

FOREST STEWARDSHIP PLAN

Landowners

Joe and Mary Gross
6317 Tamoshan Drive NW
Olympia WA 98502
(360) 866-1130

Legal Description of Property, Location

Legal Description: Lot 1 of survey Vol. 20 Page 134
Location: Township 20, Range 10, Section 29
Address: 66 Walker Bottom Road; Hoquiam WA 98550
Parcel Number: 201029240020
20.3 acres

Parcel A: Parcel 1 of that certain Grays Harbor County Survey recorded November 16, 1999 in Volume 20 of the Surveys, Page 134, under Auditor's File No. 1999-11160021, records of Grays Harbor County; (Being a portion of Tract 1, Springfield Tracts, as per plat recorded in Volume 5 of Plats, page 11, records of Grays Harbor County; AND a portion of the West Half of Section 29, Township 20 North Range 10 West of the Willamette Meridian); Situate in the County of Grays Harbor, State of Washington

Parcel B: A 60 foot easement along the North property line of Parcel 2 of that certain Grays Harbor County Survey recorded November 16, 1999 in Volume 20 of Surveys, page 134, under Auditor's File No. 1999-10160021, records of Grays Harbor County from the Walker County Road approximately 550 feet more or less to the East back of an unnamed creek for ingress and egress, as disclosed in document recorded September 27, 2000 under Auditor's File No. 2000-09270082 records of Grays Harbor County; Situate in the County of Grays Harbor, State of Washington

Plan Preparer

Joe Gross

Assisted by:

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Washington State Department of Natural Resources
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Plan Prepared June, 2004

Landowner's Objectives

Short Term (0-5 yrs.)	Begun	To Do Next:	Done
Plan to provide current or near-term (now- 5 yrs from now) income from the forest products. ♦ Salal ♦ Cascara ♦ Oxalis ♦ Identify other potential marketable products ♦ Identify how to get them marketed/possible vendors	√ √	Contact "Mr. Who Greens", Pacific Cascara Company in Montesano, and Capitol Florist. Find out what the potential vendors are looking for and how to harvest the way they want. Also, find out if they will buy on a sporadic basis or need regular supply.	
Assess viability of planting mixture of tree species to protect against market risks and against disease that attacks a particular type of timber but not another. ♦ Find out about timber types and past and anticipated market conditions associated with each type. ♦ Find out care required by the prospective types.	√ √ √	Identify potential species to plant. Ask local advice for this. While attending class and reading materials for class, continue to assess the appropriateness of the potential type and amount of trees to plant.	√ √ √
Learn to identify what is growing in existing timber stand, in order not to thin out the more commercially viable species. ♦ 12 foot radius around retained trees to provide room for growth ♦ Learn more about thinning techniques (how & why) to begin to thin existing timber stand to enhance eventual productivity. ♦ Assess health	√ √		√
Long Term (20-25 yrs)			
Periodic harvest and sale of timber and other forest products.			
Maintain the health and vigor of the forest by release operations, precommercial thinning, and pruning.	√		
Maintain and improve wildlife habitat consistent with commercial forest as primary use.			

Plans for Developing the Commercial Value of the Property

Identify the commercial viability of the forest products on the property. These products appear to be primarily salal, huckleberry, cascara, and ferns.

Thin Zone 1 to increase sunlight, the availability of water, and soil nutrients to the Hemlock, Douglas Fir and Sitka Spruce growing there. It will likely take several years to thin this area. Some trees may have sufficient diameter to make commercial thinning viable in a few years. Other thinning will be precommercial. One reason it will be appropriate to take this amount of time to make this thinning is that delay will enable us time to learn more about thinning. Since the trees in this Zone are closer than others on the property to financial viability, there could be a larger financial impact in this Zone of choosing the wrong trees to thin out and which to leave. We expect to later thin this Zone to D+12, to increase the amount of growing space for the commercially valuable species in this Zone.

Therefore, thinning efforts for the time being will be focused on Zone 2, while we learn more about how to correctly make the more significant thinning required in Zone 1. Continue release cutting¹ and precommercial thinning in Zone 2 to increase sunlight, the availability of water, and soil nutrients to the Hemlock, Douglas Fir and Sitka Spruce growing there. Prune the "leave trees" as necessary to increase the availability of light as well as to promote commercial viability of wood in the "leave trees" for when they are eventually harvested.

Remove the slash in Zone 3 remaining from the clearcut in 1999. It is anticipated that this will be removed by burning in Fall, 2004. After the slash is burned, this area will be planted as advised by the soils reports, in Red Alder, Douglas Fir, and Western Hemlock. This Zone is approximately 2 ½ acres. At D+12, this area will be planted with 750 trees. Planting is anticipated for Winter, 2006.

Zone 4 is a Riparian Zone in two portions. Along the North edge of the property, Hansen Creek runs through it. A small part of Zone 4 is where an unnamed stream runs along the Southwest edge of the property. Both portions of this Zone will remain in a natural condition.

¹ The Practice of Silviculture- Applied Forest Ecology, 9th edition, 1997, by Smith, Larson, Kelty, and Ashton

General Property Description

Location. The property is 20.3 acres on Axford Prairie, 3 miles south of Humptulips and 16 miles north of Hoquiam on Walker Road, and a little west of Highway 101. It is a rectangular piece of property. On the North, the property is bounded by Hansen Creek, a stream designated by the Washington Fish & Wildlife Department as a stream in which Coho and Chum salmon spawn. In the East, it is bounded by a house lot. To the South, it is bounded by non-industrial forestland owned by the person who owns the house to the East. To the West is partially cleared forestland held by an absentee landowner.

History. The land was owned by an estate, as was much of the land on the north edge of Walker Road. The estate sold much of the land to Jacobs-Eaton Timber, who sold it after logging it. It subdivided much of the property. For instance, the property was once part of a 45-acre parcel that Jacobs-Eaton split into a 20.3-acre parcel and a 25-acre parcel.

The property was sold 4 years ago to the absentee landowner to the West of the property. Circumstances caused the land to recently revert to ownership of Jacobs-Eaton Timber. Jacobs-Eaton had the land surveyed such that it could be split into two roughly 10-acre parcels if their initial attempt to sell the land as a 20.3-acre parcel failed. In addition, they had the access road built to the spalt road and they paid the back-property taxes to take the land from timber status to residential status to expedite the sale. Jacobs-Eaton anticipated that it would be sold as building lots, as is happening with much of the land in the vicinity.

Historically, the old growth forest in the vicinity was logged between 1900 and 1910. The Hansens bought the property from Polson Logging in 1902, presumably after Polson logged it. Hansen Creek, which forms the northern boundary of the property, is named for the Hansens. The Hansens may have been the predecessors of the estate that sold the property to Jacobs-Eaton Timber. There are no known cultural or historical sites on the property.

Access. A gravel access road (described as Parcel 2 on the Title Page of this Plan) is on a designated easement along the eastern edge of the absentee landowner's land. The road enters the property and continues approximately another 550 feet. There it makes a perpendicular intersection with a spalt road that was been on the property for years before the gravel road. The gravel road that is on the property was built in the Fall of 2003, and built up with the addition of more gravel in late winter, 2004. The built-up Zone extends southward from an Zone that appears to have been used as a landing the last time it was logged, to a gate installed at the South corner of the property at same time as the road was built up.

The spalt road is subject to considerable compression when wet. Investigation must be made into surface treatments of the spalt road in order to make it viable for year-round access.

Water and Power. There is neither a well nor power on the property. Typically, water for wells has been found at 60 feet deep but water at 80 feet is of better quality. The water has an iron-manganese content. This information is from people who are lifetime residents of the Zone. The surface of the soil, down to about 5 feet has an appearance of high iron content, since it is significantly orange in appearance. In addition, gray sandstone and quartz rocks at the surface have an orange cast, indicating discoloration by water runoff. Five perc holes have been dug on the property by backhoe on the site. Four are along the spalt road and one is on the west side of the gravel road that leads to the spalt road. It is at the edge of the suspected landing. I have since filled-in the perc hole that was to the west of the gravel road and marked the other sites for safety reasons by cutting back the surrounding brush. They will be filled-in by a backhoe when the slash piles in Zone 3 are stacked and burned.

Power is available along Walker Road, and could potentially be brought to the site by sharing the easement with the access road. It is closer to the property on Highway 101. However, the land of the homeowner to the east, whose lot is between the property and Highway 101, blocks access to it. Jerrie Eaton suggested that if he was to determine how best to provide power to the site he would try to negotiate with the homeowner a sale of sufficient property to provide a power corridor from the property to Highway 101. He estimated that on the most eastern edge the property is 100 feet from Highway 101.

Rainfall. The property is near the Olympic Rainforest, and receives approximately 80 inches of rain per year. There was a lot of standing water in many parts of the land, especially in the clearcut portion of Zone 3 in midwinter when we bought the land. The soil report for that Zone indicates high puddling potential there, so that was consistent with expectations. However, the land dried surprisingly fast in the Spring.

Stand Descriptions and Conditions

Zone 1. This Zone is approximately 13 acres. Jacobs-Eaton Timber logged this Zone in 1988, and was reforested by them. This plantation consists primarily of Douglas Fir, Western Hemlock, and Sitka Spruce, in roughly a 60%-20%-20% mix respectively. There is also a patch of Red Alder in this Zone, approximately in an oblong shape 100' in diameter. The 50-year site index for Zone 1 is 110 feet for Western Hemlock, 85 feet for Red Alder, and 126 feet for Douglas Fir.

Zone 2. This Zone borders Zone 3, which was clearcut in 1999 by Jacobs-Eaton Timber, from whom the land was purchased. Zone 2 is approximately 2 ½ acres. It was left forested to provide seed trees for the logged Zone 3, according to Jerrie Eaton. It is very brushy, and we are presently releasing it (removing trees not yet of sufficient size to be considered precommercial thinning). Trees such as Cascara are being removed since they screen sunlight from the young hemlock, spruce, and Douglas Fir in this Zone. Thick understory vegetation has also hindered development of the young trees and is being removed. We are taking care to leave trees such as native cherry to maintain some shade. The edge between Zones 2 and 3 has shown limited success in natural reseedling. Our hope that releasing done in Zone 2 will benefit trees growing along this edge, as well as benefiting young trees growing in this Zone. Seed trees in this Zone are primarily Spruce, Hemlock, Red Alder, and Lodgepole Pine. We plan to use the University of Washington thinning modeling (LMS) program (RTI) to see if the thinning that is contemplated for this Zone will be effective. The 50-year site index for Zone 2 is 110 feet for Western Hemlock, 85 feet for Red Alder, and 126 feet for Douglas Fir.

Zone 3. This Zone is approximately 2 ½ acres. It was clearcut by Jacobs-Eaton Timber in 1999. They did not replant the Zone because they sold the land to the absentee landowner to the West. That owner also did not replant. There is now substantial competition for potential natural seeding that might occur, primarily from grass and other vegetation that has grown in the last 5 years. There are also a number of large slash piles on it. They, too, limit soil surface available for natural seeding. There are still some patches of bare soil that would be conducive to natural seeding, however. Since this Zone has little shade and there are not many Douglas Fir seed trees in Zone 2, Lodgepole Pine has been most successful in getting reestablished in this Zone. The 50-year site index for Zone 3 is 126 feet for Douglas Fir, 113 feet for Western Hemlock, and 85 feet for Red Alder.

We anticipate reforesting this Zone with Hemlock, Douglas Fir, and Red Alder. From the appearance of the stumps left from logging, this mix replicates the forest that was in this Zone before cutting. There is approximately 2 ½ acres in this Zone to plant. At D+12, this means about 750 total trees will be planted; 250 of each of these species. We plan to use the University of Washington forest modeling program (ruraltech) to see how placement of the new trees might be done.

Zone 4. This Zone is approximately 2 acres. It is the strip of land bordering on two bodies of water on either side of the property. Hansen Creek is the northern boundary of the property. It is a Class 3 stream. This stream bears Coho and Chum salmon. The riparian setback is 50 feet along the streams in this Zone. Hansen Creek varies quite a bit in the amount of water that flows in it during the winter and summer. The area next to Hansen Creek has in it primarily oxalis, ferns, salmonberry, and thimbleberry. This is evidence that numerous beaver live there or have recently lived there. A 10-15 foot slope leads down to the Creek. At scattered points, this ridge is close enough to the Creek that it is in the riparian zone. On top of the bluff is the 15-year plantation that is Zone 1. Some conifers are on the edge of the riparian zone between Zone 4 and Zone 1, especially where the bluff is close to the Creek.

The stream touching the Southwest edge of the property is a naturally occurring but unnamed. It usually dries up in the summer, according to Jerrie Eaton. No migratory or other fish have been seen in it, nor are any noted on SalmonScape, the fish locator site of the Washington State Department of Fish and Wildlife. The land bordering on this body of water is primarily a Douglas Fir forest.

Resource Description and Recommendations

Resource Category I: Forest Health

Trees on the property seem healthy and not suffering from insect infestations, root rot, or other decay conditions. We will continually monitor them for health. We have pulled out the Scotch broom that entered the site along the road bordering the logged portion of Zone 3 and on the spalt road. We will continually monitor these Zones to eliminate scotch broom that may appear in the future.

Resource Category II: Timber and Wood Products

Zone 1 consists of primarily Douglas Fir, Western Hemlock, and Sitka Spruce. It also has on it a cluster of Red Alder. The Douglas Fir, Western Hemlock, and Sitka Spruce were planted in this Zone in 1988. Since Alder is one of the first species to move into an area after a major disruptive event, such as clearcutting this Zone would have been, the Alder may not have been planted but may have resulted from natural reseedling. There are Alders in the adjoining Zone 2, and judging by their size they were probably there before 1988.

Zone 2 is an area in which there are leave trees that are Hemlock, Sitka Spruce, and Red Alder. This Zone was logged in the past, although it is unknown when those operations took place. It has naturally seeded-in with the species named above.

Zone 3 is an area that was clearcut in 1999. It has a few trees on it that have naturally seeded-in. Primarily, this is Lodgepole Pine, but there are also younger Douglas Fir and Hemlock. To effectively be either seeded or planted, the slash that remains in this area from the 1999 logging operation has to be removed from this Zone. That is expected to be done in the Fall of 2004. Heavy equipment such as backhoes and excavators will be used to do this. In order to preserve the trees that have been able to seed-in, the tree will be marked so the equipment does not destroy them. The scarification the equipment is expected to cause in this Zone will reduce the plant competition anticipated with the new seedlings.

Zone 4 is a riparian zone and will not be used to commercially grow or access trees.

We have not cruised the property, although we have explored it to collect inventory information. We intend to cruise it in the next few years, in order to inventory the timber on it in a more systematic way. When we cruise it, we will do it by designating 20 circular 1/10 acre plots. These plots have a radius of 37.2 feet from the center of the circle. We will plan to periodically re-cruise these Zones to assess the usefulness of the anticipated release operations and precommercial thinning.

Resource Category III: Soils

The property is essentially flat, but rolls gently in the Northwest corner, with a 10-15 foot slope down to Hansen Creek on the north boundary. There are three soil types on the property. Of these, the Wishkah soil type is on approximately 15 acres. The Copalis soil type is on about 3 acres, in roughly in the shape of a stalactite with its base on the western edge of the property. The Nemah soil type is on about 2 acres at the southwest corner of the property.

Characteristics of each of these soil types are summarized on the chart below.

Soil & Environmental Characteristics	Wishkah State Soil Symbol 9157	Copalis State Soil Symbol 1182	Nemah State Soil Symbol 5262
Parent Material	Glacial Lake Sediments	Glacial Drift	Clayey or Fine-Textured Old Alluvium
Precipitation	80-130 inches	80-140 inches	70-100 inches
Top Soil	Clay Loam	Gravelly Silt Loam	Silt Clay Loam
Rock Fragments (Average)	0%	25-75%	10-35%
Ave. Soil Depth	>60 inches	20-40 inches	>60 inches
Drainage	Some Poor Drained	Well Drained	Poor Drained
Permeability	Slow	Moderate	Very Slow
Available Water Capacity	High	Moderate	High
Rooting Depth	39 inches	40 inches	8 inches
Forest Soil Management Interpretation			
Mass Wasting Potential	Insignificant	Low	Insignificant
Logging System Limitation	Moderate	Moderate	Moderate
Compaction Potential (Moist) (Likelihood of Heavy Equipment to pack the soil)	High	High	High
Puddling Potential (Wet)	High	High	High
Erosion Potential	Low	Medium	Low
Described Burning Damage Potential	Medium	Low	Low
Water Table & Flooding Hazard	Moderate	N/A	Severe
Windthrow Potential (Susceptibility to Blow-Down)	High	Medium	High
Species Interpretations (Species Best Suited to the Soil Type)			
Major Tree Species	1 st - Western Hemlock 2 nd - Red Alder	1 st Douglas Fir 2 nd - Western Hemlock	1 st - Red Alder (No 2 nd listed)
Site Index	1 st - 110 2 nd - 85	1 st - 126 2 nd - 113	86
Plant Competition	1 st - Severe 2 nd - N/A	1 st - Severe 2 nd - Moderate	Severe

Resource Category IV: Water Quality, Riparian and Wetland Areas

Axford Prairie is a floodplain. The major river in the vicinity is the Humptulips River, although there are also numerous smaller streams. They are all part of the Humptulips River drainage basin. Hansen Creek has healthy fish runs in it, as designated by the SalmonScape part of the website of the Washington Department of Fish and Wildlife. There are no known fish runs in the unnamed stream in the southwest corner. There is little mass-wasting potential on the property, as shown by the soil reports.

The water flow in both Hansen and the unnamed stream are seasonally variable. The most potential for erosion occurs along the banks of Hansen Creek, which in places are 10-15 feet high. There is virtually no bank along the unnamed stream in the southwest corner.

Domestic water sources are groundwater. Although by the appearance of surface soil and rock there is iron and manganese throughout the vicinity, we have been told by long-time residents that good quality water is 60 feet below the surface.

Chemicals have not been used on the property to treat vegetation in at least the last five years, when the property was essentially untended.

There are no wetlands on the property.

Resource Category V: Fish and Wildlife Habitat

The property has a great diversity of habitats which could support a variety of wildlife. These characteristics include exposed soil and grassland with slash piles in Zone 3, meadow/forest edge in Zone 2, established forest of 15 year old trees with lush understory growth in Zone 1. Zone 4 is a riparian zone. Snags are found throughout the property and on neighboring properties. These snags show evidence of being used as forage and there are a few cavities in these trees that appear to have been used as nesting sites.

Slash piles in many parts of Zone 3 may inhibit use of part of the Zone as wildlife habitat, but they may also provide shelter and hiding spots for other wildlife. They are not large enough to inhibit wildlife migration across the property.

Wildlife observed on the property are birds and hummingbirds, insects, garter snakes, rabbits, forest grouse, and deer. Beaver have not been seen on the property, but there are many signs of beaver activity. It is also likely that elk live in the Zone or migrate across the property. Although we need to remove a number of slash piles from the property by burning them, stumps, some branches, and coarse woody debris will be left to provide animal habitat. Small trees such as what appears to be native cherry are on the property and provide browse for deer and elk.

The Washington Department of Fish and Wildlife has designated Hanson Creek, on the northern boundary of the property, as a stream in which Coho and Chum salmon migrate. The Creek may also support trout and other species of fish. The Fish and Wildlife Department has identified the Zone near the mouth of the Creek as a site where Bull Trout can be found. While this Zone is some distance from the property, trout may also migrate up past the property through Hansen Creek.

Hanson Creek is wide and 2-3 foot deep in the Winter, but shrinks quickly in dry weather. It has much debris in it that has fallen naturally, providing a good habitat for fish. The quantity of debris in it restricts Creek flow in the Summer.

A stream that reportedly dries up in the summer is in the southwest corner of the property. The SalmonScape program on the Washington Department of Fish and Wildlife does not indicate that there are fish in it. It is a tributary of Hanson Creek, which it meets several miles west of the property. The road into the property crosses this stream, and a large culvert was installed over the stream at that point by Jacobs-Eaton Timber. This installation was made in accordance with applicable State specifications, according to Jerrie Eaton.

Resource Category VI: Threatened and Endangered Species and Cultural Resources

No threatened or endangered species are known to be on or use the property. No sites of cultural interest have been found on the property.

Resource Category VII: Aesthetics and Recreation

This property is not visible from Walker Road, the main access route to properties in the vicinity. An access road leads from Walker Road over an easement across another property. A gate is across the access road where the road enters the property. It is intended that this gate will stop unauthorized vehicles from entering the property. While public access and recreation on the property is not intended, the property owners will use the property for personal recreation. The variety of vegetation and open space on the property is conducive to a variety of personal recreational uses.

We will use property for camping among other recreational uses. Neighboring land is used primarily for residential purposes, on 5-10 acre lots.

Resource Category VIII: Agro-forestry/Special Forest Products

Salal. There is lush salal growth in many portions of Zone 1. In some parts of the Zone, the salal is approximately 6 feet high. Much of the salal in this Zone is free of spots and quite green, so it may have commercial value.

Huckleberry. Evergreen Huckleberry grows on many of the stumps remaining from the first forest. Some of the bushes in Zone 1 are 5 feet high and may produce many berries. Since we have not yet owned the land for a complete growing season, potential for commercial value is unknown.

Cascara. Cascara can be found throughout the property, but is in higher concentration in Zones 1 and 2. It has an opportunistic growth habit. The young trunks of these trees are flexible, and on this property, they grow toward sunlight regardless of where the tree comes out of the ground. In the portions of the property where a number of seed trees were left, the Cascara grows tall with no branches in the shaded Zones along the trunk. The trees that have this type of growth often have spreading crowns that screen sun from other overstory growth of the hemlock, Douglas Fir and Sitka Spruce that grow nearby. This adds to the density of the canopy which shades understory growth. In the portions of Zone 2 that are being thinned, focus in cutting the Cascara has had the effect of opening the understory to a lot of sunlight and eliminates a competitor for water. It also allows more space between the Hemlock, Douglas Fir and Sitka Spruce for growth. Due to the abundance of Cascara on the property, the focus on release operations and thinning appear to have substantially enhanced the environment for growing other trees. Due to the abundance of Cascara on the property, we do not anticipate that removing the trees that have been and will be removed will lessen the commercial potential of harvesting Cascara bark from the remaining trees should we choose to do that.

Ferns. The primary species on the property are: Bracken; Sword, Maiden Hair, and Deer Fern

Management Timetable

We have determined the following tasks will be done:

In the next 2 years:

- ◆ Burn the slash in Zone 3 that remains from the clearcut that was made 5 years ago on the property. In preparing to burn the slash, open the vegetation in Zone 3 to a sufficient degree to provide a seedbed for natural revegetation of trees from the surrounding seed trees.
- ◆ Identify vendors to buy seedlings from to plant in Zone 3.
- ◆ Take steps to ensure proper care of the planted seedlings.
- ◆ Determine the viability of harvest of Floral Greens from the property.
- ◆ Identify a potential homesite on the property. While this may not be a primary residence, it may become a site for a vacation home.
- ◆ Continue release operations in Zone 2. Begin pruning and precommercial thinning in that Zone as needed.
- ◆ Take steps to ensure the viability of the spalt road as an access route through the property.

In the next 5 years:

- ◆ Make a plot maps to make a cruise of timber on the property, starting with the plantation in Zone 1.
- ◆ Make a precommercial thinning of Zone 1.
- ◆ Begin release operations in Zone 3 after trees planted there become established.

In the next 10 years:

- ◆ Commercially thin Zone 1
- ◆ Continue to make cruises of timber on the property.
- ◆ Continue release operations in Zones 2 and 3.
- ◆ Consider additional plantings to fill-in areas in Zone 3 where trees previously planted did not survive.

Forest Stewardship Plan Summary Checklist

This summary checklist describes resource protection and/or enhancement practices for the next ten years.
All practices that apply have been checked.

Resources	Protection Measures					Enhancement Practices					Notes
	No Action Needed	0-3 Years	4-7 Years	7-10 Years	Not Applicable	No Action Needed	0-3 Years	4-7 Years	7-10 Years	Not Applicable	
Forest Health		√						√			Necessary to take Measures for Forest Health practices will be done in the plantation in Zoned areas always be done
Timber/Wood Products		√					√				
Soils/Erosion Control/Water Quality		√	√	√		√					Care in these areas on going basis.
Riparian Zones, Wetlands		√	√	√		√					Care in these areas on going basis.
In-Stream Fisheries Habitat		√	√	√		√					Care in these areas on going basis.
Wildlife Habitat		√	√	√		√					Care in these areas on going basis.
Threatened/Endangered Species					√					√	
Historical/Cultural Resources					√					√	
Aesthetics/Recreation		√					√				
Agro-Forestry/Special Products		√					√				

Forest Stewardship Plan Signature Page

Plan Prepared By Landowner:

Joseph A. Gross, Jr.
Mary T. Gross

7/23/04

Signature

Date

JOSEPH A. GROSS JR

MARY T. GROSS

Printed Name

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Address

OLYMPIA WA 98504

(360) 866-1130

Phone

APPROVAL SIGNATURE

I have reviewed this Plan and approve it as meeting the standards for a Forest Stewardship Plan.

Michael N. Nystrom, Stewardship Forester
South Puget Sound Region Department of Natural Resources
950 Farman Avenue North
Enumclaw WA 98022-9282

Telephone: 360-825-1631

Photos* & Maps

* See also Aerial Photo in pocket Inside of Front Cover Of Notebook



Endangered Species & Natural Heritage plot

Section 29
of township t20r10w
1 inch = 1000 ft.
04/20/04



This map includes information that Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources.

Locations of mapped wildlife and habitat features are generally within a quarter mile of the locations displayed on this map. Locations of fish and wildlife resources are subject to variation caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using maps more than six months old.

To insure appropriate use of this information, users are encouraged to consult with WDFW biologists.

Due to changing ownership status and reliance on outside information, the Department of Natural Resources cannot accept responsibility for errors and omissions. Therefore, no warranties accompany this material.

WASHINGTON NATURAL HERITAGE PROGRAM

NATURAL HERITAGE DATA

Rare Plant Species, High-quality Wetland Ecosystems,
High-quality Terrestrial Ecosystems

999 Rare plant species Area of Concern

999 Rare non-vascular plants Area of Concern

999 Rare Animal Species Area of Concern

999 High-quality ecosystem, terrestrial or aquatic Area of Concern

For DNR & Landowner Use Only

Information from WDFW

PRIORITY HABITAT & SPECIES and WILDLIFE SITES

- * Marbled Murrelet Site (status 1-3)
- * Spotted Owl Site (status 1-3)
- ☐ PHS Site Location

----- PHS Boundary

All information generally within 1/4 mile of location shown.

WDFW Wildlife Sites common name, year observed

▲ State Endangered	○ Federal Endangered
▲ State Threatened	○ Federal Threatened
▲ State Sensitive	○ Federal Sensitive
▲ State Candidate	○ Federal Candidate
△ State Monitor	No Federal Status

Sensitive species "areas of concern" data are maintained by the WA Natural Heritage Program and are based solely on existing records in our databases. Many areas of the state have never been inventoried for special plants, animals or important terrestrial/aquatic ecosystems. The boundaries shown on this map are generalized to protect sensitive information. This map is intended for use by WA DNR staff and landowners. Please do not redistribute. Additional information can be obtained from the Natural Heritage Program by calling 360-902-4667.

Forest Soil Summary Sheet for State Soil Symbol 5262

Soil Name: NEMAH
 Modifier Name: No soil name modifier

Slope Phase 0 - 2 %

*Most of what will
 need is here - this is from
 DNR*

Soil & Environmental Characteristics

Parent Material	CLAYEY OR FINE-TEXTURED OLD ALLUVIUM
Precipitation	70 - 100 inches
Elevation	20 - 400 feet
Top Soil Texture	SLT.CLY.LOAM
Rock Fragments (Average)	10 - 35 %
Restrictive Layer	RESTRICTION
Average Soil Depth	>60 inches
Drainage	POOR Drained
Permeability	VERY SLOW
Available Water Capacity	HIGH
Rooting Depth	8 inches
Is Soil Hydric?	YES

Forest Soil Management Interpretation

Mass Wasting Potential INSIGNIFIC'T

Road Construction

Cut Slope, Fill & Sidecast Hazard	N/A
Ballast Requirement	HIGH
Ballast Suitability	N/A

Timber Harvest

Logging System Limitation	MODERATE
Compaction Potential (Moist)	HIGH
Displacement Potential (Dry)	NO DATA
Displacement Potential (Wet)	LOW
Puddling Potential (Wet)	HIGH
Erosion Potential	LOW

Site Preparation

Described Burning Damage Potential	LOW
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Regeneration

Water Table & Flooding Hazard	SEVERE
Windthrow Potential	HIGH

Fertilization Response Priority

NO DATA

Species Interpretations

	Major Tree Species	Site Index	Eastside %Stocking	-----Regeneration-----	Drought Potential	Plant Competition
1st	Red Alder	86	N/A	LOW	SEVERE	over

*1
 Better suited for wet sites than Douglas Fir*

*This means how likely is it that if
 you make a partial cut how likely is
 it that the rest of the trees will blow*

Forest Soil Summary Sheet for State Soil Symbol 9157

Soil Name: WISHKAH

Modifier Name: No soil name modifier

Slope Phase 0 - 5 %

Soil & Environmental Characteristics

Parent Material	GLACIAL LAKE SEDIMENTS
Precipitation	80 - 130 inches
Elevation	50 - 500 feet
Top Soil Texture	CLAY LOAM
Rock Fragments (Average)	0 - 0 %
Restrictive Layer	RESTRICTION
Average Soil Depth	>60 inches
Drainage	SOME POOR Drained
Permeability	SLOW
Available Water Capacity	HIGH
Rooting Depth	39 inches
Is Soil Hydric?	NO

Forest Soil Management Interpretation

Mass Wasting Potential	INSIGNIFICANT
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Road Construction

Cut Slope, Fill & Sidecast Hazard	N/A
Ballast Requirement	HIGH
Ballast Suitability	N/A

Timber Harvest

Logging System Limitation	MODERATE
Compaction Potential (Moist)	HIGH
Displacement Potential (Dry)	NO DATA
Displacement Potential (Wet)	LOW
Puddling Potential (Wet)	HIGH
Erosion Potential	LOW

Site Preparation

Described Burning Damage Potential	MEDIUM
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Regeneration

Water Table & Flooding Hazard	MODERATE
Windthrow Potential	HIGH

Fertilization Response Priority

NO DATA

Species Interpretations

	Major Tree Species	Site Index	Eastside %Stocking	-----Regeneration-----	
				Drought Potential	Plant Competition
1st	Western Hemlock	110	N/A	LOW	SEVERE
2nd	Red Alder	85	N/A	N/A	N/A

Forest Soil Summary Sheet for State Soil Symbol 1182

Soil Name: COPALIS

Modifier Name: No soil name modifier

Slope Phase 8 - 30 %

Soil & Environmental Characteristics

Parent Material	GLACIAL DRIFT
Precipitation	80 - 140 inches
Elevation	30 - 800 feet
Top Soil Texture	GRAVELLY SILT LOAM
Rock Fragments (Average)	25 - 75 %
Restrictive Layer	RESTRICTION
Average Soil Depth	20 - 40 inches
Drainage	WELL Drained
Permeability	MODERATE
Available Water Capacity	MODERATE
Rooting Depth	40 inches
Is Soil Hydric?	NO

Forest Soil Management Interpretation

Mass Wasting Potential

LOW

Road Construction

Cut Slope, Fill & Sidecast Hazard

MODERATE

Ballast Requirement

MEDIUM

Ballast Suitability

POOR

Timber Harvest

Logging System Limitation

MODERATE

Compaction Potential (Moist)

HIGH

Displacement Potential (Dry)

LOW

Displacement Potential (Wet)

MEDIUM

Puddling Potential (Wet)

HIGH

Erosion Potential

MEDIUM

Site Preparation

Described Burning Damage Potential

LOW

Regeneration

Water Table & Flooding Hazard

N/A

Windthrow Potential

MEDIUM

Fertilization Response Priority

LOW

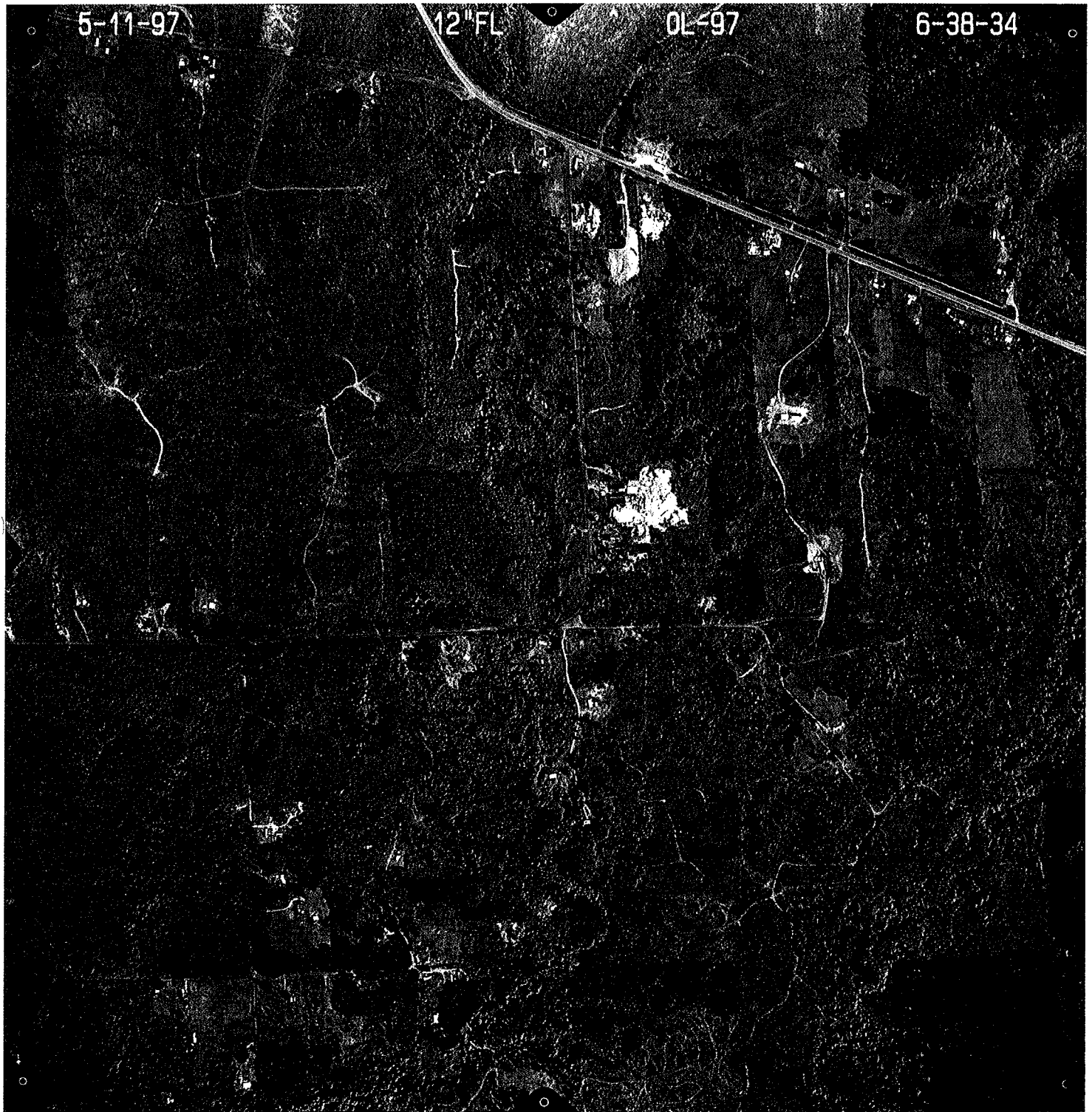
Species Interpretations

Major Tree Species		Site Index	Eastside %Stocking	-----Regeneration-----	
				Drought Potential	Plant Competition
1st	Douglas Fir	126	N/A	LOW	SEVERE
2nd	Western Hemlock	113	N/A	LOW	MODERATE

"Hydric" means it has the smell & composition of swampy soil - smells & looks like it has significant organic content

Harvest late summer when land is all dry

Cross



2005 Planting Diary

2/18/05- Picked up 480 Douglas Fir seedlings, P+1 (Plug +1) from Silvaseed in Roy, WA at approx 2 PM. Arrived @ trailer too late in day to start planting. 120/bag = 4 bags. They're about 2-3 feet tall, with roots about 10'-12' long. Put space blanket underneath them so heat from under bed would be reflected back. When storing them waiting for planting, I put them in shady spots, often on shade from slash piles Bob made since they are tall.

2/19/05- Planted 120 DF seedlings in 'Field', from spalt road toward Walker Road. 3 paces apart. Ground frozen until 9:30 AM. Started planting @ 10 AM; finished @ 5:45 PM.

2/20/05- Planted 164 DF seedlings. Ground frozen until 10 AM. Some of it never thawed out, so I did not plant in those spots. Started @ 10:30; finished @ 6 PM. Planted in same area, picking up where I ended yesterday. Last two days have been able to roughly plant in rows because area is flat with no vegetation or debris in the way (except for slash piles left from previous Jacobs-Eaton logging.)

2/21/05- Planted 196 DF seedlings. Started @ 9:45 AM; finished @ 6:30 PM. That's all the DF we have ordered for this year. Planted some within 200 feet of property between ours and Walker Road. Next week, Hemlocks come.

2/25/05- Picked up 360 Western Hemlock (3 bags) from Silvaseed, with Greg. All P+1 (Plug + 1). Toured the facility. Saw greenhouses and cold storage, and semi-cold storage. Arrived @ property around 3:20 PM. Finished planting 1st bag (120) at 6:20 PM. 40/hour. Hemlock seedlings are about 12'-18' tall, with roots 10' long. Silvaseed cuts them off at that length. They need less of a hole to be dug for their roots than the DF did. Even at that, I seem to be getting faster at planting. Also spent about ½ hour or so talking to Charles Painter.

2/26/05- Started planting at 9:40 AM. Spent some time exploring potential alternative planting spots since we seem to have little area left for the Cedar. Already have had to move planting into management area 2, which I was not planning to plant until 2006. Along the way, I discovered the last property corner that we had not found- the NW corner, on Hansen Creek.

Planted 162 Hemlock today. Mary and Greg come out around Noon to put on bud caps so we spent a good bit of time talking this afternoon, to compare notes on how we're doing, etc. I was disappointed that I did not finish planting the Hemlocks.

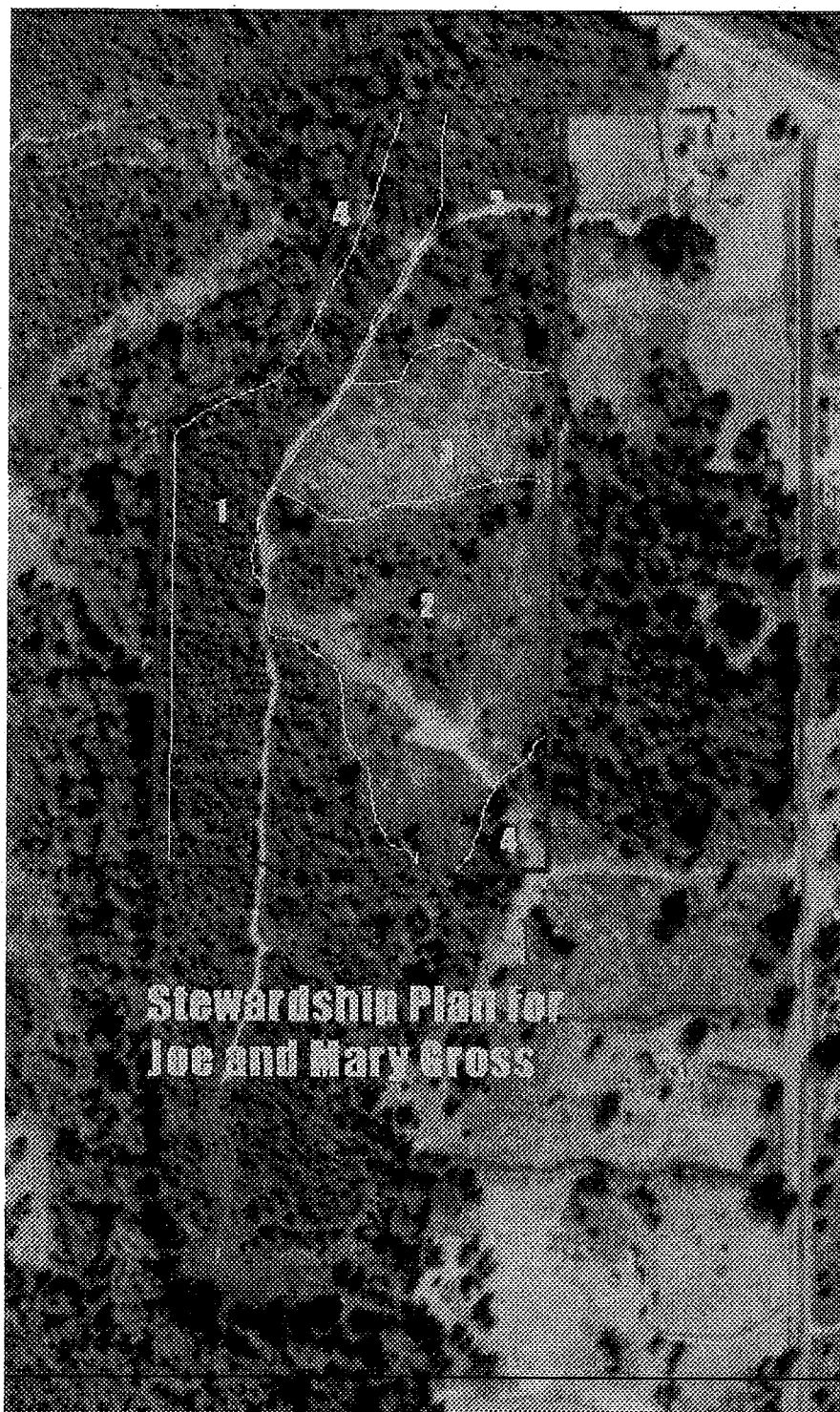
2/27/05- Planted the remaining 82 Hemlock today. Started @ 8:30 AM; finished @ 12:30 PM. Mary helped me find spots to plant where Bob cleared and other places where he had not cleared so we can plant Cedar there.

3/19/05- Picked up 300 Western Red Cedar, P+1 (Plug +1) from Tree Management Inc., off Highway 12 toward Cowlitz River Valley. Strange place- they aren't friendly or businesslike there. This was the only place that I could find that sold Cedar so we ordered from them. Silvaseed did not have Cedar available to order because the roots on their Cedar seedlings froze and were not fit to plant. Surprise! These Cedar came from Silvaseed, and were simply resold by Tree Management. I guess we'll see how they do. If these have to be replaced, I'll plan to deal with Silvaseed.

The Cedar are like Hemlock to handle and plant. They are generally taller than the Hemlock, but not as tall as the DF. Roots still cut at 10'. Planted them mostly in Area 2. Planted 180 today.

3/20/05- Planted remaining 120 Cedar today. Put Vexar tubes around all Cedar, because they are so susceptible to browse by deer.

I was advised to plant the Douglas Fir in high, sunny spots; the Hemlock in spots of medium height, in spots that get shade; and the Cedar in low spots because they tolerate the wetness better than the other species.





Digital Orthophoto

Photography

TOWNSHIP: T20R10W

SECTION: 29

1 inch = 1000 ft.

Contours 20 ft.

04/20/04



	Paved road
	Unpaved road
	Unknown surface
	Trails
	Railroad
	Railroad Grade
	Ferry Crossing
	Water text is FP water type only within section
	Water Type not classified

	Lake, Pond, Canal or Reservoir
	Intermittent Lake, Pond or Reservoir
	Marsh
	Open Water
	Flats -Mud, Tidal, Sand or Gravel

Parcel Boundaries -Kitsap Co. 5/98
King Co. 12/00
Pierce Co. 2/00

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