara Foord, Chief Deputy — 06-07-05
ROBERT (BOB) MAIN — DATE

OWNER'S DECLARATION:

WE, THE UNDERSIGNED, HEREBY DECLARE THAT WE HAVE AUTHORIZED AND CAUSED THIS PLAT TO BE PREPARED AND THE PROPERTY TO BE PARTITIONED IN ACCORDANCE WITH ORS CHAPTER 92.

JOE BENETTI (MAYOR OF THE CITY OF COOS BAY) — 5/20/05 DATE

Rick Wetherell — 5/26/05
RICK WETHERELL, (MAYOR OF THE CITY OF NORTH BEND) — DATE

5-25-05
ROB K. SCHAB (GENERAL MANAGER, COOS BAY/NORTH BEND WATER BOARD) — DATE

SURVEYOR'S CERTIFICATE:

I, RALPH E. DUNHAM, HEREBY CERTIFY THAT I HAVE NOT SURVEYED PARCEL 1, PARCEL 2 OR PARCEL 3 OF THIS PARTITION AND MAKE NO REPRESENTATION OF THE ACCURACY OF THE BOUNDARIES OF PARCEL 1, PARCEL 2 OR PARCEL 3 OF THAT PARTITION SHOWN ON THE ATTACHED PLAT.

Ralph E. Dunham — 4/9/05
RALPH E. DUNHAM, P.L.S. — DATE

STATE OF OREGON
COUNTY OF COOS
THIS IS TO CERTIFY THAT:
JOE BENETTI, MAYOR OF COOS BAY, OR

PERSONALLY APPEARED BEFORE ME ON THIS 19th DAY OF May 2005, WHO HAVE ACKNOWLEDGED THAT HE/SHE HAVE SIGNED THE ABOVE OWNER'S DECLARATION AS THEIR VOLUNTARY ACT AND DEED.
IN TESTIMONY WHEREOF I HAVE HEREUNTO SET MY SEAL THIS 19th DAY OF May, 2005

MY COMMISSION EXPIRES ON: 2-17-2009
Joyce L. Jansen
NOTARY PUBLIC FOR the State of Oregon

OFFICIAL SEAL
JOYCE L. JANSEN
NOTARY PUBLIC-OREGON
COMMISSION NO. 389215
MY COMMISSION EXPIRES FEBRUARY 17, 2009

STATE OF OREGON
COUNTY OF COOS
THIS IS TO CERTIFY THAT Rick Wetherell
RICK WETHERELL, MAYOR OF NORTH BEND, OR

PERSONALLY APPEARED BEFORE ME ON THIS 26th DAY OF May 2005, WHO HAVE ACKNOWLEDGED THAT HE/SHE HAVE SIGNED THE ABOVE OWNER'S DECLARATION AS THEIR VOLUNTARY ACT AND DEED.
IN TESTIMONY WHEREOF I HAVE HEREUNTO SET MY SEAL THIS 26th DAY OF May, 2005

MY COMMISSION EXPIRES ON: 8-5-2008
Leigh Stiles
NOTARY PUBLIC FOR the State of Oregon

OFFICIAL SEAL
LEIGH STILES
NOTARY PUBLIC-OREGON
COMMISSION NO. 383457
MY COMMISSION EXPIRES AUGUST 5, 2008

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1990
RALPH E. DUNHAM
2443
EXPIRES 12/31/05

I DO HEREBY CERTIFY THAT THIS IS AN EXACT AND TRUE COPY OF THE ORIGINAL

STATE OF OREGON
COUNTY OF COOS
THIS IS TO CERTIFY THAT
ROB K. SCHAB, GENERAL MANAGER CBNBWB

PERSONALLY APPEARED BEFORE ME ON THIS 25th DAY OF May 2005, WHO HAVE ACKNOWLEDGED THAT HE/SHE HAVE SIGNED THE ABOVE OWNER'S DECLARATION AS THEIR VOLUNTARY ACT AND DEED.
IN TESTIMONY WHEREOF I HAVE HEREUNTO SET MY SEAL THIS 25th DAY OF May, 2005

MY COMMISSION EXPIRES ON: 12-19-2007
Suzanne Baker
NOTARY PUBLIC FOR the State of Oregon

OFFICIAL SEAL
SUSANNE BAKER
NOTARY PUBLIC-OREGON
COMMISSION NO. 374297
MY COMMISSION EXPIRES DEC 19, 2007

Stuntzner Engineering & Forestry, L.L.C.
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Drawn By:	ELVIN STINGLEY	Date:	April 06, 2005
Checked By:	JLE	Drawing No.:	CBNBWB-Final
Designed By:	CDH	Revised:	
Job Name:	CBNB-Waterboard Land Trade		Sheet 3 of 7

FINAL PARTITION PLAT
LINE TABLE SHEET FOR PARCEL #1

P 2005 #11
CAB C-438

BEGINNING AT THE INTERSECT OF THE WEST LINE OF THE SE¼ OF THE SE¼ OF SECTION 32, T.25S., R.13W., W.M., WITH THE EXTERIOR (SOUTHERLY) BOUNDARY OF THE EXISTING PRIMARY WATER BOARD ROADWAY, THENCE THE FOLLOWING COURSES:

LINE TABLE (G-H)

LINE	LENGTH	BEARING
L142	100.45	N60°17'52"W
L143	72.20	N58°55'19"W
L144	56.43	N63°29'12"W
L145	41.42	N72°13'59"W
L146	36.87	N73°07'41"W
L147	35.96	N74°31'28"W
L148	43.18	N82°37'29"W
L149	53.01	S87°37'41"W
L150	178.11	S83°33'06"W
L151	24.30	S86°52'17"W
L152	38.42	N84°13'38"W
L153	39.82	N69°50'15"W
L154	43.84	N53°50'18"W
L155	45.63	N36°52'55"W
L156	49.30	N19°41'29"W
L157	46.59	N01°50'36"W
L158	52.76	N07°16'12"E
L159	49.29	N16°14'03"E
L160	58.26	N25°37'12"E
L161	54.18	N34°18'45"E
L162	73.98	N42°18'08"E

LINE TABLE (H-I)

LINE	LENGTH	BEARING
L163	275.12	N02°26'09"E
L164	262.35	S87°18'58"E

LINE TABLE (I-J)

LINE	LENGTH	BEARING
L165	39.91	N30°50'48"E
L166	42.38	N20°37'55"E
L167	50.52	N08°49'27"E
L168	30.53	N01°34'12"W
L169	16.32	N10°02'31"W
L170	24.63	N12°49'15"W
L171	55.99	N16°02'13"W
L172	63.26	N12°57'32"W
L173	106.84	N13°17'32"W
L174	68.29	N16°12'15"W
L175	127.75	N12°15'03"W
L176	34.71	N07°40'02"W
L177	44.18	N01°04'46"E
L178	37.82	N02°07'53"E
L179	57.61	N05°42'07"E
L180	40.26	N15°46'15"E
L181	38.14	N23°07'24"E
L182	44.49	N32°50'57"E
L183	105.83	N38°23'25"E
L184	63.50	N35°32'29"E
L185	102.44	N31°59'22"E
L186	88.17	N28°35'53"E
L187	76.90	N23°08'30"E
L188	60.91	N15°02'41"E
L189	54.96	N06°44'09"E
L190	36.13	N02°23'13"E
L191	50.91	N03°18'16"W
L192	87.75	N05°07'40"W
L193	47.19	N02°13'35"E
L194	54.67	N18°09'11"E
L195	41.41	N32°20'30"E
L196	31.43	N44°03'25"E
L197	44.65	N45°39'28"E
L198	43.63	N40°28'02"E
L199	27.20	N33°11'00"E
L200	29.13	N20°48'09"E
L201	30.01	N09°15'00"E
L202	101.79	N04°02'10"W
L203	30.33	N07°57'02"W
L204	42.65	N13°47'48"W
L205	49.82	N18°18'14"W
L206	83.28	N23°24'30"W
L207	198.75	N25°12'00"W
L208	206.44	N24°08'31"W
L209	85.24	N25°46'19"W
L210	41.18	N32°00'24"W
L211	47.24	N38°14'46"W
L212	56.49	N46°05'37"W
L213	38.76	N53°23'25"W
L214	34.07	N64°14'26"W
L215	41.19	N76°27'07"W
L216	42.47	N88°31'55"W
L217	50.98	S82°24'31"W
L218	52.03	S75°46'08"W
L219	50.81	S68°06'06"W
L220	40.81	S56°27'39"W
L221	50.18	S44°25'19"W
L222	52.21	S34°02'22"W
L223	62.75	S24°35'58"W
L224	45.02	S21°39'01"W
L225	43.46	S31°04'18"W
L226	43.20	S48°01'31"W
L227	54.18	S65°31'58"W
L228	113.88	S75°32'36"W
L229	41.08	S72°22'50"W
L230	49.64	S59°12'05"W
L231	43.50	S49°17'23"W
L232	68.73	S41°48'58"W

LINE TABLE (J-K)

LINE	LENGTH	BEARING
L233	104.95	S04°04'40"W
L234	71.32	S13°17'33"E
L235	51.22	S00°01'28"E
L236	47.25	S06°39'26"W
L237	46.87	S12°32'03"W
L238	49.64	S17°41'53"W
L239	82.79	S33°36'54"W
L240	119.70	S31°30'57"W
L241	102.03	S27°43'26"W
L242	101.62	S26°08'09"W
L243	96.32	S22°59'38"W
L244	113.25	S20°55'19"W
L245	118.82	S16°34'32"W
L246	91.80	S15°28'04"W
L247	171.11	S11°44'52"W
L248	202.48	S06°58'18"W
L249	144.16	S11°40'54"W
L250	134.31	S16°48'20"W
L251	133.54	S21°30'36"W
L252	117.05	S27°48'43"W
L253	59.80	S28°11'20"W
L254	130.27	S33°49'00"W
L255	45.80	S09°27'59"W
L256	41.69	S28°18'40"W
L257	43.12	S53°53'34"W
L258	43.20	S73°32'49"W
L259	43.57	N83°47'57"W
L260	38.43	N59°02'51"W
L261	46.05	N40°52'04"W
L262	130.75	N09°32'03"W
L263	134.49	N06°25'54"W
L264	127.07	N22°12'16"E
L265	139.26	N13°17'26"E
L266	133.82	N05°06'08"E
L267	138.51	N02°43'39"W
L268	267.83	N26°08'06"E
L269	264.49	N22°49'58"E
L270	229.09	N18°43'57"E
L271	168.22	N16°55'16"E
L272	148.67	N15°04'46"E
L273	257.20	N11°16'49"E
L274	164.82	N48°12'16"E
L275	48.83	N17°54'40"E

LINE TABLE (K-L)

LINE	LENGTH	BEARING
L276	27.93	N37°46'17"W
L277	118.15	N31°33'53"W
L278	39.39	N35°07'52"W
L279	34.95	N47°40'33"W
L280	35.66	N59°03'04"W
L281	130.49	N66°12'53"W
L282	74.43	N60°43'20"W
L283	59.76	N46°38'47"W
L284	55.52	N31°47'17"W
L285	85.05	N27°03'15"W
L286	57.16	N30°13'47"W
L287	16.65	N32°32'09"W
L288	42.73	N38°46'27"W
L289	46.32	N51°06'49"W
L290	46.16	N63°46'07"W
L291	44.43	N76°38'20"W
L292	80.64	N78°42'03"W
L293	42.20	N67°05'32"W
L294	41.04	N48°43'40"W
L295	45.76	N32°09'49"W
L296	56.70	N14°02'31"W
L297	40.87	N17°09'41"W
L298	37.11	N22°48'18"W
L299	80.77	N25°02'18"W
L300	93.35	N27°00'12"W
L301	31.22	N35°47'48"W
L302	32.09	N47°38'18"W
L303	45.89	N54°11'20"W
L304	72.43	N53°16'03"W
L305	85.08	N56°55'45"W
L306	38.26	N63°19'37"W
L307	35.73	N69°16'58"W
L308	21.04	N76°04'20"W

LINE TABLE L-W

LINE	LENGTH	BEARING
L309	12.90	S18°28'00"W
L310	158.42	S64°16'54"W
L311	40.18	S52°24'37"W
L312	58.29	S76°31'17"W
L313	50.83	S53°55'24"W
L314	31.53	S48°49'32"W
L315	45.61	S45°30'07"W
L316	32.00	S57°34'06"W
L317	40.06	S62°48'12"W
L318	27.97	S61°18'01"W
L319	35.83	S85°59'23"W
L320	43.06	N73°57'18"W
L321	49.19	N45°32'39"W
L322	47.37	N20°07'51"W
L323	52.99	N06°47'44"E
L324	28.50	N41°15'32"E
L325	39.79	N34°03'56"E
L326	34.08	N32°51'32"E
L327	82.58	N35°51'55"E
L328	100.76	N58°45'11"E
L329	96.21	N00°00'00"E
L330	57.83	N70°59'49"E

LINE TABLE (M-N)

LINE	LENGTH	BEARING
L331	36.00	N13°50'47"W
L332	25.77	N11°36'02"W
L333	25.59	N05°24'52"W
L334	26.54	N00°18'09"E
L335	24.96	N05°11'41"E
L336	123.69	N08°16'41"E
L337	21.91	N13°30'30"E
L338	19.59	N30°04'07"E
L339	18.31	N39°39'48"E
L340	17.95	N50°00'41"E
L341	17.93	N58°50'32"E
L342	17.97	N69°14'07"E
L343	40.43	N78°21'23"E
L344	107.24	N82°45'50"E
L345	188.13	N80°20'09"E
L346	115.68	N80°32'48"E
L347	193.25	N80°42'59"E
L348	95.12	N82°18'00"E
L349	94.86	N84°23'19"E
L350	79.40	N83°44'36"E
L351	87.51	N81°28'51"E
L352	89.71	N78°45'23"E
L353	98.97	N76°08'47"E
L354	34.09	N71°51'04"E
L355	32.86	N65°43'49"E
L356	109.20	N63°07'35"E
L357	56.96	N67°23'41"E
L358	43.51	N72°12'45"E
L359	40.12	N84°07'31"E
L360	34.62	S86°36'24"E
L361	26.64	S77°56'05"E
L362	63.36	S74°14'51"E
L363	54.31	S71°06'45"E
L364	9.79	S74°16'44"E

LINE TABLE (N-O)

LINE	LENGTH	BEARING
L365	17.18	N01°02'24"E
L366	9.84	N42°40'14"W
L367	30.08	N12°52'50"W
L368	11.57	N28°30'58"W
L369	41.94	N28°30'58"W
L370	40.62	N18°17'57"W
L371	14.33	N00°20'07"E
L372	7.45	N41°13'21"W
L373	67.56	N28°12'16"W
L374	32.18	N18°00'58"W
L375	140.16	N35°32'08"W
L376	45.67	N05°08'00"W
L377	43.91	N17°00'23"E
L378	47.46	N43°32'01"E
L379	39.50	N71°02'49"E
L380	41.85	S85°52'36"E
L381	31.70	N55°01'14"E
L382	29.75	N74°04'10"E
L383	35.35	S85°11'00"E
L384	58.31	S61°21'59"E
L385	74.06	S42°50'24"E
L386	53.26	S03°45'22"E
L387	27.96	S31°28'23"E
L388	16.81	S75°04'57"E
L389	40.43	N82°18'41"E
L390	53.44	N54°39'06"E
L391	19.43	N87°22'32"E

LINE TABLE (O-P)

LINE	LENGTH	BEARING
L392	21.73	N60°28'52"E
L393	68.43	N70°04'20"E
L394	22.49	N69°04'34"E
L395	26.18	N62°40'31"E
L396	15.85	N57°03'09"E
L397	54.72	N53°40'03"E
L398	20.15	N50°26'52"E
L399	23.27	N46°41'50"E
L400	24.81	N41°05'39"E
L401	28.93	N35°23'59"E
L402	23.41	N30°58'54"E
L403	25.08	N24°45'33"E
L404	16.99	N21°11'41"E
L405	46.30	N17°29'10"E
L406	48.13	N13°42'40"E
L407	17.06	N09°24'25"E
L408	20.49	N02°55'15"E
L409	105.43	N00°00'46"E
L410	21.25	N00°17'29"W
L411	26.85	N10°18'33"E
L412	25.23	N20°52'59"E
L413	15.65	N29°57'44"E
L414	40.44	N36°03'14"E
L415	20.01	N42°20'58"E
L416	26.20	N50°33'39"E
L417	21.90	N55°12'06"E
L418	41.27	N63°02'27"E
L419	24.96	N66°36'33"E
L420	30.50	N71°53'51"E
L421	18.09	N75°53'33"E
L422	34.30	N81°21'05"E
L423	31.78	N88°18'58"E
L424	30.30	S84°46'27"E
L425	35.64	S70°07'54"E
L426	26.38	S59°08'59"E
L427	49.30	S54°50'32"E
L428	55.00	S57°26'33"E
L429	18.96	S60°44'53"E
L430	26.67	S65°06'05"E
L431	27.83	S72°00'12"E
L432	24.23	S77°33'12"E
L433	33.41	S88°32'28"E
L434	25.44	N84°11'45"E

(CONTINUED)

LINE TABLE (O-P) CONT.

LINE	LENGTH	BEARING
L435	30.65	N78°51'21"E
L436	32.97	N73°21'24"E
L437	32.49	N67°37'53"E
L438	31.85	N62°21'28"E
L439	30.42	N57°57'40"E
L440	25.19	N55°28'37"E
L441	38.78	N51°32'13"E
L442	40.03	N46°35'06"E
L443	36.14	N40°02'34"E
L444	35.07	N35°42'42"E
L445	34.73	N30°52'31"E
L446	29.77	N25°15'21"E
L447	39.27	N19°52'49"E
L448	27.35	N14°36'20"E
L449	38.81	N11°30'29"E
L450	35.78	N13°04'26"E
L451	32.69	N18°16'30"E
L452	63.10	N21°47'48"E
L453	29.42	N20°20'04"E
L454	36.65	N12°31'32"E
L455	44.91	N13°08'47"E
L456	38.75	N21°34'48"E
L457	41.67	N33°12'46"E
L458	35.78	N43°16'09"E
L459	23.35	N51°31'09"E
L460	34.82	N56°28'33"E
L461	29.32	N55°33'46"E
L462	31.58	N50°40'19"E
L463	35.12	N44°05'19"E
L464	27.46	N37°57'20"E
L465	38.69	N31°58'39"E
L466	27.19	N29°19'39"E
L467	34.23	N25°42'59"E
L468	38.16	N21°56'39"E
L469	45.19	N16°27'33"E
L470	40.83	N10°01'06"E
L471	27.69	N03°16'19"E
L472	17.22	N02°21'44"W
L473	53.72	N03°49'04"W
L474	22.67	N02°32'19"E
L475	21.54	N12°15'07"E

LINE TABLE P- L504

LINE	LENGTH	BEARING
L476	219.72	N65°59'07"W
L477	693.46	N05°41'59"W
L478	224.62	N14°35'04"E
L479	323.29	N23°40'06"E
L480	129.65	S69°31'41"E
L481	1412.13	S54°53'19"E
L482	262.04	S00°06'35"E
L483	125.00	S86°21'16"E
L484	27.20	S5?°14'51"E
L485	26.93	S35°25'43"E
L486	33.85	S12°01'30"E
L487	45.37	S09°19'56"E
L488	56.48	S03°04'28"E
L489	51.79	S22°05'15"E
L490	20.14	S66°59'07"E
L491	24.02	S77°05'53"E
L492	25.15	S87°13'19"E
L493	14.79	N84°13'47"E
L494	13.88	N62°55'53"E
L495	18.40	N75°25'04"E
L496	24.68	S86°36'09"E
L497	26.55	S66°44'28"E
L498	25.52	S45°00'46"E
L499	27.85	S23°12'27"E
L500	11.17	S04°21'34"E
L501	41.90	S01°27'04"E
L502	104.44	N89°53'25"E
L503	707.11	S45°06'35"E
L504	430.00	N89°53'25"E
SEG. OF L505	74.08	S0°06'35"E

LINE TABLE - OUTER BOUNDARY PARCEL 1

LINE	LENGTH	BEARING
L561	1060.55	N66°21'47"E
L560	329.89	N02°11'49"E
L559	1299.47	N86°19'56"W
L558	1344.02	N02°50'19"E
L557	1256.85	N86°16'11"W
L556	1280.83	N02°45'19"E
L555	1361.67	N86°30'33"W
L554	2645.14	S02°24'04"W
L553	2649.48	N87°18'05"W
L552	1322.57	S02°24'04"W
L551	1332.21	N87°10'33"W
L550	1321.71	S02°34'50"W
L549	2646.45	S02°16'41"W
L548	1311.13	N87°20'33"W
L547	1323.25	S02°08'24"W
L546	1314.51	S87°18'54"E
L545	1322.65	S02°00'37"W
S. BDY S32	3952.49	S87°20'33"E
L141	524.17	N02°30'25"E

TO THE P.O.B. OF PARCEL 1

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1990
RALPH E. DUNHAM
2443
EXPIRES 12/31/05

I DO HEREBY CERTIFY THAT THIS IS AN EXACT AND TRUE COPY OF THE ORIGINAL

Stuntzner Engineering & Forestry, L.L.C.
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Drawn By:	Elvin Stingley	Date:	April 06, 2005
Checked By:	JLE	Drawing No.:	CBNBWB-Final
Designed By:	CDH	Revised:	
Job Name:	CBNB-Waterboard Land Trade		Sheet 4 of 7

FINAL PARTITION PLAT
LINE TABLE SHEET FOR PARCEL #2 (Pg. 1 of 2)

P 2005 #11
CAB C-438

LINE TABLE (A-B)

LINE	LENGTH	BEARING
P.O.B. L1	1374.19	S86°29'52"E
L2	2472.88	S02°11'18"W
L3	192.29	N88°02'58"W

LINE TABLE (B-C)

LINE	LENGTH	BEARING
L4	6.95	S39°02'13"W
L5	6.79	S39°14'18"W
L6	13.23	S44°09'47"W
L7	13.15	S48°57'51"W
L8	13.37	S53°52'13"W
L9	29.80	S59°00'24"W
L10	18.99	S54°59'53"W
L11	23.70	S48°13'05"W
L12	25.85	S43°07'30"W
L13	13.46	S34°13'26"W
L14	18.13	S36°29'19"W
L15	37.77	S26°30'22"W
L16	22.87	S19°19'14"W
L17	20.04	S18°26'09"W
L18	40.08	S25°31'53"W
L19	32.24	S33°57'19"W
L20	40.15	S41°24'14"W
L21	57.42	S52°08'14"W
L22	49.13	S63°15'35"W
L23	48.97	S72°41'17"W
L24	53.67	S81°22'23"W
L25	40.11	S75°02'01"W
L26	43.56	S71°22'22"W
L27	58.35	S80°08'19"W
L28	44.31	N88°49'19"W
L29	42.91	N79°43'33"W
L30	43.20	N69°37'26"W
L31	53.35	N57°46'45"W
L32	42.96	N52°48'15"W
L33	54.44	N46°34'09"W
L34	72.76	N41°33'43"W
L35	78.63	N41°21'42"W
L36	29.10	N45°00'45"W
L37	19.76	N53°37'42"W
L38	26.78	N58°53'18"W
L39	28.30	N66°55'27"W
L40	11.63	N75°19'48"W
L41	17.13	N78°05'01"W
L42	16.40	N83°20'55"W
L43	16.03	N88°41'02"W
L44	8.05	S88°02'55"W
L45	8.52	S86°37'11"W
L46	101.63	S83°24'03"W
L47	103.14	S83°09'26"W
L48	71.58	S83°34'45"W
L49	42.56	S83°56'49"W
L50	30.10	S81°42'20"W
L51	64.44	S81°24'45"W
L52	34.02	S72°15'45"W
L53	27.58	S64°14'27"W
L54	28.52	S56°48'17"W
L55	25.04	S50°35'05"W
L56	21.26	S43°22'34"W
L57	20.70	S39°02'51"W
L58	23.40	S33°42'06"W
L59	20.28	S27°27'11"W
L60	30.97	S23°49'19"W
L61	35.27	S23°21'17"W
L62	82.57	S19°10'52"W
L63	129.83	S17°55'04"W
L64	80.53	S18°48'40"W
L65	82.13	S19°22'31"W
L66	72.67	S18°26'33"W
L67	73.26	S19°37'48"W
L68	58.91	S19°26'19"W
L69	31.28	S24°00'38"W
L70	24.93	S29°10'42"W
L71	23.54	S34°15'06"W
L72	25.79	S39°04'59"W
L73	25.45	S43°48'56"W
L74	24.15	S48°13'02"W
L75	36.91	S52°43'16"W
L76	46.11	S54°24'18"W

LINE TABLE (C-D)

LINE	LENGTH	BEARING
L77	8.65	S35°27'52"E
L78	229.27	S35°38'11"E
L79	49.29	S35°42'08"E
L80	27.23	S14°23'28"W
L81	40.71	S31°05'52"W
L82	22.42	S46°53'23"W
L83	22.84	S58°31'41"W
L84	18.68	S69°40'07"W
L85	55.73	S78°50'48"W
L86	51.45	S81°17'17"W
L87	77.00	S73°10'12"W
L88	97.94	S77°44'06"W
L89	105.37	S74°07'03"W
L90	31.08	N70°30'34"W
L91	146.98	S56°30'39"W
L92	110.80	S86°23'33"W
L93	70.90	N18°31'12"W

LINE TABLE (D-E)

LINE	LENGTH	BEARING
L94	30.25	S25°06'36"W
L95	147.43	S24°45'30"W
L96	148.49	S22°17'14"W
L97	139.43	S22°18'19"W
L98	155.76	S24°09'05"W

LINE TABLE (E-F)

LINE	LENGTH	BEARING
L99	14.56	N47°20'33"E
L100	17.68	N57°08'55"E
L101	18.24	N66°12'53"E
L102	12.33	N75°49'18"E
L103	11.75	N82°05'11"E
L104	16.16	N90°00'00"E
L105	23.85	S80°29'23"E
L106	14.13	S67°01'14"E
L107	11.28	S62°15'08"E
L108	23.84	S51°57'38"E
L109	22.54	S40°24'44"E
L110	21.89	S25°43'12"E
L111	19.41	S16°23'46"E
L112	61.05	S06°19'17"E
L113	171.64	S78°07'23"E
L114	13.42	S69°45'27"E
L115	15.72	S61°35'50"E
L116	19.07	S52°15'25"E
L117	14.63	S40°36'50"E
L118	9.95	S37°08'36"E
L119	10.95	S28°25'52"E
L120	12.53	S21°53'36"E
L121	12.84	S15°52'54"E
L122	19.45	S05°00'56"E
L123	14.61	S03°31'44"W
L124	13.69	S12°25'53"W
L125	11.58	S18°15'56"W
L126	11.71	S28°18'40"W
L127	12.99	S32°10'31"W
L128	10.94	S39°58'14"W
L129	9.22	S46°50'42"W
L130	13.56	S51°48'06"W
L131	12.95	S60°04'44"W
L132	14.38	S67°17'05"W
L133	90.84	S70°27'15"W
L134	122.69	N88°26'58"W
L135	63.26	N84°05'59"W
L136	137.23	N80°33'30"W

LINE TABLE (F-G)

LINE	LENGTH	BEARING
L137	116.00	S02°36'48"W
L138	548.44	N88°14'03"W
L139	106.38	S02°41'36"W
L140	439.60	N87°20'33"W
L141	524.17	N02°30'25"E

LINE TABLE (G-H)

LINE	LENGTH	BEARING
L142	100.45	N60°17'52"W
L143	72.20	N58°55'19"W
L144	56.43	N63°29'12"W
L145	41.42	N72°13'59"W
L146	36.87	N73°07'41"W
L147	35.96	N74°31'28"W
L148	43.18	N82°37'29"W
L149	53.01	S87°37'41"W
L150	178.11	S83°33'06"W
L151	24.30	S86°52'17"W
L152	38.42	N84°13'38"W
L153	39.82	N69°50'15"W
L154	43.84	N53°50'18"W
L155	45.63	N36°52'55"W
L156	49.30	N19°41'29"W
L157	46.59	N01°50'36"W
L158	52.76	N07°16'12"E
L159	49.29	N16°14'03"E
L160	58.26	N25°37'12"E
L161	54.18	N34°18'45"E
L162	73.98	N42°18'08"E

LINE TABLE (H-I)

LINE	LENGTH	BEARING
L163	275.12	N02°26'09"E
L164	262.35	S87°18'58"E

LINE TABLE (I-J)

	LENGTH	BEARING
L165	39.91	N30°50'48"E
L166	42.38	N20°37'55"E
L167	50.52	N08°49'27"E
L168	30.53	N01°34'12"W
L169	16.32	N10°02'31"W
L170	24.63	N12°49'15"W
L171	55.99	N16°02'13"W
L172	63.26	N12°57'32"W
L173	106.84	N13°17'32"W
L174	68.29	N16°12'15"W
L175	127.75	N12°15'03"W
L176	34.71	N07°46'02"W
L177	44.18	N01°04'46"E
L178	37.82	N02°07'53"E
L179	57.61	N05°42'07"E
L180	40.26	N15°46'15"E
L181	38.14	N23°07'24"E
L182	44.49	N32°50'57"E
L183	105.83	N38°23'25"E
L184	63.50	N35°32'29"E
L185	102.44	N31°59'22"E
L186	88.17	N28°35'53"E
L187	76.90	N23°08'30"E
L188	60.91	N15°02'41"E
L189	54.96	N06°44'09"E
L190	36.13	N02°23'13"E
L191	50.91	N03°18'16"W
L192	87.75	N05°07'40"W
L193	47.19	N02°13'35"E
L194	54.67	N18°09'11"E
L195	41.41	N32°20'30"E
L196	31.43	N44°03'25"E
L197	44.65	N45°39'28"E
L198	43.63	N40°28'02"E
L199	27.20	N33°11'00"E
L200	29.13	N20°48'09"E
L201	30.01	N09°15'00"E
L202	101.79	N04°02'10"W
L203	30.33	N07°57'02"W
L204	42.85	N13°47'48"W
L205	49.82	N18°18'14"W
L206	83.28	N23°24'30"W

(CONTINUED)

LINE TABLE (I-J) CONT.

	LENGTH	BEARING
L207	198.75	N25°12'00"W
L208	206.44	N24°08'31"W
L209	85.24	N25°46'19"W
L210	41.18	N32°00'24"W
L211	47.24	N38°14'46"W
L212	56.49	N46°05'37"W
L213	38.76	N53°23'25"W
L214	34.07	N64°14'26"W
L215	41.19	N76°27'07"W
L216	42.47	N88°31'55"W
L217	50.98	S82°24'31"W
L218	52.03	S75°46'08"W
L219	50.81	S68°06'08"W
L220	40.81	S56°27'39"W
L221	50.18	S44°25'19"W
L222	52.21	S34°02'22"W
L223	62.75	S24°35'58"W
L224	45.02	S21°39'01"W
L225	43.46	S31°04'18"W
L226	43.20	S48°01'31"W
L227	54.18	S65°31'58"W
L228	113.88	S75°32'36"W
L229	41.08	S72°22'50"W
L230	49.64	S59°12'05"W
L231	43.50	S49°17'23"W
L232	68.73	S41°48'58"W

LINE TABLE (J-K)

LINE	LENGTH	BEARING
L233	104.95	S04°04'40"W
L234	71.32	S13°17'33"E
L235	51.22	S00°01'28"E
L236	47.25	S06°39'26"W
L237	46.87	S12°32'03"W
L238	49.64	S17°41'53"W
L239	62.79	S33°36'54"W
L240	119.70	S31°30'57"W
L241	102.03	S27°43'26"W
L242	101.62	S26°08'09"W
L243	96.32	S22°59'38"W
L244	113.25	S20°55'19"W
L245	118.82	S16°34'32"W
L246	91.80	S15°28'04"W
L247	171.11	S11°44'52"W
L248	202.48	S06°58'18"W
L249	144.16	S11°40'54"W
L250	134.31	S16°48'20"W
L251	133.54	S21°30'36"W
L252	117.05	S27°48'43"W
L253	59.80	S28°11'20"W
L254	130.27	S33°49'00"W
L255	45.80	S09°27'59"W
L256	41.69	S28°18'40"W
L257	43.12	S53°53'34"W
L258	43.20	S73°32'49"W
L259	43.57	N83°47'57"W
L260	38.43	N59°02'51"W
L261	46.05	N40°52'04"W
L262	130.75	N09°32'03"W
L263	134.49	N06°25'54"W
L264	127.07	N22°12'16"E
L265	139.26	N13°17'26"E
L266	133.82	N05°06'08"E
L267	138.51	N02°43'39"W
L268	267.83	N26°08'06"E
L269	264.49	N22°49'58"E
L270	229.09	N18°43'57"E
L271	168.22	N16°55'16"E
L272	148.67	N15°04'46"E
L273	257.20	N11°16'49"E
L274	164.82	N48°12'16"E
L275	48.83	N17°54'40"E

LINE TABLE (K-L)

LINE	LENGTH	BEARING
L276	27.93	N37°46'17"W
L277	118.15	N31°33'53"W
L278	39.39	N35°07'52"W
L279	34.95	N47°40'33"W
L280	35.66	N59°03'04"W
L281	130.49	N66°12'53"W
L282	74.43	N60°43'20"W
L283	59.76	N45°38'47"W
L284	55.52	N31°47'17"W
L285	85.05	N27°03'15"W
L286	57.16	N30°13'47"W
L287	16.65	N32°32'09"W
L288	42.73	N38°46'27"W
L289	46.32	N51°06'49"W
L290	46.16	N63°46'07"W
L291	44.43	N76°38'20"W
L292	80.64	N78°42'03"W
L293	42.20	N67°05'32"W
L294	41.04	N48°43'40"W
L295	45.76	N32°09'49"W
L296	56.70	N14°02'31"W
L297	40.87	N17°09'41"W
L298	37.11	N22°48'18"W
L299	80.77	N25°02'18"W
L300	93.35	N27°00'12"W
L301	31.22	N35°47'48"W
L302	32.09	N47°38'18"W
L303	45.89	N54°11'20"W
L304	72.43	N53°16'03"W
L305	85.08	N56°55'45"W
L306	38.26	N63°19'37"W
L307	35.73	N69°16'58"W
L308	21.04	N76°04'20"W

REGISTERED PROFESSIONAL LAND SURVEYOR

OREGON
JULY 25, 1990
RALPH E. DUNHAM
2443

EXPIRES 12/31/05

I DO HEREBY CERTIFY THAT THIS IS AN EXACT AND TRUE COPY OF THE ORIGINAL

LINE TABLE (L-M)

LINE	LENGTH	BEARING
L309	12.90	S18°28'00"W
L310	158.42	S64°16'54"W
L311	40.18	S52°24'37"W
L312	58.29	S76°31'17"W
L313	50.83	S53°55'24"W
L314	31.53	S48°49'32"W
L315	45.61	S45°30'07"W
L316	32.00	S57°34'06"W
L317	40.06	S62°48'12"W
L318	27.97	S61°18'01"W
L319	35.83	S85°59'23"W
L320	43.06	N73°57'18"W
L321	49.19	N45°32'39"W
L322	47.37	N20°07'51"W
L323	52.99	N06°47'44"E
L324	26.50	N41°15'32"E
L325	39.79	N34°03'56"E
L326	34.08	N32°51'32"E
L327	82.56	N35°51'55"E
L328	100.76	N58°45'11"E
L329	96.21	N00°00'00"E
L330	57.83	N70°59'49"E

LINE TABLE (M-N)

LINE	LENGTH	BEARING
L331	36.00	N13°50'47"W
L332	25.77	N11°36'02"W
L333	25.59	N05°24'52"W
L334	26.54	N00°18'09"E
L335	24.96	N05°11'41"E
L336	123.69	N08°16'41"E
L337	21.91	N13°30'30"E
L338	19.59	N30°04'07"E
L339	18.31	N39°39'48"E
L340	17.95	N50°00'41"E
L341	17.93	N58°50'32"E
L342	17.97	N69°14'07"E
L343	40.43	N78°21'23"E
L344	107.24	N82°45'50"E
L345	188.13	N80°20'09"E
L346	115.68	N80°32'48"E
L347	193.25	N80°42'59"E
L348	95.12	N82°18'00"E
L349	94.86	N84°23'19"E
L350	79.40	N83°44'36"E
L351	87.51	N81°28'51"E
L352	89.71	N78°45'23"E
L353	98.97	N76°08'47"E
L354	34.09	N71°51'04"E
L355	32.86	N65°43'49"E
L356	109.20	N63°07'35"E
L357	56.96	N67°23'41"E
L358	43.51	N72°12'45"E
L359	40.12	N84°07'31"E
L360	34.62	S86°36'24"E
L361	26.64	S77°56'05"E
L362	63.36	S74°14'51"E
L363	54.31	S71°06'45"E
L364	9.79	S74°16'44"E

LINE TABLE (N-O)

LINE	LENGTH	BEARING
L365	17.18	N01°02'24"E
L366	9.84	N42°40'14"W
L367	30.08	N12°52'50"W
L368	11.57	N28°30'58"W
L369	41.94	N28°30'58"W
L370	40.62	N18°17'57"W
L371	14.33	N00°26'07"E
L372	7.45	N41°14'07"E
L373	67.56	N28°12'16"W
L374	32.18	N18°00'58"W
L375	140.16	N35°32'08"W
L376	45.67	N05°08'00"W
L377	43.91	N17°00'23"E
L378	47.46	N43°32'01"E
L379	39.50	N71°02'49"E
L380	41.85	S85°52'36"E
L381	31.70	N55°01'14"E
L382	29.75	N74°04'10"E
L383	35.35	S85°11'00"E
L384	58.31	S61°21'59"E
L385	74.06	S42°50'24"E
L386	53.26	S03°45'22"E
L387	27.96	S31°28'23"E
L388	16.81	S75°04'57"E
L389	40.43	N82°18'41"E
L390	53.44	N54°39'06"E
L391	19.43	N87°22'32"E

CONTINUED
(PAGE 6 of 7)

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Drawn By:	Elvin Stingley	Date:	April 06, 2005
Checked By:	JLE	Drawing No.:	CBNBWB-Final
Designed By:	CDH	Revised:	
Job Name:	CBNB-Waterboard Land Trade	Sheet 5 of 7	

P 2005 #11
CAB C-438

FINAL PARTITION PLAT
LINE TABLE SHEET FOR PARCEL #2 (Pg. 2 of 2)

LINE TABLES FOR PARCEL #2

LINE TABLE (O–P)		
LINE	LENGTH	BEARING
L392	21.73	N60°28'52"E
L393	68.43	N70°04'20"E
L394	22.49	N69°04'34"E
L395	26.18	N62°40'31"E
L396	15.85	N57°03'09"E
L397	54.72	N53°44'03"E
L398	20.15	N50°26'52"E
L399	23.27	N46°41'50"E
L400	24.81	N41°05'39"E
L401	28.93	N35°23'59"E
L402	23.41	N30°58'54"E
L403	25.08	N24°45'33"E
L404	16.99	N21°11'41"E
L405	46.30	N17°29'10"E
L406	48.13	N13°42'40"E
L407	17.06	N09°24'25"E
L408	20.49	N02°55'15"E
L409	105.43	N00°00'46"E
L410	21.25	N00°17'29"W
L411	26.85	N10°18'33"E
L412	25.23	N20°52'59"E
L413	15.65	N29°57'44"E
L414	40.44	N36°03'14"E
L415	20.01	N42°20'58"E
L416	26.20	N50°33'39"E
L417	21.90	N55°12'06"E
L418	41.27	N63°02'27"E
L419	24.96	N66°36'33"E
L420	30.50	N71°53'51"E
L421	18.09	N75°53'33"E
L422	34.30	N81°21'05"E
L423	31.78	N88°18'58"E
L424	30.30	S84°46'27"E
L425	35.64	S70°07'54"E
L426	26.38	S59°08'59"E
L427	49.30	S54°50'32"E
L428	55.00	S57°26'33"E
L429	18.96	S60°44'53"E
L430	26.67	S65°06'05"E
L431	27.23	S72°00'12"E
L432	24.23	S77°33'12"E
L433	33.41	S88°32'28"E
L434	23.44	N84°11'45"E
L435	30.65	N78°51'21"E
L436	32.97	N73°21'24"E
L437	32.49	N67°37'53"E
L438	31.85	N62°21'28"E
L439	30.42	N57°57'40"E
L440	25.19	N55°28'37"E
L441	38.73	N51°32'13"E
L442	40.03	N46°35'06"E
L443	36.14	N40°02'34"E
L444	35.07	N35°42'42"E
L445	34.73	N30°52'31"E
L446	29.77	N25°15'21"E
L447	39.27	N19°52'49"E
L448	27.35	N14°36'20"E
L449	38.81	N11°30'29"E
L450	35.78	N13°04'26"E
L451	32.69	N18°16'30"E
L452	63.16	N21°47'48"E
L453	29.42	N20°20'04"E
L454	36.65	N12°31'32"E
L455	44.91	N13°08'47"E
L456	38.75	N21°34'48"E
L457	41.67	N33°12'46"E
L458	35.78	N43°16'09"E
L459	23.35	N51°31'09"E
L460	34.82	N56°28'33"E
L461	29.32	N55°33'46"E
L462	31.58	N50°40'19"E
L463	35.12	N44°05'19"E
L464	27.46	N37°57'20"E
L465	38.69	N31°58'39"E
L466	27.19	N29°19'39"E
L467	34.23	N25°42'59"E
L468	38.16	N21°56'30"E
L469	45.19	N16°27'33"E
L470	40.83	N10°01'06"E
L471	27.69	N03°16'19"E
L472	17.22	N02°21'44"W
L473	53.72	N03°49'04"W
L474	22.67	N02°32'19"E
L475	21.54	N12°15'07"E

LINE TABLE (P–O)		
LINE	LENGTH	BEARING
L476	219.72	N65°59'07"W
L477	693.46	N05°41'59"W
L478	224.62	N14°35'04"E
L479	323.29	N23°40'06"E
L480	129.65	S69°31'41"E
L481	1412.13	S54°53'19"E
L482	262.04	S00°06'35"E
L483	125.00	S86°21'16"E
L484	27.20	S57°14'51"E
L485	26.93	S35°25'43"E
L486	33.85	S12°01'30"E
L487	45.37	S09°19'56"E
L488	56.48	S03°04'28"E
L489	51.79	S22°05'15"E
L490	20.14	S66°59'07"E
L491	24.02	S77°05'53"E
L492	25.15	S87°13'19"E
L493	14.79	N84°13'47"E
L494	13.88	N62°55'53"E
L495	18.40	N75°25'04"E
L496	24.68	S86°36'09"E
L497	26.55	S66°44'28"E
L498	25.52	S45°00'46"E
L499	27.85	S23°12'27"E
L500	11.17	S04°21'34"E
L501	41.90	S07°07'37"E
L502	104.44	N89°53'25"E
L503	707.11	S45°06'35"E
L504	430.00	N89°53'25"E
L505	110.00	S00°06'35"E
L506	247.59	S46°31'37"W
L507	720.00	S00°06'35"E
L508	76.34	N90°00'00"E

LINE TABLE (O–A)		
LINE	LENGTH	BEARING
L509	32.07	S09°15'25"W
L510	36.40	S11°51'12"W
L511	38.17	S14°18'49"W
L512	34.83	S18°27'06"W
L513	42.12	S22°42'50"W
L514	34.94	S19°31'12"W
L515	37.66	S17°43'18"W
L516	49.77	S20°45'53"W
L517	40.26	S18°27'06"W
L518	33.42	S22°03'21"W
L519	47.22	S27°20'48"W
L520	31.16	S20°25'41"W
L521	27.04	S21°00'46"W
L522	28.08	S16°42'59"W
L523	21.61	S13°36'23"W
L524	31.14	S03°44'06"W
L525	38.92	S06°20'47"W
L526	32.64	S07°46'22"W
L527	27.53	S14°26'03"W
L528	29.25	S19°52'24"W
L529	58.94	S27°46'57"W
L530	37.43	S35°17'56"W
L531	34.20	S39°50'00"W
L532	43.88	S42°21'54"W
L533	36.53	S45°50'06"W
L534	28.62	S49°15'51"W
L535	26.68	S55°26'02"W
L536	20.55	S60°06'20"W
TO THE P.O.B. PARCEL 2 (L1, PG. 5 of 7)		

REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JULY 25, 1990
RALPH E. DUNHAM
2443

EXPIRES 12/31/05

I DO HEREBY CERTIFY THAT THIS IS AN EXACT AND TRUE COPY OF THE ORIGINAL

Stuntzner Engineering & Forestry, L.L.C.
ENGINEERING • LAND SURVEYING • FORESTRY
PLANNING • WATER RIGHTS
705 South 4th St.
Post Office Box 118
Coos Bay, Oregon 97420
Phone: (541) 267-2872
Fax: (541) 267-0588

Drawn By:	Elvin Stingley	Date:	April 05, 2005
Checked By:	JLE	Drawing No.:	CBNBWB-Final
Designed By:	CDH	Revised:	
Job Name:	CBNB-Waterboard Land Trade	Sheet 6 of 7	

P 2005 #11
CAB C-438

FINAL PARTITION PLAT
LINE TABLE SHEET FOR PARCEL #3

BEGINNING AT THE INTERSECT OF THE WEST LINE OF THE J. AKINS DLC #45 WITH THE EXTERIOR BOUNDARY OF THE EXISTING PRIMARY WATER BOARD ROADWAY, THENCE THE FOLLOWING COURSES:

PORTION OF LINE TABLE (B-C)

LINE	LENGTH	BEARING
P.O.B. L14	18.13	S36°29'19"W
L15	37.77	S26°30'22"W
L16	22.87	S19°19'14"W
L17	20.04	S18°26'09"W
L18	40.08	S25°31'53"W
L19	32.24	S33°57'19"W
L20	40.15	S41°24'14"W
L21	57.42	S52°08'14"W
L22	49.13	S63°15'35"W
L23	48.97	S72°41'17"W
L24	53.67	S81°22'23"W
L25	40.11	S75°02'01"W
L26	43.56	S71°22'22"W
L27	58.35	S80°08'19"W
L28	44.31	N88°49'19"W
L29	42.91	N79°43'33"W
L30	43.20	N69°37'26"W
L31	53.35	N57°46'45"W
L32	42.96	N52°48'15"W
L33	54.44	N46°34'09"W
L34	72.76	N41°33'43"W
L35	78.63	N41°21'42"W
L36	29.10	N45°00'45"W
L37	19.76	N53°37'42"W
L38	26.78	N58°53'18"W
L39	28.30	N66°55'27"W
L40	11.63	N75°19'48"W
L41	17.13	N78°05'01"W
L42	16.40	N83°20'55"W
L43	16.03	N88°41'02"W
L44	8.05	S88°02'55"W
L45	8.52	S86°37'11"W
L46	101.63	S82°24'03"W
L47	103.14	S83°09'26"W
L48	71.58	S83°34'45"W
L49	42.56	S83°56'49"W
L50	30.10	S81°42'20"W
L51	64.44	S81°24'45"W
L52	34.02	S72°15'45"W
L53	27.58	S64°14'27"W
L54	28.52	S56°48'17"W
L55	25.04	S50°35'05"W
L56	21.26	S43°22'34"W
L57	20.70	S39°02'51"W
L58	23.40	S33°42'06"W
L59	20.28	S27°27'11"W
L60	30.97	S23°49'19"W
L61	35.27	S23°21'17"W
L62	82.57	S19°10'52"W
L63	129.83	S17°55'04"W
L64	80.53	S18°48'40"W
L65	82.13	S19°22'31"W
L66	72.87	S18°26'33"W
L67	79.26	S19°37'48"W
L68	58.91	S19°26'19"W
L69	31.28	S24°00'38"W
L70	24.93	S29°10'42"W
L71	23.54	S34°15'06"W
L72	25.79	S39°04'59"W
L73	25.45	S43°48'56"W
L74	24.15	S48°13'02"W
L75	36.91	S52°43'16"W
L76	46.11	S54°24'18"W

LINE TABLE (C-D)

LINE	LENGTH	BEARING
L77	8.65	S35°27'52"E
L78	229.27	S35°38'11"E
L79	49.29	S35°42'08"E
L80	27.23	S14°23'28"W
L81	40.71	S31°02'52"W
L82	22.42	S46°53'23"W
L83	22.84	S58°31'41"W
L84	18.68	S69°40'07"W
L85	55.73	S78°50'48"W
L86	51.45	S81°17'17"W
L87	77.00	S73°10'12"W
L88	97.94	S77°44'06"W
L89	105.37	S74°07'03"W
L90	31.08	N70°30'34"W
L91	146.98	S56°30'39"W
L92	110.80	S86°23'33"W
L93	70.90	N18°31'12"W

LINE TABLE (D-E)

LINE	LENGTH	BEARING
L94	30.25	S25°06'36"W
L95	147.43	S24°45'30"W
L96	148.49	S22°17'14"W
L97	139.43	S22°18'19"W
L98	155.76	S24°09'05"W

LINE TABLE (E-F) + (L137)

LINE	LENGTH	BEARING
L99	14.56	N47°20'33"E
L100	17.68	N57°08'55"E
L101	18.24	N66°12'53"E
L102	12.33	N75°49'18"E
L103	11.75	N82°05'11"E
L104	16.16	N90°00'00"E
L105	23.85	S80°29'23"E
L106	14.13	S67°01'14"E
L107	11.28	S62°15'08"E
L108	23.84	S51°57'38"E
L109	22.54	S40°24'44"E
L110	21.89	S25°43'12"E
L111	19.41	S16°23'46"E
L112	61.05	S06°19'17"E
L113	171.64	S78°07'23"E
L114	13.48	S69°45'27"E
L115	15.72	S61°35'50"E
L116	19.07	S52°15'25"E
L117	14.63	S40°36'50"E
L118	9.95	S37°08'36"E
L119	10.95	S28°25'52"E
L120	12.53	S21°53'36"E
L121	12.84	S15°52'54"E
L122	19.45	S05°00'56"E
L123	14.61	S03°31'44"W
L124	13.69	S12°25'53"W
L125	11.58	S18°15'56"W
L126	11.71	S28°18'40"W
L127	12.99	S32°10'31"W
L128	10.94	S39°58'14"W
L129	9.22	S46°50'42"W
L130	13.56	S51°48'06"W
L131	12.95	S60°04'44"W
L132	14.38	S67°17'05"W
L133	90.84	S70°27'15"W
L134	122.69	N88°20'58"W
L135	63.26	N84°05'59"W
L136	137.23	N80°33'30"W
L137	116.00	S02°36'48"W
N BDY DLC44	2667.25	S87°14'18"E
W BDY DLC45	2547.67	N01°58'02"E

TO THE P.O.B OF PARCEL 3

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
JULY 25, 1995
RALPH E. DUNHAM
2443
EXPIRES 12/31/05

I DO HEREBY CERTIFY THAT THIS IS AN EXACT AND TRUE COPY OF THE ORIGINAL

Stuntzner Engineering & Forestry, L.L.C.
ENGINEERING • LAND SURVEYING • FORESTRY
PLANNING • WATER RIGHTS
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Post Office Box 118
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Drawn By:	Elvin Stingley	Date:	April 06, 2005
Checked By:	JLE	Drawing No.:	CBNBWB-Final
Designed By:	CDH	Revised:	
Job Name:	CBNB-Waterboard Land Trade		Sheet 7 of 7

Appendix F

SOILS MAP
AND
SOILS INVENTORY REPORT

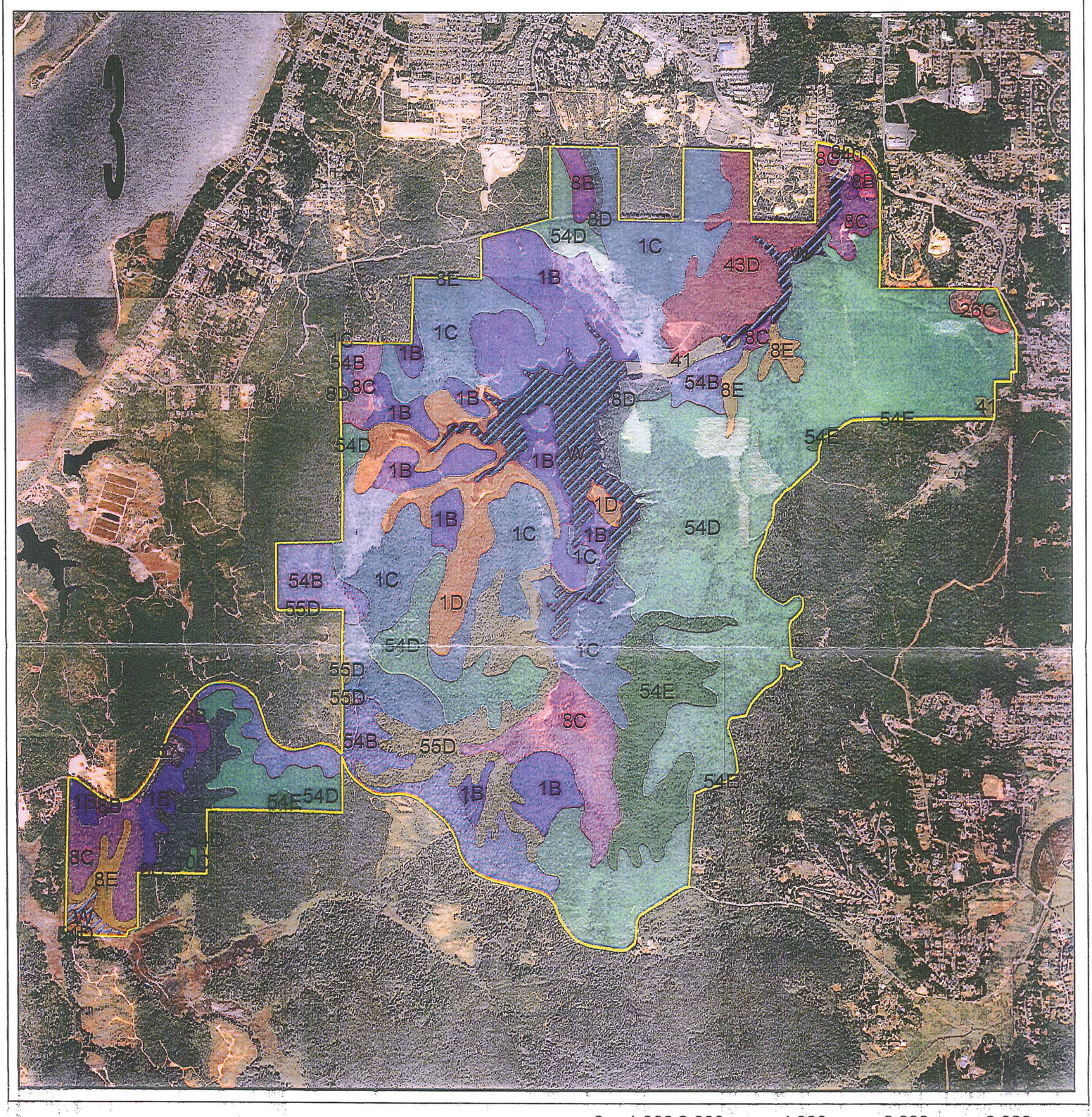
Soils Inventory Report

Wed Jun 4 08:08:31 PDT 2008

Map Unit Symbol	Map Unit Name	Acres	Percent
10C	Chismore silt loam, 7 to 12 percent slopes	2.1	0%
1B	Bandon sandy loam, 0 to 7 percent slopes	346.5	11%
1C	Bandon sandy loam, 7 to 12 percent slopes	485	16%
1D	Bandon sandy loam, 12 to 30 percent slopes	129.3	4%
26C	Geisel silt loam, 2 to 12 percent slopes	11.9	0%
40	Nehalem silt loam	0.8	0%
41	Nestucca silt loam	15.9	1%
43D	Netarts loamy fine sand, 2 to 30 percent slopes	116.3	4%
54B	Templeton silt loam, 0 to 7 percent slopes	188.7	6%
54D	Templeton silt loam, 7 to 30 percent slopes	989.8	32%
54E	Templeton silt loam, 30 to 50 percent slopes	138.2	4%
55D	Templeton-Bullards complex, 3 to 30 percent slopes	138	4%
57	Udorthents, level	8.2	0%
8B	Bullards sandy loam, 0 to 7 percent slopes	34	1%
8C	Bullards sandy loam, 7 to 12 percent slopes	180.2	6%
8D	Bullards sandy loam, 12 to 30 percent slopes	88.1	3%
8E	Bullards sandy loam, 30 to 50 percent slopes	45.1	1%
W	Water	159.7	5%
	Total:	3077.8	

COOS BAY - NORTH BEND WATER BOARD

SOILS MAP



0 1,000 2,000 4,000 6,000 8,000

Feet

Legend

CBNBWB_Boundary	1D	54D	8D
Soils Map	26C	54E	8E
Map Symbol	40	55D	W
10C	41	57	
1B	43D	8B	
1C	54B	8C	

United States Department of Agriculture
NRCS Natural Resources Conservation Service

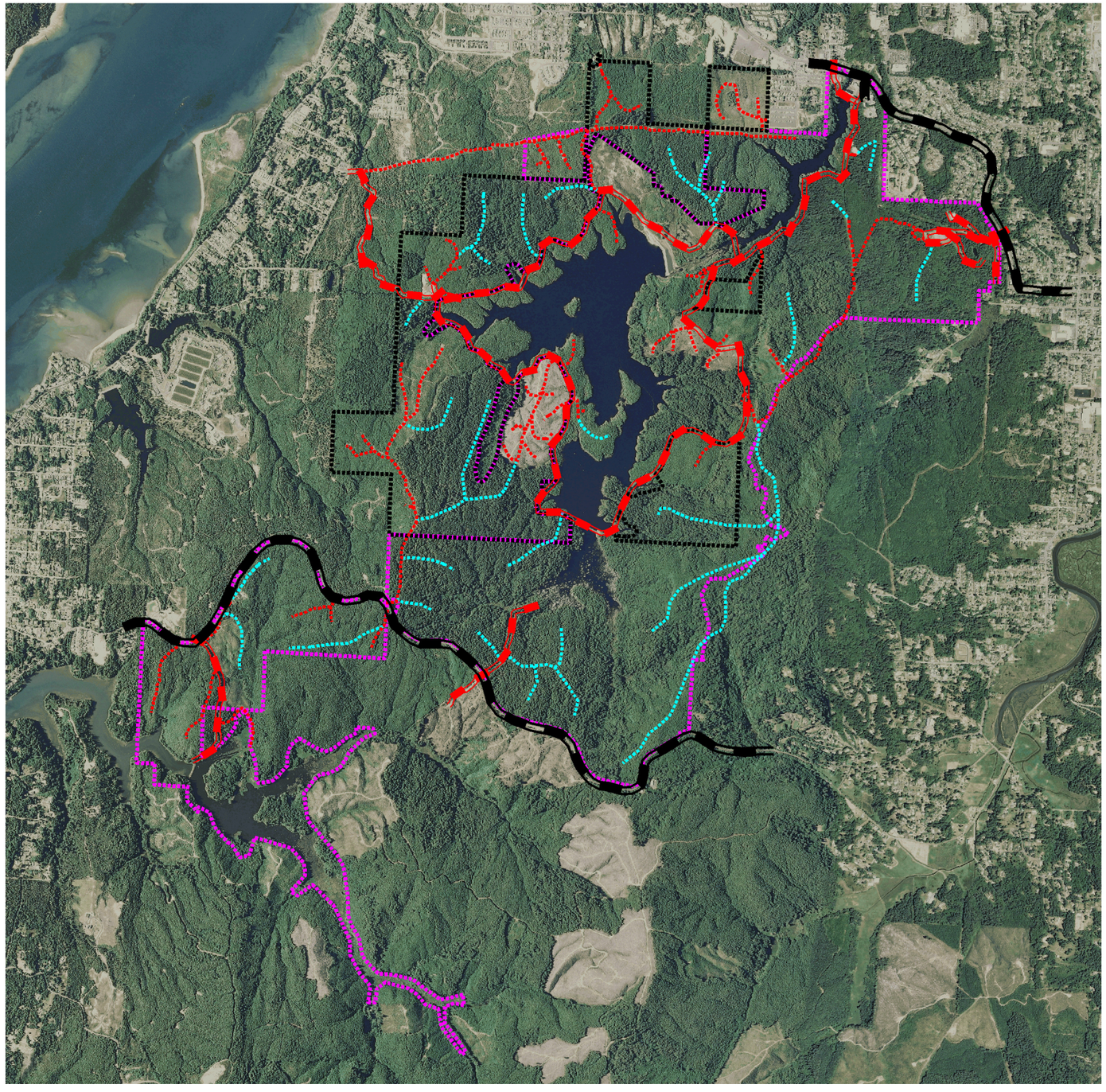
Coquille Field Office
382 North Central Boulevard
Coquille, Oregon 97423
(541) 396-2841

Appendix G

PROPOSED ROAD PLAN
AND
ROAD CONSTRUCTION SPECIFICATIONS

Pony Creek Watershed
Proposed Road Plan

Stuntzner Engineering & Forestry, LLC
PO BOX 118 ~ 705 SOUTH 4TH STREET
COOS BAY, OREGON 97420
541-267-2872



- Paved_Public_Roads
- Gravel_Roads
- Unsurfaced_Roads
- Proposed_Road

All Ownership(by OWNERSHIP)

- 'CB'
- 'CBNBWB'
- ORTHO_1-1_1N_S_OR011_2011_1.SID

N
W E
S

2640 0 2640 5280 7920 10560 13200 Feet

Scale = 1 : 2640.00 (In : Feet)

02-06-2012

EXHIBIT A

ROAD CONSTRUCTION SPECIFICATIONS

Right-Of-Way Logging:

1. All trees within the posted right-of-way boundary containing 50 board feet shall be felled and bucked to lengths specified by Menasha Corporation.
2. All logs shall be properly limbed, and free of debris.
3. All conifer logs having a minimum volume of 20 board feet net truck scale shall be yarded and delivered as specified by Menasha's engineer.
4. Right-of-way timber shall be felled to minimize breakage. Whenever necessary, hydraulic powered rams shall be used to fall timber uphill or to lead in order to prevent breakage.

Clearing and Grubbing:

1. Debris as used in this section will be defined as that material consisting of brush, limbs, stumps or other loose vegetative material resulting from logging the right-of-way.
2. Clearing shall consist of removing all brush and other debris 5 feet back from the top of the staked cut bank to toe of fill slope.
3. All trees 15 feet or higher within 10 feet of the top of the back slope shall be cut.
4. Grubbing is the removal of stumps, roots and other wood material embedded within the road prism.
5. No loose debris, stumps and/or roots, are to remain under any fill.
6. No clearing or grubbing debris is to be left lodged against merchantable trees or to remain in any streams.
7. Cutting of snags and danger trees outside the right-of-way boundaries shall be as required by the Oregon State Compensation Board, Accident Prevention and Safety Department. If snags or danger trees are on property other than Menasha's land, notify Menasha's logging engineer for proper action.
8. Slash, chunks, stumps and other clearing debris shall not be disposed of within any critical slide area. (example, headwalls) Subgrade

Construction:

1. The road shall be constructed as shown on the plan and profile. Deviation from the plan may be made, upon approval of Menasha Corporation engineer, if such a change would improve the road or reduce construction costs.
2. Unless otherwise specified, the roads shall be 14 feet of subgrade width, plus 3 feet for ditch. Turnouts shall be intervisible and shall be of sufficient width and length for two logging trucks to pass. All curves shall be constructed with appropriate width as shown on the plan and profile, or approved by Menasha's engineer.
3. The minimum radius curve shall be 50 feet, unless otherwise specified.
4. The road is to be full-benched construction on side slopes which exceed 60%.
5. Embankment shall be constructed as staked at locations shown on the plan and profile or where small amounts of fill would improve road alignment or grade.
6. Any sharp vertical curves in the roadbed shall be reduced by excavating necessary material to create a uniform grade profile between major changes in grade.

7. Cut slopes shall be constructed 3/4:1 below 60% topography, 1/2:1 above 60% topography, in common or unclassified material.
8. All fills 6 feet deep and over shall be widened 2 feet for each 6 feet of centerline depth. Embankment slopes shall not be steeper than 1-1/2:1 for common excavation.
9. Menasha Corporation reserves the right to revise the road location at its expense, to improve the road or provide for more economical construction.
10. Excavated material shall not be allowed to cover boles of standing trees to a depth in excess of one foot on the upper side.
11. Embankments shall be placed and compacted in successive parallel layers not to exceed 18" in depth. Construction equipment shall be routed over the layers of embankment material placed and travel shall be distributed evenly over the entire width of embankment for the purpose of compaction.
12. Excess excavation shall be sidecast except as specified below:
    a. Where material will enter a stream course.
    b. Where material will accumulate in areas deemed critical slide potential by the menasha Forest Engineer.
    c. On steep side slopes exceeding 55%, all of the excavated material shall be drifted to a stable location along ride tops or flatter side slopes, unless otherwise specified. On side slopes exceeding 50%, sidecast material will not exceed 2' in depth measured perpendicular to slope.
13. Excavation of material through critical areas:
    a. Pioneer roads may not be sidecast and shall be kept to a minimum width.
    b. When blasting is required, low intensity shots will be used. This is to contain as much material as possible within the road prism. Containment will be not less than 90%.
    c. All excavation, following the pioneer road, will be placed in a stable waste area as shown on the plan and profile, or authorized by Menasha's engineer.

Grading:

1. Grading shall consist of blading and subgrade, borrow pits, ditches and turnouts to remove surface irregularities and provide a crowned roadbed with 8" of crown at the centerline.
2. Rocks larger than 6" at the maximum dimension shall be removed from the finished subgrade.
3. Rock protruding above the finished subgrade more than one-half the depth of the intended surfacing shall be removed.
4. Any berm left during the construction of the subgrade shall be removed during grading, unless authorized by Menasha's engineer, in order to prevent excessive erosion of the fill slope.

Rock Excavation:

1. Solid rock shall consist of materials which cannot be loosened for excavation by ripping or other mechanical methods.
2. In the use of explosives, the contractor shall adopt methods and procedures which will prevent damage to adjacent landscape features and will minimize scattering the rocks, stumps or other debris outside the clearing limits. On side slopes over 55% blasting will be done to maximize the containment of rock, soil and debris within the road prism. Drilling and blasting patterns and procedures shall be used that will produce a smooth surface without appreciable breaks, in accordance with the road plan.

3. In solid rock cuts where pockets that will not drain are formed by blasting below the subgrade elevation, drainage shall be provided by ditching to the edge of the subgrade and backfilling both the pockets and the ditch with fragmentary rock, gravel or other suitable porous material.

4. Vertical excavation of slopes shall be allowed in rock excavation, except where slope height exceeds 15 feet. Slopes over 15 feet shall be constructed to a 1/4:1 slope. Embankments constructed of rock shall not have slopes steeper than 1:1.

5. When indicated on the plans, rock encountered in the excavation shall be conserved for placement as protection on the road subgrade as specified on the plans.

Drainage:

1. Corrugated metal culvert pipe shall be of the types, sizes, gauges and dimensions shown on the road plans, and installed in accordance with these specifications. Cross drain lengths and locations shown on the road plans are approximate and will be determined by Menasha's engineer following completion of the subgrade. Unless otherwise stated, Menasha will furnish the required CMPs.

2. A minimum cover of one foot, but not less than one-half of the diameter or span of the pipe, shall be placed on top of the pipe unless otherwise specified.

3. Pipes shall be bedded in a suitable foundation material of uniform density throughout the length of the culvert. Where ledge rock, boulders, soft or spongy soils are encountered, they shall be excavated eight inches below the invert grade for a width of at least one pipe diameter or span on each side of the pipe and shall be replaced by gravel or other suitable selected bedding material.

4. Backfill shall be in uniform select material placed under the haunches and alongside the pipe in layers not exceeding six inches in depth and compacted thoroughly on each side of the pipe for the full length of the culvert. The pipe shall be completely supported by compacted backfill material on each side at least one external diameter or span of the pipe, except insofar as undisturbed material obtrudes upon this area. This method of backfilling and compaction shall be continued until the material has reached an elevation of one foot above the top of the pipe.

5. Metal culverts shall not be dragged, dropped, or otherwise mishandled in such a manner as to break the outer coating or spelter. Any damage to the outer coating or spelter or to the pipe itself will be corrected in a manner suitable to the Menasha engineer.

6. The outflow end of pipes shall be located so that water will fall upon solid, stable soil and not upon road embankments. Half-round culverts shall be used to control erosion where it is not feasible to direct the culvert outlet onto stable ground.

7. All culvert installation shall be approved by the Menasha engineer prior to the completion of installation.

8. Live stream shall be cleaned for a distance of 50 feet above the end of the culvert pipe.

9. During construction, incomplete roads shall be drained by out-sloping, waterbars, or dispersion ditches where necessary to minimize stream siltation. Natural stream flows shall be maintained so as not to be hazardous to any section of the road.

10. On road projects which do not call for the construction of a drainage ditchline, cross-ditches shall be installed as shown on the specification drawing at locations marked by Menasha's engineer.

Cleanup:

When construction project is completed, contractor shall remove all equipment and materials from the project area and leave it in a neat, well finished condition before the final payment is released.

Appendix H

CITY OF COOS BAY ORDINANCE NO. 170
AND
WATER BOARD RESOLUTION NO. 210

ORDINANCE NO. 170

AN ORDINANCE REGULATING SALES OF CITY TIMBER TO PROHIBIT EXPORT AND TO CONFORM WITH THE FOREST CONSERVATION AND SHORTAGE RELIEF ACT OF 1990, A FEDERAL LAW; AS AMENDED BY ORDINANCE NO. 192

The City of Coos Bay Ordains as follows:

Section 1. Definitions. For the purposes of this ordinance, the following mean:

City Timber. Any timber owned by the City of Coos Bay.

Export. Unprocessed timber loaded on a vessel or other conveyance with a foreign destination or present at a facility such as a port or dock with intent to load it on a vessel or other conveyance with a foreign destination.

Performance bond. The security required by a city timber sale contract which ensures satisfactory performance of contract requirements by the timber sale purchaser. A performance bond may be in the form of a surety bond, cash, negotiable securities, irrevocable letter of credit, or an assignment of surety.

Person. An individual, a partnership, a public or private corporation, and unincorporated association, or any other legal entity. The term includes any subsidiary subcontractor, parent company or other affiliate. Business entities are considered affiliates when one controls or has the power to control the other or when both are controlled directly or indirectly by a third person.

Purchaser. Person who has entered into a timber sale contract with the City.

Unprocessed timber or **unprocessed city timber.** Trees or portions of trees or other roundwood not processed to standards and specifications suitable for end product use. The term does not include timber processed into any one of the following:

(1) Lumber or construction timbers, meeting current American Lumber Standards Grades or Public Lumber Inspection Bureau Export R or N list grades, sawn on 4 sides, not intended for remanufacture;

(2) Lumber, construction timbers, or cants for remanufacture, meeting current American Lumber Standards Grades or Pacific Lumber Inspection Bureau Export R or N list clear grades, sawn on 4 sides, not to exceed 12 inches (nominal) in thickness;

(3) Lumber, construction timbers, or cants for remanufacture, that do not meet the grades referred to in subsection (2) and are sawn on 4 sides, with wane less than 1/4 of any face, not exceeding 8-3/4 inches in thickness;

(4) Chips, pulp, or pulp products;

(5) Veneer or plywood;

(6) Poles, posts, or piling cut or treated with preservatives or use as such,

(7) Sakes or shingles,

(8) Aspen or other pulpwood bolts, not exceeding 100 inches in length, exported for processing into pulp,

(9) Pulp logs or cull logs processed at domestic pulp mills, domestic chip plants, or other domestic operations for the purpose of conversion of the logs into chips,

(10) Firewood cut in pieces 48 inches or less in length.

Section 2. Criteria for Eligibility to Bid on City Timber Sale Contracts.

(1) In additional to all other requirements of law, any person submitting a bid for the purchase of city timber must certify that;

(a) The person will not export directly or indirectly unprocessed city timber; and

(b) The person will not sell, transfer, exchange or otherwise convey unprocessed city timber to any other person without obtaining a certification from the person that meets the requirements of Section 6.

(2) A person shall not be disqualified for having exported unprocessed timber from private lands within twenty-four months of the date of submission of this bid. [Section 2(2) added by Ordinance No. 192, section 1, passed January 19. 1993.]

Section 3. Prohibition Against Indirect Substitution. In addition to all other requirements of law, no person who is prohibited from purchasing timber directly from the City may purchase city timber from any other person. Acquisitions of Western Red Cedar which are domestically processed into finished products to be sold into domestic or international markets are exempt from the prohibition contained in this section.

Section 4. Applicable City Timber. All unprocessed timber which ordinates from city lands is prohibited from export.

Section 5. Surplus Timber. The prohibitions against export shall not apply to specific quantities of grades and species of unprocessed timber originating from city land which the United States Secretary of Agriculture or Interior has determined by rule to be surplus to the needs of timber manufacturing facilities in the United States.

Section 6. Reporting Requirements.

(1) Before the City will issue final acceptance of timber sale contract requirements, a purchaser of city timber must:

(a) Notify the City of the delivery destination of all timber purchased under that contract.

(b) Prior to selling, trading, exchanging, or otherwise conveying city timber to any other person, the purchaser of city timber shall obtain a certification of the person's eligibility to purchase city timber, and their intent to comply with the terms and conditions contained in this section. Obtaining certification shall not relieve the purchaser's responsibility to provide the City with an accounting of the delivery destination of that timber.

(2) Any performance bond required by a city timber sale contract may be retained by the City, until satisfactory notification of city timber delivery destination has been received.

(3) Failure to provide the City with a final accounting of the delivery destination of city timber will be considered a violation of these export regulations. Violators will be subject to the penalties contained in Section 7.

Section 7. Purchaser Disqualification and Termination of Contracts.

(1) The City shall keep a record of any person who violates the requirements of this ordinance.

(2) A person whose name appears on the record for violations as stated in (1) above, and who again violates the requirements of this ordinance shall be disqualified from bidding on or purchasing city timber for a period of five years following the date of the violation. Any appeals of disqualification shall be handled as provided in ORS 279.045.

(3) The City may cease operations on and/or terminate any city timber sale contract entered into with a person who has violated the requirements of this ordinance, and assess damages according to the following formula:

D = (OSV+AC) - (PR+RSV), where:

(a) D= Damages and Expenses

(b) OSV = Original Sale Value (timber only - does not include project value). The original sale value shall be adjusted to reflect estimated overruns or underruns on recovery sales.

(c) AC = Administrative Costs. These costs include both the field and office costs required for the preparation of the defaulted parcel for resale. These costs also include rehabilitation or regeneration delay costs, legal service costs, interest, and other costs allowed by law.

(d) PR = Payments Received.

(e) RSV = Remaining Sale Value. The value of the remaining timber shall be determined using the City's estimate of remaining volume, multiplied by the dollar values stated in the contract.

Section 8. Log Branding and Marking Requirements.

(1) All city timber originating from city timber sales shall be branded with an assigned and registered brand before removal from the sale area. Unless prevented by the size or condition of the wood, both ends of all logs originating from city timber sales shall be hammer branded and both ends shall be painted with a paint type and color determined by the City.

(2) If properly marked city timber is subdivided into smaller pieces for any other purpose than immediate processing, each piece must be branded with the city brand specifically used for this purpose and signifying the unprocessed timber is city timber ineligible for export.

Section 9. Enforcement. Investigation of suspected violations of these rules and/or surveillance of unprocessed timber in transit and at port facilities may be conducted by the City, or contracted by the City to other state or federal agencies. Any alleged violations of the export prohibition provisions of this section will be referred by the City to the appropriate federal or state agency or city department for prosecution or other legal action.

Passed by the Council and approved by the Mayor May 7, 1991.

RESOLUTION NO. 210

A RESOLUTION REGULATING SALES OF WATER BOARD TIMBER TO PROHIBIT EXPORT AND TO CONFORM WITH THE FOREST CONSERVATION SHORTAGE AND RELIEF ACT OF 1990, A FEDERAL LAW

(Revision of Resolution No. 201)

The Coos Bay-North Bend Water Board resolves as follows:

SECTION I. DEFINITIONS

For the purpose of this resolution, the following definitions apply.

Water Board Timber - Any timber owned by the Coos Bay-North Bend Water Board.

Export - That unprocessed timber which is loaded on a vessel or other conveyance with a foreign destination or is present at a facility such as a port or dock with intent to load it on a vessel or other conveyance with a foreign destination.

Performance Bond - The security required by a Water Board timber sale contract which ensures satisfactory performance of contract requirements by the timber sale purchaser. A performance bond may be in the form of a surety bond, cash, negotiable securities, irrevocable letter of credit, or an assignment of surety.

Person - An individual, a partnership, a public or private corporation, an unincorporated association, or any other legal entity. The term includes any subsidiary subcontractor, parent company or other affiliate. Business entities are considered affiliate when one controls or has the power to control the other or when both are controlled directly or indirectly by a third person.

Private Lands - Land within the State of Oregon owned by a person. The term does not include federal land or non-federal public lands or any lands the title to which is:

A. Held in trust by the United States for the benefit of any Indian tribe or individual;

B. Held by any Indian tribe or individual subject to a restriction by the United States against alienation; or

C. Held by any Native Corporation as defined in Section 3 of the Alaska Native Claims Settlement Act (43 USC 1602).

Purchaser - Person who has entered into a timber sale contract with the Water Board.

Unprocessed Timber or Unprocessed Water Board Timber - Trees or portions of trees or other roundwood not processed to standards and specifications suitable for end product use. The term does not include timber processed into any one of the following:

A. Lumber or construction timbers meeting current American Lumber Standards Grades or Public Lumber Inspection Bureau Export R or N list grades, sawn on four sides, not intended for remanufacture;

B. Lumber, construction timbers, or cants for remanufacture meeting current American Lumber Standard Grades or Pacific Lumber Inspection Bureau Export R or N list clear grades, sawn on four sides, not to exceed 12 inches (nominal) in thickness;

C. Lumber, construction timbers, or cants for remanufacture that do not meet the grades referred to in subsection B and are sawn on four sides with wane less than 1/4 of any face, not exceeding 8-3/4 inches in thickness;

D. Chips, pulp, or pulp products;

E. Veneer or plywood;

F. Poles, posts, or piling cut or treated with preservatives for use as such;

G. Shakes or shingles;

H. Aspen or other pulpwood bolts not exceeding 100 inches in length exported for processing into pulp;

I. Pulp logs or cull logs processed at domestic pulp mills, domestic chip plants, or other domestic operations for the purpose of conversion of the logs into chips;

J. Firewood cut in pieces 48 inches or less in length.

Water Board - The Coos Bay-North Bend Water Board which operates as a joint instrumentality of the Cities of Coos Bay and North Bend pursuant to ORS 225.050 and created by the respective city charters.

SECTION II - CRITERIA FOR ELIGIBILITY TO BID ON WATER BOARD TIMBER SALE CONTRACTS

In addition to all other requirements of law, any person submitting a bid for the purchase of Water Board timber after June 10, 1991, must certify in a form and manner as specified by the Water Board that:

1. The person will not export directly or indirectly unprocessed Water Board timber; and

2. The Water Board hereby exempts bidders for Water Board timber from the requirements of ORS 526.816(3) relating to exporting private timber from private lands. Bidders shall not be disqualified from bidding on Water Board timber if they export logs from private land.

3. The person will not export directly or indirectly unprocessed timber originating from private lands in Oregon other than as permitted by law; and

4. The person will not sell, transfer, exchange, or otherwise convey unprocessed Water Board timber to any other person without obtaining a certification from the person that meets these above-stated requirements.

SECTION III - PROHIBITION AGAINST INDIRECT SUBSTITUTION

In addition to all other requirements of law, no person who is prohibited from purchasing timber directly from the Water Board may purchase Water Board timber from any other person. Acquisitions of Western Red Cedar which are domestically

processed into finished products to be sold into domestic or international markets are exempt from the prohibition contained in this section.

SECTION IV - APPLICABLE WATER BOARD TIMBER

All unprocessed timber which originates from Water Board lands is prohibited from export.

SECTION V - SURPLUS TIMBER

The prohibitions against export shall not apply to specific quantities of grades and species of unprocessed timber originating from Water Board land which the United States Secretary of Agriculture or Interior has determined by rule to be surplus to the needs of timber manufacturing facilities in the United States.

SECTION VI - REPORTING REQUIREMENTS

A. Before the Water Board will issue final acceptance of timber sale contract requirements, a purchaser of Water Board timber must:

   1. Notify the Water Board of the delivery destination of all timber purchased under that contract;

   2. Prior to selling, trading, exchanging, or otherwise conveying Water Board timber to any other person, the purchaser of Water Board timber shall obtain a certification of the person's eligibility to purchase Water Board timber and their intent to comply with the terms and conditions contained in this section. Obtaining certification shall not relieve the purchaser's responsibility to provide the Water Board with an accounting of the delivery destination of that timber.

B. Any performance bond required by a Water Board timber sale contract may be retained by the Water Board until satisfactory notification of Water Board timber delivery destination has been received.

C. Failure to provide the Water Board with a final accounting of the delivery destination of Water Board timber will be considered a violation of these export regulations. Violators will be subject to the penalties in Section VII.

SECTION VII - PURCHASER DISQUALIFICATION AND TERMINATION OF CONTRACTS

A. The Water Board shall keep a record of any person who violates the requirements of this resolution.

B. A person whose name appears on the record for violations as stated in A above and who again violates the requirements of this resolution shall be disqualified from bidding on or purchasing Water Board timber for a period of five years following the date of the violation. Any appeals of disqualification shall be handled as provided in ORS 279.045.

C. The Water Board may cease operations on and/or terminate any Water Board timber sale contract entered into with a person who has violated the requirements of this resolution and assess damages according to the following formula:

D = (OSV+AC) - (PR+RSV), where:

1. D = Damages and Expenses.

2. OSV = Original Sale Value (timber only - does not include project value). The original sale value shall be adjusted to reflect estimated overruns or underruns on recovery sales.

3. AC = Administrative Costs. These costs include both the field and office costs required for the preparation of the defaulted parcel for resale. These costs also include rehabilitation or regeneration delay costs, legal service costs, interest, and other costs allowed by law.

4. PR = Payments Received.

5. RSV = Remaining Sale Value. The value of the remaining timber shall be determined using the Water Board's estimate of remaining volume, multiplied by the dollar values stated in the contract.

SECTION VIII - LOG BRANDING AND MARKING REQUIREMENTS

A. All Water Board timber originating from Water Board timber sales shall be branded with an assigned and registered brand before removal from the sale area. Unless prevented by the size or condition of the wood, both ends of all logs originating from Water Board timber sales shall be hammer branded and both ends shall be painted with a paint type and color determined by the Water Board.

B. If properly marked Water Board timber is subdivided into smaller pieces for any other purpose than immediate processing, each piece must be branded with the Water Board brand specifically used for this purpose and signifying the unprocessed timber is Water Board timber ineligible for export.

SECTION IX - ENFORCEMENT

Investigation of suspected violations of these rules and/or surveillance of unprocessed timber in transit and at port facilities may be conducted by the Water Board or contracted by the Water Board to other state or federal agencies. Any alleged violations of the export prohibition provisions of this section will be referred by the Water Board to the appropriate federal or state agency or city department for prosecution or other legal action.

The foregoing resolution was duly passed by the Water Board this 4th day of March, 1993.

W. P. Grile, Chairman

ATTEST

Appendix I

CERTIFICATION PROGRAMS

FSC- Forest Stewardship Council

PEFC- Programmme for the Endorsement of Forest Certification

SFI- Sustainable Forestry Initiative

ATFS- American Tree Farm System

AFF – American Forrest Foundation 2010-2015 Standards for Forest Certification

Comparison of Two Forest Certification Systems and Oregon Legal Requirements, *Final Report to the Oregon Department of Forestry, December 14, 2001*

About Us

Also in this section:

Board of Directors

Staff List

How is FSC Funded?

Job Postings

FSC-US Prospectus

The History of FSC-US

In the days leading up to and following the 1992 Earth Summit in Rio, world attention was focused on the challenges faced by cultures around the globe as demands on their natural resources increased. Poverty, disease, land use change, climate change, and pollution all continue to threaten our resources and the stability of cultures worldwide. The challenges at Rio remain largely unmet. However, the conversations that occurred there contributed to one solution — the Forest Stewardship Council (FSC).

Driven in part by the failure of an intergovernmental process to agree on a global forest compact, and the compelling question — what is sustainable forestry? — loggers, foresters, environmentalists, and sociologists came together in the first General Assembly to form the FSC in 1993.

The Forest Stewardship Council was created to change the dialogue about and the practice of sustainable forestry worldwide. This impressive goal has in many ways been achieved, yet there is more work to be done. FSC sets forth principles, criteria, and standards that span economic, social, and environmental concerns. The FSC standards represent the world's strongest system for guiding forest management toward sustainable outcomes. Like the forestry profession itself, the FSC system includes stakeholders with a diverse array of perspectives on what represents a well-managed and sustainable forest. While the discussion continues, the FSC standards for forest management have now been applied in over 57 countries around the world.

In 1995, FSC-US, located in Minneapolis, MN, was established as the national “chapter” of FSC.

It's purpose is to coordinate the development of forest management standards throughout the different biogeographic regions of the U.S., to provide public information about certification and FSC, and to work with certification organizations to promote FSC certification in the U.S.FSC-US has a national presence through the work of its Board of Directors, members, staff, and regional standards coordinators.

The FSC's international headquarters are located in Bonn, Germany. FSC has contact person and national offices in more than 40 countries, creating a global FSC network. For more information on FSC at the international level, please visit www.fsc.org.

PEFC™
PEFC/01-00-01

PEFC UNIQUE FEATURES

What makes PEFC unique AND the system of choice?

As the largest forest certification system globally PEFC is the certification system of choice, with over 230 million hectares of forests globally upholding PEFC's Sustainability Benchmarks. To date, over 10,000 companies have achieved PEFC Chain of Custody certification, offering tens of thousands of PEFC-certified products globally.

With alternative forest and Chain of Custody certification systems available, there are good reasons why so many people are choosing PEFC. Here we present some of the unique and distinguishing features of PEFC when compared to other international certification systems.

PEFC upholds the highest standards without exception

- Requires compliance with all fundamental ILO Conventions in forest management since 2001, setting new benchmarks for social issues
- Is tailored to the specific needs of family and community-owned forests, with lasting contributions to livelihoods and rural development
- Offers well-established processes for group certification, thereby offering access to certification and the marketplace for certified products from locally controlled forestry
- Sets the highest standards for forest certification aligned with the majority of the world's governments, including
  - Maintaining or enhancing biodiversity
  - Identifying, protecting and/or conserving ecologically important forest areas
  - Prohibiting forest conversions and excluding certification of plantations established by conversions
  - Prohibiting use of the most hazardous chemicals and GMOs, minimizing the use of pesticides
  - Protecting workers' rights and welfare, and encouraging local employment
  - Recognizing the principle of free, prior and informed consent, the UN Declaration on Indigenous Peoples' Rights, and the ILO Convention
  - Respecting property, land tenure, customary and traditional rights; provisions for consultation with local people stakeholders
  - Abiding by applicable laws
  - Safeguarding the basic rights of workers
- Includes social, health and safety requirements in Chain of Custody certification.

Level of stakeholder engagement equally high for all standards

- Strictly separates standard-setting, certification and accreditation to ensure complete independence and impartiality
- Requires all national standards to be independently developed with participation open to all interested parties
- Recognizes the importance of the nine major groups as defined by Agenda 21
- Requires that all standards undergo public consultation at national and international levels and third-party assessment
- Demands and implements regular revisions of national certification systems

Builds on intergovernmental agreements & globally recognized processes

- Builds its understanding of sustainable forest management on broad societal consensus as expressed in international and intergovernmental processes
- Supports the implementation of governmental agreements through a voluntary, market-based mechanism
- Follows globally accepted ISO Guidelines for certification and accreditation

PEFC Council – Programme for the Endorsement of Forest Certification Schemes,
World Trade Center 1, 10 Route de l'Aéroport, PO Box 636, 1215 Geneva, Switzerland
t +41 22 799 4540, f +41 22 799 4550, w www.pefc.org

SUSTAINABLE FORESTRY INITIATIVE

Good for you. Good for our forests.℠

SFI – the North American Standard – KEY FACTS

INDEPENDENT GOVERNANCE

SFI is a fully independent, registered non-profit, with a governance structure with equal representation across three chambers: social, economic and environmental.

CONSERVATION SUPPORT

SFI has the support of conservation groups including The Conservation Fund, NatureServe, Ducks Unlimited and the American Bird Conservancy. SFI also partners with groups like the Rocky Mountain Elk Foundation and the National Wild Turkey Federation.

A SINGLE NORTH AMERICAN ASSURANCE

SFI is a single standard covering 135 million acres certified to it across North America. FSC has 13 different standards across North America, 9 in the US and 4 in Canada.

INTERNATIONAL ENDORSEMENT AND ACCEPTANCE

SFI is endorsed by the Programme for Endorsement of Forest Certification, a globally recognized organization that has strict requirements for endorsement. SFI is accepted by governments around the world including the US, UK and Japan.

STEADY SUPPLY

SFI offers a strong standard that promotes sustainable forest management, and in North America SFI offers significantly more products from certified sources than FSC. Today, SFI has 212 program participants and this year alone has seen a 90% increase in chain of custody with more than 320 facilities involved in the SFI program.

A GROWING LIST OF CUSTOMERS

Customers across the US accept SFI, including names such as Wal-Mart, Unisource, xpedx, Xerox, Pella, FAO Schwartz, United Airlines, Centex Homes and Graphic Communications.

LEADERSHIP

Only 10% of the world's forests are third-party certified — the majority of which is in North America. By sourcing certified products, from a variety of credible standards, buyers are sending a message that they support sound forestry and buy responsibly.

INDEPENDENT VERIFICATION

SFI has been subject to recent rigorous independent assessments of forest certification programs, including standards development, content, certification, accreditation and chain-of-custody by organizations such as the UK government's independent process that deemed SFI a legal and sustainable assurance for sourcing forest products.

CHOICE

The global marketplace recognizes and endorses multiple forest certification standards, including SFI, recognizing that competition is healthy and improves forest management. Endorsing one standard merely limits consumer choice among several available standards.

LEGALITY

In addition to promoting sustainable forest management on SFI certified lands, SFI participants must also ensure that the wood they purchase comes from legal and well-managed sources. This is critical in today's market given global trade of forest products and with 90% of the world's forests still remaining uncertified.

RESPONSIBLE SOURCING

The SFI Standard acknowledges that there is a significant amount of wood fiber that is not from certified forests and requires SFI companies that source wood directly take measures to ensure all of the wood fiber they use, certified or not, is procured from known and legal sources. Risk assessments are taken to prevent undesirable or illegal wood fiber from offshore entering the product mix and in North America it means promoting logger training, best management practices and landowner outreach to promote the increased use of sustainable forestry practices in forests that are not certified.

SCIENCE-BASED

SFI is a research and science-based standard that takes careful consideration of forestry issues of interest in the marketplace and through its continual improvement process often builds new requirements into its standard that reflect a thoughtful and comprehensive approach. SFI Inc. works with various organizations , including:

- NatureServe maintains and improves data on occurrence of endangered species and communities — aiding program participants in their protection.
- National Council of Air and Stream Improvement (NCASI) has a team of scientists to perform research on topics of interest to SFI. Recently NCASI completed a compendium of state and provincial best management practices that will aid the next round of revisions to the SFI standard.
- NCASI also completed a compendium of credible regional conservation plans in the US and Canada to aid program participants in meeting the SFI standard requirement for participation in landscape and conservation planning.
- Working with the American Bird Conservancy to develop new SFI standard provisions to conserve priority sites for endangered and critically endangered species.

BIODIVERSITY

An independent scientific study by The Manomet Center for Conservation Sciences noted that SFI certified landowners had "strong biodiversity practices." The report also concluded that there was "no difference between FSC and SFI" in terms of biodiversity practice scores.

WILDLIFE HABITAT

SFI is the only certification standard that requires participants to identify and protect important wildlife habitat elements on both certified land and non-certified land. This includes landscape-level measures that promote habitat diversity and the conservation of forest plants and animals.

SPECIES AT RISK

SFI participants must have plans to locate and protect known sites associated with critically imperilled and imperilled species and communities. Through landowner outreach and logger training, SFI Implementation Committees (SICs) also have a direct, positive impact on the conservation of these species on all lands.

BEST MANAGEMENT PRACTICES (BMPs)

"Implementation with BMPs was statistically significantly higher when the timber was delivered to a Sustainable Forestry Initiative (SFI) mill." This was the conclusion of a 2005 study by the Texas Forest Service.

FORESTS OF EXCEPTIONAL CONSERVATION VALUE

Through SFI certification, independent auditors verify compliance with SFI performance measures specific to the protection of lands that are ecologically, geologically, historically, or culturally significant. This includes specific requirements for protecting spiritual sites important to indigenous peoples.

RESEARCH

Since 1995, SFI program participants have independently contributed more than $885 million in forest management research. Efforts have led to improved management for the Red Cockaded Woodpecker in the Southeast US, while efforts in the Northwest have revealed new information on the habits on Canadian Lynx. Current projects are underway to assess the biodiversity footprint of wood procurement in the Southeast US.

For more information about the SFI program, visit www.sfiprogram.org or call Allison Welde at 703.875.9500

SUSTAINABLE FORESTRY INITIATIVE
Good for you. Good for our forests.℠

www.sfiprogram.org

About Us

About Us

About Us

Growing Stewardship from the Roots

The American Tree Farm System® (ATFS) is a network of more than 83,000 woodland owners sustainably managing 26 million acres of forestland. It is the largest and oldest sustainable family woodland system in America, internationally recognized, meeting strict third-party certification standards.

For 70 years, ATFS has enhanced the quality of America's woodlands by giving forest owners the tools they need to keep their forests healthy and productive. Stemming the loss of America's woodlands is vital to our country's clean water and air, wildlife habitat, recreational activities, and producing the jobs, wood and paper products we all need.

ATFS is a program of the American Forest Foundation.

In the news

The latest news and information from Tree Farm - the voice of America's private landowners.

The latest

Tools & Resources

ATFS provides the tools, resources, and information for Tree Farmers and woodland owners they need to keep forests healthy and productive.

Learn more

Take Action

It's important for all of us to ensure the right policies are in place to conserve our nation's forests and woodlands. Join us today!

Act now!

SUBSCRIBE TO E-NEWSLETTER

ATFS is a program of the American Forest Foundation (AFF). Find out how we grow stewardship from the roots by signing up for AFF's quarterly e-newsletter.

SIGN UP NOW

- Webinar Series
- Management Plan Template
- Services Directory
- Inspector's Corner
- Family Activities
- Leaders Only

- Donate Online
- Planned Giving
- Monthly Giving
- Donations by Mail

American Forest Foundation (AFF) 2010- 2015 Standards of Sustainability for Forest Certification

Standards Prologue

The American Forest Foundation's (AFF) 2010-2015 Standards of Sustainability for Forest Certification promote the vitality of renewable forest resources while protecting environmental, economic and social benefits and work to increase public understanding of all benefits of sustainable forestry. They are based on North American and Pan-European guidelines for **sustainable forest management**, encourage **adaptive management**, and serve as the basis for the American Tree Farm System® (ATFS) certification program. **Forest owners** and managers who follow the AFF Standards of Sustainability are encouraged to promote the American Tree Farm System® program by displaying appropriate signs and participating in relevant program activities.

The AFF 2010-2015 Standards of Sustainability address aspects of **sustainable forest management** and incorporate eight standards with various performance measures and indicators. ATFS **qualified Tree Farm inspectors**, **group managers**, and **accredited third-party assessors** will conduct field verification of **landowner** conformance to the AFF Standards as prescribed by ATFS policies and procedures. All AFF **sustainability** elements (standards, performance measures and indicators) are important and will be considered in reviews. Responsibilities, task, or obligations that are phrased with the word "*must,*" are core elements that are required to be certified by the American Tree Farm System. *Note: **Bold type** throughout this document denotes words or phrases defined in the attached glossary. An asterisk symbol (*) indicates guidance provided in the appendix document.*

This document was prepared at the direction of the AFF Board of Trustees. It was developed by the 2008-2009 Independent Standards Review Panel under the process described by the AFF Standards Setting Procedures. Guidance documents (third-party auditing, internal monitoring, and **landowner** guidance) for implementation and interpretations will be used to clarify requirements of the Standards.

Guidance: Please note that all of the indicators for a Performance Measure apply to each property being certified to the 2010 Standard.

The guidance statements are intended to inform the landowner, the inspector and the third-party auditor as to the intent of the Standard. Guidance statements are not the Standard.

Inspectors and auditors are cautioned to apply the Standard as written, avoiding personal preference. Inspectors and auditors are urged to respect the forest owner's opportunity for creative solutions embodied in the Standard.

Standard 1: Commitment to Practicing Sustainable Forestry

Forest owner demonstrates commitment to **forest vitality** by developing and implementing a sustainable forest **management plan**.

Performance Measure 1.1

Forest owner must have and implement a written forest **management plan** consistent with the size of the forest and the **scale** and intensity of the forest activities.

> Guidance: Landowner objectives for managing the subject property must be stated in the plan document. The management plan may be comprised of several separate documents that, taken together, comprise the management plan.

Indicator 1.1.1

Management plan must be active, adaptive, and embody the **landowner's** current objectives, remain appropriate for the land certified, and reflect the current state of knowledge about forestry and natural resource management.

> Guidance: The management plan must conform to the intent of the landowner's objectives. For example: if the landowner's objective is to increase the occurrence of wild turkey on the property, the management plan is expected to prescribe management activities that will enhance, or at least maintain, suitable wild turkey habitat. Landowner objectives are concise, high-level, statements of what the landowner hopes to accomplish through their management The detail for achieving the objectives will be reflected in the body of the plan.
>
> Plan detail should reflect the forest and habitat complexity of the property as well as the management intensity planned for the property. The Standard does not require a prescribed management plan information structure or hierarchy. The plan preparer has considerable latitude in developing the plan at a level of complexity that meets the landowner's objectives and provides for an accurate method of prescribing any planned treatments or activities to the forest property or its component parts.
>
> The nature of adaptive management requires that the landowner not be bound to follow the management plan prescriptions when circumstances influencing the property and its management have changed or when the landowner's objectives change. Examples of such changes would include regeneration-harvest of significant portions of the timber, the sale or acquisition of lands included in the certificate and major damage from: storms, fire, pest or disease outbreaks.
>
> Handwritten notes to the plan are acceptable as indications of updates to the plan for individual properties. A more formal or structured system for recording plan changes is to be expected with larger collections of properties whether under one ownership or part of a Group Management structure. A Group Manager is expected to have a system in place that will allow timely retrieval and editing of management plans under its authority and responsibility.
>
> While the plan is not expected to address all possible facets of state-of-the-art forestry or habitat management, the plan is expected to avoid commonly accepted poor forestry or wildlife management practices. For Example: A plan that prescribes practices to maximize short term income should not compromise long term forest health or productivity.

Interpretation (approved by Certification Committee 6.21.2010):

It is widely accepted that management plans can present a suite of options to landowners for their consideration. ATFS does not view management plans as a strict blueprint for landowner action, rather that management plans are adaptive and responsive to a number of factors. Inspectors and third-party auditors should contemplate the following question when assessing the conformance of a management plan to the AFF Standards; does the failure to perform the plan-action constitute a breach of sustainability for this property? If the answer is no - then the landowner is not out of conformance. If the answer is yes - then this is an issue that needs to be addressed.

Indicator 1.1.2

Management plans must: clearly state **landowner's** objectives, describe desired forest condition, include management activities aimed at reaching the desired forest condition and **landowner's** objectives, document a feasible strategy for activity implementation, and include a tract map accurately depicting significant forest related resources.

Where present, and relevant to the property, the plan must address the following resource elements: forest health, soil, water, wood and fiber production, threatened and endangered species, **special sites**, **invasive species, integrated pest management,** and **high conservation value forests.**

Where present, relevant to the property, and consistent with **landowner's** objectives, the plan preparer may consider, describe and evaluate the following resource elements: fire, wetlands, **desired species** (fish, wildlife and plant), recreation, aesthetic quality, biomass and carbon.

Guidance: The plan must clearly state what type of forest conditions (i.e. fast growing conifer plantations, mixed hardwood bottomland forests, older forests of longleaf pine, etc…) the landowner is attempting to achieve, as well as the practices that will be used to achieve the conditions.

The plan must specifically mention the required topics (landowner objectives, forest health, soil, water, wood and fiber production, threatened and endangered species, special sites, invasive species, integrated pest management, and high conservation value forests). If there is no occurrence of an attribute on the required topic list (threatened and endangered species, special sites, invasive species, high conservation value forests) the plan may simply say that the attribute is not present on the subject property. (see Standards 4, 5 and 7)

Integrated Pest Management (see glossary) needs only to be addressed if there is a pest or disease outbreak on the property that warrants management action.

The plan may mention attributes from the optional list (fire, wetlands, desired species, recreation, aesthetic quality, biomass and carbon) if they are present or desired by the forest owner. If the topic is mentioned, the plan must address that property attribute in some way.

There is no requirement for level of detail in the plan. Addressing the attribute may be as simple as saying that "the attribute will be protected during all forest operations in compliance with applicable regulations". Alternately, the plan preparer may provide a detailed description of the management actions or protections specific to the attribute.

It is understood that property recently covered by a written management plan will not necessarily have evidence of plan performance.

*Indicator 1.1.3**

Forest owner should monitor for changes that could interfere with the management objectives as stated in **management plan** (e.g., presence of **invasive species**, pest outbreaks, and indications of trespass). When problems are found, reasonable actions are taken.

Guidance: Monitoring for individual landowners can be achieved by visiting the property at least once per year, riding through it or walking the trails. Landowners are encouraged to walk their property boundary lines.

Landowners are encouraged to keep a written record of monitoring observations to defend themselves from adverse possession claims, substantiate any casualty losses and enable them to make timely response to trespass, illegal dumping, timber theft and insect or disease outbreaks. Records of monitoring may be informal and can be included in the management plan documentation.

Landowners may commission someone else to do their monitoring for them.

Landowners who cannot readily visit their property(s) on a regular basis, as well as Independently Managed Groups, are expected to have a documented record of property visits and monitoring observations.

Landowner records of management activities, over time, should give evidence that the landowner is responding to information inputs from monitoring.

Standard 2: Compliance with Laws

Forest management activities comply with all relevant federal, state and local laws, regulations and ordinances.

Performance Measure 2.1

Forest owner must comply with all relevant federal, state, county, and municipal laws, regulations, and ordinances.

Guidance: It is recommended that landowners employ the maxim "When in doubt, ask".
Common forest management activities that are regulated in many states include: state and federally protected species and their habitat, prescribed burning, herbicide and insecticide application, harvesting, road building, pond construction and stream crossings.
Excellent professional resources are available to the forest owner at local natural resource agency offices. Please consult the resource pages for forest owners, on the ATFS website, for additional help on relevant federal and state laws and regulations.

Compliance with all relevant (applicable) laws can be verified in a three-tiered process:

Step 1 – Observation of conditions on the subject property
Step 2 – The landowner's own verbal or written claim of legal compliance
Step 3 – Research with the state Department of Natural Resources, local Natural Resource Conservation Service office or State Forestry Commission offices

If Step 1 and Step 2 do not raise any issues, then the inspector or auditor is not required to employ Step 3.

Indicator 2.1.1

Forest owner must comply with all relevant laws, regulations and ordinances and will correct conditions that led to **adverse regulatory actions**, if any.

Guidance: Full legal compliance to relevant laws, regulations and ordinances is the intent of the Standard. Mistakes may occur in carrying out forest management activities. Forest owners must be committed to correcting inadvertent violations. A pattern of willful violation of relevant laws, regulations or ordinances is not acceptable.

If there is evidence of past non-conformance (see Guidance for 2.1), then the landowner must show proof of a good-faith effort to remedy the non-conformance. If the matter is tied up in court, then the landowner is only disqualified when a final adverse judgment is rendered AND the landowner refuses to comply with the ruling.

Indicator 2.1.2

Forest owner should obtain advice from appropriate professionals, or contractors who are trained in, and familiar with, relevant laws, regulations and ordinances.

Guidance: Regulatory compliance advice from untrained, non-professionals is discouraged and can lead to costly mistakes.

Standard 3: Reforestation and Afforestation

Forest owner completes timely restocking of **desired species** of trees on harvested sites and non-stocked areas where tree growing is consistent with land use practices and the **forest owner's** management objectives.

Performance Measure 3.1

Reforestation or afforestation must be achieved by a suitable process that ensures adequate stocking levels.

Indicator 3.1.1

Harvested forest land must achieve adequate stocking of **desired species** reflecting the **forest owner**'s management objectives, within five years after harvest, or within a time interval as specified by applicable regulation.

Guidance: The landowner should ask their natural resource professional or check with the state agency responsible for forestry assistance to find out if there is a reforestation law in place, and if so, to ensure compliance with it.

Adequate stocking levels for planted tree stocks are prescribed by federal and state reforestation cost-share programs and can be used as a guide even where cost-share funds were not used. However, certain wildlife habitat management regimes may favor lower stocking rates than the cost-share program guidelines do. Therefore, it is important to make sure the chosen guidelines fit the forest conditions and are consistent with landowner objectives.

Natural regeneration stocking assessments should account for both softwood and hardwood regeneration.

Please refer to the ATFS website for further stocking guide resources.

Standard 4: Air, Water, and Soil Protection

Forest management practices maintain or enhance the environment and ecosystems, including air, water, soil and site quality.

Performance Measure 4.1

Forest owner must meet or exceed practices prescribed by **State Forestry Best Management Practices** (BMPs) that are applicable to the property.

Guidance: State Forestry BMP compliance is required by the Standard in all states. Forest owners are urged to secure a copy of the state forestry BMP guide from their state forestry agency and to familiarize themselves with the guidelines in it for harvesting , road building, reforestation, habitat management and other forest activities. For many states this information is available free on-line and in printed format.

For states with Forest Practice Acts the statutes, administrative rules, and guidance for the Acts is considered the equivalent of BMP's. Where the AFF standard reads BMP, the inspector or auditor should reference the Forest Practice Act in states where present.

Indicator 4.1.1

Forest owner must implement specific BMPs that are applicable to the property.

Guidance: When planning management activities that will cause any soil disturbance or require chemical application, the BMP manual for the state that the property is located in should be consulted and applicable BMP methods employed. Examples of activities requiring BMP application:

- Harvest planning – including block design, haul roads, skidder trails, stream crossings and truck-loading areas
- Reforestation design – mechanical or chemical site preparation, machine or hand planting
- Road maintenance or construction – all facets
- Prescribed burning plans – fire lane construction, smoke management, agency notification

No field evidence of BMP implementation is to be expected where no management activity has occurred. However, if the property shows evidence of water quality impairment originating on the property, that is not caused by the forest owner's actions, the forest owner is strongly encouraged to have plans for remediation.

Examples:

- Forest owner purchases a tract with a forest road that is eroding soil into a water body.
- ATV riders are trespassing on the property and are crossing a stream causing the banks to erode
- Garbage is being dumped on the property near a stream crossing and some of it is getting into the stream during high-water conditions
- Storm damage has impaired the performance of road culverts

Indicator 4.1.2

Forest owner must minimize road construction and other disturbances within riparian zones and wetlands.

Guidance: State BMP manuals are generally quite detailed on recommended practices for road construction and other disturbances of riparian zones. If there is a point of confusion, the forest owner is advised to consult with a natural resource professional who is experienced in forest road design and installation. In some states, permits may be required for forest roads or other disturbances that intersect a riparian zone.

Forest owners should specify with contractors that state forestry BMPs must be adhered to.

In all cases, the primary concern is to avoid contaminating watercourses that are adjacent to the forest activity.

Performance Measure 4.2

Forest owner must consider **integrated pest management** to control pests, pathogens and unwanted vegetation.

Indicator 4.2.1

Forest owner should evaluate alternatives to manage pest, pathogens and unwanted vegetation to achieve specific management objectives.

Guidance: Integrated pest management (IPM) can take many forms, some of the most effective measures are preventative. Measures that improve forest health or in some other way protect the property from injurious organisms are very cost-effective. Forest Chemical applications are often used only when other control measures are ineffective.

Forest owners should consult with their state forestry agency or natural resource professional to learn about recommended IPM techniques for any particular disease or pest outbreak on their property.

Examples:
Southern Pine Beetle outbreaks are most economically controlled by cutting down all of the affected trees, as well as a buffer of green trees around the zone showing evidence of infestation. Merchantable trees should be hauled to market immediately and the rest laid flat on the ground. SPB outbreaks are discouraged by maintaining healthy stands that are free to grow. Prompt thinning is a good preventative measure.

Annosus root rot outbreaks can be controlled by applying Borax to the freshly cut stumps of harvested trees when thinning softwoods in the affected area. Annosus root rot can de discouraged by avoiding partial cutting in infection areas, favoring less susceptible species in regeneration and use of prescribed fire in certain situations.

Indicator 4.2.2

Pesticides used must be EPA-approved.

Guidance: The Environmental Protection Agency (EPA) approves the use of pesticides for specific situations and on specific plants or animals, at specified application rates. The forest owner is responsible for ensuring that the planned use of a pesticide is in compliance with the EPA label limitations.
Please consult the resource pages for forest owners, on the ATFS website, for additional information on EPA-approved pesticides

Indicator 4.2.3

Pesticides must be applied, stored and disposed of in accordance with EPA-approved labels and by persons appropriately trained, licensed and supervised.

Guidance: In most states, forestry chemicals must be applied by a licensed applicator. The forest owner is responsible for ensuring that anyone applying forestry–use chemicals is in compliance with state and federal regulations. In some states landowners can apply certain pesticides on their land without any special permits or licenses. In others they can apply for and receive, a license or permit to apply forestry chemicals on their own lands according to the EPA label limitations.
In any event, the requirements for safe use, storage and disposal must be met by forest owners and /or their agents.

Performance Measure 4.3

When used, **prescribed fire** must conform with **forest owner's** objectives, the forest **management plan** and pre-fire planning.

Guidance: In many states the state forestry agency employs a permit system for prescribed burning. Many of these agencies provide training for prescribed burning that is available to forest owners. Successful completion of a prescribed burning course is often required before the state forestry agency will issue a burning permit. Many states regulate the amount of open burning that can be conducted on a given day in a county or multi-county zone.

Prescribed burning includes controlled burning of piles, windrows and broadcast fire applications.

A prescribed burning plan is recommended, which will include: reconnaissance of the burning block, estimates of fuel condition, required weather conditions and adequate means of controlling the fire after it is set. Oral discussion of a burning plan with all of the parties involved, before the burn is started on the property, is acceptable – a written burning plan record is not required by the Standard but may be required by the state agency that regulates open burning in the state.

Inspectors and auditors may test for compliance with PM 4.3 by interviewing the forest owner and observing the property. The forest owner may have written records to support conformance claims, but is not required to do so.

Indicator 4.3.1

Prescribed fire must conform with the **management plan** and state and local laws and regulations.

Guidance: The intent is that the forest owner's plans and good-faith actions in using prescribed fire conform to the management plan and the relevant laws and regulations.
It is recognized that the best laid plans may go awry on any given day. The inspector or auditor is to look for a pattern of wise use of prescribed fire where it is used

Standard 5: Fish, Wildlife and Biodiversity

Forest management activities contribute to the conservation of **biodiversity**.

Performance Measure 5.1

Forest management activities must maintain or enhance habitat for threatened or endangered communities and species.

> Guidance: State or Federally listed threatened or endangered species and their habitats are protected in the relevant laws and regulations. If landowners become aware of the presence of a threatened or endangered species on their property, it is their duty to become aware of the requirements for protecting the habitat for that species and to take appropriate actions in the management of their property.

Indicator 5.1.1

Forest owner must confer with natural resource agencies, state natural resource heritage programs or review other sources of information to determine occurrences of threatened and endangered species on the property and their habitat requirements.

> Guidance – Threatened or Endangered Species:
> Forest owners are not required to do an exhaustive search for threatened or endangered species on their property. Forest owners are expected to make a good-faith effort to find out if there are known occurrences of a threatened or endangered species on their property.
>
> If there are known occurrences of threatened or endangered species on the property, then the forest owner may be required to make provisions for their protection if specified by regulation.
>
> Contacting the state Natural Resource or Fish & Game service representative is usually an effective way to find out if a forest property is known to contain a threatened or endangered species.
>
> Threatened or endangered species lists are maintained by the US Fish & Wildlife Service in accordance with the Endangered Species Act [http://ecos.fws.gov/tess_public/] .
>
> Nationally listed threatened or endangered freshwater fish that migrate to sea are listed by NOAA's National Marine Fisheries Service (NMFS) [http://www.nmfs.noaa.gov/pr/species/esa/].
>
> Some threatened or endangered species are also listed separately by the State Agencies. Please consult the ATFS website for additional resources on threatened or endangered species.

Indicator 5.1.2

Forest management activities must incorporate measures to protect identified threatened or endangered species.

Guidance: Forest owners are encouraged to consult with a natural resource professional for assistance in planning to protect threatened and endangered species.

Measures for habitat protections may include:

- no mechanical entry in the habitat area
- restricted pesticide use in the habitat area
- residual tree maintenance in the habitat area
- buffer zone establishment and maintenance around the habitat area
- hunting or fishing restrictions
- signage or marking of the habitat area

Performance Measure 5.2

Forest owner should address the **desired species** (fish, aquatic, wildlife, and plant) and/or desired forest communities in the **management plan** and forest management activities.

Guidance: Forest owners may wish to increase the presence, on their property, of one or more desirable species such as deer, persimmon trees or large-mouth bass. While these goals may have been mentioned in the Landowner Objectives, the body of the plan should give some detail on management activities planned to achieve the stated objective(s)

Indicator 5.2.1

Forest owner should consult available and accessible information on management of the forest for **desired species** (fish, aquatic, wildlife, and plant) and/or forest communities and integrate it into forest management.

Guidance: Several good sources for desired species management are readily available to the forest owner:

- Non profit organizations that focus on the desired species
- State and Federal agencies that focus on fish and game species
- Extension Service publications

Please consult the resource pages for forest owners, on the ATFS website, for additional information on desired species management.

Performance Measure 5.3

Forest owner should make practical efforts to prevent, eradicate or otherwise control **invasive species**.

Indicator 5.3.1

Forest owner should make practical efforts to prevent, eradicate or otherwise control **invasive species** using a range of **integrated pest management** methods.

Guidance: On monitoring visits to the property, forest owners should be alert to the presence of forest-invasive species.

Natural resource professionals can supply the forest landowner with up-to-date information on forest invasive species. When reasonably available, the forest owner should take advantage of learning opportunities about forest-invasive species. Integrated pest management techniques may provide a cost-effective method of control that will avoid forest chemical use.

If control measures for forest-invasive species require the use of forest herbicides, all herbicide applications should be conducted by trained applicators, in accordance with state and federal regulations.

Invasive species are most commonly associated with plants, but in reality can include a wide range of plants, animals and fungi.

Examples: Kudzu, Japanese Privet, Chinese Tallow Tree, Multi-flora Rose, Norway Maple, Scotch Broom, Himalaya Blackberry, Tree of Heaven, feral hogs, Gypsy Moth, Nutria

Performance Measure 5.4

Forest management activities should maintain or enhance **rare species** and **high conservation value forests**.

Guidance - Rare species:

Forest owners are not required to do an exhaustive search for rare species on their property. Forest owners are encouraged to make a good-faith effort to find out if there are known occurrences of a rare species on their property.

Rare species may not be listed on state or federal Threatened & Endangered species lists but may be considered by the landowner to be a rare occurrence on their own property even if regionally abundant. This often happens because the landowner's property is out of the main range for a given species or past management practices have extirpated the species from the local area.

If there are known occurrences of rare species on the property, then the forest owner may be required to make provisions for their protection if specified by regulation.

NatureServe has an on-line database that can be searched at the county level for rare plants and animals
[http://www.natureserve.org/explorer/servlet/NatureServe]

Examples of rare species occurrence;

- A bear's den
- A patch of natural ginseng
- A morel mushroom patch
- A champion tree

Guidance - High conservation value forests

Most high conservation value forests in the United States that are globally, nationally or regionally significant have been identified and protected by Federal or State government, or have been put under conservation easement by an environmental non-profit organization.

There is no single central clearinghouse of information on high conservation value forests. There is, at this time, no state or federal agency that regulates high conservation value forests on private forest lands.

High conservation value forests are evaluated at the landscape level rather than the forest stand level.

Several organizations have listed areas that they believe merit high conservation value forests status.

Please consult the resource pages for forest owners on the ATFS website for additional help on high conservation value forests.

Indicator 5.4.1

Appropriate to the **scale** and intensity of the situation, forest management activities should incorporate measures to protect or mitigate impacts on **rare species** and identified **high conservation value forests**.

Guidance: Forest owners who have identified some or all of their forest property as containing rare species should delineate the area on maps associated with the management plan. Management activities on or adjacent to the designated rare-species-area should not harm or diminish the habitat for the rare species. For rare species identified on the property, the forest owner is urged to confer with relevant state wildlife agencies to gain a better understanding of the legal requirements for habitat protection, as well as protection of the organism(s).

Forest owners who have identified some or all of their forest property as high conservation value forest should delineate the area on the maps associated with the management plan. Management activities on or adjacent to the high conservation value forest should not harm or diminish the high conservation values that lead to the designation of the area.
A more likely scenario, for family forest owners, is that the forest owner's property is adjacent to a state or federally protected area that is identified as a high conservation value forest. Forest owners should consider the impact, to a neighboring high conservation value forest, of planned activities on their forest property.

Standard 6: Forest Aesthetics

Forest **management plans** and management activities recognize the value of forest aesthetics.

Performance Measure 6.1

Forest owner should manage the visual impacts of forest management activities consistent with the size of the forest, the **scale** and intensity of forest management activities and the location of the property.

Indicator 6.1.1

Forest management activities should apply **visual quality measures** compatible with appropriate silvicultural practices.

Guidance: Forest aesthetics considerations can be incorporated into management planning with little cost to the forest owner. Employing forest aesthetics considerations into the management plan can produce a much more visually appealing experience on property visits for owners, their guests and passers-by using nearby public roads.

Forest owners can access a very good Forest Aesthetics Guide at http://www.aces.edu/forestry/aesthetics/
Print copies can be ordered from Forest Resources Association at http://www.forestresources.org/PUBLICATIONS/print_pubs.html
The guide was produced jointly by American Forest and Paper Association and Forest Resources Association

Examples:

- Place log truck-loading zones out of public view
- Leave islands of mast or roost trees within harvest areas
- Put a bend in the entrance road to block view of tract interior
- Follow contour lines and timber type margins with roads and harvest boundaries
- Close and re-vegetate idle roads with wildlife-friendly plants

Standard 7: Protect Special Sites

Special sites are managed in ways that recognize their unique historical, archeological, cultural, geological, biological or ecological characteristics.

Performance Measure 7.1

Forest management activities must maintain **special sites**.

Indicator 7.1.1

Forest owner must make a reasonable effort to locate and protect **special sites** appropriate for the size of the forest and the **scale** and intensity of forest management activities.

Guidance: Special sites are generally smaller in size than high conservation value forests. Special sites are evaluated at the forest stand or sub-stand level. Most special sites will be a small portion of the property. Special sites may be designated for purely sentimental reasons, or may be sites with significant cultural or archeological significance. Special sites may not be found on every property. The probability of a special site occurrence increases in proportion to the size of the forest ownership.

It is recommended that the forest owner identify special sites on management planning maps and, where appropriate, on the ground. However, the forest owner may choose not to identify some special sites on the ground in an effort to protect them from vandalism or overuse.

Special sites can be identified during property reconnaissance prior to preparing the management plan, from old property maps, from local lore and during monitoring reconnaissance. The forest owner may wish to contact the State cultural heritage program for additional information on local sites that have special historical significance.

Please consult the resource pages for forest owners, on the ATFS website, for additional resources on special sites.

Any special site identified in the management plan must include provisions for its protection, especially during forest management activities.

Examples:
American Indian burial sites, historical building ruins, old cemeteries, cave entrances, spring heads, rare mineral outcroppings, Civil War battle ground, a champion tree, a bear's den, a pitcher plant bog, a covered bridge

Inspectors and auditors may test for conformance with PM 7.1 by interviewing the forest owner for awareness, reviewing plan documents and associated operating records, and by observing the property.

Standard 8: Forest Product Harvests and Other Activities

Forest product harvests and other management activities are conducted in accordance with the **management plan** and consider other forest values.

Performance Measure 8.1

Forest owner should use **qualified natural resource professionals** and **qualified contractors** when contracting for services.

Indicator 8.1.1

Forest owner should seek **qualified natural resource professionals** and **qualified contractors**.

Guidance: The services of a qualified natural resource professional can prove very cost-effective for the forest owner. Costly mistakes that involve wasted time, resources or regulatory violations may be avoided.

Many states have registration, or licensing systems for foresters and wildlife managers. The people listed by these systems have passed rigorous entrance exams and are required to regularly obtain continuing education.

State forestry and wildlife agencies often can provide referral-lists of natural resource professionals who are working in the state or county.

The Society of American Foresters has a Certified Forester program
http://www.safnet.org/certifiedforester/index.cfm

The Wildlife Society has a Certified Wildlife Biologist program
www.wildlife.org/certification/index.cfm

The Association of Consulting Foresters is a national association of forestry consultants:
http://www.acf-foresters.org

A qualified natural resource professional often will be familiar with the contractors who are doing forestry-related work in the area and can make recommendations.

Please consult the resource pages for forest owners, on the ATFS website, for help in finding contractors who are well trained in BMP and regulatory compliance, as well as, assistance in finding natural resource professionals.

*Indicator 8.1.2**

Forest owner should engage contractors that carry appropriate insurance and comply with appropriate federal, state and local safety and **fair labor rules**, regulations and standard practices[1].

Guidance: Forest owners are encouraged to stipulate that contractors are required to be in compliance with all relevant laws and regulations. A natural resource professional can help with this process.
Forest Owners are encouraged to discuss liability issues with their insurance agent and their attorney to gain a perspective on appropriate insurance minimums that they might require of contractors.

Indicator 8.1.3

Forest owner should retain appropriate contracts for **forest product** harvests and other management activities to demonstrate conformance to the AFF Standards.

Guidance:
Forest owners should review the Standard before planning management activities.
Forest owners should specify in contracts for forestry activities that appropriate BMPs must be adhered to.
Other contract specifications might include:

- Protection of special sites
- Adherence to labor laws
- Requirements for adequate insurance
- Protection of soil and water integrity
- Residual tree damage
- Forest road maintenance and restoration
- Fence and gate protection and/or restoration
- Litter control
- Hazardous material spill prevention and clean-up

Examples of forestry activities requiring review for AFF Standards compliance:

- Harvest operations including timber and non-timber products
- Site preparation and reforestation
- Forest road construction and maintenance
- Mineral extraction
- Hunting and fishing
- Invasive species control
- Pest management

[1] Auditors shall consider any **complaints** alleging violation of **fair labor rules** filed by workers or organized labor since the previous third-party certification audit. The auditor shall not take action on any labor issues pending in a formal grievance process or before Federal, State or local agencies or the courts, however, until those processes are completed. Absent a record of documented **complaints** or non-compliances, contractors and managers are assumed to be in compliance with this indicator.

Performance Measure 8.2

Forest owner must monitor **forest product** harvests and other management activities to ensure they conform to the **management plan** objectives.

Indicator 8.2.1

Harvest, utilization, removal and other management activities must be conducted in compliance with the **management plan** and maintain the potential of the property to produce **forest products** and other benefits sustainably.

Guidance: The forest owner may monitor harvesting and other activities personally or they may employ someone else to do it for them. Many forest owners engage a natural resource professional for this function.

The intent of Performance measure 8.2 is to ensure the maintenance of "the potential of the property to produce **forest products** and other benefits sustainably" Good planning, utilizing natural resource professionals, engaging competent contractors and using an effective contract go a long way toward this end.

Glossary of Terms
accredited third party assessors – A natural resource professional who has completed ATFS required training for third party assessors and is contracted or employed by an International Accreditation Forum (IAF) accredited certification body.
adaptive management – A dynamic approach to forest management in which the effects of treatments and decisions are continually monitored and used to modify management on a continuing basis to ensure that objectives are being met (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998)
adverse regulatory actions – Written warning, citations or fines issued by law enforcement or regulatory bodies.
biodiversity – The variety and abundance of life forms, processes, functions and structures of plants, animals and other living organisms, including the relative complexity of species, communities, gene pools and ecosystems at spatial scales that range from local through regional to global (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).
complaint – Labor complaints are those with formal documentation filed through the state's fair labor practices board or similar body.
desired species – Those species of flora and fauna designated in the landowner's management plan and not known to cause negative impacts on the local environment.
fair labor rules – Include federal, state and local labor legislation and international labor standards cited in Programme for the Endorsement of Forest Certification schemes (PEFC) Annex 3, Chapter 3.3.
forest owner – Landowner or designated representative such as, but not limited to, professional resource manager, family member, trustee, etc.
forest product – [Forest Produce] Any raw material yielded by a forest. Generally defined in Forest Acts or Ordinances, and subdivided conventionally into major forest products, i.e. timber and fuelwood, and minor forest products, i.e. all other products including leaves, fruit, grass, fungi, resins, gums, animal parts, water, soil, gravel, stone and other minerals on forest land (F. C. Ford –Robertson, Terminology of Forest Science Technology, Practice, and Products, Society of American Foresters, 1971.
forest vitality – The health and sustainability of a forest.
group manager – The individual(s) designated by the Independently Managed Group organization to manage the administrative affairs of implementing and achieving the AFF Standards and Standard Operating Procedures for group programs (SOP-01) for an ATFS certified independently managed group program. Please refer to the ATFS Group Certification Process documentation.
high conservation value forests – Forests of outstanding and critical importance due to their environmental, social, biodiversity or landscape values. Due to the small scale and low-intensity of family forest operations, informal assessment of HCVF occurrence through consultation with experts or review of available and accessible information is appropriate.
integrated pest management – The maintenance of destructive agents, including insects, at tolerable levels by planned use of a variety of preventative, suppressive, or regulatory tactics and strategies that are ecologically and economically efficient and socially acceptable (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998). A pest control strategy that uses a variety of complementary strategies including: mechanical devices, physical devices, genetic, biological or cultural management and chemical management (US EPA).
invasive species – Non-native species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112 (Feb. 3,

1999).
landowner – Entity that holds title to the property to be certified.
management plan – Documents that guide actions and that change in response to feedback and changed conditions, goals, objectives and policies. Management plans may incorporate several documents including, but not limited to, harvest plans, activity implementation schedules, permits, research, etc. For the purposes of the American Tree Farm System® eligible management plans, plan amendments may include letters, notes, and other forms of informal updates in addition to formal plan revisions.
pesticide – Pesticides include chemicals commonly known as herbicides and insecticides.
prescribed fire – A fire ignited by management to meet specific objectives (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).
qualified contractor – Forest contractors who have completed certification, licensing, recommended training and education programs offered in their respective states.
qualified natural resource professional – A person who by training and experience can make forest management recommendations. Examples include foresters, soil scientists, hydrologists, forest engineers, forest ecologists, fishery and wildlife biologists or technically trained specialists in such fields.
qualified Tree Farm inspector – A natural resource professional who has completed ATFS required training for certifying forested properties and is eligible to inspect properties on behalf of ATFS. ATFS requires all trained inspectors meet approved eligibility requirements.
rare species – A plant or animal or community that is vulnerable to extinction or elimination.
scale – The extent of forest operations on the landscape/certified property.
special sites – Those areas offering unique historical, archeological, cultural, geological, biological or ecological value. Special Sites include: A. Historical, archaeological, cultural and ceremonial sites or features of importance to the forest owner; B. Sites of importance to wildlife such as rookeries, refuges, fish spawning grounds, vernal ponds and shelters of hibernating animals; C. Unique ecological communities like relic old-growth, springs, glades, savannas, fens and bogs; and D. Geological features such as terminal moraines, cliffs and caves.
state forestry best management practice(s) (BMPs) – Forestry BMPs are generally accepted forest management guidelines that have been developed by state forestry agencies with broad public stakeholder input.
sustainability – The capacity of forests, ranging from stands to ecoregions, to maintain their health, productivity, diversity and overall integrity, in the long run, in the context of human activity (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998).
sustainable forest management – The practice of meeting the forest resource needs and values of the present without compromising the similar capability of future generations (Helms et al, The Dictionary of Forestry, Society of American Foresters, 1998). *Note* – AFF's Standards of Sustainability reflect criteria of sustainability based on the Montreal Process, 1993, and the Pan-European Operational-Level Guidelines (PEOLGs).
visual quality measures – Modifications of forestry practices in consideration of public view, including timber sale layout, road and log landing locations, intersections with public roadways, distributing logging residue, tree retention, timing of operations and other factors relevant to the scale and location of the project.

Comparison of Two Forest Certification Systems And Oregon Legal Requirements

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Final Report to the Oregon Department of Forestry

December 14, 2001

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Study Background

The purpose of the project is to document, compare and summarize the various standards and requirements of Oregon forest landowners under applicable state and federal laws, with two major, voluntary forest certification systems. It is not a assessment of implementation, but instead a policy analysis. Specifically, this analysis focuses on the following tasks:

1. Summarize, and report on the current standards and requirements for Oregon private forest landowners to become certified under:
    - The Forest Stewardship Council (FSC) system using SmartWood and Scientific Certification Systems (SCS) certifier standards, and FSC national indicators, and
    - The Sustainable Forestry Initiative® (SFI)SM Program.
2. Examine, summarize, and report on the current standards and requirements that must be met for Oregon private forest landowners to comply with state and federal laws applicable to forest management and related practices. Other laws (e.g. labor, safety, etc.) are included only in generalized analyses as they pertain to forest practices.
3. Analyze, and report how compliance with current Oregon and federal laws satisfies the current standards and requirements for Oregon private forest landowners to become certified under the FSC and SFI programs.

Funding for the study was provided by the Oregon Department of Forestry, Forest Practices Program.

This study compares the mandatory legal requirements facing Oregon forest landowners with the required standards of two popular forest certification systems (Forest Stewardship Council and Sustainable Forestry Initiative Program). In the case of the FSC, the study examines the FSC standard as applied in two different certifier guidelines, as well as the USA national indicators, which are a blueprint for developing regional rules in the United States. With the SFI program, the study examines the system wide standard and procedures for completing verifications, but does not examine verification audit procedures for any specific organization.

Only the third party options for each of the certification systems were examined in this study. Provisions that are optional, or do not require third party verification are not covered. Stewardship Agreements, although optional under Oregon Forest Law, were examined in this study because they are comparable in some ways to the voluntary certification systems under examination.

The FSC guidelines used were those for natural forest management. Plantation guidelines of FSC were considered inappropriate for much of the forest base in Oregon, although these standards may apply to afforested areas, and fiber farms of hybrid poplar or other species.

Completing this analysis also involved consulting with ODF Forest Practices and Forest Resources Planning Departmental staffs for accurate evaluation of state and federal laws and regulations. It also involved review by FSC, SFI, SmartWood, SCS, and

PriceWaterhouseCoopers personnel for input on study approach, supporting documents and draft reports.

The authors wish to acknowledge the extensive reviews of initial drafts that were provided by employees of the Oregon Department of Forestry, Price, Waterhouse, Coopers, and the Sustainable Forestry Initiative Program. FSC representatives and certifiers were provided opportunity to review the drafts, but did not do so. David Morman, policy program manager for the Oregon Department of Forestry in Salem also deserves a large thank you for his vision and leadership, which made the project possible. Reviews were done only to ensure accuracy. Findings and implications are the conclusions reached by the solely by the authors, and do not represent a consensus among the reviewers.

Primary documents used for this study were most current versions available of:

- Oregon's Forest Practices Act (OFPA) and related Administrative Rules (OAR's) for forestlands and operations.
- Other Oregon Statutes (ORS's) and Administrative Rules related to forestland use and operations.
- Sustainable Forestry Initiative, 2001 version (Sustainable Forestry Initiative Standard 2000, 2001, 2002, 2003).
- RIEE/SmartWood Oregon FSC Certification Guidelines, date/version.
- Scientific Certification Systems Forest Conservation Program, 1995 version.
- FSC National Indicators, February 2001 version.

To some degree this or any study focused on evaluation of evolving systems is made more difficult by ever shifting standards. All of the systems under study are changing as this study is being completed. Such was the case for the SFI program, which has a number of changes that have been approved for use beginning in January 2002. Where known and appropriate, comments are made regarding coming changes in the various systems.

While each certification system often concentrates on slightly different environmental or management issues, and use somewhat different terminology, the intent of this study is to examine the systems using a common set of terms and perspective about the relevant forestry issues. Thus, this analysis was guided using the certification categories shown in the table following.

Certification Analysis Categories

Program Administration/Process
Sponsor/Administrator
Standard Setting Process & Participants
Verification Process
Enforcement Protocol
Dispute Resolution Process
Training & Credentialing Required
Public Transparency & Involvement
Forest Planning & Monitoring
Written Plans
Inventory
Sustained Yield
Monitoring
Chain of Custody/Labeling
Forest Management Practices
Silviculture
Reforestation
• Regeneration
• Site Preparation
• Genetics
Stand Management
• Stocking Control
• Fertilization
Forest Protection/Health
• Fire (including slash treatment)
• Pests & Pathogens
Access
Harvest/Utilization
Personnel & Supervision
Environmental Considerations
Biological Conservation
• Ecological Function/ Long Term Productivity
• Species Conservation
• Landscape Scale Concerns
• Exotic Species
• Reserves/Special Area
Water Resources
Soil Resources
Chemicals
Air Quality
Socio-Economic Considerations
Land Tenure & Use
Community & Cultural Relations
Worker Relations
Economic Viability/Stability
Legal & Other Policy Requirements
Visual Management

Oregon Forest Law and Forest Certification In Perspective

Oregon's system of forest laws and rules has a rich history. Beginning with a reforestation act in 1941, Oregon has been a national leader in conserving forest lands and protecting public assets such as air, water, fish and wildlife. During the decade of the 1970's Oregon implemented the nation's first comprehensive forest practices act (1972) and a land use planning law (Senate Bill 100 in 1976), which required commercial forest land to be identified and protected from development. The legacy has continued with numerous changes in the forest practices act, and reaffirmation of the land use law throughout the remainder of the 20th century.

Certifying a forest as well-managed has been done in the United States since 1941 when the American Tree Farm System was set up. Tree Farm, now sponsored by the American Forest Foundation (AFF), was not created in response to pressures in the marketplace–as some current systems have been. Membership has always been limited to properties that have passed inspection by a tree farm inspector appointed by AFF.

Since the early 1990s, many new certification systems have appeared. The Worldwide Fund for Nature and other environmental groups created the Forest Stewardship Council (FSC) with its international certification system in 1993. The intent was to protect tropical forests and to help tropical timber producers avoid boycotts of their products in Europe's environmentally sensitive wood product markets. The FSC is a worldwide, non-profit, membership organization that is organized into three voting chambers-economic, environmental and social. The FSC has adopted 10 worldwide forest management principles and associated criteria. In addition, FSC accredits and oversees certification organizations worldwide to do FSC certifications, and leads in the development of regional certification rules.

The United States-based American Forest & Paper Association (AF&PA), an industry trade group, began developing it own certification system in the late 1980's, based on public polling, which showed concerns about forest sustainability. Initially, the SFI Standard and Program guidelines were developed to include self-reporting by members. Since its formal introduction in 1995, the SFI Program has been modified substantially, so that it now includes a third party verification option with mandatory core indicators. The Sustainable Forestry Board, an appointed committee, composed of 40% AF&PA members, and 60% non-member stakeholders, now manages the SFI program. Although directed primarily at its member companies, the system has expanded to include other private and public ownerships through a licensing arrangement.

Worldwide, certification systems have proliferated rapidly over the past decade. At least 40 different systems are known to exist currently. This project only examines two popular ones being discussed in the United States. This does not imply that these systems are the only valid ones to consider, however the ones examined are most commonly discussed in the USA forest industry today.

Certification Terminology

Assessment: The process of determining if a forest operation meets the criteria for a particular certification scheme.

Chain-of-Custody: Ability to track a product (wood) from the beginning of production (harvesting trees in the forest), along the processing and marketing channels, to the final consumer.

Eco-label: Proprietary symbol used to identify a product that has been produced with a given environmental standard.

First-, Second- and Third-Party Certification: Refers to who sets the standards and administers the certification system. If done by self, it is considered first party. If done by a trade or other related organization it is generally considered second party. If done by an independent organization, it is third party.

Performance-based: Qualification for certification is determined by assessing applicant performance against a set of performance measures set by the certifier.

Systems-based: examining the environmental management system that an applicant is using to manage their forest, and determining its compliance with the certification scheme determine Qualification for certification.

Verification: Process of verifying compliance with a set of certification criteria.

A more complete discussion of the evolution of these and other certification systems is included in “An Introduction to Forest Certification,” EC 1518, available from the Oregon State University Extension Service, Corvallis, Oregon. More information about Oregon's forest laws can also be obtained either from the Oregon Department of Forestry, or the OSU Extension Service.

Study Findings

This study provided much insight into the similarities and differences of Oregon's extensive legal requirements for forest landowners, and the FSC and SFI certification systems. Although all three sets of standards are changing through time, the points below address not only differences in these standards, but also difference in the process and philosophy used to drive each system. Listed below are some of the key points that came out of the analysis. Following are some implications for landowners, certifiers and Oregon's policy makers. Summaries for each of the 5 major categories are then presented. Finally, the detailed information for each category of analysis is included as Appendix A.

Overall Summary Points:

1. Oregon law is mostly concerned with protecting public assets, while recognizing the importance of growing and harvesting forest products. For public resources (e.g. water, endangered species, visual quality, air quality) Oregon law has more detailed requirements than the certification systems.

2. Certification systems assess whole ownerships and management systems, while State law looks at only certain components of the forest and forest management systems.

3. FSC systems require meeting or exceeding all laws, while the SFI program currently refers to meeting certain legal requirements (i.e. water laws, chemical laws, reforestation laws, labor laws).[1] Under both certification systems, Oregon operations must meet higher requirements than in those states without comprehensive forest practice laws and rules.

4. The SFI Program is directed at several highly visible public concerns for the impact of forest practices (i.e. sustainability, reforestation, special-use areas, water quality, chemical use).

5. The SFI program does not explicitly address many socio-economic concerns considered under the FSC certification systems (e.g. responsibility to communities, land use/tenure, economic viability).

6. FSC criteria are most detailed regarding adverse environmental impacts of forest management, and the monitoring and correction of such impacts.

7. The two FSC certifiers (SmartWood and Scientific Certification Systems) examined have similar certification guidelines, but have significant differences in emphasis and detail. They also differ in some ways from the FSC national indicators, which are the blueprint in the USA for development of all FSC regional rules.

[1] On August 17, 2001 the Sustainable Forestry Board approved a comprehensive statement that will require SFI Program participants to meet all applicable forestry and related laws and regulations. This is planned for inclusion in the new SFI Standard in January 2002.

8. All the certification systems examined, as well as Oregon law have at least one area in which they exceed all the other systems in emphasis.

    - The SFI program provides specific and extensive direction for support of forestry research, training of a wide range of employees and contractors, and special considerations for visual management of the landscape.
    - Oregon law and administrative rules contain extensive direction for regeneration, air and water quality, and fire control.
    - The FSC systems have significant detail regarding required components of written plans, community relations, and chain-of-custody/labeling.

9. Core/minimum standards are common to all systems. In addition to required core indicators, the SFI Verification Program also lists many additional indicators that may be used. FSC or SFI participants certification programs must show their commitment to continuous improvement over time, which is a different target than the minimum standards required by Oregon law.

10. Verification under the SFI Program follows well-established accounting/auditing procedures used by major businesses, whereas the FSC system allows accredited certifiers to develop their own auditing systems with some overall direction in procedures.

11. The FSC system includes peer review of the assessment report with the goal of providing an objective and scientifically credible assessment. The SFI Program and Oregon legal process do not include peer review, although ODF decisions about compliance with laws can be appealed.

12. The FSC and SFI systems appear to be converging together on transparency and level of performance required. The SFI system has undergone extensive changes during the past year in how it is administered, and standards used to judge performance, in order to become a stronger third party certification system. The FSC network has recently announced it is moving its international headquarters to Europe, in an apparent attempt to make it more accessible to the business world.

IMPLICATIONS OF THESE FINDINGS:

Implications for Oregon Forestland Owners- Certainly certification is on the mind of many of Oregon's private and public forest owners. A September 19, 2001 certification summit in Corvallis, was just one of a number of certification meetings recently held to help owners understand various certification options. Certified wood products are also beginning to show up on the shelves of such retail giants as Home Depot, so demand for these products appears to be on the rise.

This study reveals that Oregon landowners appear to be at or above the level of the SFI and FSC certification systems on a number of categories of analysis (i.e. water quality, air quality, regeneration, fire control). If Oregon forest owners find it necessary to become certified to retain access to wood markets, or for other reasons, they will have to make fewer adjustments in management practices than in states and countries without a comparable array of legal requirements. This is good news. A bit of bad news to date is that Oregon landowners have been imposing higher costs on

themselves through a stricter state legal standard, but are not being rewarded for it in the marketplace. If certification were to be widely adopted, it would force other wood growing regions to come up to and beyond Oregon's standards and cost structure. This is also good news for Oregon forestland owners.

If Oregon forestland owners are to take advantage of the certification systems examined in this analysis they will have to exceed the legal standard in certain categories (written plans, inventory of resources, monitoring impacts, documenting commitment to community economic viability, record keeping for chain of custody). How much they will have to do will depend upon which system they choose. For example, if they choose the SFI system, their current state and federally controlled use of herbicides in the forest may be adequate, but if they choose the FSC system they may be required to make significant changes to herbicide use and documentation.

One category that seems to stand out is the lack of comprehensive written management plans required by state law. Both the FSC and SFI systems require a written plan for third party audited certifications. A written plan is also required for other popular certification systems such as the Tree Farm Program. Landowners wishing to pursue certification are likely to have to present a written plan for their property.

Implications for Certifiers

The SFI and FSC should be able to use the results of this study to examine where Oregon landowners are likely to be strong or weak when it comes to doing audits of Oregon properties. This should make them able to streamline audits of Oregon landowners and possibly make the audits cheaper. This process could likely be enhanced if there was active sharing of forest practices act inspection information with audit teams.

The SFI and FSC should also be able to see from this analysis where their systems measure up to a democratically produced set of forest laws and guidelines that were produced by a wide array of stakeholders in Oregon over the past 50 years. The comparisons in different categories of analysis should be useful for standard setting experts for these organizations when they are deliberating the level of standard that is adequate for a given category.

Although it was not the primary intent of this study, the summary tables also allow for comparing the SFI and FSC systems. The two systems have many things in common, but definitely require different standards for specific categories. Whether one system is better or more credible than the other may depend most on what categories and issues are of most interest. For example, while the SFI system has more detail about making sure workers have adequate training, the FSC system concentrates more on making sure workers receive fair wages and long-term employment. For at least this analysis, there does not seem to be a clearly superior system for all categories analyzed.

Implications for Oregon's Policy Makers-

A major point reiterated by this study was that Oregon has a very extensive set of laws and regulations to protect public assets such as air, water, fish and wildlife, as well as the well being of Oregon's citizens. Oregon policymakers and citizens have long been national leaders in recognizing the need to protect these assets and rights, and have

enacted various legislation such as a reforestation act, forest practices act, land use planning law, and worker protection statutes. Each of these pieces of legislation and the subsequent administrative rules has increased the cost or complexity of managing forests in Oregon.

- Bodies such as the Oregon Board of Forestry can use this study to examine the relative regulatory burden being placed on landowners, and examine strategies to help landowners recover some of regulatory cost in the marketplace.

- They also may want to examine collaborative data sharing strategies with certifiers that will allow certifications to take place in a more efficient manner.

- Finally, they may want to increase the requirements of the stewardship agreements to allow participating landowners the dual benefit of less regulatory cost and becoming certifiable under one or more certification systems.

Program Administration/Process Summary

Program Administration/ Process	Required By Law	SFI Program	FSC-SCS	FSC-Smart Wood	FSC Nat. Indicators
Sponsor/Administrator	State/Fed. Gov.	AF&PA-member organization	SCS is a for-profit certifier	Non-profit network of certifiers	FSC-member organization
Standard Setting Process & Participants	Legislation and Admin. Rules	Originally internal with increasing outside input[2]	Internal with some outside input	Internal with some outside input	Internal with significant outside input
Verification Process	Notifications and plans required with 15-day notice. Inspections at discretion of inspectors	Annual self-reporting required, 3rd party audits optional. Recertification currently 3-5 years[3]	3rd party assessment required every 5 years, with annual audits.	3rd party assessment required every 5 years, with annual audits.	3rd party assessment required every 5 years, with annual audits.
Enforcement Protocol	Civil and criminal penalties, suspension of operations and repair orders	Non-compliance can lead to loss of membership/ license. Also loss of certified status	Non-compliance can lead to loss of certified status	Non-compliance can lead to loss of certified status	Certifiers must abide by FSC direction or they may lose FSC accrediting.
Dispute Resolution Process	Appeals to Board of Forestry and courts	Currently covered by ANSI –RAB dispute resolution process[4]	Certifier and contract with FSC backup specified	Certifier and contract with FSC backup specified	FSC has a formal process for hearing and resolving disputes

[2]Currently the SFI program is overseen by a Sustainable Forestry Board composed of 60% outside stakeholders. The current revision of the SFI Standard also includes broad public review.

[3] Will add annual surveillance audit if new rules are adopted Jan. 2002.

[4] SFI program will have its own dispute resolution process if planned directives are adopted Jan. 2002.

Training & Credentialing Required	ODF inspectors have academic and work experience required	Auditors must have formal auditing training	Team members chosen by reputation and vitas.	Team leader must have previous experience; other team members must have expertise in forest type.	Not specified
Public Transparency & Involvement	Full public disclosure required for all activities	No individual public reporting or stakeholder input is required. If program participant wishes to publicly proclaim audit results, they do so in collaboration with the verifier.[5]	Some stakeholder input and public summary of assessment required	Some stakeholder input and public summary of assessment required	Some public/stake holder input is required.

Summary Points:

- Fundamental differences in philosophy exist between the governmental regulatory approach and the network of membership organizations and business that operate the voluntary certification systems. While landowners are required to comply with all laws, certification systems measure conformance with specified criteria and standards.

- The FSC and AF&PA are both membership organizations, with members and program staff having a direct ability to influence certification rules and programs through committee appointments and other internal input. Major issues and policies can be by vote of the membership in the case of FSC. In the case of the SFI program, the Sustainable Forestry Board approves all policy and rules.

- FSC membership is composed of a wide range of organizations including forest product buyers groups, forest landowners, labor unions, churches, and environmental organizations. The SFI Program is also composed of different types of organizations including forestland owners, forest products manufacturers, conservation organizations, universities, state and county lands, and others through their membership in the AF&PA or a licensee's program. The

[5] Public agencies undergoing an FSC or SFI certification, however, require full disclosure of the entire certification reports and process.

FSC certifiers examined represent a for-profit company (SCS) and a non-profit network of partners (SmartWood), while the SFI verifiers represent for-profit businesses.

- The length of time various programs and associated organizations have been in operation varies. The Oregon Forest Laws and Rules have been evolving over the past 60 years, beginning with the Forest Protection Act of 1941. In contrast, the certification systems have only been in operation since the early 1990's, with FSC starting in 1993 and the SFI program introduced publicly in 1995, after several years of development.

- Oregon forest laws and rules come about through a public process with mandated transparency, stakeholder input, and opportunity to change coming through the election and voting processes. The certification systems have some stakeholder input into standard setting, but the processes are generally less transparent than the governmental one.

- While certification system standards are reviewed and updated at the pleasure of the system manager, the Oregon Forest Practices Rules require annual review by the Board of Forestry, in consultation with other state agencies and revision in a public forum as needed.

- While Oregon laws require an operation-by-operation notification, the certification systems look at the whole ownership or ownership block at a point in time. While a Forest Practices Forester may never examine an individual property on site, field inspection is required for both the SFI program and FSC systems before certification status is granted. Individual forest practices are not examined under the certification systems unless they fall under the sampling done at the time of assessment. In essence, Oregon law looks carefully at the parts whenever an operation is done, while the certification systems look at a sample of the whole of the forest ownership.

- Oregon law tends to focus most on specific targets and the use of best management practices, (i.e. reforestation standards, riparian area protection, stream and wetland protection, and resource site protection standards), while certification systems tend to look at broader resource issues (profitability, biological conservation, equity for workers and communities).

- Verification within the SFI program involves third party auditors from professional accounting/auditing businesses and forestry experts, while FSC assessments generally only include forestry experts. In addition, the Forest Monitoring Program of the External Review Panel makes external input into the SFI program.

- Verification within FSC certifiers also varies considerably. While the SmartWood system treats all criteria with somewhat equal weight (a fatal flaw approach). The SCS system includes weighting of various criteria to put the most emphasis in the scoring on the most important criteria.

- The Oregon legal system has included monitoring of system effectiveness, while the certification systems, to date, have not released any information that being certified has improved management by clients or improved their forests.

- Not all Oregon Forest Practices rules are subject to enforcement action. Resource protection rules are enforced with civil penalties up to $5,000 or criminal actions when damage has occurred. Personnel are specifically guided by ODF direction on the administration of general rules vs. specifically enforced rules.

- Forest landowners are faced with potential criminal and/or civil penalties for each operation/practice if they break public laws. Not meeting certification conditions for either the certification systems is handled under the contract with the certifier, and can result in loss of certified status by the landowner. In the case of AF&PA, not meeting the SFI standards can also be grounds for expulsion of members or licensees.

- Under the FSC, certifiers can also be punished for bad behavior by having their accreditation removed. The potentially biggest threat for certifiers performing either FSC or SFI certifications is that their reputation might be discredited and clients would not hire them for assessments.

- Disputes during a forest operations or while an assessment audit are ongoing are generally handled within the organization involved (either ODF, FSC certifier or SFI auditor).

- For Oregon laws, disputes that cannot be handled administratively are handled in the court system or using a collaborative dispute resolution process. FSC uses a formal dispute resolution process . Disputes within the SFI program are handled differently depending upon their nature. They may fall under the American National Standards Institute (ANSI)-Registrars Accreditation Board (RAB) process, or if between the public and a participant are handled under the SFI inconsistent practice protocol. A new SFI Program dispute resolution process is expected in Jan. 2002.

- Oregon Department of Forestry appears to have the most specific requirements for both experience and formal education for employees it hires. They also have extensive and ongoing training to ensure competency of personnel. Of the certification systems examined, the SFI program seems to have the most stringent criteria for training and credentialing of certifiers. Their system is based on professional accounting/auditing practices, with specialties in sustainable forestry auditing, and requires specified training. The FSC and SFI systems both recruit teams of forestry experts for their assessments based on the reputation and experience of the team members. The SFI program also requires that one member of the team shall be a forester as defined by the Society of American Foresters. SmartWood has a formal training package that they deliver periodically for potential assessment team leaders and members.

- Of the 3 systems examined, Oregon's legal system has the highest level of transparency to the general public through mandated public hearings and

reporting requirements. Both FSC and the SFI program seek external input about their programs, but reserve decision-making for private sessions of appointed committees. The FSC rules committees operate at regional, national and international levels. The SFI program is directed by the Sustainable Forestry Board, a committee of AF&PA members (40%), and non-member stakeholders (60%).

- The public has open access to landowner notifications of operations, and other reports done by the ODF. In contrast, only selected information (public summary) is available from FSC certifications and SFI third party audit disclosures are not required. Public agencies undergoing an FSC or SFI certification, however, require full disclosure of the entire certification reports and process.

- The systematic and public process to develop and administer state laws and rules results in relatively objective and consistent policies and applications. However, In recent years elected officials (legislators, governor) and ad hoc advisory committees have taken a more direct and active role in this process, increasing the importance of political and other subjective, social influences.

- The certification systems examined are an interesting mix of types of organizations. FSC and AF&PA are both non-profit, membership organizations, with very different memberships and organizations. The SmartWood Network is composed of non-profit organizations, while SCS is a for-profit company.

Forest Planning and Monitoring

Explanation of Rating System Used:

(NR) item not required by this system
(**<**) requirements or specificity less than other systems analyzed
(**=**) requirements substantial and/or equal to other systems analyzed
(**>**) requirements or specificity greater than other systems analyzed.

Note: Ratings do not represent a judgment of positive or negative impacts of the system provisions, but indicate the relative level of constraints imposed or features offered by the provisions. For example, the three FSC rules examined offer a full chain-of-custody and eco-label so they received a > rating, while the SFI program and Oregon law do not. This does not imply a chain-of-custody and eco-label is better for every producer, but instead that an extra feature is offered by these systems.

Forest Planning & Monitoring	**Required By Law**	**SFI**	**FSC-SCS**	**FSC-Smart Wood**	**FSC Nat. Indicators**
Written Plans	(<) Operations plans sometimes required. (=)For stewardship option, plans required.	(=) Written plan required	(>) Extensive written plan required	(>) Extensive written plan required	(>) Extensive written plan required
Inventory	(<) Inventory required only for selected resources of public interest.	(=) Comprehensive inventory required, including biological and geological resources.	(=) Comprehensive inventory required, including a wide range of site parameters.	(=) Comprehensive inventory required, including a wide range of site parameters. Special data collection for old growth and non-timber forest products	(=) Comprehensive inventory required, including a wide range of site parameters. Special data collection for high conservation value forests and non-timber forest products
Sustained Yield	(<) Reforestation requirements help sustain yield over long term	(=) Calculation of sustained yield required	(>) Extensive requirements for calculation and adherence to sustained yield	(>) Sustained yield includes timber and non-timber resources	(>) Sustained yield includes timber and non-timber resources

Monitoring	(<) Some done by ODF, but little required for operators	(>) Operational monitoring required under continuous improvement objective. Also specific monitoring required for clearcuts, training and public relations	(=) Operational monitoring	(>) Operational monitoring with feedback to operations	(>) Operational monitoring with feedback to operations
Chain of Custody (COC)/Labeling	(<) Log branding required	(NR) Source identified labeling for verified operations has been approved but is not yet available	(>) Full COC and eco-label available	(>) Full COC and eco-label available	(>) Full COC and eco-label available

Summary Points:

- The FSC National Indicators and SmartWood systems require the most comprehensive written plan of any of the systems involved. The SFI requires a plan, but allows a wide choice of plan components and form, so it is unclear what is actually mandatory. Legal requirements are only for operation-by-operation plans and notifications, rather than a comprehensive management plan. If a landowner chooses the stewardship agreement process, more documentation is required, but only for topics dealing with complying with state laws, so the written plan is still less comprehensive than the other systems.

- All of the certification systems examined require inventory of significant resources. Differences include items such as non-timber products, road classifications and "High Conservation Value Forests," which are required under FSC systems, but not explicitly by SFI. Oregon's Forest Practice laws require landowners to inventory to determine a need to reforest, and when filing notification of operations, slope, evidence of slope instability, and distance to water bodies (lake, stream, channel, wetland). Where timber harvest in riparian management areas is planned, tree inventory is needed to identify which, if any, may be cut. Inventory of other resources and features generally is optional, although State agencies may inventory locally important resource sites that may affect management options for landowners. However, even in the case of stewardship agreements, the comprehensiveness of the inventory required by Oregon law is less than for FSC certification systems.

- Oregon requirements do not directly address sustained yield, but instead approach it via reforestation requirements, green tree retention, clearcut restrictions and riparian management area (RMA) retention requirements. By contrast, the SFI and FSC systems specifically require calculation of and

adherence to sustained yield. The SCS system, in particular, places great emphasis on sustained yield.

- The FSC systems require sustained yield of non-timber forest products while SFI and legal systems are silent on this issue.

- While all systems require some monitoring by landowners, the certification systems require more monitoring than State law. The SmartWood and FSC National Indicators require collection of relatively extensive biological and other data (current practices and environmental impacts) to use for adjusting management practices. SFI concentrates monitoring on clearcuts (visual aspects), training, and flow of information about the SFI.

- While all the FSC systems require complete chain-of-custody tracking, the SFI system currently has no provision for it. The State requires log branding and source identification for logs sold to mills, which amounts to at least a partial chain-of-custody. SFI has plans in the works for a non chain-of-custody based eco-label by fall 2001.

Forest Management Practices

Explanation of Rating System Used:

(NR) item not required by this system
(**<**) requirements or specificity less than other systems analyzed
(**=**) requirements substantial and/or equal to other systems analyzed
(**>**) requirements or specificity greater than other systems analyzed.

Note: Ratings do not represent a judgment of positive or negative impacts of the system provisions, but indicate the relative level of constraints imposed or extra features offered by the provisions. For example, FSC is the only program that prohibits the use of genetically modified organisms (GMO's), so its requirements are greater than the other systems, and received a > rating. This does not mean that prohibiting the use of GMO's is better than allowing them.

Forest Management Practices	**Required Legally**	**SFI**	**FSC-SCS**	**FSC-Smart Wood**	**FSC Nat. Indicators**
Regeneration	(>) Extensive requirements	(=) Clear direction that sites must be promptly reforested after harvests	(=) Clear direction that sites must be promptly reforested after harvests	(=) Clear direction that sites must be promptly reforested after harvests	(=) Clear direction that sites must be promptly reforested after harvests
Site Preparation	(>) Extensive requirements for soil and water protection	(<) Minimal requirements	(NR)	(NR)	(>) Protection of soil and residual trees
Genetics	(=) Use locally adopted sources	(=) GMO's okay of law followed	(>) GMO's not allowed	(>) GMO's not allowed	(>) GMO's not allowed
Stocking Control	(=)	(NR)	(>) Thinning expected	(>) Thinning expected	(=)
Fertilization	(=) Fertilization allowed	(=) Fertilization allowed	(=) Fertilization allowed, but use of man made fertilizers discouraged	(=) Fertilization allowed, but use of man made fertilizers discouraged	(>) Fertility maintained through natural cycles
Fire (including slash treatment)	(>) Extensive directives, mostly for fire control	(=) Wildfire control and prescribed fires	(=) Wildfire control and prescribed fires	(=) Wildfire control and prescribed fires	(=) Wildfire control and prescribed fires

Pests & Pathogens	(=) Need to control outbreaks	(=) Need to control outbreaks	(=) Use of natural cycles to prevent and control outbreaks	(=) Use of natural cycles to prevent and control outbreaks	(=) Use of natural cycles to prevent and control outbreaks
Access	(=) Access necessary for management	(NR)	(=) Access necessary for management	(=) Access necessary for management	(NR)
Harvest/Utilization	(<) No requirements for utilization	(=) Minimize waste	(=) Minimize waste	(=) Minimize waste	(=) Optimize use of resources
Personnel & Supervision	(=) Limited training required	(>) Extensive training required	(=) Training and supervision required	(=) Training and supervision required	(=) Training and supervision required

Summary Points:

- Prompt reforestation with native species following harvest is required under all certification systems and Oregon law. Oregon legal requirements are the most explicit and detailed of any of the systems examined. Besides use of native species, FSC systems are more restrictive by requiring maintenance of the native/natural forest type (i.e. plantations of native species are not equivalent to natural forests under FSC guidelines).

- FSC National Indicator and Oregon law address soil and residual tree protection under provisions for site preparation. SmartWood and SCS are not explicit about site preparation requirements, while SFI offers minimal guidance.

- All systems emphasize use of locally adapted sources, and use of either artificial or natural regeneration. Use of genetically modified organisms is specifically prohibited under the FSC systems, allowable under SFI, and not addressed by Oregon law.

- SCS and SmartWood have some emphasis on stocking control/intermediate stand treatments, whereas Oregon law and the FSC National Indicators address stocking via harvest and related reforestation requirements (minimum stocking, free-to-grow status).

- All systems allow forest fertilization, although the FSC national indicators emphasize productivity management through natural cycles, rather than relying on man-made inputs of nutrients.

- All systems, except SCS, recognize both the prescriptive use of fire and control of catastrophic wildfire. Oregon law provides the most detailed and specific directives regarding fire management and control.

- All systems recognize the need to control/limit major pest/pathogen problems. FSC, however, emphasizes prevention and maintaining natural cycles/processes to minimize problems.

- Oregon law, SCS and SmartWood recognize roads as necessary part of forest management. SFI and FSC National indicators have no explicit statement about roads.

- All systems assume (expect) some timber harvest to occur.

- Both SFI and FSC emphasize minimizing waste and efficient utilization/use. FSC National Indicators emphasizes “optimal” use and broad interpretation of forest goods and services.

- While all systems, except Oregon law, place emphasis on training and supervision of personnel for management of forests, SFI places the greatest emphasis, with substantial requirements for participants in the SFI. Oregon law requires some training and licensing of pesticide operators.

Environmental Considerations

Explanation of Rating System Used:

(NR) item not required by this system
(**<**) requirements or specificity less than other systems analyzed
(**=**) requirements substantial and/or equal to other systems analyzed
(**>**) requirements or specificity greater than other systems analyzed.

Note: Ratings do not represent a judgment of positive or negative impacts of the system provisions, but indicate the relative level of constraints imposed or extra features offered by the provisions.

Environmental Considerations	Required Legally	SFI	FSC-SCS	FSC-Smart Wood	FSC Nat. Indicators
Ecological Function/ Long Term Productivity	(<) Avoid productivity loss; emphasis is on prevention of resource damage.	(=) Avoid loss of productivity through a biological conservation and other measures.	(>) Maintain natural ecological functions to maintain productivity	(>) Maintain natural ecological functions to maintain productivity	(>) Maintain natural ecological functions to maintain productivity, restore lost productivity where necessary
Species Conservation	(=) Threatened and endangered species only	(=) Habitat management for species conservation required under several criteria.	(>) Specific requirements for habitat management	(>) Specific requirements for habitat management	(>) Specific requirements for habitat management such as management of High Value Conservation Forests
Landscape Scale Concerns	(NR)	(>) Management at different scales	(=)	(=)	(>) Management at different scales
Exotic Species	(=) Use of exotic species must be justified by written declaration.	(NR)[6]	(=) Use of exotic species must be justified and is commonly certified for plantations that do not replace native forests	(=) Use of exotic species must be justified and is commonly certified for plantations that do not replace native forests	(=) Use of exotic species must be justified and is commonly certified for plantations that do not replace native forests

[6] SFB has approved new guidelines for use of exotic species, which are planned to take effect in Jan. 2002.

Reserves/Special Areas	(=) Special areas protected	(=) Must identify and manage in a way that recognizes their special qualities.	(>) Special areas protected and reserve areas established.	(>) Special areas protected and reserve areas established.	(>) Special areas protected and reserve areas established.
Water Resources	(>) Extensive directives for water protection	(=) Must meet water laws. Protect water quality.	(=) Meet or exceed water laws.	(>) Exceed state standard in areas such as culvert sizing	(=) Meet or exceed water laws.
Soil Resources	(=)	(=)	(=)	(=)	(>) Repair and restore degraded areas
Chemicals	(=) Notification required for each application	(=) Meet or exceed laws; be economically and environmentally responsible and train employees	(>) Use must be justified, with eventual elimination of use the goal	(>) Use must be justified, with eventual elimination of use the goal	(>) Use must be justified, with eventual elimination of use the goal
Air Quality	(>) Air is public asset and is specifically protected by law	(<) Mentioned in standard under objective 2, but no indicators listed	(NR)	(NR)	(NR)

Summary Points:

- FSC systems emphasize maintenance of ecological functions as a primary means of addressing forest productivity, species diversity and landscape-level concerns. SFI does not explicitly address ecological function, and Oregon law only makes limited reference to it. SFI and Oregon law focus on dealing with symptoms (i.e. long term productivity loss), and less on linkages between function and productivity.

- All systems address threatened and endangered species and other species conservation concerns. SFI and FSC emphasize biological/species conservation through habitat management. FSC systems provide the most specific and potentially significant directives (i.e. High Conservation Value Forest requirements). Oregon law addresses biological and species conservation through the protection of inventoried resource sites on private lands and extensive reserves and habitat management areas required by law on public lands

- All systems except the Oregon law give specific consideration to landscape scale concerns. SFI and FSC National Indicators provide specific direction for management at various/appropriate scales through the landscape level.

- All systems except the SFI require special consideration and justification for the use of exotic species.

- Oregon law and the FSC systems have explicit requirements for protection of special areas/reserves. SFI requires "special consideration," but it is unclear how protection is assured. FSC systems also require general reserve areas to be set-aside on every property.

- Oregon laws recognize the need to protect the "waters of the state," and include more specific and detailed requirements for water resource protection (i.e. riparian widths, minimum basal area requirements) than any of the certification systems examined. This high level of the Oregon legal standard for water resource protection, results in stricter water protection standards for Oregon landowners who participate in certification systems requiring compliance with all state and local water laws, than what is required for landowners under the same certification systems in states and regions with a lower water protection standard.

- The SmartWood system has a culvert-sizing requirement to meet a 100-year flood, while the Oregon legal standard is a 50-year flood and passage for both juvenile and adult fish.

- The approach of the certification systems to water resource protection is generally that of continuous improvement, while the Oregon legal approach is to set the minimum acceptable standard as law. In some cases, the Oregon legal system includes some mechanisms for restoration/enhancement (i.e. alternative plans), but these are optional.

- All the certification systems examined and Oregon legal requirements address soil resource impacts/protection. There is considerable overlap in considerations for both soil and water resource protection.

- The FSC national indicators place some emphasis on repair/restoration of areas of damaged soil, while other systems and the Oregon law are silent on this topic.

- None of the systems examined prohibit the use of chemicals, but all require careful and controlled use. Federal and Oregon laws on pesticides have specific and detailed directives for use and safety.

- FSC systems require reduction and eventual elimination of chemical use. The FSC national indicators reference a list of FSC approved chemicals for use in the forest. This list does not include some chemicals that the state and federal government list as legal to use.

- As with water, Oregon law recognizes air as a public resource and requires special measures (such as regulated slash burning) to protect air quality.

Certification systems do not refer specifically to air quality, though some protection is inferred and deferred to state law.

Socio-Economic Considerations

Explanation of Rating System Used:

(NR) item not required by this system
(**<**) requirements or specificity less than other systems analyzed
(**=**) requirements substantial and/or equal to other systems analyzed
(**>**) requirements or specificity greater than other systems analyzed.

Note: Ratings do not represent a judgment of positive or negative impacts of the system provisions, but indicate the relative level of constraints imposed or features offered by the provisions

Socio-Economic Considerations	Required Legally	SFI	FSC-SCS	FSC-Smart Wood	FSC Nat. Indicators
Land Tenure & Use	(>) Retaining land in forest use is mandated by state law	(NR)	(=) Use and tenure are points of emphasis	(=) Use and tenure are points of emphasis	(=) Use and tenure are points of emphasis
Community & Cultural Relations	(=) Public values are focus	(=) Focus is broader public	(>) Specific references and responsibility to local communities	(>) Specific references and responsibility to local communities	(>) Specific references and responsibility to local communities
Worker Relations	(>) Worker rights and safety are specifically protected	(=) Significant training required for employees	(>) Must show evidence of good conditions for workers	(>) Must show evidence of good conditions for workers	(>) Must show evidence of good conditions for workers
Economic Viability/Stability	(<) Only broad goal is stated	(<) Addressed implicitly through the SFI Standard	(=) Long term economic viability is goal; reinvestment required	(=) Long term economic viability is goal; reinvestment required	(=) Long term economic viability is goal; reinvestment required
Legal & Other Policy Requirements	(>) Strictly bound to make and administer laws	(<) Must meet reforestation, water and chemical laws[7]	(=) Must meet or exceed all applicable laws	(=) Must meet or exceed all applicable laws	(=) Must meet or exceed all applicable laws

[7] On August 17, 2001 the Sustainable Forestry Board approved a comprehensive statement that will require SFI Program participants to meet all applicable forestry and related laws and regulations. This is planned for finalization in October 2001 and inclusion in the new SFI Standard in January 2002.

Visual Management	(=) Visual management required for scenic corridors	(+) Major emphasis on visual management	(=)	(=)	(NR)

Summary Points:

- Both Oregon law and the FSC systems discourage conversion of forestlands to other uses. In the case of Oregon law, this protection of important forest areas is mandated. The FSC systems pointedly emphasize the owner's long-term forest tenure/use, and consideration of indigenous people's rights (access). The SFI is silent regarding land use/conversion.

- All systems include some requirements for community/cultural relations, but the nature and emphasis of these varies. FSC systems pointedly address community-level/neighbor considerations and responsibilities, while SFI targets efforts to the broader "public, with some inference to local involvement. The Oregon legal process focuses heavily on protection of public assets and rights. It also requires public access/information about inspection of forest operations and other agency business.

- All systems address worker relations and safety, but through different approaches. Oregon law uses extensive safety codes and worker rights rules, combined with licensing and inspections, to ensure a safe working environment and adequate consideration of worker rights. The SFI system relies on training requirements to ensure that workers are well prepared and safe, but is silent on worker rights. The FSC systems focus on collecting evidence of certain conditions (i.e. excellent social and economic well being of workers) to ensure that workers are well paid, well prepared and have a safe working environment.

- The FSC systems place clear emphasis on establishing that an operation has long-term economic viability/stability as a means for sustainable forestry. This concept also includes required reinvestment of earnings in the forest through management practices and infrastructure. The SFI system does not specifically identify how to evaluate economic viability, and Oregon law only broad inference to it through rules that require maintenance of the forestland base and productivity

- The FSC systems specifically require compliance with all applicable state, federal and local laws/regulations, while SFI currently only mentions specific laws/regulations for required compliance (i.e. water quality laws, reforestation laws, chemical use laws). SFI program participants will have to comply with all applicable laws under newly approved guidelines, which are set to take effect January 1, 2002.

- Consideration of visual management/aesthetics is addressed under all systems accept the FSC national indicators. The SFI gives significant emphasis to maintaining visual quality in general, while Oregon law concentrates requirements primarily along designated state and federal "scenic highways."

Appendix A: Detailed Information on Each of the Five Major Categories

Program Administration/Process:[8]

Program Sponsor/Administrator

Oregon Legal Requirements

- Oregon's Forest Practices Act [ORS 527.610 to 527.770, 527.990 (1) and 527.992] and Administrative Rules [OAR Chapter 629] repeatedly refer to both the Oregon Board of Forestry (BOF) and the State Forester as primary administrators of these legal requirements. However, staff of the Forest Practices Program of the Oregon Department of Forestry (ODF) is typically recognized as the "duly authorized" representatives of the State Forester" [ORS 527.620]. ODF staff thus provides primary field administration of the state forest practices laws and rules, and are the state personnel who have most frequent and substantial contact with forest landowners and operators.

- In some specific circumstances, including some involving worker safety, smoke management, chemical use, species conservation, and water use, staff of other state and federal agencies may work with forest landowners and operators to administer certain state and federal laws and rules. Such agencies include the Oregon Occupational Safety and Health Administration (OSHA), Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, Oregon Department of Agriculture, Oregon Department of Land Conservation and Development, Oregon Parks and Recreation Department, Oregon Water Resources Department, U.S. Fish and Wildlife Service, National Marine Fisheries Service, Army Corps on Engineers, and the Environmental Protection Agency. Agencies such as the Immigration and Naturalization Service (INS) also interact with landowners and operators regarding worker status and rights.

Sustainable Forestry Initiative

The SFI was created in the early 1990's as a program of the American Forest and Paper Association (AF&PA). It was pilot tested in 1994 and made a requirement for all members in 1997. Although all members of AF&PA must participate in the SFI, the third party verification process (added in 1999) is optional. During 2000, the AF&PA appointed a Sustainable Forestry Board, which oversees the SFI program and conducts periodic reviews of it. The board is made up of a variety of interests, but member participation is limited to 40% of the overall board membership, giving non-members a

[8] The detailed analysis includes references to major sections of the law or certification standard relevant to the discussion. For example, OFPA references list chapter in Oregon law [ORS 527], while SFI goal and indicator are also listed [4.1.2.1.1]. FSC references are to Criteria and Indicators, or to a specific page of certifier instructions.

voting majority. The SFI standard is frequently reviewed, with new versions in 1999, 2000, and a revision underway for 2001.

Scientific Certification Systems

Based in Oakland California, Scientific Certification Systems (SCS) is one of the two FSC accredited certifiers headquartered in the United States. SCS was formed in 1984 to independently evaluate and certify environmental and food safety performance. SCS is a for-profit company, with strict operational guidelines to separate it from client companies. The Forest Conservation Program was established by SCS in 1991 to identify forest management practices, which most successfully sustain timber resources, while maintaining the ecological viability of the forest, and benefiting the larger community. The FSC Board of Directors during August 1995 accredited the Forest Conservation Program as meeting the FSC standard. The version of the FCP used in this analysis is the October 1995 release.

RIEE/SmartWood

The Rogue Institute for Economy and Ecology was a regional partner for the SmartWood certification network, prior to the dissolution of the Institute in 2000. The guidelines used in this analysis are ones approved by the Forest Stewardship Council (FSC) in 1999 (version dated 11/10/99), and subsequently used on FSC certifications in Oregon. The SmartWood certification network is a worldwide network of partners, doing Forest Stewardship Council accredited certifications of forests and forest product companies. SmartWood is a program of the non-profit, Rainforest Alliance. SmartWood and Scientific Certification Systems are the two currently accredited FSC certifiers based in the United States. The Forest Stewardship Council is a non-profit, membership organization, which accredits certifiers and oversees rules development for forest and chain-of-custody certifications worldwide. Since RIEE is no longer available to do certifications in Oregon, the Oregon SmartWood certifications are being done by a northern California-based SmartWood partner.

FSC National Indicators

- The Forest Stewardship Council (FSC) is an international, non-profit; membership organization composed of forest products buyers groups (wholesalers and retailers), producers of forest products, government agencies and representatives, and environmental groups. The FSC is organized as three chambers (economic, social, and environmental), which determine policies. Each chamber has only one vote on policy matters, and members can only be represented in a single chamber. The FSC is an independent third-party, i.e. neither a producer nor purchaser of forest products (1st or second party), and upon certification a forest landowner or manager may use the FSC logo for marketing purposes.

- FSC-US oversees the activities of the FSC in the United States, specifically regional rules promulgation, certifier actions and public relations. FSC-US appointed a committee during mid-2000 to create a set of national indicators to use for developing consistent regional rules within the 11 U.S. FSC-US will use these approved indicators to compare regional rules as they are developed.

Standard Setting Process

Oregon Legal Requirements

Legal Statutes (e.g., Oregon Forest Practices Act - OFPA)

- Legislative or initiative process of promulgating laws.
- Legislative process requires public hearings and majority votes of elected officials (both chambers of legislature) subject to veto-by governor.
- Initiative process requires review of ballot title review of economic impact to state government, and public vote.

Administrative Rules (e.g., Oregon's Forest Practice Rules):

- Defined process for rule promulgation (ORS Chapter 527)
- Board of Forestry (BOF) given "exclusive authority" by OFPA to develop and enforce forestry rules (ORS 527.630)
- Regional Forest Practice committees to review proposed rules (advisory)
- Board coordinates with other state agencies
- ODF staff provides technical analysis for the BOF with proposals for rules
- Governor can issue executive order to BOF to consider new rules (example: steam management rules for salmon/steelhead), and process (e.g., formed Forest Practices Advisory Committee - FPAC)
- Legislature can pass laws/direct BOF to draft new rules
- ORS 527.714 requires rule development to involve public hearings/discussion, and disclosure of need/impact by BOF.

Sustainable Forestry Initiative

- SFI Standard initially implemented by AF&PA (1996); modified in 97, 99, 2000, 2001 and 2002 (underway).

- Standard evaluated in practice by external review panel (non-AF&PA) and other stakeholders, including field evaluations led by the Isaak Walton League and including participation by the U.S. Forest Service, and the Sustainable Forestry Partnership.

- Sustainable Forestry Board established July 2000 to manage Standard, verification procedures and compliance. Majority of members are from non-AF&PA representation. Representatives are from NGO's, public organizations, professionals/academic, loggers, NIPF's

Scientific Certification Systems

- The standard used in the Forest Conservation Program was developed internally by SCS, but has undergone significant peer review, including by the Forest Stewardship Council during accreditation hearings in 1995.

- SCS refers to stakeholder reviews of the FCP at a regional level, but it is unclear if these have been done, or how they might have changed the FCP.

- The structure of the FCP is such that it can be tailored to individual situations by adjusting the weighting given various factors, and by how the regional stakeholder input is structured and considered in the report.

RIEE/SmartWood

- Generic SmartWood standards developed internally by organization, with consultation from various external groups (10 international) standards approved by FSC international

- Regional standards (RIEE) developed internally from modification of generic standards to reflect local needs/issues:
    a. "Broad, consultative process"
    b. SmartWood approved regional standard

- FSC regional standards will supercede certifier standards (e.g., RIEE/SmartWood) when completed

FSC National Indicators

The FSC—the U.S. Standards Committee, consisting of approximately twenty national experts in forestry, ecology and sociology, developed U.S. National Indicators. Two subcommittees, forestry and ecology and social, prepared the National Indicators. The indicators were publicly reviewed during late 2000 and formally adopted during February 2001. The indicators may be exceeded in the regional rules, but they may not be left out. Actual certification is performed by FSC accredited organizations, such as SCS and SmartWood, which have developed their own regional standards (including the RIEE/SmartWood guidelines used in this project), that they can use until regional rules are approved. Once the regional rules are adopted, then they must be used for any FSC certification in that region, regardless of certifier.

Verification Process

Oregon Legal Requirements

- ODF and other state agencies have primary responsibilities for monitoring activities, e.g., chemical rules [OAR 629-620-0700], water protection rules, [OAR 629-635-0110], and smoke management [ORS 477.554, OAR 629-43-0043].

- ODF Forest Practices Foresters:
    a. Review all notification of operations
    b. Inspect sites before, during, and after operations per ODF guidelines, particularly operations with high probability for environmental impacts (e.g., high risk sites, streams, THREATENED AND ENDANGERED sites, fire risk, visually sensitive areas).

- ODF staff monitor rule effectiveness using a sample of operations

Sustainable Forestry Initiative

- Self-reporting to AF&PA is required of all participants, but 3rd party verification is voluntary/optional

- Verification process is based on a range of international and national auditing, and verification standards and protocols (e.g., GAAP, CSA, ISO)

- Systematic and documented process to objectively obtain and evaluate evidence to determine participants conformity

- 3rd party audits require:
    a. Totally independent verifier
    b. Trained auditor as lead verifier (week long course in auditing required)
    c. Written report (mutually agreed contents) to participate
    d. Confidential unless participant decides otherwise
    e. Use of core indicators mandatory
    f. Verify team must include 1 professional forester
    g. Site visit, chosen by auditors
    h. No conflict of interest by certifier

- Re-verification required in 3 years, and then every 5 years. Newly adopted provisions (to take effect Jan. 2002) will require annual audits with a 5-year recertification.
- Verification teams must include at least one team member who is a forester as defined by the Society of American Foresters.

FSC Systems

- Meetings with stakeholders (includes communities, adjoining landowners, environmental groups, researchers, etc) are required by FSC systems

- FSC assessment reports are reviewed by a peer review panel

- FSC requires annual audits (progress report – min 2) and re-certification every 5 years

- The FSC certification summary is public, but assessment documents are not.

- FSC requires a statement indicating that no known conflict of interest exists by members of a certification panel (although not specified in RIEE guidelines)

- FSC systems are not based on conventional auditing process/procedures

Scientific Certification Systems

- A well-detailed 11-step process for verification of conformance with the FSC standard is required. The verification team generally includes at least a three-person team, with specialties matching the scope and size of the operation being considered. The process includes a preliminary meeting, 2-3 day preliminary

evaluation, work contract, assembly of an evaluation team, collecting/analyzing data, consulting with stakeholders, assigning scoring weights, assigning performance scores, specification of conditions, client review and peer review.

- If the client receives at least a weighted average of 80 for each of the three major program categories (timber sustainability, ecosystem maintenance, and financial/socio-economic considerations), then they are eligible for designation as a "well managed forest." A certification contract can then be drawn up to allow the client to use the SCS eco-label and/or the FSC eco-label.

- SCS offers property, manager and chain-of-custody certifications.

- Duration of the certification contract coincides with the client's planning process (when plans are normally rewritten), but is generally 3-6 years, with annual updates.

RIEE/SmartWood

- All FSC certifiers follow a similar process to verify conformance to FSC international forest principles, and regionally recognized standards of sustainable forest management. Following third-party evaluation by a panel of regional and local experts, overseen by the accredited certifier, the draft document is peer reviewed and forwarded to FSC national staff, where it is again reviewed. Since this is a third-party certification, panel participants must sign statements indicating that they have no known conflict of interest. SmartWood offers a variety of certification options:

- Can apply to either
    a. Property (source)
    b. Manager (resource)
    c. Chain-of-custody
- More specifically, the process involves:
    a. Team leader with training/experience
    b. Local specialists and familiarity with forestry
    c. Site inspection (chosen by auditor)
    d. Peer review of assessment report
    e. Each performance criterion (5 total) scored 1 to 5.
    f. Issuing of a formal certification contract between SmartWood and client. Contracts are generally for 5 years, with annual update audits.

FSC National Indicators

The FSC National Indicators are not to be used directly for certification, but will appear as underlying principles in the regional rules used by the FSC accredited certifiers. The FSC certification process is discussed more specifically under accredited certifier RIEE/SmartWood above.

Enforcement Protocol

Oregon Legal Requirements

- Forest Practices Act/Rules:
    a. Citations specifying the violation may be issued; citations are mandatory where damage has already occurred, and with violations of requirements for notification of operations, prior approval, and written plans.
    b. Operator must cease committing violation
    c. Repair and/or cease operations order may be issued
    d. FPF has option to prescribe corrective action with a "statement of unsatisfactory condition," instead of immediately issuing a citation. This option does not apply with mandatory citations listed above.
    e. Civil penalties are assessed in most cases when a citation is issued; amounts are set by formula up to $5000 for each violated rule.
    f. When the operator fails to correct any damage, liens may be used to pay for correcting non-compliance, or a court order may be used for force compliance;
    g. Criminal prosecution can also occur
    h. Landowner may request hearings and file appeals

- Stewardship Plan Option: Standard Setting
    a. General Guidelines for landowner plan established by ORS 527.662 with rules adopted by the BOF in OAR 629-606-0000.
    b. Specific plan components and requirements are identified in joint agreement between State Forester (ODF) and landowner; process includes a public review and comment period before approval
    c. State Forester (ODF) establishes agreements with landowners

- Stewardship Plan Option: Verification Process
    a. Joint audit process (ODF/Landowner) once every 3 years (minimum)
    b. Audit report to landowner (assumed public document)
    c. Joint process for potential revisions

- Stewardship Plan Option: Enforcement Protocol
    a. State or landowner can terminate agreements, which can result in suspended operations (written plans and approval again needed)

Sustainable Forestry Initiative

- Process for addressing non-conformity:
    a. Appropriately documented and supported
    b. Consensus and understanding between verifier and participant
    c. Significant non-conformance can lead to failure to verify
    d. Schedule and remedies specified

- If participant chooses public disclosure, disclosure of verification results is directed by SFI guidelines and Federal Trade Commission rules.

Scientific Certification Systems

Signed contract between SCS and client specifies conditions of the certification agreement and responsibilities of each party. To remain certified, a client must meet conditions imposed in the contract, and be willing to submit to annual audits, and random inspections.

RIEE/SmartWood

- Signed contract between SW and participant

- Participant must meet pre-conditions before certification and make progress on other conditions to remain certified

FSC National Indicators

Each FSC certification is viable for five years only, and is subject to annual audits by the regional certifier. If annual audits indicate that the forest landowner or manager is not meeting the stewardship criteria established through certification, the award will be revoked and the logo may not be used. FSC at the national or international level can also intervene by pulling the accreditation of a certifier if they are issuing questionable certification contracts.

Dispute Resolution Process

Oregon Legal Requirements

- Forest landowners or operators who have been issued a citation and assessed a civil penalty due to violation of Oregon forest practice statutes or rules have a right to contest the citation and any penalty under a standardized hearings process. A hearings officer produces a proposed order and the Board of Forestry resolves the case through a final order. The individual, operator, landowner, or company has the option of taking their case to the Oregon Court of Appeals, and potentially the Oregon Supreme Court. Operator, landowners, or companies also may contest or appeal other orders of the State Forester, such as a denial of a written plan, through the standard hearings and appeals processes provided in Oregon law.

- Individuals who submit comments to the State Forester and who are adversely affected by operations conducted under an approved or amended stewardship agreement may file a request for a hearing to the Board of Forestry [ORS 527.662(11) and OAR 629-606-0700]. The Board may subsequently issue an order to rescind, affirm or modify the approval or amendment of a stewardship agreement, and also may award legal costs to the prevailing party against those who present a position without probable cause [ORS 527.662].

Sustainable Forestry Initiative

The SFI 3rd party verification process is an optional process. The SFI verification process guidelines specify consensus between verifier and program participant as the target of the findings (SFI 2001, page 7, interpretation). If disputes arise, the lead

verifier has the final word (SFI 2001,page 6, verification meeting). Procedures for resolution are specified within ANSI and RAB standard procedures for audits. In addition, concerns about interpretation of the standard or other material issues are to be referred to the SFI Program Interpretations Sub-group. The text makes it clear, however, that the SFI program does not see its role as resolving disputes regarding particular certifications.

SCS, RIEE/SmartWood, and FSC National Indicators

SCS has a formal appeals procedure detailed in the FCP manual (section J). The process covers appeals by the participants and also by third parties. The RIEE/SmartWood guidelines do not specifically address dispute resolution, but the FSC has formal guidelines covering resolution of disputes. These guidelines were put in place after environmental groups challenged certifications done in Central America and Africa. The process involves filing of a formal challenge with FSC, then a review of the specific points by the certifier. FSC then issues a ruling. Disagreement on individual points during the certification process is generally the business of the certifier and the client and not part of this larger dispute resolution process. It is the responsibility of the certifier and client to work out a mutually acceptable certification contract.

Training & Credentialing

Oregon Legal Requirements

- The Oregon Department of Forestry requires a minimum of two years experience in forestry and a bachelor's degree in forestry or one-year forestry experience and a master's degree in forestry for candidates for Forest Practices Forester jobs (Personal communication, David Degenhardt, ODF, July 2001)

- Forest Practices Foresters (FPFs) gain initial job competency via either developmental assignments or through attending a Program Administration Course. They also receive mentoring from other FPF's and their supervisors. (Personal Communication, David Degenhardt, ODF, July 2001).

- Continuing education for FPFs is based upon a list of knowledge, skills and abilities needed to fully perform thirteen duties or job requirements of the FPF position. These may be obtained via a wide variety of learning opportunities from self-study to internal trainings to external workshops. (Personal communication, David Degenhardt, ODF, July 2001).

- Oregon law has specific requirements for licensing and training of those who handle "restricted use" pesticides, and for commercial and public applicators and consultants.

- Landowners who file for stewardship agreements must demonstrate sufficient knowledge and practical experience to develop and implement the plan [OAR 629-606-0400]. The State also is committed to training such landowners in forest practice rules, statutes and technical guidance [OAR 629-606-600].

Sustainable Forestry Initiative

The SFI has an entire standard (SFI 2002) that deals with qualification criteria for verifiers. All verifiers are required to have completed a minimum secondary education or equivalent. They must have formal training and experience in forestry operations, environmental regulation, and sustainable forest management systems domestically and internationally. They must also be familiar with the verification requirements of the SFI. Lead verifiers, additionally must have completed an internal auditing course to conduct first and second party audits. To do third party audits a lead verifier must successfully complete a week long lead auditors training course and be accredited by a national accreditation body such as ANSI or RAB.

Scientific Certification Systems

SCS assigns team members to assessments according to their expertise in relevant disciplines and knowledge of sustainable resource management. They do not require any particular prior FCP team experience, or expertise in auditing. The client is also allowed to help choose team members, but if consensus cannot be reached between SCS and the client, an arbitrator will be brought in to help choose the team.

RIEE/SmartWood

SmartWood assigns assessment team members who are familiar with the particular region and type of forestry operation being assessed. They also ensure that the team leader is one who has previously participated in other SmartWood assessments. SmartWood offers periodic training courses for assessors, but the course is not required to participate on a team.

FSC National Indicators

FSC National Indicators do not specify any particular credentials or training requirements to conduct FSC certifications in the USA. Certifications may only be done, however, under the direction of an accredited FSC certifier. The presumption seems to be here that the accreditation process will ensure competence in the certification process.

Public Transparency & Involvement

Oregon Legal Requirements

- Public transparency and involvement in standards setting for forestlands vary with the specific origin of the Oregon law or rule. Those developed by the Oregon Legislature or Board of Forestry (BOF) are subject to standard requirements for public notices, hearings, review and voting prior to adoption. Regional forest practice committees that include public representatives also normally review rules proposed by the Board [ORS 527.650, ORS 527.660]. In addition, the BOF or Governor may appoint advisory committees that include public representatives to provide review or input to policy makers. Such public processes and involvement

contrast with laws proposed through citizen initiatives, which are subject only to public review of the ballot title and disclosure of financial impact to state government.

- Oregon's legal requirements provide the opportunity for any citizen to subscribe to receive copies of notifications received by the department.

- Oregon's stewardship agreement process includes provisions for public disclosure and potential review of proposed agreements [ORS 527.662].

Sustainable Forestry Initiative

The Sustainable Forestry Initiative Standard, and other SFI guidelines (2001, 2002 and 2003) all address public disclosure. A major purpose of the SFI is to address public concerns about forest practices, so it is important for program participants to share information about the results of the program with public audiences. In the Sustainable Forestry Initiative Standard, program participants' progress in fulfilling their commitment to sustainable forestry is to be communicated to the public (Objective 9). For 3rd party audits, a core indicator of this is prompt response to the annual SFI survey questionnaire from the SFI program staff. The communication of SFI program results is required to be accurate and consistent (SFI 2001, public communication and claims), and should be done according to FTC guidelines on product advertising and communication. In addition third party audits can be proclaimed via and audit summary prepared jointly by the third party auditor and the program participant. As far as working documents, all of these are considered confidential between participant and verifier (SFI 2002, section 9).

Scientific Certification Systems

The certification assessment final report is not available to the public. The team leader prepares an executive summary, which serves as the primary means for conveying information about the results of the evaluation.

RIEE/SmartWood

Guidelines specify that certification guidelines used and a public certification summary will be provided for each assessment conducted (Section VII). Input from neighbors and other community members are also commonly sought during assessments. For certification of public lands, special meetings are conducted and disclosure procedures followed.

FSC National Indicators

While FSC protocol in general encourages transparency with external publics and stakeholders, the indicators do not specifically address the transparency of the certification process. There are many references to forest managers seeking public input and informing neighbors and others of planned activities in the indicators, and in certifier procedural guidelines (see RIEE/SmartWood and SCS above).

Forest Planning and Monitoring:

Written Plans

Oregon Legal Requirements

- Oregon's Forest Practices Act requires landowners to notify the Oregon Department of Forestry 15 days before conducting an operation defined as any commercial activity relating to the establishment, management or harvest of forest tree species. This notification applies to some or all activities within a single calendar year on an individual ownership. The forms used for notification require some information like that found in a written management plan:
    a. Description of planned operations and location, e.g., activity type, equipment, harvest level, timing, and legal description
    b. Identification of signification environmental features, e.g., site codes, slope stability, distance to water, stream type/use, wetlands, estuary, Threatened & Endangered species/habitat, archeological, scenic/visual

- More detailed written plans and prior approval are needed to conduct certain operations, e.g., those in or near some stream types, those near Threatened and Endangered species/habitat, those that involve alternatives to following standard forest practice requirements (tree species for reforestation, management of riparian vegetation, etc.). Key plan components include operations details, equipment, map, and site and resource descriptions.

- The "Stewardship Plan" option allowed under Oregon law [ORS 527.662] requires a multi-year written plan and signed agreement between the landowner and the state. Key components of plan include:
    a. Management objectives as they relate to Forest Practice statutes and rules
    b. Location and site features, including road system, forest types, scenic highways, water bodies, high risk sites, road problems, special resource sites (Threatened and Endangered species/habitat)
    c. Prescriptions and practices to protect inventoried resources
    d. Administrative and technical resources, specialized expertise (if needed)
    e. Restoration and enhancement practices
    f. Incorporation of adaptive management and Act/Rule revisions

Sustainable Forestry Initiative

- The SFI Standard generally discusses plans as written policies and programs, but not specifically as written management plans [except 4.1.1.1.4]. These references to plans include "planned" natural regeneration, "policies and program plans" for sustainable forestry, habitat diversity, visual impact, and mill inventory, and the need to "document" riparian protection measures [4.1.2.1.1, 4.1.1.1.1, 4.1.4.1.1, 4.1.5.1.1, 4.2.1.1.8, 4.1.3.1.2].

- Written plans are required and discussed in the SFI verification process. Plans are expected to include:

a. a long-term resource analysis (e.g., forest inventory, land classification, soils, GRY, GIS, harvest levels).
b. Other categories of activities or features requiring written documentation include public recreation and education
c. reforestation
d. chemical use
e. forest and soil productivity maintenance
f. forest protection
g. use of genetically improved trees
h. state BMPs and training
i. water body protection
j. management of wildlife habitat
k. biological diversity
l. visual management
m. size and distribution of clearcuts
n. forest cover diversity
o. identification and management of special sites
p. procurement
q. efficient utilization of trees
r. use of qualified resource and logging professionals.

Scientific Certification Systems

The SCS program description refers several times to the use or need for landowner data and plans, and "that exemplary and sustainable forestry…should be guided by an effective and operational written plan." Although the most specific references to management planning are in the context of timber resource sustainability (e.g., section A.6.), a list of forest management plan components (Appendix 5, which is described as consistent with FSC Principles and Criteria) also includes requirements for describing landowner management objectives and concerns related to wildlife. Similarly, non-timber management planning is strongly inferred through such goals as "wildlife management practices are routinely incorporated into timber management activities" [B.3.].

RIEE/SmartWood

- A multi-year written plan that is relatively comprehensive and site-specific (e.g., including maps and work plans) is required. Key features include management objectives, inventory (timber non-timber) silviculture plans and rationale (harvest level, region, etc.) future forest conditions, harvest system/equipment and rationale, financial projections and strategy, and/or utilization strategies, formal/informal relationships with stakeholders and neighbors, monitoring and adaptive management provisions.

- Certain substitutions (e.g., use of existing plans) and an exception (i.e., small landowner using a known manager/management system) are allowed.

FSC National Indicators

- Requires management plan appropriate to scale and intensity of the operation [Principle 7, Criteria 7.1- 7.4, 8.2, 9.3, 10.1].

- Management plan must be written, implemented and kept up to date.

- Management Plans include the following elements [7.1]:
    a. Management objectives that are specific, achievable, and measurable.
    b. Description of forest resources, environmental limitations, ownership status, socio-economic conditions, plus a profile of adjacent lands.
    c. Description of Silviculture system(s) used
    d. Rational for annual rate of harvest and species selection
    e. Provisions for monitoring forest growth and dynamics
    f. Possible environmental safeguards
    g. Plans for identification and protection of rare, endangered or threatened species
    h. Maps describing resources and protected areas
    i. Description and justification of harvesting techniques and equipment

- Periodic revision required accounting for new scientific, environmental, social or environmental information [7.2, 8.4].

- Adequate training and supervision of personnel [7.3]

- Public disclosure necessary [7.4]

- Written guidelines prepared and implemented for [6.5]:
    a. Erosion control
    b. Minimize forest damage during harvesting, road construction, and mechanical disturbances
    c. Water resource protection

- Prepare written strategies as a component of management plans whenever pesticides are to be used [6.6b]

- Management plan includes specific measures that ensure the maintenance and/or enhancement of High Conservation Value Forests [9.3]

- Plantations shall be planned and managed in accordance with Principles 1 through 9 [Principle 10].

- Management objectives of plantations shall be explicitly stated in management plan and clearly demonstrated [10.1].

Inventory

Oregon Legal Requirements

- Oregon's Forest Practice laws require landowners to inventory some resource characteristics in certain situations. These include determining a need to reforest [OAR 629.610.0020], and when filing notification of operations, slope, evidence of slope instability, and distance to water bodies (lake, stream, channel, wetland). Where timber harvest in riparian management areas is planned, tree inventory is needed to identify which, if any, may be cut.

- Inventory of other resources and features generally is optional, although State agencies may inventory locally important resource sites that may affect management options for landowners.

Stewardship Plans:

Landowners who operate under Stewardship Plans must use known inventories of streams, lakes, and other waters. Inventories also are needed for high-risk sites, road-related problems, and special sites (threatened and endangered species nesting sites, habitat; etc.). The Stewardship Plan should describe key site features.

Sustainable Forestry Initiative

SFI core indicators specify identification and mapping of special sites (i.e., ecologic, geologic, historically significant), stand inventory, mapping of perennial streams, lakes and other riparian areas. Collection of biodiversity related data is required, but not clearly specified as to what types of information are to be collected.

Scientific Certification Systems

The SCS program makes a number of references to inventory and other data collected by the landowner to support certification, including lists of specific types of data for the forest management plan (Appendix 5). Although discussed primarily in the context of timber resource sustainability, these lists also include inventory of non-timber resources such as wildlife, water bodies and riparian areas.

RIEE/SmartWood

The RIEE/SmartWood program requires inventory of:

a. Timber and non-timber resources being managed [3.2]
b. Road Classification [4.6]
c. Biological resources [5.0]
d. Environment Impact assessments [5.2]
e. Conservation areas [5.8]
f. Late seral or large diameter forest [5.9]

FSC National Indicators:

- Management plan includes reliable data on growth, yield, stocking and regeneration [7.1d, 5.6, 8.2, 10.2]

- Assessment of environmental impacts [6.1, 10.3], by implication including:
  a. Rare, threatened, or endangered species and habitats [6.2]
  b. Forest regeneration and succession [6.3]
  c. Genetic species diversity [6.3b]
  d. Late seral or old growth forests [7.1 and 6.3]
  e. Coarse woody debris, snags and den trees [6.3c]
  f. Unique or protected areas [6.4]
  g. Transportation system [6.5e]
  h. Stream and other water crossing structures [6.5]
  i. Pesticides [6.6]
  j. Exotic species [6.9, 10.4]

- Presence and attributes of High Conservation Value Forests [9.1,9.4]

Sustained Yield

Oregon Legal Requirements

Oregon law makes no specific reference to maintaining sustained yields through regulated harvest. However, some requirements have outcomes that relate to or may affect sustained yields, including:

a. Maximum clearcut size limits (120 acres) and clearcut "green-up" requirements
b. Regulated harvest in riparian zones (RMA's)
c. Green (live) tree and snag retention in clearcuts larger than 25 acres (2 per acre)
d. Tree retention and harvest pattern requirements along scenic highways/corridors [ORS 527.755]
e. Tree retention in some high risk sites

Sustainable Forestry Initiative

SFI "participants shall ensure that long-term harvest levels are sustainable and consistent with appropriate growth and yield models and written plans" [4.1.1.1.4]. The program requires ongoing inventory, growth calculations, and documentation of annual harvests relative to a sustainable management plan. The SFI verification process and indicators have similar language and requirements, and specifically mention periodic/continuous inventory, soils maps, GIS, modeling capabilities, etc.

Scientific Certification Systems

Sustained yield is a primary theme in the Timber Resource Sustainability component of the SCS program, which includes specific sections and emphasis on harvest regulation [A.1.] and stocking and growth control [A.2.]. Descriptions of planned harvest levels over time by area, species and products are considered ideal, as are historical data and research findings to support target rotations and yields. In addition, specific stand

treatments should complement these broad, long-term harvest strategies and result in desirable conditions for stands and individual trees.

RIEE/SmartWood

The RIEE/SmartWood program requires sustainable yield of high value forest products as well as sustainable harvest of non-timber products. Generally, harvest should not exceed growth, but departures from even flow are allowed for over/understocked stands. The basis for determining sustainable yields is conservative and well documented estimates of growth and yield.

FSC National Indicators

- Rate of harvest of forest products should not exceed levels, which can be permanently sustained [5.6]. Sustainability of harvest levels based on documented growth, regeneration, site index, and soil classification (5.6a). Once age class distribution commensurate with long-term sustainability is achieved, harvest rates should not exceed growth rate for any ten-year period (5.6b) .

- Management plan must include reliable data on growth, yield, stocking and regeneration [7.1d.1, 10.2], while improving the ecological composition structures and functions of forests [7.1d.2].

- Specifically, requires the following data collection for forest management planning [8.2a-e]:
    a. Yield of all forest products
    b. Growth rates, regeneration, and condition of the forest
    c. Composition of observed changes in flora and fauna
    d. Environmental and social impacts from harvesting and other operations
    e. Costs, productivity and efficiency of forest management

- Each of the above has specific sub-categories.

Monitoring

Oregon Legal Requirements

- Oregon's Forest Practices Act/Rules include some requirements or inferences related to landowner/operator monitoring:
    a. Operations shall inspect and maintain roads drainage systems before rainy season [OAR 629-625-0600]
    b. For natural reforestation, written plan shall include how reforestation progress will be evaluated (i.e., monitored) [OAR 629-610-0030].
    c. Landowner may cooperate with state monitoring activities (e.g., Water Protection Rules – OAR 629-635-0110).

a. In addition, because state may inspect properties during and after operations, there is some incentive for landowners to formally/informally monitor compliance and results.

b. Stewardship Plans may include participation in monitoring program sponsored or endorsed by ODF/ODFW [OAR 629-606-0300].

c. State taxes levied against timber harvest partially fund state administered compliance and effectiveness monitoring activities.

Sustainable Forestry Initiative

SFI requires periodic updates of inventory [4.1.1.1.4] as well as criteria to judge reforestation and correct inadequacies [4.1.2.1.1], both of which infer monitoring. More explicitly, SFI requires monitoring of:

a. Clearcut size and number [4.1.5.1.2]
b. Compliance of "green-up" requirements [4.1.5.1.3]
c. System to ensure efficient utilization [4.1.7.1.1]
d. Landowners receiving information [4.2.1.1.4]
e. Number of staff completing training [4.2.1.1.6]
f. All information needed for annual progress reports [4.3.1.1.1]

Strongest statement about monitoring comes from Objective 11 of the Sustainable Forestry Initiative Standard. This requires monitoring and a management review system to evaluate program effectiveness as part of the commitment to continuous improvement.[4.4.4.1.1]

Scientific Certification Systems

The SCS program description discusses monitoring primarily in the context of observations made by the verification team, rather than the landowner. However, the need or desirability for some landowner monitoring is inferred from the general indicators and ideal performance targets that identify specific desirable resource or socio-economic conditions.

RIEE/SmartWood

- RIEE/SmartWood includes a primary statement that "Monitoring is essential." The management plan must include monitoring protocols and links to adaptive management process [3.2]. Similarly, a consistent, replicable biological monitoring system must be implemented and used for adaptive management [5.3]. Monitoring also may be used to predict future resource conditions and sustainable harvest [4.1].

- Other specific monitoring requirements:
    a. Roads should be regularly monitored and timely repairs made [4.6]
    b. Environmental impact of exotics used (uses are discouraged) [5.13]
    c. Use of biological control agents [5.13]

FSC National Indicators

Monitoring and assessment is a major concern in the FSC national indicators. Specific references in the certification guidelines include:

- The rate of harvest of forest products shall not exceed levels which can be permanently sustained [5.6a,b]

- Assessment of environmental impacts shall be completed—appropriate to the scale, intensity of forest management and uniqueness of the affected resources—and adequately integrated into management systems [6.1, 10.1].

- Assessments include landscape level and on-site considerations [6.1] and determined prior to site-disturbing operations [6.1].

- Assessment of current conditions [6.1a] for:

- Ecological processes
    a. Unique vulnerable etc species and communities
    b. Common plants animals and their habitats
    c. Sensitive (state) and rare/endangered (federal) species and habitats
    d. Water resources
    e. Soil resources [also 7.1a,b]

- Assessment for forest regeneration and succession [6.3a] genetic and ecosystem diversity (6.3b) and natural cycles that affect productivity [6.1c]

- Use of biological control agents shall be documented, minimized and monitored [6.8].

- Use of exotic species shall be controlled and actively monitored [6.9, 10.4]

- Monitoring and assessment [Principle 8], appropriate to scale and intensity of forest management [8.1] to assess the condition of the forest, yields of forest products, chain of custody, management activities and social and environmental impacts.

- Forest management includes research and data collection to monitor for [8.2]:
    a. Yield of all forest products
    b. Growth rates, regeneration, condition of the forest
    c. Composition and changes in flora and fauna
    d. Environmental and social impacts of harvesting and other operations
    e. Costs, productivity and efficiency of forest management

- While respecting the confidentially of information, forest managers make publicly available a summary of results of monitoring above indicators [8.3].

- Assessment to determine the presence and attributes consistent with High Conservation Value Forests will be completed [9.1]

- Annual monitoring conducted to assess the effectiveness of the measures employed to maintain and enhance the applicable conservation attributes of High Conservation Value Forests [9.4].

- Monitoring of plantations shall include regular assessments of potential on-site and off ecological and social impacts (potential impacts are listed) [10.8].

Chain-of-Custody

Oregon Legal Requirements

- Log brands required west of cascades (optional east) to transport logs. Brands must be registered and are used to establish primary ownership of logs. Brands are added (catch brands) as ownership changes.

- The log branding system resembles chain-of-custody, but does not ensure information about:
    a. Log origin (where grown)
    b. Harvest conduct (except for ODF notification number)
    c. Processor of logs will uniquely identify final products as to origin.

Sustainable Forestry Initiative

Chain of custody labeling currently is not a component of the SFI system. An on product label has been approved for use, but is still being designed and deployed at this time. This labeling is only available for 3rd party verified operations and is planned to be a source-identified type of system.

Scientific Certification Systems

Chain-of-custody and product labeling are significant components of the SCS program [sections H. and I.]:

- A relatively detailed outline of required chain-of-custody procedures is provided, and extends from forest to mill, to secondary processor, to wholesaler, to retailer. These procedures include log and product segregation, tags, and documentation. SCS recognizes that production systems vary widely and that chain-of-custody procedures should reflect case-specific circumstances.

- The SCS program includes a process to certify and monitor the chain-of-custody procedures of program participants [sections H.1, H.2 and I.].

RIEE/SmartWood

- In the forest, RIEE/SmartWood requires [Indicators 8.1-8.4]:
    a. Product volume and source data
    b. Invoices and transport documentation to show certification status of products
    c. Marks, labels, documented separate storage, etc. at all points of processing and distribution up to sale/transport off property
    d. Appropriate public representation of certified products

- These indicators are used except for verifiers for certain situations (e.g. on-site processing of both certified/uncertified products, operation has multi-state/div or distant production and processing facilities or very complex chain of custody issues/risks), where more complex guidelines apply.

FSC National Indicators

Documentation must be provided by the forest manager that allows the certifying organization to track each forest product from its origin to its final destination [8.3, see also Section 3.6 of Chain of Custody Standards, FSC Accreditation Manual].

Forest Management Practices:

Forest Regeneration

Oregon Legal Requirements

- Rules require minimum seedling/sapling/tree stocking levels (numerical), based on local site class & stage of forest stand development; landowner must not only plant seedlings or retain adequate residuals within 24 months, but also must ensure they are “free to grow” after 6 years.

- Rules require use of commercial species ecologically suited to the local site; conifer sites generally may not be reforested with hardwoods without an approved plan. An approved plan also is needed for natural regeneration or use of non-native species. Seedlings or seeds for artificial reforestation should be from sources genetically adapted to the site.

- Rules require minimum seedling/sapling/tree stocking levels (numerical), based on local site class and stage of forest stand development; landowner must not only plant seedlings or retain adequate residuals within 1-2 years, but also must ensure they are “free to grow” after 6 years [OAR 629-610-0020].

- Rules provide some incentive for afforestation of certain idle lands [OAR 629-611-0000] by allowing timber harvest in otherwise restricted areas, under a one-time exemption from most tree retention requirements (e.g., within stream RMA except for the first 20 feet from most stream designations, special resource sites other than during annual critical period of use).

Sustainable Forestry Initiative

- Regeneration conducted in a manner that maintains soil productivity. (Objective 1)

- Written policy and plans with time frame. Artificial and natural regeneration specified. Criteria to judge adequate regeneration, with provisions for correction of problems. Compliance with state laws. Must accurately report regeneration information annually to SFI. (Objective 2)

- Chemicals used in reforestation must be used prudently and in compliance with all laws.

- Must have policies and plans for monitoring clearcut size and number. Must have written policy and tracking system regarding green up of clearcut areas. (Objective 5)

Scientific Certification Systems

- Forest stands must be maintained or restored to fully stocked, vigorous growing condition, occupied by high-valued tree species. This first indicator under the timber resource sustainability program element requires that regeneration be done to recover from harvests or natural events that reduce forest stocking.

- Assessment teams are also directed to consider patterns and composition of regeneration and young stand development that determines future yields and the sustainability of current harvest levels [Criteria A2]. The focus of regeneration efforts is directed at sustaining timber yields continuously.

- Even-aged silviculture is used only where it will mimic natural stand regeneration patterns. [Criteria B2].

RIEE/SmartWood

- Plan must have measures for ensuring adequate regeneration.

- Seed stock from appropriate sources, preferably local sources.

- No other specific references to regeneration- accept as it deals with use of chemicals- where chemicals may be used temporarily to restore a site.

FSC National Indicators

As a general statement the FSC national Indicators discourages conversion of forests to plantations or non-forest land uses except under special circumstances [6.10]

- The forest must be maintained or restored to the range and distribution of age-classes that would naturally occur on the site [6.3a].

- Trees are selected for harvest, retention or planting that maintains or enhances the productivity, genetic and species diversity and quality of the residual stand [6.3b]

- Locally adapted seed are used for artificial regeneration [6.3b].

- Use of genetically modified organisms is prohibited [6.8]

Site Preparation

Oregon Legal Requirements

- Rules include general statement recognizing slash treatment as a necessary tool for protection of reproduction and residual stands [OAR 629-615-0000].

- Rules require planning and conducting slash treatment to protect residual timber stands and reproduction to optimize conditions of forest tree species [OAR 620-615-0100]. Rules for mechanical site preparation focus on soil and water resource protection [OAR 629-615-0200 and 0250]. Rules for prescribed burning require adequate protection of reproduction and residual timber [OAR 629-615-0300].

Sustainable Forestry Initiative

- SFI requires site preparation to be done in a manner that maintains soil productivity [Objective 1, 4.1.1.1.1, Core indicator #3].

- There are no other direct references to site preparation, but there are indirect references, e.g., the requirement that all management units are to be designed for either artificial or natural regeneration [4.1.2.1.1, Core Indicator #2]. Requirements for methods to minimize soil disturbance and erosion [4.1.2.1.4, Core indicators 2 & 3] and to distribute (harvest) residues to add organic nutrient value to future soils [4.1.7.1.1, Other indicators #2] also could affect site preparation practices.

Scientific Certification Systems

There appear to be no direct statements about site preparation or slash management in the SCS program directives.

RIEE/SmartWood

Slash management is mentioned under pest and pathogen discussion, but no specific details given. No other specific references to site preparation or planting of harvested areas. The discussion of the management plan contents, however, requires measures to ensure *adequate* regeneration of commercial species, which could include site preparation.

FSC National Indicators

In the National Indicators, site preparation relates primarily to forest regeneration, maintaining natural forest cycles, and minimizing environmental impacts [6.3].

- Sufficient disturbance should be provided to generate stand conditions that result in successional phases that would naturally occur on the site [6.3]. Where even-aged management is used sufficient live trees and native vegetation is retained to be consistent with characteristics of natural disturbance for the forest community type [6.3a].

- Course woody debris and snags are maintained. Post-harvest activities (e.g. soil scarification, slash burning) must maintain soil fertility, structure and functions. If soil damage occurs must employ soil modification techniques [6.3, 6.5, 5.3].

- Guidelines are required and are to be implemented to control erosion and sedimentation from logging operations, construction of roads, road and skid trail density, water diversion features (water bars etc) to protect water resources and aquatic habitats [6.5]. If soil degradation occurs, soil modification techniques are required [6.3c].

Genetics

Oregon Legal Requirements

Rules require use of commercial and marketable species that are ecologically suited to the local site; prior approval is required for reforestation primarily with hardwoods [OAR 629-610-0050]. A written plan and prior approval is needed for natural regeneration

[OAR 629-610-0030] or use of non-native species [OAR 629-610-0060] to meet state minimum stocking requirements. Seedlings or seeds for artificial reforestation should be from sources genetically adapted to the site [OAR 629-610-0050].

Sustainable Forestry Initiative

Objective 2 under Other SFI Indicators (not required) #1 requires seedlings to be locally adapted. Indicator #8 specifies, "genetically improved stock is appropriately deployed to achieve Sustainable Forestry Initiative Standard reforestation requirements." In addition, the Sustainable Forestry Initiative Standard [4.1.2.1.6] requires that participants using genetically improved seedlings including those derived through biotechnology shall use sound scientific methods and follow all appropriate federal and state regulations and other international applicable protocols. More specific detail on this issue is in the 2 Core indicators and 4 other indicators that deal with these criteria.

Scientific Certification Systems

The only direct reference to genetics deals with the use of exotic and genetically engineered species, especially where they might possibly threaten natural ecosystems. (Indicator B1). Genetically modified organisms (GMOs) are prohibited. The directions go on to require careful use of exotics, and point out that hybrid species, and genetically selected material from plus tree programs are not considered genetically engineered (see Footnote 13, page 29, Forest Conservation Program manual).

RIEE/SmartWood

RIEE/SmartWood specifies that genetically engineered organisms are not to be used [5.15]. With regards to seed origin, seed stock is to be obtained from appropriate seed zones and where feasible, and collected from trees growing naturally on or near the site [4.3]. In addition, timber management must not result in genetic erosion (genotypic or phenotypic) as a result of preferential harvesting on the most desirable health and form classes [4.5].

FSC National Indicators

- Trees are selected for harvest retention or planting that maintains or enhances the productivity, genetic and species diversity, and quality of the residual stand [6.3, 10.4]

- Diversity of habitats of native species is protected and maintained [6.3] and representative samples of existing ecosystems are protected in their natural state [6.4]

- Locally adapted seed are used in artificial regeneration [6.3].

- Exotic species [6.9] and non-indigenous biological control agents are minimized, monitored, and strictly controlled. Genetically modified organisms are prohibited [6.8].

Stocking Control

Oregon Legal Requirements

No laws/rules requiring stocking control to maintain or enhance forest productivity (e.g., pre-commercial or commercial thinning), except when stocking control results in basal area or tree counts below specified numerical limits for various site classes; such situations trigger local reforestation requirements due to understocked conditions [OAR 629-610-0020, see regeneration section].

Sustainable Forestry Initiative

SFI includes no specific reference to thinning or stocking control. However, the need to maintain forest cover diversity across the landscape [Objective #5, Performance Measure 4] could require some stocking control.

Also, sustainable harvest levels required under the SFI implicitly require some degree of stocking control. [4.1.1.1.4]

Scientific Certification Systems

Stocking and growth control is a major indicator of timber resource sustainability. Guidelines tie together growth and yield targets with performance of stand treatments designed to meet the targets. The guidelines speak to the distribution of stand ages represented across the ownership, as well as condition of trees retained during harvests. The goal of young stands is full stocking with target species. [Criteria A2].

RIEE/SmartWood

- Thinning is mentioned specifically in relation to managing for highest and best use.
- Under silviculture, managers are instructed as a “rule of thumb” to remove trees across the diameter classes, favoring well formed, fast-growing trees of all species.
- No specific system of management is required.
- Under biological conservation-forest should contain a mixed species composition, and structure, with multiple age and size classes, including large diameter forest structure.
- For properties larger than 1000 acres, no more than 15% of the property can be in stands less than 10 years of age.

FSC National Indicators

There are no explicit statements about stocking in the National Indicators. Stocking and growth control are discussed implicitly under the following:

- Rate of harvest shall not exceed levels which can be permanently sustained [5.6a,b]

- The forest must be maintained or restored to the range and distribution of age-classes that would naturally occur on the site [6.3a]

- Trees are selected for harvest, retention or planting that maintains or enhances the productivity, genetic and species diversity and quality of the residual stand [6.3b]

Fertilization

Oregon Legal Requirements

No laws/rules requiring or restricting the use of fertilizers, other than those for water quality protection [OAR 629-620-0040, see chemicals section]; generally, the Forest Practice Rules for fertilizers are somewhat less restrictive than those for pesticides (e.g., stream buffer requirements, record keeping).

Sustainable Forestry Initiative

- SFI states that forest management activities are to be conducted in a manner that maintains soil productivity [Objective 1].

- Chemicals, including fertilizers, shall be used prudently, following BMP's, and meeting or exceeding applicable laws and regulations [Objective 2, Performance Objective 3]. Participants must have a written policy, training of personnel, and information available. They also must participate in research projects to reduce use rates and to expand other approaches to Integrated Pest Management (IPM).

Scientific Certification Systems

While fertilizer use is not mentioned explicitly, the target for forests is that they are self-sustaining over time. Thus, continued use of fertilizers could raise questions about the sustainability of the management regime [Criteria B2].

RIEE/SmartWood

No specific reference to fertilizers. If synthetic chemical fertilizers were to be used (i.e. urea) then they would fall under the chemical section of environmental impacts. They would then be restricted to use in restoring productivity that had been previously lost. Productivity is to come from natural soil processes, supported by uneven-aged, multiple species stands.

FSC National Indicators

In the National Indicators, fertility relates to maintaining natural forest cycles and minimizing environmental impacts.

- Sufficient disturbance [e.g. fire] should be provided to generate stand conditions that result in successional phases that would naturally occur on the site [6.3].

- Course woody debris and snags are maintained. Post-harvest activities (e.g. soil scarification, slash burning) must maintain soil fertility, structure and functions. If soil damage occurs must employ soil modification techniques [6.3, 6.5, 5.3].

Fire

Oregon Legal Requirements

- Rules include general statement that recognizes prescribed burning as a tool used achieve reforestation, maintain forest health, improve wildlife habitat and reduce wildfire hazard; directives for the conduct of prescribed burning operations include those that address concerns for air quality, soil and water protection, forest regeneration and snags and down wood [OAR 629-615-0300]. Permits for burning are required [ORS 477.515, OAR 629-43-0076].

- Rules for fire prevention and control include requirements for fire tools, extinguishers, pumps, hoses, water supply, spark arresters, exhaust screens, cleared areas around landings and cable blocks, falling of certain dead trees and snags, watchman service [OAR 629-43-0005 to 0036], and currently established fire protection levels [OAR 629-43-0070].

- In some circumstances, operators assume the legal liability for fire suppression when extra fire hazards are created by forest operations.

Sustainable Forestry Initiative

The Sustainable Forestry Initiative Standard [4.1.2.1.5] specifies that participants shall manage so as to protect forests from damaging agents such as wildfire, pests and diseases. Core indicators of this include having a written plan or policy; managing in such a way as to minimize susceptibility to damaging agents; participating in and supporting fire prevention and control programs.

Scientific Certification Systems

Although fire is not mentioned as a tool in forest management nor protection, recovery from wildfire plans are mentioned under management plan elements [Criteria A6]. Also, “excessive” salvaging after wildfires is mentioned as a potential practice precluding certification [Criteria A5].

RIEE/SmartWood

Indicator 5.10 specifies that an indicator of forest protection is that fire is being reintroduced where appropriate to reduce the long-term ecological effects of fire exclusion. Fire management is also mentioned under the general discussion of pest and pathogens, as a supported activity.

FSC National Indicators

- Fire management is specifically address under management planning [7.1] for use of prescribed burning and control of wildfires.

- Use of fire is implied in Indicator 6.3; to maintain or restore portions of the forest that result from processes that would naturally occur on the site [6.3a.2].

- Slash management should be accomplished to achieve goals of site preparation and reduce fuels to moderate or low fire hazard levels. [6.5d]

Pest & Pathogens

Oregon Legal Requirements

- Rules include general statement that recognizes slash treatment as a necessary tool for the protection of reproduction and residual stands from the risk of fire, insects, and disease [OAR 629-615-0000].

- Rules encourage the voluntary use of integrated pest management practices and also state that pesticides use is one of a variety of integrated pest management strategies that forest landowners may implement to minimize forest pest impacts in an environmentally and economically sound manner [OAR 629-620-0000]. Specific directives in using chemicals that include pesticides focus on requirements for safety and protection of air and water quality [OAR 629-620-0100 to 0800].

- Oregon law allows the Oregon Department of Forestry to conduct pest surveys on private lands and enter into agreements to assist landowners in pest control activities, including provisions for some (but not necessarily all costs) financial assistance [ORS 527.310 to 527.370].

Sustainable Forestry Initiative

Sustainable Forestry Initiative Standard section 4.1.2.1.5 requires program participants to manage so as to protect forests from damaging agents such as wildfire, pests, and diseases. Purpose is to maintain and improve long-term forest health and productivity. Required core indicators include written plans and managing forests to minimize susceptibility to damaging agents. Other indicators (not required) can include pest surveys, monitoring and integrated pest management.

Scientific Certification Systems

Management of pests and pathogens is a significant component of the SCS program, whose assessment includes a focus on “measures taken to produce stand conditions less susceptible to devastating mortality from pest and pathogen activity” [Section A.3.]. Among the measures evaluated are:

a. Recognition of inevitable outbreaks and related forest regulation strategy
b. Biological and Silviculture control practices used
c. Financial provisions for cost of future protection programs
d. Future protection and salvage priorities

RIEE/SmartWood

Management for biodiversity includes maintenance of all native plants, animals, insects and diseases. When a species threatens other native species it is considered as a pest and can be controlled by non-chemical methods. No prohibition against chemical methods, they are just not supported like non-chemical ones. Bio-control agents are minimized, monitored, documented and carefully controlled. Also, forest protection strategies and restoration strategies are required as a part of the written management plans (fire, pests, encroachment).

FSC National Indicators

- FSC National Indicators require participants to manage for natural cycles that affect the productivity of the forest ecosystem [6.3]. Specifically, prescriptions for salvage harvests must balance ecological and economic considerations. Course woody debris and snags should be maintained for nutrient cycling and wildlife habitat where possible [6.3].

- Preventative and biological, rather than chemical methods, of pest management are preferred [6.6]. Use of biological control agents (especially exotic species) is monitored and strictly controlled [6.8]. Certain pesticides, herbicides, etc are banned [6.6, 10.7].

- Exotic species are carefully controlled and actively monitored [6.9, 10.4].

ROAD ACCESS

Oregon Legal Requirements

Rules include general statement recognizing that forest roads are essential to forest management and contribute to providing jobs, productivity, tax base and other social and economic benefits [OAR 629-625-0000].

Sustainable Forestry Initiative

SFI does not currently discuss access (roads, etc.) considerations or concerns in the context of forestland use or management. This will change if new provisions regarding minimizing road construction are adopted in January 2002 as planned.

Scientific Certification Systems

- Forest access is a significant component of the SCS program, which notes that "effective and comprehensive management of a working forest requires an adequate, well-maintained road access network" [Section A.4.]. Such adequacy includes appropriate scaling of the road system so that it is not excessive for the access needed.

- Ideal performance indicators include:
    a. All managed lands are accessible within one operating season
    b. Area of road system minimizes loss of productive forest land

RIEE/SmartWood

RIEE/SmartWood includes general statements that “well-built roads represent a good long-term investment” and they “promote forest access.”

FSC National Indicators

- The transportation system should be designed, constructed and maintained to minimize the extent and impact of the road network and its potential cumulative adverse effects. Examples under the National Indicators include minimization of road density and displacement of sedimentation to streams, conservation of habitats and migration corridors for wildlife, adequacy of riparian management zones [5.5, 6.5].

- Access to roads is controlled to minimize impacts to soil and biota [5.5, 6.5, 8.2] while allowing other legitimate accesses [see Principles 3 and 4].

- Drainage structures on roads and skid trails are maintained and any drainage problems are corrected [6.5, 8.2].

- Stream crossings are located and constructed to minimize fragmentation of aquatic habitats [6.5, 8.2].

- Transportation system addressed specifically under management planning [7.1, 8.2].

TIMBER HARVEST & UTILIZATION

Oregon Legal Requirements

Rules include general statement that harvesting of forest tree species is an integral part of forest management by which wood for human use is obtained and by which forests are established and tended [OAR 629-630-0000]. Oregon laws include no other significant reference to harvesting and utilization, except with respect to environmental concerns.

Sustainable Forestry Initiative

SFI participants are required to “promote the efficient use of forest resources” [Objective 7] and use appropriate harvest techniques [4.1.7.1.1]. Core indicators of this include:
    a. Written policy, program and/or plan to address efficient utilization of trees.
    b. Monitoring/auditing system to ensure efficient utilization.

There are also 8 other non-required indicators listed.

Scientific Certification Systems

Harvest efficiency and product utilization is a significant component of the SCS program, which recognizes that “an important element of sustainable forest management operations is the avoidance of undue waste and inefficiency in the process of growing, harvesting, and marketing wood products” [Section A.5]. Ideal performance indicators include:

a. All usable products carefully extracted, merchandised & sold at highest value
b. Effort made to diversify the type of products marketed
c. Minimal product wastage and residual stand damage

RIEE/SmartWood

- RIEE/SmartWood guidelines include many references to utilization and marketing. In addition they deal with some harvest issues, especially with regards to damage to soil or other resources. Under 4.0, Management Practices participants are instructed to manage for the highest and best use of forest products (timber and non-timber). Under harvest practices, " during harvest, competent foresters strive to minimize damage to residual stand and other forest resources."

- The discussion of benefits from the forest and economic viability [7.0] addresses this area, with specific requirements for forest utilization:
    a. Forest operations are to encourage the utilization of frequently occurring, less commonly utilized plant species or products for commercial uses [7.4].
    b. Logs and lumber are to be handled to minimize potential loss in value and waste [7.5].
    c. Managers are to seek the highest and best use for individual tree and lumber species [7.6].

  To balance this close utilization, the RIEE/SmartWood guidelines require retaining and recruiting woody debris, snags and legacy trees [5.19-5.21].

- Specific requirements for harvesting include:
    a. Directional felling is to be used to minimize residual damage, decrease skidding distances, improve efficiency and protect future harvest and/or seed trees [4.7].
    b. Skid trails and yarding systems must minimize damage to residual stand [4.8].

FSC National Indicators

Harvest efficiency and product utilization are addressed by the National Indicators under Principle 5 (Benefits from the Forest) and also under Principle 6 (Environmental Impacts).

- Management and marketing operations should encourage the optimal use and local processing [5.2, 8.2].

- Management should minimize waste associated with harvesting and on-site processing and avoid damage to other forest resources [5.3].

- Operations should maintain/enhance the value of forest services and resources such as watersheds and fisheries [5.4, 6.5, 8.2].

- Operations should seek to maintain natural cycles that affect the productivity of the forest ecosystem [6.3c, 8.2]

PERSONNEL & SUPERVISION

Oregon Legal Requirements

With the exception of health and safety concerns (see sections on Chemicals and Safety), Oregon laws and rules make few specific references to personnel and supervision for forest management practices. Pesticide applicators must have a license that is attained and kept by passing an examination and attending subsequent training sessions [ORS 634.106]. Stewardship plans provide a "positive opportunity for self administration" of legal requirements for resource protection [OAR 629-606-0000].

Sustainable Forestry Initiative

SFI includes many references to communication with and training of employees, contractors and others. Listed below are the core requirements, but the optional requirements also include many references to training and communication.

a. Staff roles and responsibilities for achieving Sustainable Forestry Initiative Standard. Objectives are assigned and fully understood [Objective 1, Core Indicator 4].
b. Training is required for all persons involved in forest chemical applications [Objective 2, 4.1.2.1.3, Core Indicator 2], and designated state trained or certified applicators are to supervise forest chemical applications [Core Indicator 3].
c. Field staff and contractors must be trained in water quality laws and state BMP's [Objective 3, 4.1.3.1.1, Core Indicator 2]. BMP training sessions for employees and/or contractors are required and must be documented [4.1.3.1.4].
d. Training and education for operations personnel in wildlife management and biodiversity management are required [Objective 4, 4.1.4.1.3, Core indicator 2].
e. BMP and regeneration training for procurement staff is required [Objective 8, 4.2.1.1.1, Core Indicator 3]. Participants must cooperate with state groups to promote training and education of wood producers in a range of topics, e.g., safety, sustainable forestry, BMPs, regeneration, business management, transportation, public policy, ESA and other wildlife protection measures [4.2.1.1.2]. A plan and support for profession training of wood producers are required [Core Indicators 1, 2]. Program participants are required to sponsor training and education programs for wood producers, employees, and contractors [4.2.1.1.3]. Training programs for personnel communicating the SFI to mill and woodland managers, wood procurement operations and field foresters also are required [4.2.1.1.6, Core Indicator 2].

Scientific Certification Systems

- The SCS program states that "to be viable in the long run, sustainable forestry requires ongoing investment in the management program" [Section C.4.].

- A primary focus is attracting and retaining competent professionals and maintaining currency of knowledge and skills. Related field and management indicators of positive performance thus include "expenditures on or commitment to ongoing employee training and education. " For forest stocking and growth control [Section A.2.], ideal performance includes foresters who are "fully knowledgeable about and apply up-to-date, scientifically based Silviculture practices."

- Landowner or operator supervision is not specifically discussed in the SCS program.

RIEE/SmartWood

RIEE/SmartWood directly states that the quality of the work depends upon the forest workers, and that developing a team of well-trained and motivated workers is an excellent investment. Specific requirements include:

a. Clear guidance is given to field staff and contractors so that they understand and implement the forest management plan [4.9].
b. When chemicals are used, staff and contractors receive training in and utilize correct handling, application, storage and disposal procedures [5.24].
c. Safeguards exist to ensure that contractors comply with applicable labor laws [6.10].
d. Forest workers are provided opportunities for training consistent with responsibilities or work requirements [6.11].

FSC National Indicators

There are several criteria for forest worker training, supervision and safety. Specifically:

- Forest workers shall receive adequate training and supervision to ensure proper implementation of management plans [7.1].

- Safety standards regarding chemical use, containers, and non-organic waste disposal are observed and qualified personnel engaged [6.7].

- Forest management should meet or exceed all applicable laws and regulations covering health and safety of employees and their families [4.2]

- Rights of workers to organize and voluntarily negotiate are guaranteed [4.3].

Environmental Considerations:

Ecological Function/Long Term Productivity

Oregon Legal Requirements

- Oregon law requires retention of some down logs or trees and standing snags or green (live) trees in harvest units greater than 25 acres in size where timber harvest is extensive enough to require reforestation and which leaves less than the minimum number of trees of a specified diameter [ORS 527.676]. Log and tree retention is intended for wildlife habitat, nutrient cycling, moisture retention and other resource benefits. Several other requirements are intended to help maintain soil and site productivity (see Soil Resource section).

- Rules include general statements recognizing the ecological functions of wetlands, lakes and riparian areas, including hydrologic functions, wood and litter inputs to stream channels, shade for cool water, bank stability and fish and wildlife habitat [OAR 629-635-0100, 629-640-0000, 629-645-0000, 629-650-0000]. For most perennial streams and larger wetlands and lakes, rules require “Riparian Management Areas” (RMAs) where timber harvest and other practices are significantly restricted or modified in order to protect, maintain and, where appropriate, improve riparian functions and values [OAR 629-635-0100 (2) and (3)].

- The Oregon Plan, the Oregon Watershed Enhancement Board, and Watershed Improvement Grant Fund provide direction and support for voluntary efforts by landowners to maintain or enhance ecological functions in watersheds [ORS 541.360 to 541.405]. Although law does not require participation, the scope of these statute-based programs is such that significant actions are taking place on private lands throughout Oregon.

Sustainable Forestry Initiative

- While the SFI standards and core indicators have several references for maintaining productivity, none specifically address maintaining ecological function in their operations. There are several related statements such as maintaining ecological/natural forest community types [4.1.4.1.1] to promote habitat diversity, and using harvest methods/unit placement to promote landscape diversity [4.1.5.1.4].

- Finally, SFI participants are required to provide funding for research to improve the understanding of ecological functions.

- Overall, management activities are required to be conducted in a manner that protects and maintains forest and soil productivity [4.1.1.1.1, core indicator 3; Sustainable Forestry Initiative Standard criteria 4.1.2.1.4].

- Participants are also instructed to ensure long-term forest productivity and conservation of forest resources through prompt reforestation, soil conservation, afforestation, and other measures [Objective 2]. Specific core indicators also deal with ensuring productivity through having written policy and plans, identification of potential soil compaction problems, and utilizing erosion control measures.

Scientific Certification Systems

- Sustainable forestry operations should seek to minimize the alteration of natural forest ecosystem conditions and processes [Program Element B].

- This principle is more carefully defined as maintaining all elements of a natural forest ecosystem, including all seral stages. Individual species are required to be maintained in self-supporting portions within the working forest [Criteria B1].

- Key biological components and ecological functions are to be maintained at levels associated with maximum long-term biological activity [Criteria B2]. The field indicators of this include factors such as length of rotations, nutrient management, and soil impacts.

RIEE/SmartWood

- One of the three fundamental concepts is “maintenance of environmental functions, including wildlife habitat, diverse biological resources and watershed stability” [Philosophy]. Management plan requirements include protection measures and/or targets for biological resources [3.2vii].

- SmartWood guidelines include a major section entitled “Environmental Impacts and Biological Conservation.” Although there does not appear to be an explicit statement about long-term productivity, several statements deal with ecological function.

- With regards to large diameter trees, this policy states “FSC certification is intended to encourage the development of some large diameter forest structure across a landscape to ensure that *critical ecological functions are maintained*.”

- Field biological assessments, environmental impact assessments prior to activities and a monitoring system for biological resources are also required [5.1-5.3] as a way of tracking and maintaining ecological function.

- Several other indicators also potentially relate to ecological function and long-term productivity including requirements for mixed species composition [5.5, 5.6], endangered species and conservation areas [5.7, 5.8], late seral stands [5.9], and reintroduction of fire [5.10]. In addition, landowners with more than 1000 acres are required to maintain and restore key biological areas.

- Also under retention [5.19, 5.20, 5.21], managers are required to retain or recruit sufficient woody debris, snags and legacy trees to protect overall ecosystem function.

FSC National Indicators

- One of the ten fundamental principles of the FSC National Indicators is Environmental Impacts. One criteria for certification under that principle deals explicitly with maintenance of ecological functions and long-term productivity [6.3, 10.8]. Indeed, FSC believes that maintenance of ecological functions in the forest is fundamental to productive healthy forests. Criteria 6.3 has three components:
  a. Forest regeneration and succession, including maintaining old-growth forests if they have not been designated as High Conservation Value Forests
  b. Genetic, species and ecosystem diversity and integrity
  c. Natural cycles that affect the productivity of forest systems.

- Natural cycles include course woody debris, e.g. large fallen trees and logs, and snags [6.3]. Green trees are retained if necessary for snag and woody debris recruitment.

- Both vertical and horizontal structural diversity within forest stands is to be maintained and enhanced. While large size-class trees are not explicit, the naturally occurring range of age and size classes is encouraged over portions of the forest [6.3]. Understory species are also maintained.

- Activities performed after harvests are to maintain soil fertility structure and functions by leaving and distributing slash and using fire where it is appropriate to the ecosystem [6.3]. Course woody debris and snags are maintained [6.3].

- Post-harvest activities (e.g. soil scarification, slash burning) must maintain soil fertility, structure and functions. If soil damage occurs must employ soil modification techniques [6.3, 6.5, 5.3].

- Guidelines are required and are to be implemented to control erosion and sedimentation from logging operations, construction of roads, road and skid trail density, water diversion features (water bars etc) to protect water resources and aquatic habitats [6.5, 8.2,10.6]

- Forest management should include enough re-investment to ensure the ecological productivity of the forest [5.1]

- Written guidelines require that forest damage be minimized during harvest and other forms of disturbances [6.5, 7.1]

- Environmental assessments and possible mitigation actions are required [6.1, 7.1, 8.2, 8.4, 10.6]

Species Conservation

Oregon Legal Requirements

- Oregon has state laws to protect threatened and endangered species and certain sensitive species, which complements federal law, and directs state policies and programs. The Oregon Department of Fish and Wildlife has responsibility for

threatened and endangered fish and wildlife species [ORS Chapter 496], whereas the Oregon Department of Agriculture addresses plant species [ORS Chapter 564]. Oregon law also authorizes the Oregon Natural Heritage Program, which helps maintain a comprehensive database of the status and locations of rare, threatened and endangered species throughout the state. Extensive threatened and endangered habitat protection is provided through legal requirements placed on state and federal forestlands.

- Rules require use of ecologically suited, native species to meet reforestation stocking requirements; exceptions require written plans and prior approval. Landowners are encouraged to reforest with a mixture of acceptable tree species to promote stand diversity [OAR 629-610-0050 and 0060].

- Rules include process for determining whether watershed specific protection rules are needed where threatened or endangered species exist [OAR 629-635-0120].

- Rules include goals, procedures and directives for protecting sensitive bird nesting, roosting and watering sites and important resource areas for threatened and endangered fish and wildlife species [OAR 629-665]. Detailed requirements provide protection for osprey, great blue heron, northern spotted owls and bald eagles; these measures include protection of nesting, roosting and watering sites during specific critical periods and restrictions on operations within specified distances of such sites. Presence of active nests of threatened or endangered species may prompt a landowner to prepare a detailed Habitat Conservation Plan (HCP) and seek its approval by the U.S. Fish and Wildlife Service prior to any operations within a specified distance of the nest.

- The Oregon Plan, the Oregon Watershed Enhancement Board, and Watershed Improvement Grant Fund provide direction and support for voluntary efforts by landowners to maintain or enhance habitat for aquatic species [ORS 541.360 to 541.405]. Although law does not require participation, the scope of these statute-based programs is such that significant actions are taking place on private lands throughout Oregon.

Sustainable Forestry Initiative

- One major objective of the SFI program is to contribute to the conservation of biological diversity at the stand and landscape levels [Objective 4].

- They also must apply knowledge and field experience to manage habitat and contribute to the conservation of biological diversity [4.1.4.1.3].

- In addition, participants must identify, map and manage special sites in a manner appropriate to their unique features. These objectives, when acted out operationally will help maintain an array of forest types and many associated species.

- Participants are also required to have programs to protect specific federally listed threatened and endangered species [4.1.4.1.1, core indicator 2].

Scientific Certification Systems

- The focus of the SCS approach is at the ecosystem level, so the standard deals mostly with maintaining systems and habitat, versus individual species. Program elements, however, do make some references to individual species. For example, maintaining "all elements of a natural forest ecosystem" is the primary target [B1].

- Operations where management actions have led to systematic or widespread extirpation of a species or habitat do not meet the certification threshold [B1].

- Timber management practices that threaten to extirpate one or more endemic wildlife populations or habitats are grounds for non-certification. Also, lack of consideration for threatened and endangered species within the management program is grounds for non-certification [B3].

RIEE/SmartWood

- The SmartWood philosophy is well reflected in the statement under pest and pathogens: "RIEE/SmartWood promotes management for biodiversity, which includes the maintenance of all-native plants, animals, insects and diseases." The focus is to keep as broad an array of native species as possible.

- When a species becomes a concern, " threatened, rare, endemic or endangered species (on either local and/or international endangered or threatened species lists) or ecosystems are explicitly protected during forest operations" [5.7].

FSC National Indicators

- Assessments of environmental impacts are required, including unique, rare, vulnerable and threatened species and communities [6.1,10.5,10.8].

- Species habitats are to be compared to historical conditions within a landscape context [6.1].

- Safeguards are to be in place to protect rare, threatened, endangered species and habitats [6.2, 6.3; also see ecological functions above, 10.3]. Conservation zones are to be established, if necessary.

- Genetic, species and ecosystem diversity are to be maintained/enhanced [5.5 6.3].

- Written guidelines are required to minimize forest damage and maintain species diversity during harvest and other forms of disturbances [6.5, 7.1].

- Environmental assessments and possible mitigation actions are required [6.1,7.1,8.2,8.4].

- Principle 9, including criteria, is concerned explicitly with conservation of "High Conservation Value Forests" (defined and attributes listed in the National Indicators).

While this principle deals with habitat conservation, at both stand and landscape scales, implicit in it is much about protection and conservation of species.

Landscape Level Concerns

Oregon Legal Requirements

- Oregon law generally does not explicitly address landscape scale environmental concerns. However, various laws and related requirements reflect or have implications for landscape level issues or values, including:

- Oregon's land use planning and zoning laws [ORS Chapter 197], which help maintain forestlands over large areas by limiting property subdivision or conversions to other land uses.

- Riparian Management Areas required along streams, which provide some continuity and consistency in riparian conditions among different forest landowners.

- Fire and pest protection requirements, which provide some continuity and consistency in protection measures among landowners.

- Restrictions on the size of clearcut harvests and harvests along scenic highways, which help maintain forest cover in large areas.

- Assistance programs (Oregon Plan, Oregon Watershed Improvement Grants, etc.) promote planned, voluntary actions across ownerships within watersheds, etc. Although participation is not mandatory, the scope of these programs is such that landscape-scale actions on private lands are significant and unique in Oregon.

Sustainable Forestry Initiative

- Although references to visual management and land classification systems could be construed to deal with landscape issues, the most direct references deal with habitat and vegetative cover.

- In the case of habitat, participants must have policies, programs and plans to promote habitat diversity at the stand and landscape levels [4.1.4.1.1].

- With forest cover, they must have written policy, programs and/or plans to promote diversity of forest cover across the landscape [4.1.5.1.4].

Scientific Certification Systems

- Although the SCS system contains a lot of wording about ecosystems, the provision for managing for them at the landscape level is only hinted at in certain wording.

- The full range of seral stages from regeneration to old growth is highly desirable, along with geographic dispersion [B1]. Also under these criteria are field indicators to collect data for watersheds and other geographic units (landscape level diversity).

- There do not appear to be any directives that would explicitly require adjoining landowners to work together on landscape issues.

RIEE/SmartWood

- SmartWood requires one element of the management plan to include a description of the formal process of coordinating with adjoining landowners and stakeholders [3.2ix].

- Under environmental impacts, “management activities consider and/or integrate larger landscape-level considerations on neighboring properties” [5.4]. Maintaining key biological areas across the landscape is also required [5.11].

FSC National Indicators

Principle 6 (Environmental Impacts) specifies scale concerns, ranging from species to landscapes, and accounting for ownership size (see ecological functions/productivity and species conservation sections).

- Environmental assessments and possible mitigation actions are required [6.1, 7.1, 8.2, 8.4, 10.2, 10.3].

- Representative samples of existing ecosystems within the landscape should be protected in their natural state [6.4].

- Principle 9, including four criteria, is concerned explicitly with conservation of “High Conservation Value Forests” (defined and attributes listed in the National Indicators). While this principle deals with habitat conservation, at both stand and landscape scales, implicit in it is much about protection and conservation of species [9.1-9.4].

Exotic Species

Oregon Legal Requirements

- Rules require written plans and prior approval for use of non-native tree species to meet reforestation stocking requirements [OAR 629-610-0060].

- Although not specifically targeted at forestlands, Oregon law includes provisions for identification, assessment, and control of noxious weeds, which are often non-native species [1999 HB 2118, ORS Chapter 452].

Sustainable Forestry Initiative

The only current references within the Sustainable Forestry Initiative Standard and indicators for introduction or management of exotic plants, is to abide by international protocols for genetic engineering. This will change substantially if planned changes are adopted in January 2002.

Scientific Certification Systems

Where exotic species threaten the ecological integrity of surrounding natural ecosystems because of poor design, control and monitoring, an operation is not certifiable [B1].

RIEE/SmartWood

- Under pests and pathogens, “use of exotic species is discouraged and must be carefully monitored [5.13]. Also, it is required that invasive exotic plants are not utilized [5.15].

- If a particular species, native or exotic threatens a native species, then it can be considered a pest, and can be controlled, preferably through non-chemical methods.

FSC National Indicators

- Exotic species are carefully controlled and actively monitored [6.9].

- Preventative and biological, rather than chemical methods, of pest management are preferred. Certain pesticides, herbicides, etc are banned [6.6, 10.7].

- Use of biological control agents (especially exotic species) is monitored and strictly controlled [6.8].

- Use of genetically modified organisms (GMOs) is prohibited [6.8].

Reserves/Special Areas

Oregon Legal Requirements

- Rules include goals, procedures and requirements for protection of biologically significant sites [OAR 629 Division 665 and 680]; such sites contain ecologically and scientifically significant living natural resources, including native plant associations, animal communities or both.

- It is also noteworthy that 61 percent of Oregon’s forestlands are in public ownership where there are significant legal requirements for forest reserves and the protection of special areas. Thus, while private lands have limited legal requirements for reserve areas on a landscape scale, Oregon’s state and federal laws and other policies address this issue on extensive public lands in the state.

Sustainable Forestry Initiative

The Sustainable Forestry Initiative Standard requires special consideration for sites with ecological, geological or historic significance [4.1.6]. Participants are required to have written plans/policies and to seek the help of those with expertise on these types of sites [core indicators 1,2].

Scientific Certification Systems

An ownership committed to sustainable forestry will seek to inventory candidate areas and to identify and execute appropriate mechanisms for assuring the protection of key areas [B6]. Owners can continue to manage these areas, or transfer their management and costs to other entities.

RIEE/SmartWood

SmartWood seems to focus on protecting the biological integrity and function everywhere, not just on special areas. They do, however, specify special protection/consideration for endangered species, ecosystems and conservation areas [5.7, 5.8].

FSC National Indicators

- Representative samples of existing, special ecosystems are to be protected [6.4, 10.5]. These reserves/special areas have three purposes: (1) serve as reference conditions, (2) maintain an underrepresented ecological condition, and (3) protect a rare, sensitive, threatened, unique feature in the landscape. This also may include under-represented species or size-classes of trees or other vegetation [6.4].

- Principle 9, including four criteria, is concerned explicitly with conservation of High Conservation Value Forests (defined and attributes listed in the National Indicators). While this Principle deals with habitat conservation, at both stand and landscape scales, and concerns protection of old-growth forests and old-growth conditions. Implicit in it is much about protection and conservation of species [9.1-9.4].

Water Resources

Oregon Legal Requirements

- Oregon laws and administrative rules make numerous and diverse references to protecting water resources, and include many specific requirements. Several major sections of Oregon's Forest Practices Rules focus on or specifically address water resource protection [OAR 629 Divisions 620, 625, 630, 635, 640, 645, 650, 655, 660], and others include many provisions that largely are intended for water protection (e.g., chemicals, roads, timber harvesting).

- The Forest Practices Act and Rules represent Oregon's primary mechanism for meeting other state and federal laws and directives (e.g., water quality standards, Clean Water Act) for water resource protection on forestlands. For example, the Act and rules identify the "Best Management Practices" (BMP's) to be used to maintain water quality and adequately meet existing legal standards [ORS 527.765 and 527.770].

Specific features include:

- Most streams and larger wetlands and lakes on forestlands require "Riparian Management Areas" (RMAs) where timber harvest and other practices are

significantly restricted or modified [OAR Divisions 635, 640, 645, 650]. Harvest restrictions in stream RMA's typically include a 20-foot no-cut zone and maintenance of conifers of minimum basal area and diameter. These quantitative values vary with stream size, fish or domestic water use, and geographic region.

- Some modification of the standard RMA tree and vegetation retention requirements is allowed [OAR 629-640-0300 and 0400] where: a) stream habitat enhancement projects are implemented, b) there is catastrophic tree mortality, c) hardwood dominated sites are converted to conifers or d) site specific conditions and plans are appropriate.

- There are several rules regarding the location, design, construction and maintenance of forest roads, primarily for water resource protection [OAR 629, Division 625]. Examples include restrictions and design requirements for stream crossings and road fills, and maintenance of road surfaces and drainage systems.

- Several rules for water resource protection focus on timber harvesting practices, including felling, yarding, and skid trails [OAR 629 Division 630]. Examples include requirements for felling away from water bodies, prior approval and minimum spacing of cable corridors and yarding through RMA's, skid trail setbacks from streams, and water bars.

- There are rules regarding the use of mechanical site preparation practices and use of chemicals [OAR 629 Division 615 and 620] for the purpose of water resource protection. These are discussed elsewhere in this report, under these two specific headings in the Forest Management Practices and Environmental Considerations sections.

- In addition, Oregon's Stewardship Agreement option [OAR 629 Division 606] includes several references to water resources. For example, the required stewardship plan should include an inventory of water bodies, road problems that could adversely affect water quality, and descriptions of any restoration or enhancement projects to improve water quality or related risks or resource conditions.

Sustainable Forestry Initiative

- Objective 3 states "protect water quality in streams, lakes and other water bodies by implementing riparian protection"

- SFI participants must:
    a. Use BMPs developed by the EPA
    b. Meet or exceed all applicable state water quality laws and regulations
    c. Comply with requirements of the Clean Water Act
    d. Have written implementation plans for complying with water laws and regulations
    e. Train field staff and contractors (with documentation) about water laws and regulations, and implementing water quality BMP's.
    f. Develop, implement and document riparian protection for all perennial streams

g. Involve experts at the state level to help identify riparian goals and objectives
h. Map perennial streams, lakes and other riparian areas
i. Provide financial and in-kind support for water research

Scientific Certification Systems

- The SCS evaluation "includes a focused examination of the ownership's policies, programs and practices for maintaining and enhancing the condition of watercourses located within the property" [B.4.]. Evaluation observations and supporting data include water buffer policies, stream restoration projects, and stream crossing effectiveness, and road layout and drainage. Ideal performance indicators include:
    a. A conservative approach that places aquatic and riparian protection above timber considerations
    b. Management that maintains water quality and habitat conditions associated with undisturbed forest

- Less direct or implied attention to water resource considerations appears elsewhere in the SCS system, including pesticide use [B.5.] and road construction and maintenance [A.4.].

RIEE/SmartWood

- "The forestry operation meets national, state and local environmental...laws" [1.1]. Several other indicators also address water resource protection in an indirect [4.6, 4.8] or pointed [5.16, 5.17, 5.18] manner. Directives for specific practices often are given in the discussion material that accompanies the broad indicators:

- "Road and skid trail system construction, maintenance and closure standards are established to minimize environmental impact, and are followed in the field" [4.6]. For example, road drainage should be controlled, the 100-year flood return interval is the minimum target for culverts, road use should be severely restricted in winter, and roads should be monitored and repaired in a timely manner. The largest and most lasting impacts of logging are usually roads, landings and skid trails; poor design can leave a legacy of soil and water impacts, and sound stewardship requires rehabilitation of degraded areas and proper management to avoid similar problems in the future.

- "Skid trail and yarding systems minimize...the potential for soil erosion and compaction" [4.8]. For example, signs of poor yarding include deep cuts by tractors, bare soil mounds and logs dragged through watercourses. Harvest layout should minimize soil erosion potential; too few landings create more soil and water impacts. SmartWood pointedly recognizes that the way a site looks following logging is not necessarily a reflection of environmental damage.

- "Riparian areas are managed to maintain water quality and temperature..." [5.16]. For example, total harvest, equipment operations and road crossings should be limited in riparian buffer strips to maintain the canopy and reduce compaction, and all streams require some special consideration.

- "Wetland areas are protected and restored to maintain ecosystem functions that support...moderate stream flow, and improve water quality, flood control, sediment trapping, etc." [5.17].

- "Management activities prevent surface erosion, landslides, and reduce the impact of peak water flow..." [5.18].

FSC National Indicators

- Forestry operations are to meet state and federal laws and standards set by regional working groups (see SmartWood and SCS above). National indicators [6.5h] include:
    a. Limits on logging operations based on slope, soil stability, and stream characteristics
    b. Management limitations near bodies of water, including intermittent bodies, stream courses, wetlands.
    c. Widths and characteristics or riparian areas
    d. Temperature, shade sedimentation, and chemical pollution resulting from forestry operations

- Stream crossings located and constructed to minimize fragmentation of aquatic habitats [6.5i].

- Guidelines are required and are to be implemented to control erosion and sedimentation from logging operations, construction of roads, road and skid trail density, water diversion features (water bars etc) to protect water resources and aquatic habitats [6.5, 10.6]

Soil Resources

Oregon Legal Requirements

- Oregon laws/rules do not make many specific references to protecting or maintaining soil resources, except within the context of erosion control and water resource protection. However, it is inferred a number of times through references and requirements to maintain "forestland productivity."

- Reforestation/silviculture rules [OAR 629 Divisions 610 and 615] require:
    a. When reforestation is not required or planned, sufficient site revegetation within 12 months to provide continuing soil productivity & stabilization.
    b. Slash treatments to be planned to maintain forestland productivity.
    c. No mechanical site preparation in riparian areas with steep slopes, evidence of erosion, or where subsoil exposure or compaction is likely.
    d. Land clearing projects to minimize compaction and topsoil movement to maintain forestland productivity.
    e. Prescribed burning treatments protect humus and the soil surface.
    f. Rules require that written plans for prescribed burning in riparian areas include a description of how impacts will be minimized, especially in highly erodible soils and steep slopes.

- Forest roads rules [OAR 629 Division 625] require:
    a. Construction and maintenance practices to maintain forestland productivity.
    b. Road widths be minimized (note: road mileage or density is not addressed)
    c. Road locations to avoid steep or unstable slopes.
    d. Road design, location and construction to minimize landslide risk.
    e. Road fills to be stabilized as needed.
    f. Road maintenance and closure practices to protect water resources.

- Timber Harvest – rules [OAR 629 Division 630] require:
    a. Harvesting practices that generally maintain forestland productivity.
    b. Logging method and equipment that minimize soil deterioration.
    c. Ground based yarding is to be avoided on soils that are unstable, easily compacted or steep, unless operations can be done without damaging productivity.
    d. Written plans for "high risk sites" describe how soil impacts will be minimized.
    e. Felling and yarding operations that provide water resource protection.
    f. Some snags and down logs must be left in harvested areas, in part to maintain (soil) nutrient cycling and moisture retention [ORS 527.676].
    g. In addition, the Water Protection Rules [OAR 629 Divisions 635 to 655] include some requirements for harvesting practices to maintain the productivity and hydrologic function of soils.

- Stewardship Plans – rules [OAR 629 Division 606] require:
    a. Plans that include inventory of high risk sites and road-related problems that could adversely affect soil productivity.
    b. Unique soil characteristics or geologic features are considered when planning road construction or timber harvest.

Sustainable Forestry Initiative

- The primary basis for SFI soil protection measures is found in statements about the need to "broaden the practice of sustainable forestry by employing an array of...environmentally...sound practices..." [Program Objectives 1 and 2, Objective 1, 4.1.1], and to "ensure long-term forest productivity and conservation through prompt reforestation, soil conservation, afforestation and other measures" [Objective 2, 4.1.2].

- Performance measures and core indicators require SFI participants to:
    a. Conduct long-term resource analysis to guide forest management planning that could include soils inventory and maps.
    b. Conduct forest management activities, including timber harvesting techniques, site preparation and reforestation, in a manner that maintains soil productivity.
    c. Implement management practices to protect and maintain forest and soil productivity [4.1.2.1.4].
    d. Have a written policy, program and/or plan to protect and maintain forest and soil productivity.
    e. Identify soils vulnerable to compaction and use appropriate methods to avoid excessive soil disturbance.
    f. Utilize erosion control measures to minimize the loss of soil and site productivity.

g. Other (optional) SFI indicators for soil resource protection include harvesting and reforestation standards to protect soil productivity, soils mapping and inventory, soil productivity monitoring, minimizing roads, and restoring abandoned roads.

Scientific Certification Systems

- The SCS system addresses soil resources primarily in a section on Long-term Ecological Productivity [B.2.]. Related evaluation observations and supporting data include management to maintain nutrient capital, soil impacts from harvesting (e.g., compaction, rutting, erosion), and soil exposure that results in harsh microclimates. Ideal performance is shown by management based on ecological rotations of forest ecosystems, which are fully self-sustaining over time.

- Some further consideration of soil resources is implied in the evaluation directives for roads [A.4.] and harvest efficiency and utilization [A.5.].

RIEE/SmartWood

Several requirements for soil resource protection are included in the core indicators and related discussion material.

- Forest Management Practices: Forest managers must retain or recruit sufficient woody debris to protect...soil fertility...and integrity [5.19]. Related discussion refers to forests becoming increasingly simplified, increasing the importance of woody debris in soil and nutrient availability.

- Forest Roads: Standards for road and skid trail system construction, maintenance and closure must be established and followed to minimize environmental impact [4.6]. Related discussion refers to soil loss due to poor road design, and old roads occupying growing space as well as being erosion sources.

- Timber Harvest: Skid trail and yarding systems minimize...potential for erosion and compaction [4.8]. Related discussion states that visual appearance, including bare soil, does not necessarily reflect environmental damage. However, bare soil that is mounded or oriented downhill and deep cuts by tractors are signs of poor practices. Harvest and landing layout can be important in minimizing soil impacts.

FSC National Indicators

- Post-harvest activities (e.g. soil scarification, slash burning) must maintain soil fertility, structure and functions. If soil damage occurs must employ soil modification techniques [6.3, 6.5, 5.3].

- Guidelines are required and are to be implemented to control erosion and sedimentation from logging operations, construction of roads, road and skid trail density, water diversion features (water bars etc) to protect water resources and aquatic habitats [6.5,10.6].

- State and federal laws and regional guidelines (see Smartwood and SCS above) are followed.

Chemical Use

Oregon Legal Requirements

- In general, State [OAR 629 Division 620, ORS Chapter 634] and Federal [FIFRA] laws and rules regulate forestry use of chemicals such as pesticides, and fertilizers].

- Operators are also subject to laws of ODA, DEQ, OSHD (ORE – OSHA), WRD, OHO, and EPA.

- Specific licensing and training requirements for handling of restricted use pesticides, and for commercial and public applicators and consultants. This licensing is administered by the Oregon Department of Agriculture.

- Operators are encouraged to use integrated pest management (IPM) strategies. Pesticides are mentioned as only one effective tool, implying that other methods should be considered and used where appropriate.

- Notification is required for all chemical applications – chemical type, method of application, location, date, material to be used.

- Use must not negatively impact soil, air, water, wildlife or aquatic organisms.

- Many specific forestry directives regarding use, including:
    a. Spills and leaks must be controlled and reported
    b. Water protected during mixing, including location
    c. Water protection during application
    d. Disposal of chemical containers
    e. Daily record of chemical applications
    f. Notification of water system operators
    g. Aerial applications require full 15 day waiting period

Sustainable Forestry Initiative

- The Sustainable Forestry Initiative requires written policy, program and/or plan for appropriate application/handling.

- Operations must meet or exceed applicable laws/regulations

- Trained and/or certified applicators must be used where required

- Copies of laws must be accessible at appropriate locations

- Participants must contribute to research to increase efficiency, reduce use rates of chemical use, and [pursue] other approaches to IPM.

Scientific Certification Systems

The SCS system includes a specific section on practices and policies for the use of chemical pesticides [B.5.]. SCS does not believe that sustainable forestry precludes the use of chemicals, but notes that they are "often misapplied" and that many industrial operations are "inappropriately dependent upon the broad scale use of chemicals." Evaluation observations and supporting data include reason, frequency and effectiveness of use, Silviculture methods to minimize use, and use of targeted versus broadcast spraying. Ideal performance indicators include:

a. Skillful use of pesticides
b. Use of pesticides only when absolutely necessary and unavoidable
c. Forest management to substantially reduce or eliminate future dependence on pesticides

RIEE/Smartwood

- Although chemical use not prohibited, it is strongly discouraged.
- If chemicals are used, "Constant effort is made to reduce/eliminate use of synthetic pesticides, fungicides and herbicides"
- Banned chemicals (By VSA and World Heath Organization) may not be used
- Training must be provided for staff and operators
- Chemicals, containers, and waste must be disposed of in an environmentally appropriate manner at off site locations
- No specific mention of fertilizers

FSC National Indicators

- Preventative and biological, rather than chemical methods, of pest management are preferred [6.6, 10.7], including Integrated Pest Management. Certain pesticides, herbicides, etc are banned. When chemicals are used written prescriptions are required that explain risks and benefits of use and worker precautions. Records of pest occurrence, control measure, and worker exposure are required.
- Chemical containers, wastes must be disposed of in an environmentally appropriate way [6.7].
- All state and federal laws and regulations governing pesticide use, disposal and worker safety are followed [4.2].

Air Quality

Oregon Legal Requirements

- Oregon law directs the Departments of Forestry and Environmental Quality to develop and administer a state "smoke management plan" [ORS 477.013], to protect air quality. Slash treatment and prescribed burning practices must follow rules of the plan [OAR 629-615-0300].

- Other air quality standards and emission control requirements may be established by the Environmental Quality Commission for specific locations [ORS 468A.025].

- Although intended primarily for water resource protection, rules regarding the use of chemicals include directives that should reduce air quality problems. For example, operators shall apply chemicals only under weather conditions that protect non-target forest resources and comply wit the product label [OAR 629-620-0400].

Sustainable Forestry Initiative

Air quality is raised as one of the resources to protect in the definition of sustainable forestry in the Sustainable Forestry Initiative Standard. It is not explicitly addressed anywhere else in the SFI standards or core indicators, but is certainly related to references on fire control and management activities [4.1.2.1.5].

Scientific Certification Systems

The SCS program does not include specific consideration of air quality. However, some attention to air quality concerns might occur under directives regarding pesticide use [B.5.] and "good neighbor" relations with local communities [C.2.].

RIEE/SmartWood

Although no specific references to maintaining air quality exist in the guidelines, it is required that forest management does not negatively impact human health within the surrounding watersheds and communities [6.6]. Also, compensation is required to local communities for direct damage for which the operation is responsible [6.4]. To the extent that air quality is negatively impacted by forest management activities, it might fall under these indicators.

FSC National Indicators

- No specific reference is made to air quality. However, criterion 6.1 requires that assessment of environmental impacts be made. Assessments include landscape level considerations, which might include air quality if excessive smoke, dust or pesticide drift resulted from forestry operations.

- Forest management must meet or exceed all applicable laws and regulations covering health and safety of employees and their families [4.2], and maintain the long-term well-being of forest workers and local communities [Principle 4]

Socio-Economic Considerations:

Land Tenure and Use

Oregon Legal Requirements

- Oregon and federal law is extensive in establishing the right of ownership of and title to private lands. The federal government also has legally binding treaties that recognize sovereign lands of Native American tribes within Oregon's borders.

- Other than eminent domain provisions for forest rights of way or patrol or communication sites [ORS 526.168], Oregon law does not specifically create or address significant forestland tenure issues. In addition, unlike federal tax law, Oregon has no estate taxes to affect forest ownership or management by mandating tax payments by heirs based on current market values of land and standing commercial timber.

- Oregon's land use planning laws [ORS Chapter 197] include provisions that help maintain forestland use over time, even with changes in property ownership. These laws facilitate local zoning of lands specifically for forest use, and Oregon's tax codes provide options for low or deferred taxes for such lands. A substantial permit and review process also generally discourages zoning changes that allow development or other major land use changes. Even when development permits are granted, landowners may be required to pay several years of back taxes under the revised zoning category.

Sustainable Forestry Initiative

There appear to be no specific references to land tenure or use in the SFI Standard or core indicators. There is an apparent expectation that land has clear title (usual in the USA), be free of indigenous claims (handled by historical treaties in the USA), and be held, or sold as desired. There are no statements about conversion of forestlands to non-forest uses. One provision that might apply is the requirement to identify and protect special sites, which is a land use type of provision [Objective 6].

Scientific Certification Systems

- Emphasis on maintaining the sustainable forestry operation is mostly on financial stability. "Sustainable forestry, or any management regime will only be practiced over the long run if it is capable of producing financial returns adequate to serve the financial needs and exigencies of the ownership" [Program Element C].

- There do not appear to be any explicit restrictions for removal of land from the forest base.

- A candidate operation that cannot establish its legal right to use the land base is not certifiable [C1].

RIEE/SmartWood

- Land tenure is addressed as one of the FSC's 10 basic forest principles. The SmartWood guidelines further expand on the concept by stating: "consistent, long-term management will not occur unless managers can be relatively certain that forest will remain as forest…" [Section 2.0]. The SmartWood guidelines deal with clear and legal tenure [2.1], evidence of long-term commitment (i.e. estate plan, easement, management plan, etc…)[2.2], resolving conflicts with neighbors [2.3], protecting the land against unauthorized use [2.4], and legal/traditional rights of local communities to lawfully use and manage forest resources (water, firewood, controlled use rights)[2.5].

- When it comes to indigenous people's rights, "where rights and use issues involving Native Americans are in dispute, an appropriate process for addressing and resolving grievances shall be in place" [6.14].

FSC National Indicators

- Land tenure and use rights and responsibilities is one of the basic principles of FSC. This principle requires that long-term forest tenure and use right is clearly defined and legally established [2.1].

- Local communities with legal or customary tenure to the forest shall maintain their ability to access the land or resource over forest operations, unless they freely delegate control to other agencies [2.2] This also pertains to indigenous peoples rights to own, use, and manage their lands [3.1, 3.2]. Such indigenous peoples rights are also a basic principle of FSC.

- Disputes over tenure or use rights should be resolved. Number, circumstances and status of disputes will be considered during certification [2.3].

- Forest lands or resources should be protected form illegal harvesting, settlement and other unauthorized activities [1.5]. Inappropriate hunting fishing, trapping, collecting shall be controlled [6.2].

- Forest conversions to plantations or non-forest uses shall not occur, except under specific exempted circumstances, as noted in the National Indicators [6.10].

Community/Cultural Relations

Oregon Legal Requirements

- Oregon law includes requirements for public information and notices of chemical applications and other forest activities [ORS 527.670], and forest practices specifically intended to protect community and individual water supplies [OAR Division 640] and local air [ORS 477.515] and scenic [ORS 390.845 and 527.755] values.

- A permit is required if forest operations will disturb sites containing human remains, funerary objects and objects of cultural patrimony, or objects associated with prehistoric Indian tribal culture [ORS 390.235].

- Coordination with appropriate local agencies on procedures for review and comment on local forest operations is provided through rule adoption or by cooperative agreement [ORS 527.721]. In addition, there is formal recognition of the authority of state or local governments to regulate forest practices outside and within urban areas, respectively, as defined by urban growth boundaries or city limits [ORS 527.722].

- Consideration of local public safety or property allows for some modification in protection requirements for forest streams and other water bodies [OAR 629-605-0500]. Public safety concerns related to rapidly moving landslides also can result in specific rules or other requirements related to forest practices [ORS 527.630].

- The Oregon Department of Forestry and other state agencies are encouraged to provide employment for young people, within existing administrative and financial capabilities [ORS 418.688].

- Oregon law encourages cities to plant and care for trees, and provides for related technical assistance to local governments and diverse community groups [ORS 526.500].

Sustainable Forestry Initiative

- SFI participants must provide recreation and education opportunities for the public where "consistent with forest management objectives." [4.1.1.1.3]. This might include fire prevention [4.1.2.1.5, indicator 3]

- Broadly, the SFI requires participants to support research on a number of sustainable forestry topics including sustainable forestry [4.1.1.1.2]; chemical use [4.1.2.1.3]; water quality [4.1.3.1.3]; and wildlife management, ecological functions, and conservation of biological diversity [4.1.4.1.2].

- The SFI specifically requires collaboration with a number of groups and individuals through the wood procurement process. Participants are to broaden the practice of sustainable forestry by cooperating with forest landowners, wood producers, consulting foresters and program participants' employees [4.2.1, Objective 8]. They are to support educational material development for forest landowners [4.2.1.1.1, core indicator 2]; help organize training for wood producers [4.2.1.1.2] and procurement employees [4.2.1.1.3]; and inform their own employees [4.2.1.1.6]. They should also support efforts of other groups and agencies to encourage the application of sustainable forest management principles.

- The SFI further requires participants to work through their SFI state implementation committee to address public outreach, education and technical assistance. [Objective 10, 4.3.2.1.1, core indicator 1].

- Regarding public input into forest practices, procedures must be set up by program participants at the state or other appropriate level to address concerns from loggers, consulting foresters, employees, the public or program participants. [4.3.2.1.2] They can do this through the efforts of their state implementation committee [core indicator 1].

- SFI participants are also required to give a public reporting of their compliance with the Sustainable Forestry Initiative Standard annually [Objective 9]. This information goes to the national office, but not released company by company.

Scientific Certification Systems

- Candidate operations must show how they are a "good neighbor" to surrounding communities. This interface includes such issues as employees' participation in local communities, payment of taxes, employing locals, sales and purchases within community, and informing public stakeholders of planned forestry actions [Criteria C2].

- Indigenous peoples and other public groups should have access to lands for traditional uses. Also, public access for recreational purposes is a program element that must be considered in operations [C3].

RIEE/Smartwood

- Certified operations are "expected to be recognized good neighbors in local communities" [Criteria 6.0]. Expectations of certified operations vary depending upon landowner size. Smaller operations should be concerned with local recreation needs, while larger owners need to have a formal system of interacting with the public.

- Community use rights for things like recreation, water, firewood and berry gathering must be formally recognized [2.5]. Also, the forest management plan must include a description of the process used to consult with stakeholders, particularly in regards to traditional uses [3.2ix].

- Forest management activities are also required to strengthen and diversify the local economy [7.7].

- Specific indicators for community relations include: Hiring local workers and companies [6.1]; notification of local communities and individuals impacted by forest operations [6.2]; protection of cultural sites [6.3]; compensation to local communities for damage [6.4]; participation in public education and research [6.5]; no negative impact on local human health [6.6]; and consideration of aesthetics [6.7].

- Specific indicators for indigenous rights include: Openness and cooperation with Native American tribes [6.13]; dispute resolution process for indigenous claims [6.14]; fair compensation to tribes for knowledge [6.15].

FSC National Indicators

- Compensation is required for the application of traditional knowledge for the use of forest species or management systems [3.4].

- Sites of special cultural, economic or religious significance to indigenous people shall be clearly identified and protected [3.3]

- Principle 4 requires forest management operations to maintain and enhance long-term social and economic well-being of forest workers and local communities.

- Local communities should be given opportunities for employment, training, and [ecosystem] services from the forest [4.1].

- Social impacts of management planning and operations must be evaluated, including those being affected directly [4.4].

- Grievances should be resolved fairly and appropriately with compensation given for damages or losses to legal and customary rights, property, and resources of local people [4.5].

- Forest management and marketing operations should encourage local processing [5.2] and strive to strengthen and diversify the local economy [5.4].

- Forest managers should make public a summary of the primary elements of their management plan [7.4], results of monitoring [8.5], and management of High Conservation Value Forests [9.3, 9.4].

Worker Relations & Safety

Oregon Legal Requirements

- A license is required by forest labor contractors who provide workers for landowners; such licensing requires the contractor to follow various directives, including record keeping and written communications of employment conditions, compensation, and workers' rights and remedies under state and federal law [ORS Chapter 658]. Individual landowners and small-scale reforestation contractors may be exempt from some or all of these requirements.

- Oregon law includes very extensive and detailed rules to promote worker safety specifically during forest activities such as logging, fire fighting, and transport of workers and timber [OAR 437, Division 6]. Compliance with applicable state and federal safety requirements is reiterated in Oregon's forest practice rules, which also allow some discretion in administration of certain rules (e.g., snag and green tree retention) to promote worker safety [OAR 629-605-0400].

Sustainable Forestry Initiative

- The SFI Standard provisions require training for their employees on a number of specific topics, including: chemicals [4.1.2.1.3]; BMPs [4.1.3.1.1 and 4.1.3.1.4];

wildlife habitat/conservation biology [4.1.4.1.3]; regeneration [4.2.1.1.1]; and overall SFI Standard principles [4.2.1.1.6].

- Program participants shall work closely with a variety of groups and organizations to ensure training and education of wood producers in logging safety and OSHA wage and hour rules. [4.2.1.1.2]

- AF&PA requires members to abide by its Environmental Health and Safety Principles. This requirement does not reach to licensees.

RIEE/SmartWood

- SmartWood instructions encourage hiring and training of local forest workers. "Offering good forest workers continued job opportunities and paying them well serves the interests of workers, managers and landowners alike" [Criteria 6.0].

- Specific indicators for worker relations include:
    a. Fair wages for full time workers and contractors [6.8]
    b. Safe working conditions [6.9]
    c. Contractor compliance with labor laws [6.10]
    d. Training programs [6.11]
    e. Freedom for workers to organize and negotiate [6.12]

Scientific Certification Systems

Employees and contractors are to be considered by examining the candidate operation for such factors as wages and benefits, average tenure of workforce, employee morale, decision making structure, rates paid to contractors, safety records, and stability of contracting relationships. These are to be compared with industry averages and other like operations to determine certifiability. Exploitation of workers/contractors, insecurity in employment or contracting, and resource risk from employee/contractor vandalism are all grounds for non-certification

FSC National Indicators

- Social and economic well being of forest workers and local communities is a fundamental principle of FSC [Principle 4].

- Workers in local forest communities should be given opportunities for employment, training and other services [4.1].

- Should meet or exceed laws covering health and safety of workers and their families [4.2, 6.6, 6.7].

- Workers have the right to organize and negotiate with employers [4.3]

Economic Viability & Stability

Oregon Legal Requirements

- Oregon law recognizes that forests make a vital contribution to the state by providing jobs, products, tax base and other social and economic benefits [ORS 527.630]. Thus, it is public policy of the state "to encourage economically efficient forest practices that ensure the continuous growing and harvesting of forest tree species and the maintenance of forestland for such purposes as the leading use of privately owned land, consistent with sound management of [other resource values]." This policy includes providing a stable regulatory environment to encourage investments in private forestlands.

- Specific laws and rules provide economic relief or incentives for desirable management practices on forestlands. These include reduced timber harvest restrictions where stream enhancement projects are conducted [OAR 629-640-0110], tax credits for reforestation of underproductive lands [ORS 315.104], guaranteed rights to harvest timber from idle lands that are afforested [ORS 526.490], and reduced or deferred taxes on forest lands and timber [ORS Chapter 321].

Sustainable Forestry Initiative

The SFI Standard under section 2 principles addresses economic viability. Participants are also required to employ an array of scientifically, environmentally and economically sound practices to achieve sustainable forestry [4.1.1]. Economic justification of reforestation practices is also required [4.2.1.1.1]. Another related area may be utilization [Objective 7], where participants are required to promote the efficient use of forest resources. Presumably this would also contribute to economic viability.

Scientific Certification Systems

- Noting that "financial viability is the linchpin of a long-term commitment to…sustainable forestry," Financial and Socio-Economic Considerations [C.] is one of three primary "program elements" of the SCS system. The Timber Resource Sustainability program element [A.] also includes some direct and indirect references to economic concerns in focusing management toward high-value products as well as in avoiding "boom-bust" harvest cycles.

- In addition to attention on basic economic concerns, a key SCS theme is a management program that avoids conflicts between short-term financial or raw material needs and long-term forest productivity or ownership stability. The SCS evaluation thus includes assessment of basic financial performance as well as cash flow demands and whether financial considerations dictate or drive management decisions [C.1.]. Ideal performance indicators include:
    a. Compatibility between financial needs and short- and long-term forest productivity
    b. Returns on investments that support long-term commitments to forest stewardship

RIEE/SmartWood

- Certified operations must remain economically viable over the long-term. The RIEE/SmartWood mandate is to "evaluate economic viability form the perspective of ensuring, as much as possible, that sound long-term investments are being made by the operation in terms of forest management, conservation and local communities" [Criteria 7.0].

- Specific indicators of this viability include: stumpage or other fees are at or above the norm and perceived to be a positive incentive for long-term forest management [7.1]; revenues from operations cover costs and allow for reinvestments [7.2]; long-term financial planning [7.3]; minimized waste of logs and lumber [7.5]; and wood utilized for the highest and best use [7.6].

FSC National Indicators

Principle 5 is concerned primarily with economic viability, as well as other environmental and social benefits from forest management.

- Forest management should strive for economic viability while taking into account full environmental, social and operational costs of production [5.1].

- Must ensure reinvestment to maintain ecological productivity of the forest [5.1]. Should maintain or enhance the value of forest services, such as watersheds and fisheries [5.5. 6.5]. Strive to strengthen and diversify the local economy, avoiding dependence on a single forest product [5.4,10.3].

- Rate of harvest shall not exceed levels that can be permanently sustained [5.6, 8.2, 10.3].

Legal and Other Policy Requirements

Oregon Legal Requirements

- The numerous existing Oregon laws affecting forestland use and management are widely applicable, i.e., exceptions are generally limited to non-forest lands and smaller scale activities that have no immediate or expected economic benefits.

- Oregon laws and rules for air and water quality protection during forest management activities are intended for compliance and consistency (e.g., "best management practices") with related state and federal laws [ORS 527.724, ORS 527.765, OAR 629-605-0130].

Sustainable Forestry Initiative

Although there does not appear to be any general statement that SFI participants must meet or exceed all laws, there are specific references to complying with certain laws. These include: state reforestation laws and regulations [4.1.2.1.1, core indicator 4]; label requirements and BMP's for chemical use [4.1.2.1.3]; federal and state regulations and international protocols for genetic engineering [4.1.2.1.6]; state water quality laws, plus

requirements of the federal Clean Water Act [4.1.3.1.1]; and requirements for protection of federally-listed threatened and endangered species [4.1.4.1.1]. SFI participants will all be required to meet or exceed all applicable laws under planned changes for January 2002.

Scientific Certification Systems

- The SCS program pointedly states that, "to be certifiable, the forest operations being evaluated must comply with applicable local, state, federal and international laws and regulations. Such laws and regulations include, but are not limited to" worker safety, basic human rights as well as environmental requirements. Violations of such laws or legal rights are specifically cited as indicators for SCS non-certification in discussions of watercourse management [B.4.], ecosystem reserve policies [B.6.], and employee and contractor relations [C.5.].

- In addition to compliance with applicable legal directives, the SCS system includes some other references to legal or policy considerations. For example, failure to acknowledge local landowner obligations that parallel ownership rights can indicate non-certification [C.2.]. Conversely, among the ideal performance indicators are:
    a. Legal evidence of ownership or concession rights for operations [C.1.]
    b. Advocacy of sustainable forestry in public arenas of policy debate and formulation [C.2.]

RIEE/SmartWood

Besides meeting the intent of the FSC's *Principles and Criteria for Forest Management,* SmartWood participants must also meet national, state, and local environmental, labor and forestry laws [1.1]. Managers are also responsible for providing guidance so that their field operations meet the intent of applicable international conventions, agreements, or treaties [1.3]. SmartWood assessors commonly check with government agencies to help determine whether an operation is complying with legal requirements.

FSC National Indicators

Principle 1 requires compliance with all laws and regulations and FSC principles. If conflicts between laws and regulations and FSC principles arise, they are evaluated on a case-by-case basis [1.4].

- Forest managers shall respect all national, state and local laws, regulations [1.1] and international agreements [1.3].

- All taxes, fees, royalties, etc are paid [1.2]. Clear evidence of land tenure (title etc) is demonstrated [2.1].

- Appropriate mechanisms shall be employed to resolve disputes [2.3,4.5].

- Forest management shall meet or exceed all applicable laws and regulations covering health and safety of workers and their families [4.2], including pesticide use and disposal [6.6, 6.7].

- By implication much of Principle 6 (Environmental Impact) deals with specific federal and state laws covering species and habitat protection and water quality and a lot of the state forest practices acts, if they exist.

Visual Management

Oregon Legal Requirements

Law identifies “visually sensitive corridors” along 30 major state & interstate highways; key area is 150-foot slope distance from edge of these roadways [ORS 527.755]. These corridors have unique legal requirements:

- Law requires regulated harvest &/or reforestation to maintain or establish forest cover (10 feet or taller) in corridor and/or area immediately adjacent.

- Law requires clearing of major harvest debris within 30-60 days of harvest or cessation of harvest activity if harvest is not complete.

- Law absolves landowner from liability from injury or damage from trees retained in corridor.

- Law exempts ownerships less than 5 acres.

Sustainable Forestry Initiative

- Requires consideration of visual management for harvest and other forest operations [Objective 5]. Must have written policy, programs and plans addressing visual management. Aesthetic considerations are incorporated into harvesting, and other activities where visual impacts are a concern.

- Impact of clearcuts is addressed with requirements for plans and monitoring of size, number and green up [4.1.5.1.3].

Scientific Certification Systems

The SCS system specifically refers to aesthetic considerations in its sections on Forest Access [A.4.] and Public Use Management [C.3.]. In these sections, ideal performance indicators include harvest operations and road design, construction and maintenance that address aesthetic considerations.

RIEE/SmartWood

Impacts to the aesthetic character of the forest are considered when planning and implementing management activities [6.7]. Also, payments to communities are required where loss is created by an operation [6.4], although it is unclear whether such loss could include visual impacts.

FSC National Indicators

There are no explicit statements about views or visual management, other than general statements about respecting all laws and regulations, etc.

Appendix J

HABITAT UNITS DESCRIPTIONS
AND
BUFFER ZONE MAP

from Coos Bay – North Bend Water Board's "Draft Revised: Wildlife Management and Monitoring Plan" (Sol Coast, 2008)

3.1 Buffer Zone

Buffer zone management continues to be directed towards developing habitat that benefits species using mature coniferous forests and deciduous forests. Additional emphasis has been placed on habitat for species utilizing snags, downed wood, and brush piles. Nesting and perching habitat for bald eagle, osprey, and other raptors has been included.

The buffer zone includes a total of 192 acres. Approximately 167 acres of upland habitat are included in the buffer zone around the UPC Reservoir. The buffer zone is generally 100-feet wide. The buffer is enlarged in several locations (or "bulges") to encompass high quality habitat. (see Figure 1)

Table 1. Upland habitat types and stand conditions of Upper Pony Creek Reservoir buffer zone.

Habitat Type[1]	Stand Condition	Buffer Zone Acreage	% of Total Area
Temperate Coniferous Forest	Large Sawtimber	61.5	32%
Temperate Coniferous Forest	Closed Sapling/Pole	42.5	22%
Temperate Coniferous Forest	Open Sapling/Pole	39.8	21%
Coniferous/Hardwood Forest	Closed Sapling/Pole	13.4	7%
Deciduous Forest	Closed Sapling/Pole/Sawtimber	25.7	13%
Wetland Marsh	N/A	4.5	2%
Developed/Residential	Road	5.2	3%
	Total Acreage	192.5	

[1]Upland habitat type and stand conditions are from Brown et al. (1985)

Approximately 45 percent (87.2 acres) of the buffer zone is in a condition approaching the desired stand condition of mature coniferous forest. Approximately 50 percent (95.7 acres) of the buffer zone is in coniferous or coniferous/hardwood sapling/pole stand condition. Approximately 3 percent (5.2 acres) of the buffer includes road surfaces.

Prescriptive pre-commercial thinning and brush pile creation has been completed in the buffer zone directed towards:

1. Converting the managed pole/sapling stands into mature stands with natural forest conditions,
2. Modifying existing managed mature stands to reflect natural stand conditions,
3. Maintaining deciduous stands (early seral stage) as deciduous stands,
4. Developing snag habitat, and
5. Developing downed woody debris habitat.

3.1.1 Promote managed sapling/pole stands to form natural mature forest

Most sapling/pole stands in the buffer zone have been established through regeneration of Douglas-fir (*Pseudotsuga menziesii*) stands for commercial use. Douglas-fir is a major component of young and mature stands in the Sitka spruce (*Picea sitchensis*) forest zone (Franklin and Dyrness 1988), but it is over-emphasized in commercial forest management to the exclusion of other potential dominant tree species. The most common seral tree species under natural conditions in the Sitka spuce zone are Sitka spruce, western hemlock (*Tsuga heterophylla*), and western red cedar (*Thuja plicata*). Climax conditions are dominated by western hemlock, which is more shade tolerant than Sitka spruce. Sitka spruce and

Douglas-fir can regenerate in natural openings and western red-cedar can co-dominated on moist to wet sites with western hemlock. Because all four species mentioned above are long-lived, they can be represented even in very old, climax stands. Sitka spruce and Douglas-fir can regenerate in natural openings and western red-cedar can co-dominate on moist to wet sites with western hemlock.

Natural mature stands will have a more diverse canopy structure than managed mature stands (Brown et al. 1985). Trees of varying ages and species will establish under natural regenerations, as opposed to artificial regeneration. Pioneer species such as Douglas-fir will establish early, to be followed by shade-tolerant species such as western hemlock and Sitka spruce. On wetter sites, tolerant western red-cedar will regenerate under red alder (*Alnus rubra*) or shrubs. Mature natural stands can also have a diverse understory including sword-fern (*Polystichum munitum*), Oregon oxalis (*Oxalis oregano*), beedruby (*Maianthemum dilatium*), western springbeauty (*Montia sibirid*), threefoil foamflower (*Tiarella trifoliate*), evergreen violet (*Viola sempervirens),* stream violet (*Viola glabella*), Smith fairy-bell (*Disporum smithii*), red billberry (*Vaccinium parvifolium*), and fool's huckleberry (*Menziesia ferruginea*).

Other components of natural mature stands are high snag densities and large amounts of dead and downed woody debris. Snags in natural stands are represented by many age classes (since injury or death), many size categories, and a range of decomposition states. Downed woody material can range from small to large diameter material in varying states of decay. Downed logs provide a significant source of tree regeneration (nurse logs) in mature forests. These habitat elements will be dealt with in subsequent sections of this Plan.

The paragraphs above describe desired stand conditions to be created in the sapling/pole stands of the buffer zone devoted to management of mature coniferous forest. These stands represent approximately 95.7 acres. Management interventions will depend on actual stand conditions. Generally, the sapling/pole stands have trees spaced approximately every 6-10 feet (i.e., 1210-435 trees per acre [TPA], respectively). Areas of the buffer zone to be managed as mature coniferous forest have been delineated into management units having similar stand conditions."

A management prescription has been developed for each management unit to encourage stand development into the desired future condition.

Management interventions in young regeneration stands (<40 years old) may include, but not be limited to, precommercial thinning to encourage growth of target species (completed in 2006), interplanting of shrubs and trees to increase species diversity, and commercial thinning as stands mature to improve growth of selected individuals. The highest management priority in theses stands should be heavy thinning to reduce stocking to promote bi game foraging and encourage rapid tree growth.

Early thinning of existing young regeneration stands (i.e., Units 18-35, 48 and 49) consist of variable density thinning that removed every second or third tree, thus decreasing density by one-half to one-third, respectively. Douglas-fir was selectively removed to favor shade-tolerant trees such as big leaf maple (*Acer macrophyllum*), Sitka spruce, western shemlock, and western red cedar as leave trees. This also favors a diverse mix of understory shrubs and herbs. Early thinning may be followed by a commercial thin at age 40 to 60 years at the discretion of the management committee. Thinning in open canopy stands (ie, Units 18-27) would favor thinning to influence species composition. Thinning in closed stands (i.e., Units 28-35, 48, and 49) would also emphasize species compositions, but additionally focus on encouraging development of a diverse understory.

3.1.2 Enhance existing managed mature stands to reflect natural stand conditions

Intervention in intermediate-and mature-aged stands may be needed to encourage development of old-growth stand characteristics (i.e., Units 1-17 and 53). These stands represent up to 61.5 acres. Management will be directed towards creation of multi-aged, mixed species stands with a multi-

layered canopy and diverse understory. Management actions may include commercial thinning to create forest openings, removal of individuals of certain species to promote species diversity, and tree planting to promote certain species.

Existing mature stands in the buffer area exhibit a wide range of over-and under-story species. Vertical canopy structure is diverse. Snag density is high, as are downed, woody debris densities. The shrub and herbaceous layers are generally well-developed. Minimal intervention in these stands is anticipated.

3.1.3 Maintain deciduous stands (early seral stage) as deciduous stands

Red alder is a common seral stage in the Sitka spruce zone following disturbance. These stands typically develop on moist to wet sites and can persist for long periods of time. However, they are eventually replaced by hemlock/red cedar stands. Red alder stands are important for many wildlife species, including sensitive species such as the white-footed vole, and are therefore, a desired element of the buffer zone.

Management interventions will be required to perpetuate this vegetation type. These stands represent approximately 25.7 acres (i.e., Units 36-41). Management actions may include removal of some late successional conifers to retard succession, and patch removal of over-mature alder and soil scarification to promote red alder regeneration in the opening. The resource agency management committee may evaluate the status of deciduous habitat within the entire watershed and decide sufficient habitat is being maintained through ongoing silvicultural activity. In this case, maintenance of the deciduous habitat within the buffer may be de-emphasized.

3.1.4 Management of Mixed Coniferous/Deciduous Forest

Approximately 13.4 acres in the buffer zone are currently in a mixed forest condition (i.e., Units 42-45 and 50-52). If succession is left uninterrupted, these stands will develop into temperate coniferous forest. Heavy thinning with ground-disturbance can be employed to maintain the mixed forest condition, or a policy of no management intervention can be used to allow these stands to develop into a coniferous forest condition. A decision will be made at each management review meeting to decide which strategy to pursue in these stands to meet overall wildlife management objectives.

Shannon Souza, PE
CWRE TCCT:PV&Thermal
Principal

EIS Buffer Acres

Cell #	AC	Category
1	3.26	Mature
2	7.04	Mature
3	1.13	Mature
4	1.86	Mature
5	6.99	Mature
6	2.82	Mature
7	0.69	Mature
8	8.61	Mature
9	2.52	Mature
10	5.31	Mature
11	2.59	Mature
12	3.95	Mature
13	1.10	Mature
14	0.80	Mature
15	0.37	Mature
16	2.01	Mature
17	1.09	Mature
18	12.65	Reprod
19	1.91	Reprod
20	1.47	Reprod
21	8.26	Reprod
22	0.15	Reprod
23	3.33	Reprod
24	2.02	Reprod
25	1.17	Reprod
26	1.00	Reprod
27	7.69	Reprod
28	0.66	Reprod
29	8.06	Reprod
30	4.25	Reprod
31	6.96	Reprod
32	9.78	Reprod
33	1.04	Reprod
34	0.26	Reprod
35	4.91	Reprod
36	2.34	Deciduous
37	0.80	Deciduous
38	4.65	Deciduous
39	12.32	Deciduous
40	1.72	Deciduous
41	3.90	Deciduous
42	7.56	Mixed
43	1.55	Mixed
44	2.56	Mixed
45	0.97	Mixed
46	2.90	Wetland
47	1.57	Wetland
48	1.87	Reprod
49	4.47	Reprod
50	0.44	Mixed
51	0.07	Mixed
52	0.09	Mixed
53	9.75	Mature
Total	187.24	

EIS Buffer Acres
By Category

Cell #	AC	Category
36	2.34	Deciduous
37	0.80	Deciduous
38	4.65	Deciduous
39	12.32	Deciduous
40	1.72	Deciduous
41	3.90	Deciduous
	25.73	**Deciduous Total**
1	3.26	Mature
2	7.04	Mature
3	1.13	Mature
4	1.86	Mature
5	6.99	Mature
6	2.82	Mature
7	0.69	Mature
8	8.61	Mature
9	2.52	Mature
10	5.31	Mature
11	2.59	Mature
12	3.95	Mature
13	1.10	Mature
14	0.80	Mature
15	0.37	Mature
16	2.01	Mature
17	1.09	Mature
53	9.75	Mature
	61.89	**Mature Total**
42	7.56	Mixed
43	1.55	Mixed
44	2.56	Mixed
45	0.97	Mixed
50	0.44	Mixed
51	0.07	Mixed
52	0.09	Mixed
	13.24	**Mixed Total**
18	12.65	Reprod
19	1.91	Reprod
20	1.47	Reprod
21	8.26	Reprod
22	0.15	Reprod
23	3.33	Reprod
24	2.02	Reprod
25	1.17	Reprod
26	1.00	Reprod
27	7.69	Reprod
28	0.66	Reprod
29	8.06	Reprod
30	4.25	Reprod
31	6.96	Reprod
32	9.78	Reprod
33	1.04	Reprod
34	0.26	Reprod
35	4.91	Reprod
48	1.87	Reprod
49	4.47	Reprod
	81.91	**Reprod Total**
46	2.90	Wetland
47	1.57	Wetland
	4.47	**Wetland Total**
	187.24	**Grand Total**

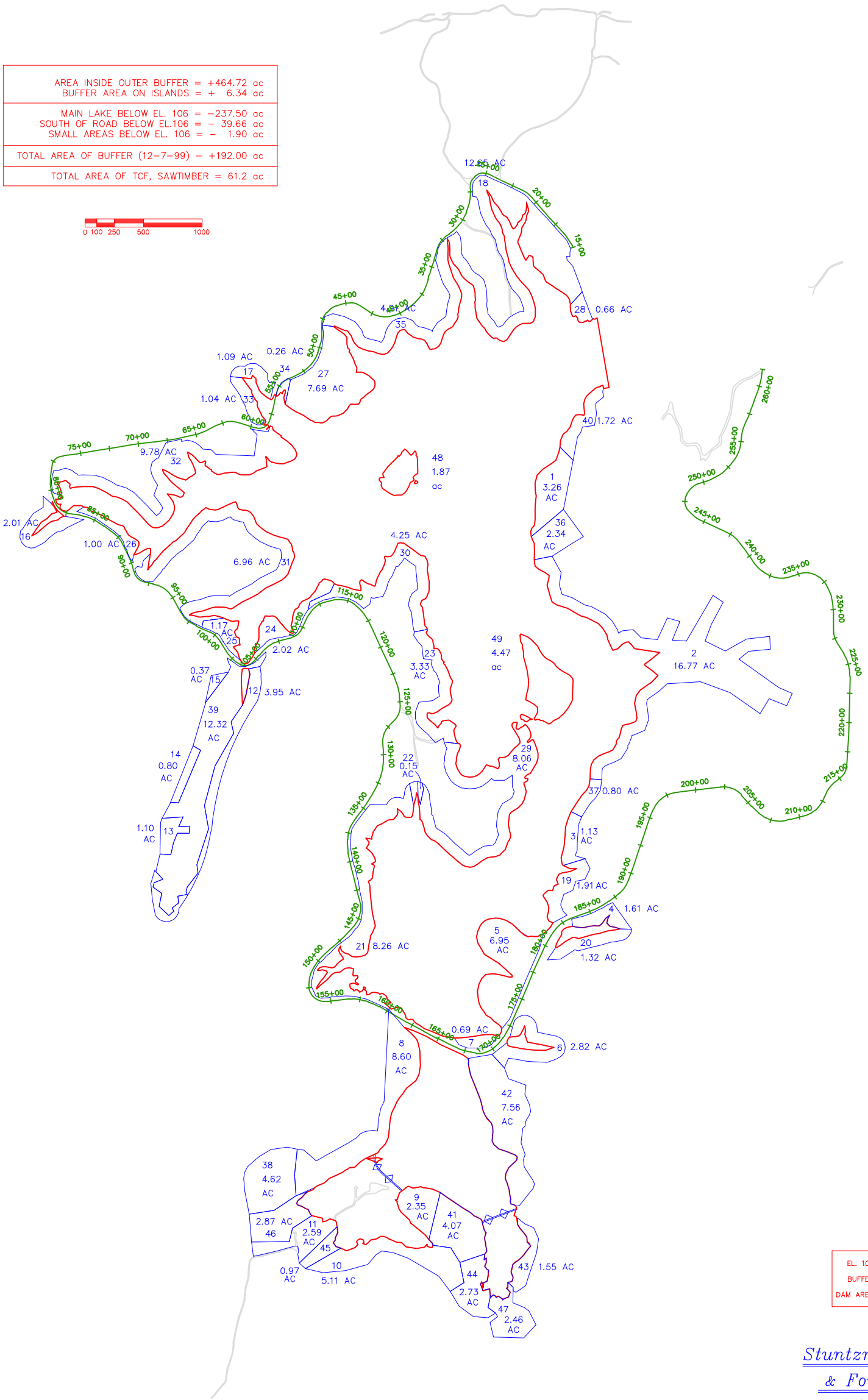
UPPER PONY CREEK RESERVOIR

COOS BAY NORTH BEND WATER BOARD
LOCATED T25S, R13W, SEC. 28, 29, 32+33.
COOS COUNTY OREGON.

AREA INSIDE OUTER BUFFER = +464.72 ac BUFFER AREA ON ISLANDS = + 6.34 ac
MAIN LAKE BELOW EL. 106 = −237.50 ac SOUTH OF ROAD BELOW EL.106 = − 39.66 ac SMALL AREAS BELOW EL. 106 = − 1.90 ac
TOTAL AREA OF BUFFER (12−7−99) = +192.00 ac
TOTAL AREA OF TCF, SAWTIMBER = 61.2 ac

SCALE
1" = 450'

0 100 250 500 1000



LEGEND

EL. 106 =	———
BUFFER =	
DAM AREA =	

Stuntzner Engineering & Forestry, L.L.C.

ENGINEERING * LAND SURVEYING * FORESTRY
PLANNING * WATER RIGHTS

705 South 4th St.
Post Office Box 118
Coos Bay, Oregon 97420

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Fax: (541) 267-0568

11-24-99, PCRBUFER.DWG 07-27-04

Appendix K

CITY OF COOS BAY AND WATER BOARD SITE ACCESS AGREEMENT
AND
EXISTING ROADS AND GATES MAP

1/12/93

SITE ACCESS AGREEMENT

THIS AGREEMENT made and entered into between THE CITY OF COOS BAY, hereinafter referred to as **City**, and THE COOS BAY-NORTH BEND WATER BOARD, hereinafter referred to as **Water Board**;

W I T N E S S E T H:

WHEREAS **City** desires to develop a police firearms range on city owned land that is adjacent to the water shed; and

WHEREAS access to the site will require crossing **Water Board** property by **Water Board** roadways and through **Water Board** gates; and

WHEREAS it has been determined by **Water Board** that such access under the terms set forth herein can be allowed.

NOW, THEREFORE, IT IS hereby agreed as follows:

1. **Water Board** will designate the route for access to the range site.

2. The only site improvements will be a storage building for range materials constructed on a concrete slab, with concrete filled block walls and a built up composition roof. The door will be reinforced steel with a metal door frame. A vault toilet will be provided inside the building. The building will be wired for electricity provided by a portable 2400 watt generator. Appropriate parking will be provided. The perimeter of the building will be enclosed with a cyclone fence. Prior to construction, **Water Board** shall review and approve the initial site plan and any future additions or modifications of the site. **Water**

Board agrees it will not unreasonably withhold its approval under this section.

3. At no time will ammunition, gasoline, or any other explosives be stored on the site.

4. The site will not be expanded to include any other uses.

5. The site will be developed and maintained to complement and minimize any impact on the water shed at no cost to Water Board.

6. City's police department will have full responsibility for scheduling range activities and for enforcing rules governing use of the facility.

7. The range will be available for use by Coos Bay and North Bend police department personnel only.

8. City will provide responsible supervision at the range at all times when it is in use. At no time will individual officers be allowed on the range premises unless accompanied by the City's designated *range master*.

9. The public will not be allowed to use the range.

10. Smoking will not be allowed within Water Board boundaries.

11. Appropriate liability insurance will be maintained by City.

12. As additional consideration for access to the site, City will provide regular drive-through patrols of Water Board property. Such patrols will be performed an average of seven times

per week, and patrols will be scheduled so that generally four occur on the weekend and three during the week. Fewer patrols may be scheduled during the heavy rain season, subject to prior agreement with the general manager of the **Water Board**. On occasion, the patrols will be performed during the night. In cases of trespass, vandalism, or poaching, the **City** police will respond and investigate.

13. If at any time **Water Board** determines that the access through its properties to the site or the use of the range itself has a negative impact on the water shed, **Water Board** may revoke permission to use the Water Board property following thirty (30) days written notice to City.

14. If in the opinion of either party hereto, other problems have developed either in the course of performance of this agreement or as a result thereof, a meeting shall be scheduled at the request of either party to discuss and resolve the matter.

IN WITNESS WHEREOF, the parties hereto have caused the signatures of their legally authorized representative to be affixed.

DATED this 23rd day of December, 1993.

COOS BAY-NORTH BEND WATER BOARD

By _____

ATTEST:

_____

CITY OF COOS BAY

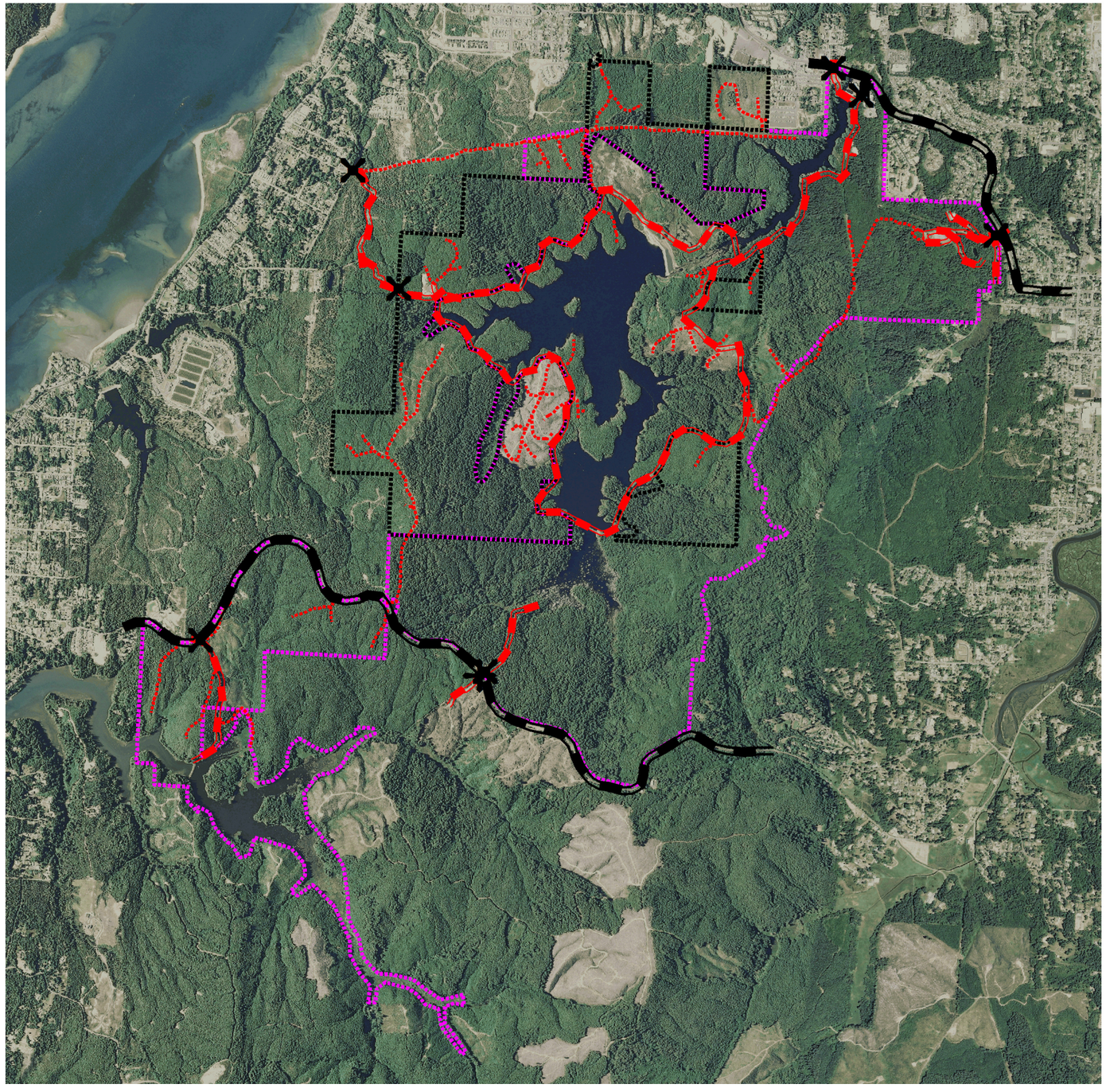
By _____
Jim Watson, City Manager

ATTEST:

_____

Pony Creek Watershed
Existing Roads and Gates

Stuntzner Engineering & Forestry, LLC
PO BOX 118 ~ 705 SOUTH 4TH STREET
COOS BAY, OREGON 97420
541-267-2872



- Gate
- Paved_Public_Roads
- Gravel_Roads
- Unsurfaced_Roads

All Ownership(by OWNERSHIP)

- 'CB'
- 'CBNBWB'
- ORTHO_1-1_1N_S_OR011_2011_1.SID

N
W E
S

2640 0 2640 5280 7920 10560 13200 Feet

Scale = 1 : 2640.00 (In : Feet)

02-06-2012

Appendix L

TIMBER MANAGEMENT PROGRAM
AND
ADDENDUM NO. 1

COOS BAY-NORTH BEND WATER BOARD
CITY OF COOS BAY

Timber Management Program

Since the City of Coos Bay holds clear title to approximately fifty two percent (52%) of the land in the Pony Creek Watershed vicinity, and since such land is intended to be used primarily for municipal water production in the foreseeable future, and an analysis of the forest resources has been made, resulting in the development of a timber management program,

Now, therefore, it is agreed that:

1. The City of Coos Bay contract with the Coos Bay-North Bend Water Board to include the above lands in the Board's Water Quality and Timber Management Program in operation on the other lands under Board management in the Pony Creek Watershed vicinity.

2. Net Revenues from timber sales on City of Coos Bay ownership lands be paid by Board to City.

3. The basic Timber Management program to be used by Board shall follow the general program outlined in 1976, or as jointly amended by the parties hereto.

4. An annual review report of the past season's work shall be given to City by Board, giving as a minimum the following elements:

   (a) the location of the Management Unit
   (b) the size of the Management Unit
   (c) the ownership of the Management Unit by percentage
   (d) how timber revenues were divided when Coos Bay was not the sole owner of the subject unit
   (e) copies of timber sale receipts
   (f) records of payment made to Board for timber sales in the subject unit
   (g) a summary of board foot volume by grade and species from the subject Unit
   (h) cost breakdown of all expenses related to subject unit

   This report shall be given every year as soon after January 1 as practicable.

5. Board shall set up a recordkeeping system by Management Unit which shall be reviewed by the City.

6. Board shall propose an annual program to City for the coming season as soon after the review report as possible. This proposal shall:

   (a) describe the Unit by location, acreage, forest type and ownership
   (b) show an estimate of timber harvest volume and anticipated income from sales
   (c) give a detailed breakdown of anticipated costs
   (d) include a description of other work included, such as tree planting, brush clearing, etc.

City shall give approval on the annual proposal prior to Board implementation of same.

7. It is hereby jointly agreed that City shall receive notices to all bid openings, site inspection meetings, pre-logging conferences, etc., and act in an advisory capacity to Board staff on matters of City concern.

CITY OF COOS BAY

ATTEST: _____ By _____

COOS BAY-NORTH BEND WATER BOARD

ATTEST: _____ By _____

ADDENDUM NO. 1

to

WATER BOARD - CITY TIMBER MANAGEMENT PROGRAM AGREEMENT

March 24, 1980

8. Watershed Roads

Board shall construct watershed roads to jointly serve the water production needs as well as the timber management needs of the Pony Creek Watershed. The roads so constructed shall be classified as follows:

(a) Primary Roads

(1) A primary road shall be located in the Pony Creek canyon, and roughly paralleling the creek, between the watershed main gate and the upper dam. Another primary road shall be located approximately half way between the lake and the watershed divide, encircling the upper lake.

(2) Primary roads shall be engineered to provide the proper grade, curvature, drainage and side sloping to be suitable for log truck traffic. The road bed shall be basically twelve feet (12') wide with turn outs. The road shall be gravelled to allow year-round use.

(3) On primary roads, the net revenue from right-of-way timber shall be applied to pay for construction costs. The remaining cost of primary road construction shall be paid for one-third (1/3) by the water program of the Coos Bay-North Bend Water Board and two-thirds (2/3) by the timber program.

(4) The two-thirds (2/3) cost to be paid by the timber management program shall be by the imposition of a use charge on timber hauled from the watershed. The formula for charge shall be established by dividing the estimated road cost by the total timber to be hauled from the watershed. This rate of charge is Six Dollars ($6.00) per thousand board feet at present. Before net revenues are declared for any timber management unit, the road use charge shall be deducted from the unit's gross revenues and placed in the road construction account.

(5) From time to time, in order that the road program may be executed in response to need, outside funds may be necessary to cover the cost of specific projects should there not be sufficient funds available from current use charge payments. In this case, the Water Board or the City of Coos Bay may advance such funds, interest-free, to finance the program. Such funds shall be returned as early as possible to said lender from road charge payments.

(6) When all primary roads have been constructed, no additional road charges shall be levied.

(7) The primary road system shall be maintained by gravel replacement, grading, brush removal, culvert and drainage maintenance, slope and shoulder maintenance, and other activities as are needed.

(8) The primary road maintenance program shall be financed one-third (1/3) by the water program and two-thirds (2/3) by the timber management program.

(9) The cost of the primary road system maintenance shall be summarized at the end of the calendar year. The portion to be paid by the timber management program shall be deducted from the gross revenue received from all timber sales on the watershed for that year. Said cost shall be allocated to management units by the proportion of the volume of timber taken from each unit that year as compared to the total volume taken from the watershed during that period of time.

(10) If no timber is hauled from the watershed during the calendar year, there will be no money available from the timber management program to pay for maintenance of primary roads.

(b) Secondary Roads

(1) Secondary roads will extend from the primary road system to the timber management unit that it serves.

(2) Normally, the secondary roads will be constructed concurrently with the harvest of timber in a management unit.

(3) The cost of construction of secondary roads shall be included with the cost associated with the harvest of a management unit.

(4) Right-of-way timber revenue from secondary roads shall be included with the timber unit that is being served by said road.

(5) It is not anticipated that secondary roads will be constructed to the standards that is proposed for primary roads. Normally, no gravel will be placed on the secondary road.

(6) It is not anticipated that a regular maintenance program will be used on secondary roads. If maintenance is needed, the cost of that maintenance will be charged against the unit account for that unit that is being served. Maintenance costs of secondary roads will not be included with the primary road maintenance program.

9. Financial Management

(a) The timber management program will be treated on an enterprise basis.

(b) Board shall account for all income and expense by the timber management unit.

(c) Board shall prepare an annual summary of all programs in each management unit currently active. This summary shall show all data pertinent, such as original estimates, bid amounts, sale or harvest volumes, expenses and estimated final volumes, income and expense if the unit is not complete.

(d) Board shall prepare a report annually for each unit which shows the estimated net dollar amount in each unit monthly, the average interest rate received on its investments that month, and the interest income which was earned that month on the City's share of that revenue for that month. The report shall have a summary which will show the amount of interest earnings due the City for the year from that unit. Said interest total for each unit shall be added to the total net revenues due the City from that unit.

(e) Board shall keep under monthly review those units which are nearing completion. After all initial harvesting is completed and the revenues received, and after all expenses have been paid, Board shall make a declaration of the unit's net revenue at a public meeting.

(f) City's portion of the net revenues from any unit shall be identified under "City of Coos Bay Timber Management Reserves".

(g) The City reserve is to be maintained at a level to cover any present or future City financial liabilities from the timber management program. The amount of reserve is to be determined by the City and reviewed at the annual joint meeting. Money shall be disbursed from the reserve by the Board to the City in response to a request from the City.

IN WITNESS WHEREOF the parties have hereunto set their hands this 17th day of April, 1980, City of Coos Bay by its Mayor and City Manager, thereunto duly authorized and Board by its Chairman and Manager.

COOS BAY-NORTH BEND WATER BOARD

By John H. Bergsma
~~William Arbus~~, Chairman

By C W Heckard
C. W. Heckard, Manager

CITY OF COOS BAY

By Donald E. Poage, M.D.
Donald Poage, M.D., Mayor

By Douglas W. Hilyard
Douglas Hilyard, Manager

Appendix M

OREGON DEPARTMENT OF FORESTRY
FOREST PRACTICES ADMINISTRATIVE RULES
AND
FOREST PRACTICES ACT

Oregon Department of Forestry
Forest Practice Administrative Rules and Forest Practices Act

CHAPTER 629
Forest Practices Administration

January 2010

"STEWARDSHIP IN FORESTRY"

This publication includes the text of the Forest Practices Act and the Forest Practice Administrative Rules as they exist on January 1, 2010.

Divisions 670 through 680 of the forest practice rules are not included in this publication, but are available as separate publications upon request. The rules in these divisions address civil penalties, appeals from orders of the State Forester, hearings procedure, stay of operations, access to notifications and written plans, regional forest practice committees, and the resource site inventory and protection process.

The Secretary of State publishes the official administrative rules.

The rules and statutes are also available on the Oregon Department of Forestry's website at: http://egov.oregon.gov/ODF/ as well as the Oregon Secretary of State's website at http://arcweb.sos.state.or.us/rules/alpha_index.html. See Department of Forestry, Chapter 629, Division 600-680, and the Oregon State Legislature at http://www.leg.state.or.us/ors/home.htm. See Chapter 527.

Rule and statutory language changes made since the July 2008 publication are indicated by underlined text and are listed below.

Changes:

The following rules were amended or adopted with effective dates in 2009. The changes are underlined for this edition of the rules:

In 2008, OAR 629-623-0400 was amended and 629-623-0500 was suspended through the temporary rule process. The changes were effective July 18, 2008 through January 12, 2009, and were shown in the July 2008 edition of this publication. As of January 13, 2009, the temporary rule changes lapsed and since that time have not been adopted as permanent changes. Therefore, OAR 629-623-0400 and 629-623-0500 have reverted to the form in which they existed on July 17, 2008.

The table of contents for the administrative rules is on the inside cover page. The table of contents for the Forest Practices Act is on page 65.

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DIVISION 600
DEFINITIONS

629-600-0100
Definitions

As used in OAR chapter 629, divisions 605 through 669 and divisions 680 through 699, unless otherwise required by context:

(1) **"Abandoned resource site"** means a resource site that the State Forester determines is not active.

(2) **"Active resource site"** means a resource site that the State Forester determines has been used in the recent past by a listed species. 'Recent past' shall be identified for each species in administrative rule. Resource sites that are lost or rendered not viable by natural causes are not considered active.

(3) **"Active roads"** are roads currently being used or maintained for the purpose of removing commercial forest products.

(4) **"Aquatic area"** means the wetted area of streams, lakes and wetlands up to the high water level. Oxbows and side channels are included if they are part of the flow channel or contain fresh water ponds.

(5) **"Artificial reforestation"** means restocking a site by planting trees or through the manual or mechanical distribution of seeds.

(6) **"Basal area"** means the area of the cross-section of a tree stem derived from DBH.

(7) **"Basal area credit"** means the credit given towards meeting the live tree requirements within riparian management areas for placing material such as logs, rocks or rootwads in a stream, or conducting other enhancement activities such as side channel creation or grazing exclosures.

(8) **"Bog"** means a wetland that is characterized by the formation of peat soils and that supports specialized plant communities. A bog is a hydrologically closed system without flowing water. It is usually saturated, relatively acidic, and dominated by ground mosses, especially sphagnum. A bog may be forested or non-forested and is distinguished from a swamp and a marsh by the dominance of mosses and the presence of extensive peat deposits.

(9) **"Channel"** is a distinct bed or banks scoured by water which serves to confine water and that periodically or continually contains flowing water.

(10) **"Chemicals"** means and includes all classes of pesticides, such as herbicides, insecticides, rodenticides, fungicides, plant defoliants, plant desiccants, and plant regulators, as defined in ORS 634.006 (8); fertilizers, as defined in ORS 633.311; petroleum products used as carriers; and chemical application adjuvants, such as surfactants, drift control additives, anti-foam agents, wetting agents, and spreading agents.

(11) **"Commercial"** means of or pertaining to the exchange or buying and selling of commodities or services. This includes any activity undertaken with the intent of generating income or profit; any activity in which a landowner, operator or timber owner receives payment from a purchaser of forest products; any activity in which an operator or timber owner receives payment or barter from a landowner for services that require notification under OAR 629-605-0140; or any activity in which the landowner, operator, or timber owner barters or exchanges forest products for goods or services. This does not include firewood cutting or timber milling for personal use.

(12) **"Completion of the operation"** means harvest activities have been completed to the extent that the operation area will not be further disturbed by those activities.

(13) **"Conflict"** means resource site abandonment or reduced resource site productivity that the State Forester determines is a result of forest practices.

(14) **"Debris torrent-prone streams"** are designated by the State Forester to include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement.

(15) **"Department"** means the Oregon Department of Forestry.

(16) **"Diameter breast height"** (DBH) means the diameter of a tree inclusive of the bark measured four and one-half feet above the ground on the uphill side of the tree.

(17) **"Domestic water use"** means the use of water for human consumption and other household human use.

(18) **"Dying or recently dead tree"** means a tree with less than ten percent live crown or a standing tree which is dead, but has a sound root system and has not lost its small limbs. Needles or leaves may still be attached to the tree.

(19) **"Estuary"** means a body of water semi-enclosed by land and connected with the open ocean within which saltwater is usually diluted by freshwater derived from the land. "Estuary" includes all estuarine waters, tidelands, tidal marshes, and submerged lands extending upstream to the head of tidewater. However, the Columbia River Estuary extends to the western edge of Puget Island.

(20) **"Exposure categories"** are used to designate the likelihood of persons being present in structures or on public roads during periods when shallow, rapidly moving landslides may occur.

(21) **"Filling"** means the deposit by artificial means of any materials, organic or inorganic.

(22) **"Fish use"** means inhabited at any time of the year by anadromous or game fish species or fish that are listed as threatened or endangered species under the federal or state endangered species acts.

(23) **"Fledging tree"** means a tree or trees close to the nest which the State Forester determines are regularly used by young birds to develop flying skills.

(24) **"Foraging area"** means an area (usually a body of water) where bald eagles concentrate their hunting activities.

(25) **"Foraging perch"** means a tree or other structure that overlooks a portion of a foraging area and is habitually used by bald eagles as a vantage point while hunting.

(26) **"Forestland"** means land which is used for the growing and harvesting of forest tree species, regardless of how the land is zoned or taxed or how any state or local statutes, ordinances, rules or regulations are applied.

(27) **"Free to grow"** means the State Forester's determination that a tree or a stand of well distributed trees, of acceptable species and good form, has a high probability of remaining or becoming vigorous, healthy, and dominant over undesired competing vegetation. For the purpose of this definition, trees are considered well distributed if 80 percent or more of the portion of the operation area subject to the reforestation requirements of the rules contains at least the minimum per acre tree stocking required by the rules for the site and not more than ten percent contains less than one-half of the minimum per acre tree stocking required by the rules for the site.

(28) **"Further review area"** means an area of land that may be subject to rapidly moving landslides as mapped by the State Department of Geology and Mineral Industries or as otherwise determined by the State Forester.

(29) **"Geographic region"** means large areas where similar combinations of climate, geomorphology, and potential natural vegetation occur, established for the purposes of implementing the water protection rules.

(30) "**High landslide hazard location"** means a specific site that is subject to initiation of a shallow, rapidly moving landslide.

(31) **"High water level"** means the stage reached during the average annual high flow. The "high water level" often corresponds with the edge of streamside terraces, a change in vegetation, or a change in soil or litter characteristics.

(32) **"Hydrologic function"** means soil, stream, wetland and riparian area properties related to the storage, timing, distribution, and circulation of water.

(33) **"Important springs"** are springs in arid parts of eastern Oregon that have established wetland vegetation, flow year round in most years, are used by a concentration of diverse animal species, and by reason of sparse occurrence have a major influence on the distribution and abundance of upland species.

(34) **"Inactive roads"** are roads used for forest management purposes exclusive of removing commercial forest products.

(35) **"Key components"** means the attributes which are essential to maintain the use and productivity of a resource site over time. The key components vary by species and resource site. Examples include fledging trees or perching trees.

(36) **"Lake"** means a body of year-round standing open water.

(a) For the purposes of the forest practice rules, lakes include:

(A) The water itself, including any vegetation, aquatic life, or habitats therein; and

(B) Beds, banks or wetlands below the high water level which may contain water, whether or not water is actually present.

(b) **"Lakes"** do not include water developments as defined in section (82) of this rule.

(37) **“Landslide mitigation”** means actions taken to reduce potential landslide velocity or re-direct shallow, rapidly moving landslides near structures and roads so risk to persons is reduced.

(38) **"Large lake"** means a lake greater than eight acres in size.

(39) **“Large wood key piece”** means a portion of a bole of a tree, with or without the rootwad attached, that is wholly or partially within the stream, that meets the length and diameter standards appropriate to stream size and high water volumes established in *A Guide to Placing Large Wood in Streams*, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, May 1995.

(40) **"Live tree"** means a tree that has 10 percent or greater live crown.

(41) **"Local population"** means the number of birds that live within a geographical area that is identified by the State Forester. For example: the area may be defined by physical boundaries, such as a drainage or subbasin.

(42) **"Main channel"** means a channel that has flowing water when average flows occur.

(43) **"Natural barrier to fish use"** is a natural feature such as a waterfall, increase in stream gradient, channel constriction, or other natural channel blockage that prevents upstream fish passage.

(44) **"Natural reforestation"** means restocking a site with self-grown trees resulting from self-seeding or vegetative means.

(45) **"Nest tree"** means the tree, snag, or other structure that contains a bird nest.

(46) **"Nesting territory"** means an area identified by the State Forester that contains, or historically contained, one or more nests of a mated pair of birds.

(47) **"Operation"** means any commercial activity relating to the establishment, management or harvest of forest tree species except as provided by the following:

- (a) The establishment, management or harvest of Christmas trees, as defined in ORS 571.505, on land used solely for the production of Christmas trees.
- (b) The establishment, management or harvest of hardwood timber, including but not limited to hybrid cottonwood that is:
  - (A) Grown on land that has been prepared by intensive cultivation methods and that is cleared of competing vegetation for at least three years after tree planting;
  - (B) Of a species marketable as fiber for inclusion in the furnish for manufacturing paper products;
  - (C) Harvested on a rotation cycle that is 12 or fewer years after planting; and
  - (D) Subject to intensive agricultural practices such as fertilization, cultivation, irrigation, insect control and disease control.
- (c) The establishment, management or harvest of trees actively farmed or cultured for the production of agricultural tree crops, including nuts, fruits, seeds and nursery stock.
- (d) The establishment, management or harvest of ornamental, street or park trees within an urbanized area, as that term is defined in ORS 221.010.
- (e) The management or harvest of juniper species conducted in a unit of less than 120 contiguous acres within a single ownership.
- (f) The establishment or management of trees intended to mitigate the effects of agricultural practices on the environment or fish and wildlife resources, such as trees that are established or managed for windbreaks, riparian filters or shade strips immediately adjacent to actively farmed lands.
- (g) The development of an approved land use change after timber harvest activities have been completed and land use conversion activities have commenced.

(48) **"Operator"** means any person, including a landowner or timber owner, who conducts an operation.

(49) **"Other wetland"** means a wetland that is not a significant wetland or stream-associated wetland.

(50) **"Perch tree"** means a tree identified by the State Forester which is used by a bird for resting, marking its territory, or as an approach to its nest.

(51) **"Plan for an Alternate Practice"** means a document prepared by the landowner, operator or timber owner, submitted to the State Forester for written approval describing practices different than those prescribed in statute or administrative rule.

(52) **"Relief culvert"** means a structure to relieve surface runoff from roadside ditches to prevent excessive buildup in volume and velocity.

(53) **"Removal"** means the taking or movement of any amount of rock, gravel, sand, silt, or other inorganic substances.

(54) **"Replacement tree"** means a tree or snag within the nesting territory of a bird that is identified by the State Forester as being suitable to replace the nest tree or perch tree when these trees become unusable.

(55) **"Resource site"** is defined for the purposes of protection and for the purposes of requesting a hearing.

- (a) For the purposes of protection:
  - (A) For threatened and endangered bird species, "resource site" is the nest tree, roost trees, or foraging perch and all identified key components.
  - (B) For sensitive bird nesting, roosting and watering sites, "resource site" is the nest tree, roost tree or mineral watering place, and all identified key components.
  - (C) For significant wetlands "resource site" is the wetland and the riparian management area as identified by the State Forester.
- (b) For the purposes of requesting a hearing under ORS 527.670(4) and ORS 527.700(3), "resource site" is defined in OAR 629-680-0020.

(56) **"Riparian area"** means the ground along a water of the state where the vegetation and microclimate are influenced by year-round or seasonal water, associated high water tables, and soils which exhibit some wetness characteristics.

(57) **"Riparian management area"** means an area along each side of specified waters of the state within which vegetation retention and special management practices are required for the protection of water quality, hydrologic functions, and fish and wildlife habitat.

(58) **"Roosting site"** means a site where birds communally rest at night and which is unique for that purpose.

(59) **"Roost tree"** is a tree within a roosting site that is used for night time roosting.

(60) **"Saplings and poles"** means live trees of acceptable species, of good form and vigor, with a DBH of one to 10 inches.

(61) **"Seedlings"** means live trees of acceptable species of good form and vigor less than one inch in DBH.

(62) **"Shallow, rapidly moving landslide"** means any detached mass of soil, rock, or debris that begins as a relatively small landslide on steep slopes and grows to a sufficient size to cause damage as it moves down a slope or a stream channel at a velocity difficult for people to outrun or escape.

(63) **"Side channel"** means a channel other than a main channel of a stream that only has flowing water when high water level occurs.

(64) **Significant wetlands"** means those wetland types listed in OAR 629-680-0310, that require site specific protection.

(65) **"Snag"** means a tree which is dead but still standing, and that has lost its leaves or needles and its small limbs.

(66) **"Sound snag"** means a snag that retains some intact bark or limb stubs.

(67) **"Staging tree"** is a tree within the vicinity of a roosting site that is used for perching by bald eagles before entering the roost.

(68) **"Stream"** means a channel, such as a river or creek, that carries flowing surface water during some portion of the year.

(a) For the purposes of the forest practice rules, streams include:

(A) The water itself, including any vegetation, aquatic life, or habitats therein;

(B) Beds and banks below the high water level which may contain water, whether or not water is actually present;

(C) The area between the high water level of connected side channels;

(D) Beaver ponds, oxbows, and side channels if they are connected by surface flow to the stream during a portion of the year; and

(E) Stream-associated wetlands.

(b) "Streams" do not include:

(A) Ephemeral overland flow (such flow does not have a channel); or

(B) Road drainage systems or water developments as defined in section (82) of this rule.

(69) **"Stream-associated wetland"** means a wetland that is not classified as significant and that is next to a stream.

(70) **"Structural exception"** means the State Forester determines that no actions are required to protect the resource site. The entire resource site may be eliminated.

(71) **"Structural protection"** means the State Forester determines that actions are required to protect the resource site. Examples include retaining the nest tree or perch tree.

(72) **"Temporal exception"** means the State Forester determines that no actions are required to prevent disturbance to birds during the critical period of use.

(73) **"Temporal protection"** means the State Forester determines that actions are required to prevent disturbance to birds during the critical period of use.

(74) **"Tree leaning over the channel"** means a tree within a riparian management area if a portion of its bole crosses the vertical projection of the high water level of a stream.

(75) **"Tyee Core Area"** means a location with geologic conditions including thick sandstone beds with few fractures. These sandstones weather rapidly and concentrate water in shallow soils creating a higher shallow, rapidly moving landslide hazard. The Tyee Core area is located within coastal watersheds from the Siuslaw watershed south to and including the Coquille watershed, and that portion of the Umpqua watershed north of Highway 42 and west of Interstate 5. Within these boundaries, locations where bedrock is highly fractured or not of sedimentary origin as determined in the field by a geotechnical specialist are not subject to the Tyee Core area slope steepness thresholds.

(76) **"Type D stream"** means a stream that has domestic water use, but no fish use.

(77) **"Type F stream"** means a stream with fish use, or both fish use and domestic water use.

(78) **"Type N stream"** means a stream with neither fish use nor domestic water use.

(79) **"Unit"** means an operation area submitted on a notification of operation that is identified on a map and that has a single continuous boundary. Unit is used to determine compliance with ORS 527.676 (down log, snag and green live tree retention), ORS 527.740 and 527.750 (harvest type 3 size limitation), and other forest practice rules.

(80) **"Vacated roads"** are roads that have been made impassable and are no longer to be used for forest management purposes or commercial forest harvesting activities.

(81) **"Water bar"** means a diversion ditch and/or hump in a trail or road for the purpose of carrying surface water runoff into the vegetation and duff so that it does not gain the volume and velocity which causes soil movement or erosion.

(82) **"Water development"** means water bodies developed for human purposes that are not part of a stream such as waste treatment lagoons, reservoirs for industrial use, drainage ditches, irrigation ditches, farm ponds,

stock ponds, settling ponds, gravel ponds, cooling ponds, log ponds, pump chances, or heli-ponds that are maintained for the intended use by human activity.

(83) **"Waters of the state"** include lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

(84) **"Wetland"** means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include marshes, swamps, bogs, and similar areas. Wetlands do not include water developments as defined in section (82) of this rule.

(85) **"Written plan"** means a document prepared by an operator, timber owner or landowner that describes how the operation is planned to be conducted.

DIVISION 605
PLANNING FOREST OPERATIONS

629-605-0100
Compliance

(1) The operator, landowner, or timber owner shall comply with the practices described in the forest practice statutes and rules unless approval has been obtained from the State Forester for a plan for an alternate practice which is designed to result in the same effect or to meet the same purpose or provide equal or better results as those practices described in statute or administrative rule.

(2) The State Forester may approve a plan for an alternate practice to waive or modify forest practice rules when:
  (a) The State Forester determines that a federal or state agency, a college or university, or a private landowner has submitted an application to the State Forester for a bona fide research project involving activities not in accordance with the rules; or
  (b) The State Forester determines that waiving or modifying a specific practice will result in less environmental damage than if the practice is applied; or
  (c) After consulting with the Department of Fish and Wildlife or other responsible coordinating state agency, the State Forester determines that waiving or modifying a specific practice will improve soil, water quality, fish habitat, or wildlife habitat; or
  (d) The State Forester determines that the alternate practice is necessary to provide for public safety or to accomplish a land use change.

(3) When the State Forester's approval does not follow the written recommendations of the Department of Fish and Wildlife or other responsible coordinating state agency, the State Forester shall maintain a written explanation of the reasons for approving the alternate practices.

(4) The State Forester may approve a plan for an alternate practice to waive or modify rules for resource sites identified in OAR 629-680-0100 (Threatened or Endangered Fish and Wildlife Species), OAR 629-680-0200 (Sensitive Bird Nesting, Roosting and Watering Sites), 629-680-0300 (Significant Wetlands), or 629-680-0400 (Biological Sites) when:
  (a) The county has an adopted program under OAR 660-016-0005 and 660-016-0010 that has evaluated the resource sites; and
  (b) Applying the forest practice rules for the identified resource sites would regulate or prevent operations, or uses, allowed under the acknowledged county comprehensive plan.

629-605-0105
Notice of Federal Endangered Species Act

Compliance with the forest practices rules does not substitute for or ensure compliance with the federal Endangered Species Act. Nothing in these rules imposes any state requirement to comply with the federal Endangered Species Act. Landowners and operators are advised that federal law prohibits a person from taking certain threatened or endangered species which are protected under the Endangered Species Act.

629-605-0110
Annual Review

The State Forester shall, at least once each year, meet with other state agencies concerned with the forest environment to review the Forest Practice Rules relative to sufficiency. The State Forester shall then report to the

Board of Forestry a summary of such meeting or meetings together with recommendations for amendments to rules, new rules, or repeal of rules.

629-605-0120
Consultation
Department personnel shall consult with personnel of other state agencies concerned with the forest environment situations where expertise from such agencies is desirable or necessary.

629-605-0130
Compliance with the Rules and Regulations of the Department of Environmental Quality
Each operation, as defined by ORS 527.620, shall be conducted in full compliance with the rules and regulations of the Department of Environmental Quality relating to air and water pollution control. In addition to all other remedies, any violation thereof shall be subject to all remedies and sanctions available by law, rule, or regulation to the Department of Environmental Quality.

629-605-0140
Notification to the State Forester - Types of Operations
Under the provisions of ORS 527.670:

(1) Notification to the State Forester shall be given for the following types of operations:
- (a) Harvesting of forest tree species including, but not limited to, felling, bucking, yarding, decking, loading or hauling.
- (b) Construction, reconstruction and improvement of roads, including reconstruction or replacement of crossing structures on any streams.
- (c) Site preparation for reforestation involving clearing or the use of heavy machinery.
- (d) Application of chemicals.
- (e) Clearing forestland for conversion to any non-forest use.
- (f) Disposal or treatment of slash.
- (g) Pre-commercial thinning.
- (h) Cutting of firewood, when the firewood will be sold or used for barter.
- (i) Surface mining.

(2) Notification to the State Forester shall not be required for the following types of activities, which may or may not be operations:
- (a) The establishment, management or harvest of Christmas trees, as defined in ORS 571.505, on land used solely for the production of Christmas trees.
- (b) Routine road maintenance, such as grading, ditch cleaning, culvert cleaning, cross drain installation that is not in a stream, or rocking.
- (c) Tree planting or tree seed applications, except when trees or seeds are treated with rodenticides.
- (d) Cutting of firewood, when the firewood will not be sold or used for barter.
- (e) Harvesting or collection of minor forest products, such as boughs, cones and hardwood burls.
- (f) Road reconstruction of an emergency nature where delay for notification procedures presents a greater potential for resource damage than the operation. Within 48 hours after starting an emergency road reconstruction operation, the operator shall contact the State Forester and report the operation. When asked by the State Forester, the operator shall be able to demonstrate that an emergency actually existed.
- (g) The establishment, management, or harvest of hardwood timber, including but not limited to hybrid cottonwood, that is:
  - (A) Grown on land that has been prepared by intensive cultivation methods and that is cleared of competing vegetation for at least three years after tree planting;
  - (B) Of a species marketable as fiber for inclusion in the furnish for manufacturing paper products;
  - (C) Harvested on a rotation cycle that is 12 or fewer years after planting; and
  - (D) Subject to intensive agricultural practices such as fertilization, cultivation, irrigation, insect control and disease control.
- (h) The establishment, management or harvest of trees actively farmed or cultured for the production of agricultural tree crops, including nuts, fruits, seeds and nursery stock.
- (i) The establishment, management or harvest of ornamental, street, or park trees within an urbanized area, as that term is defined in ORS 221.010.
- (j) The management or harvest of juniper species conducted in a unit of less than 120 contiguous acres within a single ownership.

(k) The establishment or management of trees intended to mitigate the effects of agricultural practices on the environment or fish and wildlife resources, such as trees that are established or managed for windbreaks, riparian filters or shade strips immediately adjacent to actively farmed lands.

(l) The development of an approved land use change after timber harvest activities have been completed and land use conversion activities have commenced.

(3) Exemption from notification of certain types of operations does not relieve the operator's responsibility for complying with the applicable forest practice rules.

629-605-0150

Notification to the State Forester - When, Where and How

(1) The operator, landowner or timber owner shall notify the State Forester as required by ORS 527.670(6), at least 15 days before starting an operation.

(2) The State Forester may waive the 15 day waiting period required in section (1) of this rule, except as prohibited in ORS 527.670(9) for aerial applications of chemicals and ORS 527.670(10) for operations requiring a written plan under ORS 527.670(3)(a) and (b**)**. Waivers may be granted when the State Forester has already previewed the operation site or has otherwise determined the operation to have only minor potential for resource damage. Waivers shall be made in writing, and on an individual notification basis.

(3) Once an operation is actually started following proper notification of the State Forester, the operation may continue into the following calendar year without further notification under 527.670(6), provided:

(a) There are no changes to the information required on the notification;

(b) The operator gives written notice to the State Forester of their intent to continue the operation within the first two months of the following calendar year; and

(c) The operation actively continues within the first six months of the following calendar year.

(4) No notification is valid after the second calendar year, unless:

(a) The landowner or operator submits a written request to extend the notification before the end of the second calendar year;

(b) There are no changes to the information submitted on the original notification; and

(c) The State Forester approves the request.

(5) Notwithstanding sections (3) and (4) of this rule, nothing in this rule relieves an operator, landowner or timber owner of the responsibility to comply with ORS 477.625, requiring a permit to use fire or power-driven machinery; or ORS 321.550 requiring notification of intent to harvest provided to the Department of Revenue through the department for tax collection purposes.

(6) For the purposes of ORS 527.670 a notification will be considered received only when the information required by the State Forester is complete and the necessary forms are on file at the department district or unit office responsible for the area in which the operation will take place. Notifications not properly completed shall be promptly returned to the party submitting them. Properly completed notifications submitted to an incorrect department office will be forwarded to the correct office.

(7) Notifications required by ORS 527.670(6) shall be completed in detail, on forms provided by the State Forester. The notification shall include a map to scale, or aerial photograph that is corrected for distortion, on which the boundary of the operation unit is clearly marked. When more than one type of operation activity or more than one unit is submitted on a single notification, each operation unit shall be identifiable as to the type of operation activity, by legal subdivision, and drawn on a map to scale, aerial photograph corrected for distortion, or other appropriate means. Operations involving harvesting in more than one county may not be combined on the same notification because of tax collection requirements.

(8) When operations include the application of chemicals, properly completed notifications shall include the common name of the chemicals to be used; the brand name, if known at the time of notification; the application method; and, for fertilizers, the intended application rate per acre. Public information on allowable application rates of commonly applied forest chemicals will be maintained at department field offices. Additional information on chemical applications shall be collected and recorded by operators at the time of application, and made available upon request to the State Forester, pursuant to OAR 629-620-0600.

(9) The operator, landowner or timber owner, whichever filed the original notification, shall contact the State Forester and report any subsequent change to information contained in the notification. Additions to the geographic location, however, shall require a separate notification.

629-605-0160

Forest Practices Regions

The state is divided into three regions to better achieve the purposes of the forest practice rules. These regions are:

(1) Eastern Oregon Region Boundary: All land east of the summit of the Oregon Cascade Range as described by the following boundary: Beginning at a point on the Columbia River near the junction of Interstate 84 and

State Highway 35, thence southerly along State Highway 35 to the north line of Section 5, T2S-R10E; thence east to the NE corner Section 5; thence southeasterly approximately 1.5 miles to a point of intersection with Forest Road No. 1720 in Section 9, T2S-R10E; thence easterly along said road and along Forest Road No. 44 to the east line of Section 12, T2S-R10E; thence southerly along the western boundaries of Wasco, Jefferson, Deschutes, and Klamath Counties to the southern boundary of Oregon.

(2) Northwest Oregon Region Boundary: All land west of the summit of the Oregon Cascade range as described in the Eastern Oregon Region boundary, north of the south boundary of Lane County.

(3) Southwest Oregon Region Boundary: All land west of the summit of the Cascade Range as described in the Eastern Oregon Region Boundary; south of the south boundary of Lane County.

629-605-0170
Statutory Written Plans

(1) Operators must submit to the State Forester a written plan as required by ORS 527.670(3) before conducting any operations requiring notification under OAR 629-605-0140, which are within:
  (a) 100 feet of a stream classified as Type F or Type D. Written plans for Type F and Type D streams are further described in OAR 629-635-0130.
  (b) 300 feet of a specific site involving threatened or endangered wildlife species, or sensitive bird nesting, roosting, or watering sites; as listed by approximate legal description, in a document published by the Department of Forestry titled "Cooperative Agreement Between the Board of Forestry and the Fish and Wildlife Commission, March 28, 1984."
  (c) 300 feet of any resource site identified in OAR 629-665-0100 (Sensitive Bird Nesting, Roosting and Watering Resource Sites on Forestlands), 629-665-0200 (Threatened and Endangered Species that use Resource Sites on Forestlands), or 629-645-0000 (Significant Wetlands).
  (d) 300 feet of any nesting or roosting site of threatened or endangered species listed by the U.S. Fish and Wildlife Service or by the Oregon Fish and Wildlife Commission by administrative rule.

(2) The State Forester shall notify the operator of the presence of one of the sites listed in section (1) of this rule and the requirement of the written plan at any time the State Forester determines the presence of the above sites.

(3) Written plans required under section (1) of this rule shall be subject to the hearings provisions of ORS 527.700(3) (Appeals from orders of State Forester hearings procedure; stay of operation); and shall be subject to the provisions of ORS 527.670(10), (11) and (12) (Commencement of operations; when notice and written plan required; appeal of plan) prescribing certain waiting periods and procedures.

Non-Statutory Written Plans

(4) Unless waived by the State Forester, the operator must submit a written plan as required by ORS 527.670(2) and the rules listed below, which shall not be subject to the provisions of ORS 527.700(3) or 527.670(10), (11) and (12).
  (a) 629-605-0190(1) - Operating near or within sites that are listed in the “Cooperative Agreement Between the Board of Forestry and the Fish and Wildlife Commission, March 28, 1984” or sites designated by the State Forester;
  (b) 629-605-0190(2) - Habitat sites of any wildlife or aquatic species classified by the Department of Fish and Wildlife as threatened or endangered;
  (c) 629-623-0700(1) - Conducting timber harvesting or road construction operations with intermediate or substantial downslope public safety risk;
  (d) 629-623-0700(2) - Constructing a stream crossing fill over a debris torrent-prone stream with intermediate or substantial downslope public safety risk;
  (e) 629-623-0700(3) - Locating a waste-fill area within a drainage containing debris torrent-prone streams with intermediate or substantial downslope public safety risk;
  (f) 629-625-0100(2)(a) - Constructing a road where there is an apparent risk of road-generated materials entering waters of the state from direct placement, rolling, falling, blasting, landslide or debris flow;
  (g) 629-625-0100(2)(c) - Constructing a road within the riparian management area of a medium or large Type N stream;
  (h) 629-625-0100(3) - Constructing a road on high landslide hazard locations;
  (i) 629-625-0100(4) - Placing woody debris or boulders in the stream channel of a Type N stream for stream enhancement;
  (j) 629-625-0320(1)(b)(B) - Constructing a permanent stream crossing fill over 15 feet deep in a Type N stream;
  (k) 629-630-0200(3) - Locating a landing within the riparian management area of a medium or large Type N stream;

(l) 629-630-0700(3) - Yarding across streams classified as medium or large Type N;
(m) 629-630-0800(4)(c) - Constructing a temporary stream crossing fill over 8 feet deep in a Type N stream;
(n) 629-635-0130(1)(c) - Operating within 100 feet of a large lake;
(o) 629-660-0050(1) - Removing beaver dams or other natural obstructions located farther than 25 feet from a culvert in a Type N stream;
(p) 629-665-0020(2) - Operating near a resource site requiring special protection; and
(q) 629-665-0210(1) - Operating near a Northern Spotted Owl resource site.

(5) If an operator, timber owner or landowner is required to submit a written plan to the State Forester under subsection (4) of this section:
(a) The State Forester shall review the written plan and may provide comments to the person who submitted the written plan;
(b) Provided that notice has been given as required by ORS 527.670 and OAR 629-605-0150, the operation may commence on the date the State Forester provides comments. If no comments are provided the operation may commence at any time after 14 calendar days following the date the written plan was received;
(c) Comments provided by the State Forester under paragraph (a) of this subsection, to the person who submitted the written plan are for the sole purpose of providing advice to the operator, timber owner or landowner regarding whether the operation described in the written plan is likely to comply with ORS 527.610 to 527.770 and rules adopted thereunder. Comments provided by the State Forester do not constitute an approval of the written plan or operation;
(d) If the State Forester does not comment on a written plan, the failure to comment does not mean an operation carried out in conformance with the written plan complies with ORS 527.610 to 527.770 or rules adopted thereunder nor does the failure to comment constitute a rejection of the written plan or operation;
(e) In the event that the State Forester determines that an enforcement action may be appropriate concerning the compliance of a particular operation with ORS 527.610 to 527.770 or rules adopted thereunder, the State Forester shall consider, but is not bound by, comments that the State Forester provided under this section.

Written Plan Content Required for All Written Plans

(6) Written plans required under OAR 629-605-0170 must contain a description of how the operation is planned to be conducted in sufficient detail to allow the State Forester to evaluate and comment on the likelihood that the operation will comply with the Forest Practices Act or administrative rules.

(7) Written plans required under OAR 629-605-0170 will be considered received when complete with the following information:
(a) A map showing protected resource(s) and the harvest area; and
(b) The specific resource(s) that require protection; and
(c) The practices that may affect the protected resource(s) such as road and landing location, disposal of waste materials, felling and bucking and post operation stabilization measures; and
(d) The specific techniques and methods employed for resource protection such as road and landing design, road construction techniques, drainage systems, buffer strips, yarding system and layout; and
(e) Additional written plan content required in individual rules.

(8) Modification of a written plan shall be required when, based on information that was not available or was unknown at the time the original written plan was reviewed, the State Forester determines the written plan no longer addresses compliance with applicable forest practice rules. Written plans with modifications required under this section shall not be subject to the provisions of ORS 527.670(10) and (11) relating to waiting periods for written plans.

629-605-0173
Plans for an Alternate Practice

(1) Operators must obtain written approval of a plan for an alternate practice from the State Forester before conducting forest practices utilizing protection standards or methods different than those specified in rule or statute.

(2) Plans for an alternate practice must include sufficient information to allow the State Forester to assess the plan to determine that the practices described in the plan will yield results consistent with ORS 527.610 to 527.770 and administrative rules adopted thereunder.

(3) Plans for alternate practices proposed as part of a written plan required by ORS 527.670(3) shall be subject to the hearings provisions of ORS 527.700(3) (Appeals from orders of State Forester hearings procedure;

stay of operation); and shall be subject to the provisions of ORS 527.670(10), (11) and (12) (Commencement of operations; when notice and written plan required; appeal of plan) prescribing certain waiting periods and procedures.

(4) An operator must comply with all provisions of an approved plan for an alternate practice.

(5) The following rules require a plan for an alternate practice to be submitted and approved by the State Forester prior to commencing the practice or operation:

- (a) 629-605-0100(2)(a) – Modifying, exempting or suspending the rules or statutes for a bona fide research project conducted by a federal or state agency, a college or university, or a private landowner;
- (b) 629-605-0100(2)(b) – Waiving or modifying a specific practice that will result in less environmental damage than if the practice is applied;
- (c) 629-605-0100(2)(c) – Waiving or modifying a specific practice that will improve soil, water quality, fish habitat, or wildlife habitat;
- (d) 629-605-0100(2)(d) – Waiving or modifying rules to provide for public safety or to accomplish a land use change;
- (e) 629-605-0100(4) – Waiving or modifying rules for resource sites when a county has an adopted program under OAR 660-016-0005 and 660-016-0010 that has evaluated the resource sites;
- (f) 629-605-0173(1) – Conducting forest practices utilizing protection standards or methods different than those specified in rule or statute;
- (g) 629-605-0175(2) – Conducting operations that result in a single harvest type 3 unit, or combinations of harvest type 3 units, that exceed the contiguous 120 acre limit on a single ownership;
- (h) 629-605-0175(7) – Waiving the harvest type 3 acreage limitations for conversions or disasters described in ORS 527.740(4);
- (i) 629-605-0500 – Modifying the protection requirements for streams, lakes, wetlands and riparian management areas for reasons of forest health or because of hazards to public safety or property;
- (j) 629-610-0020(3) – Waiving or modifying the reforestation requirements following a stand improvement operation where the residual stand conditions will result in enhanced long-term tree growth;
- (k) 629-610-0030(3) – Utilizing natural reforestation methods when an operation results in a reforestation requirement;
- (l) 629-610-0040(3) – Extending the time allowed for reforestation when natural reforestation methods are utilized;
- (m) 629-610-0050(2) – Utilizing more than 20% hardwood stocking when an operation results in a reforestation requirement;
- (n) 629-610-0060(1) – Utilizing non-native tree species when an operation results in a reforestation requirement;
- (o) 629-610-0070(1) – Suspending the reforestation rules for the salvage or conversion of low value forest stands when participating in a forest incentive program;
- (p) 629-610-0090(1) – Exempting the reforestation requirements for the purpose of developing forestland for a use that is not compatible with the maintenance of forest tree cover;
- (q) 629-615-0300(5) – Modifying the protection requirements for riparian areas, aquatic areas and wetlands when the need for prescribed burning outweighs the benefits of protecting components required to be left;
- (r) 629-620-0400(7)(d) – Modifying the protection requirements for aerial application of fungicides;
- (s) 629-625-0320(3) – Modifying the culvert sizing requirements of 629-625-320(2)(a) to reduce the height of fills where roads cross wide flood plains;
- (t) 629-640-0100(13) – Modifying the retention requirements in a Type F RMA for the removal of roadside trees which pose a safety hazard;
- (u) 629-640-0200(14) – Modifying the retention requirements in a Type D or N RMA for the removal of roadside trees which pose a safety hazard;
- (v) 629-640-0400(1)(a) – Utilizing site specific vegetation retention prescriptions for streams and riparian management areas;
- (w) 629-645-0020(1) – Utilizing site specific vegetation retention prescriptions for significant wetlands;
- (x) 629-645-0050(3) – Modifying the retention requirements for significant wetlands for reasons of forest health;
- (y) 629-650-0040(3) – Modifying the retention requirements for lakes for reasons of forest health;
- (z) 629-665-0020(1)(b)(C) – Structural or temporal exceptions when proposed forest practices conflict with a resource site;
- (aa) 629-665-0110(3) – Structural replacement of an osprey site;

(bb) 629-665-0110(4) – Temporal exceptions near an osprey site;
(cc) 629-665-0120(3) – Structural exceptions of a great blue heron site;
(dd) 629-665-0120(5) – Temporal exceptions near a great blue heron site.

629-605-0175
Harvest Type 3 Units Exceeding 120 Acres

(1) The purpose of this rule is to describe the process that operators shall follow to gain approval of a plan for an alternate practice for a harvest type 3 unit that is between 120 and 240 acres in size.
(2) Operators must obtain written approval of a plan for an alternate practice from the State Forester before conducting operations that result in a single harvest type 3 unit, or combinations of harvest type 3 units, that exceed the contiguous 120 acre limit on a single ownership.
(3) For each unit on which a harvest type 3 is proposed to exceed the contiguous 120 acre limit, the plan for an alternate practice shall:
  (a) Describe the planned harvest including, but not limited to, the elements of a written plan listed in OAR 629-605-0170;
  (b) Include a detailed map of the planned harvest that shows the specific unit boundaries; and
  (c) Demonstrate that the larger harvest size will result in increased protection of, or reduced adverse impact on, any or all of the resources and values protected by the Oregon Forest Practices Act. For the purposes of this rule, resources and values includes:
    (A) Air quality, water resources, soil productivity, and fish and wildlife resources as described in ORS 527.710(2);
    (B) The resource sites needing protection as listed in ORS 527.710(3);
    (C) Scenic resources within visually sensitive corridors as provided in ORS 527.755; and
    (D) Public safety related to landslides.
(4) The State Forester shall review the operator's compliance with the Oregon Forest Practices Act and deny approval of the plan for an alternate practice submitted under this rule when the operator has:
  (a) Received citations for violating a forest practice rule or statute within the past year; or
  (b) Failed to comply with an order to cease further violation, an order to repair damage, or an order to correct an unsatisfactory condition under ORS 527.680(2).
(5) Plans for an alternate practice submitted under this rule shall not be subject to appeal under ORS 527.700(3).
(6) Single harvest type 3 units or combinations of harvest type 3 units may not exceed 240 contiguous acres on a single ownership, except when the units have been reforested as described in ORS 527.750(1)(a), (b) and (c).
(7) The harvest type 3 acreage limitations do not apply for conversions or disasters described in ORS 527.740(4) when the operator obtains approval from the State Forester of a plan for an alternate practice before conducting operations.

629-605-0180
Interim Process for Protecting Sensitive Resource Sites Requiring Written Plans

Protection practices for sites requiring written plans under OAR 629-605-0170(1)(b) or (d) shall be determined for each site as follows:
(1) The State Forester shall notify the operator and landowner of the presence of a site requiring a written plan, and request their input into the decision making process.
(2) The State Forester shall, when practical, inspect the proposed operation with the landowner or landowner's representative, the operator, and the appropriate representative of the Department of Fish and Wildlife. The State Forester shall then determine if the proposed forest practice is in conflict with the protection of the sensitive resource site.
(3) If planned forest practices are determined to conflict with protection of the sensitive resource site, the written plan must describe reasonable measures sufficient to resolve the conflict in favor of the resource site. Reasonable measures to resolve the conflict in favor of the resource site may include but are not limited to preparing and implementing a habitat management plan, obtaining approval of a plan for an alternate practice, limiting the timing of forest practices, redesigning the proposed practices in favor of site protection and excluding the forest activities outright.
(4) If planned forest practices are determined not to conflict with protection of the sensitive resource site, the written plan shall describe how the operation will be conducted in compliance with existing forest practice rules. No additional protection measures shall be required.

629-605-0190
Written Plans for Operations Near Critical, Threatened, or Endangered Wildlife Habitat Sites
Operators must submit a written plan to the State Forester before operating near or within:
(1) Critical wildlife or aquatic habitat sites that are listed in a 1984 cooperative agreement between the Board of Forestry and the Fish and Wildlife Commission or sites designated by the State Forester; or
(2) Habitat sites of any wildlife or aquatic species classified by the Department of Fish and Wildlife as threatened or endangered.

629-605-0200
Compliance with Statutory Requirements
(1) In addition to all other requirements of administrative rule promulgated under the Forest Practices Act, operators, landowners and timber owners who conduct forest operations shall comply with the requirements in:
  (a) ORS 527.740 (Harvest type 3 unit limitations);
  (b) ORS 527.750 (Exceeding harvest type 3 size limitations);
  (c) ORS 527.755 (Scenic highways and visually sensitive corridors); and
  (d) ORS 527.676 (Live and dead wood retention in harvest type 2 and 3 units greater than 25 acres).
(2) Failure to comply with requirements in section (1) of this rule may be subject to any of the enforcement mechanisms provided in the Oregon Forest Practices Act under ORS 527.680, 527.690, 527.990 or 527.992.

629-605-0210
Harvest Type 3 Units within Single Ownerships
(1) For the purposes of ORS 527.740 and this rule, "single ownership" as defined in ORS 527.620, shall be interpreted broadly to prohibit manipulation of ownership entities or property transfers intended to avoid the provisions of ORS 527.740, restricting the size of harvest type 3 units, as defined by ORS 527.620. "Single ownership" shall not be interpreted to restrict lawful operations on bona fide separate ownerships.
(2) Nothing in ORS 527.740 is intended to restrict the location of a harvest type 3 unit or harvest type 3 unit acreage of one landowner based on the harvest type 3 unit of a wholly separate ownership.

629-605-0220
Judicial Determinations of Rule Validity
It is the intent of the Board that if any section of a rule is declared invalid or is remanded by the Court of Appeals under ORS 183.400, the remaining sections of the rule will remain valid.

629-605-0400
Forest Activity Safety
Compliance with worker safety regulations is essential for ensuring the safety of operators and their employees. Regulation of forest practices must be achieved in a manner which allows operators to comply with applicable federal and state safety requirements. In administering the forest practice rules to meet the resource protection goals, especially requirements related to working near snags, residual green trees and unstable material, the State Forester shall use appropriate discretion.

629-605-0500
Modification of Requirements for Forest Health and Public Safety
Protection requirements for streams, lakes, wetlands and riparian management areas may be modified by approval of a plan for an alternate practice by the State Forester for reasons of forest health or because of hazards to public safety or property. Hazards to public safety or property include hazards to river navigation and hazards to improvements such as roads, bridges, culverts, or buildings. Forest health concerns include fire, insect infestations, disease epidemics, or other catastrophic events not otherwise addressed in OAR 629-640-0300. Such modifications of protection requirements should prevent, reduce or alleviate the forest health conflict or hazard while meeting the intent of the protection goals as much as possible.

DIVISION 610
FOREST PRACTICES REFORESTATION RULES

629-610-0000
Purpose

(1) Timely reforestation of forestland following operations that reduce tree stocking below established standards is an essential factor in assuring continuous growing and harvesting of forest tree species, considering landowner objectives and consistent with the sound management of timber and other forest resources. Reforestation or other forms of revegetation are also important for the continued productivity and stabilization of soils exposed as a result of operations.

(2) OAR 629-610-0000 through 629-610-0090 shall be known as the reforestation rules.

(3) The purpose of the reforestation rules is to establish standards to ensure the timely replacement and maintenance of free to grow forest tree cover following forest operations at or above stocking levels that will use the tree growth potential of forestlands in Oregon.

(4) The reforestation rules are designed to:
- (a) Define forestland subject to reforestation requirements;
- (b) Describe the conditions under which reforestation shall be required;
- (c) Specify the minimum number of trees per acre;
- (d) Specify the maximum time period allowed for establishment of such trees after an operation reduces stocking;
- (e) Describe the acceptable species for reforestation;
- (f) Describe the conditions under which revegetation shall be required in lieu of reforestation; and
- (g) Specify the conditions under which an exemption from the reforestation requirements may be approved.

(5) Except as described below, the reforestation rules shall become effective on January 1, 1995 and shall be applied as follows:
- (a) Operations completed after January 1, 1995 must comply with the reforestation rules;
- (b) Except as provided in subsection (c) operations completed before January 1, 1995 must comply with the applicable reforestation requirements of ORS 527.745 and OAR 629-024-0400 to 0404, 629-024-0500 to 0503, and 629-024-0600 to 0604 as they existed on September 6, 1994;
- (c) Landowners subject to subsection (b) may request to have the reforestation rules apply to an operation at any time following January 1, 1995. The State Forester shall approve such requests so long as the landowner will fully apply the reforestation rules on the operation.

629-610-0010
Forestlands Suitable for Reforestation

(1) Any forestland which is capable of annual wood production of at least 20 cubic feet per acre at culmination of mean annual increment (Cubic Foot Site Class VI or better) shall be subject to the requirements of the reforestation rules.

(2) Potential site productivity is determined directly by tree growth and stocking measurements throughout the operation area or determined indirectly using applicable USDA Natural Resources Conservation Service soil survey information, USDA Forest Service plant association guides, Oregon Department of Revenue western Oregon site class maps, or other information determined by the State Forester to be of comparable quality.

629-610-0020
Reforestation Stocking Standards

(1) The landowner shall increase tree stocking to a level that meets the applicable productivity-based stocking standards described in sections (4), (5) and (6) of this rule within the time limits established by OAR 629-610-0040 whenever post-operation free to grow tree stocking in all or a portion of the operation area is below the applicable stocking standards and:
- (a) Trees or snags of acceptable species are harvested; or
- (b) Free to grow tree stocking is reduced as a result of the operation.

(2) Reforestation is not required on those portions of the operation area:
- (a) Where adequate free to grow tree stocking remains after the completion of the operation;
- (b) That are not disturbed by operation activities; or
- (c) On soils or sites not meeting the minimum productivity requirements of OAR 629-610-0010.

(3) The State Forester shall approve a plan for an alternate practice to waive or modify the reforestation requirements following a stand improvement operation such as a precommercial thinning, commercial thinning, overstory removal, or other partial cut harvest if the State Forester determines that the residual stand

conditions after such an operation will result in enhanced long-term tree growth and there is a high probability the purpose of the reforestation rules will be achieved.

(4) For Cubic Foot Site Class I, II and III forestlands (capable of producing at least 120 cubic feet per acre per year at culmination of mean annual increment), the minimum tree stocking standards are:
  (a) 200 free to grow seedlings per acre; or
  (b) 120 free to grow saplings and poles per acre; or
  (c) 80 square feet of basal area per acre of free to grow trees 11-inches DBH and larger; or
  (d) An equivalent combination of seedlings, saplings and poles, and larger trees as calculated in section (7) of this rule.

(5) For Cubic Foot Site Class IV and V forestlands (capable of producing between 50 and 119 cubic feet per acre per year at culmination of mean annual increment), the minimum tree stocking standards are:
  (a) 125 free to grow seedlings per acre; or
  (b) 75 free to grow saplings and poles per acre; or
  (c) 50 square feet of basal area per acre of free to grow trees 11-inches DBH and larger; or
  (d) An equivalent combination of seedlings, saplings and poles, and larger trees as calculated in section (7) of this rule.

(6) For Cubic Foot Site Class VI forestlands (capable of producing between 20 and 49 cubic feet per acre per year at culmination of mean annual increment), the minimum tree stocking standards are:
  (a) 100 or more free to grow seedlings per acre; or
  (b) 60 free to grow saplings and poles per acre; or
  (c) 40 square feet of basal area per acre of free to grow trees 11-inches DBH and larger; or
  (d) An equivalent combination of seedlings, saplings and poles, and larger trees as calculated in section (7) of this rule.

(7) In both even-aged and uneven-aged stands, the stocking of residual seedlings, saplings and poles, and larger trees shall be weighted to determine stand stocking and potential reforestation requirements. For this purpose, seedlings, saplings and poles, and trees 11-inches DBH and larger are proportionally equivalent in the following ratios: 100 free to grow seedlings are equivalent to 60 free to grow saplings and poles, which are equivalent to 40 square feet of basal area of free to grow trees 11-inches DBH and larger.

(8) Live conifer trees 11-inches DBH and larger left standing in harvested areas to meet the green tree and snag retention requirements of Section 5, Chapter 919, Oregon Laws 1991 shall be counted towards meeting the tree stocking standards if the trees are free to grow.

(9) For the purposes of determining compliance with the tree stocking requirements of the reforestation rules, tree stocking in riparian management areas within an operation area will be considered separately from stocking in the rest of the operation area.

(10) Landowners may submit plans for alternate practices that do not conform to the reforestation stocking levels established under these rules. A plan for alternate practices may be approved if the State Forester determines that there is a high probability that the purpose of the reforestation rules will be achieved, or if the plan carries out an authorized research project conducted by a public agency or educational institution.

629-610-0030
Natural Reforestation Methods

(1) Natural reforestation methods may be the best means to meet a variety of resource management objectives on some forestlands. Successful natural reforestation requires careful, flexible, site-specific pre-harvest planning and post-harvest monitoring.

(2) Reforestation may be difficult on Cubic Foot Site Class VI forestlands due to factors such as poor soils, harsh climate and competing vegetation. Reforestation in wetland areas may be difficult because of high water tables, competing vegetation, and inaccessibility. Careful reforestation planning is needed before operations are conducted on these sites. On Cubic Site Class VI forestlands and in wetlands, the use of silvicultural systems that promote natural regeneration and the retention of good quality residual trees after operations often have a higher probability of success than artificial reforestation methods.

(3) When an operation will result in a reforestation requirement and natural reforestation methods are planned, the landowner shall obtain written approval from the State Forester of a plan for an alternate practice which describes how reforestation will be accomplished. Information in the plan shall include:
  (a) A description of the seed sources that will be used;
  (b) Site preparation and vegetation competition control methods;
  (c) An estimate of the time needed to obtain an adequately stocked free to grow stand;
  (d) How progress towards natural reforestation will be evaluated; and
  (e) Alternative strategies that will be used if natural reforestation does not progress as planned.

(4) The plan for an alternate practice required in section (3) of this rule must be submitted no later than twelve months after tree stocking is reduced.
(5) Plans for an alternate practice for the use of natural reforestation methods shall be approved by the State Forester if a determination is made that the information provided accurately indicates there is a high probability the purpose of the reforestation rules will be achieved.

629-610-0040
Time Allowed for Reforestation
(1) The time period for compliance with the reforestation rules begins at the completion of the operation or 12 months after tree stocking has been reduced, whichever comes first.
(2) The landowner shall begin reforestation, including any necessary site preparation, within 12 months when reforestation is required.
(3) The landowner shall complete planting or seeding within 24 months unless a plan for an alternate practice for natural reforestation has been approved by the State Forester.
(4) By the end of the sixth full calendar year, the landowner shall have established a free to grow stand of trees which meets or exceeds the minimum stocking level required by OAR 629-610-0020.
(5) When natural reforestation methods are planned, the time limits for evidence of successful germination and for establishing a free to grow stand of trees which meets or exceeds the minimum stocking level required for the site shall be established in the approved plan for an alternate practice required for such methods.
(6) If reforestation cannot be accomplished within the specified time due to circumstances determined by the State Forester to be beyond the landowner's control, the State Forester shall extend the time to accomplish reforestation. Such circumstances may include, but are not limited to:
  (a) Nursery failure;
  (b) Inadequate seedling availability following salvage harvesting;
  (c) Extreme drought;
  (d) Insect infestation;
  (e) State smoke management restrictions on the burning of slash;
  (f) Wildfire or disease damage; or
  (g) Severe wildlife damage that could not be reasonably anticipated or controlled by the landowner.
(7) Extensions shall be made only upon a determination by the State Forester, based on timely written evidence provided by the landowner, that documents the landowner made reasonable attempts to comply with the reforestation requirements of the rules.
(8) Where an extension is granted for reforestation failure on land suitable for reforestation or in cases where a violation of the reforestation rules is cited, the landowner shall be required to take remedial action to achieve the required stocking standards within a time prescribed by the State Forester using recognized stand establishment methods.

629-610-0050
Acceptable Species for Reforestation and Residual Stand Stocking
(1) The State Forester shall determine if tree species are acceptable for artificial reforestation, natural reforestation, and as residual seedling, sapling and pole, or larger tree stocking based on all of the following criteria:
  (a) The species must be ecologically suited to the planting site;
  (b) The species must be capable of producing logs, fiber, or other wood products suitable in size and quality for the production of lumber, sheeting, pulp or other commercial forest products; and
  (c) The species must be marketable in the foreseeable future.
(2) Up to 20 percent of the site-based stocking levels required by 629-610-0020 may be met by using free to grow hardwood trees remaining after harvest if the trees are of species meeting the requirements of section (1) of this rule. An approved plan for an alternate practice is required before more than 20 percent of the required stocking may be met with residual, post-operation hardwood trees. Approval for the use of higher levels of hardwood residual stocking shall be based on a determination by the State Forester that there is a high probability the purpose of the reforestation rules will be achieved.
(3) Landowners are encouraged to reforest with a mixture of acceptable tree species, where appropriate, to reduce the risk of insect and disease losses and to promote stand diversity. Seedlings or seeds used for artificial reforestation should be from seed sources that are genetically adapted to the growing site.

629-610-0060
Use of Non-Native Tree Species

(1) When an operation will result in a reforestation requirement, and the landowner intends to plant or seed a tree species not native to the operation area, the landowner shall submit for approval a plan for an alternate practice to the State Forester which describes the tree species and how it will be used to meet the reforestation requirements. Information in the plan must include:
  (a) The tree species that will be used;
  (b) Evidence that the species is ecologically suited to the planting site;
  (c) Evidence that the species is capable of producing commercial forest products that will be marketable in the foreseeable future; and
  (d) Available research or field test findings which demonstrate the tree species has been successfully used in reforesting sites similar to the operation area.

(2) A plan for an alternate practice for the use of non-native tree species must be submitted for approval no later than twelve months after tree stocking is reduced and prior to planting. Plans for an alternate practice for the use of non-native tree species shall be approved by the State Forester if a determination is made that the information provided indicates there is a high probability the purpose of the reforestation rules will be achieved.

(3) For the purpose of this rule, any tree species that the State Forester determines has naturally existed and reproduced in the operation area or on similar sites shall be considered a native species.

629-610-0070
Suspension of the Reforestation Rules

(1) A landowner must submit to the State Forester a plan for an alternate practice to suspend the reforestation rules for the salvage or conversion of low value forest stands, to establish forest stands that are adequately stocked and free to grow.

(2) (a) The State Forester may approve the plan for an alternate practice when the harvest area is a conversion of underproducing forestland, or a salvage of forest stands where the merchantable trees are dead or dying due to wildfire, insects, diseases or other factors beyond the landowner's control and the State Forester determines:
    (A) The landowner is approved for funding from a forest incentive program, for which the State Forester is the technical advisor; and
    (B) The gross harvest revenues will not exceed the total costs of harvest, taxation, and reforestation.
  (b) For the purposes of this rule, "conversion of underproducing forestland" means an operation conducted on forestland subject to the reforestation requirements that does not currently support the minimum number of free to grow trees required with the objective of removing undesirable competing vegetation, including the incidental harvest of forest products, and establishing an adequately stocked, free to grow forest stand.

(3) To determine whether subsection (2)(a)(B) of this rule is met on a harvest operation that has not started, the State Forester shall make a field observation of the harvest area to determine:
  (a) The estimated merchantable volume;
  (b) The value of the merchantable volume by applying current local market values; and
  (c) The estimated harvest, taxation, and reforestation costs.

(4) When the State Forester is not able to determine the projected revenues and projected costs from the field observation described in subsection (3) of this rule, the State Forester may require the landowner to submit one or more of the following:
  (a) A third party estimate, by species and grade, of the volumes and values of logs to be delivered to the mill;
  (b) The projected costs of harvesting the forest products, including, but not limited to, harvest planning and administration, road construction and maintenance, felling and bucking, yarding, and loading and hauling;
  (c) The projected severance, harvest, and income taxes;
  (d) The projected costs of reforestation, including planning and administration, site preparation, trees, tree planting, tree protection, and moisture conservation; or
  (e) The projected costs of any other measures necessary to establish a forest stand in an adequately stocked and free to grow condition, as specified in the reforestation rules.

(5) To determine whether subsection (2)(a)(B) of this rule is met on a harvest operation that has started, but is not yet complete, the landowner shall submit to the State Forester one or more of the following:
  (a) The contracts executed to sell and harvest forest products, including but not limited to, all logging costs and receipts;
  (b) All the forest products scaling summaries showing gross and net volumes, by species and corresponding mill receipts showing payment; or
  (c) Any tax forms, records or reports submitted by the landowner that detail the gross and net volumes of forest products harvested, by species, plus logging and management costs used to determine harvest and severance taxes.
(6) Operations that are complete are not eligible for a suspension of the reforestation rules.
(7) The State Forester shall revoke the suspension of the reforestation rules at any time within 6 years of completing the operation if the landowner fails to establish a forest stand:
  (a) According to the specifications and time lines required under the applicable forest incentive program; or
  (b) In an adequately stocked and free to grow condition, as specified in the reforestation rules.

629-610-0080
Revegetation When Reforestation is not Required
When reforestation is not required or planned, the landowner shall ensure sufficient revegetation of the site to provide continuing soil productivity and stabilization within 12 months of the completion of the operation. Revegetation required by this rule may be planted or naturally established, and shall consist of trees, shrubs, grasses, or forbs suitable for soil stabilization and productivity protection. Landowners are encouraged to revegetate the operation area with native plants.

629-610-0090
Exemption from Reforestation for Land Uses Not Compatible with Forest Tree Cover
(1) A landowner, through a plan for an alternate practice, may request all, or portions of, an operation area be exempted from the reforestation requirements for the purpose of developing forestland for a use that is not compatible with the maintenance of forest tree cover. Approval of a plan for an alternate practice shall be obtained for such an exemption from the State Forester and shall only be granted for the smallest land area necessary to carry out the intended change in land use. Reforestation shall be required on the portions of operation areas not directly involved in the land use change.
(2) In seeking approval of the plan for an alternate practice, the landowner shall provide written documentation to the State Forester which establishes:
  (a) The specific portion of the operation area necessary for the proposed change in land use;
  (b) The intended change in land use and the incompatibility of the land use with forest tree cover;
  (c) The intended change in land use is authorized under local land use and zoning ordinances, and all necessary permits and approvals have been obtained, or will be obtained within 12 months following the reduction in tree stocking; and
  (d) The county assessor and local planning department have been notified in writing of the proposed change in land use.
(3) Reasonable progress towards the change in land use, as determined by the State Forester, shall be made within 12 months of the completion of the operation. Evidence of reasonable progress towards a change to an agricultural use may include activities such as stump removal, cultivation, fencing, and planting or seeding of crops or pasture. Evidence of reasonable progress towards a change to use involving building a structure may include activities such as stump removal, excavation, and construction.
(4) The change in land use shall be completed and continuously maintained within 24 months of the completion of the operation.
(5) If the change in land use cannot be accomplished within the specified time due to circumstances beyond the landowner's control, the State Forester shall extend the time to accomplish the change in land use. Such circumstances may include, but are not limited to, governmental delays in reviewing and processing permits and approvals, but do not include delays where a landowner is appealing the denial of a permit or approval if the State Forester does not have reason to believe the landowner will prevail on appeal. Extensions shall be made only upon a determination by the State Forester, based on written evidence provided by the landowner, that the landowner made reasonable attempts to comply. Landowners who need extensions are encouraged to contact the State Forester as soon as possible after the circumstances occur.

(6) The State Forester shall determine if the change in land use has been completed by:
  (a) The presence or absence of improvements necessary for use of the land for the intended purpose; and
  (b) Evidence of established and continuously maintained use of the land for the intended purpose.
(7) To remain exempt from the reforestation requirements the landowner shall continuously maintain the land in the new use until at least six calendar years following the completion of the operation.

DIVISION 611
AFFORESTATION INCENTIVE RULES

629-611-0000
Purpose

(1) The purpose of OAR 629-611-0000 to 629-611-0020 is to implement ORS 526.490, providing an incentive for landowners to convert parcels of idle land or land in other uses to commercial forest use.
(2) The provisions of ORS 526.490 shall be called the afforestation incentive and OAR 629-611-0000 to 629-611-0020 shall be known as the afforestation incentive rules.
(3) The afforestation incentive in these rules is a one-time exemption from most tree retention requirements in the forest practice rules as described in section (5) of this rule.
(4) For the purposes of the afforestation incentive rules, "planted" trees means those trees that a landowner establishes as an initial forest stand to qualify for the incentive and includes:
  (a) All trees the landowner plants or causes to be planted; and
  (b) All naturally established trees that are established within ten years prior to, or following, the date the parcel is certified as qualified for the incentive.
(5) Notwithstanding forest practice rule provisions prohibiting harvest of trees, the afforestation incentive allows landowners to harvest all planted trees on certified afforestation incentive parcels with the following limitations:
  (a) The afforestation incentive applies only to the land and timber located more than 20 feet from large or medium Type F, Type D, or Type N streams, or small Type F or Type D streams.
  (b) Any forest operations on such parcels must comply with all forest practice rules that require practices other than restrictions on harvesting the planted trees.
  (c) A planted tree that later becomes a key component of a specified resource site normally requiring protection under the forest practice rules may be harvested; however, the State Forester may temporarily prohibit harvesting during an annual critical period of use of the site, as provided in the specified resource site protection rules.
  (d) (For information only) Federal law prohibits a person from taking threatened or endangered species. Taking, under the federal law, may include significant alteration of habitat on any class of land ownership. Compliance with the afforestation incentive rules is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act.

629-611-0010
Qualifications and Procedures

(1) To qualify for the afforestation incentive, a parcel or any separate portion thereof must meet all of the following requirements:
  (a) It must be at least five contiguous acres.
  (b) The State Forester must obtain evidence that, regardless of its use prior to July 1, 1972, from that date until the time of afforestation it has been idle or exclusively in uses other than commercial activities related to the growing and harvesting of forest tree species. Forestland in understocked condition, identified consistent with (c) below, may qualify for the incentive if the stocking was reduced or limited by causes other than a forest operation occurring after July 1, 1972.
  (c) No acre may be certified as part of an afforestation incentive parcel if, prior to the establishment of a well-stocked, free to grow stand of forest trees, the acre's stocking, if any, was 25 square feet of basal area or more.
  (d) Afforestation must have begun on the parcel on or after September 9, 1995, the date ORS 526.490 became effective.
(2) To gain certification of a parcel as eligible for the afforestation incentive, a landowner must request inspection by the State Forester within two to five years following stand establishment.

(3) A request for inspection and certification of a parcel shall be accompanied by the following:
  (a) A map that depicts the parcel or portion thereof in relation to public lands survey subdivisions and access roads for the purpose of locating and inspecting the parcel, and that will be sufficient to identify the parcel at the time of harvest;
  (b) Photographs documenting the condition of the parcel as idle land or land in other than adequately-stocked commercial forest use prior to stand establishment; and
  (c) Written permission of the owner to enter the property as necessary to inspect and determine whether the parcel qualifies for the afforestation incentive.

(4) To be certified eligible for the afforestation incentive, the parcel's afforestation must meet or exceed the reforestation rule standards for acceptable species, adequate stocking, and free to grow condition found in OAR Chapter 629 Division 610 of the forest practice rules. Pre-existing free to grow forest tree stocking may be counted toward meeting those standards.

(5) Landowners who qualify parcels for the afforestation incentive by meeting the requirements of sections (1) to (4) of this rule shall be issued a certificate by the State Forester describing the parcel and the exemption from harvest restrictions to which the landowner is entitled.

(6) The afforestation incentive is a one-time exemption for each individual parcel or portion thereof, applying only to planted trees established to initially certify each parcel. These trees constitute the parcel's first rotation stand for either even-aged or uneven-aged management. The certification date shall be considered the beginning of the first rotation so that, at the time of harvesting, no trees other than the planted trees shall be included in the exemption.

(7) To ensure recognition of the afforestation incentive at the time of harvest, many years after certification of a parcel, landowners are encouraged to record the certificate issued by the State Forester with the appropriate county clerk as specified under ORS 205.130.

(8) In order to exercise the exemption from tree harvesting restrictions under ORS 526.490(3), the landowner must present a record of the certificate to the State Forester whenever first rotation trees are to be harvested.

629-611-0020
Fee for Inspection and Certification

The State Forester shall charge a fee to persons requesting certification to offset the costs of inspecting parcels and preparing certificates. This fee shall be $50 per parcel plus $2 per acre for each acre in excess of five acres, to a maximum of $200 per parcel.

DIVISION 615
TREATMENT OF SLASH

629-615-0000
Purpose

(1) OAR 629-615-0000 to 0300 shall be known as the treatment of slash rules.

(2) For the purposes of these rules, treatment of slash is recognized as a necessary tool for the protection of reproduction and residual stands from the risk of fire, insects, and disease, to prepare the site for future productivity and to minimize the risk of material entering streams. Such treatment may employ the use of mechanical processes, fire, chemical or other means to minimize competitive vegetation and residue from harvesting operations.

629-615-0100
Maintenance of Productivity and Related Values

(1) Operators shall plan and conduct forest operations in a manner which will provide adequate consideration to treatment of slash to protect residual stands of timber and reproduction to optimize conditions for reforestation of forest tree species, to maintain productivity of forestland, to maintain forest health, and maintain air and water quality and fish and wildlife habitat.

(2) Operators shall dispose of or disperse unstable slash accumulations around landings to prevent their entry into streams.

629-615-0200
Mechanical Site Preparation Near Waters of the State

(1) When mechanical site preparation is necessary in riparian management areas or near waters of the state, operators shall conduct the operations in a way that sediment or debris does not enter waters of the state.

(2) When using mechanical site preparation, operators shall provide adequate distance between disturbed soils and waters of the state to filter sediment from run-off water.
(3) Operators shall not use mechanical site preparation in riparian management areas:
  (a) On slopes over 35 percent, with the exception of excavator-type equipment used during dry periods; or
  (b) On sites with evidence of surface or gully erosion; or
  (c) Where exposure or compaction of the subsoil is likely to occur.
(4) During mechanical site preparation, operators shall not place debris or soil in waters of the state or where it may enter waters of the state.

629-615-0250
Protection of Soil Productivity During Mechanical Site Preparation
On land clearing projects where mechanical methods are used, operators shall minimize compaction and movement of topsoil to protect soil productivity.

629-615-0300
Prescribed Burning
(1) Prescribed burning is a tool used to achieve reforestation, maintain forest health, improve wildlife habitat and reduce wildfire hazard. Prescribed burning is to be done consistent with protection of air and water quality, and fish and wildlife habitat. The purpose of this rule is to ensure that necessary prescribed burning is planned and managed to maximize benefits and minimize potential detrimental effects.
(2) When planning and conducting prescribed burning, operators shall:
  (a) Comply with the rules of Oregon's "Smoke Management Plan."
  (b) Adequately protect reproduction and residual timber, humus and soil surface.
  (c) Consider possible detrimental effects of prescribed burning upon riparian management areas, streams, lakes, wetlands, and water quality, and how these effects can be best minimized.
  (d) Lay out the unit and use harvesting methods that minimize detrimental effects to riparian management areas, streams, lakes, wetlands, and water quality during the prescribed burning operation.
  (e) Fell and yard the unit to minimize accumulations of slash in channels and within or adjacent to riparian management areas.
  (f) Minimize fire intensity and amount of area burned to that necessary to achieve reforestation, forest health, or hazard reduction needs.
(3) When burning within 100 feet of Type F and Type D streams, within 100 feet of large lakes, and within 300 feet of significant wetlands, operators shall describe in the written plan how detrimental effects will be minimized within riparian management areas; especially when burning on highly erosive soils, for example decomposed granite soils and slopes steeper than 60 percent.
(4) During prescribed burning operations, operators shall protect components such as live trees, snags, downed wood, and understory vegetation required to be retained by OAR 629-635-0310 through 629-650-0040. When the operator has taken reasonable precautions to protect the components, but some detrimental effects occur, the intent of the rule is met if the overall integrity of the riparian management area is maintained. Operators shall not salvage trees killed by prescribed fire in a riparian management area if the trees were retained for purposes of OAR 629-635-0310 through 629-655-0000.
(5) When the need for prescribed burning outweighs the benefits of protecting components required to be left within the riparian area, aquatic area and wetlands, protection requirements may be modified through a plan for an alternate practice. Approval of such a plan shall consider the environmental impacts and costs of alternative treatments.

DIVISION 620
CHEMICAL AND OTHER PETROLEUM PRODUCT RULES

629-620-0000
Purpose
(1) OAR 629-620-0000 through 629-620-0800 shall be known as the chemical and other petroleum product rules. In addition to the application of chemicals, operators should be aware that certain requirements of these rules also apply to the use of other petroleum products, such as fuel and lubricants, on any forest operation.
(2) Operators are encouraged to voluntarily use integrated pest and vegetation management processes. The use of pesticides is one of a variety of integrated pest management strategies that forest landowners may

implement to minimize the impact of forest pests in an environmentally and economically sound manner to meet site specific objectives. When properly used, pesticides and other chemicals can be effective tools in the growing and harvesting of forest tree species.

(3) The purpose of the forest practice chemical and other petroleum product rules is to establish requirements that will ensure:
   (a) Chemicals and other petroleum products used on forestland do not occur in the soil, air, or waters of the state in quantities that would be injurious to water quality or to the overall maintenance of terrestrial wildlife or aquatic life; and
   (b) The vegetative components of riparian management areas and sensitive resource sites receive protection on herbicide operations consistent with the purposes of the reforestation rules, the requirements of the sensitive resource site rules, and the vegetation retention goals of the water protection rules.

(4) All distances listed in the chemical and other petroleum product rules shall be measured horizontally.

(5) Operations involving the use of chemicals and other petroleum products on forestland are also subject to the pesticide control laws administered by the Department of Agriculture, hazardous waste laws administered by the Department of Environmental Quality, hazard communication rules administered by the Occupational Safety and Health Division, the water use laws administered by the Water Resources Department. Maximum contaminant levels in drinking water for certain pesticides are established by the Health Division.

629-620-0100
Preventing, Controlling, and Reporting Leaks and Spills of Chemicals and Other Petroleum Products

(1) The operator shall maintain equipment used for transportation, on-site storage, or application of chemicals in a leak proof condition. If there is evidence of chemical leakage, the operator shall suspend the further use of such equipment until the deficiency has been corrected.

(2) Operators shall take adequate precautions to prevent leaks or spills of other petroleum products, such as fuel, motor oil, and hydraulic fluid, from entering the waters of the state.

(3) Operators shall take immediate and appropriate action to stop and contain leaks or spills of chemicals and other petroleum products.

(4) The operator shall immediately report to the State Forester any chemical spills and other petroleum product spills resulting from the operation that enter, or may enter, the waters of the state. Such notification will not exempt the operator from any requirements of other local, state, and federal agencies to report chemical or other petroleum product spills.

629-620-0200
Protection of Water Quality During Mixing of Chemicals

(1) Whenever water is taken from any stream or water impoundment for use in the mixing of chemicals, the operator shall prevent chemicals from entering the waters of the state by taking at least the following precautions:
   (a) Providing an air gap or reservoir between the water source and the mixing tank; and
   (b) Using pumps, suction hoses, feed hoses, and check valves that are used only for water.

(2) (For information only) When water is to be withdrawn from the waters of the state for use in mixing pesticides or for slash burning, ORS 537.141 requires operators to notify the Water Resources Department and the Department of Fish and Wildlife. Notification to the State Forester does not satisfy this requirement.

629-620-0300
Locations of Mixing, Transfer, and Staging Areas for Chemicals and Other Petroleum Products

(1) Operators shall conduct the following activities only in locations where spillage of chemicals or other petroleum products will not enter the waters of the state:
   (a) Mixing chemicals;
   (b) Transferring chemicals or other petroleum products between equipment or containers including, but not limited to, fueling of aircraft or heavy equipment;
   (c) Cleaning tanks or equipment used during chemical applications;
   (d) Landing and staging aircraft.

(2) Notwithstanding section (1), operators shall not locate chemical mixing and staging areas for aerial chemical applications within 100 feet of Type F or Type D streams.

629-620-0400

Protection of the Waters of the State and Other Resources When Applying Chemicals

(1) When applying chemicals aerially or from the ground, operators shall protect waters of the state and other forest resources by following the requirements of the chemical product label and by meeting the additional protection measures listed in this rule.

(2) When applying herbicides near or within riparian management areas or waters of the state, operators shall maintain vegetation required to be protected by the water protection rules.

(3) Weather conditions such as temperature, relative humidity, wind speed, wind direction, atmospheric temperature inversions, and precipitation may strongly affect the deposition and drift of chemicals during aerial and pressurized, ground-based chemical applications. Operators shall apply chemicals only under weather conditions which will protect non-target forest resources and comply with the product label and the other sections of this rule.

(4) Except where the product label or sections (2), (6), or (7) apply more stringent requirements, when applying chemicals by aircraft, operators shall not directly apply chemicals within 60 feet of:
- (a) Significant wetlands;
- (b) The aquatic areas of Type F and Type D streams;
- (c) The aquatic areas of large lakes;
- (d) The aquatic areas of other lakes with fish use; or
- (e) Other areas of standing open water larger than one-quarter acre at the time of the application.

(5) Except where the product label or sections (2) or (6) apply more stringent requirements, when applying chemicals from the ground, operators shall not directly apply chemicals within 10 feet of:
- (a) Significant wetlands;
- (b) The aquatic areas of Type F and Type D streams;
- (c) The aquatic areas of large lakes;
- (d) The aquatic areas of other lakes with fish use; or
- (e) Other areas of standing open water larger than one-quarter acre at the time of the application.

(6) Operators shall not directly apply fertilizers within 100 feet of Type D streams and the domestic use portions of Type F streams. For other waters of the state, no untreated strips are required to be left by operators when applying fertilizers, except that operators shall not directly apply fertilizers to:
- (a) The aquatic areas of other Type F streams or to large and medium Type N streams;
- (b) Significant wetlands;
- (c) The aquatic areas of large lakes;
- (d) The aquatic areas of other lakes with fish use; or
- (e) Other areas of standing open water larger than one-quarter acre at the time of the application.

(7) (a) Except as allowed under subsections (d) and (e), operators shall not directly apply fungicides or non-biological insecticides by aircraft, within 300 feet of:
  - (A) Significant wetlands;
  - (B) The aquatic areas of Type F and Type D streams;
  - (C) The aquatic areas of large lakes;
  - (D) The aquatic areas of other lakes with fish use; or
  - (E) Other areas of standing open water larger than one-quarter acre at the time of the application.

(b) Operators shall not directly apply fungicides or non-biological insecticides by aircraft within 60 feet of the aquatic areas of Type N streams containing flowing water at the time of application.

(c) For the purpose of this rule, "biological insecticide" means any insecticide containing only naturally occurring active ingredients including, but not limited to, viruses, bacteria, semiochemicals (pheromones), or fungi.

(d) Plans for alternate practices that modify the requirements of subsections (a) and (b) may be approved by the State Forester. Approvals of such plans shall be based on a written finding by the State Forester determining that:
  - (A) Such a modification is essential to control a fungus or a population of an insect species to reduce damage to, and to better provide for, the overall maintenance of forest resources protected under the Forest Practices Act;
  - (B) The operational or weather condition constraints placed on the application by the plan for alternate practice, in addition to the requirements of the forest practice rules and the product label, will reduce the potential for the fungicide or non-biological insecticide to drift outside the operation area or to enter the waters of the state; or

(C) Adequate documentation has been submitted by the operator indicating the toxicity to humans, fish populations, or to aquatic invertebrate populations of the fungicide or non-biological insecticide to be applied is lower than the documented toxicity of the fungicide chlorothalonil or the non-biological insecticide carbaryl, as used in forestry prior to September 4, 1996.

(e) The requirements of sections (a) and (b) do not apply to pest eradication programs conducted on forestland by the Department of Agriculture.

(8) The operator shall make all aerial chemical applications parallel to the edge of the water when applying chemicals within 100 feet of:
- (a) Significant wetlands;
- (b) The aquatic areas of Type F and Type D streams;
- (c) The aquatic areas of large lakes;
- (d) The aquatic areas of other lakes with fish use; or
- (e) Other areas of standing open water larger than one-quarter acre at the time of the application.

629-620-0500
Disposal of Chemical Containers

Operators shall dispose of chemical containers in accordance with the Department of Environmental Quality's disposal requirements. Operators may apply flushing solution resulting from cleaning of chemical containers to the operation area.

629-620-0600
Daily Records of Chemical Applications

(1) Whenever pesticides are aerially applied or applied using a pressurized, ground-based, broadcast application system on forestland, the operator shall maintain a daily record of application operations which includes:
- (a) The legal description of the location of the operation area actually treated with chemicals;
- (b) The acreage actually treated with chemicals;
- (c) Brand name or EPA registration number of the chemicals used, the carrier used, and the application rate;
- (d) Date and time of application;
- (e) Air temperature, to be measured within the operation area and recorded at least hourly for aerial applications and at least at the beginning and end of each day's application for ground applications;
- (f) Relative humidity, to be measured within the operation area and recorded at least hourly for aerial applications and at least at the beginning and end of each day's application for ground applications;
- (g) Wind velocity and direction, to be measured within the operation area and recorded at least hourly for aerial applications and at least at the beginning and end of each day's application for ground applications;
- (h) The name of the person making the application, including the contractor’s name and pilot’s name when applied aerially, or the contractor’s name and/or employee’s name for ground application.

(2) Whenever pesticides are applied on forestland using methods other than those described in section (1) of this rule, the operator shall maintain a daily record of all information listed in subsections (a), (b), (c), (d), and (h) of section (1).

(3) Whenever fertilizers are applied on forestland, the operator shall maintain a record of all information listed in subsections (a), (b), (d), and (h) of section (1) of this rule and shall also record the application rate and the formulation used.

(4) The records required in sections (1), (2) and (3) of this rule shall be maintained by the operator for three years from the date of application and be made available at the request of the State Forester.

629-620-0700
Chemical and Other Petroleum Product Rules: Effectiveness Monitoring and Evaluation

(1) In cooperation with state agencies, landowners, and other interested parties, the department shall conduct monitoring to evaluate the effectiveness of the chemical and other petroleum product rules. The monitoring shall determine the effectiveness of the rules to meet the goals of the Forest Practices Act and the purposes stated in the rules, as well as their workability and operability.

(2) It is the Board of Forestry's intent that the department and its cooperators place a high priority on assessing the monitoring needs and securing adequate resources to conduct the necessary monitoring. The department shall work with its cooperators and the Legislature to secure the necessary resources, funding and coordination for effective monitoring.

(3) The department shall report to the Board of Forestry annually about current monitoring efforts and, in a timely manner, present findings and recommendations for changes to practices. The Board of Forestry shall consider the findings and recommendations and take appropriate action.

629-620-0800
Notification of Community Water System Managers When Applying Chemicals

(1) The purpose of this rule is to ensure that community water system managers are appropriately notified of planned chemical operations so that they can coordinate their monitoring activities with planned operations.
(2) This rule applies to community water systems where the surface water drainage area upstream of their intake is 100 square miles or less. The State Forester shall maintain a list of community water systems for which notification is required. A community water system with a drainage area of more than 100 square miles upstream of its intake may request to be added to the list based upon its ability to conduct effective monitoring in the watershed. The list shall be available at department field offices where notifications are submitted.
(3) When chemicals will be aerially applied within 100 feet, or applied from the ground within 50 feet of domestic portions of Type F or Type D streams, and the water use is by a community water system as designated under section (2) of this rule, the operator shall notify the water system manager of a planned chemical operation at least 15 days before the operation commences.
(4) The operator shall provide the following additional information before commencing the operation if requested by the manager of the affected water system at the time of notification required in section (3) above:
    (a) The application technology that will be used;
    (b) Practices that will be followed to minimize drift toward the stream;
    (c) Any monitoring efforts that will be conducted by the landowner; and
    (d) The planned time schedule for the application.

DIVISION 623
SHALLOW, RAPIDLY MOVING LANDSLIDES AND PUBLIC SAFETY

629-623-0000
Purpose

(1) Shallow, rapidly moving landslides may be a public safety risk affected by forest operations. There is a high natural landslide hazard in certain locations. In the short term, forest practices regulations can reduce the risk to people who are present in locations prone to shallow, rapidly moving landslides. In the long term, effective protection of the public can only be achieved through the shared responsibilities of homeowners, road users, forestland owners, and state and local governments to reduce the number of persons living in or driving through locations prone to shallow, rapidly moving landslides during heavy rainfall periods.
(2) OAR 629-623-0000 through 629-623-0800 shall be known as the shallow, rapidly moving landslide and public safety rules.
(3) The purpose of the shallow, rapidly moving landslides and public safety rules is to reduce the risk of serious bodily injury or death caused by shallow, rapidly moving landslides directly related to forest practices. These rules consider the exposure of the public to these safety risks and include appropriate practices designed to reduce the occurrence, timing, or effects of shallow, rapidly moving landslides.
(4) These rules are based on the best scientific and monitoring information currently available. The department will continue to monitor factors associated with shallow, rapidly moving landslides and also review new research on this issue. The department will recommend rule changes if this new information suggests different forest practices may be appropriate.

629-623-0100
Screening for High Landslide Hazard Locations and Exposed Population

(1) The State Forester will use further review area maps and/or other information to screen proposed operations for high landslide hazard locations that may affect exposed populations. Operators are encouraged to acquire available maps and other information and to conduct their own public safety screening.
(2) Upon notification by the State Forester, operators shall identify portions of the operation that contain high landslide hazard locations and shall also identify structures and paved public roads within further review areas below the operation area.
(3) The following criteria shall be used to identify high landslide hazard locations:
    (a) The presence, as measured on site, of any slope in western Oregon (excluding competent rock outcrops) steeper than 80 percent, except in the Tyee Core Area, where it is any slope steeper than 75 percent; or

(b) The presence, as measured on site, of any headwall or draw in western Oregon steeper than 70 percent, except in the Tyee Core Area, where it is any headwall or draw steeper than 65 percent.

(c) Notwithstanding the slopes specified in (a) or (b) above, field identification of atypical conditions by a geotechnical specialist may be used to develop site specific slope steepness thresholds for any part of the state where the hazard is equivalent to (a) or (b) above. The final determination of equivalent hazard shall be made by the State Forester.

629-623-0200
Exposure Categories

(1) The State Forester will verify the information provided by operators in OAR 629-623-0100 and use this information to determine the exposure category for the operation.

(2) Exposure Category A includes habitable residences, schools, and other buildings where people are normally present during periods when wet season rain storms are common.

(3) Exposure Category B includes paved public roads averaging over 500 vehicles per day, as determined, if possible during periods when wet season rain storms are common.

(4) Exposure Category C includes barns, outbuildings, recreational dwellings not included in Exposure Category A, low-use public roads, and other constructed facilities where people are not usually present when wet season rain storms are common.

629-623-0250
Shallow, Rapidly Moving Landslide Impact Rating

(1) The State Forester will publish technical guidance for evaluating and rating shallow, rapidly moving landslide impact potential for any exposed population. Impact rating factors may include, but are not limited to: the location of the structure or road in relationship to the debris torrent-prone stream or steep slope; channel confinement; channel gradient; channel junction angles; and debris in the channel.

(2) Shallow, rapidly moving landslide impact potential is rated as unlikely, moderate, serious and in limited cases, extreme.

(3) The State Forester may require the landowner to submit a geotechnical determination of shallow, rapidly moving landslide impact rating for the proposed operation.

(4) The impact rating may include the potential for the failure of a structure in the direct path of a rapidly moving landslide resulting in a substantial risk of serious bodily injury or death to the exposed population below that structure.

(5) The State Forester will make the final impact rating.

629-623-0300
Public Safety Risk Levels

(1) The exposure categories described in OAR 629-623-0200 and the impact rating described in OAR 629-623-0250 are used to determine the downslope public safety risk level and the applicable forest practice rules that apply to the operation, as described in Sections (2) through (10) of this rule.

Substantial downslope public safety risk

(2) For Exposure Category A, substantial downslope public safety risk exists if the impact rating is extreme or serious.

(3) For Exposure Category B, substantial downslope public safety risk exists if the impact rating is extreme and the State Forester informs the operator that these site specific conditions warrant substantial public safety risk practices.

(4) Substantial Downslope Public Safety Risk operations are regulated by OARs 629-623-0400, 629-623-0450, 629-623-0600, and 629-623-0700.

Intermediate downslope public safety risk

(5) For Exposure Category A, intermediate downslope public safety risk exists if the impact rating is moderate.

(6) For Exposure Category B, intermediate downslope public safety risk exists if the impact rating is serious.

(7) For Exposure Category C, intermediate downslope public safety risk exists if the impact rating is extreme and the State Forester informs the operator that these site specific conditions warrant intermediate public safety risk practices.

(8) Intermediate Downslope Public Safety Risk operations are regulated by OARs 629-623-0500, 629-623-0550, 629-623-0600, 629-623-0700, and 629-630-0500.

Low downslope public safety risk

(9) All other operations not described in sections 2, 3, 5, 6 and 7 of the rule are determined to have low downslope public safety risk.

(10) Low Downslope Public Safety Risk operations are regulated by OAR 629-630-0500 and by 629-625-0000 through 0700 and all other applicable rules.

Applicability of regulations and use of leave trees

(11) As required by ORS 195.256(4), forest practice rules shall not apply to risk situations arising solely from the construction of a building permitted under ORS 195.260(1)(c).

(12) Leave trees required to comply with timber harvesting rules for shallow, rapidly moving landslides and public safety may also be used to comply with ORS 527.676 except those required to be retained in riparian management areas by OAR 629-640-0000 through 629-640-0500.

629-623-0400

Restriction of Timber Harvesting - Substantial Downslope Public Safety Risk

(1) Operators shall not remove trees from high landslide hazard locations with substantial downslope public safety risk unless a geotechnical report demonstrates to the State Forester that any landslides that might occur will not be directly related to forest practices because of very deep soil or other site-specific conditions. Removal of dead or diseased trees or trees from sites that have already failed is allowed if the operator demonstrates to the State Forester that the operation results in no increased overall downslope public safety risk.

(2) Operators shall leave a sufficient number and arrangement of trees adjacent to high landslide hazard locations to reduce the likelihood of trees retained in these locations blowing down.

629-623-0450

Restriction of Road Construction - Substantial Downslope Public Safety Risk

(1) Operators shall not construct new roads on high landslide hazard locations or other very steep slopes with substantial downslope public safety risk.

(2) Operators may reconstruct existing roads in high landslide hazard locations when the written plan required by OAR 629-623-0700 incorporates site-specific practices as directed by a geotechnical specialist and demonstrates that road reconstruction will reduce landslide hazard.

629-623-0500 (REINSTATED WHEN THE SUSPENSION UNDER TEMPORARY RULE LAPSED JANUARY 13, 2009.)

Timber Harvesting - Intermediate Downslope Public Safety Risk

(1) The purpose of this rule is to manage canopy closure on high landslide hazard locations with intermediate downslope public safety risk.

(2) For harvesting operations that remove all or most of the largest trees, operators shall ensure that no more than half the area of high landslide hazard locations on a single ownership within the drainage or hillslope directly above the affected structure or road are in a 0 to 9 year-old age class or with reduced canopy closure in other age classes;

(3) For thinning or partial cutting operations, operators shall retain a vigorous stand that allows rapid canopy closure.

(4) Landowners shall use reforestation and stand management practices that result in rapid canopy closure.

(5) For timber harvesting operations, landowners shall describe in the written plan required by OAR 629-623-0700 how they will manage the high landslide hazard locations on their ownership within the affected drainage or hillslope with intermediate downslope public safety risk.

629-623-0550

Road Construction - Intermediate Downslope Public Safety Risk

(1) When constructing roads on high landslide hazard locations or other very steep slopes with intermediate downslope public safety risk, operators shall follow site-specific practices as directed by a geotechnical specialist.

(2) In addition to the road construction and maintenance rules in OAR 629-625-0100 through 629-625-0440, written plans shall include**:**

(a) An evaluation of cutslope stability that demonstrates major cutslope failure is very unlikely; and

(b) A description of measures to be taken to prevent water from draining onto high landslide hazard locations.

629-623-0600
Protection Along Debris Torrent-Prone Streams

(1) The purpose of this rule is to reduce or eliminate woody debris loading, and to retain large standing trees in locations where they might slow debris torrent movement along debris torrent-prone streams with substantial or intermediate downslope public safety risk.

(2) During timber harvesting operations, operators shall fell and yard trees in a manner to minimize slash and other debris accumulations in debris torrent-prone stream channels where there is substantial or intermediate downslope public safety risk.

(3) Operators shall remove logging slash piles and continuous logging slash deposits from debris torrent-prone stream channels where there is substantial or intermediate downslope public safety risk.

(4) Operators shall leave, and during felling and yarding activity, protect large standing trees along the likely depositional reaches of debris torrent-prone streams, as determined by the State Forester, in locations where there is substantial or intermediate downslope public safety risk. Leave trees shall:
   (a) Be larger than 20 inches in diameter breast height;
   (b) Be within 50 feet of the edge of the active channel along both sides of the stream;
   (c) Be left for a distance of 300 feet or the depositional length of the channel, whichever is less, as measured from the beginning of the forested portion of the stream reach above the road or structure;
   (d) Not include trees that pose a greater public safety risk because of windthrow or other risks as determined by the State Forester.

629-623-0700
Written Plans to Evaluate Public Safety Risk

(1) To allow evaluation of public safety risk and the appropriate methods for reducing this risk, operators shall submit a written plan for all timber harvesting or road construction operations with intermediate or substantial downslope public safety risk as described in OAR 629-623-0300. Written plans shall include:
   (a) A determination of public safety risk (OAR 629-623-0300);
   (b) A map showing those portion(s) of the operation containing high landslide hazard locations;
   (c) The location of all existing and proposed new roads crossing high landslide hazard locations;
   (d) A detailed road design for all new or reconstructed roads crossing high landslide hazard locations;
   (e) The location of habitable structures (Exposure Category A) and paved public roads (Exposure Category B) below the operation and within further review areas;
   (f) Locations where timber harvesting will not occur;
   (g) Locations where partial cutting will occur and the specific silvicultural prescription; and
   (h) Additional information related to the operation as requested by the State Forester.

(2) Operators shall submit a written plan for proposed stream crossing fills constructed across debris torrent-prone streams with substantial or intermediate downslope public safety risk.

(3) Operators shall submit a written plan for proposed waste fill areas within a drainage containing debris torrent-prone streams where there is substantial or intermediate downslope public safety risk.

629-623-0800
Hazard Mitigation and Risk Reduction Projects

(1) Completed landslide mitigation projects can be used to lower the shallow, rapidly moving landslide impact rating as described in OAR 629-623-0250.
   (a) The landowners who own structures and are directly affected by the impact rating must agree to landslide mitigation.
   (b) Structural measures designed and inspected by a geotechnical specialist are the preferred mitigation strategy.

(2) Landowners may remove trees on high landslide hazard locations above habitable structures or paved public roads where the public safety risk from trees blowing over is equal to or higher than the public safety risk from landslides. Supporting evidence for removing these trees must be included in the written plan required by OAR 629-623-0700.

(3) A homeowner may submit evidence in the form of a risk management plan to the State Forester to lower the exposure category (OAR 629-623-0200) from Exposure Category A to Exposure Category B. Risk management plans shall include:
   (a) An evacuation plan that substantially reduces the risk to residents and visitors during periods when shallow, rapidly moving landslides may occur;
   (b) A copy of the property title showing full disclosure of the elevated landslide hazard on that property, including a statement that it is the homeowner's responsibility to inform residents and visitors of the elevated landslide hazard and of the necessity to comply with the evacuation plan;

(c) Assumption by the homeowner of all liability for injury and property damage associated with shallow, rapidly moving landslides initiating within the operation; and
(d) The signatures of the homeowner and of a notary public.

DIVISION 625
FOREST ROADS
ROAD CONSTRUCTION AND MAINTENANCE RULES

629-625-0000
Purpose

(1) Forest roads are essential to forest management and contribute to providing jobs, products, tax base and other social and economic benefits.
(2) OAR 629-625-0000 through 629-625-0650 shall be known as the road construction and maintenance rules.
(3) The purpose of the road construction and maintenance rules is to establish standards for locating, designing, constructing and maintaining efficient and beneficial forest roads; locating and operating rock pits and quarries; and vacating roads, rock pits, and quarries that are no longer needed; in manners that provide the maximum practical protection to maintain forest productivity, water quality, and fish and wildlife habitat.
(4) The road construction and maintenance rules shall apply to all forest practices regions unless otherwise indicated.

629-625-0100
Written Plans for Road Construction

(1) A properly located, designed, and constructed road greatly reduces potential impacts to water quality, forest productivity, fish, and wildlife habitat. To prevent improperly located, designed, or constructed roads, a written plan is required in the sections listed below.
(2) In addition to the requirements of the water protection rules, operators must submit a written plan to the State Forester before:
    (a) Constructing a road where there is an apparent risk of road-generated materials entering waters of the state from direct placement, rolling, falling, blasting, landslide or debris flow;
    (b) Conducting machine activity in Type F or Type D streams, lakes or significant wetlands; or
    (c) Constructing roads in riparian management areas.
(3) Operators shall submit a written plan to the State Forester before constructing roads on high landslide hazard locations. Operators and the State Forester shall share responsibility to identify high landslide hazard locations and to determine if there is public safety exposure from shallow, rapidly moving landslides using methods described in OAR 629-623-0000 through 0300. If there is public safety exposure, then the practices described in OAR 629-623-0400 through 0800 shall also apply.
(4) In addition to the requirements of the water protection rules, operators shall submit a written plan to the State Forester before placing woody debris or boulders in stream channels for stream enhancement.

629-625-0200
Road Location

(1) The purpose of this rule is to ensure roads are located where potential impacts to waters of the state are minimized.
(2) When locating roads, operators shall designate road locations which minimize the risk of materials entering waters of the state and minimize disturbance to channels, lakes, wetlands and floodplains.
(3) Operators shall avoid locating roads on steep slopes, slide areas, high landslide hazard locations, and in wetlands, riparian management areas, channels or floodplains where viable alternatives exist.
(4) Operators shall minimize the number of stream crossings.
(5) To reduce the duplication of road systems and associated ground disturbance, operators shall make use of existing roads where practical. Where roads traverse land in another ownership and will adequately serve the operation, investigate options for using those roads before constructing new roads.

629-625-0300
Road Design

(1) The purpose of OARs 629-625-0300 through 629-625-0340 is to provide design specifications for forest roads that protect water quality.
(2) Operators shall design and construct roads to limit the alteration of natural slopes and drainage patterns to that which will safely accommodate the anticipated use of the road and will also protect waters of the state.

629-625-0310
Road Prism

(1) Operators shall use variable grades and alignments to avoid less suitable terrain so that the road prism is the least disturbing to protected resources, avoids steep sidehill areas, wet areas and potentially unstable areas as safe, effective vehicle use requirements allow.
(2) Operators shall end-haul excess material from steep slopes or high landslide hazard locations where needed to prevent landslides.
(3) Operators shall design roads no wider than necessary to accommodate the anticipated use.
(4) Operators shall design cut and fill slopes to minimize the risk of landslides.
(5) Operators shall stabilize road fills as needed to prevent fill failure and subsequent damage to waters of the state using compaction, buttressing, subsurface drainage, rock facing or other effective means.

629-625-0320
Stream Crossing Structures

(1) Operators shall design and construct stream crossing structures (culverts, bridges and fords) to:
  (a) Minimize excavation of side slopes near the channel.
  (b) Minimize the volume of material in the fill.
    (A) Minimizing fill material is accomplished by restricting the width and height of the fill to the amount needed for safe use of the road by vehicles, and by providing adequate cover over the culvert or other drainage structure.
    (B) Fills over 15 feet deep contain a large volume of material that can be a considerable risk to downstream beneficial uses if the material moves downstream by water. Consequently, for any fill over 15 feet deep operators shall submit to the State Forester a written plan that describes the fill and drainage structure design. Written plans shall include a design that minimizes the likelihood of**:**
      (i) Surface erosion**;**
      (ii) Embankment failure**;** and
      (iii) Downstream movement of fill material.
  (c) Prevent erosion of the fill and channel.
(2) Operators shall design and construct stream crossings (culverts, bridges, and fords) to:
  (a) Pass a peak flow that at least corresponds to the 50-year return interval. When determining the size of culvert needed to pass a peak flow corresponding to the 50-year return interval, operators shall select a size that is adequate to preclude ponding of water higher than the top of the culvert; and
  (b) Allow migration of adult and juvenile fish upstream and downstream during conditions when fish movement in that stream normally occurs.
(3) An exception to the requirements in subsection (2)(a) of this rule is allowed to reduce the height of fills where roads cross wide flood plains. Such an exception shall be allowed if the operator obtains approval of a plan for an alternate practice. The State Forester will approve such a plan when the plan demonstrates:
  (a) The stream crossing site includes a wide flood plain; and
  (b) The stream crossing structure matches the size of the active channel and is covered by the minimum fill necessary to protect the structure;
  (c) Except for culvert cover, soil fill is not placed in the flood plain; and
  (d) The downstream edge of all fill is armored with rock of sufficient size and depth to protect the fill from eroding when a flood flow occurs.

629-625-0330
Drainage

(1) The purpose of this rule is to provide a drainage system on new and reconstructed roads that minimizes alteration of stream channels and the risk of sediment delivery to waters of the state. Drainage structures should be located based on the priority listed below. When there is a conflict between the requirements of sections (2) through (6) of this rule, the lowest numbered section takes precedence, and the later-numbered and conflicting section shall not be implemented.
(2) Operators shall not concentrate road drainage water into headwalls, slide areas, high landslide hazard locations, or steep erodible fillslopes.
(3) Operators shall not divert water from stream channels into roadside ditches.
(4) Operators shall install dips, water bars, or cross drainage culverts above and away from stream crossings so that road drainage water may be filtered before entering waters of the state.
(5) Operators shall provide drainage when roads cross or expose springs, seeps, or wet areas.

(6) Operators shall provide a drainage system using grade reversals, surface sloping, ditches, culverts and/or waterbars as necessary to minimize development of gully erosion of the road prism or slopes below the road.

629-625-0340
Waste Disposal Areas
Operators shall select stable areas for the disposal of end-haul materials, and shall prevent overloading areas which may become unstable from additional material loading.

629-625-0400
Road Construction
OARs 629-625-0400 through 629-625-0440 provide standards for disposal of waste materials, drainage, stream protection, and stabilization to protect water quality during and after road construction.

629-625-0410
Disposal of Waste Materials
Operators shall not place debris, sidecast, waste, and other excess materials associated with road construction in locations where these materials may enter waters of the state during or after construction.

629-625-0420
Drainage
(1) Operators shall clear channels and ditches of slash and other road construction debris which interferes with effective roadway drainage.
(2) Operators shall provide effective cross drainage on all roads, including temporary roads.
(3) Operators shall install drainage structures on flowing streams as soon as feasible.
(4) Operators shall effectively drain uncompleted roads which are subject to erosion.
(5) Operators shall remove berms on the edges of roads or provide effective drainage through these berms, except for those berms intentionally designed to protect road fills.

629-625-0430
Stream Protection
(1) When constructing stream crossings, operators shall minimize disturbance to banks, existing channels, and riparian management areas.
(2) In addition to the requirements of the water protection rules, operators shall keep machine activity in beds of streams to an absolute minimum. Acceptable activities where machines are allowed in streambeds, such as installing culverts, shall be restricted to periods of low water levels. Operators shall submit a written plan to the State Forester for machine activity in Type F or Type D streams, lakes, and significant wetlands.
(3) For all roads constructed or reconstructed operators shall install water crossing structures where needed to maintain the flow of water and passage of adult and juvenile fish between side channels or wetlands and main channels.
(4) Operators shall leave or re-establish areas of vegetation between roads and waters of the state to protect water quality.
(5) Operators shall remove temporary stream crossing structures promptly after use, and shall construct effective sediment barriers at approaches to channels.

629-625-0440
Stabilization
(1) Operators shall stabilize exposed material which is potentially unstable or erodible by use of seeding, mulching, riprapping, leaving light slashing, pull-back, or other effective means.
(2) During wet periods operators shall construct roads in a manner which prevents sediment from entering waters of the state.
(3) Operators shall not incorporate slash, logs, or other large quantities of organic material into road fills.

629-625-0500
Rock Pits and Quarries
(1) The development, use, and abandonment of rock pits or quarries which are located on forestland and used for forest management shall be conducted using practices which maintain stable slopes and protect water quality.
(2) Operators shall not locate quarry sites in channels.

(3) When using rock pits or quarries, operators shall prevent overburden, solid wastes, or petroleum products from entering waters of the state.
(4) Operators shall stabilize banks, headwalls, and other surfaces of quarries and rock pits to prevent surface erosion or landslides.
(5) When a quarry or rock pit is inactive or vacated, operators shall leave it in the conditions described in section (4) of this rule, shall remove from the forest all petroleum-related waste material associated with the operation; and shall dispose of all other debris so that such materials do not enter waters of the state.

629-625-0600
Road Maintenance
(1) The purpose of this rule is to protect water quality by timely maintenance of all active and inactive roads.
(2) Operators shall maintain active and inactive roads in a manner sufficient both to provide a stable surface and to keep the drainage system operating as necessary to protect water quality.
(3) Operators shall inspect and maintain culvert inlets and outlets, drainage structures and ditches before and during the rainy season as necessary to diminish the likelihood of clogging and the possibility of washouts.
(4) Operators shall provide effective road surface drainage, such as water barring, surface crowning, constructing sediment barriers, or outsloping prior to the rainy and runoff seasons.
(5) When applying road oil or other surface stabilizing materials, operators shall plan and conduct the operation in a manner as to prevent entry of these materials into waters of the state.
(6) In the Northwest and Southwest Oregon Regions, operators shall maintain and repair active and inactive roads as needed to minimize damage to waters of the state. This may include maintenance and repair of all portions of the road prism during and after intense winter storms, as safety, weather, soil moisture and other considerations permit.
(7) Operators shall place material removed from ditches in a stable location.
(8) In order to maintain fish passage through water crossing structures, operators shall:
    (a) Maintain conditions at the structures so that passage of adult and juvenile fish is not impaired during periods when fish movement normally occurs. This standard is required only for roads constructed or reconstructed after September 1994, but is encouraged for all other roads; and
    (b) As reasonably practicable, keep structures cleared of woody debris and deposits of sediment that would impair fish passage.
    (c) Other fish passage requirements under the authority of ORS 498.268 and 509.605 that are administered by other state agencies may be applicable to water crossing structures, including those constructed before September 1, 1994.
(9) Where needed to protect water quality, as directed by the State Forester, operators shall place additional cross drainage structures on existing active roads within their ownership prior to hauling to meet the requirements of OAR 629-625-0330.

629-625-0650
Vacating Forest Roads
(1) The purpose of this rule is to ensure that when landowners choose to vacate roads under their control, the roads are left in a condition where road related damage to waters of the state is unlikely.
(2) To vacate a forest road, landowners shall effectively block the road to prevent continued use by vehicular traffic; and shall take all reasonable actions to leave the road in a condition where road-related damage to waters of the state is unlikely.
(3) Reasonable actions to vacate a forest road may include: removal of stream crossing fills; pullback of fills on steep slopes, frequent cross ditching, and/or vegetative stabilization.
(4) Damage which may occur from a vacated road, consistent with Sections (2) and (3) of the rule, will not be subject to remedy under the provisions of the Oregon Forest Practices Act.

629-625-0700
Wet Weather Road Use
(1) The purpose of this rule is to reduce delivery of fine sediment to streams caused by the use of forest roads during wet periods that may adversely affect downstream water quality in Type F or Type D streams.
(2) Operators shall use durable surfacing or other effective measures that resist deep rutting or development of a layer of mud on top of the road surface on road segments that drain directly to streams on active roads that will be used for log hauling during wet periods.
(3) Operators shall cease active road use where the surface is deeply rutted or covered by a layer of mud and where runoff from that road segment is causing a visible increase in the turbidity of Type F or Type D streams as measured above and below the effects of the road.

DIVISION 630
HARVESTING

629-630-0000
Purpose

(1) Harvesting of forest tree species is an integral part of forest management by which wood for human use is obtained and by which forests are established and tended.
(2) Harvesting operations result in a temporary disturbance to the forest environment.
(3) The purpose of the harvesting rules is to establish standards for forest practices that will maintain the productivity of forestland, minimize soil and debris entering waters of the state, and protect wildlife and fish habitat.
(4) OARs 629-630-0000 through 629-630-0800 shall be known as the harvesting rules.
(5) The harvesting rules shall apply to all forest practices regions unless otherwise indicated.

629-630-0100
Skidding And Yarding Practices

(1) For each harvesting operation, operators shall select a logging method and type of equipment appropriate to the given slope, landscape, and soil properties in order to minimize soil deterioration and to protect water quality.
(2) Operators shall avoid ground-based yarding on unstable, wet, or easily compacted soils unless operations can be conducted without damaging soil productivity through soil disturbance, compaction or erosion.
(3) Operators shall locate skid trails where sidecasting is kept to a minimum.
(4) Operators shall locate skid trails on stable areas so as to minimize the risk of material entering waters of the state.
(5) Operators shall avoid excavating skid trails on slumps or slides.
(6) Operators shall limit cable logging to uphill yarding whenever practical. When downhill cable yarding is necessary, operators shall use a layout and system which minimizes soil displacement.

629-630-0150
Ground-Based Harvesting on Steep or Erosion-Prone Slopes

(1) The purpose of this rule is to reduce the potential for erosion from steep or erosion-prone slopes to enter waters of the state.
(2) Slopes over 60 percent are subject to the requirements of Sections (4) through (9) of this rule.
(3) Slopes over 40 percent where soils consist of decomposed granite-type materials, or other highly erodible materials as determined by the State Forester, are considered erosion-prone and subject to the requirements of Sections (4) through (9) of this rule.
(4) Methods that avoid development of compacted or excavated trails are the preferred alternative for operating on steep or erosion-prone slopes. If the operation will result in excavated or compacted skid trails, operators shall apply sections (5) through (9) of this rule.
(5) If skid trails are located on steep or erosion-prone slopes, operators shall locate them at least 100 feet from any stream channels.
(6) Operators shall locate skid trails where water can drain off the skid trail and onto undisturbed soils.
(7) Skid trails shall not be located straight up and down steep or erosion prone slopes for a distance exceeding 100 feet unless effective drainage and sediment filtration can be achieved.
(8) Operators shall install effective cross ditches on all skid roads located on steep or erosion-prone slopes.
(9) Operators shall limit the amount of ground with disturbed soils on steep or erosion-prone slopes as described in Sections (2) and (3) of this rule to no more than ten percent of the steep or erosion-prone slopes within the operation area.

629-630-0200
Landings

(1) Operators shall minimize the size of landings to that necessary for safe operation.
(2) Operators shall locate landings on stable areas so as to minimize the risk of material entering waters of the state.
(3) Operators shall avoid locating landings in riparian management areas. When no feasible alternative landing locations exist, operators shall submit a written plan to the State Forester before locating landings in riparian management areas.

(4) Operators shall not incorporate slash, logs, or other large quantities of organic material into landing fills.
(5) Operators shall deposit excess material from landing construction in stable locations well above the high water level.

629-630-0300
Drainage Systems
(1) The purpose of this rule is to provide and maintain a drainage system for each landing, skid trail, and fire trail that will control and disperse surface runoff to minimize sediment entering waters of the state.
(2) Operators shall construct dips, grade reversals or other effective water diversions in skid trails and fire trails as necessary to minimize soil displacement and to ensure runoff water is filtered before entering waters of the state.
(3) Operators shall drain skid trails by water barring or other effective means immediately following completion of the operation and at all times during the operation when runoff is likely.
(4) Operators shall establish effective drainage on landings during and after use.

629-630-0400
Treatment of Waste Materials
(1) Operators shall leave or place all debris, slash, sidecast and other waste material associated with harvesting in such a manner to prevent their entry into waters of the state.
(2) Where sidecast material or exposed soils are potentially unstable or erodible, the operator shall stabilize it by pullback, spreading out, seeding or other effective means.
(3) Operators shall remove from the forest all petroleum product related waste material associated with the operation including, but not limited to, crankcase oil, filters, grease and oil containers.
(4) Operators shall dispose of all other debris such as machine parts, old wire rope, and used tractor tracks so that such materials do not enter waters of the state.

629-630-0500
Harvesting on High Landslide Hazard Locations
(1) The purpose of this rule is to prevent timber harvesting-related serious ground disturbance and drainage alterations on all high landslide hazard locations, and to reference additional requirements when there is public safety exposure below the high landslide hazard location.
(2) Operators and the State Forester shall share responsibility to identify high landslide hazard locations and to determine if there is public safety exposure from shallow, rapidly moving landslides using methods described in OAR 629-623-0100 through 0300. If there is public safety exposure, then the practices described in OAR 629-623-0400 through 0800 shall also apply.
(3) Operators shall not construct skid roads on high landslide hazard locations.
(4) Operators shall not operate ground-based equipment on high landslide hazard locations.
(5) Operators shall prevent deep or extensive ground disturbance on high landslide hazard locations during log felling and yarding operations.
(6) Operators concerned about the application of these standards to a specific operation may consult with the State Forester to obtain an evaluation of their harvesting plan and its likelihood of compliance with the standards.

629-630-0600
Felling; Removal of Slash
(1) Operators shall fell, buck, and limb trees in ways that minimize disturbance to channels, soils and retained vegetation in riparian management areas, streams, lakes and all wetlands greater than one-quarter acre, and that minimize slash accumulations in channels, significant wetlands and lakes.
(2) During felling operations operators shall:
  (a) Whenever possible, fell all conifer trees away from riparian management areas, streams, lakes and significant wetlands, except for trees felled for stream improvement projects.
  (b) On steep slopes, use felling practices such as jacking, line pulling, high stumps, whole tree yarding, or stage-cutting as necessary and feasible to prevent damage to vegetation retained in riparian management areas, soils, streams, lakes and significant wetlands.
  (c) When hardwoods must be felled into or across streams, lakes or significant wetlands, operators shall:
    (A) Buck and yard the trees to minimize damage to beds, banks and retained vegetation.
    (B) When it can be done consistently with protecting beds and banks, yard hardwood trees or logs away from the water before limbing.

(3) Operators shall minimize the effects of slash that may enter waters of the state during felling, bucking, limbing or yarding by:
  (a) Removing slash from Type F and Type D streams, lakes and significant wetlands as an ongoing process (removal within 24 hours of the material entering the stream) during the harvest operation.
  (b) Not allowing slash to accumulate in Type N streams, lakes or wetlands in quantities that threaten water quality or increase the potential for mass debris movement.
  (c) Placing any slash that is removed from streams, lakes, or wetlands above high water levels where it will not enter waters of the state.

629-630-0700
Yarding; Cable Equipment Near Waters of the State

(1) Operators shall maintain the purposes and functions of vegetation required to be retained in riparian management areas and minimize disturbance to beds and banks of streams, lakes, all wetlands larger than one-quarter acre, and retained vegetation during cable yarding operations.
(2) Operators shall minimize the yarding of logs across streams, lakes, significant wetlands, and other wetlands greater than one-quarter acre whenever harvesting can be accomplished using existing roads or other practical alternatives.
(3) Operators may use yarding corridors through retained streamside trees as long as the numbers and widths of yarding corridors are minimized. Operators shall submit a written plan to the State Forester when yarding across streams classified as Type F or Type D, any large or medium Type N streams, lakes, or significant wetlands.
(4) When yarding across Type F or Type D streams, any large or medium Type N streams, lakes, or significant wetlands is necessary, it shall be done by swinging the yarded material free of the ground in the aquatic areas and riparian areas.
(5) Cable yarding across streams classified as small Type N or other wetlands greater than one-quarter acre shall be done in ways that minimize disturbances to the stream channel or wetland and minimize disturbances of retained streamside vegetation.

629-630-0800
Yarding; Ground-based Equipment Near Waters of the State

(1) Operators shall maintain the purposes and functions of vegetation required to be retained in riparian management areas, and minimize disturbances to beds and banks of streams, lakes, all wetlands larger than one-quarter acre, and retained vegetation during ground-based yarding operations.
(2) Operators shall not operate ground-based equipment within any stream channel except as allowed in the rules for temporary stream crossings.
(3) Operators shall minimize the number of stream crossings.
(4) For crossing streams that have water during the periods of the operations, operators shall:
  (a) Construct temporary stream crossing structures such as log crossings, culvert installations, or fords that are adequate to pass stream flows that are likely to occur during the periods of use. Structures shall be designed to withstand erosion by the streams and minimize sedimentation.
  (b) Choose locations for temporary stream crossing structures which minimize cuts and fills or other disturbances to the stream banks.
  (c) Minimize the volume of material in any fills constructed at a stream crossing. Fills over eight feet deep contain such a large volume of material that they can be a considerable risk to downstream beneficial uses should the material move downstream by water. For any fill for a temporary crossing that is over eight feet deep, operators shall submit to the State Forester a written plan that includes a description of how the fills would be constructed, passage of water, and the length of time the fills would be in the stream.
  (d) Design temporary structures so that fish movement is not impaired on Type F streams.
  (e) Remove all temporary stream crossing structures immediately after completion of operations or prior to seasonal runoff that exceeds the water carrying capacity of the structures, whichever comes first. When removing temporary structures, operators shall place fill material where it will not enter waters of the state.
(5) For stream crossings where the channels do not contain water during the periods of the operations, operators are not required to construct temporary crossings as long as disturbances are no greater than what would occur if structures were constructed. Soil that enters the channels during the yarding operations must be removed after completion of the operation or prior to stream flow, whichever comes first. When removing such materials from the channels, operators shall place the materials in locations where they will not enter waters of the state.

(6) Operators shall construct effective sediment barriers such as water bars, dips, or other water diversion on stream crossing approaches after completion of operations, or prior to rainy season runoff, whichever comes first.

(7) Machine activity near (generally within 100 feet) streams, lakes, and other wetlands greater than one-quarter acre shall be conducted to minimize the risk of sediment entering waters of the state and preventing changes to stream channels. Operators shall only locate, construct, and maintain skid trails in riparian management areas consistent with the harvesting rules.

(8) Operators shall minimize the amount of exposed soils due to skid trails within riparian management area. Except at stream crossings, operators shall not locate skid trails within 35 feet of Type F or Type D streams. Operators shall provide adequate distances between all skid trails and waters of the state to filter sediment from runoff water.

(9) Operators shall locate and construct skid trails so that when high stream flow occurs water from the stream will not flow onto the skid trail.

DIVISION 635
WATER PROTECTION RULES: PURPOSE, GOALS, CLASSIFICATION AND RIPARIAN MANAGEMENT AREAS

629-635-0000
Purpose, Goals, Classification and Riparian Management Goals

The definitions in OAR 629-600-0100 apply to the Water Protection Rules, unless otherwise defined in the specific rules.

629-635-0100
Purpose and Goals

(1) The leading use on private forestland is the growing and harvesting of trees, consistent with sound management of soil, air, water, fish and wildlife resources. There is a unique concentration of public resource values in and near waters of the state because these areas are critical for the overall maintenance of fish and wildlife and for maintaining water quality. Consequently, the policies of the Forest Practices Act, including encouraging economically efficient forest practices, are best achieved by focusing protection measures in riparian management areas, where the emphasis is on providing water quality and fish and wildlife habitat.

(2) OAR 629-635-0000 through 629-660-0060 are known as the "water protection rules."

(3) The purpose of the water protection rules is to protect, maintain and, where appropriate, improve the functions and values of streams, lakes, wetlands, and riparian management areas. Active management is encouraged where appropriate to meet this purpose. These functions and values include water quality, hydrologic functions, the growing and harvesting of trees, and fish and wildlife resources.

(4) Plans for alternate practices may be used to alter vegetation retention requirements in the water protection rules based on local site conditions. The plans may include but are not limited to site specific vegetation retention prescriptions as described in OAR 629-640-0400 (for streams) and 629-645-0020 (for wetlands). Operators are encouraged to:

  (a) Evaluate site specific conditions in waters and riparian management areas; and

  (b) Develop plans for alternate practices that will:

    (A) Maintain, enhance, or restore riparian functions in streams, wetlands, lakes; or

    (B) Meet the purposes and goals of the water protection rules while better meeting operational or other objectives.

(5) General vegetation retention prescriptions for streams, lakes and wetlands apply where current vegetation conditions within the riparian management area have achieved or are likely to achieve the desired future condition in a "timely manner." Landowners are encouraged to manage stands within riparian management areas in order to grow trees in excess of what must be retained so that the opportunity is available to harvest the excess.

(6) Alternative vegetation retention prescriptions for streams allow incentives for operators to actively manage vegetation where existing vegetation conditions are not likely to achieve the desired future condition in a "timely manner."

(7) The overall goal of the water protection rules is to provide resource protection during operations adjacent to and within streams, lakes, wetlands and riparian management areas so that, while continuing to grow and harvest trees, the protection goals for fish, wildlife, and water quality are met.

  (a) The protection goal for water quality (as prescribed in ORS 527.765) is to ensure through the described forest practices that, to the maximum extent practicable, non-point source discharges of

pollutants resulting from forest operations do not impair the achievement and maintenance of the water quality standards.

(b) The protection goal for fish is to establish and retain vegetation consistent with the vegetation retention objectives described in OAR 629-640-0000 (streams), 629-645-0000 (significant wetlands), and 629-650-0000 (lakes) that will maintain water quality and provide aquatic habitat components and functions such as shade, large wood, and nutrients.

(c) The protection goal for wildlife is to establish and retain vegetation consistent with the vegetation retention objectives described in OAR 629-640-0000 (streams), 629-645-0000 (significant wetlands), and 629-650-0000 (lakes) that will maintain water quality and habitat components such as live trees of various species and size classes, shade, snags, downed wood, and food within riparian management areas. For wildlife species not necessarily reliant upon riparian areas, habitat in riparian management areas is also emphasized in order to capitalize on the multiple benefits of vegetation retained along waters for a variety of purposes.

629-635-0110
Monitoring

(1) Monitoring and evaluation of the water protection rules are necessary because of the innovative approach taken in the rules. Monitoring and evaluation are needed to increase the level of confidence of all concerned that the rules will maintain and improve the condition of the riparian vegetation and waters of the state over time.

(2) In cooperation with state and federal agencies, landowners and other interested parties, the department shall conduct monitoring on a continuing basis to evaluate the effectiveness of the water protection rules. The monitoring shall determine the effectiveness of the rules to meet the goals of the Forest Practices Act and the purposes stated in the rules, as well as their workability and operability.

(3) It is the Board of Forestry's intent that the department and its cooperators place a high priority on assessing the monitoring needs and securing adequate resources to conduct the necessary monitoring. The department shall work with its cooperators and the Legislature to secure the necessary resources, funding and coordination for effective monitoring.

(4) The department shall report to the Board of Forestry annually about current monitoring efforts and, in a timely manner, present findings and recommendations for changes to practices. The Board of Forestry shall consider the findings and recommendations and take appropriate action.

629-635-0120
Watershed Specific Practices for Water Quality Limited Watersheds and Threatened or Endangered Aquatic Species

(1) The objective of this rule is to describe a process for determining whether additional watershed specific protection rules are needed for watersheds that have been designated as water quality limited or for watersheds containing threatened or endangered aquatic species.

(2) The Board of Forestry shall appoint an interdisciplinary task force, including representatives of forest landowners within the watershed and appropriate state agencies, to evaluate a watershed, if the board has determined based on evidence presented to it that forest practices in a watershed are measurably limiting to water quality achievement or species maintenance, and either:

(a) The watershed is designated by the Environmental Quality Commission as water quality limited; or

(b) The watershed contains threatened or endangered aquatic species identified on lists that are adopted by rule by the State Fish and Wildlife Commission, or are federally listed under the Endangered Species Act of 1973 as amended.

(3) The board shall direct the task force to analyze conditions within the watershed and recommend watershed-specific practices to ensure water quality achievement or species maintenance.

(4) The Board shall consider the report of the task force and take appropriate action.

(5) Nothing in this rule shall be interpreted to limit the Board's ability to study and address concerns for other species on a watershed basis.

629-635-0130
Written Plans for Streams, Lakes, Wetlands and Riparian Management Areas

(1) Operators shall submit to the State Forester a written plan before conducting any operation requiring notification under OAR 629-605-0140(1) within:

(a) 100 feet of fish use or domestic water use streams (classified as Type F or Type D under OAR 629-635-0200), except as described in section (3) of this rule;

(b) 300 feet of significant wetlands;
(c) 100 feet of large lakes.

(2) In addition to the written plan requirements in OAR 629-605-0170, operators shall specifically describe in the written plan for operations within 100 feet of domestic water use portions of Type F or D streams the practices and methods that will be used to prevent sediment from entering waters of the state.

(3) The State Forester may waive, in writing, the requirement for a written plan within 100 feet of a Type F or Type D stream, if the State Forester determines the intended forest practice will not directly affect the physical components of the riparian management area. "Physical components" means materials such as, but not limited to, vegetation, snags, rocks, and soil. "Directly affect" means that physical components will be moved, disturbed, or otherwise altered by the operation activity, even if only temporarily.

(4) Written plans required under section (1)(a) and (1)(b) of this rule are subject to the process required for a written plan pursuant to ORS 527.670(8) through (12), and appeal pursuant to ORS 527.700.

629-635-0200
Water Classification

(1) The purpose of this water classification system is to match the physical characteristics and beneficial uses of a water body to a set of appropriate protection measures.

(2) For the purposes of applying appropriate protection measures, waters of the state shall be classified as either streams, wetlands, or lakes.

(3) Streams shall be classified further according to their beneficial uses and size.

(4) Streams shall be classified into one of the following three beneficial use categories:
(a) Streams that have fish use, including fish use streams that have domestic water use, shall be classified as Type F.
(b) Streams that have domestic water use, but not fish use, shall be classified as Type D.
(c) All other streams shall be classified as Type N.

(5) For purposes of classification, a stream is considered to have domestic water use only if a water use permit has been issued by the Oregon Water Resources Department.

(6) A channel is considered to have domestic water use upstream of an intake for the distances indicated below:
(a) For domestic water use that is a community water system (as defined under OAR 333-061-0020), Type D classification shall initially apply to the length of stream that was designated as Class I under the classification system that was in effect on April 22, 1994, which is that shown on district water classification maps at the time of adoption of this rule.
(b) For domestic water use that is not a community water system, Type D classification shall be initially applied for the shortest of the following distances:
(A) The distance upstream of the intake to the farthest upstream point of summer surface flow;
(B) Half the distance from the intake to the drainage boundary; or
(C) 3000 feet upstream of the intake.
(c) Type D classification shall apply to tributaries off the main channel as long as the conditions of subsections (6)(a) and (b) of this rule apply.

(7) (a) A representative of a community water system or other domestic use water permit holder may request that the department designate additional lengths of channels upstream of a domestic water intake or reservoir as Type D. The representative or permit holder must present evidence that the additional stream protection is needed. The department will decide whether or not to extend Type D classification to these other channels based on evidence presented by the requesting party showing that protection measures associated with Type N classification would be insufficient to prevent adverse detrimental temperature increases, turbidity increases, or other adverse water quality changes at the domestic water use intake or reservoir.
(b) The process and criteria described in subsection (7)(a), and the criteria under section (6) of this rule will be used to evaluate the extent of Type D classification for new community water systems.
(c) The department will decide whether or not to extend the length of Type D classification within 30 days of the presentation of evidence.

(8) The domestic water use classification may be waived by the department at the request of a landowner who is the sole domestic water use permit holder for an intake and who owns all the land along upstream channels that would be affected by the classification related to that intake. This waiver shall not affect the classification related to downstream domestic water use intakes.

(9) A stream or lake will be considered to have fish use if inhabited at any time of the year by anadromous or game fish species or fish that are listed as threatened or endangered species under the federal or state endangered species acts.

(10) The fish use classification does not apply to waters where fish were introduced through a fish stocking permit that includes documentation that the stream had no fish prior to stocking.

(11) Through September 30, 2007, the department will use section (12) of this rule to determine if a water body has fish use. On and after October 1, 2007, the department will use section (13) of this rule to determine if a water body has fish use, and section (12) will be inoperative.

(12) The department, with assistance from the Oregon Department of Fish and Wildlife, will conduct a comprehensive field survey to identify fish use on non-federal forestland in Oregon. However, this survey will take a number of years to complete. In the interim, the following procedures apply to determining which unsurveyed waters are designated Type F:

(a) The department will assume that waters have fish use if they were Class I under the previous classification system. Waters that were Class I solely because of domestic water use are excluded.

(b) If waters within the boundaries of a proposed operation were not Class I (under the previous classification system) and fish use is unknown, then:

(A) The department will conduct a field survey for fish after a notification of operation is received; or

(B) The department will approximate the upstream extent of fish use in a watershed by considering the connection of the water with downstream waters where fish use is known. Fish use will be assumed to occur upstream of the known fish use until the first natural barrier to fish use is encountered.

(c) Where fish use is unknown, an operator may request that the department conduct a field survey for fish use for reaches of a stream that will be included within an operation that is scheduled to start at least 12 months following the request. The operator shall limit such requests to operations that are part of a landowner's planned harvest schedule and will be conducted during the following year. The department, with assistance from the Oregon Department of Fish and Wildlife when needed, shall attempt to complete such surveys within 12 months following the request. If the survey cannot be conducted in the time indicated, the stream will be considered to have no fish use. However, if the operation has not commenced within six months of the time the operation was scheduled to begin, the stream will again be considered to have unknown fish use.

(d) The department may use other reliable fish survey information when determining whether or not a stream has fish use. This information could include surveys done by landowners, federal or state agencies, universities, or other persons or entities. The department will determine whether such information is reliable. **[SECTION (12) IS INOPERATIVE NOW PER SECTION (11)].**

(13) For the purposes of stream classification, the department will use the procedures in this section to determine if a stream has fish use.

(a) For stream segments where field surveys for fish use show that fish use ends at a natural barrier to fish use or other point that is not an artificial obstruction, the department will designate fish use based on the survey.

(b) For stream segments where field surveys for fish use show that fish use ends at an artificial obstruction to fish passage, the department will designate fish use as continuing upstream from the artificial obstruction to the first natural barrier to fish use.

(c) For stream segments where field surveys for fish use have not been conducted, the department will designate fish use as continuing upstream from a point of known fish use and ending at the first natural barrier to fish use, without respect to any artificial obstructions to fish passage. An operator may request that the department conduct a fish presence survey to verify this designation of fish use in stream segments associated with an operation scheduled to start between 12 and 24 months after the request.

(A) The department will make a good faith effort to conduct the requested surveys and will prioritize its survey work taking into account landowners without the financial or technical resources to conduct the surveys themselves.

(B) As an option, the landowner may conduct the fish presence survey.

(C) If neither the landowner nor the department is able to conduct the survey before the operation begins, the Type F classification applies up to the first natural barrier to fish use.

(d) To be used for stream classification under this section, field surveys for fish use must be conducted according to the protocol in “Surveying Forest Streams for Fish Use,” published by the Oregon Department of Forestry and the Oregon Department of Fish and Wildlife.

(e) The department may use other information to determine the upstream extent of fish use including but not limited to field surveys for fish use by landowners or other entities, and local knowledge of stream conditions, natural barriers to fish use, or fish presence.

(f) An operator may request an exception to Type F stream classification above an artificial obstruction to fish passage that is documented by field survey as the end of fish use. The department will grant the request upon determining that the artificial obstruction is likely to continue to prevent fish passage for a period of time exceeding that needed to regrow trees to a size that would provide key pieces of large wood.

(g) When an exception to Type F stream classification is made above an artificial obstruction, the department will classify the stream as either Type D or Type N as appropriate and operators must apply the corresponding vegetation retention requirements.

(h) For the purposes of ORS 215.730(1)(b)(C), Type N streams are equivalent to "Class II streams."

(14) For each of the three beneficial use categories (Type F, Type D, and Type N), streams shall be categorized further according to three size categories: large, medium, and small. The size categories are based on average annual flow.

(a) Small streams have an average annual flow of two cubic feet per second or less.

(b) Medium streams have an average annual flow greater than 2 and less than 10 cubic feet per second.

(c) Large streams have an average annual flow of 10 cubic feet per second or greater.

(15) The assignment of size categories to streams on forestland will be done by the department as follows:

(a) The department will index average annual flow to the upstream drainage area and average annual precipitation. The methodology is described in Technical Note FP1 dated April 21, 1994.

(b) Actual measurements of average annual flow may substitute for the calculated flows described in the technical note.

(c) Any stream with a drainage area less than 200 acres shall be assigned to the small stream category regardless of the flow index calculated in subsection (15)(a).

(16) Wetlands shall be classified further as indicated below:

(a) The following types of wetlands are classified as "significant wetlands":

(A) Wetlands that are larger than 8 acres;

(B) Estuaries;

(C) Bogs; and

(D) Important springs in eastern Oregon.

(b) Stream-associated wetlands that are less than 8 acres are classified according to the stream with which they are connected.

(c) All other wetlands, including seeps and springs are classified according to their size as either "other wetlands greater than one-quarter acre" or "other wetlands less than one-quarter acre."

(17) Lakes shall be classified further as indicated below:

(a) Lakes greater than 8 acres are classified as "large lakes."

(b) All other lakes are classified as "other lakes."

629-635-0210

Designation of Waters; Notice to Landowners; Reconsideration

(1) The State Forester shall maintain a map showing the classification of waters of the state in each Department of Forestry unit office where notice of operations required by ORS 527.670(6) may be submitted. The map shall show streams, lakes and significant wetlands of known classification within the geographic area of responsibility for that unit office. For streams, the maps shall indicate the size class and, when known, extent of fish use and domestic water use classification.

(2) Once a water of the state has been classified according to OAR 629-635-0200, the State Forester shall not change the classification without written notice to the landowners immediately adjoining the portion(s) of water to be reclassified. Notice to landowners shall include the reason for the change of classification and applicable rules.

(3) Any landowner whose land immediately adjoins the water to be reclassified, any landowner who has received a water right or was granted an easement affecting the water classification, or any state resource agency may request reconsideration of classifications of waters of the state by the department. Such a request shall be in writing and shall identify on a map the portion of the stream or water of the state which should be reconsidered. The request shall present evidence that the current classification is not consistent with OAR 629-635-0200 "Water Classification."

(4) The department shall have up to 14 days to provide a final decision on a request for reconsideration of water classification. Until such a decision is provided, operators shall conduct any operation based upon the most protective potential water classification.

629-635-0220
Geographic Regions
For the purposes of assigning protection measures to waters of the state, seven geographic regions have been delineated for forested areas within the state. The boundaries and names of the geographic regions are displayed in Figure 1 *[on page 48]*. Precise boundaries are found on maps at department field offices. Geographic regions are not "forest regions" established pursuant to ORS 527.640.

629-635-0300
Riparian Management Areas and Water Quality Protection Measures
(1) Riparian management area widths are designated to provide adequate areas along streams, lakes, and significant wetlands to retain the physical components and maintain the functions necessary to accomplish the purposes and to meet the protection objectives and goals for water quality, fish, and wildlife set forth in OAR 629-635-0100.
(2) Specified protection measures, such as for site preparation, yarding and stream channel changes, are required for operations near waters of the state and within riparian management areas to maintain water quality.
(3) (a) Operators shall apply the specified water quality protection measures and protect riparian management areas along each side of streams and around other waters of the state as described in OAR 629-635-0310 through 629-660-0060.
(b) Operators may vary the width of the riparian management area above or below the average specified width depending upon topography, operational requirements, vegetation, fish and wildlife resources and water quality protection as long as vegetation retention and protection standards are met. However, the average width of the entire riparian management area within an operation must equal or exceed the required width.

629-635-0310
Riparian Management Area Widths for Streams
(1) (a) The riparian management area widths for streams are designated for each stream type as shown in Table 1 *[on page 49]*.
(b) Except as indicated in section (2), operators shall measure the riparian management area width as a slope distance from the high water level of main channels.
(c) Notwithstanding the distances designated in subsection (1)(a), where wetlands or side channels extend beyond the designated riparian management area widths, operators shall expand the riparian management area as necessary to entirely include any stream-associated wetland or side channel plus at least 25 additional feet. This provision does not apply to small Type N streams.
(2) In situations where the slope immediately adjacent to the stream channel is steep exposed soil, a rock bluff or talus slope, operators shall measure the riparian management area as a horizontal distance until the top of the exposed bank, bluff or talus slope is reached. From that point, the remaining portion of the riparian management area shall be measured as a slope distance.

DIVISION 640
WATER PROTECTION RULES: VEGETATION RETENTION ALONG STREAMS

629-640-0000
Vegetation Retention Goals for Streams; Desired Future Conditions
(1) The purpose of this rule is to describe how the vegetation retention measures for streams were determined, their purpose and how the measures are implemented. The vegetation retention requirements for streams described in OAR 629-640-0100 through 629-640-0400 are designed to produce desired future conditions for the wide range of stand types, channel conditions, and disturbance regimes that exist throughout forestlands in Oregon.
(2) The desired future condition for streamside areas along fish use streams is to grow and retain vegetation so that, over time, average conditions across the landscape become similar to those of mature streamside stands. Oregon has a tremendous diversity of forest tree species growing along waters of the state and the age of mature streamside stands varies by species. Mature streamside stands are often dominated by conifer trees. For many conifer stands, mature stands occur between 80 and 200 years of stand age. Hardwood stands and some conifer stands may become mature at an earlier age. Mature stands provide ample shade over the channel, an abundance of large woody debris in the channel, channel-influencing root masses along the edge of the high water level, snags, and regular inputs of nutrients through litter fall.

(3) The rule standards for desired future conditions for fish use streams were developed by estimating the conifer basal area for average unmanaged mature streamside stands (at age 120) for each geographic region. This was done by using normal conifer yield tables for the average upland stand in the geographic region, and then adjusting the basal area for the effects of riparian influences on stocking, growth and mortality or by using available streamside stand data for mature stands.

(4) The desired future condition for streamside areas that do not have fish use is to have sufficient streamside vegetation to support the functions and processes that are important to downstream fish use waters and domestic water use and to supplement wildlife habitat across the landscape. Such functions and processes include: maintenance of cool water temperature and other water quality parameters; influences on sediment production and bank stability; additions of nutrients and large conifer organic debris; and provision of snags, cover, and trees for wildlife.

(5) The rule standards for desired future conditions for streams that do not have fish use were developed in a manner similar to fish use streams. In calculating the rule standards, other factors used in developing the desired future condition for large streams without fish use and all medium and small streams included the effects of trees regenerated in the riparian management area during the next rotation and desired levels of instream large woody debris.

(6) For streamside areas where the native tree community would be conifer dominated stands, mature streamside conditions are achieved by retaining a sufficient amount of conifers next to large and medium sized fish use streams at the time of harvest, so that halfway through the next rotation or period between harvest entries, the conifer basal area and density is similar to mature unmanaged conifer stands. In calculating the rule standards, a rotation age of 50 years was assumed for even-aged management and a period between entries of 25 years was assumed for uneven-aged management. The long-term maintenance of streamside conifer stands is likely to require incentives to landowners to manage streamside areas so that conifer reforestation occurs to replace older conifers over time.

(7) Conifer basal area and density targets to produce mature stand conditions over time are outlined in the general vegetation retention prescriptions. In order to ensure compliance with state water quality standards, these rules include requirements to retain all trees within 20 feet and understory vegetation within 10 feet of the high water level of specified channels to provide shade.

(8) For streamside areas where the native tree community would be hardwood dominated stands, mature streamside conditions are achieved by retaining sufficient hardwood trees. As early successional species, the long-term maintenance of hardwood streamside stands will in some cases require managed harvest using site specific vegetation retention prescriptions so that reforestation occurs to replace older trees. In order to ensure compliance with state water quality standards, these rules include requirements in the general vegetation retention prescription to retain all trees within 20 feet and understory vegetation within 10 feet of the high water level of specified channels to provide shade.

(9) In many cases the desired future condition for streams can be achieved by applying the general vegetation retention prescriptions, as described in OAR 629-640-0100 and 629-640-0200. In other cases, the existing streamside vegetation may be incapable of developing into the future desired conditions in a "timely manner." In this case, the operator can apply an alternative vegetation retention prescription described in OAR 629-640-0300 or develop a site specific vegetation retention prescription described in OAR 629-640-0400. For the purposes of the water protection rules, "in a timely manner" means that the trees within the riparian management area will meet or exceed the applicable basal area target or vegetation retention goal during the period of the next harvest entry that would be normal for the site. This will be 50 years for many sites.

(10) Where the native tree community would be conifer dominant stands, but due to historical events the stand has become dominated by hardwoods, in particular, red alder, disturbance is allowed to produce conditions suitable for the re-establishment of conifer. In this and other situations where the existing streamside vegetation is incapable of developing characteristics of a mature streamside stand in a "timely manner," the desired action is to manipulate the streamside area and woody debris levels at the time of harvest (through an alternative vegetation retention prescription or site specific vegetation retention prescription) to attain such characteristics more quickly.

629-640-0100
General Vegetation Retention Prescription for Type F Streams

(1) (a) Operators shall apply the vegetation retention requirements described in this rule to the riparian management areas of Type F streams.

(b) Segments of Type F streams that are different sizes within an operation shall not be combined or averaged together when applying the vegetation retention requirements.

(c) Trees left to meet the vegetation retention requirements for one stream type shall not count towards the requirements of another stream type.

(2) Operators shall retain:
  (a) All understory vegetation within 10 feet of the high water level;
  (b) All trees within 20 feet of the high water level; and
  (c) All trees leaning over the channel.

(3) Operators shall retain within riparian management areas and streams all downed wood and snags that are not safety or fire hazards. Snags felled for safety or fire hazard reasons shall be retained where they are felled unless used for stream improvement projects.

(4) Notwithstanding the requirements of section (2) of this rule, vegetation, snags and trees within 20 feet of the high water level of the stream may be felled, moved or harvested as allowed in other rules for road construction, yarding corridors, temporary stream crossings, or for stream improvement.

(5) Operators shall retain at least 40 live conifer trees per 1000 feet along large streams and 30 live conifer trees per 1000 feet along medium streams. This includes trees left to meet the requirements described in section (2) of this rule. Conifers must be at least 11 inches DBH for large streams and 8 inches DBH for medium streams to count toward these requirements.

(6) Operators shall retain trees or snags six inches or greater DBH to meet the following requirements (this includes trees left to meet the requirements of sections (2) and (5) of this rule):
  (a) If the live conifer tree basal area in the riparian management area is greater than the standard target shown in Table 2 *[on page 49]* where the harvest unit will be a harvest type 2 or type 3 unit (as defined by ORS 527.620), or Table 3 *[on page 50]* where the harvest unit will be a harvest type 1, partial harvest, or thinning, operators shall retain live conifer trees of sufficient basal area to meet the standard target.
  (b) If the live conifer tree basal area in the riparian management area is less than the standard target (as shown in Table 2 where the harvest unit will be a harvest type 2 or type 3 unit, or Table 3 where the harvest unit will be a harvest type 1, partial harvest, or thinning) but greater than one-half the standard target shown in Table 2, operators shall retain all live conifer trees six inches DBH or larger in the riparian management area (up to a maximum of 150 conifers per 1000 feet along large streams, 100 conifers per 1000 feet along medium streams, and 70 conifers per 1000 feet along small streams).
  (c) If live conifer tree basal area in the riparian management area is less than one-half the standard target shown in Table 2:
    (A) Operators may apply an alternative vegetation retention prescription as described in OAR 629-640-0300 where applicable, or develop a site specific vegetation retention prescription as described in OAR 629-640-0400; or
    (B) Operators shall retain all conifers in the riparian management area and all hardwoods within 50 feet of the high water level for large streams, within 30 feet of the high water level for medium streams, and within 20 feet of the high water level for small streams.

(7) In the Coast Range, South Coast, Interior, Western Cascade, and Siskiyou geographic regions, hardwood trees and snags six inches or greater DBH may count toward the basal area requirements in subsection (6)(a) of this rule as follows:
  (a) All cottonwood and Oregon ash trees within riparian management areas that are beyond 20 feet of the high water level of large Type F streams, may count toward the basal area requirements.
  (b) Up to 10 percent of the basal area requirement may be comprised of sound conifer snags at least 30 feet tall and other large live hardwood trees, except red alder, growing in the riparian management area more than 20 feet from the high water level and at least 24 inches DBH.

(8) In the Eastern Cascade and Blue Mountain geographic regions, hardwood trees, dying or recently dead or dying trees and snags six inches or greater DBH may count toward the basal area requirements in subsection (6)(a) of this rule as follows:
  (a) The basal area of retained live hardwood trees may count toward meeting the basal area requirements.
  (b) Up to 10 percent of the basal area retained to meet the basal area requirement may be comprised of sound conifer snags at least 30 feet tall.
  (c) For small Type F streams, the maximum required live conifer tree basal area that must be retained to meet the standard target is 40 square feet. The remaining basal area required may come from retained snags, dying or recently dead trees, or hardwoods if available within the riparian management area.

(9) Notwithstanding the requirements indicated in this rule, operators may conduct precommercial thinning and other release activities to maintain the growth and survival of conifer reforestation within riparian management areas. Such activities shall contribute to and be consistent with enhancing the stand's ability to meet the desired future condition.

(10) When determining the basal area of trees, the operator may use the average basal area for a tree's diameter class, as shown in Table 4 *[on page 50],* or determine an actual basal area for each tree. The method for determining basal area must be consistent throughout the riparian management area.

(11) (a) For large and medium Type F streams, live conifer trees retained in excess of the active management target and hardwoods retained beyond 20 feet of the high water level of the stream that otherwise meet the requirements for leave trees may be counted toward requirements for leave trees within harvest type 2 or harvest type 3 units (pursuant to Section 9, Chapter 9, Oregon Laws 1996 Special Session). [*Note: That Oregon Law has been codified into ORS 527.676.]*

(b) For small Type F streams, all retained live trees that otherwise meet the requirements for leave trees may count toward requirements for leave trees within harvest type 2 or harvest type 3 units (pursuant to Section 9, Chapter 9, Oregon Laws 1996 Special Session). [*Note: That section of Oregon Law has been codified into ORS 527.676.]*

(12) Trees on islands with ground higher than the high water level may be harvested as follows:

(a) If the harvest unit is solely on an island, operators shall apply all the vegetation retention requirements for a large Type F stream described in this rule to a riparian management area along the high water level of the channels forming the island.

(b) Otherwise, operators shall retain all trees on islands within 20 feet of the high water level of the channels forming the island and all trees leaning over the channels. In this case, conifer trees retained on islands may count toward the basal area requirement for adjacent riparian management areas so long as the trees are at least 11 inches DBH for large streams and eight inches DBH for medium streams.

(13) When applying the vegetation retention requirements described in this rule to the riparian management areas, if an operator cannot achieve the required retention without leaving live trees on the upland side of a road that may be within the riparian management area and those trees pose a safety hazard to the road and will provide limited functional benefit to the stream, the State Forester may approve a plan for an alternate practice to modify the retention requirements on a site specific basis.

629-640-0105
Placing Large Wood Key Pieces in Type F Streams to Improve Fish Habitat

(1) Placement of large wood key pieces in a Type F stream to improve fish habitat that is conducted in conjunction with a forest operation is subject to the regulations in the Oregon Forest Practices Act and the forest practice rules.

(2) The goal of placing large wood key pieces is to deliver wood that is relatively stable, but can reconfigure to a limited degree and work with the natural stream flow to restore and maintain habitat for aquatic species. When placing large wood key pieces in conjunction with an operation, an operator shall design and implement the project to:

(a) Rely on the size of wood for stability and exclude the use of any type of artificial anchoring;

(b) Emulate large wood delivery configurations that occur from natural riparian processes over time; and

(c) Restore and maintain natural aquatic habitat over time rather than rely on constructed habitat structures.

(d) Meet the standards established in *A Guide to Placing Large Wood in Streams*, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, May 1995.

629-640-0110
Live Tree Retention Credit for Improvement of Type F Streams

(1) Many Type F streams currently need improvement of fish habitat because they lack adequate amounts of large woody debris in channels, or they lack other important habitat elements.

(2) This rule allows operators incentives to conduct other stream enhancement projects to create immediate improvements in fish habitat. Operators placing large wood key pieces in streams, as described in OAR 629-640-0105, may qualify for the live tree retention credit under this rule only if such placement meets the additional requirements of this rule.

(3) When addressed in a written plan, operators may place conifer logs or downed trees in Type F streams and receive basal area credit toward meeting the live tree retention requirements in a stream's riparian management area.

(4) For each conifer log or tree the operator places in a large or medium Type F stream, the basal area credit is twice the basal area of the placed log or tree.

(5) For each conifer log or tree the operator places in a small Type F stream, the basal area credit is equal to the basal area of the placed log or tree.

(6) Basal area credit will be determined by measuring the cross-sectional area of the large end of a log or by measuring the point on a downed tree that would be equivalent to breast height.

(7) To receive basal area credit for downed trees or conifer logs placed in a stream, the operator shall comply with the guidance and restrictions for placing logs or trees prescribed by the State Forester.

(8) Operators may propose other stream enhancement projects for basal area credit such as creation of backwater alcoves, riparian grazing exclosures (such as fencing), and placement of other instream structure such as boulders and rootwads. When a project is addressed in a written plan and reviewed by the department in consultation with the Department of Fish and Wildlife, basal area credit shall be given toward meeting the live tree requirements within riparian management areas. The basal area credit shall be negotiated between the department, operator and Department of Fish and Wildlife.

(9) Basal area credit may be given to an operation for enhancement projects conducted at locations other than at the operation site so long as the project is in the same immediate vicinity as the operation site (for instance, within one or two miles of the operation).

(10) Basal area credit may be given to an operation for improvement projects conducted at a later date (this may be necessary to avoid operating under high water conditions or to protect spawning areas), but the project must be completed within six months of the completion of the operation.

(11) In granting basal area credit, the standing tree basal area retained within riparian management areas of Type F streams shall not be reduced to less than the active management targets shown in Table 2 or 3 *[on pages 49 and 50]*, as applicable.

(12) For small Type F streams in the Eastern Cascade and Blue Mountain geographic regions, the live conifer tree basal area may be reduced to 30 square feet for the active management target. The remaining portion of the basal area requirement must come from snags, dying or recently dead or dying trees, or hardwood trees if available in the riparian management area.

(13) Operators shall notify the State Forester of the completion of live tree retention credit stream improvement projects that were planned for locations other than on the operation site under section (9) of this rule or that were planned to be completed at another date under section (10) of this rule.

629-640-0200
General Vegetation Retention Prescription for Type D and Type N Streams

(1) (a) Operators shall apply the vegetation retention requirements described in this rule to the riparian management areas of Type D and Type N streams.

(b) Segments of Type D or Type N streams that may be of a different size within an operation shall not be combined or averaged together when applying the vegetation retention requirements.

(c) Trees left to meet the vegetation retention requirements for one stream type shall not count toward the requirements of another stream type.

(2) Operators shall retain along all Type D, and large and medium Type N streams:

(a) All understory vegetation within 10 feet of the high water level;

(b) All trees within 20 feet of the high water level; and

(c) All trees leaning over the channel.

(3) Operators shall retain all downed wood and snags that are not safety or fire hazards within riparian management areas and streams. Snags felled for safety or fire hazard reasons shall be retained where they are felled unless used for stream improvement projects.

(4) Notwithstanding the requirements of section (2), vegetation, snags and trees within 20 feet of the high water level of the stream may be felled, moved or harvested as allowed in the rules for road construction, yarding corridors, temporary stream crossings, or for stream improvement.

(5) Operators shall retain at least 30 live conifer trees per 1000 feet along large Type D and Type N streams and 10 live conifer trees per 1000 feet along medium Type D and Type N streams. This includes any trees left to meet the requirements described in section (2) of this rule. Conifers must be at least 11 inches DBH for large streams and eight inches DBH for medium streams to count toward these requirements.

(6) Operators shall retain all understory vegetation and non-merchantable conifer trees (conifer trees less than six inches DBH) within 10 feet of the high water level on each side of small perennial Type N streams indicated in Table 5 *[on page 51]*.

(a) The determination that a stream is perennial shall be made by the State Forester based on a reasonable expectation that the stream will have summer surface flow after July 15.

(b) The determination in subsection (6)(a) of this rule can be made based on a site inspection, data from other sources such as landowner information, or by applying judgment based upon stream flow patterns experienced in the general area.

(c) Operators are encouraged whenever possible to retain understory vegetation, non-merchantable trees, and leave trees required within harvest type 2 or harvest type 3 units (pursuant to ORS 527.676) along all other small Type N streams within harvest units.

(7) Operators shall retain trees six inches or greater DBH to meet the following requirements (this includes trees left to meet the requirements of sections (2) and (5) of this rule):

(a) If the live conifer tree basal area in the riparian management area is greater than the standard target shown in Table 6 *[on page 51]* where the harvest will be a harvest type 2 or type 3 unit (as defined by ORS 527.620), or in Table 7 *[on page 52]* where the harvest unit is a harvest type 1, partial harvest, or thinning, operators shall retain along all Type D, and medium and large Type N streams live conifer trees of sufficient basal area to meet the standard target.

(b) If the live conifer tree basal area in the riparian management area is less than the standard target (as shown in Table 6 *[on page 51]* where the harvest will be a harvest type 1 or type 2 unit or Table 7 where the harvest unit is a harvest type 1, partial harvest, or thinning), but greater than one-half the standard target shown in Table 6, operators shall retain along all Type D, and medium and large Type N streams all conifers 6 inches DBH or larger in the riparian management area (up to a maximum of 100 conifers per 1000 feet along large streams, and 70 conifers per 1000 feet along medium streams).

(c) If the live conifer tree basal area in the riparian management area is less than one-half the standard target shown in Table 6:

(A) Operators may apply an alternative vegetation retention prescription as described in OAR 629-640-0300, where applicable, or develop a site specific vegetation retention prescription as described in OAR 629-640-0400; or

(B) Operators shall retain along all Type D, and medium and large Type N streams all conifers in the riparian management area and all hardwoods within 30 feet of the high water level for large streams and within 20 feet of the high water level for medium streams.

(8) In the Coast Range, South Coast, Interior, Western Cascade, and Siskiyou geographic regions, hardwood trees and snags six inches or greater DBH may count toward the basal area requirements in subsection (7)(a) of this rule as follows:

(a) All cottonwood and Oregon ash trees within riparian management areas that are beyond 20 feet of the high water level of large Type D and N streams, may count toward the basal area requirements.

(b) For large Type D and N streams, up to 10 percent of the basal area requirement may be comprised of sound conifer snags at least 30 feet tall and other large live hardwood trees, except red alder, growing in the riparian management area more than 20 feet from the high water level and at least 24 inches DBH.

(c) For medium Type D and N streams:

(A) Up to 30 square feet of basal area per 1000 feet of stream may be comprised of hardwood trees.

(B) Up to five percent of the basal area retained may be comprised of sound conifer snags that are at least 30 feet tall.

(9) In the eastern Oregon and Blue Mountain geographic regions:

(a) The basal area of all retained live hardwood trees may count toward meeting the basal area requirements.

(b) For large Type D and N streams, up to 10 percent of the basal area requirement may be comprised of sound conifer snags at least 30 feet tall.

(c) For medium Type D and N streams, up to five percent of the basal area retained may be comprised of sound conifer snags that are at least 30 feet tall.

(10) Notwithstanding the requirements indicated in this rule, operators may conduct precommercial thinning and other release activities to maintain the growth and survival of conifer reforestation within riparian management areas. Such activities shall contribute to and be consistent with enhancing the stand's ability to meet the desired future condition.

(11) When determining the basal area of trees along streams in a harvest unit, operators may use the average basal area for a tree's diameter class, as shown in Table 4 in OAR 629-640-0100 *[on page 50]*, or determine an actual basal area for each tree. The method for determining basal area must be consistent throughout the riparian management area.

(12) All live trees retained along Type D and N streams that otherwise meet the requirements for leave trees may count toward requirements for leave trees within harvest type 2 or harvest type 3 units (pursuant to ORS 527.676).

(13) Trees on islands with ground higher than the high water level may be harvested as follows:
  (a) If the harvest unit is solely on an island, operators shall apply all the vegetation retention requirements for a large Type F stream described in this rule to a riparian management area along the high water level of the channels forming the island.
  (b) Otherwise, operators shall retain all trees on islands within 20 feet of the high water level of the channels forming the island and all trees leaning over the channels. In this case, conifer trees retained on islands may count toward the basal area requirement for adjacent riparian management areas so long as the trees are at least 11 inches DBH for large streams and 8 inches DBH for medium streams.
  (c) All merchantable trees may be harvested from islands within small Type N streams.

(14) When applying the vegetation retention requirements described in this rule to the riparian management areas, if an operator cannot achieve the required retention without leaving live trees on the upland side of a road that may be within the riparian management area and those trees pose a safety hazard to the road and will provide limited functional benefit to the stream, the operator may submit a plan for an alternate practice to the State Forester to modify the retention requirements on a site specific basis.

629-640-0210
Leaving Green Trees and Snags along Small Type N Streams subject to Rapidly Moving Landslides

(1) The purpose of this rule is to provide a source of large wood that can be moved by rapidly moving landslides into Type F streams.

(2) When directed by the State Forester, operators must retain green trees and snags required for harvest type 2 or type 3 units under ORS 527.676 adjacent to small Type N streams subject to rapidly moving landslides likely to deliver wood to Type F streams.
  (a) The green trees and snags must be retained within an area that is 50 feet on each side of the small Type N stream and 500 feet upstream from a riparian management area of a Type F stream.
  (b) Requirements under OAR 629-623-0300 supersede the requirements of this rule.

(3) Operators are required to retain all green trees and snags in the area described in subsection (2)(a) of this rule up to the number determined by the equation H – T where:
  (a) H is the total number of green trees and snags required to be retained in the harvest type 2 or type 3 unit; and
  (b) T is the number of trees retained in riparian management areas in the harvest unit that may be counted as harvest unit leave trees under OAR 629-640-0100(11) and 629-640-0200(12).

(4) An operator may propose a plan for an alternate practice to meet the purpose of this rule. Alternate practices may include but are not limited to placing wood directly in the Type F stream.

(5) This rule takes effect on October 1, 2007.

629-640-0300
Alternative Vegetation Retention Prescriptions

(1) Alternative prescriptions are intended to apply to situations where the existing streamside stand is too sparse or contains too few live conifers to maintain fish, wildlife, and water quality resources over time. Future desired streamside stand conditions are achieved through immediate manipulation of vegetation, including reforesting the riparian management area with conifers.

(2) Sections (3) and (4) of this rule are alternative vegetation retention prescriptions that operators may apply if the conifer basal area in the riparian management area is no more than one-half of the standard target indicated in either Table 2 of OAR 629-640-0100 *[on page 49]* or Table 6 of 629-640-0200 *[on page 51]*, as may be applicable, and conditions described in the alternative prescription are applicable.

(3) Alternative Vegetation Retention Prescription 1 (Catastrophic Events). This alternative prescription applies to streamside stands that have been damaged by wildfire or by catastrophic windthrow, insect or disease mortality. Such mortality must occur at the stand level and shall not include normal endemic mortality. The prescription is intended to provide adequate stream shade, woody debris, and bank stability for the future while creating conditions in the streamside area that will result in quick establishment of a new and healthy stand. Operators shall:
  (a) Retain trees that have fallen in the stream. Only portions of these trees that are outside the high water levels and do not contribute to the ability of the downed tree to withstand movement during high flows may be harvested.
  (b) Retain all live and dead trees within 20 feet of the high water level of large and medium streams and 10 feet of the high water level of small streams.
  (c) For Type F streams, retain live trees, dying or recently dead trees, and downed logs sufficient to satisfy the active management target shown in Table 2 *[on page 49]*.

(d) For Type D and N streams, retain live trees, dying or recently dead trees, or downed logs sufficient to satisfy the standard target shown in Table 6 *[on page 51]*.

(e) Live conifers shall be retained first to meet the target. If live conifers are too few to satisfy the target, then the target shall be met as much as possible by including windthrown trees within the channel and dying or recently dead trees.

(f) For purposes of this prescription the basal area of a windthrown tree in the channel or a retained dying or recently dead tree contributes two times its basal area toward meeting the target.

(4) Alternative Vegetation Retention Prescription 2 (Hardwood Dominated Sites). This alternative prescription applies to streamside sites that are capable of growing conifers, and where conifer stocking is currently low and unlikely to improve in a "timely manner" because of competition from hardwoods and brush. If portions of such riparian management areas currently contain abundant conifer basal area, it is intended that these areas of good conifer basal area be segregated and managed using the general vegetation retention prescription while the remainder is managed according to this alternative prescription. The alternative prescription is intended to provide adequate stream shade, some woody debris, and bank stability for the future while creating conditions in the streamside area that will result in quick establishment of a conifer stand. The operator shall:

(a) Evaluate the stand within the riparian management area and, where they exist, segregate segments (200 feet or more in length) that are well-stocked with conifer, as identified from an aerial photograph, from the ground or through other appropriate means. The general vegetation retention prescription for vegetation retention shall be applied to these segments.

(b) For the remaining portion of the riparian management area that has lower conifer basal area, the riparian management area shall be divided into conversion blocks and retention blocks.

(c) No more than half of the total stream length in the harvest unit can be included within conversion blocks. Conversion blocks can be no more than 500 feet long and must be separated from each other by at least 200 feet of retention block or by at least a 200 foot segment where the general vegetation retention prescription is applied.

(d) Within conversion blocks the operator shall retain:

(A) All trees growing in the stream or within 10 feet of the high water level of the stream.

(B) All trees leaning over the channel within 20 feet of the high water level of large streams.

(e) Within retention blocks the operator shall retain:

(A) For large streams, all conifer trees within 50 feet of the high water level of the stream and all hardwood trees within 30 feet of the high water level of the stream.

(B) For medium streams, all conifer trees within 30 feet of the high water level of the stream and all hardwood trees within 20 feet of the high water level of the stream.

(C) For small streams, all trees within 20 feet of the high water level of the stream.

629-640-0400
Site Specific Vegetation Retention Prescriptions for Streams and Riparian Management Areas

(1) (a) Operators are encouraged to develop site specific vegetation retention prescriptions in a plan for an alternate practice.

(b) A primary aim of these prescriptions is to identify opportunities and allow incentives for restoring or enhancing riparian management areas or streams.

(c) Another purpose of site specific vegetation retention prescriptions is to allow for changes to the vegetation retention requirements in OARs 629-640-0100 and 629-640-0200. The changes must provide for the functions and values of streams and their riparian management areas as described in the vegetation retention goals for streams while affording a better opportunity to meet other objectives.

(2) Operators may develop site specific vegetation retention prescriptions for streams and their riparian management areas to achieve the vegetation retention goals described in OAR 629-640-0000 if:

(a) The potential of the streamside stand to achieve basal area and stand density similar to mature conifer forest stands in a "timely manner" is questionable; or

(b) In-stream conditions are impaired due to inadequate large woody debris or other factors; or

(c) The modification of a standard or practice would result in less environmental damage than if the standard or practice were applied.

(3) A plan for an alternate practice shall be approved if the State Forester determines that when properly executed the alternate plan will have no significant or permanent adverse effects and:

(a) It will meet or exceed the vegetation retention goals in a more "timely manner" than if the plan were not implemented; or

(b) The long-term benefits of the proposed restoration practice are greater than short-term detrimental effects; or

(c) The proposed practice will result in less environmental damage than if the regular rules were followed.

(4) Factors that may need to be considered in the plan include, but are not limited to, the potential of the existing streamside stand to achieve mature conifer forest characteristics, the long-term supply of woody debris, survival of planted conifers, sensitivity to changes in water temperature and water quality, the potential for sedimentation, the stability of woody debris placed in aquatic areas, and monitoring the direct effects of the proposed practices.

629-640-0500
Reforestation Within Stream Riparian Management Areas

Harvested portions of riparian management areas along streams are subject to the same reforestation requirements that apply to adjacent areas outside of the riparian management areas. Reforestation is more difficult in riparian management areas due to a number of factors. To succeed with the required reforestation, landowners should anticipate and plan for such factors as brush control measures, animal damage problems, and tree species that are suitable for wetter sites.

FIGURE 1. Geographic Regions
OAR 629-635-0220

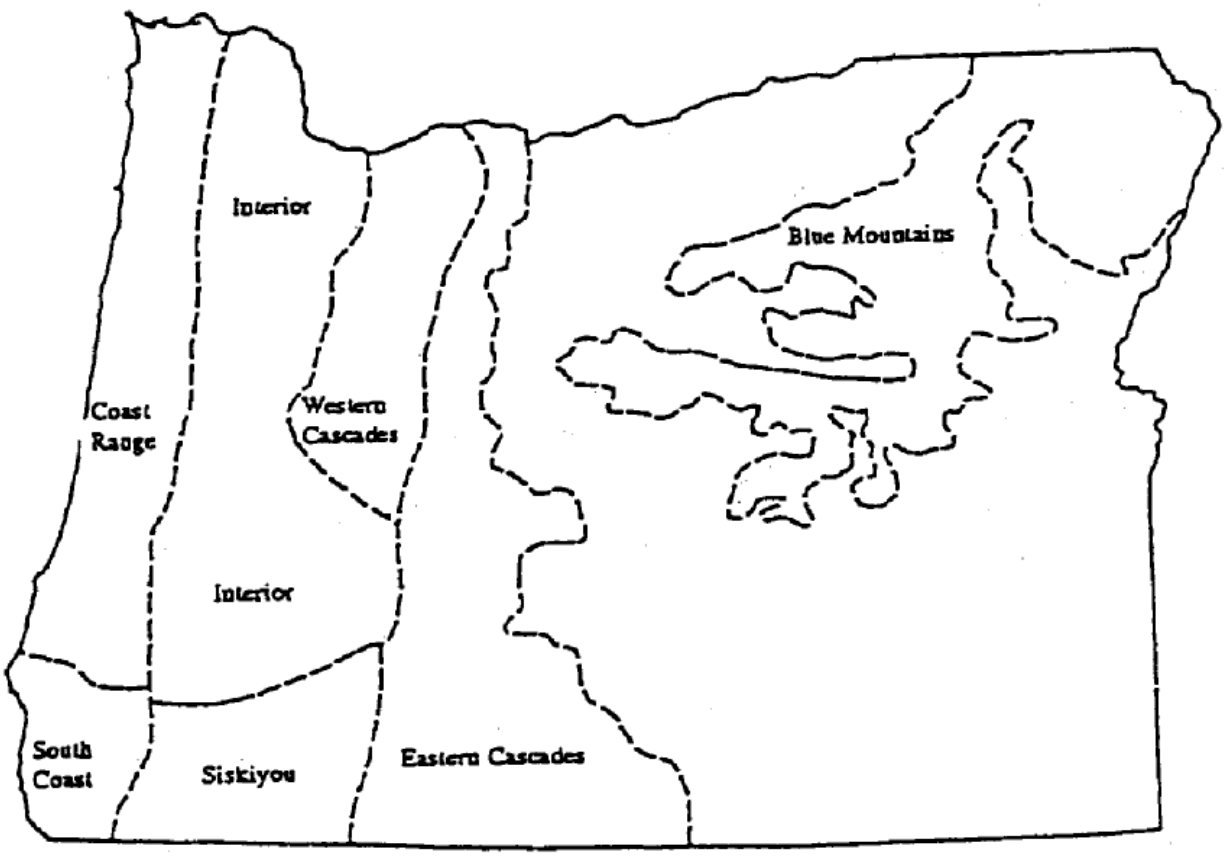

TABLE 1. Riparian Management Area Widths for Streams of Various Sizes and Beneficial Uses (OAR 629-635-0310.)

	Type F	Type D	Type N
LARGE	100 feet	70 feet	70 feet
MEDIUM	70 feet	50 feet	50 feet
SMALL	50 feet	20 feet	Apply specified water quality protection measures, and see OAR 629-640-0200.

TABLE 2. General Prescription for Type F streams: Streamside Tree Retention for Harvest Type 2 or Type 3 Units (OAR 629-640-0100 (6) (a))

Geographic Region	SQUARE FEET OF BASAL AREA PER 1000 FEET OF STREAM, EACH SIDE					
	LARGE Type F RMA = 100 feet		MEDIUM Type F RMA = 70 feet		SMALL Type F RMA = 50 feet	
	Standard Target	Active Mgt. Target	Standard Target	Active Mgt. Target	Standard Target	Active Mgt. Target
Coast Range & S. Coast	230	170	120	90	40	20
Interior & W. Cascade	270	200	140	110	40	20
Siskiyou	220	170	110	90	40	20
Eastern Cascade & Blue Mountain	170	130	90	70	50[1]	50[2]

[1] The maximum live conifer tree basal area that must be retained is 40 square feet. The remaining basal area may come from snags, dying or recently dead or dying trees, or hardwood trees if available within the riparian management area.

[2] Live conifer tree basal area may be reduced to 30 square feet for the active management target. The remaining portion of the basal area requirement must come from snags, dying or recently dead or dying trees, or hardwood trees if available within the riparian management area.

TABLE 3. General Prescription for Type F Streams: Streamside Tree Retention for Harvest Type 1, Partial Harvest, or Thinning Units (OAR 629-640-0100 (6) (a))

	SQUARE FEET OF BASAL AREA PER 1000 FEET OF STREAM, EACH SIDE					
Geographic region	LARGE Type F RMA = 100 feet		MEDIUM Type F RMA = 70 feet		SMALL Type F RMA = 50 feet	
	Standard Target	Active Mgt. Target	Standard Target	Active Mgt. Target	Standard Target	Active Mgt. Target
Coast Range & S. Coast	300	270	160	140	50	30
Interior & W. Cascade	350	310	180	160	50	30
Siskiyou	290	260	140	120	50	30
Eastern Cascade & Blue Mountain	220	200	120	100	50[1]	50[2]

[1]The maximum live conifer tree basal area that must be retained is 40 square feet. The remaining basal area may come from snags, dying or recently dead or dying trees, or hardwood trees if available within the riparian management area.

[2]Live conifer tree basal area may be reduced to 30 square feet for the active management target. The remaining portion of the basal area requirement must come from snags, dying or recently dead or dying trees, or hardwood trees if available within the riparian management area.

TABLE 4. Basal Area for Various Diameter Classes (OAR 629-640-0100 (10))

Diameter Breast Height (inches)	Basal Area (square feet)	Diameter Breast Height (inches)	Basal Area (square feet)
6 to 10	0.3	41 to 45	10.1
11 to 15	0.9	46 to 50	12.6
16 to 20	1.8	51 to 55	15.3
21 to 25	2.9	56 to 60	18.3
26 to 30	4.3	61 to 65	21.6
31 to 35	5.9	66 to 70	25.2
36 to 40	7.9	71 to 75	29.0

TABLE 5. Vegetation Retention for Specified Small Type N Streams (OAR 629-640-0200 (6))

Geographic Region	Retain Understory Vegetation and Unmerchantable Conifers 10 Feet Each Side of Stream for:
Eastern Cascades and Blue Mountains	All perennial streams.
South Coast	Portions of perennial streams where the upstream drainage area is greater than 160 acres.
Interior	Portions of perennial streams where the upstream drainage area is greater than 330 acres.
Siskiyou	Portions of perennial streams where the upstream drainage area is greater than 580 acres.
Coast Range and Western Cascades	No retention required.

TABLE 6. General Prescription for Type D, and Large and Medium Type N Streams: Streamside Tree Retention for Harvest Type 2, or Type 3 Units (OAR 629-640-0200 (7) (a))

Geographic Region	SQUARE FEET OF BASAL AREA PER 1000 FEET OF STREAM, EACH SIDE		
	LARGE TYPE D AND N RMA = 70 feet	MEDIUM TYPE D AND N RMA = 50 feet	SMALL TYPE D RMA = 20 feet
	Standard Target	Standard Target	Standard Target
Coast Range and South Coast	90	50[1]	0
Interior and Western Cascade	110	50[1]	0
Siskiyou	90	50[1]	0
Eastern Cascade and Blue Mountain	70	50[1]	0

[1] Hardwoods may count up to 30 square feet per 1000 feet towards meeting the standard target.

TABLE 7. General Prescription for Type D, and Large and Medium Type N Streams: Streamside Tree Retention for Harvest Type 1, Partial Harvest, and Thinning Units (OAR 629-640-0200 (7) (a))

Geographic Region	SQUARE FEET OF BASAL AREA PER 1000 FEET OF STREAM, EACH SIDE		
	LARGE TYPE D AND N RMA = 70 feet	MEDIUM TYPE D AND N RMA = 50 feet	SMALL TYPE D RMA = 20 feet
	Standard Target	Standard Target	Standard Target
Coast Range and South Coast	140	60[1]	0
Interior and Western Cascade	160	60[1]	0
Siskiyou	120	60[1]	0
Eastern Cascade and Blue Mountain	100	60[1]	0

[1] Hardwoods may count up to 30 square feet of basal area per 1000 feet toward meeting the standard target.

DIVISION 645
WATER PROTECTION RULES: RIPARIAN MANAGEMENT AREAS AND PROTECTION MEASURES FOR SIGNIFICANT WETLANDS

629-645-0000
Riparian Management Areas and Protection Measures for Significant Wetlands

(1) (a) The purpose of these rules is to protect the functions and values of significant wetlands, including wetlands larger than eight acres, estuaries, bogs and important springs in eastern Oregon on forestlands.

(b) Significant wetlands on forestlands provide a wide range of functions and values, including those related to water quality, hydrologic function, fish and other aquatic organisms, and wildlife.

(c) Estuaries are unique systems because they form transitions between terrestrial, marine, and freshwater environments. Because of this link, estuarine systems are among the most biologically productive in the world. Estuaries support many resident species. Estuaries also provide food, spawning area, and shelter for numerous other species at critical points in their life cycles. Removal of shoreline trees reduces the overall productivity of the estuary by reducing leaf and litter fall, thus depriving the estuary of substrate, and by removing feeding and resting habitat for birds and small mammals.

(d) Bog communities are a result of specific hydrologic, soil, and nutrient conditions. Bogs are usually saturated, low in nutrients, and highly acidic changes in runoff, sediment loading, and nutrient loading can alter the plant community composition. The peat soils have evolved over time. Compaction damages plant communities and may encourage the invasion of exotic species. Harvesting may disrupt shade tolerant vegetation, alter plant community characteristics, and hasten succession. Compaction, saturated conditions, and poor nutrient status make reforestation difficult.

(e) In arid parts of eastern Oregon, springs provide a critical source of water. These important springs have established wetland vegetation, flow year round in most years, and are used by a concentration of diverse animal species. By reason of sparse occurrence, important springs have a major influence on the distribution and abundance of upland species. Important springs shall be identified by the State Forester.

(2) (a) The goals of significant wetland protection are to maintain the functions and values of significant wetlands on forestlands over time, and to ensure that forest practices do not lead to resource site destruction or reduced productivity, while at the same time ensuring the continuous growth and harvest of forest tree species. To accomplish these goals, the rules focus on the protection of soil, hydrologic functions, and specified levels of vegetation.

(b) The intent of the rules is to minimize soil disturbance and to minimize disturbance to the natural drainage patterns of the significant wetland.

(c) Vegetation retention (including understory vegetation, snags, downed wood, and live trees) is needed to prevent erosion and sedimentation into the significant wetland, minimize soil disturbance and hydrologic changes, and to maintain components of the vegetation structure to provide for other benefits, particularly fish and wildlife values.

(3) Significant wetlands other than estuaries, bogs or important springs in eastern Oregon shall have riparian management areas extending 100 feet from the wetlands. When an operation is proposed within 300 feet of a significant wetland, the resource site evaluation process in OAR 629-665-0020 shall be followed by the landowner, operator or timber owner. If the proposed operation conflicts with the significant wetland, the operator shall submit a written plan to the State Forester before starting operations. The written plan shall comply with the requirements of OAR 629-605-0170, Written Plans.

(4) For all significant wetlands, operators shall provide the following to the wetlands and riparian management areas:

(a) Live tree retention (OAR 629-645-0010);

(b) Soil and hydrologic function protection (OAR 629-645-0030);

(c) Understory vegetation retention (OAR 629-645-0040); and

(d) Snag and down wood retention (OAR 629-645-0050).

(5) For forested significant wetlands, written plans must address reforestation.

(6) When an operation is proposed within 300 feet of an estuary, bog or important spring in eastern Oregon, the State Forester shall determine the riparian management area during the resource site inspection required by OAR 629-665-0020. Riparian management areas shall extend outward 100 to 200 feet from the estuary, 50 to 100 feet from the bog, or 50 to 100 feet from the important spring in eastern Oregon. The distance determination of the State Forester shall depend on:
   (a) Stocking level of the timber stand adjacent to the estuary, bog or spring;
   (b) Ability of the area to withstand windthrow;
   (c) Size of the estuary, bog or spring. As the size increases, the size of the riparian management area shall increase; and
   (d) For bogs and springs only, topography and erodibility of adjacent uplands.

629-645-0010
Live Tree Retention for Significant Wetlands

(1) In significant wetlands and their riparian management areas, operators shall retain approximately 50 percent of the original live trees, by species, in each of the following diameter classes (DBH):
   (a) 6 to 10 inches;
   (b) 11 to 20 inches;
   (c) 21 to 30 inches; and
   (d) larger than 30 inches.
(2) As part of the live trees in subsection (1) above, operators shall retain trees bordering significant wetlands.
(3) For estuaries and the adjacent riparian management areas, operators shall protect live trees that are:
   (a) Perch and nest trees for predatory birds and colonial nesting birds;
   (b) Likely to provide for future large woody debris to the estuaries' perimeters; and
   (c) Contributing to bank stability.

629-645-0020
Site-Specific Vegetation Retention Prescriptions for Significant Wetlands

(1) Operators are encouraged to develop site specific vegetation retention prescriptions for significant wetlands in a plan for an alternate practice.
(2) The functions and values of forested wetlands vary with species composition, stocking levels, and geographic location. Operators are encouraged to propose site specific vegetation retention prescriptions in a plan for an alternate practice that allow for changes to the live tree requirements in OAR 629-645-0010 and that provide equal or better protection of the functions and values of forested significant wetlands and forested stream-associated wetlands, and address operational concerns.

629-645-0030
Soil and Hydrologic Function Protection for Significant Wetlands

(1) In significant wetlands and their riparian management areas, operators shall protect soil from disturbances that result in impaired water quality, hydrologic functions, or soil productivity. Operators shall protect hydrologic functions by minimizing disturbances and shall prevent accelerating the natural conversion of the wetland to uplands.
(2) The written plan required under OAR 629-635-0130 shall describe how the operation will be conducted to prevent adverse effects on water quality, hydrologic functions or soil productivity. The following practices shall be addressed in written plans when they are proposed in significant wetlands:
   (a) Filling within wetlands;
   (b) Machine activity within wetlands; and
   (c) Road construction within wetlands.
(3) Operators shall not drain significant wetlands.
(4) Notwithstanding subsection (3) of this rule, minor drainage for reforestation is allowed. Any drainage for reforestation must be designed so the significant wetland is not converted to an upland.

629-645-0040
Understory Vegetation Retention for Significant Wetlands

(1) The purpose of retaining understory vegetation is to provide soil stability and bank stability in and along significant wetlands, to maintain cover and shade for wildlife habitat and aquatic habitat, and to protect water quality.
(2) To achieve the purpose of understory retention, the operator shall limit disturbance of understory vegetation within significant wetlands and their riparian management areas to the minimum necessary to remove timber harvested from the area and achieve successful reforestation.

(3) The written plan required in OAR 629-635-0130 for operations within 300 feet of significant wetlands shall describe how disturbance to the understory vegetation will be minimized during harvest or site preparation for reforestation.

629-645-0050
Snag and Downed Wood Retention for Significant Wetlands

(1) For significant wetlands, operators shall retain all snags and downed trees within the wetlands and the applicable riparian management areas.
(2) Notwithstanding subsection (1) of this rule, any snag defined to be a safety hazard under the safety requirements found in OAR 437, Division 7, Forest Activities, or determined to be a fire hazard by the State Forester, may be felled. Any snag felled because of a safety or fire hazard shall be left unyarded.
(3) The retention requirements in subsection (1) of this rule may be modified for reasons of forest health for trees that are dying or recently dead or dying because of fire, insect or disease epidemics, or other catastrophic events when addressed in a plan for an alternate practice approved by the State Forester.
(4) Snags and downed wood left pursuant to subsection (1) of this rule may not be counted toward the requirements of ORS 527.676.

DIVISION 650
WATER PROTECTION RULES: RIPARIAN MANAGEMENT AREAS AND PROTECTION MEASURES FOR LAKES

629-650-0000
Riparian Management Areas and Protection Measures for Lakes

(1) The purpose of this rule is to protect the functions and values of lakes. Lakes on forestlands provide a wide range of functions and values, including those related to water quality, hydrologic functions, aquatic organisms, fish and wildlife.
(2) Operators shall protect riparian management areas extending:
  (a) 100 feet from the high water level of large lakes; and
  (b) 50 feet from the high water level of other lakes that have fish use or other lakes that are equal to or greater than one-half acre in size.
  (c) No riparian management area is required for other lakes that do not have fish and that are less than one-half acre.
(3) For all lakes with riparian management areas, operators shall provide the following to the riparian management areas and the aquatic areas:
  (a) Live tree retention (OAR 629-650-0010);
  (b) Soil and hydrologic function protection (OAR 629-650-0020);
  (c) Understory vegetation retention (OAR 629-650-0030); and
  (d) Snag and down wood retention (OAR 629-650-0040).
(4) For all lakes not having riparian management areas, the lakes shall be protected as other wetlands (OAR 629-655-0000).

629-650-0010
Live Tree Retention for Lakes

(1) Operators shall retain in the riparian management areas of lakes approximately 50 percent of the original live trees, by species, in each of the following diameter classes (DBH):
  (a) 6 to 10 inches;
  (b) 11 to 20 inches;
  (c) 21 to 30 inches; and
  (d) larger than 30 inches.
(2) As part of the live trees in subsection (1) above, trees on the edge of lakes shall be retained.

629-650-0020
Soil and Hydrologic Function Protection for Lakes

(1) Operators shall protect soil within the riparian management areas of lakes from disturbances that result in impaired water quality, hydrologic functions, or soil productivity. Operators shall protect hydrologic functions by minimizing disturbances and shall prevent accelerating the natural conversions of lakes to uplands.

(2) Operators shall not drain lakes except for lakes formed by plugged culverts or beaver dams and as allowed in rule for road maintenance.

629-650-0030
Understory Vegetation Retention for Lakes

(1) The purpose of retaining understory vegetation is to provide soil stability and bank stability along lakes, to maintain cover and shade for wildlife habitat and aquatic habitat, and to protect water quality.
(2) To achieve the purpose of understory retention, operators shall limit disturbance of understory vegetation within riparian management areas of lakes to the minimum necessary to remove timber harvested from the areas and to achieve successful reforestation.

629-650-0040
Snag Retention and Downed Wood Retention for Lakes

(1) For lakes, operators shall retain all snags and downed trees within the lakes and the applicable riparian management areas.
(2) Notwithstanding subsection (1) of this rule, any snag defined to be a safety hazard under the safety requirements found in OAR 437, Division 7, Forest Activities, or determined to be a fire hazard by the State Forester, may be felled. Any snag felled because of a safety or fire hazard shall be unyarded.
(3) The retention requirements in subsection (1) of this rule may be modified for reasons of forest health for trees that are dying or recently dead because of fire, insect or disease epidemics, or other catastrophic events when addressed in a plan for an alternate practice approved by the State Forester.
(4) Snags and downed wood left pursuant to this rule may not be counted toward the requirements of ORS 527.676.

DIVISION 655
WATER PROTECTION RULES: PROTECTION MEASURES FOR "OTHER WETLANDS", SEEPS AND SPRINGS

629-655-0000
Protection Measures for "Other Wetlands," Seeps and Springs

(1) There is no riparian management area for other wetlands, seeps and springs.
(2) When operating in or along other wetlands greater than one-quarter acre, the operator shall:
    (a) Protect soil and understory vegetation from disturbance that results in reduced water quality, hydrologic function or soil productivity. Operators shall protect hydrologic functions by minimizing disturbances to soils during forest operations and shall prevent accelerating the natural conversions of wetlands to uplands;
    (b) Leave snags and downed trees in the wetlands, except for any snags determined by the State Forester to be fire hazards, or any snags that must be felled to achieve compliance with the safety requirements found in OAR 437, Division 7, Forest Activities.
        (A) Any snags felled because of safety or fire hazards shall be left unyarded.
        (B) Snags and downed wood left within other wetlands, seeps or springs may apply toward the requirements of ORS 527.676.
(3) When conducting operations along other wetlands less than one-quarter acre, springs or seeps, operators shall protect soil and vegetation from disturbances which would cause adverse effects on water quality, hydrologic function, and wildlife and aquatic habitat.
(4) Identification of other wetlands is sometimes difficult, especially when the wetland has no standing water. This is particularly true when the other wetland is forested or very small. In recognition of these facts, the State Forester shall apply appropriate discretion when determining compliance with this rule.
(5) Operators are encouraged to:
    (a) Retain portions of in-unit live green trees and snags as blocks of intact vegetation around other wetlands; and
    (b) For other wetlands that are forested, adequately consider how reforestation will be accomplished.

DIVISION 660
WATER PROTECTION RULES: SPECIFIC RULES FOR OPERATIONS NEAR WATERS OF THE STATE

629-660-0040
Stream Channel Changes

(1) Operators shall not channelize, relocate, or divert water from any stream, except as allowed in the forest practice rules for construction of roads, stream improvement projects or temporary stream crossings.

(2) Operators shall not add to or remove soil or rock from any streams, except as allowed in the forest practice rules for construction of roads, stream improvement projects or temporary stream crossings.

629-660-0050
Beaver Dams or Other Natural Obstructions

(1) Except as needed for road maintenance, operators must submit a written plan to the State Forester prior to the removal of beaver dams and other natural obstructions from waters of the state during forest operations. Removal of any beaver dam that is within 25 feet of a culvert shall be considered to be needed for road maintenance.

(2) A written plan for removal of a beaver dam or obstruction must demonstrate:
  (a) A beaver dam or obstruction threatens existing forests or plantations; or
  (b) Beaver dam removal is part of a beaver population control program approved by the Oregon Department of Fish and Wildlife; or
  (c) Retaining the beaver dam or obstruction would result in greater environmental harm than benefit.

(3) Sediment releases and downstream channel scouring can occur when beaver dams are removed. Operators are encouraged to use techniques that result in a gradual release of water when a dam is removed.

629-660-0060
Headwater Amphibian Species

Amphibians that are sensitive to temperature and moisture fluctuations may live in small Type N streams. Operators are encouraged to retain portions of in-unit green live trees and snags as blocks of intact vegetation along small Type N streams.

DIVISION 665
SPECIFIED RESOURCE SITE PROTECTION RULES

629-665-0000
Purpose

(1) OAR 629-665-0000 to 0300 shall be known as the specified resource site protection rules.

(2) These rules provide a protection goal, describe the duties of the State Forester, landowner, timber owner and operator, and outline protection for:
  (a) Sensitive Bird Nesting, Roosting and Watering Resource Sites (OAR 629-665-0100);
  (b) Threatened and Endangered Fish and Wildlife Species that use Resource Sites on Forestlands (OAR 629-665-0200);
  (c) Biological Sites that are Ecologically and Scientifically Significant (OAR 629-665-0300); and
  (d) Significant Wetlands on Forestlands (OAR Chapter 629, Division 645).

629-665-0010
Protection Goal for a Resource Site

(1) The goal of resource site protection is to ensure that forest practices do not lead to resource site destruction, abandonment or reduced productivity.

(2) A resource site shall receive protection when the State Forester determines:
  (a) It is an active resource site; and
  (b) Proposed forest practices conflict with the resource site.

(3) The State Forester may grant an exception from either structural or temporal protection as determined by the Board for each species or resource site.

629-665-0020

Application of Protection and Exception Rules; State Forester Duties; Landowner, Timber Owner and Operator Duties

(1) When a landowner, timber owner or operator proposes an operation near a resource site that requires special protection, the State Forester shall inspect the resource site with the landowner or landowner's representative, the operator and when available, the appropriate representative of the Department of Fish and Wildlife. The State Forester shall:
  (a) Identify the resource site.
  (b) Apply the protection goal in OAR 629-665-0010.
    (A) If the proposed forest practices do not conflict with the resource site, the operation will not be subject to the protection requirements for the resource site. The operation shall be conducted in compliance with all other existing forest practice rules;
    (B) If the proposed forest practices conflict with the resource site, the structural and temporal protection requirements for the resource site shall be required to eliminate the conflict;
    (C) When the proposed forest practices conflict with a resource site, the landowner or operator may request a structural or temporal exception through a plan for an alternate practice, if the applicable administrative rule provides for such an exception.
    (D) The State Forester shall document and maintain on file the reasons for granting or denying all exceptions.

(2) If the proposed operation conflicts with the resource site, the operator shall submit a written plan to the State Forester before starting operations. The written plan shall comply with the requirements of OAR 629-605-0170, Written Plans.

(3) When the written plan in subsection (2) of this rule does not follow the written recommendations of the Department of Fish and Wildlife or other responsible coordinating state agency, the State Forester shall maintain on file a written explanation of the reasons for:
  (a) Differences in the identification of the resource site; and
  (b) Different protection levels required for the resource site.

(4) When a resource site is discovered by the operator, timber owner or landowner during a forest operation, the party making the discovery shall:
  (a) Immediately protect all remaining trees within 300 feet of the resource site and submit to the State Forester a written plan for the resource site; and
  (b) Immediately notify the State Forester.

629-665-0100

Species Using Sensitive Bird Nesting, Roosting and Watering Sites

The following species use sensitive bird nesting, roosting and watering resource sites:

(1) Osprey use sensitive bird nesting sites.

(2) Great blue herons use sensitive bird nesting sites.

629-665-0110

Osprey Resource Sites; Key Components; Protection Requirements; and Exceptions

(1) For osprey, the resource site is the active nest tree and any identified key components.
  (a) An active nest tree is one that has been used by osprey within the past five (5) nesting seasons. No protection is required for abandoned resource sites.
  (b) The key components associated with an osprey resource site are perching and fledging trees and replacement trees. Factors to consider when identifying key components:
    (A) Actual observation data if available;
    (B) Perching trees should provide for maximum visibility of the surrounding terrain and structure that allows the osprey easy access, such as large, tall snags or trees that have broken or dead tops, forks, or lateral branches high in the crown;
    (C) Replacement trees should provide maximum visibility of the surrounding terrain, and be large enough to support an osprey nest;
    (D) Perching and fledging trees and replacement trees should be located within 600 feet of the active nest tree;
    (E) Areas of high winds may require that additional trees be retained to protect the resource site from damage.

(2) When the State Forester identifies the resource site as per OAR 629-665-0020, the operator shall provide the following protection measures:
  (a) Retain the active nest tree; and
  (b) Retain no fewer than eight additional trees as key components (i.e.: perching, fledging and replacement trees).
  (c) During forest operations, the resource site shall be protected from damage. The operation shall be designed to protect these trees from windthrow;
  (d) During the critical period of use, the active nest tree and any perch tree identified as a key component shall be protected from disturbance. From March 1st through September 15th, forest operations shall not be permitted within 600 feet of the active nest tree or perch tree unless the State Forester determines that the operations will not cause the birds to flush from these trees. The critical period of use may be modified in writing by the State Forester as the resource site is evaluated as per OAR 629-665-0020.

(3) The State Forester shall not permit structural exceptions for the resource site: Removal of a resource site may be permitted if replacement nest trees, artificial structures, or replacement key components are provided by the operator or landowner. Replacement is not considered an exception, since the productivity of the nesting territory is maintained. When addressed in a plan for an alternate practice, replacement may be considered by the State Forester when:
  (a) Alternate forest practices which retain and protect the resource site are not economically feasible; and
  (b) The productivity of the nesting territory is not reduced.

(4) Temporal exceptions for the resource site may be approved by the State Forester when addressed in a plan for an alternate practice that demonstrates:
  (a) Nest disruption or failure for a season does not affect the local population; and
  (b) There are no economically feasible forest practices that avoid disturbance to the resource site during the critical period of use.

(5) Factors considered by the State Forester before approving a plan for an alternate practice under section (4) of this rule shall include, but are not limited to:
  (a) The size of the local population;
  (b) The contribution of the resource site in question to the local population; and
  (c) The feasibility of alternate forest practices that do not cause disturbance.

(6) The State Forester shall document all requests and decisions concerning structural or temporal exceptions. All approved structural replacements shall be documented.

629-665-0120
Great Blue Heron Resource Sites; Key Components; Protection Requirements; and Exceptions

(1) For the great blue heron, the resource site is the active nest tree(s) and any identified key components.
  (a) An active nest tree is one that has been used by one or more pair of great blue heron within the past three nesting seasons. No protection is required for an abandoned resource site.
  (b) The key components associated with a great blue heron resource site are the nest tree(s), a vegetative buffer around the nest tree(s) including perching and fledging trees, and replacement tree(s). Factors to consider when identifying key components:
    (A) Actual observation data when available;
    (B) Perching, fledging, and replacement tree(s) should be tall with plenty of space for these large birds to fly into and out. Older trees with open branching should be retained;
    (C) Areas of high winds may require that additional trees be retained to protect the active nest tree and identified key components from damage.

(2) The operator shall provide the following protection measures when operating within or near a great blue heron resource site:
  (a) Retain the active nest tree;
  (b) Retain a vegetative buffer not less than 300 feet around the outermost nest trees as key components that includes perching and fledging trees, and replacement trees.
  (c) The vegetative buffer around a rookery may be actively managed if the key components in subsection (1) are protected. When conducting forest management activities within this buffer, operators shall consider heron protection as the highest priority. The vegetative buffer needs to provide a visual screen from disturbing influences around the rookery, and must be designed to protect the nest tree(s), perching, fledging, and replacement tree(s) from windthrow. Examples of

forest management activities that may occur within the vegetative buffer include tree topping, and/or other methods of "feathering" the outer edges of the buffer to reduce windthrow potential, or remove individual trees (especially along the edge of the buffer) if the integrity of the buffer is maintained and all the key components are adequately protected. Input from the ODFW wildlife biologist and ODF's fish and wildlife specialist is important when marking trees to be removed from this buffer.

(d) During and after forest operations, the resource site shall be protected from damage. The operation shall be designed to protect the key components from windthrow;

(e) During the critical period of use, operations shall be designed and conducted so as not to disturb great blue herons using the key components. From February 15 through July 31, forest operations shall not be permitted within one-quarter (1/4) mile of the active nest tree(s) unless the State Forester determines that the operations will not cause the birds to flush from these trees. The critical period of use may be modified by the State Forester after the resource site is evaluated following OAR 629-665-0020.

(3) Structural exceptions for the resource site may be approved by the State Forester when addressed in a plan for an alternate practice. The State Forester may approve such a plan when these criteria are met:

(a) The site contains five nests or fewer;

(b) The State Forester determines that the loss of the site will not adversely affect the local population; and

(c) There are no economically feasible alternatives that maintain the key components.

(4) Factors considered by the State Forester before approving a structural exception to protection of a great blue heron resource site shall include, but are not limited to:

(a) The size of the site (number of nests);

(b) The size of the breeding population in the local area;

(c) The productivity of great blue herons in the local area;

(d) The contribution of the site to local productivity;

(e) The probability that protection measures will be successful;

(f) Available alternate nesting sites; and

(g) Whether alternatives that protect the site are economically feasible.

(5) Temporal exceptions to protection of a great blue heron resource site may be approved by the State Forester when addressed in a plan for an alternate practice. The State Forester may approve such a plan when:

(a) The State Forester determines that nest disruption or failure for a season or site abandonment will not adversely affect the local population; and

(b) There are no economically feasible alternatives that will not disturb the birds during the critical period of use.

(6) Factors considered by the State Forester before approving a temporal exception shall include, but are not limited to:

(a) The size of the site (number of nests);

(b) The size of the breeding population in the local area;

(c) The productivity of great blue herons in the local area;

(d) The contribution of the site to local productivity; and

(e) Whether alternatives that protect the site are economically feasible.

629-665-0200

Resource Sites Used By Threatened and Endangered Species

The following resource sites used by threatened or endangered species are sensitive to forest practices:

(1) Northern spotted owl nesting sites.

(2) Bald eagle nesting sites.

(3) Bald eagle roosting sites.

(4) Bald eagle foraging perches.

629-665-0210

Interim Requirements for Northern Spotted Owl Nesting Sites

(1) Whenever the State Forester determines that an operation will conflict with protection of a nesting site of the northern spotted owl (Strix occidentalis caurina), the operator must submit to the State Forester a written plan

before commencing the operation. The written plan, at a minimum, must address how the operation will be conducted to provide for the following:

(a) A 70 acre area of suitable spotted owl habitat encompassing the nest site, to be maintained as suitable spotted owl habitat;

(b) Prevention of disturbances resulting from operation activities which cause owls to flush from the nesting site. Such disturbances must be prevented during the critical period of use for nesting. The critical period of use is the time period between March 1 and September 30, each year.

(2) For the purposes of this rule, nesting site means and includes the tree, when known, containing a spotted owl nest; or when not specifically known, includes an activity center of a pair of adult spotted owls. An activity center is a location determined by the State Forester to have been reliably identified as being occupied by an adult pair of spotted owls, capable of breeding. Such determination must be supported by repeated observation of the owls in close proximity or observation of nesting behavior.

(3) (a) For the purposes of this rule, suitable spotted owl habitat means and includes:

(A) A stand of trees with moderate to high canopy closure (60 to 80%); a multi-layered, multi-species canopy dominated by large overstory trees (greater than 30 inches in diameter at breast height); a high incidence of large trees with various deformities (e.g., large cavities, broken tops, and other evidence of decadence); numerous large snags; large accumulations of fallen trees and other woody debris on the ground; and sufficient open space below the canopy for owls to fly; or

(B) In the absence of habitat which exhibits all the characteristics listed above, the available forested habitat which comes closest to approximating the listed conditions.

(b) Stands which do not exhibit at least two of the characteristics listed in paragraph (a)(A) of this section are not suitable habitat.

(4) (For information only) Federal law prohibits a person from taking northern spotted owls. Taking under the federal law may include significant alteration of owl habitat on any class of land ownership. Compliance with subsection (1) of this rule is not in lieu of compliance with any federal requirements related to the federal Endangered Species Act.

(5) Exceptions to the requirements for protecting northern spotted owl nesting sites are allowed if the operator is in compliance with, and has on file with the State Forester, an applicable incidental take permit issued by federal authorities under the Endangered Species Act.

629-665-0220

Bald Eagle Nesting Sites; Key Components; Protection Requirements; and Exceptions

(1) For bald eagle nesting sites, the resource site is the active nest tree and all identified key components:

(a) An active nest tree is one in which a bald eagle has nested in the past, and that the State Forester determines to be structurally capable of successful future use, whether or not the tree still contains a nest.

(b) An active nest tree may fall down or may become structurally incapable of supporting a bald eagle nest site. When this happens the nest resource site shall be considered active and shall be protected for an additional five (5) years only if the site contains suitable nesting sites. In this case, if a nesting resource site is not used during this five-year period, the site shall be considered abandoned and no protection will be required.

(c) The key components associated with a bald eagle nesting site are perching and fledging trees, replacement nest trees, and a forested buffer around the nest tree. Factors to consider when identifying key components:

(A) Actual observation data when available.

(B) Perching and fledging trees should be tall enough to provide maximum visibility of the surrounding area. Perching and fledging trees are often snags or decadent live trees with exposed, strong, lateral branches high in the crown.

(C) Replacement nest trees should provide maximum visibility of the surrounding terrain, and be large enough to support a bald eagle nest. Bald eagles prefer to nest in large, tall trees that are alive, with large limbs, broken tops, or irregular growth patterns with open structure.

(D) Areas of high winds may require that additional trees be retained to protect the active nest tree(s) and identified key components from damage.

(2) The operator shall provide the following protection measures when operating within or near a bald eagle nesting site:
  (a) During and after forest operations, the resource site shall be protected from damage. The operation shall be designed to protect the trees from windthrow;
  (b) Retain the active nest tree.
  (c) Retain a forested buffer not less than 330 feet around the active nest tree as a key component that includes perching, fledging, and replacement tree(s).
  (d) During the critical period of use, operations shall be designed and conducted to not disturb bald eagles using the resource site:
    (A) Except as provided in paragraph (B) of this subsection, during the critical period of use, operations shall not be permitted within one-quarter (1/4) mile of the active nest tree or perch trees. If the eagles have line-of-sight vision from these trees to the operation, the distance is one-half (1/2) mile.
    (B) If the State Forester determines through review of the written plan that the operations will not cause the birds to flush from the trees identified in paragraph (A) of this section, then there is no conflict and the distance restrictions in paragraph (A) of this section may be modified.
    (C) The critical period of use is January 1 through August 31. The specific critical period of use for individual nesting resource sites may be modified in writing by the State Forester depending upon the actual dates that bald eagles are present at the resource site and are susceptible to disturbance.
(3) Structural or temporal exceptions for the resource site are allowed if the operator is in compliance with, and has on file with the State Forester, an applicable incidental take permit issued by federal authorities under the Endangered Species Act.

629-665-0230
Bald Eagle Roosting Sites; Key Components; Protection Requirements; and Exceptions
(1) For bald eagle roosting sites, the resource site is the active roost trees, probable roost trees as identified by the State Forester, and all identified key components:
  (a) An active roosting site is one that has been used within the past 5 years for roosting by bald eagles. No protection is required for an abandoned bald eagle roosting site.
  (b) The key components associated with a bald eagle roosting site are staging trees, probable roost trees as identified by the State Forester, and a forested buffer around the roost trees. Factors to consider when identifying key components:
    (A) Actual observation data when available.
    (B) Roost sites frequently occur in mature forests. Roost trees are often significantly larger than the rest of the stand.
    (C) Staging trees are often large, dead-top or dominant trees or snags where one or more eagles can perch and have direct access to the roosting site.
    (D) The surrounding forested buffer must be adequate to maintain a suitable microclimate around the roost trees.
    (E) Areas of high winds may require that additional trees be retained to protect the active roost tree(s) and identified key components from damage.
(2) The operator shall provide the following protection measures when operating within or near a bald eagle roosting site:
  (a) During and after forest operations, the resource site shall be retained and protected from damage. The operation shall be designed to protect the trees from windthrow.
  (b) Retain the active roost tree(s).
  (c) Retain a forested buffer not less than 300 feet around the outermost active roost trees as a key component that includes probable roost trees.
  (d) Retain staging trees.
  (e) During the critical period of use, operations shall be designed and conducted to not disturb bald eagles using the resource site:
    (A) Except as provided in paragraph (B) of this subsection, during the critical period of use, operations shall not be permitted within one-quarter (1/4) mile of the active roost trees. If the eagles have line-of-sight vision from these trees to the operation, the distance is one-half (1/2) mile.

(B) If the State Forester determines through review of the written plan that the operations will not cause the birds to flush from trees identified in paragraph (A) of this subsection, then there is no conflict and the distance restrictions in paragraph (A) of this subsection may be modified.

(C) The critical period of use for bald eagle roosting sites in the Klamath Basin is October 31 through March 31. In other areas of Oregon the critical period of use is November 15 through March 15. The specific critical period of use for individual roosting resource sites may be modified in writing by the State Forester depending upon the actual dates that bald eagles are present at the resource site and are susceptible to disturbance.

(3) Structural or temporal exceptions for the resource site are allowed if the operator is in compliance with, and has on file with the State Forester, an applicable incidental take permit issued by federal authorities under the Endangered Species Act.

629-665-0240

Bald Eagle Foraging Perches; Key Components; Protection Requirements; and Exceptions

(1) For bald eagle foraging perches, the resource site is the active foraging perch. An active foraging perch is one that is habitually used by eagles as a vantage point while hunting. No protection is required for abandoned bald eagle foraging perches. The presence or absence of foraging perches within or near a foraging area shall be determined by the State Forester when the forester conducts an operation inspection. Factors to consider when identifying key components:

(a) Actual observation data when available.

(b) Bald eagles usually perch in the tallest trees on the edge of forest stands overlooking the hunting area. Snags and dead-top trees are often used.

(c) Areas of high winds may require that additional trees be retained to protect the active foraging perch from damage.

(2) The operator shall provide the following protection measures when operating near a bald eagle foraging perch:

(a) During and after forest operations, the foraging perch shall be retained and protected from damage. The operation shall be designed to protect the foraging perch from windthrow.

(b) During the critical period of use, operations shall be designed and conducted so they do not cause excessive disturbance to bald eagles using the foraging area. The critical period of use shall be determined on a site specific basis. The critical period of use varies for each bald eagle foraging area, depending on whether the foraging area is used by nesting, wintering, or migrating bald eagles.

(3) Temporal exceptions for the entire foraging areas shall not be permitted by the State Forester. Temporal protection is determined by evaluating the potential disturbance to the entire foraging area used by a breeding pair or wintering population of bald eagles. Disturbance at a single foraging perch in a foraging area may be determined by the State Forester to not cause a conflict. This evaluation shall be based on the number of alternative foraging perches in the bald eagle foraging area.

(4) Structural exceptions for an active foraging perch may be permitted if the State Forester determines that adequate replacement foraging perches will remain in the vicinity after completion of the forest operation.

Notes

OREGON FOREST PRACTICES ACT

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OREGON FOREST PRACTICES ACT

(Generally)

527.610 Short title. ORS 527.610 to 527.770, 527.990 (1) and 527.992 are known as the Oregon Forest Practices Act.

527.620 Definitions for ORS 527.610 to 527.770.
As used in ORS 527.610 to 527.770, 527.990 and 527.992:

(1) "**Board**" means the State Board of Forestry.

(2) "**Cumulative effects**" means the impact on the environment which results from the incremental impact of the forest practice when added to other past, present and reasonably foreseeable future forest practices regardless of what governmental agency or person undertakes such other actions.

(3) "**DBH**" means the diameter at breast height which is measured as the width of a standing tree at four and one-half feet above the ground, on the uphill side.

(4) "**Edge of the roadway**" means:
- (a) For interstate highways, the fence.
- (b) For all other state highways, the outermost edge of pavement, or if unpaved, the edge of the shoulder.

(5) "**Forest practice**" means any operation conducted on or pertaining to forestland, including but not limited to:
- (a) Reforestation of forestland;
- (b) Road construction and maintenance;
- (c) Harvesting of forest tree species;
- (d) Application of chemicals; and
- (e) Disposal of slash.

(6) "**Forest tree species**" means any tree species capable of producing logs, fiber or other wood materials suitable for the production of lumber, sheeting, pulp, firewood or other commercial forest products except trees grown to be Christmas trees as defined in ORS 571.505 on land used solely for the production of Christmas trees.

(7) "**Forestland**" means land which is used for the growing and harvesting of forest tree species, regardless of how the land is zoned or taxed or how any state or local statutes, ordinances, rules or regulations are applied.

(8) "**Harvest type 1**" means an operation that requires reforestation but does not require wildlife leave trees. A harvest type 1 is an operation that leaves a combined stocking level of free to grow seedlings, saplings, poles and larger trees that is less than the stocking level established by rule of the board that represents adequate utilization of the productivity of the site.

(9) "**Harvest type 2**" means an operation that requires wildlife leave trees but does not require reforestation. A harvest type 2 does not require reforestation because it has an adequate combined stocking of free to grow seedlings, saplings, poles and larger trees, but leaves:
- (a) On Cubic Foot Site Class I, II or III, fewer than 50 11-inch DBH trees or less than an equivalent basal area in larger trees, per acre;
- (b) On Cubic Foot Site Class IV or V, fewer than 30 11-inch DBH trees or less than an equivalent basal area in larger trees, per acre; or
- (c) On Cubic Foot Site Class VI, fewer than 15 11-inch DBH trees or less than an equivalent basal area in larger trees, per acre.

(10) "**Harvest type 3**" means an operation that requires reforestation and requires wildlife leave trees. This represents a level of stocking below which the size of operations is limited under ORS 527.740 and 527.750.

(11) "**Landowner**" means any individual, combination of individuals, partnership, corporation or association of whatever nature that holds an ownership interest in forestland, including the state and any political subdivision thereof.

(12) "**Operation**" means any commercial activity relating to the establishment, management or harvest of forest tree species except as provided by the following:
- (a) The establishment, management or harvest of Christmas trees, as defined in ORS 571.505, on land used solely for the production of Christmas trees.

(b) The establishment, management or harvest of hardwood timber, including but not limited to hybrid cottonwood, that is:
  (A) Grown on land that has been prepared by intensive cultivation methods and that is cleared of competing vegetation for at least three years after tree planting;
  (B) Of a species marketable as fiber for inclusion in the furnish for manufacturing paper products;
  (C) Harvested on a rotation cycle that is 12 or fewer years after planting; and
  (D) Subject to intensive agricultural practices such as fertilization, cultivation, irrigation, insect control and disease control.

(c) The establishment, management or harvest of trees actively farmed or cultured for the production of agricultural tree crops, including nuts, fruits, seeds and nursery stock.

(d) The establishment, management or harvest of ornamental, street or park trees within an urbanized area, as that term is defined in ORS 221.010.

(e) The management or harvest of juniper species conducted in a unit of less than 120 contiguous acres within a single ownership.

(f) The establishment or management of trees intended to mitigate the effects of agricultural practices on the environment or fish and wildlife resources, such as trees that are established or managed for windbreaks, riparian filters or shade strips immediately adjacent to actively farmed lands.

(g) The development of an approved land use change after timber harvest activities have been completed and land use conversion activities have commenced.

(13) "**Operator**" means any person, including a landowner or timber owner, who conducts an operation.

(14) "**Single ownership**" means ownership by an individual, partnership, corporation, limited liability company, trust, holding company or other business entity, including the state or any political subdivision thereof. Single ownership includes ownership held under different names or titles where the same individual or individuals, or their heirs or assigns, are shareholders (other than those of public corporations whose stock is traded on the open market), partners, business trustees or officers, or otherwise have an interest in or are associated with each property.

(15) "**State Forester**" means the State Forester or the duly authorized representative of the State Forester.

(16) "**Suitable hardwood seedlings**" means any hardwood seedling that will eventually yield logs or fiber, or both, sufficient in size and quality for the production of lumber, plywood, pulp or other forest products.

(17) "**Timber owner**" means any individual, combination of individuals, partnership, corporation or association of whatever nature, other than a landowner, that holds an ownership interest in any forest tree species on forestland.

(18) "**Visually sensitive corridor**" means forestland extending outward 150 feet, measured on the slope, from the outermost edge of the roadway of a scenic highway referred to in ORS 527.755, along both sides for the full length of the highway.

(19) "**Wildlife leave trees**" means trees or snags required to be retained as described in ORS 527.676 (1).

(20) "**Written plan**" means a document prepared by an operator, timber owner or landowner that describes how the operation is planned to be conducted.

527.630 Policy; rules.

(1) Forests make a vital contribution to Oregon by providing jobs, products, tax base and other social and economic benefits, by helping to maintain forest tree species, soil, air and water resources and by providing a habitat for wildlife and aquatic life. Therefore, it is declared to be the public policy of the State of Oregon to encourage economically efficient forest practices that ensure the continuous growing and harvesting of forest tree species and the maintenance of forestland for such purposes as the leading use on privately owned land, consistent with sound management of soil, air, water, fish and wildlife resources and scenic resources within visually sensitive corridors as provided in ORS 527.755 and to ensure the continuous benefits of those resources for future generations of Oregonians.

(2) It is recognized that operations on forestland are already subject to other laws and to regulations of other agencies which deal primarily with consequences of such operations rather than the manner in which operations are conducted. It is further recognized that it is essential to avoid uncertainty and confusion in enforcement and implementation of such laws and regulations and in planning and carrying out operations on forestlands.

(3) To encourage forest practices implementing the policy of ORS 527.610 to 527.770 and 527.990 and 527.992, it is declared to be in the public interest to vest in the State Board of Forestry exclusive authority to develop

and enforce statewide and regional rules pursuant to ORS 527.710 and to coordinate with other state agencies and local governments which are concerned with the forest environment.

(4) The board may adopt and enforce rules addressing scenic considerations only in accordance with ORS 527.755.

(5) The board shall adopt and enforce forest practice rules to reduce the risk of serious bodily injury or death from a rapidly moving landslide only in accordance with ORS 527.710 (10). As used in this subsection, "rapidly moving landslide" has the meaning given in ORS 195.250.

(6) The State of Oregon should provide a stable regulatory environment to encourage investment in private forestlands.

527.640 Forest regions.

The State Board of Forestry shall establish a number of forest regions, but not less than three, necessary to achieve the purposes described in ORS 527.630.

527.650 Forest practice committees; members; qualifications; appointment; terms.

(1) The State Board of Forestry shall establish a forest practice committee for each forest region established pursuant to ORS 527.640. Each such committee shall consist of nine members, a majority of whom must reside in the region. Members of each committee shall be qualified by education or experience in natural resource management and not less than two-thirds of the members of each committee shall be private landowners, private timber owners or authorized representatives of such landowners or timber owners who regularly engage in operations.

(2) Members of forest practice committees shall be appointed by the board for three-year terms. If there is a vacancy for any cause, the board shall make an appointment to become immediately effective for the unexpired term. Each such committee shall select a chairperson from among its members. A staff member of the State Forestry Department shall be designated by the State Forester to serve as the secretary, without voting power, for each such committee.

527.660 Committees to review rules.

Each forest practice committee shall review proposed forest practice rules in order to assist the State Board of Forestry in developing rules appropriate to the forest conditions within its region. Committee recommendations are advisory only and the committees need not be consulted prior to the adoption of any forest practice rule.

527.665 Notice of reforestation requirements to be given in forestland transfers; effect of failure to notify; damages.

(1) In any transaction for the conveyance of an ownership interest in forestland, the transferor must provide to the transferee, prior to the date of execution of the conveyance, written notice of any reforestation requirements imposed upon the land pursuant to the Oregon Forest Practices Act.

(2) The failure of the transferor to comply with subsection (1) of this section does not invalidate an instrument of conveyance executed in the transaction. However, for any such failure the transferee may bring against the transferor an appropriate action to recover the costs of complying with the reforestation requirements. The court may award reasonable attorney fees to the prevailing party in an action brought under the provisions of this section.

527.670 Commencement of operations; rules; written plan; effect of plan; notice of chemical application; fees.

(1) The State Board of Forestry shall designate the types of operations for which notice shall be required under this section.

(2) The board shall determine by rule what types of operations require a written plan.

(3) The board's determination under subsection (2) of this section shall require a written plan for operations:

(a) Within one hundred feet of a stream determined by the State Forester to be used by fish or for domestic use, unless the board, by rule, provides that a written plan is not required because the proposed operation will be conducted according to a general vegetation retention prescription described in administrative rule, or unless the operation will be conducted pursuant to a stewardship agreement entered into under ORS 541.423; or

(b) Within three hundred feet of a resource site inventoried pursuant to ORS 527.710 (3)(a) unless the operation will be conducted pursuant to a stewardship agreement entered into under ORS 541.423 and is consistent with the purposes and policies of any relevant Safe Harbor Agreements or

Candidate Conservation Agreements entered into between the State of Oregon and agencies of the United States Government, pursuant to the federal Endangered Species Act of 1973 (P.L. 93-205, 16 U.S.C. 1531 et seq.) and federal regulations.

(4) The distances set forth in subsection (3)(a) and (b) of this section are solely for the purpose of defining an area within which a hearing may be requested under ORS 527.700 and not the area to be protected by the board's rules adopted pursuant to ORS 527.710 (3)(c).

(5) For the purpose of determining the distances set forth in subsection (3)(a) and (b) of this section “site” means the specific resource site and not any additional buffer area.

(6) An operator, timber owner or landowner, before commencing an operation, shall notify the State Forester. The notification shall be on forms provided by the State Forester and shall include the name and address of the operator, timber owner and landowner, the legal description of the operating area, and any other information considered by the State Forester to be necessary for the administration of the rules promulgated by the board pursuant to ORS 527.710. Promptly upon receipt of such notice, the State Forester shall send a copy of the notice to whichever of the operator, timber owner or landowner did not submit the notification. The State Forester shall send a copy of notices involving chemical applications to persons within 10 miles of the chemical application who hold downstream surface water rights pursuant to ORS chapter 537, if such a person has requested that notification in writing. The board shall adopt rules specifying the information to be contained in the notice. All information filed with the State Forester pertaining to chemical applications shall be public record.

(7) An operator, timber owner or landowner, whichever filed the original notification, shall notify the State Forester of any subsequent change in the information contained in the notification.

(8) Within three working days of receipt of a notice or a written plan filed under subsection (6) or (7) of this section, the State Forester shall send a copy of the notice or written plan to any person who requested of the State Forester in writing that the person be sent copies of notice and written plan and who has paid any applicable fee established by the State Forester for such service. The State Forester may establish a fee for sending copies of notices and written plans under this subsection not to exceed the actual and reasonable costs. In addition, the State Forester shall send a copy of the notification to the Department of Revenue and the county assessor for the county in which the operation is located, at times and in a manner determined through written cooperative agreement by the parties involved.

(9) Persons may submit written comments pertaining to the operation to the State Forester within 14 calendar days of the date the notice or written plan was filed with the State Forester under subsection (2), (6) or (7) of this section. Notwithstanding the provisions of this subsection, the State Forester may waive any waiting period for operations not requiring a written plan under subsection (3) of this section, except those operations involving aerial application of chemicals.

(10) If an operator, timber owner or landowner is required to submit a written plan of operations to the State Forester under subsection (3) of this section:

- (a) The State Forester shall review a written plan and may provide comments to the person who submitted the written plan;
- (b) The State Forester may not provide any comments concerning the written plan earlier than 14 calendar days following the date that the written plan was filed with the State Forester nor later than 21 calendar days following the date that the written plan was filed; and
- (c) Provided that notice has been provided as required by subsection (6) of this section, the operation may commence on the date that the State Forester provides comments or, if no comments are provided within the time period established in paragraph (b) of this subsection, at any time after 21 calendar days following the date that the written plan was filed.

(11) (a) Comments provided by the State Forester, or by the board under ORS 527.700 (6), to the person who submitted the written plan are for the sole purpose of providing advice to the operator, timber owner or landowner regarding whether the operation described in the written plan is likely to comply with ORS 527.610 to 527.770 and rules adopted thereunder. Comments provided by the State Forester or the board do not constitute an approval of the written plan or operation.

- (b) If the State Forester or the board does not comment on a written plan, the failure to comment does not mean that an operation carried out in conformance with the written plan complies with ORS 527.610 to 527.770 or rules adopted thereunder nor does the failure to comment constitute a rejection of the written plan or operation.
- (c) In the event that the State Forester or board determines that an enforcement action may be appropriate concerning the compliance of a particular operation with ORS 527.610 to 527.770 or

rules adopted thereunder, the State Forester or board shall consider, but are not bound by, comments that the State Forester provided under this section or comments that the board provided under ORS 527.700.

(12) When the operation is required to have a written plan under subsection (3) of this section and comments have been timely filed under subsection (9) of this section pertaining to the operation requiring a written plan, the State Forester shall:

(a) Send a copy of the State Forester's review and comments, if any, to persons who submitted timely written comments under subsection (9) of this section pertaining to the operation; and

(b) Send to the operator, timber owner and landowner a copy of all timely comments submitted under subsection (9) of this section.

527.674 Rules requiring approval of written plan prohibited.

The State Board of Forestry may not adopt or enforce a rule under ORS 527.610 to 527.770 that requires that the board or the State Forester approve written plans as a required precedent to conducting a forest practice or operation.

527.676 Leaving snags and downed logs in harvest type 2 or type 3 units; green trees to be left near certain streams.

(1) In order to contribute to the overall maintenance of wildlife, nutrient cycling, moisture retention and other resource benefits of retained wood, when a harvest type 2 unit exceeding 25 acres or harvest type 3 unit exceeding 25 acres occurs the operator shall leave an average, per acre harvested, at least:

(a) Two snags or two green trees at least 30 feet in height and 11 inches DBH or larger, at least 50 percent of which are conifers; and

(b) Two downed logs or downed trees, at least 50 percent of which are conifers, that each comprise at least 10 cubic feet gross volume and are no less than six feet long. One downed conifer or suitable hardwood log of at least 20 cubic feet gross volume and no less than six feet long may count as two logs.

(2) In meeting the requirements of this section, the operator has the sole discretion to determine the location and distribution of wildlife leave trees, including the ability to leave snags, trees and logs in one or more clusters rather than distributed throughout the unit and, if specifically permitted by the State Board of Forestry by rule, to meet the wildlife leave tree requirements by counting snags, trees or logs otherwise required to be left in riparian management areas or resource sites listed in ORS 527.710, subject to:

(a) Safety and fire hazard regulations;

(b) Rules or other requirements relating to wildlife leave trees established by the State Board of Forestry or the State Forester; and

(c) All other requirements pertaining to forest operations.

(3) In meeting the requirements of this section, the State Forester:

(a) Shall consult with the operator concerning the selection of wildlife leave trees when the State Forester believes that retaining certain trees or groups of trees would provide increased benefits to wildlife.

(b) May approve alternate plans submitted by the operator to meet the provisions of this section, including but not limited to waiving:

(A) The requirements that at least 50 percent of wildlife leave trees be conifers, upon a showing that a site is being intensively managed for hardwood production; and

(B) In whole or in part, the requirements of this section for one operation if an alternate plan provides for an equal or greater number of wildlife leave trees in another harvest type 2 or harvest type 3 operation, that the State Forester determines would achieve better overall benefits for wildlife.

(c) May require, for operations adjacent to a fish-bearing or domestic use stream, in addition to trees otherwise required to be left in riparian management areas, up to 25 percent of the green trees required to be retained under this section to be left in or adjacent to the riparian management area of the stream.

(d) May require by rule, for operations adjacent to a small, nonfish-bearing stream subject to rapidly moving landslides as defined in ORS 195.250, that available green trees and snags be left in or adjacent to the stream. The operator must leave available green trees and snags under this paragraph within an area that is 50 feet on each side of the stream and no more than 500 feet upstream from a riparian management area of a fish-bearing stream.

(4) When a harvest type 2 or harvest type 3 unit occurs adjacent to a prior harvest type 2 or harvest type 3 unit, resulting in a combined total contiguous acreage of harvest type 2 or harvest type 3 under single ownership exceeding 25 acres, the wildlife leave tree and downed log requirements of subsection (1) of this section apply to the combined total contiguous acreage.

527.680 Violation by operator; citation; order to cease violation; order to repair damage; temporary order where violation continuing; service on operator.

(1) Whenever the State Forester determines that an operator has committed a violation under ORS 527.990 (1), the State Forester may issue and serve a citation upon the operator or authorized representative. The State Forester shall cause a copy of the citation to be mailed or delivered to the timber owner and landowner. Whenever the State Forester determines that the landowner has failed to comply with the reforestation rules under ORS 527.710, the State Forester may issue and serve a citation upon the landowner or authorized representative. Each citation issued under this section shall specify the nature of the violation charged and any damage or unsatisfactory condition that has occurred as the result of such violation.

(2) Whenever a citation is served pursuant to subsection (1) of this section, the State Forester:

(a) Shall issue and serve upon the landowner or operator or authorized representative an order directing that the landowner or operator cease further violation. If the order is served upon an operator, the State Forester shall cause a copy of such order to be mailed or delivered to the timber owner and landowner; and

(b) May issue and serve an order upon the landowner or operator and shall cause a copy of such order to be mailed or delivered to the timber owner and landowner, directing the landowner or operator, where practical and economically feasible, to make reasonable efforts to repair the damage or correct the unsatisfactory condition specified in the citation within a period specified by the State Forester.

(3) In the event the order issued under subsection (2)(a) of this section has not been complied with, and the violation specified in such order is resulting in continuing damage, the State Forester by temporary order, may direct the landowner or operator to cease any further activity in that portion of the operation that is resulting in such damage. Such temporary order shall be in effect until the date of the expiration of the period as prescribed in subsection (4) of this section or until the date that the violation ceases, whichever date occurs first.

(4) A temporary order issued under subsection (3) of this section shall be served upon the landowner or operator or authorized representative, and the State Forester shall cause a copy of such temporary order to be mailed or delivered to the operator, timber owner and landowner. If requested by the operator, timber owner or landowner, the State Board of Forestry, following the appeal procedures of ORS 527.700, must hold a hearing on the temporary order within five working days after the receipt by the board of the request. A temporary order issued and served pursuant to subsection (3) of this section shall remain in effect not more than five working days after such hearing unless the order is sooner affirmed, modified or revoked by the board.

(5) If a landowner or operator fails to comply with a final order issued under subsection (2)(b) of this section within the time specified in the order, or if the landowner or operator fails to comply with a final order imposing civil penalties for violation of any provision of the Oregon Forest Practices Act, the State Forester may issue an order that prohibits the affected landowner or operator from conducting any new operations on any forestland in this state until the landowner or operator has complied with the order to correct an unsatisfactory condition, make repair or pay the civil penalty, as the case may be, to the satisfaction of the State Forester.

527.683 Notice of violation.

(1) No civil penalty prescribed in ORS 527.992 shall be imposed until the person incurring the penalty has received notice in writing from the State Forester specifying the violation. Such notice is in addition to the notice required in ORS 183.745.

(2) The citation issued pursuant to ORS 527.680 (1) and the order issued pursuant to ORS 527.680 (2)(b) shall each constitute the notice required by subsection (1) of this section.

527.685 Civil penalty considerations; rules.

(1) The State Board of Forestry shall by rule establish the amount of civil penalty that may be imposed for a particular violation. Except as provided in subsection (5) of this section, no civil penalty shall exceed $5,000 per violation.

(2) In imposing a penalty authorized by this section, the State Forester may consider the following factors:
  (a) The past history of the person incurring a penalty in taking all feasible steps or procedures necessary or appropriate to correct any violation.
  (b) Any prior violations of statutes, rules, orders and permits pertaining to the Oregon Forest Practices Act.
  (c) The gravity and magnitude of the violation.
  (d) Whether the violation was repeated or continuous.
  (e) Whether the cause of the violation was an unavoidable accident, negligence or an intentional act.
  (f) The size and type of ownership of the operation.
  (g) Any relevant rule of the board.
  (h) The violator's cooperativeness and efforts to correct the violation.

(3) The penalty imposed under this section may be remitted or mitigated upon such terms and conditions as the board determines to be proper and consistent with the public benefit. Upon the request of the person incurring the penalty, the board shall consider evidence of the economic and financial condition of the person in determining whether a penalty shall be remitted or mitigated.

(4) The board, by rule, may delegate to the State Forester upon such conditions as deemed necessary, all or part of the authority of the board provided in subsection (3) of this section to assess, remit or mitigate civil penalties.

(5) For a violation of ORS 527.745, or rules for reforestation adopted pursuant to ORS 527.745, the State Forester may impose a civil penalty in an amount equal to the estimated cost of reforesting lands pursuant to 527.690.

527.687 Civil penalty procedure.

(1) Subject to the notice provisions of ORS 527.683, any civil penalty under ORS 527.992 shall be imposed in the manner provided in ORS 183.745.

(2) In no case shall a hearing requested under ORS 183.745 be held less than 45 days from the date of service of the notice of penalty to allow the party to prepare testimony. The hearing shall be held not more than 180 days following issuance of the notice unless all parties agree on an extension.

(3) Hearings under this section shall be conducted by an administrative law judge assigned from the Office of Administrative Hearings established under ORS 183.605.

(4) Except as provided in subsection (5) of this section, all civil penalties recovered under ORS 527.610 to 527.770, 527.990 and 527.992 shall be paid to the General Fund.

(5) Civil penalties recovered under ORS 527.685(5) shall be deposited in the State Forestry Department Account under ORS 526.060 and used, consistently with ORS 527.690, by the State Forester to reforest the land that is the subject of a violation of ORS 527.745 or rules for reforestation adopted pursuant to ORS 527.745. Civil penalties described in this subsection that exceed the costs of reforestation shall be paid to the General Fund.

527.690 Failure to comply with order to reforest or repair damage; estimate of cost of repair; notification; board authorization for repair; cost of repair as lien upon operator, timber owner or landowner.

(1) In the event an order issued pursuant to ORS 527.680 (2)(b) directs the repair of damage or correction of an unsatisfactory condition, including compliance with reforestation requirements, and if the operator or landowner does not comply with the order within the period specified in such order and the order has not been appealed to the State Board of Forestry within 30 days, the State Forester based upon a determination by the forester of what action will best carry out the purposes of ORS 527.630 shall:
  (a) Maintain an action in the Circuit Court for Marion County or the circuit court for the county in which the violation occurred for an order requiring the landowner or operator to comply with the terms of the forester's order or to restrain violations thereof; or
  (b) Estimate the cost to repair the damage or the unsatisfactory condition as directed by the order and shall notify the operator, timber owner and landowner in writing of the amount of the estimate. Upon agreement of the operator, timber owner or the landowner to pay the cost, the State Forester may proceed to repair the damage or the unsatisfactory condition. In the event approval of the expenditure is not obtained within 30 days after notification to the operator, timber owner and landowner under this section, the State Forester shall present to the board the alleged violation, the estimate of the expenditure to repair the damage or unsatisfactory condition and the justification for the expenditure.

(2) The board shall review the matter presented to it pursuant to subsection (1) of this section and shall determine whether to authorize the State Forester to proceed to repair the damage or correct the unsatisfactory condition and the amount authorized for expenditure. The board shall afford the operator, timber owner or landowner the opportunity to appear before the board for the purpose of presenting facts pertaining to the alleged violation and the proposed expenditure.

(3) If the board authorizes the State Forester to repair the damage or correct the unsatisfactory condition, the State Forester shall proceed, either with forces of the State Forester or by contract, to repair the damage or correct the unsatisfactory condition. The State Forester shall keep a complete account of direct expenditures incurred, and upon completion of the work, shall prepare an itemized statement thereof and shall deliver a copy to the operator, timber owner and landowner. In no event shall the expenditures exceed the amount authorized by subsection (2) of this section. An itemized statement of the direct expenditures incurred by the State Forester, certified by the State Forester, shall be accepted as prima facie evidence of such expenditures in any proceeding authorized by this section. If the State Forester's action to repair the damage or correct the unsatisfactory condition arose from an operation for which a bond, cash deposit or other security was required under ORS 527.760, the State Forester shall retain any applicable portion of a cash deposit and the surety on the bond or holder of the other security deposit shall pay the amount of the bond or other security deposit to the State Forester upon demand. If the amount specified in the demand is not paid within 30 days following the demand, the Attorney General, upon request by the State Forester, shall institute proceedings to recover the amount specified in the demand.

(4) The expenditures in cases covered by this section, including cases where the amount collected on a bond, deposit or other security was not sufficient to cover authorized expenditures, shall constitute a general lien upon the real and personal property of the operator, timber owner and landowner within the county in which the damage occurred. A written notice of the lien, containing a statement of the demand, the description of the property upon which the expenditures were made and the name of the parties against whom the lien attaches, shall be certified under oath by the State Forester and filed in the office of the county clerk of the county or counties in which the expenditures were made within six months after the date of delivery of the itemized statement referred to in subsection (3) of this section, and may be foreclosed in the manner provided in ORS chapter 88.

(5) All moneys recovered under this section shall be paid into the State Forestry Department Account.

527.700 Appeals from orders of State Forester; hearing procedure; rules; stay of operation.

(1) Any operator, timber owner or landowner affected by any finding or order of the State Forester issued under ORS 527.610 to 527.770 and 527.992 may request a hearing within 30 days after issuance of the order. The hearing shall be commenced within 14 days after receipt of the request for hearing and a final order shall be issued within 28 days of the request for the hearing unless all parties agree to an extension of the time limit.

(2) The State Board of Forestry may delegate to the administrative law judge the authority to issue final orders on matters under this section. Hearings provided under this section shall be conducted as contested case hearings under ORS 183.413 to 183.470. The board may establish such rules as it deems appropriate to carry out the provisions of this section. Appeals from final hearing orders under this section shall be provided in ORS 183.482, except that the comments of the board or the State Forester concerning a written plan are not reviewable orders under ORS 183.480.

(3) Any person adversely affected or aggrieved by an operation described in subsection (4) of this section may file a written request to the board for a hearing if the person submitted written comments pertaining to the operation within the time limits established under ORS 527.670 (9).

(4) A request for hearing may be filed under subsection (3) of this section only if a written plan was required pursuant to ORS 527.670 (3).

(5) A request for hearing filed under subsection (3) of this section shall be filed within 14 calendar days of the date the State Forester completed review of the written plan and issued any comments. Copies of the complete request shall be served, within the 14-day period, on the operator, timber owner and landowner. The request shall include:

- (a) A copy of the written plan on which the person is requesting a hearing;
- (b) A copy of the comments pertaining to the operation that were filed by the person requesting the hearing;
- (c) A statement that shows the person is adversely affected or aggrieved by the operation and has an interest which is addressed by the Oregon Forest Practices Act or rules adopted thereunder; and
- (d) A statement of facts that establishes that the operation is of the type described in ORS 527.670 (3).

(6) If the board finds that the person making the request meets the requirement of subsection (5)(c) of this section, the board shall set the matter for hearing within 21 calendar days after receipt of the request for hearing. The operator, timber owner and landowner shall be allowable parties to the hearing. The person requesting the hearing may raise, in the hearing, only those issues that the person raised in written comments filed under ORS 527.670 (9) relating to conformity with the rules of the board. The board shall issue its own comments, which may affirm, modify or rescind comments of the State Forester, if any, on the written plan within 45 days after the request for hearing was filed, unless all parties agree to an extension of the time limit. The comments of the board or of the State Forester concerning a written plan are not reviewable orders under ORS 183.480.

(7) The board may award reasonable attorney fees and expenses to each of the prevailing parties against any other party who the board finds presented a position without probable cause to believe the position was well-founded, or made a request primarily for a purpose other than to secure appropriate action by the board.

(8) (a) Upon the written request of a person requesting a hearing under subsection (3) of this section, a stay of the operation subject to the hearing may be granted upon a showing that:

(A) Commencement or continuation of the operation will constitute a violation of the rules of the board;

(B) The person requesting the stay will suffer irreparable injury if the stay is not granted; and

(C) The requirements of subsections (3), (4) and (5) of this section are met.

(b) If the board grants the stay, it shall require the person requesting the stay to give an undertaking which may be in the amount of the damages potentially resulting from the stay, but in any event shall not be less than $15,000. The board may impose other reasonable requirements pertaining to the grant of the stay. The board shall limit the effect of the stay to the specific geographic area or elements of the operation for which the person requesting the stay has demonstrated a violation of the rules and irreparable injury under paragraph (a) of this subsection.

(c) If the board determines in its comments that the written plan pertaining to the operation for which the stay was granted is likely to result in compliance with ORS 527.610 to 527.770 or the rules of the board, the board may award reasonable attorney fees and actual damages in favor of each of the prevailing parties, to the extent incurred by each, against the person requesting the stay.

(9) If the board rescinds or modifies the comments on the written plan as submitted by the State Forester pertaining to any operation, the board may award reasonable attorney fees and costs against the state in favor of each of the prevailing parties.

(10) As used in this section, “person” means any individual, partnership, corporation, association, governmental subdivision or public or private organization of any character.

527.710 Duties and powers of board; rules; inventory for resource protection; consultation with other agencies required.

(1) In carrying out the purposes of ORS 527.610 to 527.770, 527.990 (1) and 527.992, the State Board of Forestry shall adopt, in accordance with applicable provisions of ORS chapter 183, rules to be administered by the State Forester establishing standards for forest practices in each region or subregion.

(2) The rules shall ensure the continuous growing and harvesting of forest tree species. Consistent with ORS 527.630, the rules shall provide for the overall maintenance of the following resources:

(a) Air quality;

(b) Water resources, including but not limited to sources of domestic drinking water;

(c) Soil productivity; and

(d) Fish and wildlife.

(3) (a) In addition to its rulemaking responsibilities under subsection (2) of this section, the board shall collect and analyze the best available information and establish inventories of the following resource sites needing protection:

(A) Threatened and endangered fish and wildlife species identified on lists that are adopted, by rule, by the State Fish and Wildlife Commission or are federally listed under the Endangered Species Act of 1973 as amended;

(B) Sensitive bird nesting, roosting and watering sites;

(C) Biological sites that are ecologically and scientifically significant; and

(D) Significant wetlands.

(b) The board shall determine whether forest practices would conflict with resource sites in the inventories required by paragraph (a) of this subsection. If the board determines that one or more

forest practices would conflict with resource sites in the inventory, the board shall consider the consequences of the conflicting uses and determine appropriate levels of protection.

(c) Based upon the analysis required by paragraph (b) of this subsection, and consistent with the policies of ORS 527.630, the board shall adopt rules appropriate to protect resource sites in the inventories required by paragraph (a) of this subsection.

(4) Before adopting rules under subsection (1) of this section, the board shall consult with other agencies of this state or any of its political subdivisions that have functions with respect to the purposes specified in ORS 527.630 or programs affected by forest operations. Agencies and programs subject to consultation under this subsection include, but are not limited to:

(a) Air and water pollution programs administered by the Department of Environmental Quality under ORS chapters 468A and 468B and ORS 477.013 and 477.515 to 477.532;

(b) Mining operation programs administered by the Department of Geology and Mineral Industries under ORS 516.010 to 516.130 and ORS chapter 517;

(c) Game fish and wildlife, commercial fishing, licensing, wildlife and bird refuge and fish habitat improvement tax incentive programs administered by the State Department of Fish and Wildlife under ORS 272.060, 315.134, and ORS chapters 496, 498, 501, 506 and 509;

(d) Park land, Willamette River Greenway, scenic waterway and recreation trail programs administered by the State Parks and Recreation Department under ORS 358.480 to 358.545, 390.310 to 390.368, 390.805 to 390.925, 390.950 to 390.989 and 390.121;

(e) The programs administered by the Columbia River Gorge Commission under Public Law 99-663 and ORS 196.110 and 196.150;

(f) Removal and fill, natural heritage conservation and natural heritage conservation tax incentive programs administered by the State Land Board and the Department of State Lands under ORS 196.800 and 273.553 to 273.591;

(g) Federal Safe Drinking Water Act programs administered by the Department of Human Services under ORS 448.273 to 448.990;

(h) Natural heritage conservation programs administered by the Natural Heritage Advisory Council under ORS 273.553 to 273.591;

(i) Open space land tax incentive programs administered by cities and counties under ORS 308A.300 to 308A.330;

(j) Water resources programs administered by the Water Resources Department under ORS 536.220 to 536.540; and

(k) Pesticide control programs administered by the State Department of Agriculture under ORS chapter 634.

(5) In carrying out the provisions of subsection (4) of this section, the board shall consider and accommodate the rules and programs of other agencies to the extent deemed by the board to be appropriate and consistent with the purposes of ORS 527.630.

(6) The board shall adopt rules to meet the purposes of another agency's regulatory program where it is the intent of the board to administer the other agency's program on forestland and where the other agency concurs by rule. An operation performed in compliance with the board's rules shall be deemed to comply with the other agency's program.

(7) (a) The board may enter into cooperative agreements or contracts necessary in carrying out the purposes specified in ORS 527.630.

(b) The State Forestry Department shall enter into agreements with appropriate state agencies for joint monitoring of the effectiveness of forest practice rules in protecting forest resources and water quality.

(8) If, based upon the study completed pursuant to section 15 (2)(f), chapter 919, Oregon Laws 1991, the board determines that additional rules are necessary to protect forest resources pursuant to ORS 527.630, the board shall adopt forest practice rules that reduce to the degree practicable the adverse impacts of cumulative effects of forest practices on air and water quality, soil productivity, fish and wildlife resources and watersheds. Such rules shall include a process for determining areas where adverse impacts from cumulative effects have occurred or are likely to occur, and may require that a written plan be submitted for harvests in such areas.

(9) (a) The State Forester, in cooperation with the State Department of Fish and Wildlife, shall identify streams for which restoration of habitat would be environmentally beneficial. The State Forester shall select as a priority those streams where restoration efforts will provide the greatest benefits to fish and wildlife, and to streambank and streambed stability.

(b) For those streams identified in paragraph (a) of this subsection, the State Forester shall encourage landowners to enter into cooperative agreements with appropriate state agencies for conduct of restoration activities.

(c) The board, in consultation with appropriate state agencies, shall study and identify methods for restoring or enhancing fish and wildlife populations through restoration and rehabilitation of sites beneficial to fish and wildlife.

(d) The board shall adopt rules to implement the findings of this subsection.

(10) In addition to its responsibilities under subsections (1) to (3) of this section, the board shall adopt rules to reduce the risk of serious bodily injury or death caused by a rapidly moving landslide directly related to forest practices. The rules shall consider the exposure of the public to these safety risks and shall include appropriate practices designed to reduce the occurrence, timing or effects of rapidly moving landslides. As used in this subsection, "rapidly moving landslide" has the meaning given that term in ORS 195.250.

527.714 Types of rules; procedure; findings necessary; rule analysis.

(1) The rulemaking authority of the State Board of Forestry under ORS 527.610 to 527.770 consists generally of the following three types of rules:

(a) Rules adopted to implement administration, procedures or enforcement of ORS 527.610 to 527.770 that support but do not directly regulate standards of forest practices.

(b) Rules adopted to provide definitions or procedures for forest practices where the standards are set in statute.

(c) Rules adopted to implement the provisions of ORS 527.710 (2), (3), (6), (8), (9), and (10) that grant broad discretion to the board and that set standards for forest practices not specifically addressed in statute.

(2) When considering the adoption of a rule, and prior to the notice required pursuant to ORS 183.335, the board shall determine which type of rule described in subsection (1) of this section is being considered.

(3) If the board determines that a proposed rule is of the type described in subsection (1)(a) or (b) of this section, or if the proposed rule is designed only to clarify the meaning of rules already adopted or to make minor adjustments to rules already adopted that are of the type described in subsection (1)(c) of this section, rulemaking may proceed in accordance with ORS 183.325 to 183.410 and is not subject to the provisions of this section.

(4) If the board determines that a proposed rule is of the type described in subsection (1)(c) of this section, and the proposed rule would change the standards for forest practices, the board shall describe in its rule the purpose of the rule and the level of protection that is desired.

(5) If the board determines that a proposed rule is of the type described in subsection (1)(c) of this section, including a proposed amendment to an existing rule not qualifying under subsection (3) of this section, and the proposed rule would provide new or increased standards for forest practices, the board may adopt such a rule only after determining that the following facts exist and standards are met:

(a) If forest practices continue to be conducted under existing regulations, there is monitoring or research evidence that documents that degradation of resources maintained under ORS 527.710 (2) or (3) is likely, or in the case of rules proposed under ORS 527.710 (10), that there is a substantial risk of serious bodily injury or death;

(b) If the resource to be protected is a wildlife species, the scientific or biological status of a species or resource site to be protected by the proposed rule has been documented using best available information;

(c) The proposed rule reflects available scientific information, the results of relevant monitoring and, as appropriate, adequate field evaluation at representative locations in Oregon;

(d) The objectives of the proposed rule are clearly defined, and the restrictions placed on forest practices as a result of adoption of the proposed rule:

(A) Are to prevent harm or provide benefits to the resource or resource site for which protection is sought, or in the case of rules proposed under ORS 527.710 (10), to reduce risk of serious bodily injury or death; and

(B) Are directly related to the objective of the proposed rule and substantially advance its purpose;

(e) The availability, effectiveness and feasibility of alternatives to the proposed rule, including nonregulatory alternatives, were considered, and the alternative chosen is the least burdensome to landowners and timber owners, in the aggregate, while still achieving the desired level of protection; and

(f) The benefits to the resource, or in the case of rules proposed under ORS 527.710 (10), the benefits in reduction of risk of serious bodily injury or death, that would be achieved by adopting the rule are in proportion to the degree that existing practices of the landowners and timber owners, in the aggregate, are contributing to the overall resource concern that the proposed rule is intended to address.

(6) Nothing in subsection (5) of this section:
- (a) Requires the board to call witnesses;
- (b) Requires the board to allow cross-examination of witnesses;
- (c) Restricts ex parte communications with the board or requires the board to place statements of such communications on the record;
- (d) Requires verbatim transcripts of records of proceedings; or
- (e) Requires depositions, discovery or subpoenas.

(7) If the board determines that a proposed rule is of the type described in subsection (1)(c) of this section, and the proposed rule would require new or increased standards for forest practices, as part of or in addition to the economic and fiscal impact statement required by ORS 183.335 (2)(b)(E), the board shall, prior to the close of the public comment period, prepare and make available to the public a comprehensive analysis of the economic impact of the proposed rule. The analysis shall include, but is not limited to:
- (a) An estimate of the potential change in timber harvest as a result of the rule;
- (b) An estimate of the overall statewide economic impact, including a change in output, employment and income;
- (c) An estimate of the total economic impact on the forest products industry and common school and county forest trust land revenues, both regionally and statewide; and
- (d) Information derived from consultation with potentially affected landowners and timber owners and an assessment of the economic impact of the proposed rule under a wide variety of circumstances, including varying ownership sizes and the geographic location and terrain of a diverse subset of potentially affected forestland parcels.

(8) The provisions of this section do not apply to temporary rules adopted by the board.

Note: 527.714 was enacted into law by the Legislative Assembly but was not added to or made a part of ORS chapter 527 or any series therein by legislative action. See Preface to Oregon Revised Statutes for further explanation.

527.715 Rules to establish standards and procedures. The State Board of Forestry shall establish, by rule, the standards and procedures to implement the provisions of ORS 197.180, 197.270, 197.825, 215.050, 477.090, 477.440, 477.455, 477.460, 526.009, 526.016, 526.156, 527.620, 527.630, 527.660, 527.670, 527.683 to 527.724, 527.736 to 527.760 and 527.992.

527.721 Coordination with state and local agencies for review and comment on operations.
By rule or by cooperative agreement entered into following an opportunity for public comment before the State Board of Forestry, the board shall provide for coordination with appropriate state and local agencies regarding procedures to be followed for review and comment on individual forest operations.

527.722 Restrictions on local government adoption of rules regulating forest operations; exceptions.

(1) Notwithstanding any provisions of ORS chapters 195, 196, 197, 215 and 227, and except as provided in subsections (2), (3) and (4) of this section, no unit of local government shall adopt any rules, regulations or ordinances or take any other actions that prohibit, limit, regulate, subject to approval or in any other way affect forest practices on forestlands located outside of an acknowledged urban growth boundary.

(2) Nothing in subsection (1) of this section prohibits local governments from adopting and applying a comprehensive plan or land use regulation to forestland to allow, prohibit or regulate:
- (a) Forest practices on lands located within an acknowledged urban growth boundary;
- (b) Forest practices on lands located outside of an acknowledged urban growth boundary, and within the city limits as they exist on July 1, 1991, of a city with a population of 100,000 or more, for which an acknowledged exception to an agriculture or forestland goal has been taken;
- (c) The establishment or alteration of structures other than temporary on-site structures which are auxiliary to and used during the term of a particular forest operation;
- (d) The siting or alteration of dwellings;

(e) Physical alterations of the land, including but not limited to those made for purposes of exploration, mining, commercial gravel extraction and processing, landfills, dams, reservoirs, road construction or recreational facilities, when such uses are not auxiliary to forest practices; or

(f) Partitions and subdivisions of the land.

(3) Nothing in subsection (2) of this section shall prohibit a local government from enforcing the provisions of ORS 455.310 to 455.715 and the rules adopted thereunder.

(4) Counties may prohibit, but in no other manner regulate, forest practices on forestlands:

(a) Located outside an acknowledged urban growth boundary; and

(b) For which an acknowledged exception to an agricultural or forest land goal has been taken.

(5) To ensure that all forest operations in this state are regulated to achieve protection of soil, air, water, fish and wildlife resources, in addition to all other forestlands, the Oregon Forest Practices Act applies to forest operations inside any urban growth boundary except in areas where a local government has adopted land use regulations for forest practices. For purposes of this subsection, "land use regulations for forest practices" means local government regulations that are adopted for the specific purpose of directing how forest operations and practices may be conducted. These local regulations shall:

(a) Protect soil, air, water, fish and wildlife resources;

(b) Be acknowledged as in compliance with land use planning goals;

(c) Be developed through a public process;

(d) Be developed for the specific purpose of regulating forest practices; and

(e) Be developed in coordination with the State Forestry Department and with notice to the Department of Land Conservation and Development.

(6) To coordinate with local governments in the protection of soil, air, water, fish and wildlife resources, the State Forester shall provide local governments with a copy of the notice or written plan for a forest operation within any urban growth boundary. Local governments may review and comment on an individual forest operation and inform the landowner or operator of all other regulations that apply but that do not pertain to activities regulated under the Oregon Forest Practices Act.

(7) The existence or adoption by local governments of a comprehensive plan policy or land use regulation regulating forest practices consistent with subsections (1) to (5) of this section shall relieve the State Forester of responsibility to administer the Oregon Forest Practices Act within the affected area.

(8) The Director of the Department of Land Conservation and Development shall provide the State Forester copies of notices submitted pursuant to ORS 197.615, whenever such notices concern the adoption, amendment or repeal of a comprehensive land use regulation allowing, prohibiting or regulating forest practices.

527.724 Forest operations to comply with air and water pollution control rules and standards; effect of violation.

Subject to ORS 527.765 and 527.770, any forest operations on forestlands within this state shall be conducted in full compliance with the rules and standards of the Environmental Quality Commission relating to air and water pollution control. In addition to all other remedies provided by law, any violation of those rules or standards shall be subject to all remedies and sanctions available under statute or rule to the Department of Environmental Quality or the Environmental Quality Commission.

527.730 Conversion of forestland to other uses.

Nothing in the Oregon Forest Practices Act shall prevent the conversion of forestland to any other use.

527.736 Forest practice standards for operations on public and private land; rules.

(1) The standards established in ORS 527.740 to 527.750 shall be administered by the State Forester as standards applying to all operations in the state, including those on forestland owned by the state or any political subdivision thereof. Pursuant to ORS 527.710 the State Board of Forestry shall adopt, repeal or amend forest practice rules as necessary to be consistent with and to implement the standards established in ORS 527.740 to 527.750. Except as provided in ORS 527.714, nothing in ORS 468B.100 to 468B.110, 477.562, 527.620, 527.670, 527.690, 527.710, 527.715, 527.722, 527.724 and 527.736 to 527.770 shall affect the powers and duties of the board to adopt, or the State Forester to administer, all other regulations pertaining to forest practices under applicable state law.

(2) Nothing in ORS 527.740 to 527.750 is intended to apply to cutting of trees that is for growth enhancement treatments, as defined by the State Forester, such as thinning or precommercial thinning.

(3) The State Board of Forestry may modify or waive the limitations and requirements of ORS 527.676, 527.740, 527.750 and 527.755 for the purposes of a bona fide research project conducted by:
(a) A federal agency;
(b) Agencies of the executive department as defined in ORS 174.112;
(c) An educational institution; or
(d) A private landowner.

(4) The State Board of Forestry may agree as a term of a stewardship agreement entered into under ORS 541.423 to modify or waive the limitations and requirements of ORS 527.676, 527.740, 527.750 and 527,755.

(5) The State Board of Forestry may modify or waive the limitations and requirements of ORS 527.676, 527.740, 527.750 and 527,755 for the purpose of an operation for the planting, growing, managing or harvesting of hardwood timber, including but not limited to hybrid cottonwood, if:
(a) The timber is grown on land that has been prepared by intensive cultivation methods and is cleared of competing vegetation for at least three years after planting;
(b) The timber is harvested on a rotation cycle of more than 12 years and less than 20 years after planting; and
(c) The timber is subject to intensive agricultural practices, including but not limited to fertilization, cultivation, irrigation, insect control and disease control.

527.740 Harvest type 3 limitations; exceptions.

(1) No harvest type 3 unit within a single ownership shall exceed 120 acres in size, except as provided in ORS 527.750.

(2) No harvest type 3 unit shall be allowed within 300 feet of the perimeter of a prior harvest type 3 unit within a single ownership if the combined acreage of the harvest type 3 areas subject to regulation under the Oregon Forest Practices Act would exceed 120 acres in size, unless the prior harvest type 3 unit has been reforested as required by all applicable regulations and:
(a) At least the minimum tree stocking required by rule is established per acre; and either
(b) The resultant stand of trees has attained an average height of at least four feet; or
(c) At least 48 months have elapsed since the stand was created and it is “free to grow” as defined by the State Board of Forestry.

(3) Any acreage attributable to riparian areas or to resource sites listed in ORS 527.710 (3) that is located within a harvest unit shall not be counted in calculating the size of a harvest type 3 unit.

(4) The provisions of this section shall not apply when the land is being converted to managed conifers or managed hardwoods from brush or hardwood stands that contain less than 80 square feet of basal area per acre of trees 11 inches DBH or greater or when the harvest type 3 results from disasters such as fire, insect infestation, disease, windstorm or other occurrence that the State Forester determines was beyond the landowner's control and has substantially impaired productivity or safety on the unit or jeopardizes nearby forestland. The prior approval of the State Forester shall be required for such conversion or harvest type 3 operations that exceed 120 acres in size.

(5) The provisions of this section do not apply to any operation where the operator demonstrates to the State Forester that:
(a) The trees are subject to a cutting right created by written contract prior to October 1, 1990, which provides that the trees must be paid for regardless of whether the trees are cut, or subject to a cutting right created by reservation in a deed prior to October 1, 1990; and
(b) If the provisions of this section were applied, the cutting right would expire before all the trees subject to the cutting right could reasonably be harvested.

527.745 Reforestation of certain harvest types; adoption of standards; rules.

(1) The State Board of Forestry shall adopt standards for the reforestation of harvest type 1 and harvest type 3. Unless the board makes the findings for alternate standards under subsection (2) of this section, the standards for the reforestation of harvest type 1 and harvest type 3 shall include the following:
(a) Reforestation, including site preparation, shall commence within 12 months after the completion of harvest and shall be completed by the end of the second planting season after the completion of harvest. By the end of the fifth growing season after planting or seeding, at least 200 healthy conifer or suitable hardwood seedlings or lesser number as permitted by the board by rule, shall be established per acre, well-distributed over the area, which are “free to grow” as defined by the board.

(b) Landowners may submit plans for alternate practices that do not conform to the standards established under paragraph (a) of this subsection or the alternate standards adopted under subsection (2) of this section, including but not limited to variances in the time in which reforestation is to be commenced or completed or plans to reforest sites by natural reforestation. Such alternate plans may be approved if the State Forester determines that the plan will achieve equivalent or better regeneration results for the particular conditions of the site, or the plan carries out an authorized research project conducted by a public agency or educational institution.

(2) The board, by rule, may establish alternate standards for the reforestation of harvest type 1 and harvest type 3, in lieu of the standards established in subsection (1) of this section, but in no case can the board require the establishment of more than 200 healthy conifer or suitable hardwood seedlings per acre. Such alternate standards may be adopted upon finding that the alternate standards will better assure the continuous growing and harvesting of forest tree species and the maintenance of forestland for such purposes, consistent with sound management of soil, air, water, fish and wildlife resources based on one or more of the following findings:

(a) Alternate standards are warranted based on scientific data concerning biologically effective regeneration;

(b) Different standards are warranted for particular geographic areas of the state due to variations in climate, elevation, geology or other physical factors; or

(c) Different standards are warranted for different tree species, including hardwoods, and for different growing site conditions.

(3) Pursuant to ORS 527.710, the board may adopt definitions, procedures and further regulations to implement the standards established under subsection (1) of this section, without making the findings required in subsection (2) of this section, if those procedures or regulations are consistent with the standards established in subsection (1) of this section.

(4) The board shall encourage planting of disease and insect resistant species in sites infested with root pathogens or where planting of susceptible species would significantly facilitate the spread of a disease or insect pest and there are immune or more tolerant commercial species available which are adapted to the site.

(5) Notwithstanding subsections (1), (2) and (3) of this section, in order to remove potential disincentives to the conversion of underproducing stands, as defined by the board, or the salvage of stands that have been severely damaged by wildfire, insects, disease or other factors beyond the landowner's control, the State Forester may suspend the reforestation requirements for specific harvest type 1 or harvest type 3 units in order to take advantage of the Forest Resource Trust provisions, or other cost-share programs administered by the State Forester or where the State Forester is the primary technical adviser. Such suspension may occur only on an individual case basis, in writing, based on a determination by the State Forester that the cost of harvest preparation, harvest, severance and applicable income taxes, logging, site preparation, reforestation and any other measures necessary to establish a free to grow forest stand will likely exceed the gross revenues of the harvest. The board shall adopt rules implementing this subsection establishing the criteria for and duration of the suspension of the reforestation requirements.

527.750 Exceeding harvest type 3 size limitation; conditions; rules.

(1) Notwithstanding the requirements of ORS 527.740, a harvest type 3 unit within a single ownership that exceeds 120 acres but does not exceed 240 acres may be approved by the State Forester if all the requirements of this section and any additional requirements established by the State Board of Forestry are met. Proposed harvest type 3 units that are within 300 feet of the perimeter of a prior harvest type 3 unit, and that would result in a total combined harvest type 3 area under a single ownership exceeding 120 acres but not exceeding 240 acres, may be approved by the State Forester if the additional requirements are met for the combined area. No harvest type 3 unit within a single ownership shall exceed 240 contiguous acres. No harvest type 3 unit shall be allowed within 300 feet of the perimeter of a prior harvest type 3 unit within a single ownership if the combined acreage of the areas subject to regulation under the Oregon Forest Practices Act would exceed 240 acres, unless:

(a) The prior harvest type 3 unit has been reforested by all applicable regulations;

(b) At least the minimum tree stocking required by rule is established per acre; and

(A) The resultant stand of trees has attained an average height of at least four feet; or

(B) At least 48 months have elapsed since the stand was created and it is “free to grow” as defined by the board.

(2) The requirements of this section are in addition to all other requirements of the Oregon Forest Practices Act and the rules adopted thereunder. The requirements of this section shall be applied in lieu of such other requirements only to the extent the requirements of this section are more stringent. Nothing in this section shall apply to operations conducted under ORS 527.740 (4) or (5).

(3) The board shall require that a plan for an alternate practice be submitted prior to approval of a harvest type 3 operation under this section. The board may establish by rule any additional standards applying to operations under this section.

(4) The State Forester shall approve the harvest type 3 operation if the proposed operation would provide better overall results in meeting the requirements and objectives of the Oregon Forest Practices Act.

(5) The board shall specify by rule the information to be submitted for approval of harvest type 3 operations under this section, including evidence of past satisfactory compliance with the Oregon Forest Practices Act.

527.755 Scenic highways; visually sensitive corridors; operations restricted; exemptions.

(1) The following highways are hereby designated as scenic highways for purposes of the Oregon Forest Practices Act:
  (a) Interstate Highways 5, 84, 205, 405; and
  (b) State Highways 6, 7, 20, 18/22, 26, 27, 30, 31, 34, 35, 36, 38, 42, 58, 62, 66, 82, 97, 101, 126, 138, 140, 199, 230, 234 and 395.

(2) The purpose of designating scenic highways is to provide a limited mechanism that maintains roadside trees for the enjoyment of the motoring public while traveling through forestland, consistent with ORS 527.630, safety and other practical considerations.

(3) The State Board of Forestry, in consultation with the Department of Transportation, shall establish procedures and regulations as necessary to implement the requirements of subsections (4), (5) and (6) of this section, consistent with subsection (2) of this section, including provisions for alternate plans. Alternate plans that modify or waive the requirements of subsection (4), (5) or (6) of this section may be approved when, in the judgment of the State Forester, circumstances exist such as:
  (a) Modification or waiver is necessary to maintain motorist safety, protect improvements such as dwellings and bridges, or protect forest health;
  (b) Modification or waiver will provide additional scenic benefits to the motoring public, such as exposure of distant scenic vistas;
  (c) Trees that are otherwise required to be retained will not be visible to motorists;
  (d) The operation involves a change of land use that is inconsistent with maintaining a visually sensitive corridor; or
  (e) The retention of timber in a visually sensitive corridor will result in severe economic hardship for the owner because all or nearly all of the owner's property is within the visually sensitive corridor.

(4) (a) For harvest operations within a visually sensitive corridor, at least 50 healthy trees of at least 11 inches DBH, or that measure at least 40 square feet in basal area, shall be temporarily left on each acre.
  (b) Overstory trees initially required to be left under paragraph (a) of this subsection may be removed when the reproduction understory reaches an average height of at least 10 feet and has at least the minimum number of stems per acre of free to grow seedlings or saplings required by the board for reforestation, by rule.
  (c) Alternatively, when the adjacent stand, extending from 150 feet from the outermost edge of the roadway to 300 feet from the outermost edge of the roadway, has attained an average height of at least 10 feet and has at least the minimum number of stems per acre of free to grow seedlings or saplings required by the board for reforestation, by rule, or at least 40 square feet of basal area per acre, no trees are required to be left in the visually sensitive corridor, or trees initially required to be left under paragraph (a) of this subsection may be removed. When harvests within the visually sensitive corridor are carried out under this paragraph, the adjacent stand, extending from 150 feet from the outermost edge of the roadway to 300 feet from the outermost edge of the roadway, shall not be reduced below the minimum number of stems per acre of free to grow seedlings or saplings at least 10 feet tall required by the board for reforestation, by rule, or below 40 square feet of basal area per acre until the adjacent visually sensitive corridor has been reforested as required under subsection (6) of this section and the stand has attained an average height of at least 10 feet and has at least the minimum number of stems per acre.

(5) Harvest areas within a visually sensitive corridor shall be cleared of major harvest debris within 30 days of the completion of the harvest, or within 60 days of the cessation of active harvesting activity on the site, regardless of whether the harvest operation is complete.

(6) Notwithstanding the time limits established in ORS 527.745 (1)(a), when harvesting within a visually sensitive corridor results in a harvest type 1 or harvest type 3, reforestation shall be completed by the end of the first planting season after the completion of the harvest. All other provisions of ORS 527.745 shall also apply to harvest type 1 or harvest type 3 within visually sensitive corridors.

(7) Landowners and operators shall not be liable for injury or damage caused by trees left within the visually sensitive corridor for purposes of fulfilling the requirements of this section, when carried out in compliance with the provisions of the Oregon Forest Practices Act.

(8) The following are exempt from this section:
- (a) Harvest on single ownerships less than five acres in size;
- (b) Harvest within an urban growth boundary, as defined in ORS 195.060; and
- (c) Harvest within zones designated for rural residential development pursuant to an exception adopted to the statewide land use planning goals under ORS 197.732.

527.760 Reforestation exemptions for land use changes.

(1) The State Board of Forestry shall review its rules governing changes in land use and adopt or amend rules as necessary to assure that only bona fide, established and continuously maintained changes from forest uses are provided an exemption from reforestation requirements. The board shall set specific time periods for the completion of land use conversions. Among other factors, the board shall condition exemptions from reforestation requirements upon:
- (a) Demonstrating the intended change in land use is authorized under local land use and zoning ordinances, including obtaining and maintaining all necessary land use or construction permits and approvals for the intended change in land use;
- (b) Demonstrating progress toward the change in land use within the time required for planting of trees, and substantial completion and continuous maintenance of the change in land use in a time certain;
- (c) Allowing an exemption for only the smallest land area necessary to carry out the change in land use, and requiring that additional land area within the harvest unit remains subject to all applicable reforestation requirements; and
- (d) Allowing an exemption only to the extent that the proposed land use is not compatible with the maintenance of forest cover.

(2) The board may require that, prior to commencing an operation where a change in land use is proposed, a bond, cash deposit, irrevocable letter of credit or other security be filed with the State Forester in an amount determined by the State Forester sufficient to cover the cost of site preparation and reforestation for the area subject to an exemption from reforestation due to a change in land use, and shall require that provisions be made for the administration and collection on such bond or security deposit in the event that the change in land use is not established or continuously maintained within a time certain.

(3) Nothing in this section is intended to exempt any change in land use from, nor affect the applicability and administration of, any planning, zoning or permitting requirements provided under state or local laws or regulations.

527.765 Best management practices to maintain water quality; rules.

(1) The State Board of Forestry shall establish best management practices and other rules applying to forest practices as necessary to insure that to the maximum extent practicable nonpoint source discharges of pollutants resulting from forest operations on forestlands do not impair the achievement and maintenance of water quality standards established by the Environmental Quality Commission for the waters of the state. Such best management practices shall consist of forest practices rules adopted to prevent or reduce pollution of waters of the state. Factors to be considered by the board in establishing best management practices shall include, where applicable, but not be limited to:
- (a) Beneficial uses of waters potentially impacted;
- (b) The effects of past forest practices on beneficial uses of water;
- (c) Appropriate practices employed by other forest managers;
- (d) Technical, economic and institutional feasibility; and
- (e) Natural variations in geomorphology and hydrology.

(2) The board shall consult with the Environmental Quality Commission in adoption and review of best management practices and other rules to address nonpoint source discharges of pollutants resulting from forest operations on forestlands.

(3) (a) Notwithstanding ORS 183.310 (8), upon written petition for rulemaking under ORS 183.390 of any interested person or agency, the board shall review the best management practices adopted pursuant to this section. In addition to all other requirements of law, the petition must allege with reasonable specificity that nonpoint source discharges of pollutants resulting from forest operations being conducted in accordance with the best management practices are a significant contributor to violations of such standards.

(b) Except as provided in paragraph (c) of this subsection, if the board determines that forest operations being conducted in accordance with the best management practices are neither significantly responsible for particular water quality standards not being met nor are a significant contributor to violations of such standards, the board shall issue an order dismissing the petition.

(c) If the petition for review of best management practices is made by the Environmental Quality Commission, the board shall not terminate the review without the concurrence of the commission, unless the board commences rulemaking in accordance with paragraph (e) of this subsection.

(d) If a petition for review is dismissed, upon conclusion of the review, the board shall issue an order that includes findings regarding specific allegations in the petition and shall state the board's reasons for any conclusions to the contrary.

(e) If, pursuant to review, the board determines that best management practices should be reviewed, the board shall commence rulemaking proceedings for that purpose. Rules specifying the revised best management practices must be adopted not later than two years from the filing date of the petition for review unless the board, with concurrence of the Environmental Quality Commission, finds that special circumstances require additional time.

(f) Notwithstanding the time limitation established in paragraph (e) of this subsection, at the request of the Environmental Quality Commission, the board shall take action as quickly as practicable to prevent significant damage to beneficial uses identified by the commission while the board is revising its best management practices and rules as provided for in this section.

527.770 Good faith compliance with best management practices not violation of water quality standards; subsequent enforcement of standards.

A forest operator conducting, or in good faith proposing to conduct, operations in accordance with best management practices currently in effect shall not be considered in violation of any water quality standards. When the State Board of Forestry adopts new best management practices and other rules applying to forest operations, such rules shall apply to all current or proposed forest operations upon their effective dates. However, nothing in this section prevents enforcement of water quality standards against a forest operator conducting operations after the time provided in ORS 527.765 (3)(e) for adoption of revised best management practices if the board either has not adopted revised management practices or has not made a finding that such revised best management practices are not required.

527.780 Exemption from liability for trees or debris left on property.

(1) A landowner is not liable in tort for any personal injury, death or property damage that arises out of the leaving of trees and other debris on the property of the landowner under the provisions of ORS 527.610 to 527.770, under any rules adopted pursuant to ORS 527.610 to 527.770, or under any other law or rule requiring trees and debris to be left upon property after logging or other activity on the land.

(2) The limitation on liability provided by this section applies to any injury, death or damage arising out of wildfire, erosion, flooding, diversion of waters, damage to public improvements and any other injury, death or damage caused by trees or debris left by the landowner.

(3) The limitation on liability provided by this section does not apply if the injury, death or damage was caused by the intentional tort of the landowner or by the gross negligence of the landowner. As used in this subsection, “gross negligence” means negligence that is materially greater than the mere absence of reasonable care under the circumstances, and that is characterized by indifference to or reckless disregard of the rights of others.

(4) The limitation on liability provided by this section is in addition to any limitation on liability provided under ORS 105.672 to 105.696.

(5) The limitation on liability provided by this section does not apply to any liability established by the provisions of ORS chapter 477.

527.785 Exemption from liability for large woody debris left on property.

(1) A landowner is not liable in tort for any personal injury, death or property damage that arises out of the leaving of large woody debris on the property of the landowner under the provisions of ORS 527.610 to 527.770, under any rules adopted pursuant to ORS 527.610 to 527.770, or under any other law or rule requiring trees and large woody debris to be left upon property after logging or other activity on the land.

(2) The limitation on liability provided by this section applies to any injury, death or damage arising out of wildfire, erosion, flooding, diversion of waters, damage to public improvements and any other injury, death or damage caused by the large woody debris left by the landowner.

(3) The limitation on liability provided by this section does not apply if the injury, death or damage was caused by the intentional tort of the landowner or by the gross negligence of the landowner. As used in this subsection, "gross negligence" means negligence that is materially greater than the mere absence of reasonable care under the circumstances, and that is characterized by indifference to or reckless disregard of the rights of others.

(4) The limitation on liability provided by this section is in addition to any limitation on liability provided under ORS 105.672 to 105.696.

(5) The limitation on liability provided by this section does not apply to any liability established by the provisions of ORS chapter 477.

PENALTIES

527.990 Criminal penalties.

(1) Subject to ORS 153.022, violation of ORS 527.670, 527.676, 527.740, 527.750 or 527.755, or any rule promulgated under ORS 527.710 is punishable, upon conviction, as a misdemeanor. Each day of operation in violation of an order issued under ORS 527.680 (3) shall be deemed to be a separate offense.

(2) Violation of ORS 527.260 (1) is a misdemeanor. Violation of ORS 527.260 is punishable, upon conviction, by a fine of not more than $250 or by imprisonment in the county jail for not more than 60 days, or both.

527.992 Civil penalties.

(1) In addition to any other penalty provided by law, any person who fails to comply with any of the following may incur a civil penalty in the amount adopted under ORS 527.685:
   (a) The requirements of ORS 527.670, 527.676, 527.740, 527.750 or 527.755.
   (b) The terms or conditions of any order of the State Forester issued in accordance with ORS 527.680.
   (c) Any rule or standard of the State Board of Forestry adopted or issued pursuant to ORS 527.710.
   (d) Any term or condition of a written waiver, or prior approval granted by the State Forester pursuant to the rules adopted under ORS 527.710.

(2) Imposition or payment of a civil penalty under this section shall not be a bar to actions alleging trespass under ORS 105.810, nor to actions under ORS 161.635 or 161.655 seeking to recover an amount based on the gain resulting from individual or corporate criminal violations.

Notes

Notes

INFORMATION

For more information about the Oregon Forest Practices Act or the Forest Practice Rules, please contact your local Oregon Department of Forestry district office listed below or the headquarters office at 2600 State Street, Salem, Oregon 97310. (503) 945-7470.

Eastern Oregon

3501 East 3rd (PO Box 670), Prineville 97754 ..... (541) 447-5658
3701 West 13th, The Dalles 97058 ..... (541) 296-4626
400 NW 9th (PO Box 546), John Day 97845 ..... (541) 575-1139
3200 DeLap Road, Klamath Falls 97601 ..... (541) 883-5681
2290 North 4th Street, Lakeview 97630 ..... (541) 947-3311
611 20th Street, LaGrande 97850 ..... (541) 963-3168
1055 Airport Road, Pendleton 97801 ..... (541) 276-3491
802 West Hwy 82, Wallowa 97885 ..... (541) 886-2881

Northwest Oregon

801 Gales Creek Road, Forest Grove 97116 ..... (503) 357-2191
92219 Hwy 202, Astoria 97103 ..... (503) 325-5451
405 E Street, Columbia City 97018 ..... (503) 397-2636
5005 3rd Street, Tillamook 97141 ..... (503) 842-2545
14995 South Hwy 211, Molalla 97038 ..... (503) 829-2216
22965 North Fork Road SE, Lyons 97358 ..... (503) 859-2151
24533 Alsea Highway, Philomath 97370 ..... (541) 929-3266
825 Oak Villa Road, Dallas 97338 ..... (503) 623-8146
763 NW Forestry Road, Toledo 97391 ..... (541) 336-2273

Southern Oregon

1758 NE Airport Road, Roseburg 97470 ..... (541) 440-3412
63612 Fifth Road, Coos Bay 97420 ..... (541) 267-4136
4690 Highway 20, Sweet Home 97386 ..... (541) 367-6108
3150 Main Street, Springfield 97478 ..... (541) 726-3588
87950 Territorial Highway, Veneta 97487 ..... (541) 935-2283
2660 Kingwood (PO Box 460), Florence 97439 ..... (541) 997-8713
5286 Table Rock Road, Central Point 97502 ..... (541) 664-3328
5375 Monument Drive, Grants Pass 97526 ..... (541) 474-3152

Appendix N

5-YEAR WORK PLAN

Appendix N

5-YEAR WORK PLAN

The 5-Year Work Plan for FYE 2013 through 2017 is shown on the accompanying spreadsheet with each recommended activity described below.

Activity No. 1, Harvest Opportunities

The City and Water Board should continue to alternate timber harvests each year or so, recognizing that harvest timing is market driven. The worksheet does not show future timber volumes or incomes because of market variability. Harvests will average about 40 acres and 1,300 MBF per year. Consulting forester fees for planning, layout, and administration are usually deducted from gross timber receipts. The City harvested 57 acres in Units 77 and 82 in FY 2010-11. The Water Board harvested 53-acres in summer 2011.

Activities No. 2 and 3, Reforestation and Follow-up Inspections

Reforestation costs include purchased seedlings, planting labor, and consulting forester administration. Reforestation costs are estimated at $400 per acre, paid by the entity responsible for the timber harvest.

Inspections following reforestation should occur at one and five year intervals, estimated at $25 per acre. There currently is a backlog of plantations that need to be inspected. City inspections in FYE 2013 should include the 57 acre timber sale conducted in 2010 and the 40 acre sale in 2006. Water Board inspections in FYE 2013 should include the 53 acre sale conducted in 2011, the 27 acres sale in 2006, and the 36 acre sale in 2004.

The City inspection in 2017 should consist of the 57 acre timber sale conducted in 2010. Water Board inspections in 2017 should include the prior year 40 acre sale and the 53 acre sale conducted in 2011.

Activity No. 4, Vegetation Control

Reforestation follow-up inspections generally reveal that about one-half of all reforested areas require some vegetation control. Vegetation control costs are estimated at $150 per acre. City and Water Board work in FYE 2013 include one-half of the inspection areas identified above.

Activity No. 5, Vegetation Control and Reforestation of Upper Pony Creek Dam Sites

Scotch broom has invaded the disturbed areas resulting from the construction of the Upper Pony Creek Dam. These areas are primarily the construction staging area around the dam and the borrow areas north and south of the dam, totaling about 50 acres. The Scotch broom should be removed and the area reforested. As indicated earlier, vegetation control costs are estimated at $150 per acre and reforestation costs are estimated at $400 per acre.

The 10 acre borrow site south of the dam should be addressed in FYE 2013, and the 40 acre borrow site north of the dam should be addressed in FYE 2014 and 2015.

Activity No. 6, Timber Inventory

Sapling and plantation stands should be inventoried over the next 5-year period. Currently, these stands total 1,228 acres. The City owns 384 acres; the Water Board manages 844 acres. Saplings stands to be sampled should be selected from the list identified in Appendix C. This work would be performed by a forestry consultant at $15 per acre.

Activity No. 7, Loop Road Maintenance

This activity is normal or routine maintenance performed on the Loop Road. The Road Use Agreement outlines the responsibilities for annual maintenance costs with 1/3 of the costs borne by the Water Board as Water Program responsibility, and 2/3 of the costs borne by the entity conducting a timber sale as Timber Program responsibility. Costs in the Work Plan are assigned to the entity conducting a timber sale within each fiscal year. It is estimated that annual Loop Road maintenance costs will continue at about $6,000, with $4,000 of that amount assessed to the Timber Program. Costs in the form of additional gravel and grading borne by timber buyers or loggers during timber operations are separate from these costs.

Activity No. 8, Pre-Commercial Thinning

Pre-commercial thinning is needed to increase timber growth in the plantation stands on both City owned and Water Board managed lands. The City has 346 acres of plantation lands; the Water Board manages 287 acres. It is recommended the City and Water Board each thin 40 acres per year for the five year period. Costs are estimated at $150 per acre for contractors and $25 per acre for forestry consultant.

Activity No. 9, Update Annual Activities and 5-Year Work Plan

Upcoming harvest opportunities and management activities should be reviewed annually by City and Water Board staff with a forestry consultant. The 5 Year Work Plan should also be reviewed and updated accordingly. A meeting in January each year is opportune, prior to budgeting and seasonal forestry work. The consultant should assemble any needed data, lead discussions, and make recommendations. A brief report should be prepared detailing outcomes of the meeting.

	CITY OF COOS BAY AND COOS BAY - NORTH BEND WATER BOARD															
	WATERSHED MANAGEMENT PLAN					5-YEAR WORK PLAN				FYE 2013 - 2017						
	2/27/2012															
No.	RECOMMENDED ACTIVITY	REQD?	DESCRIPTION/COST BASIS	FYE 2013		FYE 2014		FYE 2015		FYE 2016		FYE 2017		TOTALS	
				Acres	Dollars	*Acres*	Dollars	*Acres*	Dollars	*Acres*	Dollars	*Acres*	Dollars	*Acres*	Dollars
1	Harvest Opportunities		Alternate harvest between City of Coos Bay and Water Board												
	City of Coos Bay			*40*				*40*				*40*		*120*	
	Water Board					*40*				*40*				*80*	
2	Reforestation	*	After prior year harvest @ $400/acre ($200 seedlings + $150 contractor + $50 forestry consultant)												
	City of Coos Bay			*40*	$ 16,000			*40*	$ 16,000			*40*	$ 16,000	*120*	$ 48,000
	Water Board					*40*	$ 16,000			*40*	$ 16,000			*80*	$ 32,000
3	Reforestation Follow-up Inspections		At 1 and 5 yr intervals following reforestations @ $25/acre (forestry consultant)												
	City of Coos Bay			*97*	$ 2,425	*40*	$ 1,000			*40*	$ 1,000	*57*	$ 1,425	*234*	$ 5,850
	Water Board			*116*	$ 2,900			*40*	$ 1,000			*93*	$ 2,325	*249*	$ 6,225
4	Vegetation Control		Within harvest units based on reforestation follow-up inspections @ $150/acre ($125 contractor + $25 forestry consultant)												
	City of Coos Bay			*48*	$ 7,200	*20*	$ 3,000			*20*	$ 3,000	*28*	$ 4,200	*116*	$ 17,400
	Water Board			*58*	$ 8,700			*20*	$ 3,000			*47*	$ 7,050	*125*	$ 18,750
5	Vegetation Control and Reforestation of Upper Pony Creek Dam Sites		Within borrow sites of UPC Dam. Vegetation control @ $150/acre; reforestation @ $400/acre)												
	Water Board			*10*	$ 5,500	*20*	$ 11,000	*20*	$ 11,000					*50*	$ 27,500
6	Timber Inventory		$15/acre (forestry consultant)												
	City of Coos Bay			*100*	$ 1,500	*100*	$ 1,500	*100*	$ 1,500	*84*	$ 1,260	*0*	$ -	*384*	$ 5,760
	Water Board			*100*	$ 1,500	*100*	$ 1,500	*100*	$ 1,500	*100*	$ 1,500	*100*	$ 1,500	*500*	$ 7,500
7	Loop Road Maintenance	*	Timber Program portion only per Road Use Agmt												
	City of Coos Bay				$ 8,000				$ 8,000				$ 8,000		$ 24,000
	Water Board						$ 8,000				$ 8,000				$ 16,000
8	Pre-Commercial Thinning		$175/acre ($150 contractor + $25 forestry consultant)												
	City of Coos Bay			*40*	$ 7,000	*40*	$ 7,000	*40*	$ 7,000	*40*	$ 7,000	*40*	$ 7,000	*200*	$ 35,000
	Water Board			*40*	$ 7,000	*40*	$ 7,000	*40*	$ 7,000	*40*	$ 7,000	*40*	$ 7,000	*200*	$ 35,000
9	Update Annual Activities and 5-Year Work Plan		Assemble data and prepare report for annual work plan (forestry consultant)												
	City of Coos Bay				$ 1,000		$ 1,000		$ 1,000		$ 1,000		$ 1,000		$ 5,000
	Water Board				$ 1,000		$ 1,000		$ 1,000		$ 1,000		$ 1,000		$ 5,000
	Subtotal Reqd Activities Only														
	City of Coos Bay				*$ 24,000*		*$ -*		*$ 24,000*		*$ -*		*$ 24,000*		*$ 72,000*
	Water Board				*$ -*		*$ 24,000*		*$ -*		*$ 24,000*		*$ -*		*$ 48,000*
	TOTAL ALL														
	City of Coos Bay				**$ 43,125**		**$ 13,500**		**$ 33,500**		**$ 13,260**		**$ 37,625**		**$ 141,010**
	Water Board				**$ 26,600**		**$ 44,500**		**$ 24,500**		**$ 33,500**		**$ 18,875**		**$ 147,975**