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## SILVICULTURAL DIAGNOSIS

### NO WHISKY COMMERCIAL THINNING

#### Existing Condition

The area is characterized by flat to moderately steep terrain (slopes ranging 10 – 55%). Elevations range from approximately 1600 to 3100 feet. Aspects are generally north and south. Soils tend to be deep and fine-textured on the flatter slopes and rocky on the steeper slopes.

Previously, the proposed treatment area contained stands of large mature Douglas-fir and western redcedar. Today, the entire area contains second-growth stands of Douglas-fir with alder dominated riparian communities. The second-growth stands were the result of several catastrophic fires in the late 1800s to 1939. The 1929 LaDee Fire burned all of the treatment area except the northeast corner, which was burned in the late 1800s. Many residual trees and snags were either removed or lost to past logging and repeated fires. The 1939 Boyer Fire reburned a similar area as the LaDee Fire ten years prior. Silvicultural treatments in the proposed project area have included planting, precommercial thinning, commercial thinning, fertilization and regeneration harvest. Planting of the area known as LaDee Flat began in the early 1930s. Productivity is moderate to high. The majority of the stands currently being proposed for commercial thinning harvest in the treatment area consist primarily of 40 to 70 year old conifer plantations. Approximately 750 acres were commercially thinned previously. All vegetation in the proposed project area is within the Western Hemlock Zone, characterized by the following plant associations:

- TSHE/BENE (western hemlock/dwarf Oregongrape)
- TSHE/BENE/POMU (western hemlock/dwarf Oregongrape/swordfern)
- TSHE/BENE-GASH (western hemlock/dwarf Oregon grape-salal)
- TSHE/POMU (western hemlock/ swordfern)
- TSHE/POMU/OXOR (western hemlock/ swordfern /oxalis)

The stands in the project area display little species diversity with common overstory and understory species consisting predominantly of Douglas-fir (*Pseudotsuga menziesii*), with minor inclusions of Pacific silver fir (*Abies amabilis*), noble fir (*Abies procera*), western hemlock (*Tsuga heterophylla*), and western redcedar (*Thuja plicata*). Ground cover includes, dwarf Oregon grape (*Berberis nervosa*), vine maple (*Acer circinatum*), salal (*Gaultheria shallon*), red huckleberry (*Vaccinium parvifolium*), Alaska huckleberry (*Vaccinium alaskaense*), and Oregon oxalis (*Oxalis oregana*).

The species mix is similar for each of the stands but most exhibit various concentrations and distributions. Douglas-fir generally dominates the overstory in the plantations with minor amounts of western hemlock, noble fir, Pacific silver fir and western redcedar scattered throughout. Current relative densities range from 45 to 80 with overstory diameters in plantations average approximately 13 to 23 inches. Heights in these stands area average well over 100 feet.

### **Disturbance Factors**

Fire, wind, insects, and harvest activity have been the major disturbance agents in the proposed treatment area. Fire, historically, was the dominant landscape pattern-forming disturbance before timber harvest activities began. This watershed is within the Pacific silver fir fire ecology group, which is a stand replacement fire type with a frequency of 50-300+ years.

Windthrow potential in the project area has been categorized as moderate by the Soil Resource Inventory (SRI January, 1979) and has not been a factor in the treatment area.

Forest insects are present at endemic levels throughout the No Whisky area. In 1985 and 86, spruce budworm was observed in the treatment area but the population was marginal. There was no visible defoliation the following year and the defoliation that did occur was insufficient to cause top-kill. When abundant, favorable breeding habitat (weakened trees) becomes available, usually as windthrow, Douglas-fir bark beetle (*Dendroctonus pseudotsugae Hopkins*) populations can rise to epidemic levels creating mortality in live trees. Disturbance by insects and disease is closely associated with windthrow. There have been no known recent insect outbreaks in the treatment area.

Several forest diseases are present in the No Whisky area. Small isolated pockets of laminated root rot (*Phellinus weirii*) are present throughout these stands with minor occurrences of western hemlock dwarf mistletoe (*Arceuthobium campylopodum tsugense*) in the overstory. The potential for mistletoe spread to younger western hemlock regeneration will increase as this understory begins to differentiate and become established as a second layer.

### **The Benefits of Thinning**

The objective of thinning is to redistribute growth potential to fewer trees, while maximizing the site's potential, leaving a stand with a desired structure and composition (Smith, 1962). In general, thinning tends to improve the overall vigor, growth, health and architecture of trees. Thinning can directly maintain forest health by maintaining growth rates of stands.

With the variable density thinning method, residual trees are distributed throughout the stand in varying concentrations or densities. Minor species

components and as well as trees with elements of wood decay that enhance biological diversity can be retained while meeting stand health and growth objectives.

Thinning provides growing space, which gives the trees with the best competitive advantage the opportunity to take advantage of this growing space for the longest practical time, fully utilizing the ability of the trees to expand their crowns into the growing room provided by the removal of neighboring trees (Oliver and Larsen, 1996).

Trees with larger crowns have greater stem taper, that is, the base of the tree is relatively large compared with trees that have small short crowns. Trees with more taper are less likely to suffer stem breakage or windthrow.

Thinning can also improve the resistance of some trees to some pathogens by manipulating the structure and species composition of a stand.

Thinning increases a tree's resistance to the wind (windfirmness) by maintaining a larger crown and increasing stem taper, and therefore, the physical stability of second-growth stands.

In the short term (5-10 years), thinning eliminates closed canopy forest conditions allowing increased sunlight to the forest floor and otherwise drastically changes plant growing conditions and wildlife habitat (Tucker, 1997).

Trees in previously thinned stands at relatively wide spacings in the No Whisky area appear to be quite windfirm as these trees exhibit good form and taper and the incidence of windthrow has not been recently observed. Other stands with smaller diameter trees and more cylindrical boles that have not received such treatment are less likely to be as windfirm.

### **Relative Density Notes**

Stand density expresses crowding of individual trees within stocked stands. Stand density has been measured in many ways but not all measures are as useful in measurement because they do not relate to site occupancy. A good measure of stand density is quantitative and independent of management objectives.

Relative density methods relate existing or planned density to some maximum biologically potential density, hence the term "relative" (Ellen, 1983). Relative density (RD) expresses stocking as a proportion of the maximum possible. For any given density, there is a maximum average tree size attainable. When reached, an increase in size occurs with a decrease in density.



Both tree and stand characteristics are closely related to relative density. Tree growth rates, crown structure and mortality, as well as understory development and natural regeneration are all closely related to RD. When relative density is held constant, residual basal area and spacing increase with an increase in average stand diameter.

The scale for relative density ranges from 0 – 100 and applies to stands of all sizes.

### **General Rules of Thumb (applied to many species)**

- Mortality zone → >RD 55
- Optimum thinning for timber → RD 35 - 55
- Thin for diversity → RD 25 – 45
- Open for understory development → RD 20 – 30
- Near “full stocking”/understory progressively suppressed → RD 30 – 55
- Mortality of some trees must occur for larger growth → RD ~55 – 100

Stand densities in the No Whisky Sale area were analyzed using Curtis’ Relative Density (RD) method (Curtis, 1982). Determination of the thinning level for these stands was based on the need to meet resource management objectives.

Curtis’ Relative Density is calculated by:

$$RD = G / \sqrt{D}$$

Where:

G = Basal Area (area occupied by each tree measured in square feet)

D = Quadratic Mean Diameter (diameter of a tree of average basal area measured in inches)

Example: a stand w/ 267ft<sup>2</sup> BA divided by the square root of 14 in. = RD → 71

### **Silvicultural Objectives**

1. Provide forest products
2. Maintain health, vigor and growth resulting in larger windfirm trees
3. Enhance diversity

4. Enhance riparian reserves
5. Enhance forage for deer and elk

### **Treatment Options**

Proposed areas under consideration for treatment were field-reviewed by a certified silviculturist and specific silvicultural systems were selected based on site-specific analyses and management area goals and objectives. The **regeneration harvest option** was not considered the optimal treatment at this time in order to allow these stands to continue their growth until such time that this option meets the desired management goals for stands in the No Whisky area.

Thinning was chosen as the optimal treatment to meet the silvicultural and management objectives for No Whisky stands 1-17, 19 - 21, 23 - 25, 31, & 34 - 40 because they have not yet reached culmination of mean annual increment and are beginning to slow in growth due to overcrowding (as they approach relative densities near 55). The following treatment options were considered in this analysis: Thinning Option #1 and Thinning Option #2.

Thinning Option #1 prescribes a commercial thinning treatment in the Matrix with a post harvest relative density between 27 and 40. This option establishes a 20-year re-entry cycle, which addresses providing forest products, maintenance of stand vigor, growth, health, and architecture of trees. Relative densities between 35 and 55 describe the optimum thinning range for timber production. The production of wood products and the volume of timber harvested from National Forest lands have direct and indirect effects on local communities and the general public. This option provides approximately 14,000 board feet of timber per acre for the production of timber products for public consumption. Implementing this thinning option allows the opportunity to extend the rotation and provide similar yields over the life of the stand. Overall stand health is achieved by removing competing or neighboring trees to allow residual trees the opportunity to fully maximize their growth potential of the site as well as promoting increased light to the forest floor for vegetation production for deer and elk. Average stand diameters in 20 years would range from 16 - 31 inches. Tree size and stocking levels begin to approach a point where growth suppression and mortality would occur (at RDs of ~ 50 – 55). Understory vegetation would have developed for 20 years without suppression from the overstory conifers.

Thinning Option #2 prescribes a commercial thinning treatment in the Riparian Reserves with a post harvest relative density between 22 and 35. This option establishes a 40-year re-entry cycle that addresses enhancement of Riparian Reserves, diversity and forage for deer and elk. Thinning in riparian reserves would increase tree size, adequately protect the zone of shade influence along

streams, and minimize the potential for sediment delivery to streams. This prescription would maintain water temperature, large woody debris, disturbance regime, and riparian reserve indicators. Thinning in Riparian Reserves would emphasize the development of vegetative and structural diversity associated with mature stand and late-successional conditions. Stands are generally thinned at a wider spacing in Riparian Reserves to achieve these desired characteristics and values.

Leaving fewer residual trees at a wide spacing increases opportunities for understory initiation and the establishment of shrub development for wildlife species for a longer period of time. This option would supply timber products in the short-term (current treatment proposal) however timber production would not be the primary objective for the Riparian Reserve. While thinning in the riparian reserve may have short-term benefits the thinning would contribute to maintaining species and structural diversity over the long term. Average stand diameters 40 years would range from 18 - 37 inches. Tree size and stocking levels begin to approach a point where growth suppression and mortality would occur (with RDs of ~ 50 – 55). Understory vegetation would have developed for 40 years without suppression from the overstory conifers, however, some vegetation manipulation may be necessary to promote palatable deer and elk forage.

### **Treatment Proposal**

- Commercially thin from below approximately 1678 acres of overstocked stands in both the Matrix and Riparian Reserves to promote and maintain health and vigor
- Variability – Thinning will generally remove the smaller trees, but the objective is to enhance biological diversity through variable spaced thinning. Diversity and variability will be introduced in several ways:
  - Leave tree spacing will vary from 55-130 trees per acre (comparable to basal areas = 110 -180 and relative density range = ~22-40%)
  - Leave trees will include desired species or those less susceptible to damaging agents
  - Leave trees will include minor species
  - Leave trees will include some trees with elements of wood decay
  - Leave trees will include some live trees where their crowns touch certain key snags
- Trees removed are generally from smaller diameter classes (~ avg10-14 inches dbh)
- Retain desired species or those less susceptible to damaging agents

The table below displays the thinning treatment option proposed for each stand. Where thinning option 1 is displayed in both the matrix as well as the RR, it was determined that the matrix Rx was equally as beneficial for the RR. All stands will be treated using a variable density thinning where relative density should average  $\pm 15\%$  of the post RD at any given point in the stand. Refer to the Silvicultural Stand Diagnosis Spreadsheet for specific stand parameters.

### No Whisky Stand Treatment Proposal (Rx)

No Whisky Stand #	Matrix Post Harvest RD/20yrs	RR Post Harvest RD/40 yrs	No Whisky Stand #	Matrix Post Harvest RD/20yrs	RR Post Harvest RD/40 yrs
1	Thin Opt 1	N/A	16	Thin Opt 1	N/A
2	Thin Opt 1	N/A	17	Thin Opt 1	Thin Opt 1
3	Thin Opt 1	N/A	19	Thin Opt 1	N/A
4	Thin Opt 1	Thin Opt 2	20	Thin Opt 1	N/A
5	Thin Opt 1	Thin Opt 2	21	Thin Opt 1	N/A
6	Thin Opt 1	N/A	23	Thin Opt 1	Thin Opt 1
7	Thin Opt 1	N/A	24	Thin Opt 1	N/A
8	Thin Opt 1	N/A	25	Thin Opt 1	Thin Opt 1
9	Thin Opt 1	N/A	31	Thin Opt 1	N/A
10	Thin Opt 1	Thin Opt 2	34	Thin Opt 1	N/A
11	Thin Opt 1	N/A	35	Thin Opt 1	Thin Opt 1
12a	Thin Opt 1	Thin Opt 2	36	Thin Opt 1	N/A
12b	Thin Opt 1	N/A	37	Thin Opt 1	N/A
13	Thin Opt 1	Thin Opt 2	38	Thin Opt 1	Thin Opt 1
14	Thin Opt 1	N/A	39	Thin Opt 1	Thin Opt 1
15	Thin Opt 1	N/A	40	Thin Opt 1	N/A

/S/ Glenda Goodwyne  
Silviculturist

December 28, 2005  
Date

## SILVICULTURAL CERTIFICATION FOR NFMA COMPLIANCE

### NO WHISKY COMMERCIAL THINNING

The proposed commercial thinning treatment of stands 1 – 17, 19 - 21, 23 - 25, 31, & 34 - 40 have been field verified by a certified silviculturist.

Based on my analysis, stand diagnosis and design criteria for the commercial thinning treatment, I recommend the following findings of facts pursuant to NFMA be made in this project decision:

There is reasonable assurance that if prescriptions are implemented as I have prescribed:

1. Soil, slope or other watershed conditions will not be irreversibly damaged.

I further find that:

All lands within this project area that would be harvested are suitable for timber production.

Evenaged management is the optimal appropriate silvicultural system and commercial thinning is the optimum harvest method for those stands prescribed for treatment because it meets the objectives of the *NORTHWEST FOREST PLAN*, the *MT HOOD FOREST PLAN* and the recommendations of the *NORTH FORK WATERSHED ANALYSIS*. These stands have not surpassed culmination of mean annual increment for fiber production.

All units or combination of adjacent units and immediately adjacent existing plantations less than an average of 4.5 feet in height do not create openings greater than 60 acres in size.

/S/ Glenda Goodwyne  
Silviculturist

December 28, 2005

Date

## Literature Cited

Curtis, R.O. 1982. A simple index of stand density for Douglas-fir. Forest Service, Vol. 28, No.1. 92-94 p

Howes, S. 1979. Soil Resource Inventory. Mt. Hood National Forest. USDA Forest Service, Pacific Northwest Region, Sandy, Oregon.

Oliver, C.D. and B.C. Larson. 1996. Forest Stand Dynamics. John Wiley & Sons, Inc. New York. 23, 37-39, p

Tucker, G. 1997. Pacific NW Alternative Silviculture Thinning: Current Projects and Prospects for the Future. The Evergreen State College, Olympia, WA and Corvallis, OR. Density Management/Riparian Silviculture; Literature Review

## DecAID Advisor

The following is a summary of snag data contained in the DecAID advisor for three different tolerance levels for both the Western Lowland Conifer Hardwood Forest Oregon Cascades and the Montane Mixed Conifer Forest. The data for each of these habitat types is given for three different structural conditions.

### DecAID – Snag Density and Sizes for 3 Different Tolerance Levels

“Western Lowland Conifer Hardwood Forest Oregon Cascades” vegetative condition best fits with the Western Hemlock And Pacific Silver fir Plant Series

Vegetative Conditions Western Lowland Conifer Hardwood Forest Oregon Cascades	80% Tolerance Level for Snag Density and Diameter	50% Tolerance Level for Snag Density and Diameter	30% Tolerance Level for Snag Density and Diameter 1
Larger (Late Seral)	36.4/acre > 10 in. with more than 14/acre > 20 in.	18.6/acre > 10 in. with more than 8.1/acre > 20 in.	5.3/acre > 10 in. with more than 4.8/acre > 20 in.
Small/Medium (Mid Seral)	36.4/acre > 10 in. with more than 15/acre > 20 in.	18.6/acre > 10 in. with more than 8.1/acre > 20 in.	5.3/acre > 10 in. with more than 4.8/acre > 20 in.
Open Canopy (Early Seral)	26/acre > 10 in. with more than 12.5/acre > 20 in.	9.4/acre > 10 in. with more than 4.2/acre > 20 in.	5/acre > 10 in. with more than 2.1/acre > 20 in.

“Montane Mixed Conifer Forest” vegetative condition best fits with the Mountain Hemlock Plant Series

Vegetative Conditions Montane Mixed Conifer Forest	80% Tolerance Level for Snag Density and Diameter	50% Tolerance Level for Snag Density and Diameter	30% Tolerance Level for Snag Density and Diameter 1
Larger (Late Seral)	27/acre > 10 in. with more than 15/acre > 20 in.	15/acre > 10 in. with more than 9/acre > 20 in.	11/acre > 10 in. with more than 6.5/acre > 20 in.
Small/Medium (Mid Seral)	32/acre > 10 in. with more than 9.5/acre > 20 in.	16.6/acre > 10 in. with more than 4.2/acre > 20 in.	10/acre > 10 in. with more than 2.7/acre > 20 in.
Open Canopy (Early Seral)	23/acre > 10 in. with more than 5.3/acre > 20 in.	8.5/acre > 10 in. with more than 2.1/acre > 20 in.	4/acre > 10 in. with more than 1.1/acre > 20 in.

The following tables contain a summary of the snag data from Forest surveys. The data is summarized in a slightly different manner than the information in the DecAID advisor.

The data separates snags into large (> 21 inches) and medium (15 to 21 inches). The DecAID advisor generally uses large (>20 inches) and small (10 to 15 inches). In terms of comparison, the data under estimates the amount of snags.

The following analysis compares the snag data to the tolerance levels for the different wildlife habitat types and structural conditions identified in the DecAID advisory tool. It displays the percentage of the watershed in each structural condition and the tolerance level for snags. The percentages are based on all past, present and foreseeable future actions.

**Average Snag Levels and Tolerance levels for Unmanaged and Managed Stands**

Series and Seral Stage	Large Snags > 21 in.	Medium Snags 15 to 21 in.	Current Tolerance Level at the Landscape Scale	Percent of analysis area
Western Hemlock Late Seral	6.2	1.7	> 30%	9.8
Western Hemlock Mid Seral	0.1	13.5	> 30% but lacks large snags	67.4
Pacific Silver Late Seral	7.8	4.8	Between 30% and 50%	0.1
Pacific Silver Mid Seral	1.9	3.2	Less than 30%	6.9
Mountain Hemlock Late Seral	3	0.1	Less than 30%	0
Mountain Hemlock Mid Seral	0.9	0.7	Less than 30%	0
All Series, Early Seral Plantations	1.5	0.5	Less than 30%	9.0
All Series, Mid Seral Plantations	0.1	0.1	Less than 30%	2.6



## AQUATIC CONSERVATION STRATEGY

The Record of Decision to Clarify Provisions Relating to the Aquatic Conservation Strategy (USDA USDI, 2004a) contains new guidance on how to implement the Aquatic Conservation Strategy. Some highlights of the clarification include: (1) Project plans are not required to assess the contribution of a site-specific project to achieving Aquatic Conservation Strategy objectives. (2) The Aquatic Conservation Strategy objectives are not to be interpreted as standards and guidelines applicable to individual projects. (3) Project would be designed to contribute to maintaining or restoring the fifth-field watershed over the long term, even if short-term effects may be adverse.

1. **The existing condition, including the important physical and biological components of the fifth-field watersheds.** *The existing conditions for local resources can be found in the EA in the Water Quality and Fish section and in the Wildlife section. The existing conditions for fifth-field watersheds can be found below in this Appendix.*
2. **The effect of the project on the existing condition.** *The effects of the alternatives on resources can be found in the EA in the Water Quality and Fish section and in the Wildlife section.*
3. **Relevant information from applicable watershed analysis used in designing and assessing the project.**

Page references	North Fork Clackamas	Lower Clackamas
Emphasis on thinning opportunities	5-1	6-7
Stream surveys	2-20	2-44

4. **Consistency with Riparian Reserve standards and guidelines of the NFP on pages C-31 to C-38.** (Where standards and guidelines contain direction to “meet,” “not adversely affect,” “not retard or prevent attainment of” or otherwise “achieve ACS objectives,” the Aquatic Conservation Strategy objectives apply only at fifth-field watershed and larger scales, are achieved only over a period of decades or longer, and do not provide additional direction constraining the short-term or long-term effects of individual projects.”

Applicable riparian reserve standards and guidelines:

TM-1 c. Apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain ACS objectives. *Refer to the purpose and need section. The objective of thinning in riparian reserves is to accelerate the development of mature and late-successional stand conditions. The design criteria and best management practices provide protection to riparian and aquatic resources.*

RF-2. For each existing or planned road, meet Aquatic Conservation Strategy objectives by:

- a. minimizing road and landing locations in Riparian Reserves.
- b. completing watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in Riparian Reserves.
- c. preparing road design criteria, elements, and standards that govern construction and reconstruction.
- d. preparing operation and maintenance criteria that govern road operation, maintenance, and management.
- e. minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.
- f. restricting sidecasting as necessary to prevent the introduction of sediment to streams.
- g. avoiding wetlands entirely when constructing new roads.

*Any new temporary roads would not be located within riparian reserves and they would be built on gentle landforms and obliterated upon project completion. They would be consistent with this standard and guideline.*

RF-3. Determine the influence of each road on the Aquatic Conservation Strategy objectives through watershed analysis. Meet Aquatic Conservation Strategy objectives by:

- a. reconstructing roads and associated drainage features that pose a substantial risk.
- b. prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected.
- c. closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short-term and long-term transportation needs.

*Road reconstruction needs have been identified along haul routes.*

RF-5. Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.

*Any new temporary roads would not be located within riparian reserves and they would be built on gentle landforms and obliterated upon project completion. They would be consistent with this standard and guideline.*

## **Middle Clackamas River**

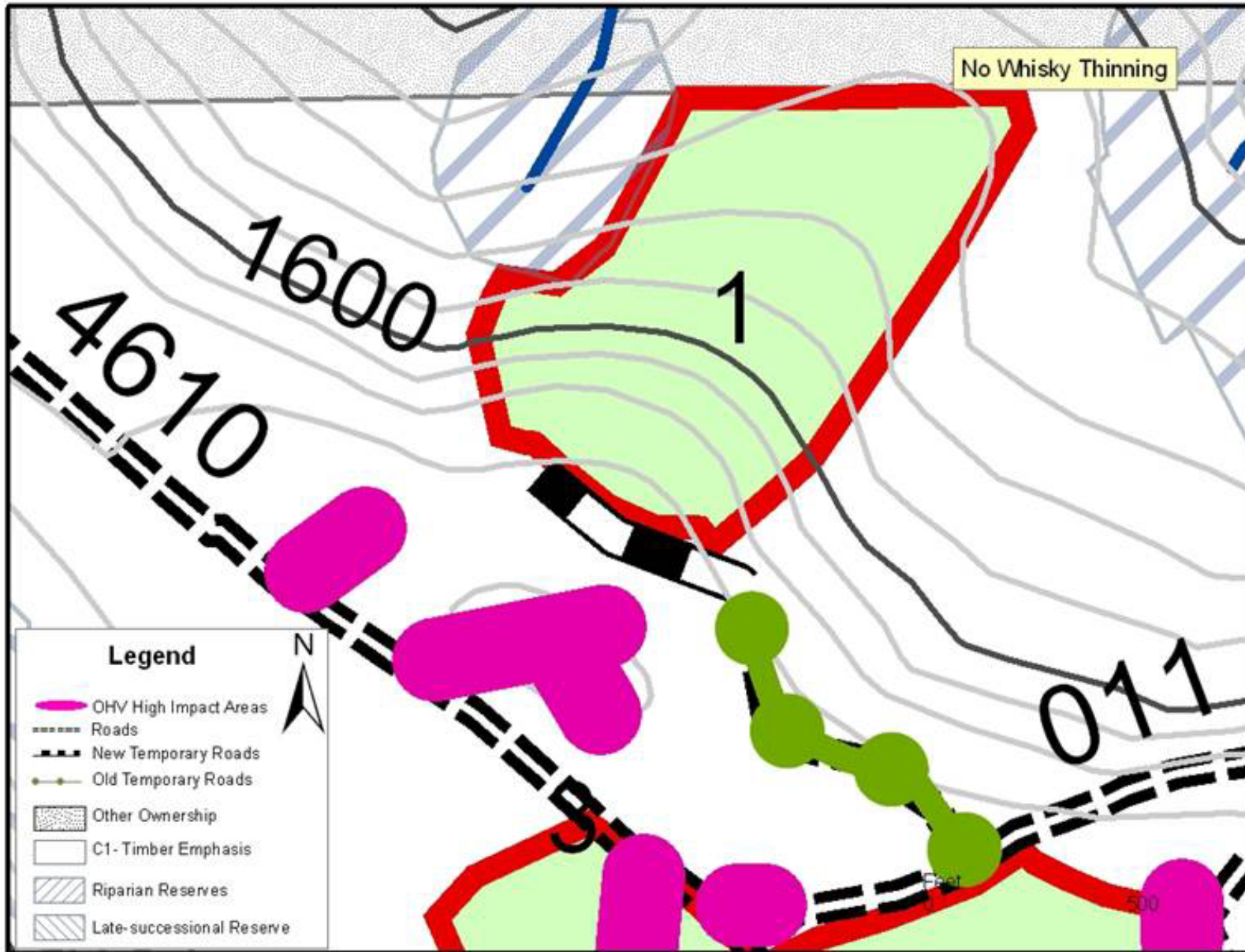
The Middle Clackamas Watershed includes the mainstem Clackamas River and watersheds that drain into the Clackamas from North Fork Reservoir to the confluence of the Collawash River. The watershed is 138,598 acres in size. The major subwatersheds

that contribute to the Middle Clackamas fifth-field watershed includes: South Fork of the Clackamas River, North Fork Clackamas, Fish Creek, and Roaring River.

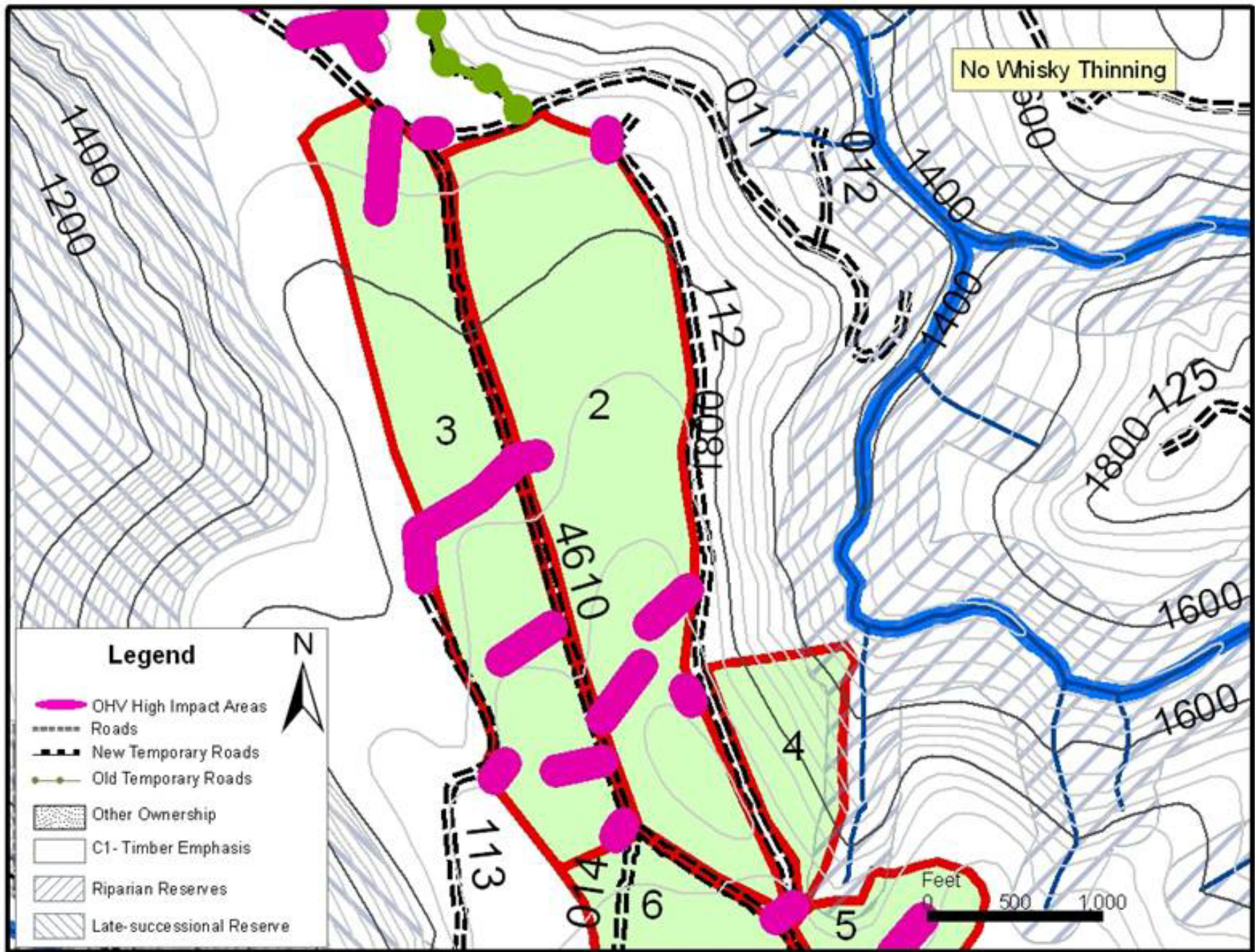
The Middle Clackamas River corridor, along with the Fish Creek and Roaring River drainages, are designated as Tier 1 key watersheds in the Record of Decision for the Northwest Forest Plan. Tier 1 watersheds have been identified as crucial refugia for at-risk fish species. The Clackamas River is also designated as a Scenic and Recreational River under the National Wild and Scenic Rivers Act and a State Scenic Waterway. The Wild and Scenic Management Plan describes the outstandingly remarkable values of fish, botany, wildlife, recreation, and cultural resources associated with the Clackamas River.

Management activities that have had an effect on aquatic resources within the Middle Clackamas River include timber harvest, road building, hatchery introductions, and hydroelectric development.

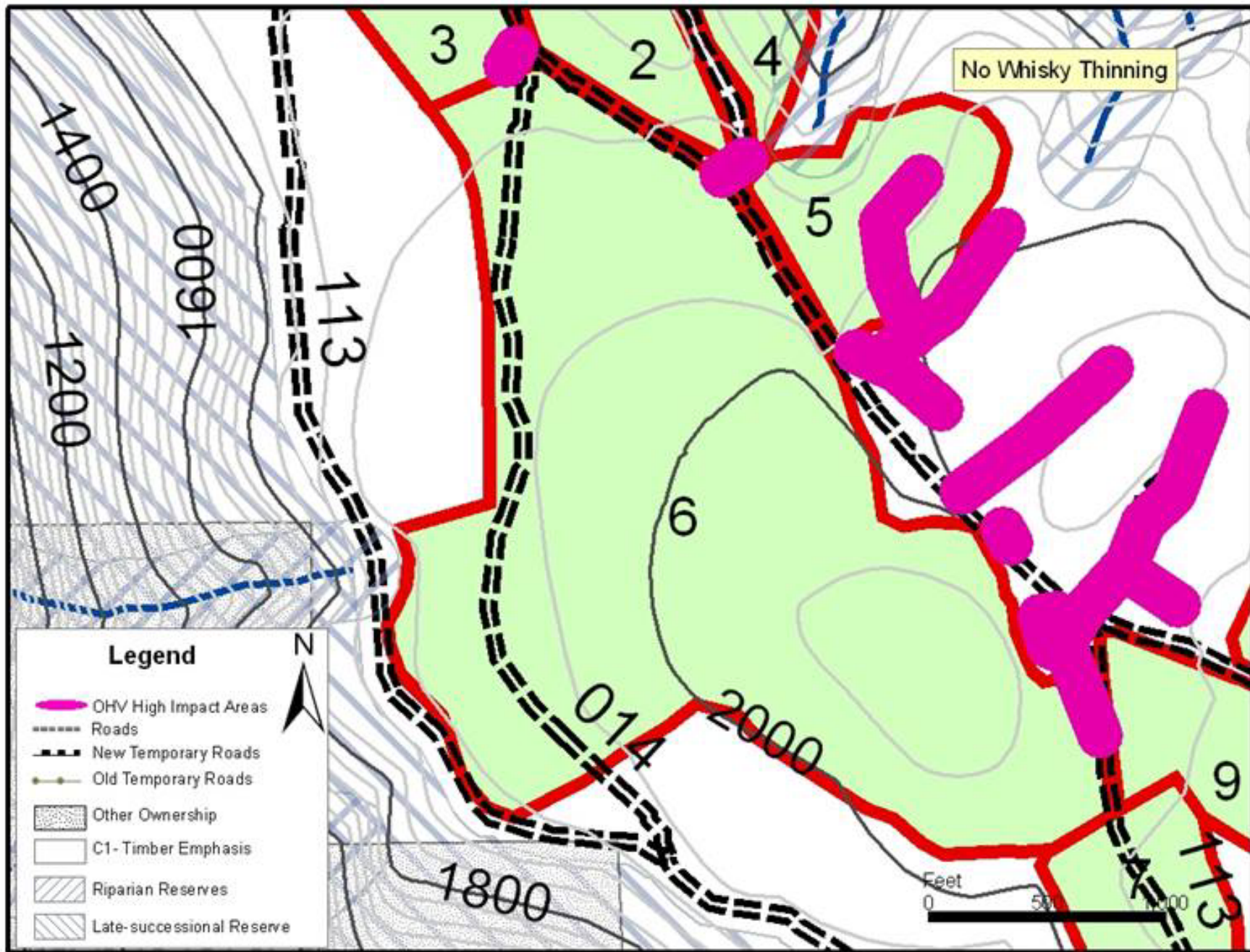
Using the “Matrix of Pathways and Indicators” (NOAA Fisheries, 1996), the condition of the existing environmental baseline within the Middle Clackamas River watershed was assessed. Baseline habitat indicators that are described “at risk” in the Middle Clackamas watershed includes: temperature, physical barriers, large woody debris, off-channel habitat, refugia, floodplain connectivity, road density, and riparian reserves. Sediment/turbidity, chemical contaminants/nutrients, substrate, pool frequency/quality, streambank condition, and peak/baseflows are described as “properly functioning”. Drainage network increase within the watershed is described as “not properly functioning”.



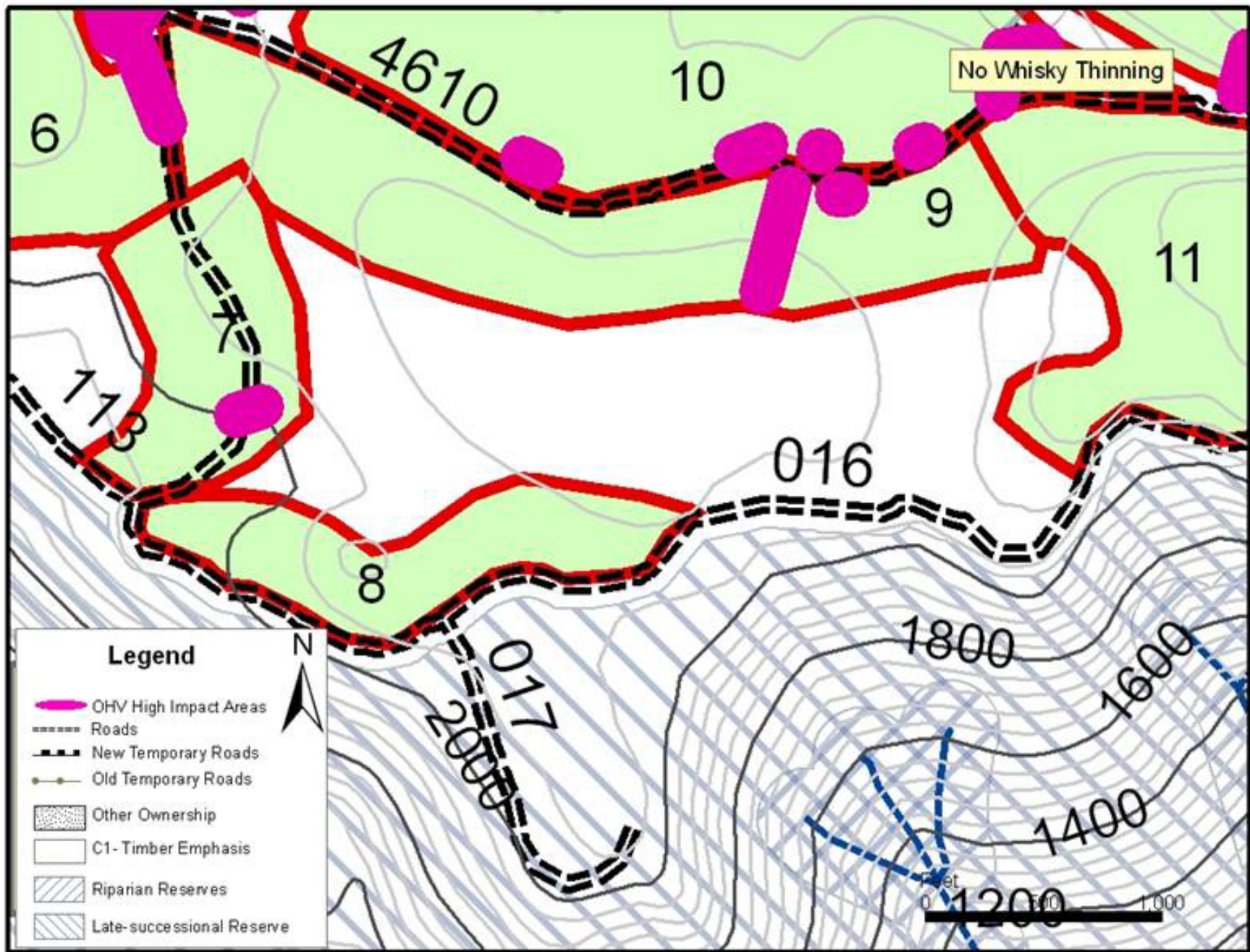


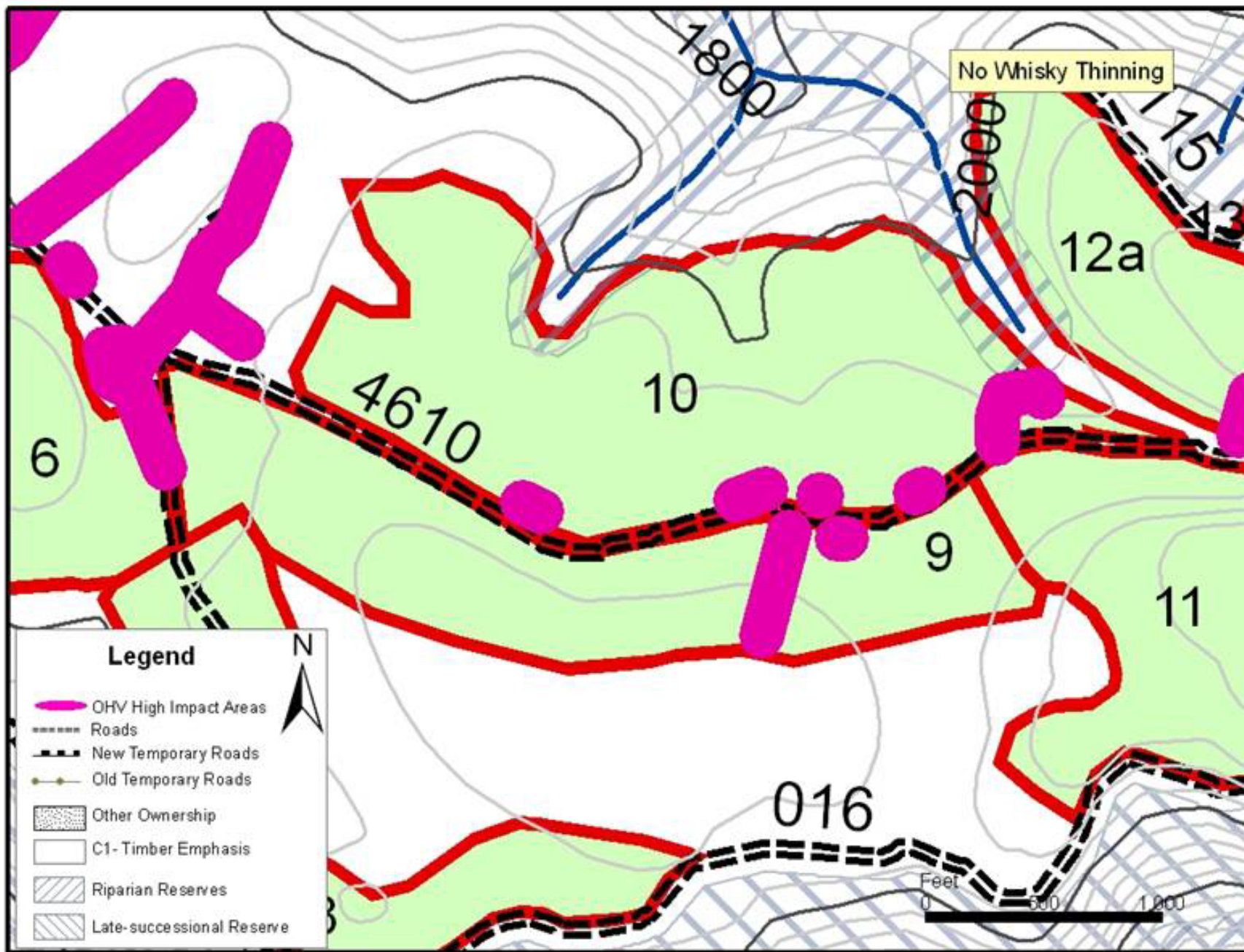




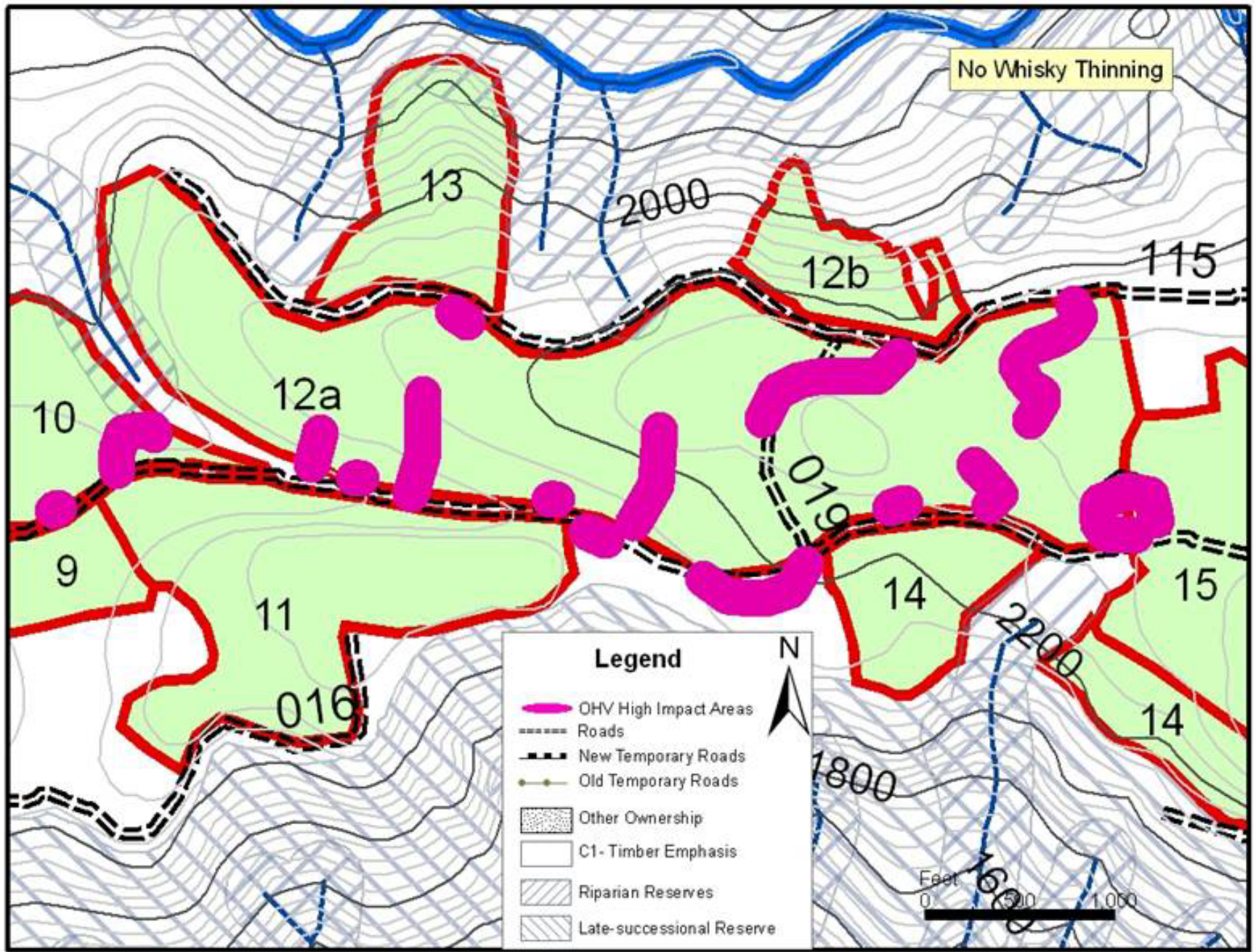




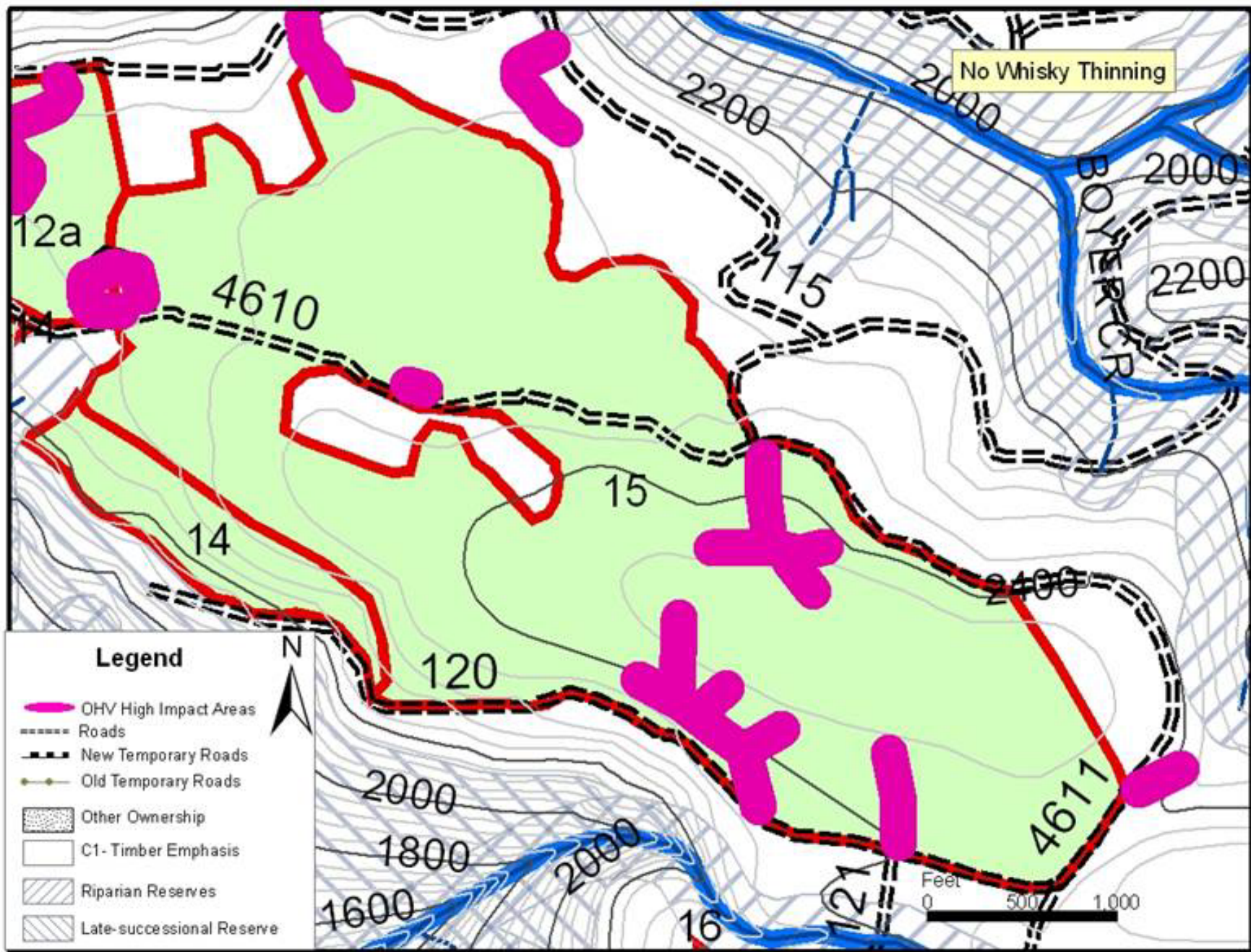




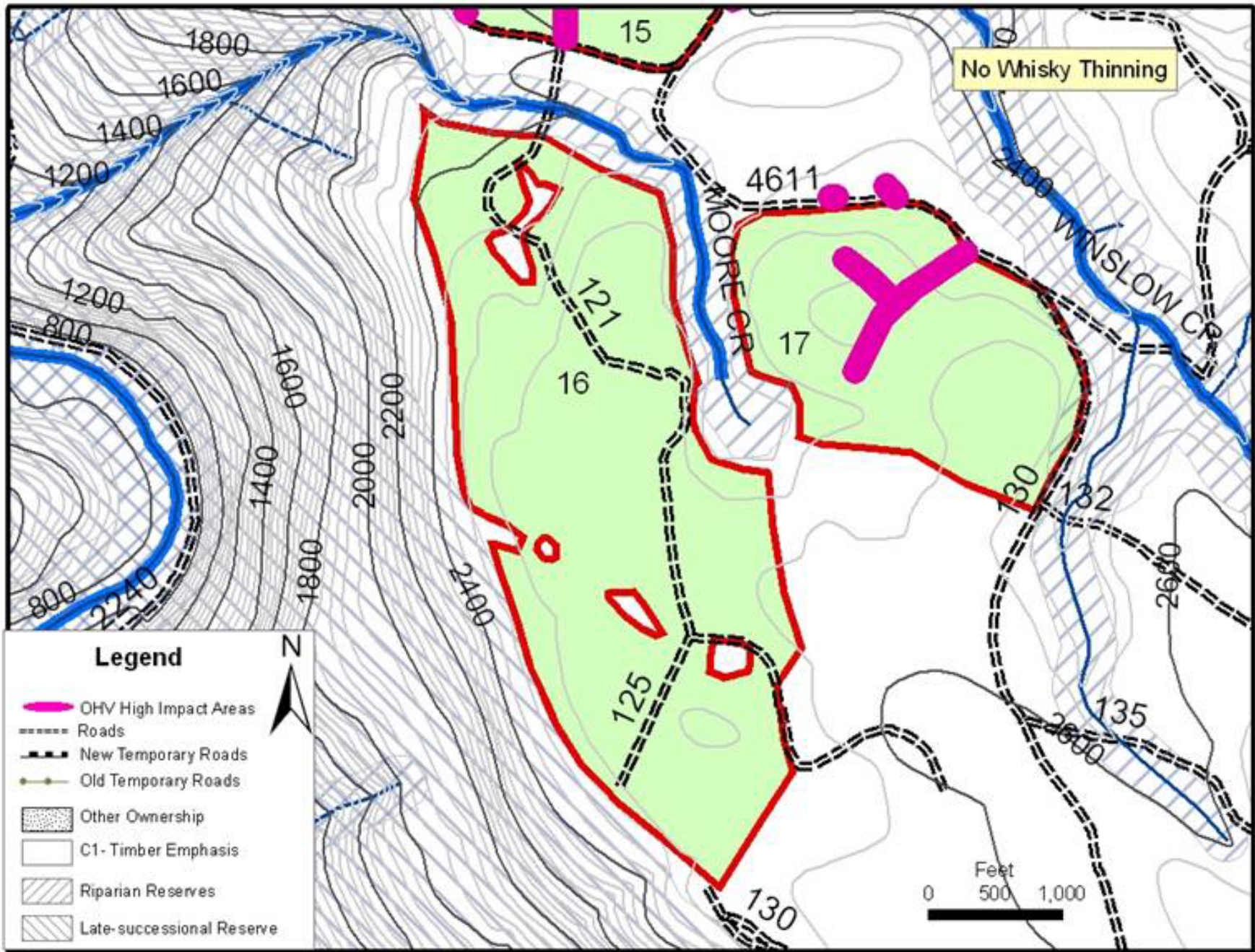




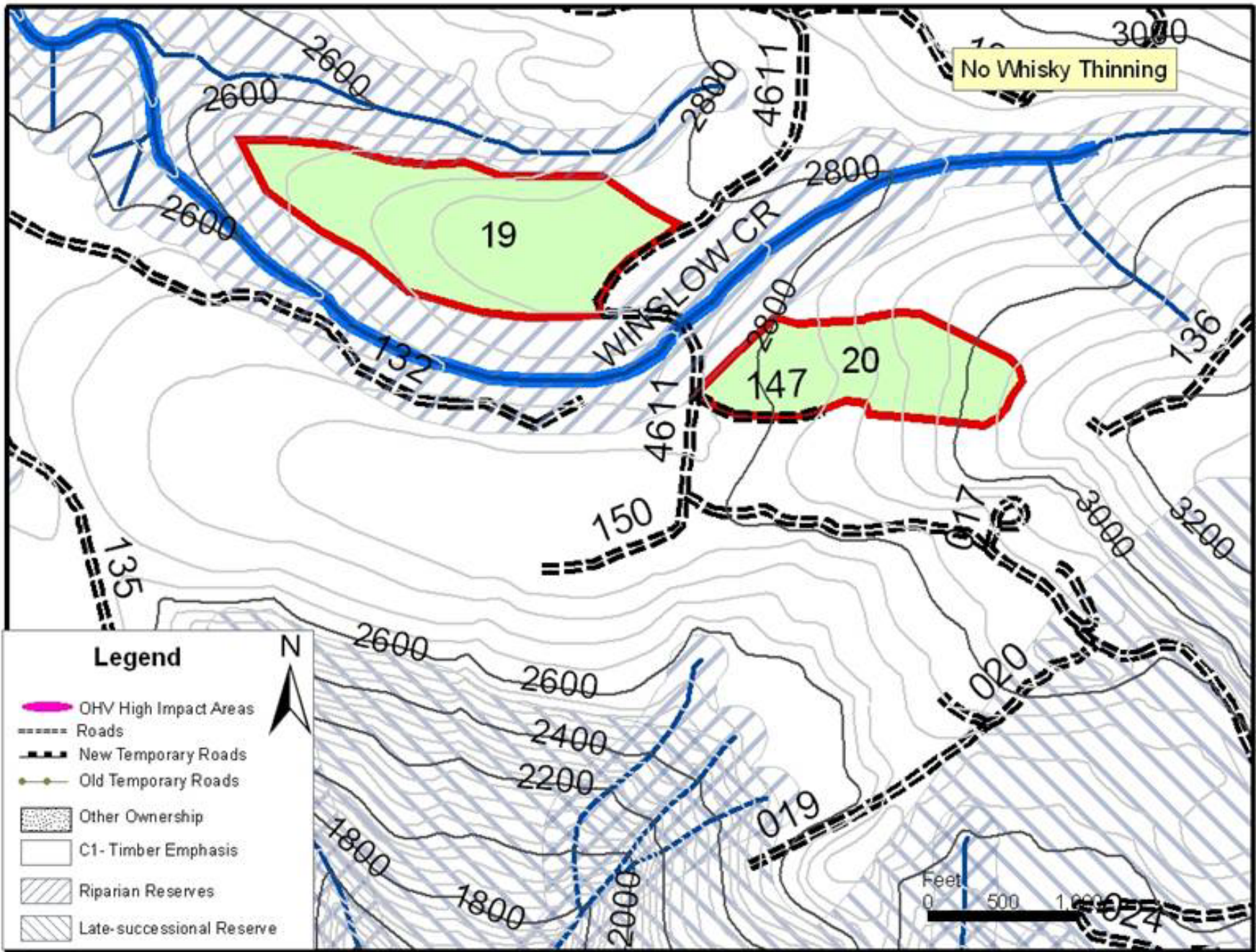




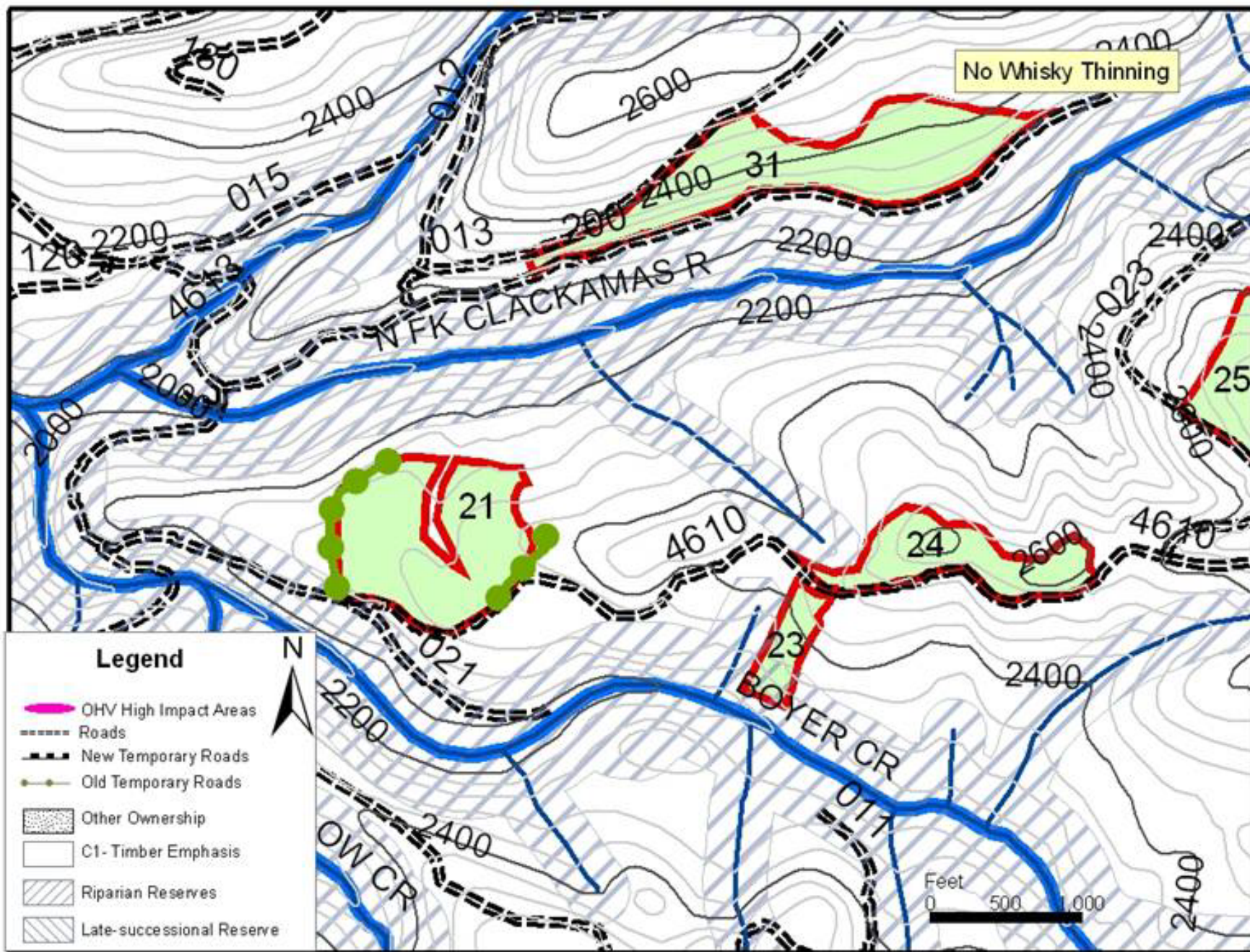




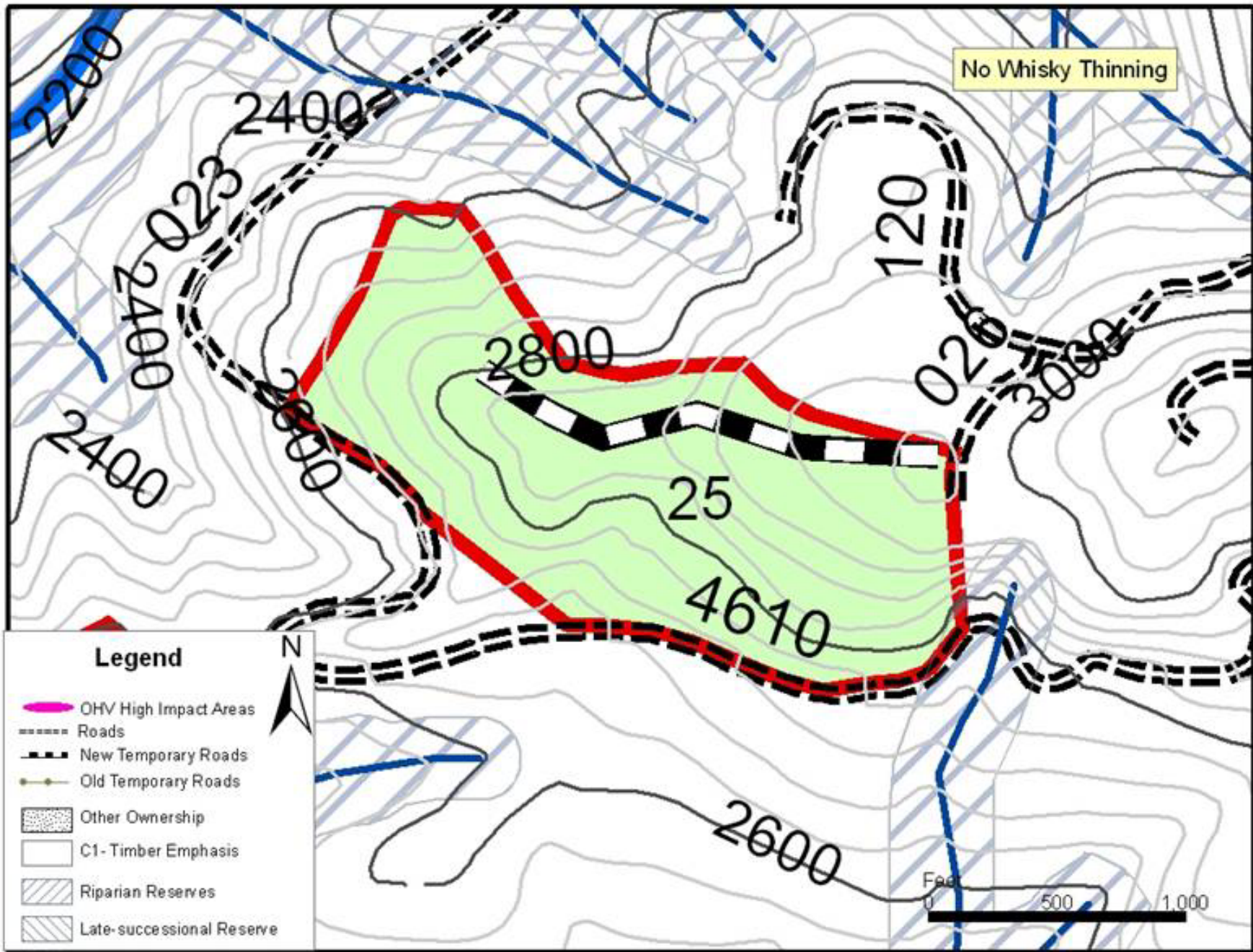




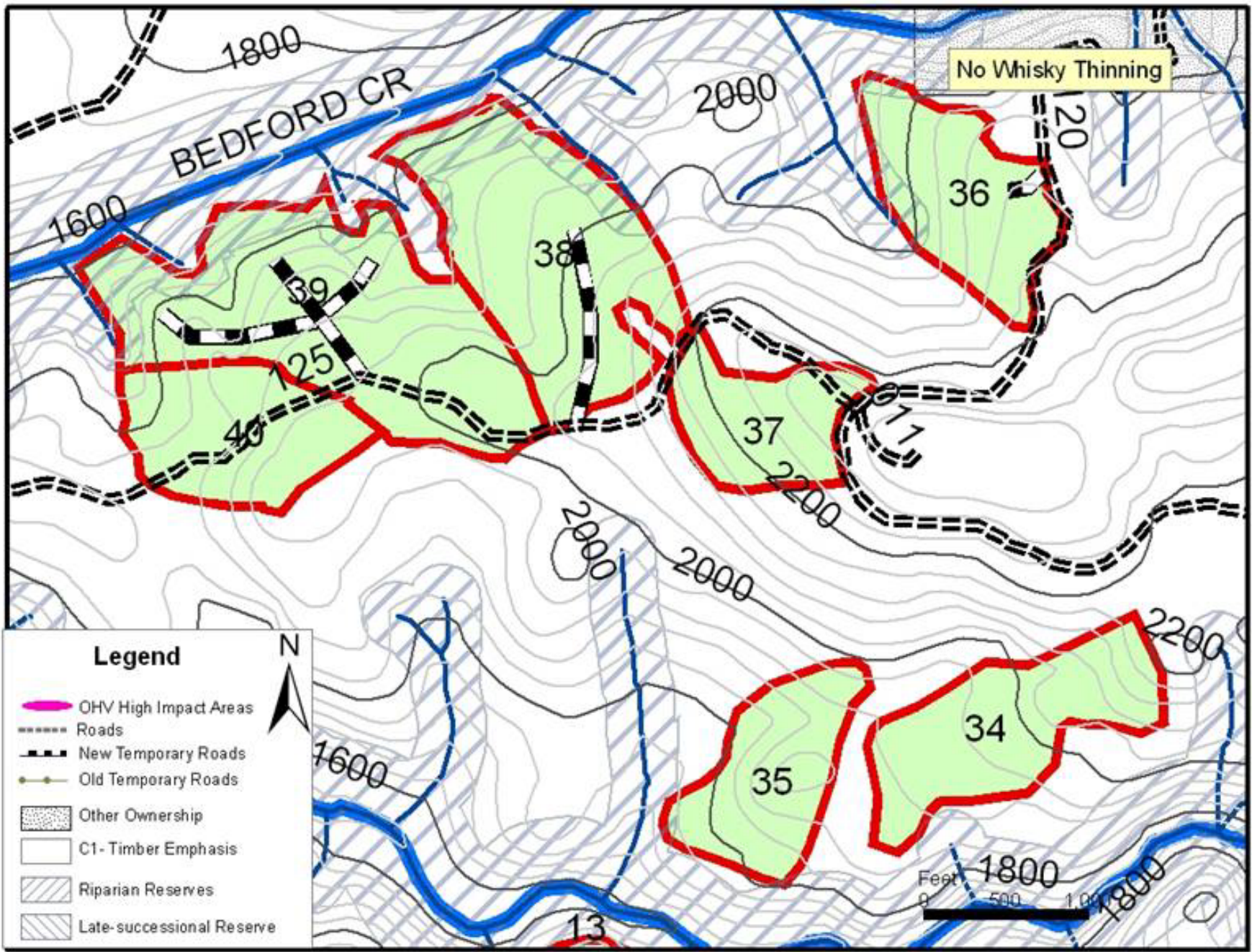












## Compliance Review: Survey & Manage Species

Environmental Analysis File

Mt. Hood National Forest – Clackamas River Ranger District

Project Name:	<b>No Whisky Plantation Thinning</b>	Prepared By:	David Lebo, Sharon Hernandez, Robert Bergamini, Jim Roden
Project Type:	<b>Commercial Thinning</b>	Date:	<b>3/2006</b>
Location:	<b>T.4S., R.5E.; T.4S., R.6E.;</b>	S&M List Date:	<b>December 2003</b>

This report documents compliance with the 2001 Record of Decision and Standard and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines as amended or modified as of March 21, 2004.

**Table A. Survey & Manage Species Known or Suspected on the Forest.**

Species	S&M Category	Within Range of the Species?	Project Contains Suitable habitat?	Project may negatively affect species/habitat?	Surveys Required?	Survey Date (month/year)	Sites Known or Found?	Site Management
<b>Survey Triggers</b>					<b>Survey Results</b>			
<b>List of Category B, D, E or F species where there are known sites</b>								
Lichen - <i>Usnea longissima</i>	F	N/A <sup>1</sup>	N/A	N/A	No	N/A	Yes	N/A
Lichen – <i>Peltigera pacifica</i>	E	N/A <sup>1</sup>	N/A	N/A	No	N/A	Yes	Yes
<b>List of Category B species where equivalent effort surveys may be needed</b>								
Lichen – <i>Bryoria subcana</i>	B	Possibly <sup>4</sup>	Possibly	No	Yes	4, 9, 10, 11 of 2005	No	N/A
Lichen – <i>Calicium abietinum</i>	B	Yes	Yes	No	No <sup>5</sup>	4, 9, 10, 11 of 2005	No	N/A
Lichen – <i>Chaenotheca chrysocephala</i>	B	Yes	Yes	No	No <sup>5</sup>	4, 9, 10, 11 of 2005	No	N/A
Lichen – <i>Chaenotheca ferruginea</i>	B	Yes	Yes	No	No <sup>5</sup>	4, 9, 10, 11 of 2005	No	N/A
Lichen - <i>Tholurna dissimilis</i>	B	Yes	No	No	No	4, 9, 10, 11 of 2005	No	N/A
Bryophyte - <i>Rhizomnium nudum</i>	B	Yes	Yes	No	No <sup>5</sup>	4, 9, 10, 11 of 2005	No	N/A
Mollusk – <i>Deroceas hesperium</i>	B	No	No	No	No	N/A	No	N/A
<b>Fungi</b>								
<i>Bridgeoporus nobilissimus</i>	A	Yes	Yes	No	Yes	4, 9, 10, 11 of 2005	No	N/A
<b>Lichens</b>								
<i>Bryoria pseudocapillaris</i>	A	No	No	No	No	4, 9, 10, 11 of 2005	No	N/A
<i>Bryoria spiralis</i>	A	No	No	No	No	4, 9, 10, 11 of 2005	No	N/A
<i>Dendriscoaulon intricatum</i>	A	Yes	Yes	No	Yes	4, 9, 10, 11 of 2005	No	N/A
<i>Hypogymnia duplicata</i>	C	Yes	No	No	No	4, 9, 10, 11 of 2005	No	N/A



Species	S&M Category	Within Range of the Species?	Project Contains Suitable habitat?	Project may negatively affect species/habitat?	Surveys Required?	Survey Date (month/year)	Sites Known or Found?	Site Management
<i>Leptogium cyanescens</i>	A	Yes	Yes	No	Yes	4, 9, 10, 11 of 2005	No	N/A
<i>Lobaria linita</i>	A	Yes	Yes	No	Yes	4, 9, 10, 11 of 2005	No	N/A
<i>Nephroma occultum</i>	C	Yes	Probably not	No	Yes	4, 9, 10, 11 of 2005	No	N/A
<i>Niebla cephalota</i>	A	No	No	No	No	4, 9, 10, 11 of 2005	No	N/A
<i>Pseudocyphellaria perpetua</i> (misapplied name <i>P. mougeotiana</i> )	A	Coastal	No	No	No	4, 9, 10, 11 of 2005	No	N/A
<i>Pseudocyphellaria rainierensis</i>	A	Yes	No (old-growth forest associate)	No	No	4, 9, 10, 11 of 2005	No	N/A
<b>Bryophytes</b>								
<i>Schistostega pennata</i>	A	Yes	Yes	No	Yes	4, 9, 10, 11 of 2005	No	N/A
<i>Tetraphis geniculata</i>	A	Yes	Yes	No	Yes	4, 9, 10, 11 of 2005	No	N/A
<b>Vascular Plants</b>								
<i>Botrychium manganense</i>	A	Yes	No	No	No	4, 9, 10, 11 of 2005	No	N/A
<i>Botrychium montanum</i>	A	Yes	Yes	No	Yes	4, 9, 10, 11 of 2005	No	N/A
<i>Coptis trifolia</i>	A	No	No	No	No	4, 9, 10, 11 of 2005	No	N/A
<i>Corydalis aquae-gelidae</i>	A	Yes	Yes	No	Yes	4, 9, 10, 11 of 2005	No	N/A
<i>Cypripedium fasciculatum</i>	C	No	No	No	No	4, 9, 10, 11 of 2005	No	N/A
<i>Cypripedium montanum</i>	C	Yes	Yes	No	Yes	4, 9, 10, 11 of 2005	No	N/A
<i>Eucepahalus vialis</i> (syn. <i>Aster vialis</i> )	A	No	No	No	No	4, 9, 10, 11 of 2005	No	N/A
<i>Galium kamtschaticum</i>	A	No	No	No	No	4, 9, 10, 11 of 2005	No	N/A
<i>Platanthera orbiculata</i> var. <i>orbiculata</i>	C	No	No	No	No	4, 9, 10, 11 of 2005	No	N/A
<b>Mollusks</b>								
<i>Cryptomastix devia</i>	A	Yes	No	No	No <sup>2</sup>	N/A	N/A	N/A
<i>Cryptomastix hendersoni</i>	A	Yes	No	No	No <sup>2</sup>	N/A	N/A	N/A
<i>Monadenia fidelis minor</i>	A	No	No	No	N/A	N/A	N/A	N/A
<i>Pristiloma arcticum crateris</i>	A	Yes	No	No	No <sup>2</sup>	N/A	N/A	N/A
<i>Juga</i> (o.) n. sp. 2	A	Yes	Yes	No	Yes <sup>3</sup>	N/A	Presume presence	Riparian Reserve S&Gs
<i>Lyogyrus</i> n. sp. 1	A	Yes	Yes	No	Yes <sup>3</sup>	N/A	Presume presence	Riparian Reserve S&Gs
<b>Vertebrates</b>								
Larch Mountain salamander <i>Plethodon larselli</i>	A	No	No	N/A	N/A	N/A	N/A	N/A

Species	S&M Category	Within Range of the Species?	Project Contains Suitable habitat?	Project may negatively affect species/habitat?	Surveys Required?	Survey Date (month/year)	Sites Known or Found?	Site Management
Great Gray Owl <i>Strix nebulosa</i>	A	Yes	No	N/A	N/A	N/A	N/A	N/A
Oregon Red Tree Vole <i>Arborimus longicaudus</i>	C	Yes	No	N/A	N/A	N/A	N/A	N/A

<sup>1</sup> N/A = Not applicable

<sup>2</sup> Surveys are not required since suitable habitat is not available on this project.

<sup>3</sup> Presence is presumed, no survey conducted.

<sup>4</sup> Primarily coastal sp. but has been found on nearby Gifford Pinchot and Willamette NFs

<sup>5</sup> Surveys were conducted for these species. Since then, strategic surveys have been completed and equivalent effort surveys are no longer required. (Survey and Manage Memo dated March 24, 2006.)

Species listed in Table A were compiled from the most recent species list found in the 2003 Annual Species Review (IM-OR-2004-034). It includes those species whose known or suspected range overlaps the Forest. Species ranges are found in the following survey protocol documents:

Survey Protocols For *Bridgeoporus (=Oxyporus) nobilissimus*, Version 2.0  
 Survey Protocols For Survey & Manage Category A & C Lichens, Version 2.1  
 Survey and Manage Survey Protocols - Protection Buffer Bryophytes Version 2.0  
 Survey Protocols For Survey & Manage Strategy 2 Vascular Plants Version 2.0  
 Survey Protocol for the Great Gray Owl, Version 3.0  
 Survey Protocol for the Red Tree Vole, Version 2.1  
 Survey and Manage Survey Protocol – Terrestrial Mollusks Version 3.0  
 Survey Protocol for Aquatic Mollusk Species, Version 2.0  
 Survey Protocols for Amphibians, Version 3.0

Survey protocols can be found at the following web site:

<http://www.or.blm.gov/surveyandmanage/sp.htm>.

Management Recommendations can be found at the following web site:

<http://www.or.blm.gov/surveyandmanage/mr.htm>

## SUMMARY OF SURVEY RESULTS

### *Usnea longissima*

Unit 31 has several locations of this lichen. Category F species do not require the management of known sites. This lichen is also on the Regional Forester's Sensitive Species list and it would be managed as directed in the Botanical Biological Evaluation. Trees with the lichen would be marked as leave trees.

### *Peltigera pacifica*

Unit 16 has one location of this lichen. Leave trees would be marked around this site. Unit 19 has 3 locations of this lichen but they are located outside the unit in the no-cut portion of the riparian reserve.

## Aquatic Mollusks

*Lyogyrus* n. sp. 1 has a range that overlaps this portion of the Mt. Hood National Forest. This mollusk has been found in many areas across the Forest and is highly likely to be present in the streams near this project. Instead of conducting surveys in all adjacent streams, species presence is presumed.

*Juga* (o.) n. sp. 2 has a range that overlaps the Mt. Hood National Forest but it has not been found in surveys anywhere near the project area. Since its habitat requirements are very similar to those of *Lyogyrus* n. sp. 1, species presence is also presumed for this species without conducting surveys.

According to the latest Management Recommendations (Aquatic Mollusks v. 2.0) it is important to maintain cool, clean water that is well oxygenated and to maintain and/or restore native plant communities. It also indicates that in most cases, the riparian reserve standards and guidelines will be sufficient for management of these species.

The riparian reserve standards and guidelines and project design criteria are sufficient to provide for the habitat needs of these species. This project will have 50 foot no-cut buffers around perennial streams and other features that are considered habitat in the Management Recommendations. This will maintain the native plant communities and will result in sufficient shade to maintain cool water temperature. This buffer plus the other design criteria would minimize the risk of erosion and sedimentation.

In conclusion, because the habitat for these species is being protected, this project would not cause a significant negative effect on the species habitat or persistence of the species at the site.

**Statement of Compliance:** Pre-disturbance surveys have been completed for this project where required based on current survey protocol. Known sites affected by this project are being managed according the current management recommendations.

Therefore, based on the preceding information regarding the status of surveys and site management for Survey & Manage species, it is my determination that this project complies with the provisions of the *2001 Record of Decision and Standard and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and other Mitigation Measure Standards and Guidelines* as amended or modified as of March 21, 2004. This project is in compliance with Point (3) on page 14 of the January 9, 2006, Court order in Northwest Ecosystem Alliance et al. v. Rey et al.

/s/ *Andrei Rykoff*

April 17, 2006

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**ANDREI RYKOFF**  
District Ranger  
Clackamas River Ranger District

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**Date**