
Lewis River Wildlife Habitat Management Plan

FERC Project Nos. 935, 2071, and 2111



2018 Annual Plan

Annual Plan for Operations Phase 2018



March 26, 2018

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Appendix A	2018 Wildlife Habitat Management Plan Baseline Schedule
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ACRONYMS & ABBREVIATIONS

To enhance readability, the use of acronyms and abbreviations has been minimized in this document. However for longer terms that are frequently used throughout the document, as well as certain units of measurement, the following acronyms and abbreviations have been used.

ac	Acre(s)
ATV	all-terrain vehicle
CC	Clearcut
C:F	cover:forage
CT	Commercial Thin
dbh	diameter at breast height
FERC	Federal Energy Regulatory Commission
GIS	Geographic Information System
GPS	Global Positioning System
IP	International Paper
LWD	Large woody debris
MU	Management Unit
NSO	Northern Spotted Owl
PCT	Pre-commercially thin
PFO	Palustrine Forested Wetland
SMA	Special Management Area
TCC	Terrestrial Coordination Committee
THA	timber harvest area
TPA	Tree per acre
VES	Visual Encounter Surveys
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WHMP	Wildlife Habitat Management Plan

1.0 Introduction

This Annual Plan fulfills PacifiCorp's obligations for the license's Article 403 and Settlement Agreement 10.8.3 (Federal Energy Regulatory Commission [FERC] 2008a, FERC 2008b, FERC 2008c, PacifiCorp et al. 2004). The objective of this plan is to detail the terrestrial protection, mitigation, and enhancement measures that are planned to be implemented on Lewis River Wildlife Habitat Management Plan (WHMP) lands in the following operational year (i.e., January 1 to December 31, 2018) (PacifiCorp 2008). This plan also provides details on available WHMP funding, outlines proposed costs, and demonstrates consistency with the Lewis River WHMP goals and objectives, and state and Federal regulations.

Appendix A provides a Gantt chart that lists each of the WHMP's habitat management and plan-wide goals, inspections and management actions that are scheduled to occur in 2018. This chart is to be used as a baseline for scheduling inspections and management actions, which are discussed in further detail in the subsequent sections.

2.0 Wildlife Habitat Management Plan Funding

Settlement Agreement 10.8.2.1 describes the annual funding for PacifiCorp lands managed under the WHMP as \$27 (in 2003 dollars, Adjusted for Inflation) per acre owned in fee simple and \$13.50 (in 2003 dollars, Adjusted for Inflation) per acre for other Interests in Land (e.g. conservation easements) (PacifiCorp et al. 2004). As of December 31, 2017 PacifiCorp has 15,156 acres (ac) of WHMP lands owned in fee simple and 16 ac of Interests in Lands. PacifiCorp is continually refining their property lines through surveys and reviewing title reports as needed, so it is expected that fee simple acres will vary slightly each year.

The 2018 WHMP budget as of January 1, 2018 dollars will be \$547,965.20 which includes the cost per acre for fee simple and conservation easement lands, interest accrued from March 31, 2017, and remaining funds from the previous year. Appendix B provides the overall 2018 budget as well as the budgets for administration, management areas, and plan-wide goals. To accurately reflect costs, the 2018 budget is based on costs expended in 2017, which may differ from original estimates in the WHMP (PacifiCorp 2008).

3.0 Land Acquisition

In accordance with the Settlement Agreement 10.1, 10.2, and 10.3, PacifiCorp has established the Yale Land Acquisition and Habitat Protection Fund, the Swift No. 1 and Swift No. 2 Land Acquisition and Habitat Protection Fund, and the Lewis River Land Acquisition and Habitat Protection Fund, which are referred to as the Yale, Swift, and the Lewis River funds respectively. Article 403 in the Yale and Swift 1 licenses require that the annual plan describe how the funds are to be used and the lands proposed to be acquired under these funds.

The Yale Fund (Settlement Agreement 10.1) was fully expended as of December 31, 2010 for the 2010 land acquisitions. No further contributions are scheduled. The purchases were accomplished with additional funding supplied from the Lewis River Fund with the Terrestrial Coordination Committee (TCC) approval.

The Swift Fund (Settlement Agreement 10.2) is currently \$1,880,386.65 as of January 30, 2018, which includes 2017 interest and the December 26, 2017 contribution of \$655,182.00. This is the 9th and final contribution to this fund. Although PacifiCorp is continuing to pursue land acquisition opportunities in Swift areas, it not likely that an acquisitions will be completed in 2018, therefore these funds should continue to grow.

The Lewis River Fund (Settlement Agreement 10.3) was fully expended as of April 30, 2017 to complete the 2017 land acquisition. No further contributions are scheduled. The purchases were accomplished with additional funding supplied from the Lewis River Fund with the Terrestrial Coordination Committee (TCC) approval

4.0 Administration

4.1 Terrestrial Coordination Committee

Settlement Agreement Section 14.2.5 requires that the TCC meet at least annually and during the development of the WHMP the TCC met at least monthly. Since the WHMP is entering into the ninth year of the implementation, the TCC meetings for 2018 are currently scheduled for monthly but may occur on an as-needed-basis and as decided by the TCC.

4.2 Annual Report

An Annual Report describing the terrestrial protection, mitigation, and enhancement measures that occurred on WHMP lands during 2017 was submitted to the TCC for the 30-day review February 7, 2018.

4.3 Annual Plan

TCC members were provided a draft of this report February 7, 2018 to review and provide comments within 30 days or by March 9, 2018. These comments were either incorporated into this report or if not, an explanation has been provided and included in Appendix C. In accordance with the Settlement Agreement 14.2.6, this report was submitted to the FERC no later than 30 days, or by April 15, 2018, after the close of the TCC's comment period.

4.4 Restoration Plans

No lands were identified as significantly damaged by anthropogenic processes in 2016; therefore no restoration plan is required in 2018.

5.0 Old-growth Habitat Management

5.1 Inspections

Old-growth aerial surveys will be conducted concurrently with the osprey (*Pandion haliaetus*) and bald eagle (*Haliaeetus leucocephalus*) nest aerial surveys (Section 15.1). Due to the difficulty in differentiating between the costs for each survey, the funds budgeted for the osprey and bald eagle nest survey include the costs of the old-growth aerial survey.

5.2 Management Actions

The old-growth connectivity data layer will be reviewed for 2018 and future habitat management decisions to insure the priority mature stands are maintained and, where feasible, implement management actions (e.g. snag development, large down wood, thinning) that would promote old-growth habitat in those areas.

6.0 Wetland Habitat Management

6.1 Inspections

The annual inspection will be completed. Post-treatment inspection will occur at Cedar Grove and Chestnut Pond to monitor the effectiveness of reed canary grass (*Phalaris arundinacea*) control treatment in 2016 and 2017. Five year inspection of the unmanaged wetlands will be conducted in 2018.

6.2 Management Actions

Management actions scheduled to occur in 2018 include the stop log removal/replacement for bullfrog (*Rana catesbeiana*) management and high winter flows, and to review the Washington Department of Natural Resources (WDNR) Heritage Database. Bullfrog monitoring and management will continue this year, with Visual Encounter Surveys (VES) surveys at Frasier Creek wetlands (Cedar Grove, Chestnut, Road Pond, Banker's Pond, Cross Road Pond, Borrow Area, and Pumphouse Pond) (Muths 2011). The objectives will be to learn more about the population and development of bullfrog larva in these ponds to insure that draining the wetlands is not selecting for a rapidly developing genotype (Adams and Pearl 2007).

Frasier Pond dam was damaged in high flows in 2016 and should be replaced in 2019 pending permits. To prevent further damage to the dam the stoplogs have been removed to lower the pond 12 inches until the dam can be replaced. The area will be monitored for debris build up throughout 2018.

The wetlands along Frasier Creek have extensive reed canary grass along their banks, which is an invasive plant species that diminishes the habitat value for native amphibians. In 2016, the first steps to controlling reed canarygrass along the Frasier Creek wetlands began at Cedar Grove Pond, the first wetland along the diversion. Chestnut Pond was treated in 2017 as the second phase of the project. The area was raked and grass seeded with a native wetland grass/forb mix and in 2018 will be planted with hydrophytic shrubs. These areas will continue to be inspected for effectiveness and, if needed, retreated in March and/or July. All areas will be photographed as needed to capture the progress.

The next pond to be treated will be Bankers Pond. This will begin with collecting Global Position System (GPS) points, photographs, and flagging the extent of reed canary grass between March 1 and May 15. The grass will be mowed with weed trimmers between May 15 and June 15 to prevent seed spreading and stimulate growth. The area will be sprayed with either aquatic approved Glyphosate or Imazapyr after the plants have approximately 2 feet of regrowth, which is expected to be around mid-July. The area will be sprayed using backpack sprayers so that only the reed canarygrass infested areas will be treated. This will be followed by a second weed trimming, if required, in September and a second application of herbicide in mid-October prior to the first frost. Because both Glyphosate and Imazapyr are non-selective herbicides, it is expected that all vegetation mixed within the reed canary grass will also be killed. Once reed canary grass appears to have been removed the area will be raked and grass seeded with a native wetland grass/forb mix and in 2019 planted with hydrophytic shrubs.

The wetlands in Unit 25 (Swift Warehouse and Swift Canal Ponds) have extensive Himalayan Blackberry (*Rubus armeniacus*) in the buffers. The efforts to control blackberry will continue and begin at Swift Canal Ponds between the ponds, 2500 and 2510 road in 2018.

Cresap Campground, North IP Pond, Swift ByPass Wetland, Swift Canal, Swift Warehouse, Yale Wetland will be treated for Himalayan blackberry in 2018.

Yellowflag Iris (*Iris pseudacorus*) is a Class C noxious weed that has been detected in the northwest corner of Beaver Bay Wetland. Controlling Yellowflag iris in this area is difficult due to deep mud and distinguishing this plant from other native fauna. The area will continue to be monitored for extent and location of the infestation(s) between April 1 to May 15. This will be followed by a treatment of aquatic approved Glyphosate between May 15 and June 15 and follow-up treatment September 15 to October 15 with aquatic approved Imazapyr (King County 2009).

In 2017, twelve WHMP Palustrine Forest (PFO) wetlands were evaluated to determine if they exceeded 20 percent shrub cover and determine what, if any, management actions are needed to enhance shrubs. Only 4 of the wetlands were at or below 20 percent shrub cover and will be planted in either the spring or fall of 2018. Six PFO wetlands have excessive amounts of Himalayan blackberry that were outcompeting native shrubs, so these wetlands will be treated for Himalayan blackberry beginning in 2018 and evaluated for the following two years to determine if blackberry has been effectively controlled and if native shrubs begin to reestablish. In addition, three PFO wetlands forested canopy are mostly comprised of declining red alder (*Alnus rubra*). Therefore to restore the forested canopy these areas will be planted with a mix of Sitka spruce (*Picea sitchensis*), western red cedar (*Thuja plicata*), Oregon ash (*Fraxinus latifolia*), red alder, and black cottonwood (*Populus balsamifera L ssp. Trichocarpa*). Appendix D has table that provides the results of the 2017 evaluation and management actions and schedule.

7.0 Riparian Habitat Management

7.1 Inspections

No inspections are required for Riparian Habitat.

7.2 Management Actions

The riparian habitat management actions that are expected to occur in 2018 include:

- Establishing buffers as necessary around the 2018 timber harvest activities,
- Developing water type modifications as necessary for 2018 and 2019 forestry activities, at least 6 water type modifications are expected.
- Implementing pre-commercial thinning in older (>15 years) timber harvest areas that overlap the WHMP riparian buffers this includes the following 752001CC (priority 4) and 113320 (priority 2).
- Treat Himalayan blackberry in the non-fish seasonal streams that run through 910664CC (priority 2) and 051238CC (priority 4).
- Treat Himalayan blackberry along the shoreline near Saddle Dam Park.

8.0 Shrubland Habitat Management

8.1 Inspections

Shrubland 6-1d, 6-1j, and 11-1 will be inspected between April 15 and October 31.

8.2 Management Actions

Shrubland 5-8d had two wildlife passageways created in 2015. Wildlife passage 1 had grown back abundantly with sword fern (*Polystichium munitum*) and salal (*Gaultheria shallon*). To encourage more desirable shrub and forb growth, the sword fern and salal were dug out of the soil with hand tools and the area was reseeded with a grass seed mix. A post-treatment inspection will be conducted to verify its effectiveness.

A review of the effectiveness of shrubland management actions will continue to be conducted this year.

9.0 Farmland, Idle Areas, and Meadows Habitat Management

9.1 Inspections

This annual spring inspection will include all farmland, idle fields, and actively managed meadows and occur between April 15 and May 31. Most of the fields that are actively managed in the spring will be surveyed for Savannah Sparrow (*Passerculus sandwichensis*), a Habitat Evaluation Procedure Species for Farmlands, Meadows and Idle Areas, between April 15 and May 31 to determine occupancy and gain more insight on nest habitat use. Fields will be surveyed using the Area Search method described in Handbook of Field Methods for Monitoring Landbirds (Ralph et al. 1993). The fall inspection will be conducted at all actively managed meadows and farmlands between October 1 and October 15.

9.2 Management Actions

Regularly scheduled annual management actions will occur in 2018 and will include:

- Lower Hanley-Curry Meadow is scheduled to be restored in 2018 to produce less dense and better quality forage. A wetland area will be identified by taking GPS points and planted

with hydrophobic shrubs to avoid being mowed in the future. The meadow will be treated with Glyphosate, then plowed, fertilized, and seeded with a mix of grass and forbs that provide big game forage. The proposed grass seed mix is available in Table 1.

- Many of the fields need invasive plant species control, but it is unlikely that all the work can be completed with the short spray window and available budget. Therefore the following meadows and fields are listed by priority:
 - Saddle Dam Fields 5 treat the Canada thistle and bull thistle. Focus on the divot on the west side of the field.
 - Hamm Meadow 1 will be treated for field bindweed (*Convolvulus arvensis*).
 - Hamm Meadow 2 will be treated for Canada thistle.
 - The area between Hamm Field 3 and Field 5 is an upland mix stand with understory of snowberry (*Symphoricarpos albus*) that creates cover and increases elk use in Hamm Field 5. The snowberry, however is encroaching into field 3 and needs to be treated so that it stays as a cover without reducing forage.
 - Swift Creek Meadows 1 and 2 that were developed by slashing young trees out of an old (2005) plantation will be inspected for shrub species composition and have bracken fern (*Pteridium aquilinum*) sprayed where it is dense and over-topping desired forage species.
 - Elk Point meadow should be have Oregon grape cut back.
 - Replant the 10 dead trees in Leach Meadow with alder.

- Annual spring mowing at:
 - Saddle Dam farmlands fields
 - Hamm Meadows 1, 2, and 3

- Annual fall mowing at:
 - Saddle Dam farmland fields
 - Upper and Lower Hanley-Curry
 - Speelyai
 - Bridge
 - Upper and Lower Winter Creek
 - Rhododendron
 - Swift Warehouse
 - Reese
 - Buncombe Hollow
 - Hamm 1, 2, 3, 4, and 5

- Soil testing will be conducted at:
 - Buncombe Hollow Orchard
 - Hamm 4 and 5
 - Upper and Lower Hanley Curry
 - Reese
 - Upper and Lower Winter Creek
 - Saddle Dam farmlands fields 3, 4 and 5

- Annual fall fertilizing will be based on soil testing and will be conducted at:
 - Saddle Dam farmland fields
 - Upper and Lower Hanley-Curry
 - Speelyai
 - Buncombe Hollow
 - Bridge
 - Upper and Lower McKee
 - Upper and Lower Winter Creek
 - Rhododendron
 - Swift Warehouse
 - Reese Meadow
 - Hamm meadows 1, 2, 3, 4, and 5

Table 1: Proposed grass seed for Lower Hanley Curry

Common Name	Scientific Name	Percentage
Perennial Ryegrass	<i>Lolium perenne</i>	25
Tall Orchardgrass	<i>Dactylis glomerata</i>	25
White Clover	<i>Trifolium repens</i>	25
Tall Fescue	<i>Festuca arundinacea</i>	15
birdsfoot trefoil	<i>Lotus corniculatus</i>	10

10.0 Orchard Management

10.1 Inspections

In 2018 we will be conducting the five year inspection on orchards:

- Rhododendron
- Reese Meadow
- Winter Creek
- Hamm Meadow 4
- Hamm Meadow 5

10.2 Management Actions

Dormant pruning is scheduled to occur at:

- Rhododendron
- Hamm 4 and 5
- Upper Winter Creek

The trees at Rhododendron will be marked using GPS. The dead tree limbs will be trimmed, the bigleaf maple and blackberry in Enclosure #8 will be removed. Enclosure #8 and #10 need to be reinforced. All Douglas fir seedlings within 20 feet of trees 7, 11, and 12 will be removed.

Upper Winter will have enclosures 7, 8, and 9 cleaned out.

Buncombe Hollow, Lower Hanley-Curry, and Speelyai orchards will be mowed in August to maintain big game forage.

Supplemental watering will occur, as needed, in July, August, and September on trees that were planted within the last 3 to 4 years.

11.0 Transmission Line Right-of-Way Habitat Management

11.1 Inspections

The annual inspection will be completed in 2018 and this inspection should be adequate to assess the post-treatment areas of 2017.

11.2 Management Actions

Transmission Line Right-of-Way (ROW) management actions that are scheduled to occur in 2018 include annual mowing, soil testing, and fertilizing at Speelyai 1/11-3/11, Woodland Park West (Speelyai 8/14-9/14), Wilkinson (Speelyai 5/15-7/15) and Lake 3/10-4/10 ROW forage areas.

Noxious weed control treatments will occur at the following spans. There may not be enough budget to cover all of the areas, so the areas should be prioritized in the following order:

- Tall Trees in Speelyai Line 1/16-7/15 in will be cut.
- Alders in Lake Line 1/1-1/2 will be cut.
- Speelyai 8/14 and 4/15 to Woodland Park will be treated for scotch broom.
- Speelyai property line to property line (3/18-5/18) will have Oregon grape cut back and treated.

Beaver Bay (Speelyai Line 7/1-11/1) is a series of wetlands and springs beneath the line that are dominated with Himalayan blackberry. The new Beaver-Cougar trail is completed and allows access to the area. In 2018 is the last of a 3-year plan to control blackberry and restore native vegetation. This year all blackberry between tower 9/1 to 11/1 will be sprayed and the 7/1-9/1 will

be retreated. In the fall we will return to cut down the dead blackberry and bigleaf maple (*Acer macrophyllum*) and red alder sapling trees. It is difficult to currently assess the hydrology, so as the blackberry is removed the area will be monitored to determine the existing native vegetation and potential for it to reestablish in blackberry areas.

12.0 Unique Area/Habitat Management

12.1 Inspections

The annual inspections will occur at oak stands 1-12, 5-1, 5-2, 6-45, and 6-52.

12.2 Management Actions

Oak Stand 6-22a, 6-22b, and 6-23 will have Scotch broom treated.



Figure 1. Scotch broom in oak stand 6-22a

Oak Stand 6-26A will have Douglas fir tree limbs cut back to reduce the overcrowding onto the oaks.

Recently planted oaks in Osprey Meadow will be monitored for success and rock outcrop will have GPS points taken and added to WHMP database.

Evaluate and map the potential talus slope south of Buncombe Hollow slope across from 1540 road.

13.0 Forestland Habitat Management

13.1 Inspections

The annual spring and fall timber harvest area (THA) inspections (i.e., reforestation inspections) will occur in 2018. Inspections and supervision will ensure implementation of harvest area maintenance practices, determining success of past practices and provide assurance that forestland management is meeting wildlife habitat objectives.

13.2 Management Actions

Forestland management in 2018 includes developing new areas of both permanent and transitional forage for big game and maintaining areas of previous forest management to provide diverse cover and forage for a variety of wildlife in stands ranging from 1 to 60 years of age. Appendix E includes wildlife – forestry survey inspections and maps of the proposed areas. These areas are explained in more detail below.

13.2.1 2018 Proposed Forestland Practices

A total of 62.14 acres are proposed for even-age (clear-cut) and 16.2 acres of commercial thinning in Management Units 15 and 34. These areas are described separately below.

Management Unit 15

There are two timber harvest areas planned in Unit 15 in 2018. One clearcut and one commercial thin. There are no northern spotted owl (*Strix occidentalis*) circles within the boundaries of Unit 15. The proposed harvest are not along a property line so no property line surveys will be required to beginning timber harvests.

Management Unit (MU) 15 consists of 524 acres and is on the south side of Merwin Reservoir. The current Cover:Forage (C:F) ratio is 79:21 and the WHMP recommended ratio is 70:30 (+ 5%), therefore the current management is not meeting objectives.

181539CC Mullet (Proposed 11.8 clear cut harvest)

This clearcut is in mature-thinned conifer stand [i.e., Canopy was a relatively uniform and vertical and horizontal texture, and average stand diameter of 21 to 26 inches diameter at breast height (dbh)]. Some of the trees along the western harvest boundary shows signs of laminated root rot.

Access to the harvest area will require restoring portions of the 1500 and the entire 1520 road. Approximately 1.3 acres of the harvest in the northern portion is within the buffer to the Merwin Roost (Appendix E). This area will be left as leave trees or have select trees thinned to promote more old growth structure. Unit 15 needs additional 4.18 acres to achieve 5% permanent forage goal, so the southern end of the harvest areas will have approximately a one acre area left as meadow.

181548CT Comb over (Proposed 16.2 acre commercial thin)

This is a commercial thin in 1987 timber harvest (871514CC) and is currently vegetation cover typed as Pole Conifer (i.e. even aged stand that has an average stand diameter of 8 to 15 inches dbh). The timber harvest cut boundary is similar to 1987 cut boundary. The canopy will reduced to between 30-50%.

Table 2: Unit 15 pre- and post- timber cover:forage ratio

Cover vs. Forage	Vegetation Cover Types	Unit 15	
		2018	
		Pre-Harvest acres	Post-Harvest acres
Cover	Old Growth (>26" dbh)	8.62	8.62
	Mature Conifer (21-26" dbh)	35.74	35.74
	Mature Conifer (Thinned) > than 5 years since commercially thinned	22.24	10.44
	Mid-Successional Conifer (16-20" dbh)	60.73	60.73
	Mid-Successional Conifer (Thinned) > than 5 years since commercially thinned	0.00	0.00
	Upland Mixed (conifer 30-70%)	120.79	120.79
	Upland Mixed (Thinned) > than 5 years since commercially thinned	0.00	0.00
	Young Upland Mixed ^d	0.00	0.00
	Pole Conifer (8-15" dbh)	128.65	112.43
	Pole Conifer (Thinned); (8-15" dbh) > 5 years since commercially thinned ^d	0.00	0.00
	Lodge Pole Pine	0.00	0.00
	Riparian Mixed	39.34	39.34
	Total Acres of Cover	416.13	388.09

Table 2: Unit 15 pre- and post- timber cover:forage ratio (continued)

Cover vs. Forage	Vegetation Cover Types	Unit 15	
		2018	
		Pre-Harvest acres	Post-Harvest acres
Forage	Young Upland Deciduous	13.94	13.94
	Mature Conifer (Thinned) < 5 years since commercially thinned	0.00	0.00
	Pole Conifer (Thinned); (8-15" dbh) < 5 years since commercially thinned	0.00	16.22
	Upland Mixed (Thinned) < than 5 years since commercially thinned	0.00	0.00
	Mid-Successional Conifer (Thinned) < than 5 years since commercially thinned	0.00	0.00
	Riparian Shrub	0.00	0.00
	Riparian Deciduous	8.62	8.62
	Upland Deciduous	65.44	65.44
	Oak Woodland ²	0.00	0.00
	Transmission Line ROW ²	0.00	0.00
	Recreational (vegetated areas)	0.00	0.00
	Dry Meadow/Grassland ²	2.44	3.44
	Shrubland ²	0.00	0.00
	Orchard ²	2.15	2.14
	Agriculture ²	0.00	0.00
	Seedling/Sapling Conifer (5-8" dbh)	1.20	1.20
	Seedling/Sapling Conifer (New) (<4" dbh)	14.41	25.29
Palustrine Wetlands ^{1,2}	0.00	0.00	
Total Acres of Forage	108.20	136.29	
Neither	Open Water (Palustrine Aquatic Bed, Palustrine Unconsolidated Bottom, Riverine Unconsolidated Bottom, and Lacustrine Unconsolidated Bottom)	0.00	0.00
	Riverine Unconsolidated Shore	0.00	0.00
	Highway right-of-way	0.00	0.00
	Residential	0.00	0.00
	Sparse veg.; Disturbed; Developed or PacifiCorp Facility	0.00	0.00
	Rock Outcropping and Talus	0.00	0.00
	Total Acres of Neither	0.00	0.00
Total Management Unit Acres		524.33	524.33
WHMP Proposed Cover:Forage Ratio		70:30 (+/- 5%) with 5% permanent forage	
Cover:Forage Ratio		79:31	74:26
Percent of Permanent Forage (Total permanent forage acres²/ total Manageable Acres)		2.61%	3.18%

1. Palustrine Wetland includes all palustrine vegetation cover types except PAB and PUB.
2. These vegetation cover types are consider permanent forage

Management Unit 34

Management Unit 34 is located on the Swift project. This management unit is one of the largest at 676.16 acres and is the highest in elevation management unit, between 3300 and 3750 ft. It currently has a Cover:Forage (C:F) ratio 96:4. Because this MU lands were acquired after the WHMP was implemented, there was no C:F ratio goal set for this MU. Based on the available acres that are manageable a C:F goal of 50:50 has determined. There is no proposed permanent forage areas because the MU currently exceeds the 5% permanent forage goals with 26.41 acres. No property surveys will be required because the timber harvest are not adjacent to the property line. There are no northern spotted owl management circles within the MU 34. There are three separate clear cut harvest proposed. Appendix E provides map of the harvest area.

Bumble 183401CC (Proposed 19.31 acres)

The proposed timber harvest will occur along the 3400, 3420, 3421, and 3405 roads, therefore no additional roads will be required. The timber harvest boundaries were determined by vegetation and topography. The THA has 3 special management areas that are either protection a shrub habitat, mostly huckleberry, or other unique areas, such as a wallow.

Yukon 183402CC (Proposed 12.07 ac)

This will be a 12 acre clear cut. The stand is comprised primarily of pacific silver fir, Douglas fir, western hemlock, and noble fir. The average dbh is 11 inches and the stands is fairly dense with 323 to 328 trees per acre. The THA has a total of 104 leave trees, 9 of which are natural snags, and exceeds the leave tree requirement by 7. A SMA that is comprised of large trees and huckleberry clump was retained as well. Again the road access to the timber harvest area is good and no additional roads should be required.

Rudolf 183403CC (Proposed 18.33 ac)

This will be an 18-acre clear cut. The stand is comprised primarily of pacific silver fir with lesser amounts of Douglas fir, and western hemlock. The average dbh is 11 inches and the stands is fairly dense with 310 trees per acre. The THA has a total of 147 leave trees, at least 4 of which are natural snags. The THA has two SMAs, the northern most is an open patch of huckleberries, habitat logs, and large trees and the southern SMA is patch of willows, vine maple, and huckleberry. The 3413 road into the THA has log cribbed culvert that has partially blown out on the downstream portion of the road. This will be removed and replaced with a temporary culvert, which will be removed following timber harvest.

Table 3: Unit 34 pre- and post- timber cover:forage ratio

Cover vs. Forage	Vegetation Cover Types	Unit 34	
		2018	
		Pre-Harvest acres	Post-Harvest acres
Cover	Old Growth (>26" dbh)	0.00	0.00
	Mature Conifer (21-26" dbh)	0.00	0.00
	Mature Conifer (Thinned) > than 5 years since commercially thinned	0.00	0.00
	Mid-Successional Conifer (16-20" dbh)	0.00	0.00
	Mid-Successional Conifer (Thinned) > than 5 years since commercially thinned	0.00	0.00
	Upland Mixed (conifer 30-70%)	0.00	0.00
	Upland Mixed (Thinned) > than 5 years since commercially thinned	0.00	0.00
	Young Upland Mixed ⁴	0.00	0.00
	Pole Conifer (8-15" dbh)	649.72	599.38
	Pole Conifer (Thinned); (8-15" dbh) > 5 years since commercially thinned ⁴	0.00	0.00
	Lodge Pole Pine	0.00	0.00
	Riparian Mixed	0.00	0.00
	Total Acres of Cover	649.72	599.38
	Forage	Young Upland Deciduous	0.00
Mature Conifer (Thinned) < 5 years since commercially thinned		0.00	0.00
Pole Conifer (Thinned); (8-15" dbh) < 5 years since commercially thinned		0.00	0.00
Upland Mixed (Thinned) < than 5 years since commercially thinned		0.00	0.00
Mid-Successional Conifer (Thinned) < than 5 years since commercially thinned		0.00	0.00
Riparian Shrub		0.00	0.00
Riparian Deciduous		0.00	0.00
Upland Deciduous		0.00	0.00
Oak Woodland ²		0.00	0.00
Transmission Line ROW ²		0.00	0.00
Recreational (vegetated areas)		0.00	0.00
Dry Meadow/Grassland ²		0.00	0.00
Shrubland ²		24.60	24.60
Orchard ²		0.00	0.00
Agriculture ²		0.00	0.00
Seedling/Sapling Conifer (5-8" dbh)		0.00	0.00
Seedling/Sapling Conifer (New) (<4" dbh)		0.00	50.34
Palustrine Wetlands ^{1,2}	1.81	1.81	
Total Acres of Forage	26.41	76.75	

Table 3: Unit 34 pre- and post- timber cover:forage ratio (continued)

Cover vs. Forage	Vegetation Cover Types	Unit 34	
		2018	
		Pre-Harvest acres	Post-Harvest acres
Neither	Open Water (Palustrine Aquatic Bed, Palustrine Unconsolidated Bottom, Riverine Unconsolidated Bottom, and Lacustrine Unconsolidated Bottom)	0.03	0.03
	Riverine Unconsolidated Shore	0.00	0.00
	Highway right-of-way	0.00	0.00
	Residential	0.00	0.00
	Sparse veg.; Disturbed; Developed or PacifiCorp Facility	0.00	0.00
	Rock Outcropping and Talus	0.00	0.00
	Total Acres of Neither	0.03	0.03
	Total Management Unit Acres	676.12	676.12
	WHMP Proposed Cover:Forage Ratio	50:50 (+/- 5%) with 5% permanent forage	
	Cover:Forage Ratio	96:4	89:11
	Percent of Permanent Forage (Total permanent forage acres²/ total Manageable Acres)⁵	8.29%	8.29%

13.2.2 2019 Forestland Planning

Forestland planning in 2018 will continue pre-cut surveys for both the 2018 and 2019 proposed forest plan areas and developing forest plans for 2020 and beyond (Table 4). The TCC will be provided site visits for forest management proposed in Management Units 15 and 34. The TCC did visit the Bumble THA in October, but unfortunately an early fall snow storm prevented the TCC from being able to walk through the THA or other proposed THAs in the Unit 34.

PacifiCorp continues to update the Geographic Information System (GIS) data and C:F model to insure compliance with the WHMP plans. In 2017, the C:F model was revised to provide define manageable acres to distinguish between cover and forage on areas that had been recently commercially thinned. As a result the proposed 5-year timber harvest plan will be reviewed and updated in 2018.

Table 4: Management units proposed in 5 year plan for forestry.

Management Unit	Total Acres	C:F Ratio	C:F Ratio Objective based on WHMP	Meets 5% permanent forage (Y/N)	Priority ¹ based on C:F Ratio	Potential Harvest Schedule
2	258.2	79:21	60:40	Y	2	2020
17	521.0	44:56	50:50	Y	3	2023
20	938.7	93:07	60:40	Y	1	2019
27	254.9	84:16	53:47	N	2	2019

1: Priority is relatively based on 1 = 1-3 years; 2 = 3-5 year planning, 3 = 5 + years.

2: To be determined (TBD); C:F objective wasn't assigned in WHMP or Management Unit is newly acquired lands

13.2.3 First Precut Survey

The first precut survey forms for the 2018 timber harvest areas are in Appendix E. First pre-cut surveys will also be conducted for 2019 THA's in Units 20 and 27.

13.2.4 Harvest Area Traverse and Geographic Information System Update

The 2018 THAs will be updated in the GIS database following TCC approval of the proposed plans and the completion of the timber harvests. Field work will be completed for the vegetation cover types and stream surveys as necessary and will be entered into the GIS database.

13.2.5 Second Precut Survey

The second precut survey for the 2018 timber harvests will be completed in the early summer of 2018 following TCC review of the sites. Forestry Appendix E maps show the 2018 timber harvest areas delineated boundaries, roads, riparian and wetland buffers, and the bald eagle roost boundary. These surveys will ensure that compliance is maintained with resource plans and special habitat components including large woody debris (LWD) and leave tree areas are protected.

13.2.6 Terrestrial Coordination Committee

The TCC on site meetings to review the proposed 2018 timber harvest areas has been tentatively scheduled during March, April, and May 2018. Due to elevation of Unit 34 this area is typically inaccessible due to snow until June, therefore the TCC visited the area in October 2017. The TCC will receive regular updates and coordination throughout 2018 regarding forestland activities.

13.2.7 Timber Harvest Area Inspections

A biologist and/or forester will conduct weekly inspections during the logging operations to ensure that the operations are compliant with WHMP best management practices, contract conditions, State Forest Practices Act, and industry standards.

13.2.8 Regeneration Practices

Regeneration practices include management actions that promote tree regeneration following timber harvests and maintaining or establishing big game forage and cover. The 2018 timber

harvest areas will be site prepped for forage seeding and tree planting by piling residual slash and site-prepping soils with a tractor-mounted brush blade. Tree planting, vegetation control and pre-commercial thinning practices are described in the following sections.

Planting and Maintenance:

The 2018 planting and seedling maintenance activities will include planting the 2017 timber harvest areas (Management Units 1, 7, and 8) as shown in Table 5. Middle Earth (171401CC) will not be planted until 2019 because the scarification could not be completed for the entire THA in 2017. Some 2015/2016 timber harvests will be interplanted in MU 3, 5, and 19. Plantskydd®, a cost effective and environmentally safe animal repellent, will also be sprayed on young seedlings to prevent further browse damage as necessary. All timber harvest areas that require seedling maintenance or planting in 2018 are listed in Table 5 and 6 and locations are mapped in Appendix F.

Table 5: 2018 Tree Planting

Harvest Area	Acres ¹	Action ²
170111 CC	5.0	Plant 250 TPA; 1000 PSME, 120 THPL, 120 PIMO
170112 CC	23.4	Plant 250 TPA; 5350 PSME, 500 THPL
160335 CC	13.1	Interplant 200 TSHE
150526 CC	19.3	Interplant 1000 PSME
170775 CC	1.7	Plant 250 TPA; 210 THPL, 210 PIMO
170776 CC	1.4	Plant 150 THPL, 385 ALRU
170838 CC	13.9	Plant 250 TPA; 3500 PSME, 500 TSHE
161908 CT	4.1	Interplant 200 TSHE
Total Acres	81.9	10,850 PSME; 900 TSHE; 980 THPL, 330 PIMO, 385 ALRU

¹ Plantable acres are less than the Timber Harvest Area due to meadows, shrub islands etc.

² ALRU= Red alder, PIMO = western white pine, PSME= Douglas-fir, TSHE = western hemlock, THPL= western red cedar

Vegetation Control:

To reduce moisture competition between tree seedlings and the grass forage mix, the existing grasses are killed by using a pre-emergent herbicide, such as Sulfometuron (Oust®) or Surflan (for western red cedar) with glyphosate, which is sprayed in an 18-in (45-cm) radius around all seedlings. All timber harvest areas that require treatment in 2018 are listed in Table 6 and locations are identified in Appendix F. Spring surveys will likely determine other THA's requiring additional vegetation control so this will likely change.

Table 6: 2018 seedling maintenance for moisture control (pre-emergent spraying)

Timber Harvest Area	Total Acres	Action
020232 CC	9.3	Spray Pendulum around THPL
120686 CC	4.1	Spray Pendulum around THPL
150526 CC	16.3	Spray Oust. Apply Plantskydd.
153501 CC	47.3	Apply Plantskydd
160335 CC	3.5	Spray Oust; Pendulum around THPL. Apply Plantskydd.
160773 CC	21	Spray Oust; Pendulum around THPL. Apply Plantskydd.
101127 CC	12.4	Retube THPL
161904 CC	8.4	Spray Oust; Pendulum around THPL. Apply Plantskydd. Retube THPL with Vexar® Tubing.
161908 CT	5.3	Spray Oust; Pendulum around THPL. Apply Plantskydd. Retube THPL with Vexar® Tubing.
170111 CC	5	Spray Oust; Pendulum around THPL. Apply Plantskydd. Tube with Vexar® Tubing
170112 CC	23.4	Spray Oust; Pendulum around THPL. Apply Plantskydd. Tube THPL with Vexar® Tubing
170775 CC	1.6	Spray Oust; Pendulum around THPL.
170776 CC	1.2	Spray Pendulum around THPL. Apply Plantskydd. Tube half of THPL with Protex tubes and half with Vexar® [®] tubes.
170838 CC	13.9	Spray Oust. Apply Plantskydd.
TOTAL	172.7	

Invasive Plant Control:

Invasive plant species and competing vegetation are controlled as necessary to maintain and promote big game forage, maintain access, and to reduce seedling competition. Treatments may include both chemical and manual methods. The list for area and target species in 2018 includes a priority listing from 1 to 4 (1 being the highest priority). Because budgets can always be a limiting factor due to the large amount of vegetation control treatments, priorities have been assigned to ensure those treatments that are most critical are managed first. There are 336.7 acres identified as priority 1 and an additional 317.4 acres identified as priority 2. The overall majorities of priority 1 and 2 species to control are Himalayan blackberry and scotch broom. The actual acres listed are those of the THA and not necessarily the amount of area to be treated (usually much less). The effort in 2018 includes 761.7 acres where competing vegetation is potentially interfering with objectives of forage or tree growth. All timber harvest areas that will have vegetation control in 2018 are listed in Table 7 and locations are identified in Appendix G.

Table 7: 2018 Timber Harvest Area vegetation control treatments

Timber Harvest Area	ACRES	Target Species¹ (spray priority)	Overall Priority
990229 CC	9.9	Spray PHAR (P4)	4
020231 CC	2.0	Spray RUAR (P1), CYSC (P1)	1
050332 CC	11.2	Spray RUAR (P3)	3
050333 CC	1.0	Spray RUAR (P4)	4
160335 CC	13.1	Spray ACMA (P1), RUAR (P2)	1
170776 CC		Spray ACMA (P1)	1
900437 CC	13.4	Spray RUAR (P4)	4
900438 CC	10.9	Spray RUAR (P4)	4
010445 CC	9.3	Spray RUAR (P4)	4
030447 CC	24.6	Spray RUAR (P1)	1
130448 CC	15.7	Spray RUAR (P2)	2
130449 CC	1.7	Spray RUAR (P2)	2
130450 CC	14.9	Spray RUAR (P2)	2
020523 CC	22.5	Spray CYSC (P2)	2
150520 CT	30.4	Spray CYSC (P1), ALRU (P1)	1
910664 CC	13.7	Spray RUAR (P2)	2
940666 CT	2.5	Spray RUAR (P2), CLVI (P2)	2
030679 CC	8.9	Spray CYSC (P2), RUAR (P2)	2
030680 CC	5.8	Spray CYSC (P2), RUAR (P2)	2
030681 CC	0.6	Spray CYSC (P2), RUAR (P2)	2
120685 CC	22.9	Spray PTAQ (P2)	2
050771 CC	2.3	Spray PHAR (P2)	2
010837 CC	13.4	Spray RUSP (P2), RUAR (P2), CYSC (P2), CLVI (P2)	2
170838 CC	13.9	Spray CYSC (P1), RUAR (P2)	1
141007 CC	22.7	Spray RUAR (P2), CYSC (P2), ALRU (P3)	2
141008 CC	8.6	Spray CYSC (P2), PHAR (P2), RUAR (P3), ALRU (P3)	2
141009 CC	24.8	Spray CYSC (P1), PHAR (P2)	2
101126 CC	18.3	Spray PTAQ (P2)	2
101127 CC	12.4	Spray RUSP (P3)	3
051238 CC	25.1	Spray RUAR (P3)	3
121547 CC	16.4	Spray RUAR (P1), PTAQ (P2), PHAR (P2)	2
031706 CC	10.5	Spray RUAR (P2), PHAR (P2)	2
091704 CC	14.4	Spray PHAR (P3)	3
091705 CC	11.2	Spray RUAR (P1), PHAM (P2)	1
101708 CC	2.8	Spray PHAR (P2), RUAR (P1), CYSC (P1)	1

Table 7: 2018 Timber Harvest Area vegetation control treatments (continued)

Timber Harvest Area	ACRES	Target Species¹ (spray priority)	Overall Priority
101801 CC	26.9	Spray RUAR (P2)	2
161904 CC	9.8	Spray CYSC (P2), RUAR (P2), ALRU (P2), PHAR (P2)	2
161908 CT	4.1	Spray CYSC (P2), PHAR (P2)	2
132010 CC	31.2	Spray RUAR (P1)	1
122501 CC	6.7	Spray RUAR (P1), CYSC (P1)	1
122502 CC	10.0	Spray RUAR (P2), CYSC (P2)	2
082603 CC	8.2	Spray RUAR (P2), ALRU (P2)	2
082604 CC	11.88	Spray RUAR (P1), CYSC (P2)	2
163605 CC	200.8	Spray CYSC (P1), ACMA (P1)	1
133710 CC	20.3	Spray PHAR (P2)	2
TOTAL	761.66		

¹ ACMA=bigleaf maple, ALRU = red alder, BUDA= butterfly bush, CLVI= travelers' joy, CYSC = scotch broom; PHAM = American pokeweed; PHAR = reed canarygrass, PTAQ = bracken fern; RUAR = Himalayan blackberry.

Pre-commercial Thinning and Pruning:

Pre-commercial thinning (PCT) and/or pruning is conducted on timber harvest areas that are generally less than 5.0 -7.0 feet in height and are required to maintain big game forage. All 2018 pre-commercial thinning or pruning is listed in Table 8 and locations are identified in Forest Appendix F.

There are a total of 946.50 acres proposed for pre-commercial thinning or pruning treatments in 2018 compared to 250.2 acres in 2017. The significant increase is due to the newly acquired lands that are largely recently harvested lands and have not been managed in previous years. Consistent with the prioritization used for vegetation control, priorities are also established for these treatments to ensure the more important areas are completed this year. There are only 561.7 acres of high priority (P1) slash PCT in 2018 but an additional 107.2 acres of moderately high priority (P2) timber harvest areas to be slash PCT or pruned. It is expected that the P1 and P2 treatments will be completed in 2018. The P3 and P4 priorities (183 acres) could wait an additional year or be completed if budgets and time allows.

Where pruning or thinning THA's includes an area designated as riparian buffer, the buffers are measured and flagged and alternative thinning practices are conducted in the buffers to encourage fewer conifers per acre with higher frequency of hardwoods and shrubs to match riparian objectives (larger diameter conifer and diverse structure).

Table 8: 2018 Pre-commercial Thinning and pruning treatments

Timber Harvest Area	Acres	Priority	PCT	Hack & Squirt	Prune	THA includes Riparian Buffer
050332 CC	11.2	1	X			N
860632 CC	1.6	4		X		N
101127 CC	12.4	2	X			N
121547 CC	16.4	1			X	N
091704CC	14.4	1	X			N
752001 CC	21.3	4			X	Y
082603 CC	8.2	1	X			N
082604 CC	11.9	1	X			N
093315 CC	47.9	2	X			Y
113320 CC	14.2	2	X			Y
043603 CC	52.7	1	X			Y
053604 CC	150.1	1	X			Y
013702 CC	32.7	2	X			Y
013703 CC	39.1	1	X			Y
013704 CC	3.9	1	X			Y
023705 CC	41.5	1	X			Y
043706 CC	60.8	1	X			Y
043707 CC	63.6	1	X			Y
053708 CC	9.0	1	X			Y
023803 CC	31.8	1	X			Y
023804 CC	63.5	1	X			N
053801 CC	29.6	1			X	Y
053802 CC	48.6	1			X	Y
073901 CC	58.4	3	X			Y
073902 CC	101.7	3	X			Y
TOTAL	946.5		829.0	1.6	115.9	

14.0 Invasive Plant Species Management

14.1 Prevention

In 2018 Upper Hanley Curry will require a pre-ground disturbance evaluation prior to DNR harvest and road construction to their property.

14.2 Detection

As the 2018 Washington State and County noxious weed lists become available, they will be included in the list of target invasive plant species on Lewis River WHMP lands.

14.3 Treatment

Several areas have been identified for invasive plant species treatment and are discussed in their corresponding habitat management sections (i.e., Forestland Management, Farmland, Idle Areas, and Meadows Management, Unique Areas, and Transmission Line Right-of-Way Management). It is assumed that an additional 25.0 ac of upland habitat and 5.0 ac within the ordinary high water mark will have invasive plant species treated in 2018. This would include unidentified infestations that need immediate treatment or areas that do not directly fall under a habitat management area, such as roads, recreation sites, and secondary management areas and treated in 2018. Appendix G is a map laying out our treatment plan.

14.4 Monitoring

Most of the areas that were treated for invasive plant species will be monitored during other annually scheduled WHMP inspections. For example: Himalayan blackberry sprayed at Hamm Meadows 4 and 5 can be evaluated for success during the Spring Farm Inspection or roads and THAs will be evaluated during the spring timber harvest area inspection. However areas that are not regularly inspected and/or inspections occur too late in the season to effectively monitor will be evaluated in 2018. The table below lists the areas that will be monitored in 2018.

Kings Landing property line will be inspected in 2018 for noxious weed encroachment.

As a collaborative effort with Cowlitz County, Clark County, and several other partners we will be surveying the shores of Merwin, Yale, and Swift Reservoirs monitoring for Knotweed (*Polygonum cuspidatum*).

Table 9: 2018 Invasive Plant Species Control Monitoring Sites

Area	Target Species (Classification) ^{1,2}	Area Treated	Control Method
Cresap Campground	GELU (B)	0.3 ac	Chemical
Speelyai Road and Day Use Area	GELU (B), ALPE (A)	0.2 ac	Chemical
Road 300	VIMI2 (monitor)	200 ft ²	Chemical
Merwin Boat Ramp	IMGL (B)	0.2 ac	Chemical
Beaver Bay Wetland	IRPS (C)	0.2ac	Chemical/Hand Pull

¹ ALPE= garlic mustard, GELU = shiny geranium, IMGL= Policeman’s helmet, IRPS= yellowflag iris, VIMI2= common periwinkle

² Noxious Weed Classification = (A) = Class A, (B) = Class B, (Bd) = Class B designated region 8, (C) = Class C

15.0 Raptor Site Management

15.1 Monitoring

The proposed timber harvest areas for 2018 will be in Management Units 15 and 34. Broadcast acoustical surveys for northern goshawks (*Accipiter gentilis*) will be conducted for the second season in Management Unit 15. Unit 34 was assumed to be non-habitat and no surveys were conducted in 2017 based on the Northern Goshawk Management on Lewis River Wildlife Habitat Management Plan Lands (PacifiCorp 2015). However, upon closer inspection habitat trees were noted. As a result in 2018 the three proposed harvest units in Unit 34 will have intensive searches conducted.

Unit 15 proposed harvest area (181539 CC) is approximately within 1.3 acres of an eagle roost buffer (Appendix E). Further evaluation is required that will result in a management plan prior to harvesting unit. The proposed harvest unit was thinned in 1995 and is now scheduled for clear cut.

The proposed timber harvest areas for 2019 will be in Management Units 20 and 27. These units will have the first season of broadcast calling conducted.

The aerial bald eagle and the osprey nest surveys will occur twice in 2018.

15.2 Habitat Enhancement

The Bald Eagle Management Plan will be revised to include new nest and territories for 2018.

15.3 Best Management Practices

Best management practices for general raptors, northern spotted owls, and bald eagles will be implemented per the WHMP.

16.0 Public Access Management

16.1 Inspections

The annual road closure and trail inspections will be completed per the WHMP.

16.2 Management Actions

It is anticipated that at least two sites will require unauthorized motorized vehicle access to be controlled in 2018. Additional sites for gating or blocking roads will be selected based on the annual surveys or as needed and will be dependent on available resources (e.g. budget), severity of trespass, and feasibility.

There has been an increased issue with off road vehicles accessing Reese Meadow and tearing up the grass. A gate will be installed prevent trucks and off road vehicles from trespassing on the property from Reese Road.



Figure 2. Reese Meadow Trespass

In 2017 an illegal trail was built in Management Unit 9 by tenants of a neighboring land owner. This trail was originally minimal and leading to the water. Upon inspection several areas near the bottom of the trail near the reservoir were being used as dump sites. Land owner was contacted and told to clean the areas. Upon doing so they unsustainably reinforced and enlarged the trail creating slope instability issues. Again, land owner was contacted to cease and desist using the area. In 2018 the trail will continue to be monitored to determine if more action is required to reduce impact to the area.



Figure 3. Garbage and illegal trail in MU 9

Management Unit 10 has ATV and illegal horse trails being flagged and built coming off private property and from sanctioned horse trails. In 2017 the trails were documented with pictures and GPS points taken to come up with a plan to reduce the increased occurrences. The ATV trail coming off of private property will have a sign posted. PacifiCorp is working with the horse group to communicate appropriate trail usage.

In 2017 the unauthorized trail off of Buncombe Hollow Trail in MU 14 was decommissioned and signs were posted. Trail was built by local land owners to access the reservoir and was not permitted. In 2018 more signs will be posted and the trails will be reassessed to determine if more action is required.

PacifiCorp will continue to implement road and culvert maintenance projects under the Washington Department of Natural Resources (WDNR) Road Maintenance and Abandonment Plan (RMAP). Although these projects are not funded by WHMP dollars, they benefit WHMP lands by controlling access, reducing sediment delivery to streams and improving overall habitat.

All road and culvert repair will be conducted in accordance to all federal, state, and county regulations. This is to include, but not limited to:

- Washington Department of Fish and Wildlife (WDFW) Hydraulic Permit Application,
- WDNR Forest Practices Act permitting guidelines,
- Army Corp of Engineers 404 permit, and/or
- County Shoreline or Critical Areas/Habitat permits as necessary.

PacifiCorp biologists will continue to coordinate with the recreation manager on the International Paper (IP) road assessment and trail development as required in the Settlement Agreement. Due to the remoteness and continued all-terrain vehicle (ATV) use in the IP road area, this area is regularly monitored by the Washington Department of Fish and Wildlife law enforcement officer.

PacifiCorp is intending to purchase additional lands in the Lewis River Basin in 2018. These lands will be assessed for public access and controlled as needed in 2018.

17.0 Monitoring

PacifiCorp will continue to monitor exclosures established in 2014 in Management Units 25, 28 and 33 to examine forage seeding and natural shrub regeneration in the absence of herbivory. PacifiCorp will conduct long term monitoring of the forage by checking the exclosures 2 times per year over the next 9 years. Monitoring will determine preferred forage species so that adjustments can be made in future projects and to determine effects of scarification techniques on the re-establishment of native shrubs. Without exclosures, the herbivory effects are so intense and widespread it is difficult to determine if a species is unsuccessful due to preferred selection or site conditions. Monitoring will simply be an ocular inspection and record of observed plants both within and outside exclosures as well as noting forage use.

18.0 References

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- PacifiCorp, Public Utility District No. 1 of Cowlitz County, National Marine Fisheries Service, National Park Service, Bureau of Land Management, U.S. Fish and Wildlife Service, USDA Forest Service, Confederated Tribes and Bands of the Yakama Nation, Washington Department of Fish and Wildlife, Washington Interagency Committee for Outdoor Recreation, Cowlitz County, Cowlitz-Skamania Fire District No. 7, North Country Emergency Medical Service, City of Woodland, Woodland Chamber of Commerce, Lewis River Community Council, Lewis River Citizens At-Large, American Rivers, Fish First, Rocky Mountain Elk Foundation, Trout Unlimited, Native Fish Society and Cowlitz Indian Tribe. 2004. Settlement Agreement Concerning the Relicensing of the Lewis River Hydroelectric Projects, FERC Project Nos. 935, 2071, 2111, and 2213, Cowlitz, Clark, and Skamania Counties, Washington. November 30, 2004.

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PacifiCorp. 2015. Northern Goshawk Management on Lewis River Wildlife Habitat Management Lands. December 9, 2015. Accessed at [http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/ar/NOGO_WHMPMGT_Memo\(final\).pdf](http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/ar/NOGO_WHMPMGT_Memo(final).pdf)

Ralph, C. John; Geupel, Geoffrey R.; Pyle, Peter; Martin, Thomas E.; DeSante, David F. 1993. Handbook of field methods for monitoring landbirds. Gen. Tech. Rep. PSW-GTR-144-ww. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 41 p.

APPENDIX A
2018 WILDLIFE HABITAT MANAGEMENT PLAN BASELINE SCHEDULE

Appendix A: 2018 Lewis River Wildlife Habitat Management Plan Schedule
WHMP Implementation Year 9

ID	Task Mode	Task Name	WHMP Start Date	WHMP Finish Date	Date Work Began	Date Work Completed	Jan '18	Feb '18	Mar '18	Apr '18	May '18	Jun '18	Jul '18	Aug '18	Sep '18	Oct '18	Nov '18	Dec '18
1		Administration	Mon 1/1/18	Mon 12/31/18	NA	NA	[Solid Blue Bar]											
2		Terrestrial Coordination Committee	Mon 1/1/18	Mon 12/31/18	NA	NA	[Dotted Blue Bar]											
3		2017 Annual Report	Mon 1/1/18	Wed 1/31/18	NA	NA	[Solid Blue Bar]											
4		TCC 30-day Review	Mon 1/1/18	Tue 1/30/18	NA	NA	[Red Dotted Bar]											
5		FERC 30-day Review	Mon 1/1/18	Wed 1/31/18	NA	NA	[Red Dotted Bar]											
6		2018 Annual Plan	Mon 1/1/18	Wed 1/31/18	NA	NA	[Solid Blue Bar]											
7		TCC 30-day Review	Mon 1/1/18	Wed 1/31/18	NA	NA	[Red Dotted Bar]											
8		FERC 30-day Review	Mon 1/1/18	Wed 1/31/18	NA	NA	[Red Dotted Bar]											
9		Restoration Plans	Mon 1/1/18	Mon 12/31/18	NA	NA	[Dotted Blue Bar]											
10		Old-Growth Habitat	Sun 1/1/12	Thu 2/28/19	NA	NA	[Solid Blue Bar]											
11		Inspections	Sun 1/1/12	Mon 12/31/18	NA	NA	[Solid Blue Bar]											
12		Initial Inspections	Sun 1/1/12	Sun 4/1/12	NA	NA	[Solid Blue Bar]											
13		Aerial Inspections	Mon 1/1/18	Mon 12/31/18	NA	NA	[Red Dotted Bar]											
14		Ground Surveys	Mon 1/1/18	Mon 12/31/18	NA	NA	[Dotted Blue Bar]											
15		Development	Sat 9/1/18	Thu 2/28/19	NA	NA	[Solid Blue Bar]											
16		Snag Development	Sat 9/1/18	Thu 2/28/19	NA	NA	[Solid Blue Bar]											
17		Thinning	Sat 9/1/18	Thu 2/28/19	NA	NA	[Solid Blue Bar]											
18		Large Woody Debris	Sat 9/1/18	Thu 2/28/19	NA	NA	[Solid Blue Bar]											
19		Connectivity	Sun 4/15/18	Sun 7/15/18	NA	NA	[Solid Blue Bar]											
20		Mature Stand Connectivity Evaluations	Sun 4/15/18	Sun 7/15/18	NA	NA	[Red Dotted Bar]											
21		Wetland Habitat	Tue 4/10/12	Mon 12/31/18	NA	NA	[Solid Blue Bar]											
22		Inspections	Tue 4/10/12	Mon 12/31/18	NA	NA	[Solid Blue Bar]											
23		Initial Evaluation	Tue 4/10/12	Sat 6/30/12	NA	NA	[Solid Blue Bar]											
24		Initial Evaluation Final Report	Tue 1/1/13	Tue 12/31/13	NA	NA	[Solid Blue Bar]											
25		Annual Inspection	Tue 4/10/18	Sat 6/30/18	NA	NA	[Dotted Blue Bar]											
26		Annual Inspection with unmanaged wetlands	Tue 4/10/18	Sat 6/30/18	NA	NA	[Red Dotted Bar]											
27		Post-Treatment Inspection	Mon 1/1/18	Mon 12/31/18	NA	NA	[Red Dotted Bar]											
28		Water Control	Mon 2/15/16	Mon 12/31/18	NA	NA	[Solid Blue Bar]											
29		Diversion Draw Down	Mon 1/1/18	Mon 12/31/18	NA	NA	[Red Dotted Bar]											
30		Winter Flow Stop Log Removal	Sat 10/15/16	Mon 10/31/16	NA	NA	[Solid Blue Bar]											
31		Winter Flow Stop Log Replacement	Mon 2/15/16	Sun 2/28/16	Wed 1/17/18	NA	[Solid Blue Bar]											
32		Dike Maintenance	Mon 1/1/18	Mon 12/31/18	NA	NA	[Solid Blue Bar]											
33		Dike Maintenance	Mon 1/1/18	Mon 12/31/18	NA	NA	[Red Dotted Bar]											
34		Crossroad Beaver Culvert Protection	Mon 1/1/18	Mon 12/31/18	NA	NA	[Green Dotted Bar]											
35		Vegetation Management	Mon 1/1/18	Mon 12/31/18	NA	NA	[Solid Blue Bar]											
36		Surrounding Wetland Vegetation	Mon 1/1/18	Mon 12/31/18	NA	NA	[Red Dotted Bar]											
37		Beaver Bay Yellowflag Iris	Sun 4/1/18	Thu 5/17/18	NA	NA	[Red Dotted Bar]											

Baseline [Dotted Blue Bar] Scheduled [Red Dotted Bar] Completed [Solid Blue Bar] Additional Task [Green Dotted Bar]

**Appendix A 2018 Lewis River Wildlife Habitat Management Plan Schedule
WHMP Implementation Year 9**

ID	Task Mode	Task Name	WHMP Start Date	WHMP Finish Date	Date Work Began	Date Work Completed	Jan '18	Feb '18	Mar '18	Apr '18	May '18	Jun '18	Jul '18	Aug '18	Sep '18	Oct '18	Nov '18	Dec '18	
38		Yellow Warbler and Mink Habitat Enhancement	Mon 1/1/18	Mon 12/31/18	NA	NA													
39		Shrub Planting	Mon 1/1/18	Mon 12/31/18	NA	NA													
40		Tree Topping or Pruning to Enhance Existing Shrubs	Mon 1/1/18	Mon 12/31/18	NA	NA													
41		Waterfowl and Bat Habitat Enhancement	Mon 1/1/18	Mon 12/31/18	NA	NA													
42		Snag Creation	Mon 1/1/18	Mon 12/31/18	NA	NA													
43		Loafing Logs	Mon 1/1/18	Mon 12/31/18	NA	NA													
44		Aquatic Vegetation Control	Mon 7/16/18	Fri 11/30/18	NA	NA													
45		Bullfrog Management	Mon 1/1/18	Mon 12/31/18	NA	NA													
46		Implement Bullfrog Management Methods	Mon 1/1/18	Mon 12/31/18	NA	NA													
47		Bullfrog Monitoring VES	Sun 4/1/18	Sat 6/30/18	NA	NA													
48		Remove Stop logs	Wed 8/15/18	Sat 9/15/18	NA	NA													
49		Replace Stop logs	Mon 10/15/18	Wed 10/31/18	NA	NA													
50		Great Blue Heron Colony Management	Mon 1/1/18	Mon 12/31/18	NA	NA													
51		Review WDNR Heritage Database	Sat 12/1/18	Mon 12/31/18	NA	NA													
52		Great Blue Heron Colony Site Management Report	Mon 1/1/18	Mon 12/31/18	NA	NA													
53		Riparian Habitat	Tue 1/1/13	Mon 12/31/18	NA	NA													
54		Inspection	Tue 1/1/13	Mon 12/31/18	NA	NA													
55		Riparian Mixed Forest Stand Evaluation	Tue 1/1/13	Tue 12/31/13	NA	NA													
56		Other Inspection	Mon 1/1/18	Mon 12/31/18	NA	NA													
57		Establish Buffers	Mon 1/1/18	Mon 12/31/18	NA	NA													
58		Water Type Modification	Mon 1/1/18	Mon 12/31/18	NA	NA													
59		Establish Buffers	Mon 1/1/18	Mon 12/31/18	NA	NA													
60		Snag Management	Wed 1/1/14	Mon 12/31/18	NA	NA													
61		Snag Development Schedule	Wed 1/1/14	Wed 12/31/14	NA	NA													
62		Snag Removal	Mon 1/1/18	Mon 12/31/18	NA	NA													
63		Restoration	Mon 1/1/18	Mon 12/31/18	NA	NA													
64		Riparian Area Damage Identification	Mon 1/1/18	Mon 12/31/18	NA	NA													
65		Riparian Area Restoration	Mon 1/1/18	Mon 12/31/18	NA	NA													
69		Shrubland Management	Sun 1/1/12	Mon 12/31/18	NA	NA													
70		Inspections	Sun 1/1/12	Wed 10/31/18	NA	NA													
71		Initial Inspection	Sun 4/15/12	Wed 10/31/12	NA	NA													
72		Initial Evaluation Final Report	Sun 1/1/12	Mon 12/31/12	NA	NA													

Baseline Scheduled Completed Additional Task

**Appendix A 2018 Lewis River Wildlife Habitat Management Plan Schedule
WHMP Implementation Year 9**

ID	Task Mode	Task Name	WHMP Start Date	WHMP Finish Date	Date Work Began	Date Work Completed	Jan '18	Feb '18	Mar '18	Apr '18	May '18	Jun '18	Jul '18	Aug '18	Sep '18	Oct '18	Nov '18	Dec '18
139		Supplemental Water	Sun 7/15/18	Sun 9/30/18	NA	NA												
140		Transmission Line Rights-of-Way	Tue 9/1/09	Tue 10/15/19	NA	NA												
141		Inspections	Tue 9/1/09	Tue 10/15/19	NA	NA												
142		Initial Evaluations with Photo Documentation	Tue 9/1/09	Thu 10/15/09	NA	NA												
143		Initial Inspections Final Report	Wed 1/1/14	Wed 12/31/14	NA	NA												
144		Revise Transmission Line Right-of-Way Habitat Management Chapter	Wed 1/1/14	Wed 12/31/14	NA	NA												
145		Annual Inspection	Sat 9/1/18	Mon 10/15/18	NA	NA									■■■■■■■■■■			
146		Annual Inspection with Photo Documentation	Sun 9/1/19	Tue 10/15/19	NA	NA												
147		Post hazard tree and invasive plant species management inspection	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
148		Shrub Management	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
149		Shrub Management	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
150		Plantings	Thu 2/1/18	Sun 4/1/18	NA	NA		■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■								
151		Invasive Plant Species Control	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
152		Aquatic Area Management	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
153		Vegetation Management	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
154		Big Game Forage Enhancement	Mon 1/1/18	Mon 12/31/18	NA	NA												
155		Soil Testing	Wed 8/1/18	Fri 8/31/18	NA	NA							■■■■■■■■■■					
156		Annual Mowing	Sat 9/1/18	Mon 10/15/18	NA	NA									■■■■■■■■■■			
157		Fertilizing	Sat 9/1/18	Mon 10/15/18	NA	NA									■■■■■■■■■■			
158		Access/Disturbance Reductions	Mon 1/1/18	Mon 12/31/18	NA	NA												
159		Access/Disturbance Reduction	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
160		Closing Open Roads	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
161		Unique Area /Habitat Management	Fri 1/1/10	Mon 12/31/18	NA	NA												
162		Inspections	Mon 1/1/18	Mon 12/31/18	NA	NA												
163		Annual Oak Stands	Sat 9/15/18	Mon 10/15/18	NA	NA									■■■■■■■■■■			
164		Additional Oak Stands	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
165		Other Unique Areas/Habitats	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
166		Oak Stand Management	Mon 1/1/18	Mon 12/31/18	NA	NA												
167		Topping a Competing Tree and Hand Piling Debris	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
168		Falling a competing Tree and Hand Piling Debris	Mon 10/15/18	Mon 12/31/18	NA	NA										■■■■■■■■■■		
169		Invasive Plant Species Control	Mon 1/1/18	Wed 10/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■
170		Cave Management	Mon 1/1/18	Mon 12/31/18	NA	NA												
171		Develop Management Strategy	Mon 1/1/18	Mon 12/31/18	NA	NA	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■	■■■■■■■■■■

Baseline Scheduled Completed Additional Task

**Appendix A 2018 Lewis River Wildlife Habitat Management Plan Schedule
WHMP Implementation Year 9**

ID	Task Mode	Task Name	WHMP Start Date	WHMP Finish Date	Date Work Began	Date Work Completed	Jan '18	Feb '18	Mar '18	Apr '18	May '18	Jun '18	Jul '18	Aug '18	Sep '18	Oct '18	Nov '18	Dec '18		
172		Unique Area Record Management	Fri 1/1/10	Mon 12/31/18	NA	NA														
173		Create Unique Area Database	Fri 1/1/10	Fri 12/31/10	NA	NA														
174		Update Unique Area Database	Mon 1/1/18	Mon 12/31/18	NA	NA														
175		Ethnobotanically Significant Plant Management	Mon 1/1/18	Mon 12/31/18	NA	NA														
176		Develop Management Strategy	Mon 1/1/18	Mon 12/31/18	NA	NA														
177		Forestland Management	Mon 1/1/18	Mon 12/31/18	NA	NA														
178		Inspections	Tue 5/1/18	Mon 12/31/18	NA	NA														
179		Spring Timber Harvest Area Survey	Tue 5/1/18	Sat 6/30/18	NA	NA														
180		Fall Timber Harvest Survey (Field Work)	Thu 11/1/18	Fri 11/30/18	NA	NA														
181		Fall Timber Harvest Survey (Analysis)	Sat 12/1/18	Mon 12/31/18	NA	NA														
182		Management Actions	Mon 1/1/18	Mon 12/31/18	NA	NA														
183		Harvest Planning	Mon 1/1/18	Mon 12/31/18	NA	NA														
184		Harvest Scheduling	Mon 1/1/18	Mon 12/31/18	NA	NA														
185		First Precut Survey	Sat 9/1/18	Mon 12/31/18	NA	NA														
186		Timber Harvest Area Traverse and GIS Update	Mon 1/1/18	Mon 12/31/18	NA	NA														
187		Second Precut Survey	Mon 1/1/18	Mon 12/31/18	NA	NA														
188		TCC On-Site Meeting	Sun 4/1/18	Thu 5/31/18	NA	NA														
189		Timber Harvest Area Logging Inspections	Sun 7/1/18	Sun 9/30/18	NA	NA														
190		Snag Development	Sun 7/15/18	Mon 12/31/18	NA	NA														
191		Regeneration Practices	Sun 4/1/18	Sun 9/30/18	NA	NA														
192		Site Preparation	Sun 7/1/18	Sun 9/30/18	NA	NA														
193		Purchase Forage Mix	Wed 8/1/18	Fri 8/31/18	NA	NA														
194		Forage Seeding	Sat 9/15/18	Sun 9/30/18	NA	NA														
195		Invasive Species; Oust	Sun 4/1/18	Tue 5/15/18	NA	NA														
196		Planting and Maintenance	Mon 1/1/18	Mon 12/31/18	NA	NA														
197		Invasive Species; (e.g. blackberry etc.)	Thu 3/15/18	Thu 11/15/18	NA	NA														
201		Planting and Seedling	Mon 1/1/18	Sat 3/31/18	NA	NA														
202		Precommercial thinning	Mon 1/1/18	Mon 12/31/18	NA	NA														
203		Invasive Plant Species Management	Mon 1/1/18	Mon 12/31/18	NA	NA														
204		Pre-Ground Disturbance Evaluation	Tue 5/1/18	Fri 8/31/18	NA	NA														
205		Post-Ground Disturbance Evaluation	Tue 5/1/18	Fri 8/31/18	NA	NA														
206		Detection	Mon 1/1/18	Mon 12/31/18	NA	NA														
207		Update State and County Noxious Weed Lists	Mon 1/1/18	Sat 3/31/18	NA	NA														

Baseline Scheduled Completed Additional Task

Appendix A: 2018 Lewis River Wildlife Habitat Management Plan Schedule
WHMP Implementation Year 9

ID	Task Mode	Task Name	WHMP Start Date	WHMP Finish Date	Date Work Began	Date Work Completed	Jan '18	Feb '18	Mar '18	Apr '18	May '18	Jun '18	Jul '18	Aug '18	Sep '18	Oct '18	Nov '18	Dec '18
208		Control Treatments	Mon 1/1/18	Mon 12/31/18	NA	NA												
209		Control Treatments	Mon 1/1/18	Mon 12/31/18	NA	NA												
210		Control Treatments within the Ordinary High Water Mark	Mon 1/1/18	Mon 12/31/18	NA	NA												
211		Monitoring	Mon 1/1/18	Mon 12/31/18	NA	NA												
212		Raptor Site Management	Fri 1/1/10	Sun 3/31/19	NA	NA												
213		Northern Goshawk Survey	Thu 3/15/18	Fri 8/31/18	NA	NA												
214		Dawn Acoustical Survey	Thu 3/15/18	Mon 4/30/18	NA	NA												
215		Intensive Search Survey	Wed 6/20/18	Fri 8/31/18	NA	NA												
216		Broadcast Acoustical Survey	Fri 6/1/18	Wed 8/15/18	NA	NA												
217		Northern Spotted Owl Surveys	Thu 3/1/18	Thu 8/30/18	NA	NA												
218		Peregrine Falcon Monitoring	Sun 4/15/18	Sat 6/30/18	NA	NA												
219		Bald Eagle and Osprey Monitoring	Sat 4/7/18	Sun 3/31/19	NA	NA												
220		Bald Eagle Nest Occupancy Monitoring	Sat 4/7/18	Wed 4/25/18	NA	NA												
221		Osprey Nest Occupancy and Bald Eagle Nest Productivity	Sun 6/10/18	Mon 6/25/18	NA	NA												
222		Known Communal Roost Monitoring	Thu 11/15/18	Sun 3/31/19	NA	NA												
223		Potential Communal Roost Monitoring	Sat 12/1/18	Thu 2/28/19	NA	NA												
224		Habitat Management	Fri 1/1/10	Mon 12/31/18	NA	NA												
225		Mature and Old-growth Raptor Habitat Evaluations	Mon 4/15/13	Mon 7/15/13	NA	NA												
226		Develop a Schedule for Implementing Habitat Enhancement Actions in Old-growth and Mature	Tue 1/1/13	Tue 12/31/13	NA	NA												
227		Complete Bald Eagle Management Plan	Fri 1/1/10	Fri 12/31/10	NA	NA												
228		Revised Bald Eagle Management Plan	Mon 1/1/18	Mon 12/31/18	NA	NA												
229		Review and Update Industry Standards for Avian Protection from Power Lines	Thu 11/1/18	Mon 12/31/18	NA	NA												
230		Public Access Management	Thu 1/1/09	Mon 12/31/18	NA	NA												
231		Inspections	Wed 5/1/13	Fri 11/30/18	NA	NA												
232		Initial Road Evaluation	Wed 5/1/13	Tue 10/15/13	NA	NA												
233		Initial Road Evaluation on Newly Acquired Lands	Wed 5/1/13	Tue 10/15/13	NA	NA												
234		Road Closure Inspection	Thu 11/1/18	Fri 11/30/18	NA	NA												
235		Initial Trail Evaluation	Wed 5/1/13	Tue 10/15/13	NA	NA												
236		Trail Inspections	Thu 11/1/18	Fri 11/30/18	NA	NA												
237		Management Actions	Thu 1/1/09	Mon 12/31/18	NA	NA												
238		Initial Evaluations of Dispersed Shoreline Campsites	Thu 1/1/09	Thu 12/31/09	NA	NA												
239		Site Pioneering Monitoring	Sat 9/1/18	Mon 12/31/18	NA	NA												

Baseline Scheduled Completed Additional Task

Appendix A 2018 Lewis River Wildlife Habitat Management Plan Schedule
WHMP Implementation Year 9

ID	Task Mode	Task Name	WHMP Start Date	WHMP Finish Date	Date Work Began	Date Work Completed	Jan '18	Feb '18	Mar '18	Apr '18	May '18	Jun '18	Jul '18	Aug '18	Sep '18	Oct '18	Nov '18	Dec '18
240		Site Creep Evaluation	Sat 9/1/18	Mon 12/31/18	NA	NA									[Red bar]			
241		Controlling Unauthorized Motorized Vehicle Use	Mon 1/1/18	Mon 12/31/18	NA	NA	[Red bar]											
245		Visual Screen	Mon 1/1/18	Mon 12/31/18	NA	NA	[Red bar]											
246		Road Construction	Mon 1/1/18	Mon 12/31/18	NA	NA	[Blue bar]											
247		Monitoring	Sun 1/1/12	Wed 12/31/25	NA	NA												
248		Inspections	Mon 1/1/18	Wed 12/31/25	NA	NA												
249		Year 17 HEP (Analysis)	Wed 1/1/25	Wed 12/31/25	NA	NA												
250		Mink Data Analysis	Mon 1/1/18	Mon 12/31/18	NA	NA	[Blue bar]											
251		Larch Mountain Salamanders	Thu 3/1/18	Fri 6/15/18	NA	NA			[Blue bar]									
252		Newly Acquired Lands (Field Work)	Sun 7/1/18	Sun 9/30/18	NA	NA							[Blue bar]					
253		Newly Acquired Lands (Analysis)	Mon 1/1/18	Mon 12/31/18	NA	NA	[Blue bar]											
254		RMEF Exclosure Monitoring	Tue 5/1/18	Sun 9/30/18	NA	NA									[Red bar]			
255		Management Actions	Sun 1/1/12	Wed 12/31/25	NA	NA												
256		Modify the Goal and Objectives	Mon 1/1/18	Mon 12/31/18	NA	NA	[Blue bar]											
257		Revise the WHMP	Wed 1/1/25	Wed 12/31/25	NA	NA												
258			Sun 1/1/12	Sun 1/1/12	NA	NA												
259			Sun 1/1/12	Sun 1/1/12	NA	NA												
260			Sun 1/1/12	Sun 1/1/12	NA	NA												
261			Sun 1/1/12	Sun 1/1/12	NA	NA												
262			Sun 1/1/12	Sun 1/1/12	NA	NA												
263			Sun 1/1/12	Sun 1/1/12	NA	NA												
264			Sun 1/1/12	Sun 1/1/12	NA	NA												
265			Sun 1/1/12	Sun 1/1/12	NA	NA												
266			Sun 1/1/12	Sun 1/1/12	NA	NA												
267			Sun 1/1/12	Sun 1/1/12	NA	NA												
268			Sun 1/1/12	Sun 1/1/12	NA	NA												
269			Sun 1/1/12	Sun 1/1/12	NA	NA												
270			Sun 1/1/12	Sun 1/1/12	NA	NA												
271			Sun 1/1/12	Sun 1/1/12	NA	NA												
272			Sun 1/1/12	Sun 1/1/12	NA	NA												
273			Sun 1/1/12	Sun 1/1/12	NA	NA												
274			Sun 1/1/12	Sun 1/1/12	NA	NA												
275			Sun 1/1/12	Sun 1/1/12	NA	NA												
276			Sun 1/1/12	Sun 1/1/12	NA	NA												
277			Sun 1/1/12	Sun 1/1/12	NA	NA												
278			Sun 1/1/12	Sun 1/1/12	NA	NA												
279			Sun 1/1/12	Sun 1/1/12	NA	NA												
280			Sun 1/1/12	Sun 1/1/12	NA	NA												

Baseline Scheduled Completed Additional Task

APPENDIX B
2018 BUDGET

**Annual WHMP Budget
Calendar Year 2018**

License Year 10

WHMP Implementation Year 9

Total Available Funds		2017 Funds	2018 Funds
Fee Simple Lands	Acres	13,276	15,156
	Cost Per Acre	\$35.59	\$34.96
	SubTotal	\$472,525.23	\$529,920.03
Interests in Lands	Acres	16	16
	Cost Per Acre	\$17.42	\$17.69
	SubTotal	\$278.68	\$283.00
Other Additional Funds	Remaining Funds from Previous Year	-\$23,506.97	\$990.91
	Additional HEP Funding	\$0.00	\$0.00
	RMEF	\$0.00	\$0.00
	Interest from March 31, 2017	\$0.00	\$16,771.26
	SubTotal	-\$23,506.97	\$17,762.17
Total		\$449,296.94	\$547,965.20

Budget

WHMP Management Area or Plan-Wide Goal		2017 Budget		2018 Proposed Budget	Difference from 2017 Budget Actual Spent
		Proposed	Actual	Proposed	
Administration	Cost	\$50,781.30	\$39,719.46	\$37,472.00	-\$2,247.46
	Percent of Budget	11.30%	8.84%	6.84%	
Old-Growth	Cost	\$344.28	\$667.24	\$374.72	-\$292.52
	Percent of Budget	0.08%	0.15%	0.07%	
Wetlands	Cost	\$18,237.88	\$8,979.54	\$30,228.16	\$21,248.62
	Percent of Budget	4.06%	2.00%	5.52%	
Riparian	Cost	\$5,164.20	\$7,206.80	\$5,620.80	-\$1,586.00
	Percent of Budget	1.15%	1.60%	1.03%	
Shrubland	Cost	\$6,541.32	\$6,671.74	\$3,372.48	-\$3,299.26
	Percent of Budget	1.46%	1.48%	0.62%	
Farmland, Meadow, Idle Areas	Cost	\$69,389.24	\$86,185.71	\$80,992.00	-\$5,193.71
	Percent of Budget	15.44%	19.18%	14.78%	
Orchard	Cost	\$9,497.70	\$5,399.30	\$11,776.32	\$6,377.02
	Percent of Budget	2.11%	1.20%	2.15%	
Transmission Line Right-of-Way	Cost	\$18,646.77	\$21,273.16	\$19,971.44	-\$1,301.72
	Percent of Budget	4.15%	4.73%	3.64%	
Unique Area/Habitat	Cost	\$3,270.66	\$1,152.06	\$4,684.00	\$3,531.94
	Percent of Budget	0.73%	0.26%	0.85%	
Forestland	Cost	\$201,235.09	\$202,385.51	\$277,430.40	\$75,044.89
	Percent of Budget	44.79%	45.04%	50.63%	
Invasive Plant Species	Cost	\$12,336.34	\$14,669.11	\$19,802.56	\$5,133.45
	Percent of Budget	2.75%	3.26%	3.61%	
Raptor	Cost	\$36,828.94	\$34,072.59	\$35,109.60	\$1,037.01
	Percent of Budget	8.20%	7.58%	6.41%	
Public Access Management	Cost	\$11,332.37	\$7,990.70	\$12,930.08	\$4,939.38
	Percent of Budget	2.52%	1.78%	2.36%	
Monitoring	Cost	\$5,508.48	\$11,933.11	\$7,494.40	-\$4,438.71
	Percent of Budget	1.23%	2.66%	1.37%	
Total Cost		\$449,114.57	\$448,306.03	\$547,258.96	
Total Percent of Budget Spent		99.96%	99.78%	99.87%	
Remaining Funds		\$182.37	\$990.91	\$706.24	

Administration Budget

License Year 10
Calendar Year 2018

Management Actions	Frequency	Budgeted Hours	Cost
Terrestrial Coordination Committee	Annually	100	\$9,368.00
WHMP Coordination (Budgets, Contractor Meetings etc.)	Annually	100	\$9,368.00
Annual Report	Annually	100	\$9,368.00
Annual Plan	Annually	100	\$9,368.00
Labor rate per hour			\$93.68
Total Labor		400	\$37,472.00
Materials			
Annual Report and Plan Reproduction			\$0.00
Other			\$0.00
Total Materials			\$0.00
Total Labor and Materials			\$37,472.00

Old-Growth Budget

License Year 10
Calendar Year 2018

Management Actions	Frequency	WHMP Estimated Hours	Budgeted Hours	Cost
Initial Evaluation	Within 5 years of WHMP Implementation	140 hours	0	\$0.00
Aerial Surveys	Annually	0 hours	0	\$0.00
Ground Surveys	Optional	4 hours per inspection	0	\$0.00
Snag Development	Optional	4 hours per tree	0	\$0.00
Thinning	Optional	Unknown	0	\$0.00
Large Woody Debris Placement	Optional	Unknown	0	\$0.00
Mature Stand Connectivity	Within 5 years of WHMP Implementation	225 hours	4	\$374.72
Labor rate per hour			\$93.68	
Total Labor			4	\$374.72
Materials				
Other			\$0.00	
Total Materials			\$0.00	
Total Labor and Materials			\$374.72	

Wetland Budget

**License Year 10
Calendar Year 2018**

Management Actions	Frequency	Estimated Effort	Hours	Cost
Initial Evaluation	Within 5 years of WHMP Implementation	180 hours	0	\$0.00
Initial Evaluation Final Report	Within 5 years of WHMP Implementation	80 hours	0	\$0.00
Annual Inspection	Annually	80 hours	20	\$1,873.60
Annual Inspection with unmanaged wetlands	Every 5 years	140 hours	0	\$0.00
Post-Treatment Inspection	Optional	4 hours per inspection	0	\$0.00
Diversion Draw Down	Optional	3 hours per draw down	10	\$936.80
Remove 1 to 2 stop logs for high winter flows	Annually	16 hours	3	\$281.04
Replace 1 to 2 stop logs for high winter flows	Annually	16 hours	3	\$281.04
Dike Maintenance	Optional	Unknown	0	\$0.00
Surrounding wetland vegetation	Optional	4 hour per site	120	\$11,241.60
Tree topping or pruning to enhance existing shrubs	Target Year 17	3 hours per tree	0	\$0.00
Shrub Planting	Target Year 17	1 hour per planting	90	\$8,431.20
Loafing log	Within 5 years of completing the initial evaluation	3 hours per tree	0	\$0.00
Snag Creation	Within 5 years of completing the initial evaluation	3 hours per tree	0	\$0.00
Aquatic Vegetation Control	Optional	0.5 hour per acre	40	\$3,747.20
Implement Bullfrog Management Methods Identified in the Initial Evaluation	Within 5 years of completing the initial evaluation	40 hours	24	\$2,248.32
Remove Stoplogs	Annually	16 hours	3	\$500.00
Replace Stoplogs	Annually	16 hours	3	\$500.00
Review WDNR Heritage Database	Annually	2 hours	2	\$187.36
Great Blue Heron Colony Site Management Report	Optional	15 hours	0	\$0.00
Labor rate per hour				\$93.68
Total Labor			318	\$30,228.16
Materials				
Shrub Planting \$5 per planting				\$1,180.00
Grass Seed for Wetland Mix				\$650.00
Total Materials				\$0.00
Total Labor and Materials				\$30,228.16

Riparian Budget

**License Year 10
Calendar Year 2018**

Management Actions	Frequency	Estimated Effort	Hours	Cost
Riparian Mixed Forest Stand Evaluations	Within 5 years of receiving the license	200 hours	0	\$0.00
Other Inspections	Optional	4 hours per site	0	\$0.00
Establish Buffers	Optional	1 hour per 100 ft (30 m) of stream	10	\$936.80
Water Type Modification form	Optional	18 hours per form	10	\$936.80
Snag Development Schedule	Within 1 year of completing the Riparian Mixed Forest Stand	50 hours	0	\$0.00
Snag Removal	Optional	3 hours per 1-20 in (50 cm) diameter at breast height Douglas-fir	0	\$0.00
Riparian Area Restoration	Within 5 years of identifying a damaged riparian area	To be determined	40	\$3,747.20
Labor rate per hour				\$93.68
Total Labor			60	\$5,620.80
Materials				
Other				\$0.00
Total Materials				\$0.00
Total Labor and Materials				\$5,620.80

Shrubland Budget

License Year 10
Calendar Year 2018

Management Actions	Frequency	Estimated Effort	Hours	Cost
Initial Evaluation	Within 4 years of WHMP Implementation	80 hours	0	\$0.00
Initial Evaluation Final Report	Within 1 year of completing the initial evaluation	30 hours	0	\$0.00
Periodic Inspection	Annually	50 hours	8	\$749.44
Success of Action	Annually	15 hours	8	\$749.44
Topping a Tree and Hand Piling Debris	Optional	4 hour per tree	0	\$0.00
Falling a tree and hand piling debris	Optional	3 hour per tree	0	\$0.00
Herbicide Injection	Optional	1.5 hours per tree	0	\$0.00
Heavy Pruning Circle	Optional	5.5 hours per planting circle	10	\$936.80
Vegetation Control - Clear Competing Brush	Optional	1.75 hour per 10 foot radius of vegetation	10	\$936.80
Revised Management Actions	Within 8 years of WHMP Implementation	100 hours	0	\$0.00
Labor rate per hour				\$93.68
Total Labor			36	\$3,372.48
Materials				
Other				\$0.00
Total Materials				\$0.00
Total Labor and Materials				\$3,372.48

Farmland, Idle Fields, and Meadows Budget

**License Year 10
Calendar Year 2018**

Management Actions	Frequency	Estimated Effort	Hours	Cost
Initial Inspection	Within 4 years of WHMP Implementation	60 hours	0	\$0.00
Initial Inspection Final Report	Within 1 year of completing the initial	60 hours	0	\$0.00
Annual Spring Inspections	Annually	40 hours	50	\$4,684.00
5-year Passively Managed Area Inspections	Every 5 years	80 hours	0	\$0.00
Annual Fall Inspection	Annually	40 hours	50	\$4,684.00
Spring Mowing/ Hay Harvest	Annually	2 hours per acre	125	\$11,710.00
Fall Mowing/ Hay Harvest	Annually	2 hours per acre	150	\$14,052.00
Soil Test	Annually	2 hours per site	8	\$749.44
Fall Fertilization	Annually	2 hours per acre	90	\$8,431.20
Spring Fertilization	Optional	2 hours per acre	0	\$0.00
Lime Application	Optional	2 hours per acre	0	\$0.00
Soil Test (Field Restoration)	Optional	2 hours per site	2	\$187.36
Lime Application (Field Restoration)	Optional	2 hours per acre	4	\$374.72
Herbicide Application Treatment	Optional	2 hours per acre	22	\$2,060.96
Cultivation	Optional	4 hours per acre	44	\$4,121.92
Fertilization	Optional	2 hours per acre	22	\$2,060.96
Seeding/planting	Optional	2 hours per acre	22	\$2,060.96
Invasive Plant Control	Optional	2 hours per acre	40	\$3,747.20
Top Seeding	Optional	4 hours per acre	5	\$468.40
Fertilizing Vegetation Screening	Optional	2 hours per screen	0	\$0.00
Planting	Optional	4 hours per planting	16	\$1,498.88
Supplemental Watering	Optional	1 hour per enclosure	0	\$0.00
Animal Damage Control	Optional	1 hour per enclosure	0	\$0.00
			Labor rate per hour	\$93.68
			Total Labor	650
				\$60,892.00
Materials				
Soil Testing (Assume \$40 per test with 10 test per year)				\$600.00
Fertilizer (Assume \$100 per acre in materials)				\$15,000.00
Herbicide for Field Restoration (\$30 per acre treated)				\$1,500.00
Grass Seed				\$2,500.00
Exclosures for new plantings (\$100 per enclosure)				\$400.00
New plantings (\$10 per seedling)				\$100.00
Other				\$0.00
			Total Materials	\$20,100.00
			Total Labor and Materials	\$80,992.00

Orchard Budget

License Year 10
Calendar Year 2018

Management Actions	Frequency	Estimated Effort	Hours	Cost
Winter Inspection	Annually	16 hours	8	\$749.44
Summer Inspection	Annually	16 hours	12	\$1,124.16
Optional Inspection	Optional	8 hours	0	\$0.00
5-year Inspection	Within 5 years of WHMP Implementation	40 hours	0	\$0.00
Dormant Pruning	Optional	1 hour per tree	42	\$3,934.56
Summer Pruning	Optional	1 hour per tree	0	\$0.00
Shade Tree Control	Optional	\$0 to \$500	6	\$562.08
Invasive Plant Species Control	Optional	2 hours per acre	12	\$1,124.16
Mowing	Annually	2 hours per acre	12	\$1,124.16
Replacement Plantings	Optional	2 hours per planting	2	\$187.36
New Plantings Inspection	Optional	2 hours per planting	6	\$562.08
Orchard Expansion Plantings	2014	4 hours per planting	0	\$0.00
Soil Testing	Optional	2 hours per orchard	0	\$0.00
Fertilizing	Optional	2 hours per acre	0	\$0.00
Grass Seeding	Optional	2 hours per acre	0	\$0.00
Orchard Tree Fertilizing	Optional	1 hour per tree	0	\$0.00
Pest Control	Optional	1 hour per tree	0	\$0.00
Animal Damage Control	Optional	1 hour per tree	16	\$1,498.88
Supplemental Watering	Optional	1 hour per tree	8	\$749.44
			Labor rate per hour	\$93.68
			Total Labor	124
				\$11,616.32
Materials				
Exclosures (\$100 per exclosure)				\$100.00
New seedlings (\$30 per tree)				\$60.00
Fertilizer (Assume \$100 per acre in materials)				\$0.00
Grass Seed (Assume \$4 per pound)				\$0.00
Other				\$0.00
			Total Materials	\$160.00
			Total Labor and Materials	\$11,776.32

Transmission Line Right-of-Way Budget

License Year 10
Calendar Year 2018

Management Actions	Frequency	Estimated Effort	Hours	Cost
Initial Evaluations with Photo Documentation	Within 5 years of WHMP Implementation	130 hours	0	\$0.00
Initial Inspections Final Report	Within 1 year of completing the initial evaluation	40 hours	0	\$0.00
Revise Transmission Line Rights-of-Way Habitat Management Chapter	Within 5 years of WHMP Implementation	20 hours	0	\$0.00
Annual Inspections	Annually	50 hours	80	\$7,494.40
Annual Inspections with Photo Documentation	Every 5 years beginning with initial inspection year	100 hours	0	\$0.00
Post hazard tree and invasive species management inspection	Within 2 months of a management actions being completed	2 hours per site	0	\$0.00
Shrub Management	Optional	4 hours	0	\$0.00
Plantings	Optional	4 hours per planting	0	\$0.00
Vegetation Management	Optional	2 hours per tree	40	\$3,747.20
Invasive Plant Species Control	Optional	4 hours per acre	50	\$4,684.00
Aquatic Area Management	Optional	Unknown	0	\$0.00
Soil Testing	Every 2 years	2 hours per site	8	\$749.44
Annual Mowing	Annual	2 hours per acre	15	\$1,405.20
Fertilization	Optional	2 hours per acre	15	\$1,405.20
Access/Disturbance Reduction	Optional	2 hours per site	0	\$0.00
Closing Open Roads	Within 5 years of WHMP Implementation	4 hours per site	0	\$0.00
Labor rate per hour			\$93.68	
Total Labor			208	\$19,485.44
Materials				
Soil Testing (Assume \$40 per test)			\$186.00	
Fertilizer (Assume \$100 per acre in materials)			\$300.00	
Exclosures (\$200 per exclosure)			\$0.00	
Plantings (\$50 per planting)			\$0.00	
Grass mix seed			\$0.00	
Ecology blocks/boulders			\$0.00	
Total Materials			\$486.00	
Total Labor and Materials			\$19,971.44	

Unique Area/ Habitat Budget

License Year 10
Calendar Year 2018

Management Actions	Frequency	Estimated Effort	Hours	Cost
Annual Oak Stand	Annual	16 hours	8	\$749.44
Additional Oak Stands	Optional	4 hours per area	0	\$0.00
Other Unique Areas	Optional	4 hours per area	0	\$0.00
Topping a Competing Tree and Hand Piling Debris	Optional	2 men x 1.5 hour per 1 20-in dbh Douglas-fir tree 1 hour for reporting	10	\$936.80
Falling a Competing Tree and Hand Piling Debris	Optional	2 men x 1 hour per 1 20 in dbh Douglas-fir tree 1 hour for reporting	10	\$936.80
Invasive Plant Species Control	Optional	1 hour per acre	20	\$1,873.60
Develop Cave Management Strategy	Optional	10 hours	0	\$0.00
Create a Unique Area Database	Within 1 year of Implementation	8 hours	0	\$0.00
Update Unique Area Database	Optional	2 hours	2	\$187.36
Develop Ethnobotanically Significant Plant Management Strategy	Optional	10 hours	0	\$0.00
Labor rate per hour				\$93.68
Total Labor			50	\$4,684.00
Materials				
Others				\$0.00
Total Materials				\$0.00
Total Labor and Materials				\$4,684.00

Forestland Budget

License Year 10
Calendar Year 2018

Management Actions	Frequency	Estimated Effort	Hours	Cost
Spring Timber Harvest Area Survey	Annually	50 hours	33	\$3,091.44
Fall Timber Harvest Area Survey	Annually	140 hours	145	\$13,583.60
Harvest Planning	Optional	80 hours	70	\$6,557.60
Harvest Scheduling	Optional	8 hours	15	\$1,405.20
First Precut Survey	Optional	1 hour per acre	20	\$1,873.60
Timber Harvest Area Traverse and GIS Update	Optional	24 hours	45	\$4,215.60
Second Precut Survey	Optional	2.5 hours per acre	30	\$2,810.40
Terrestrial Coordination Committee On-Site Meeting	Optional	16 hours	14	\$1,311.52
Timber Harvest Area Logging Inspections	Optional	80 hours	50	\$4,684.00
Snag Development	Optional	2 hours per tree	0	\$0.00
Site Preparation (Scarification and covering piles)	Optional	12 hours per 10 acres plus 10 hours	1100	\$103,048.00
Forage Seeding	Optional	50 hours	15	\$1,405.20
Invasive Plant Species - grasses	Optional	0.5 hour per acre	93	\$8,712.24
Invasive Plant Species - competing vegetation	Optional	2.8 hours per acre	450	\$42,156.00
Pre-commercial thinning	Optional	1.25 hour per acre	700	\$65,576.00
			Labor rate per hour	\$93.68
			Total Labor	2780
				\$260,430.40
Materials				
Forage seed mix				\$7,000.00
Chemicals (\$50.00 per acre)				\$0.00
Seedlings				\$1,000.00
Seedling Protection (vexar tubes, stakes, garlic sticks etc)				\$1,000.00
Plastic				\$8,000.00
			Total Materials	\$17,000.00
			Total Labor and Materials	\$277,430.40

Invasive Plant Species Budget

License Year 10
Calendar Year 2018

Management Actions	Frequency	Estimated Effort	Hours	Cost
Pre-Ground Disturbance Evaluation	Optional	5.0 hours per site	2	\$187.36
Post-Ground Disturbance Evaluation	Optional	2.0 hours per site	2	\$187.36
Detection	Optional	0.5 hour per site	80	\$7,494.40
Update State and County Noxious Weed lists	Annual	2 hours per year	8	\$749.44
Control Treatments	Optional	0.5 hour per acre	30	\$2,810.40
Control treatments within the ordinary high water mark	Optional	2.0 hours per acre	10	\$936.80
Monitoring	Optional	0.5 hour per site	10	\$936.80
Labor rate per hour				\$93.68
Total Labor			142	\$13,302.56
Materials				
Boat to survey reservoirs				\$4,500.00
Noxious Weed Training				\$2,000.00
Total Materials				\$6,500.00
Total Labor and Materials				\$19,802.56

Raptor Budget

License Year 10
Calendar Year 2018

Management Actions	Frequency	Estimated Effort	Hours	Cost
Dawn Acoustical Survey for Northern Goshawk	Optional	5 hours per survey station (18 ac [7 ha])	0	\$0.00
Intensive Search Survey for Northern Goshawk	Optional	20 hours per 25 ac (10 ha)	0	\$0.00
Broadcast Acoustical Survey for Northern Goshawk	Optional	8 hours per 494 acres (200 ha)	148	\$13,864.64
Northern Spotted Owl Surveys	Optional	4 hours per 10 survey stations	0	\$0.00
Peregrine Falcon Monitoring Protocol	Optional	15 hours per potential nest site	0	\$0.00
Aerial Survey for Bald Eagle Nest Occupancy	Annually	24 hours	30	\$2,810.40
Aerial Survey for Osprey Nest Occupancy and Bald Eagle Nest Productivity	Annually	24 hours labor	30	\$2,810.40
Known Communal Roost Monitoring	Optional	5 hours per survey per observer	0	\$0.00
Potential Communal Roost Monitoring	Optional	6 hours per survey per observer	0	\$0.00
Evaluate Mature and Old-growth Stands for Raptor Habitat Quality and Potential Enhancement	Within 5 years of WHMP Implementation	2 hours per ac (0.4 ha) time is accounted for in Old-growth	0	\$0.00
Develop a Schedule for Implementing Habitat Enhancement Actions in Old-growth Stands and Mature Stands	Within 1 year of Completing Mature and Old-growth Stands Evaluations	20 hours	0	\$0.00
Complete Bald Eagle Management Plan	Within 3 years of WHMP Implementation	80 hours	0	\$0.00
Revise Bald Eagle Management Plan to include new nest and roost sites	As Needed Within 1 Year of Discovery	10 hours	10	\$936.80
Review and Update Industry Standards for Avian Protection from Power lines	Annually	2 hours	2	\$187.36
Labor rate per hour				\$93.68
Total Labor			220	\$20,609.60
Materials				
Helicopter flight \$8000 per flight 2 flights per year				\$14,500.00
Other				\$0.00
Total Materials				\$14,500.00
Total Labor and Materials				\$35,109.60

Public Access Budget

**License Year 10
Calendar Year 2018**

Management Actions	Frequency	Estimated Effort	Hours	Cost
Initial Road Evaluation	Within 5 years of Wildlife Habitat Management Plan Implementation	2.0 hour per mile of road	0	\$0.00
Initial Road Evaluation on Newly Acquired Lands	Within 1 year of acquiring lands	2.0 hour per mile of road	0	\$0.00
Road Closure Inspection	Annually	60 hours	40	\$3,747.20
Initial Trail Evaluation	Within 5 years of Wildlife Habitat Management Plan Implementation	16 hours	0	\$0.00
Trail Inspection	Annually	12 hours	12	\$1,124.16
Initial evaluations of Dispersed Shoreline Campsites	Within 1 year of receiving a new license	50 hours	0	\$0.00
Site Pioneering Monitoring	Annually	10 hours	0	\$0.00
Site Creep Evaluation	Every 4 years	40 hours	16	\$1,498.88
Controlling unauthorized motorized vehicle use	Optional	5 hours per site	30	\$2,810.40
Visual Screen	Optional	4 hours per site	0	\$0.00
Road Construction	Optional	8 hours per site	8	\$749.44
Labor rate per hour				\$93.68
Total Labor			106	\$9,930.08
Materials				
Exclosures (\$200 per exclosure)				\$0.00
Plantings (\$50 per planting)				\$0.00
Signs (\$300 per 100 vinyl purchase every 3 years)				\$0.00
Heavy Equipment Rate (\$200 per hour)				\$0.00
Road Barriers (blocks, rocks, etc)				\$3,000.00
Other				\$0.00
Total Materials				\$3,000.00
Total Labor and Materials				\$12,930.08

Monitoring Budget

License Year 10
Calendar Year 2018

Management Action	Frequency	Estimated Effort	Hours	Cost
Year 17 Habitat Evaluation Procedure	Target Year 17	estimated 4 hours per plot plus a total 100 hours for analysis	0	\$0.00
Newly Acquired Lands	Estimated to be completed by year 6	estimated 4 hours per plot plus a total 25 hours for analysis	0	\$0.00
Modify the Goal and Objectives	Optional	10 hours	0	\$0.00
Revise the Wildlife Habitat Management Plan	Optional	10 hours	0	\$0.00
RMEF enclosure installation and monitoring	Optional	80 hours for monitoring and write-up	80	\$7,494.40
Mink Habitat Evaluation	Optional	200 hours	0	\$0.00
Larch Mountain Salamander	Optional	100 hours	0	\$0.00
Labor rate per hour				\$93.68
Total Labor			0	\$7,494.40
Materials				
Exclosures				\$0.00
Total Materials				\$0.00
Total Labor and Materials				\$7,494.40

APPENDIX C
TERRESTRIAL COORDINATION COMMITTEE 2018
ANNUAL PLAN CONSULTATION RECORD

FINAL Meeting Notes
Lewis River License Implementation
Terrestrial Coordination Committee (TCC) Meeting
February 7, 2018
Merwin Hydro Control Center

TCC Participants Present: (8)

Bill Richardson, RMEF
 Kendel Emmerson, PacifiCorp
 Summer Peterman, PacifiCorp
 Kim McCune, PacifiCorp
 Amanda Froberg, Cowlitz PUD
 Peggy Miller, WDFW
 Eric Holman, WDFW
 Erik White, Cowlitz Indian Tribe

Guest (1)

Carly Wickham, WDFW

Calendar:

March 14, 2017	TCC Meeting	Woodland Police Dept.
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Assignments from February 7, 2018	Status
Froberg: Schedule with the TCC to attend the Devil's Backbone planning meeting; May 2018.	

Assignments from October 11, 2017	Status
Emmerson: To develop a hunting access map for PacifiCorp website that shows closed or restricted hunting areas, roads, and gates.	In progress

Assignments from June 14, 2017	Status
Reynolds: Schedule a conference call with appropriate parties specific to the TNC Conservation Easement.	In progress

Assignments from April 12, 2017	Status
Emmerson/McCune: Contact PacifiCorp's properties department to discuss further TNC detail and report to the TCC at the May meeting.	In progress

Parking Lot Items	Status
WDFW: In regards to 10.3.3, Matching Funds Eagle Island Project the TCC would like a 1-2-page progress report of project status with photos after the grant term expires (12-31-2017).	Provided status update as of 11/8/17

Kendel Emmerson (PacifiCorp) called the meeting to order at 9:05am. Emmerson reviewed the agenda and asked the TCC if there were any changes/additions. Emmerson will add an update on

Unit 1 – Leave Trees and the National Hydro Association’s Outstanding Stewards of Water award application.

The TCC reviewed the December 13, 2017 meeting notes and no changes were requested. The meeting notes were approved without change at 9:15 a.m.

Public Comment Opportunity:

None

Cowlitz PUD Review of 2018 Wildlife Habitat Management Plan (WHMP)

Amanda Froberg (Cowlitz PUD) emailed an electronic copy of the Swift No. 2 WHMP 2018 (License Year 10) Annual Plan February 5, 2018 for a 30-day review and comment period. Comments are due on or before March 9, 2018. PacifiCorp has posted the draft document to its Lewis River website for viewing at the following link:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/ar/PUD_2018WHMP_Draft.pdf

Froberg informed the TCC attendees that Appendix C of the document provides the detail for a proposed *Devil’s Backbone Patch Cut Implementation Plan*, which provides detail of the WHMP management goal, objectives, cost and schedule.

Number and size of patches	One, 5-acre patch.
Cost	Total Logging Cost = \$55,360 Sale Prep, and Admin Cost = \$9,000 Post-harvest documentation = \$3,000 Total = \$67,360 (see Task Description, below)
Schedule	Identify and lay out patches in summer, 2018. Fell trees, limb, and pile slash, and create brush piles in early fall (October) 2019 to avoid the northern spotted owl and northern goshawk breeding/fledging seasons. Burn slash piles in winter (December) 2019 when fire hazard is low.

In addition, Froberg reviewed Table 2.1-1: Anticipated 2018 Annual Plan Budget in 2018 dollars.

Table 2.1-1. Anticipated 2018 (Year 10) Annual Plan Budget (2018 dollars).

2018 Budget		
Dec 26, 2017 Annual Payment	\$18,814	
2017 Carry Forward	\$ 19,245	Does not include 2015 - 2017 Timber Fund
Interest on 2017 Ending Balance	\$ 1,581	
Total 2018 Budget	\$ 39,640	
WHMP Activity	Estimated 2018 Cost	Assumptions
Administration	\$5,000	Includes general oversight and accounting, preparing Annual Report and Annual Plan, contracting, maintaining project files, participating in TCC meetings related to implementing Cowlitz PUD's WHMP.
Annual inspection to monitor and manage public access	\$0	Included in invasive plant surveys.
Invasive plant surveys at high priority sites	\$3,850	Includes labor and mileage. 3% increase over 2017.
Invasive plant species control	\$5,000	Includes 2 herbicide applications in 2018.
2018 Timber Management Fund	\$6,585	Defer at least 35% of the annual payment (not including any other carry forward).
Planning for Devil's Backbone Patch Cut	\$9,000	Based on cost estimates in Appendix C.
Estimated cost of management activities	\$29,435	
Estimated amount remaining in 2018 budget at year end	\$10,205	Any funds not spent by year end, plus accrued interest, remain in the WHMP budget to be carried into the following year. ²
Timber Fund	Balance	
2015 -2017 Timber Fund Carry Forward	\$20,287	
2018 Timber Fund Carry Forward	\$6,585	
Total	\$26,872	
Total Carry Forward to 2019 Timber Fund + Unspent Budget	\$37,077	

² TCC members desire that any unspent monies/carry forward be designated for future timber management activities.

Froberg communicated that a planning meeting to identify and lay out patches will take place summer of 2018 and the TCC is welcome to attend.

PacifiCorp Review of 2017 Wildlife Habitat Management Report (WHMP)

Kim McCune (PacifiCorp) emailed an electronic copy of the Lewis River WHMP 2017 Annual Report on February 7, 2018 for a 30-day review and comment period. PacifiCorp has posted the draft annual report to its Lewis River website for viewing at the following link:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/ar/2017_WHMP_AR_Draft_Web.pdf

Emmerson provided a cursory review of the following:

4.0 Wetland Habitat Management - The Himalayan blackberry in Management Unit 25 started to be managed in 2017. The area between Swift Pond and road 2510 was treated in August. Three new wetlands were added to the WHMP in 2017. Assessment of Palustrine Forested Wetlands shrub cover was completed.

5.0 Riparian – Himalayan blackberry was treated within stream buffers of timber harvest areas, riparian buffers were measured and flagged. In addition, three snags were created to replace the loss of larger snag.

6.0 Shrubland – PacifiCorp conducted a review of the effectiveness of shrubland management actions in 2017. The results are detailed in Appendix E of the Annual Report. In addition, red alder sapling and poles were removed to make a wildlife passage and open up the canopy that has shaded the forest floor.

7.0 Farmland – Spring mowing was conducted May 2017 and summer mowing August 2017 in addition to conducting a Savannah sparrow survey in Hamm Fields using an Area Search method.

8.0 Orchards – Pruning activities occurred at Upper and Lower Hanley Curry in addition to treating for common periwinkle, thistle, scotch broom, Himalayan blackberry and red alder, where appropriate.

9.0 Transmission Line Right-of-Way – All invasive plant species control work was completed by applying herbicide at sites identified below.

Towers	Planned	Actual	Target Species						
			Invasive Plant Species					Seedlings	
			Scotch Broom	Himalayan Blackberry	Canada thistle	Bracken fern	Other	Douglas-fir	Red Alder
Cougar Line									
1/3-5/3	Yes	Yes	X	X		X			
Lake Line									
*	*	*	*	*	*	*	*	*	*
Speelyai Line									
3/18-5/18	Yes	Yes	X	X					
8/12-4/13	Yes	No	X	X	X	X			
1/5-1/6	Yes	No				X			
4/14-8/14	No	Yes		X		X	X		
2/19-PL	Yes	Yes	X						

10.0 Unique Area/Habitat – Annual oak stand inspections occurred September 21 – December 5, 2017. By recommendation of the TCC, twenty-four new oak trees were planted east of the newly made Osprey Meadow.

11.0 Forestland Habitat – Emmerson informed the TCC attendees that Appendix G of the Annual Report was revised since the draft report and appendices was provided to the TCC (see **Attachment A**) last week. A substantial effort was completed in 2017 to improve the Cover: Forage Model by

developing criteria to model manageable acres and developing a differentiation for commercially thinned THAs as cover or forage. Appendix G provides a copy of the cover:forage model. The following is description of the substantive revisions.

The manageable acres are the total amount of acres within a manageable unit (MU) that are available to manage for cover:forage. This is calculated by taking the total acres in a MU and subtracting acres of that are classified as Reserved Habitat Acres, Restricted Acres, No Access and Marginal Access. Previously the No Access and Marginal access areas were determined by evaluating maps and updated annually, therefore these terms were modeled using the following definitions:

- Reserved Habitat Acres = Vegetation Cover Types (VCTs) that are not suitable for forestry management or timber harvest are not allowed, such as Oak Woodland (OW) and Old-growth (OG).
- Restricted Acres = Acres within WHMP buffers (e.g. riparian, wetlands, shoreline, raptor nest, bald eagle roosting staging areas), Priority Mature Stand, or Conservation Covenants.
- No Access = Areas that are inaccessible due to location, size of suitable acres, and slope.
- Suitable acres are > 1000 feet from PacifiCorp-owned road (this does not include orphaned or abandoned roads, or secondary highways) will be considered to have No Access. Suitable Acres that < 2.0 acres in size and > 1000 feet from the nearest suitable acres will be classified as No Access. Suitable acres that >60% slope will be classified as No Access.
- Marginal Access = this include all areas that are difficult to access because the suitable acres are between 40-60% slope and/or >500 feet from a PacifiCorp-owned road, not including orphaned or abandoned roads, or secondary highway.

All commercial thinning that are less than 5 years from harvest year will provide forage and commercial thinning that is more than 5 years from harvest year will be identified as cover. This applies to Mature Conifer- thinned (M-t), Mid-Successional Conifer-thinned (MS-t), Upland Mix-thinned (UM-t), or Pole Conifer-thinned (P-t).

Please see the 2017 Annual Report at the link provided above (Pages 20 – 45) for further detail.

TCC comments are due on or before March 9, 2018.

PacifiCorp Review of 2018 Wildlife Habitat Management Plan (WHMP)

Kim McCune (PacifiCorp) emailed an electronic copy of the Lewis River WHMP 2018 Annual Plan on February 7, 2018 for a 30-day review and comment period. PacifiCorp has posted the draft annual plan to its Lewis River website for viewing at the following link:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/ar/2018_WHMPAnnualPlanDraft_web.pdf

Emmerson provided a cursory review of the following:

9.0 Farmland – Regularly schedule annual management actions will occur in 2018 and will include restoring Lower Hanley-Curry Meadow.

13.0 Forestland Habitat – In 2018 a total of approximately 62 acres are scheduled for clear-cut and 16 acres of commercial thinning in Units 15 & 34.

15.0 Raptor Site - Aerial bald eagle and osprey nest surveys will occur twice in 2018. Unit 34 timber harvest will have an intensive northern goshawk survey conducted in June 2018.

16.0 Public Access – PacifiCorp anticipates having to control at least two sites for unauthorized motorized vehicle access. Additional sites for gating or blocking roads will be selected based on the annual surveys or as needed depending on severity of trespass and feasibility.

TCC comments are due on or before March 9, 2018.

<Break 10:20am>

<Reconvene 10:30am>

2017 Terrestrial Fund Year-end Accounting

Kim McCune (PacifiCorp) providing the following accounting as of December 31, 2017.

Lewis River License Implementation					
Lewis River WHMP Fund (Fee Simple Lands)					
Section 10.8.2					
Release Date	Funds Received	Expense	Interest	Balance	Notes
12/31/2016				(13,444.29)	
12/31/2017	546,203.21	(464,798.61)	-	990.91	Expenditure for 2017
		Total Spent to Date:		\$(3,711,485.55)	
		Balance Remaining:		\$ 547,194.12	

Lewis River License Implementation					
Lewis River WHMP Fund (Conservation Easement Lands)					
Section 10.8.2					
Release Date	Funds Received	Funds Expended	Balance	Notes	
12/31/2016			\$ -		
12/31/2017	\$ 283.00	\$ (278.68)	\$ -	Expenditure for 2017	
		Total Spent to Date:	\$ (2,126.94)		
		Balance Remaining:	\$ 283.00		

Lewis River License Implementation					
Lewis River LWD Fund - Haul					
Section 7.1.1					
Release Date	Funds Received	Funds Dispersed	Balance	Notes	
4/20/2016			\$ 1,013.42		
4/20/2017	\$ -	\$ (3,986.58)	\$ 1,013.42		
9/11/2017	\$ -	\$ (3,000.00)	\$ 13.42	Chilton Logging (Morris Trucking)	
		Total Spent to Date:	\$ (19,986.58)		
		Balance Remaining:	\$ 13.42		

Lewis River License Implementation					
Swift No. 1 & Swift No. 2 Land and Habitat Protection Fund					
Section 10.2, 10.2.1					
Release Date	Funds Received	Expense	Interest	Balance	Notes
12/26/2017	\$ 655,182.00		\$ 103,967.90	\$ 1,880,380.65	
		Total Spent to Date:		\$(7,929,974.69)	
		Balance Remaining:		\$ 1,880,386.65	

10.8.5.5 Mitigation Impacts to Wildlife Fund

McCune informed that mitigation funds (see table below) from the Cowlitz PUD Interconnect project are available for TCC use at any time. It is the preference of the TCC to use the funds in 2018.

Lewis River License Implementation Mitigation for Impacts on Wildlife Section 10.8.5.5					Funding Start Date: 11/1/2016
Totals:					
	\$ 10,172.00	\$ -	\$ -	\$ 10,172.00	
Release Date	Funds Received	Expense	No Interest	Balance	Notes
11/1/16	\$ 10,172.00	\$ -	\$ -	\$ 10,172.00	WO ILR-IMPWILD
12/31/17	\$ -	\$ -	\$ -	\$ 10,172.00	Once expenditure is made JV to 10057444, ROW/Permitting-Trans Line (DA)
	\$ -	\$ -	\$ -		
	\$ -	\$ -	\$ -		

Land Acquisition Purchase and Sale Agreement Update (**CONFIDENTIAL**)

McCune reported the current balance of land acquisition funds as of 12/31/2017. Additional detail around this topic is considered confidential and proprietary and not for public viewing.

Outstanding Stewards of America’s Water Award Application

Emmerson informed the TCC attendees that PacifiCorp has submitted a request for the award and may have a reply later this month.

Unit 1 – DNR spoke with PacifiCorp’s transmission & distribution staff and they need to dig a road down 8’. This means a huge cultural survey is needed. In addition, DNR needs to re-distribute the soil along the transmission line. PacifiCorp prefers DNR harden the road so it can be used in perpetuity. Too many trees were left along the transmission line so ten trees need to be topped or felled. Douglas-fir, Cherry, red alder and bigleaf maple are among the trees too close to the transmission line.

<11:15am Meeting Adjourned>

Agenda items for March 14, 2018

- Review February 7, 2018 Meeting Notes
- Review ACC/TCC 2017 Annual Report
- Land Acquisition Update (**Confidential**)
- Unit 1 Field Tour
- Study/Work Product Updates

Next Scheduled Meeting

March 14, 2018
Location: Woodland Police Dept.

Attachments:

- February 7, 2018 Meeting Agenda
- **Attachment A** – Revised Cover:Forage Model and corresponding map

These are draft-meeting notes and have not received TCC approval. These notes were submitted to TCC members for review on March 21, 2018. These notes will be finalized after the submittal of this Plan at the following TCC meeting scheduled for April 11, 2018.

DRAFT Meeting Notes
Lewis River License Implementation
Terrestrial Coordination Committee (TCC) Meeting
March 14, 2018
Woodland Police Station & Field Tour

TCC Participants Present: (9)

Bill Richardson, RMEF
 Ray Croswell, RMEF
 Kendel Emmerson, PacifiCorp
 Summer Peterman, PacifiCorp
 Kim McCune, PacifiCorp
 Amanda Froberg, Cowlitz PUD
 Peggy Miller, WDFW
 Eric Holman, WDFW
 Erik White, Cowlitz Indian Tribe

Calendar:

April 11, 2017	TCC Meeting & Tour	Park and Ride Parking Lot Woodland, WA
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Assignments from March 14, 2018	Status
Emmerson: Create high-country model of big elk use areas and a 10-15 year plan for silviculture management for TCC review.	
Emmerson: Get back to PacifiCorp staff and review use of the Cougar quarry as a better site for the ash disposal.	

Assignments from February 7, 2018	Status
Froberg: Schedule with the TCC to attend the Devil’s Backbone planning meeting; May 2018.	Complete

Assignments from October 11, 2017	Status
Emmerson: To develop a hunting access map for PacifiCorp website that shows closed or restricted hunting areas, roads, and gates.	In progress

Parking Lot Items	Status
WDFW: In regards to 10.3.3, Matching Funds Eagle Island Project the TCC would like a 1-2-page progress report of project status with photos after the grant term expires (12-31-2017).	Provided status update as of 11/8/17

Emmerson/McCune: Contact PacifiCorp's properties department to discuss further TNC detail and report to the TCC at the May meeting.	In progress
Reynolds: Schedule a conference call with appropriate parties specific to the TNC Conservation Easement.	In progress

Kendel Emmerson (PacifiCorp) called the meeting to order at 9:00am. Emmerson reviewed the agenda and asked the TCC if there were any changes/additions. Emmerson will add an update on the Unit 36 ash deposit area and the WHMP 2018 Plan comments.

The TCC reviewed the February 7, 2018 meeting notes and no changes were requested. The meeting notes are approved without change at 9:05 a.m.

Public Comment Opportunity:

None

Eagle Cliff Trail; License Amendment Application

Kim McCune (PacifiCorp) communicated to the ACC attendees that PacifiCorp prepared an amendment application to the Lewis River license that would eliminate FERC license Article 406, a provision requiring PacifiCorp to plan and construct the Eagle Cliff Park Trail. Below is a synopsis of the details the ACC, TCC and Settlement Agreement Authorized Representatives received via email March 9, 2018 for a 60-day review and comment period. Comments will be due by close of business May 8, 2018. PacifiCorp provided both a PDF of the draft Amendment and the following link to the Lewis River website:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/sad/03092018_Swift_1_Lic_Amend_DRAFT.pdf

In accordance with Article 406 PacifiCorp was to pursue building a trail at Eagle Cliff that connects with a larger trail system.

- PacifiCorp completed a feasibility study that identified three trail alternatives.
- Concerns expressed by the agencies (specifically USFW and WDFW) was that the trail was located by a major bull trout holding area, increased fishing pressure from the public, and disturbance to other wildlife. Consensus was not to build the trail.
- In response to the information, FERC noted PacifiCorp should seek a formal amendment to the License removing this specific license article.
- PacifiCorp prepared an amendment application and provided it to parties to the Lewis River Settlement Agreement for review and input. **No comment back to PacifiCorp means approval to proceed with the application to remove the requirement from the License.**

Review potential TCC Meeting Schedule through June 2018

- April 11, 2018 – Tour Unit 14 and proposed harvest areas in Unit 15 to include a potential additional harvest not yet called out in Unit 15. Joe Berry (Chilton Logging) will be attending to address any TCC questions.
- May 9, 2018 - Tour Devil's Backbone and Unit 34 and other high country sites, if weather permits.

- June 13, 2018 - Tour Units 7 & 8.

Discuss Additional Harvest Area in Unit 15

Emmerson informed the TCC attendees that PacifiCorp would like to propose an additional harvest in Unit 15 (see [Attachment A](#)). HIGSLY 1 (11.80ac) is over-stocked and not thinned and HIGSLY 2 is a 6.19ac alder stand. If we complete the harvest in all of Unit 15, we will be at our recommended cover forage ratio for Management Unit 15. In addition, there is massive ATV trespass, primarily the landowner to the East. Salmon berry and sword fern make up the understory. If Higsly 1 is not thinned, it will remain as extremely tall skinny trees, but if we do a light commercial thinning we can add some additional diameter and provide some sunlight to the forest floor. Goshawk surveys were conducted in 2017 and be easily completed in 2018. Joe Berry (Chilton Logging) will flag potential thinning options within the riparian buffers, so the TCC can see onsite. PacifiCorp will not be logging to the property line as we are trying to prevent further trespass access. Slash and rock will be added at the trespass areas. Old trails will be removed so new trails can be easily identified.

The TCC attendees thought Unit 15 appeared to be functioning habitat and may want to use the WHMP funds for other areas and leave Unit 15 as is for now. More discussion will take place during the April 11, 2018 TCC tour of Unit 15 before a decision is made.

Unit 36 Ash Deposit – [Attachment B](#)

Since Mt. St. Helens eruption PacifiCorp has pulled massive debris from the Swift Reservoir each year. All logs are removed and sorted in a fenced area near Swift Reservoir boat launch. Each year there is a massive pile of wood debris that is not used for habitat, merchantable timber, or hog fuel that needs to be burned in the winter. This has occurred for about 10 years and the result is several feet of ash that is making the area inoperable. All of this ash needs to be removed and it is estimated that it would be 1500 yd³ or 150 truckloads of ash debris.

To reduce the haul cost PacifiCorp is searching for a company-owned area, which is in close proximity to deposit the ash. The closest potential site is an open area in Unit 36 just south of the FS 90 road (see attachment B). The public has used this area for camping and a dumpsite in the past, until PacifiCorp posted camping prohibited signs and placed slash at the opening to block vehicle access. The total area is approximately 0.3 acres and if used as the deposit site, is expected to be covered with 4 feet of ash debris. This site is located within 300 feet of Marble Creek, which is within the WHMP buffer for the fish-bearing stream, therefore a small 1-2 foot berm would be created with onsite materials to prevent runoff, and the pile would be contoured to natural slope and seeded or planted with trees. A few red alder trees would need to be removed some within the stream buffer. The work would likely occur in April or May. PacifiCorp is coordinating with the Washington Department of Ecology, but there is no clear guidance on ash disposal. WDOE would like to comment once PacifiCorp proposes a location.

TCC concerns and recommendations were around run-off and leaching. It was suggested that a geotechnical survey and a perk test be completed to determine the leaching potential. TCC requested to know what would be the difference in cost between trucking to this location versus an offsite disposal area. The WHMP lands primary purpose is to provide habitat, not disposal areas to reduce costs. Emmerson mentioned a second option is Cougar Quarry, which is already exposed site and not within a stream buffer.

Cowlitz PUD Review of 2018 Wildlife Habitat Management Plan (WHMP)

Amanda Froberg (Cowlitz PUD) requested clarification from the TCC as to their long-term goals and objectives of the Devil's Backbone Patch Cut and how to spend the WHMP funds going forward. The TCC agreed to the following:

- Manage conifers to minimize regeneration and encroachment
- Invasive species control
- Unmanaged style of meadows
- Keep deferring 35% of the annual payment to the timber management fund
- Maintain opening and rebuild timber management fund for future management actions

PacifiCorp Review of 2018 Wildlife Habitat Management Plan (WHMP)

Emmerson informed the TCC attendees that comments were received from WDFW and John Clapp (Citizens at-Large), see [Attachment C](#).

WDFW and John Clapp concurs including a substantial amount of deciduous trees in the mix. In addition, as a long term goal to strive for a broader application of deciduous trees in the species mix to be planted at lower elevation sites near Merwin and Yale. This would increase stand diversity at the landscape scale. The TCC recommended considering red alder, cherry, bigleaf maple and cascara. Emmerson noted that this is possible but important to note that the container seedling is approximately \$3.00 each as compared to .65 for conifer plug. Other comments and considerations included:

- Now that we have acquired over hundreds of acres recently harvested lands what will this mean in 8-15 years when these areas need to be pre-commercially thinned and pruned how will that effect our WHMP budget. Emmerson remarked that she has considered this and needs to identify which areas are suitable vs less suitable elk habitat. WHMP forestry habitat management will be applied to the more suitable elk areas and less suitable areas will managed with more traditional forestry practices. This will something to discuss on site in the May meeting.
- There will be more need for commercial thinning around Merwin and Yale as the clear cuts of the 80's mature. This is generally only cost-effective if combined with clear-cut harvest in the adjacent area. How can meet this objective and meet cover:forage recommendations.

Land Acquisition Update (CONFIDENTIAL)

- Appraisal is needed
- Landowner permission was granted to enter property
- Start staging in August 2018 for appraisal this Fall
- Scope of work is needed

Additional detail around this topic is considered confidential and proprietary and not for public viewing.

National Hydropower Associations

PacifiCorp received an Outstanding Stewards of American Water's (OSAW) award based on the collaborative efforts with stakeholders to complete the 2017 acquisition.

Agenda items for April 11, 2018

- Review March 14, 2018 Meeting Notes
- Land Acquisition Update (**Confidential**)
- Units 14 & 15 Field Tour
- Study/Work Product Updates

Next Scheduled Meeting

April 11, 2018
Location: Park and Ride Parking Lot Woodland, WA

Attachments:

- March 14, 2018 Meeting Agenda
- **Attachment A** – WHMP Unit 15 Additional Proposed Harvest Areas (HIGSLY 1 & 2)
- **Attachment B** – Images of Ash Deposit Area (approx.. .03 acres)
- **Attachment C** – WHMP Unit 1 2017 Complete Harvest Areas
- **Attachment D** – 2018 Annual Plan TCC comments

Tour Safety Briefing

Emmerson informed the TCC tour attendees that we are headed up to Unit 1 2017 clear-cut and commercial thin. There could be timber cutting on site, there are tripping hazards, and the forest roads are very rough.

Unit 1 Field Tour 10:45am – pictures included at the end of these meeting notes

Depart for Unit 1 (Unit next to HCC on Cowlitz County side) to review 2017 timber harvest areas and proposed Road Use Permit areas by the DNR (**Attachment D**). Unit 1 cover:forage ratio goal is 50:50 and prior to the timber harvest the cover forage was 68:32 and currently 57:43.

Skull Candy 170112CC (23.9 acres)

- Prior vegetation cover type was about 11 acres of mid-successional conifer thinned that was thinned in the 1980's and 13.5 acres of mid-successional conifer.
- 187 leave trees total and recently topped 14
- Special management areas included hardwoods, shrubs and placed to break up line-of-sight
- Slash to block ATV trespass.

Beats 170111CC (4.97 acres)

- Prior vegetation cover type was mid-successional conifer
- Laminated root rot in the northwest corner. This area will be planted with pines hardwoods and cedar.
- Snag tree removal for access road.

Bose 170107 CT (7.24 acres)

- 1984 clear cut timber harvest
- Variable density thinning to 30-50% with an average of 40%
- TPA 230 to 55
- Retained a small shrub area



Unit 1 – Proposed DNR Access Road



Unit 1 – Skull Candy Completed Harvest Area



Unit 1 – Skull Candy Completed Harvest Area



Unit 1 – Wall of Slash



Unit 1 – Snag Tree



Unit 1 – Beats Clearcut



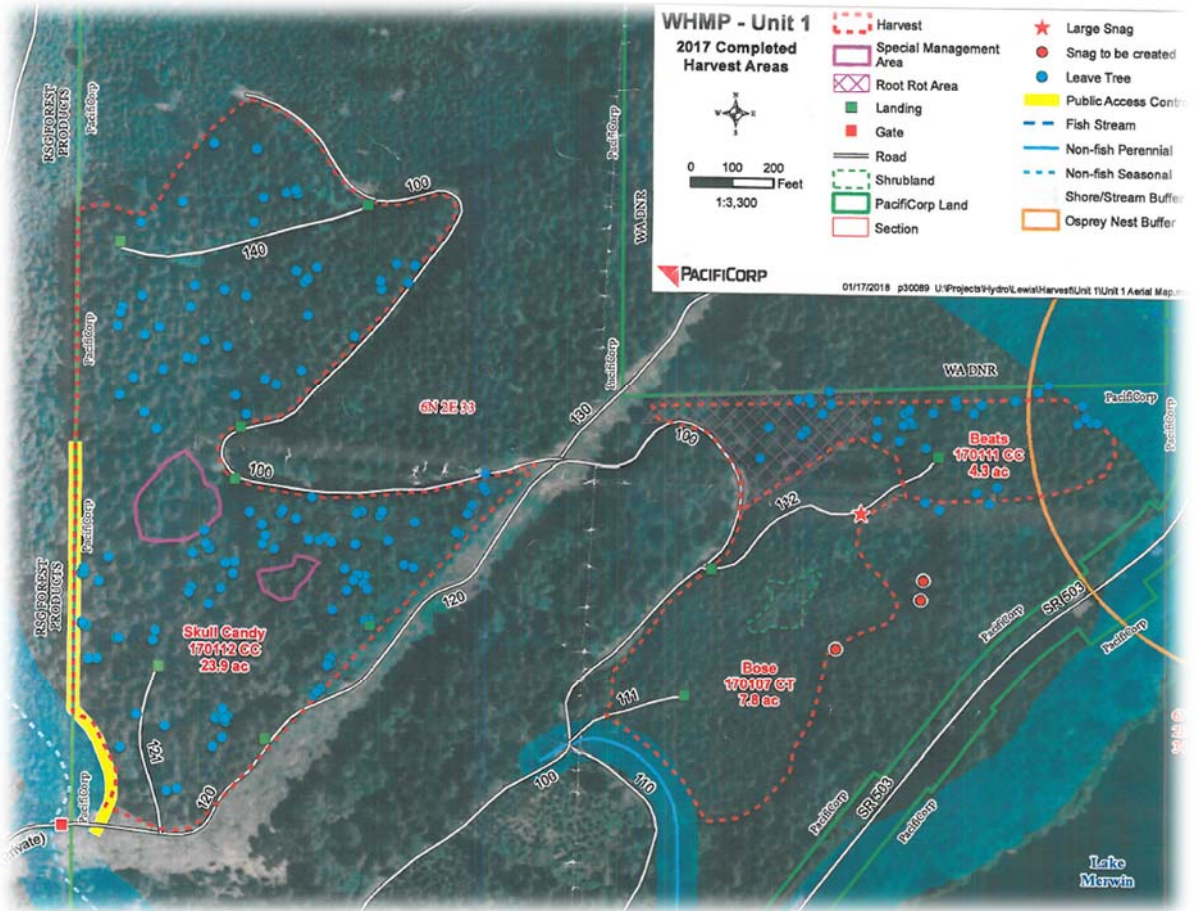
Unit 1 – Beats Clearcut



Unit 1 – Road through Bose Thin



Unit 1 –Bose Thin



Responses to Comments Received on Draft Lewis River Wildlife Habitat Management Plan 2018 Annual Plan

Commenter	Comment Number	Location	Comment	Response
Neil Chartier Forest Service R6, Gifford Pinchot NF, Mt Adams Ranger District	1	Wetland Management Section 6.2 Page 4 Paragraph 4	Will herbicide spraying be broadcast or selective (which is recommended if possible)? How will you determine whether Glyphosate or Imazapyr is used? In working with Oregon spotted frogs, I know the US Fish and Wildlife Service is recommends Imazapyr.	Broadcast herbicide application is rarely used on WHMP lands. The paragraph has been modified to read " The area will be sprayed with either aquatic approved Glyphosate or Imazapyr after the plants have approximately 2 feet of regrowth, which is expected to be around mid-July. The area will be sprayed using backpack sprayers so that only the reed canarygrass infested areas will be treated. " There are no known Oregon spotted frogs on WHMP lands. Type of aquatic approved herbicide is decided by the contractor at the time of application. In addition, treatments are in July and September, when the ponds are typically dry and not occupied with amphibians.
Neil Chartier Forest Service R6, Gifford Pinchot NF, Mt Adams Ranger District	2	Wetland Management Section 6.2 Page 5 Paragraph 7	Why the time differences in the application of Glyphosate and Imazapyr?	This is based on King County best management practices for yellow flag iris (King County 2009). These practices were selected because prior control methods were not as effective as desired. Herbicide timing and effectiveness is mostly likely due to plant growth stage and how it effectively kills the plant (e.g. prevents growth or prevents nutrient cycle).
Neil Chartier Forest Service R6, Gifford Pinchot NF, Mt Adams Ranger District	3	Farmland, Idle Areas, and Meadow Section 9.1 Page 6 Paragraph 1	Why is the information re: nest phenology needed for Savannah Sparrow needed...assuming because it's a Farmland, Meadow, and Idle Areas Habitat Evaluation Procedure species? If yes, should state that.	The sentence was modified to identify that Savannah Sparrows are Habitat Evaluation Procedures species and nest phenology was change to nest habitat use. The sentence reads as follows: "Most of the fields that are actively managed in the spring will be surveyed for Savannah Sparrow (<i>Passerculus sandwichensis</i>), a Habitat Evaluation Procedure Species for Farmlands, Meadows and Idle Areas, between April 15 and May 31 to determine occupancy and gain more insight on nest habitat use."
John Clapp Citizen at Large	4	Forestland Management Section 13.2.8 Page 18 Paragraph 2	in reading over the response from WDFW (see comment 9 below), I would like to add that I do agree with adding more of the deciduous trees into the mix, and the reference that our goals are the same in that we are looking for long term native wildlife habitat. other than that, I have been very happy with the management of terrestrial lands	In 2018 the WHMP will be planted at an average of 250 trees per acres, which is only 60 trees above the required reforestation amount (WAC 222-34-010). The 60 additional trees is allow for any seedling mortality and to avoid interplanting to remain in compliance with WAC 222-34-010. An onsite tour of Middle Earth timber harvest has been scheduled for April 11, 2018 with the Terrestrial Coordination Committee. This area may be considered for planting hardwoods species and the number and species will be determined by availability. The 2019 tree planting plan will be provided in 2019 Annual Plan, therefore no changes are required for the 2018 Annual Plan.

Commenter	Comment Number	Location	Comment	Response
Peggy Miller Washington Department of Fish and Wildlife	5	Forestland Management Section 13.2.1 Page 11 Paragraph 2	The text under the Management Unit 15, second paragraph reads Management Unit “1” instead of Management Unit “15”.	This error was corrected.
Peggy Miller Washington Department of Fish and Wildlife	6	Forestland Management Section 13.2.1 Page 13 Table 2	Table 2 appears to be missing footnotes 3, 4, and 5	The superscripts of 3,4, and 5 were removed from the table.
Peggy Miller Washington Department of Fish and Wildlife	7	Forestland Management Section 13.2.2 Page 16 Paragraph 1 and 2	In the 2019 Forest Planning section, the first sentence should read <i>Forestland planning in “2018” will continue pre-cut surveys for both the 2019 proposed forest plan areas</i> . The sentence continues with <i>“and developing forest plans for 9and beyond (Table 4)”</i> . I am not sure what year should be inserted at “9and”. In addition, the last sentence in the next paragraph reads <i>“As a result the proposed timber harvest plan for 5 years will be reviewed and updated in 2018”</i> . It is unclear if this is a static 5 year plan or a 5 year rolling outlook. Adding dates or changing the sentence to “next 5 years” would clarify the sentence.	The first sentence of paragraph 1 was modified as follows: "Forestland planning in 2018 will continue pre-cut surveys for both the 2018 and 2019 proposed forest plan areas and developing forest plans for 2020 and beyond (Table 4)." The last sentence of paragraph 2 was modified as follows: "As a result the proposed 5-year timber harvest plan will be reviewed and updated in 2018."
Peggy Miller Washington Department of Fish and Wildlife	8	Forestland Management Section 13.2.8 Page 18 Paragraph 1	In the Planting and Maintenance section, the first sentence references “Table XX”. Please identify the appropriate table.	This error was corrected.
Peggy Miller Washington Department of Fish and Wildlife	9	Forestland Management Section 13.2.8 Page 18 Paragraph 2	Regarding the species mix of Management Units 15 (Mullet) and 14 (Middle Earth) to be planted in 2019, WDFW recommends including a substantial amount of deciduous trees in the mix. In addition, as a long term goal, WDFW recommends to striving for a broader application of deciduous trees in the species mix to be planted at lower elevation sites near Merwin and Yale. This would increase stand diversity at the landscape scale. In general, WDFW suggests modifying the planting prescription to plant fewer trees per acre. On average 300 trees are planted per acre then pre-commercially thinned or pruned around 6 to 8 years later. Although planting fewer trees per acre would not account for potential seedling mortality, it would extend the time between planting and the need for thinning which in turn would save money for other activities. The long term goal for the WHMP lands is to protect and restore wildlife habitat. Planting fewer trees per acre will meet the goal while still providing harvestable trees. In addition, with seedling mortality, the stand is likely to mimic a natural stands with clumping and non-uniform distances between trees	In 2018 the WHMP will be planted at an average of 250 trees per acres, which is only 60 trees above the required reforestation amount (WAC 222-34-010). The 60 additional trees is allow for any seedling mortality and to avoid interplanting to remain in compliance with WAC 222-34-010. An onsite tour of Middle Earth timber harvest has been scheduled for April 11, 2018 with the Terrestrial Coordination Committee. This area may be considered fro planting hardwoods species and the number and species will be determined by availability. The 2019 tree planting plan will be provided in 2019 Annual Plan, therefore no changes are required for the 2018 Annual Plan.

Commenter	Comment Number	Location	Comment	Response
Peggy Miller Washington Department of Fish and Wildlife	10	Forestland Management Section 13.2.8 Page 22 Table 8	After reviewing the proposed acreage for pre-commercial thinning or pruning in the text and Table 8, it became apparent that the total acres for the priority 3 and 4 activities is not aligned in the text. The total acres in the table for this group is 183 acres. Even though the acreage for the priority 3 and 4 pre-commercial thinning, hack and squirt, and pruning is only 183 acres, it may be prudent to prioritize those efforts, especially in the newly acquired lands above Swift Reservoir, instead of completing another task. If these areas need thinning now then perhaps the TCC should discuss dropping a timber harvest area or meadow restoration (soil testing, fertilization etc.) in favor of completing the thinning during 2018 in all of the areas that need it. If Management Unit 15 harvest activities were deferred then that should free up funds from harvest set up, and monitoring, planting, invasive plant treatment and goshawk surveys. WDFW believes that completing the needed thinning is a sound management decision because the stands above Swift are dense and badly need thinning while Management Unit 15 is a forest that can certainly wait a year or two until opening the canopy.	The text was corrected to 561.7 acres of high priority (P1) and the P3 and P4 pr
Peggy Miller Washington Department of Fish and Wildlife	11	Public Access Management Section 16.2 Page 25 last paragraph	Instead of “cease and assist” in the last paragraph on the page, it likely should be “cease and desist”.	Error was corrected
Peggy Miller Washington Department of Fish and Wildlife	12	Appendix B Page 1	Administrative Budget – I was not able to deduce the reason for the color scheme in the Difference from 2017 Budget Actual Spent column. Positive and negative numbers are both red and black. In some cases red means negative/overage but that does not apply here. Please provide a color key.	Red font was to show overages and black font to show at or below budget in the last column. Errors have been corrected.

APPENDIX D
LEWIS RIVER WILDLIFE HABITAT MANAGEMENT PLAN WETLAND HABITAT
OBJECTIVE B EVALUATION, AND PLANTING AND RESTORATION PLAN

Lewis River Wildlife Habitat Management Plan Wetland Chapter Objective B Evaluation and Planting and Restoration

Wetland Name	Vegetation Cover Type	Acres by Vegetation Cover Type	Total Wetland Acres	HEP Polygon Number if applicable	# of Shrubs to be Plant determined by (Total PFO Wetland Acres / Total PFO Acres within HEP Study Segment Area) x number of shrubs for reservoir	Date Evaluated	Forestry Canopy Cover	Dominant Overstory Species	Wetland Elevation	Dominant Shrubs	Shrub Cover	Hydrology	Herbivory	Comments	Next Action	Total Number of Shrubs to Plant
BEAVER BAY WETLAND	M	0.08	40.56	573	27	11/29/2017	70%	red alder black cottonwood and western hemlock	520	Red-osier dogwood, Douglas spirea, salmonberry, and willows	50%	A mix of ponding, inundation and saturation. Sources include ground water, springs, beaver activity, and reservoir levels. Inundation is year-round	High big game use in periphery, but no it in the inundated areas. Beaver activity very high	Meets shrub criteria, Some blackberry on the peripheral on the campground side.	No action meets criteria	0
	PEM	1.19														
	PFO	16.26														
	PSS	9.52														
	PUB	2.32														
	REC	0.38														
	UD	10.09														
BORROW AREA WETLAND	PEM	2.27	3.35	NA	0	12/14/2017	50%	red alder and it appears to be declining with little to no recruitment	500	salmonberry	50%	A surface water depression wetland. Hydrology is seasonal mostly direct precipitation	High	Red alders appear to be declining so include some ash and willow in plantings	Plant in 2018 with recommended plants Oregon ash, spirea, willows, pacific ninebark, and red-osier dogwood. Ok to plant in spring.	31
	PFO	1.09														
BRIDGE WETLAND	PFO	0.82	0.82	3166	0	12/14/2017	60%	western red cedar and Oregon ash	400	Oregon ash, salmonberry	60%	A seasonally sloped-depression with direct precipitation and ground water. Some ponding but mostly saturation.	Low		No action meets criteria	0
CRESAP CAMPGROUND WETLAND	PEM	0.52	5.16	NA	0	12/14/2017	60%	western red cedar, western hemlock, and red alder. Many trees blew down within the past few years	300	salmonberry, Himalayan blackberry,	40%	Ground water sloped wetland that is mostly saturated soils and seasonal hydrology	Low	Wetland has had significant blow down so increase sunlight has changed vegetation and significant increase in Himalayan blackberry	Treat blackberry in 2018 and monitor for control effectiveness and shrub recruitment in 2019.	0
	PFO	2.44														
	PSS	2.20														
FRASIER POND	PAB	18.70	23.26	NA	0	11/30/2017	70%	red alder with pockets of Douglas-fir	900	Salmonberry	40%	Headwater with beaver activity. Source is ground water discharge (spring) and direct precipitation. Hydrology is permanent and year-round.	Moderate	Shrub % cover is good but not diverse. The ground is very hummocky. Can be planted now with Salix, ash, Hawthorne	Plant in 2018 with recommended plants spirea, willows, pacific ninebark, and red-osier dogwood. Ok to plant in spring.	84
	PEM	1.66														
	PFO	2.91														
NORTH IP POND	PAB	0.56	3.42	3130	0	12/20/2017	70%	red alder	520	Salmonberry, Red osier dogwood, and willow	50%	This is a pond created and maintained with year-round inundation by beaver activity and dike (IP Road). Hydrological source include ground water springs, direct precipitation, and reservoir levels.	Moderate	Area has excessive Himalayan blackberry that should be controlled and release existing shrubs. Need to insure no further ATV trespass	Treat blackberry in 2018 and monitor for control effectiveness and shrub recruitment in 2019.	0
	PEM	1.72														
	PFO	1.13														
SWIFT BYPASS WETLAND 2	PEM	0.79	2.98	NA	56	12/20/2017	60%	red alder, black cottonwood, and Douglas-fir	600	Willow and Red osier dogwood	20%	A wetland complex mixed of inundated and saturated wetlands. Hydrology is ground water from canal and is permanent and year-round source	High	Area has excessive Himalayan blackberry that should be controlled and release existing shrubs. Need to insure no further ATV trespass	Treat blackberry in 2018 and monitor for control effectiveness and shrub recruitment in 2019.	0
	PFO	2.18														

Lewis River Wildlife Habitat Management Plan Wetland Chapter Objective B Evaluation and Planting and Restoration

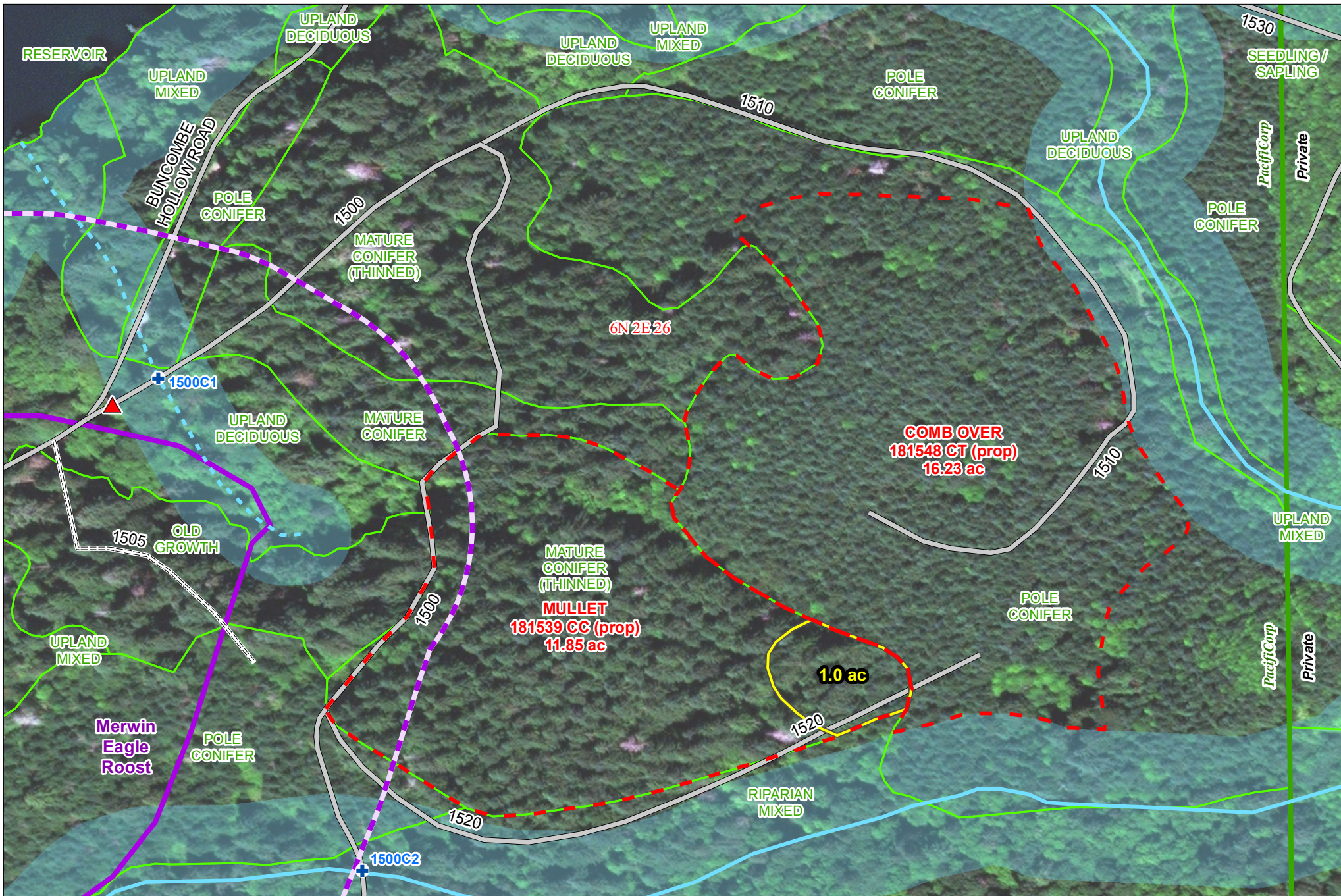
Wetland Name	Vegetation Cover Type	Acres by Vegetation Cover Type	Total Wetland Acres	HEP Polygon Number if applicable	# of Shrubs to be Plant determined by (Total PFO Wetland Acres / Total PFO Acres within HEP Study Segment Area) x number of shrubs for reservoir	Date Evaluated	Forestry Canopy Cover	Dominant Overstory Species	Wetland Elevation	Dominant Shrubs	Shrub Cover	Hydrology	Herbivory	Comments	Next Action	Total Number of Shrubs to Plant
SWIFT CANAL PONDS	PAB	0.28	8.59	NA	84	11/30/2017	70%	red alder and cottonwood	640	vine maple willow Himalayan blackberry	40%	This is a pond created and maintained with year-round inundation by beaver activity and dike (Swift Powerhouse Road). Hydrological source include ground water springs, direct precipitation, and reservoir levels.	High	Shrub cover meets criteria but shrubs are dominated with Himalayan blackberry	Treat blackberry in 2018 and monitor for control effectiveness and shrub recruitment in 2019.	0
	PEM	1.23														
	PFO	3.26														
	PSS	0.51														
	PUB	3.30														
SWIFT WAREHOUSE PONDS	PEM	5.74	9.41	NA	15	11/30/2017	60%	red alder	700	Himalayan blackberry	10%	This is a pond created and maintained with year-round inundation by beaver activity and dike. Hydrological source includes ground water springs, direct precipitation, and outflow for dam seepage.	High	Alder is declining, so planting with ash to retain canopy cover would be preferred. Need to remove all blackberry. Area is very hummocky	Spray blackberry in May 2018 and plant in fall with Oregon ash, willow and Pacific nine bark	26
	PFO	0.59														
	PUB	3.07														
VIOLET WETLAND	PEM	0.41	0.67	NA	7	11/30/2017	40%	red alder with western hemlock recruitment	2919	Big Huckleberry, Willow, Rose, Vine Maple	5% peripheral	Headwater wetland with hydrologic sources include ground water and direct precipitation. Wetland saturation is seasonal.	High	Excellent area to promote shrubs. Red alder appears to be declining and Western hemlock coming in on hummocky dry areas. Excellent place to promote shrubs	Plant in 2018 with willows, and red-osier dogwoods	12
	PFO	0.27														
WETLAND 1 - CONSTRUCTED CHANNEL	PFO	1.70	1.70	NA	44	12/20/2017	70%	red alder	600	Salmonberry	5%	These are inundated areas along the constructed channel. The hydrological sources area year round and channelize seepage from the canal.	High	Treat blackberry and plant	Treat blackberry in May 2018 and plant with willows, Oregon ash, and black hawthorne.	74
YALE PARK WETLAND	PFO	0.32	0.43	NA	1	11/30/2007	50%	red alder	500	Himalayan blackberry and willow	50%	Surface area flat wetland. The hydrological sources include ground water from seasonal creek, reservoir levels, and direct precipitation. Typically a seasonal wetland but may be year round during some years.	Low	Area is dominated with blackberry,	Treat blackberry in 2018 and monitor for control effectiveness and shrub recruitment in 2019.	9
	PSS	0.11														
		100.35	100.35		234											236

Objective B: Identify forested wetlands with less than 20 percent shrub cover and manage to increase overall shrub cover by at least an additional 5 percent (as determined by the line intercept methods) without tree harvest by Target Year 17 to benefit yellow warbler (Dendroica petechia) and mink (Mustela vison).

	Total Acres of PFO vegetation cover type	Total acres of PFO that is less than 20% shrub cover*	Total acres of PFO that need to be planted to increase shrub cover by 5%	Total square feet of PFO that need to be planted to increase shrub cover by 5%	# of shrubs required to plant at 5 ft. oc
PFO Total	32.97	2.69	0.13	5859	234
PFO Merwin	8.38	0.00	0.00	0	0
PFO Yale	16.59	0.32	0.02	697	28
PFO Swift	8.00	2.37	0.12	5162	206

Himalyan Blackberry Control and Planting Cost	
Plants \$5 per plant	\$1,180.00
Pick up and delivery	\$500.00
\$15 to plant each plant	\$3,540.00
Internal Labor 20 hours	\$1,800.00
Tubex \$10	\$2,360.00
Himalyan Blackberry Control \$500/acre	\$11,138.01
Total Costs	\$20,518.01

APPENDIX E
2018 PROPOSED TIMBER HARVEST AREA MAPS
AND FIRST PRECUT SURVEY FORMS



WHMP - Unit 15

2018 Proposed Harvest Area

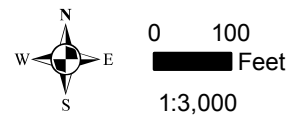
02/01/2018 U:\Projects\Hydro\Lewis\Harvest\Unit 15\Unit 15 Aerial Map.mxd

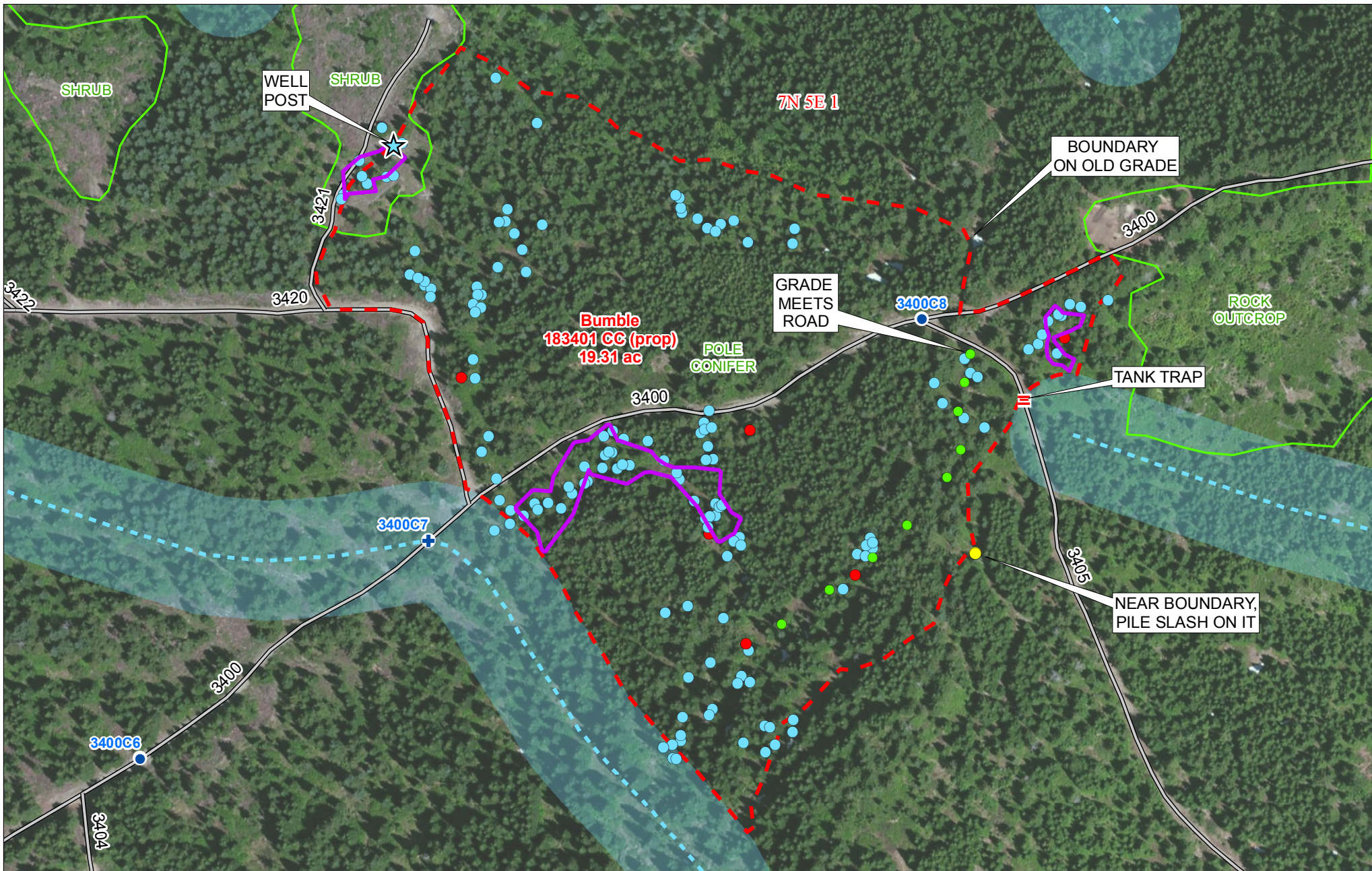
- Proposed Harvest
- Gate
- Road
- Abandon Road

- Section
- Vegetation Cover
- Shore/Stream Buffer
- PacifiCorp Land

- Proposed Meadow
- Stream Culvert
- Non-fish Perennial Stream
- Non-fish Seasonal Stream

- Eagle Roost
- Eagle Roost Buffer





WHMP - Unit 34

**2018 Proposed Harvest Area
183401 CC Bumble**

- | | | | |
|-------------------------|------------------|---------------------|-----------|
| Proposed Harvest | Road | Non-fish Seasonal | Grade (G) |
| Special Management Area | Vegetation Cover | Shore/Stream Buffer | Other |
| Leave Tree | PacifiCorp Land | Road Block | Well |
| Snag | Section | Ditch Culvert | |
| | | Stream Culvert | |

0 100 200
Feet

1:2,600



PACIFICORP

Bumble
183401CC
19.31 acres

Access: 3400, 3420, and 3421 road. Road access is good and requires very little additional work.

Leave Trees and Snags: Requires a total of 154. Currently there 136 leave trees and 6 snags. Need to add additional 12 or adjust the THA boundary.

Special Management Area: Eastern SMA is potential willow area with open grown huckleberries and a snag. The western SMA is open grown huckleberry with heavy browse and large trees. The northern SMA was retained as visual screen to the shrubland from the 3420 road.

Timber Stand Type:

Age: North of 3400 road is 39 years and south of 4300 is 53 years

Douglas-fir Site index: Class 3 north of 3400 road and class 5 south of 3400 road

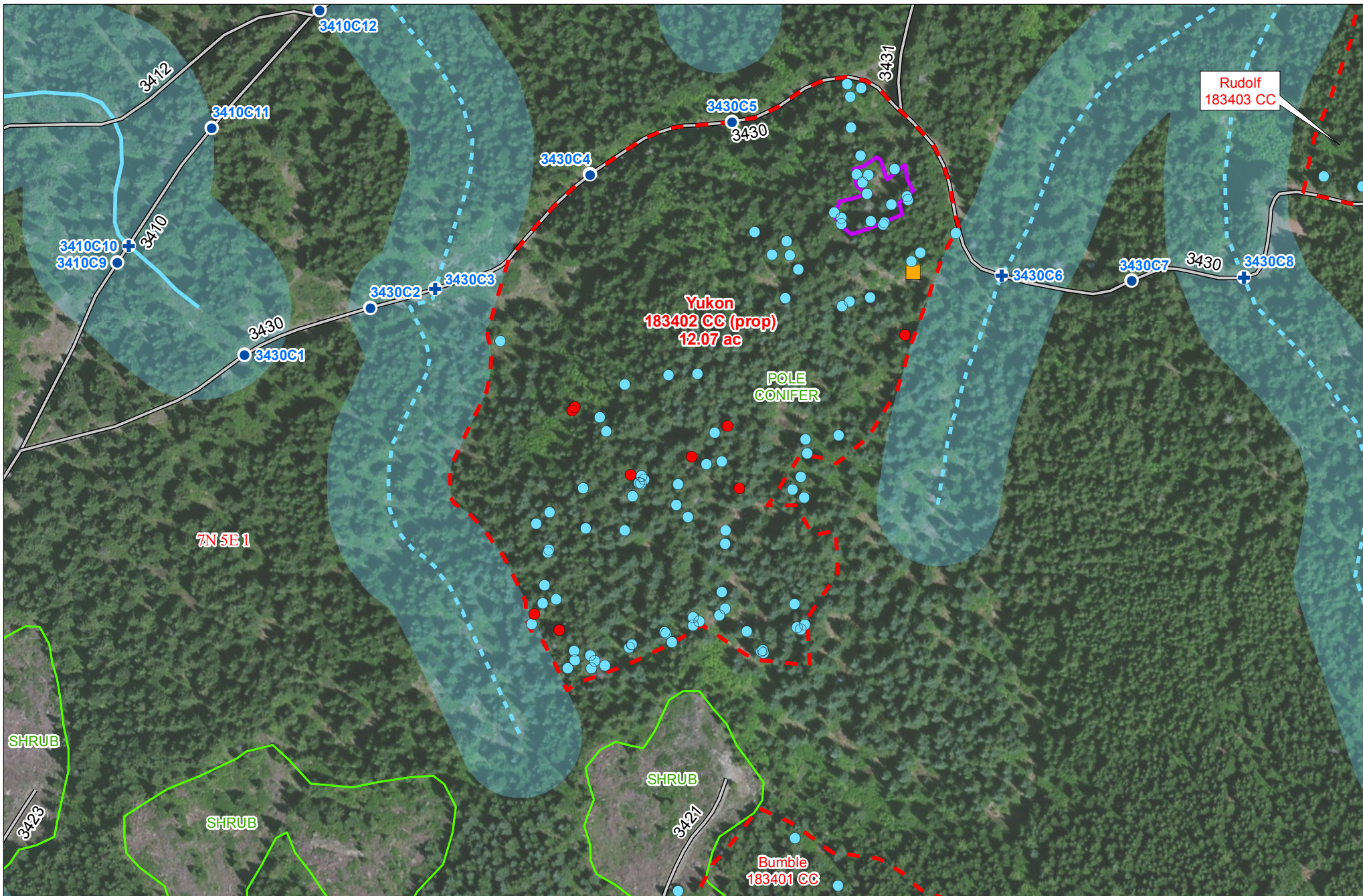
Primary species: Pacific Silver fir

Secondary species: Douglas-fir, western hemlock, and noble fir.

Trees per Acre: north of road 3400= 324

South of road 3400= 272

Average dbh: 11-12 inches



WHMP - Unit 34

2018 Proposed Harvest Area
183402 CC Yukon

Proposed Harvest

Special Management Area

Leave Tree

Snag

Log

Road

Vegetation Cover

PacifiCorp Land

Non-fish Perennial

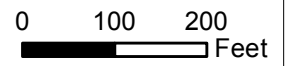
Non-fish Seasonal

Stream Buffer

Section

Ditch Culvert

Stream Culvert



1:2,500



Yukon
183402CC
12.07 acres

Access: Road access is good from 3430 road and requires very little additional work.

Leave Trees and Snags: Requires a total of 97. Currently there 95 leave trees and 9 snags.

Special Management Area: The SMA is open grown huckleberry with heavy browse and large trees.

Timber Stand Type:

Age: Range 39-47 years

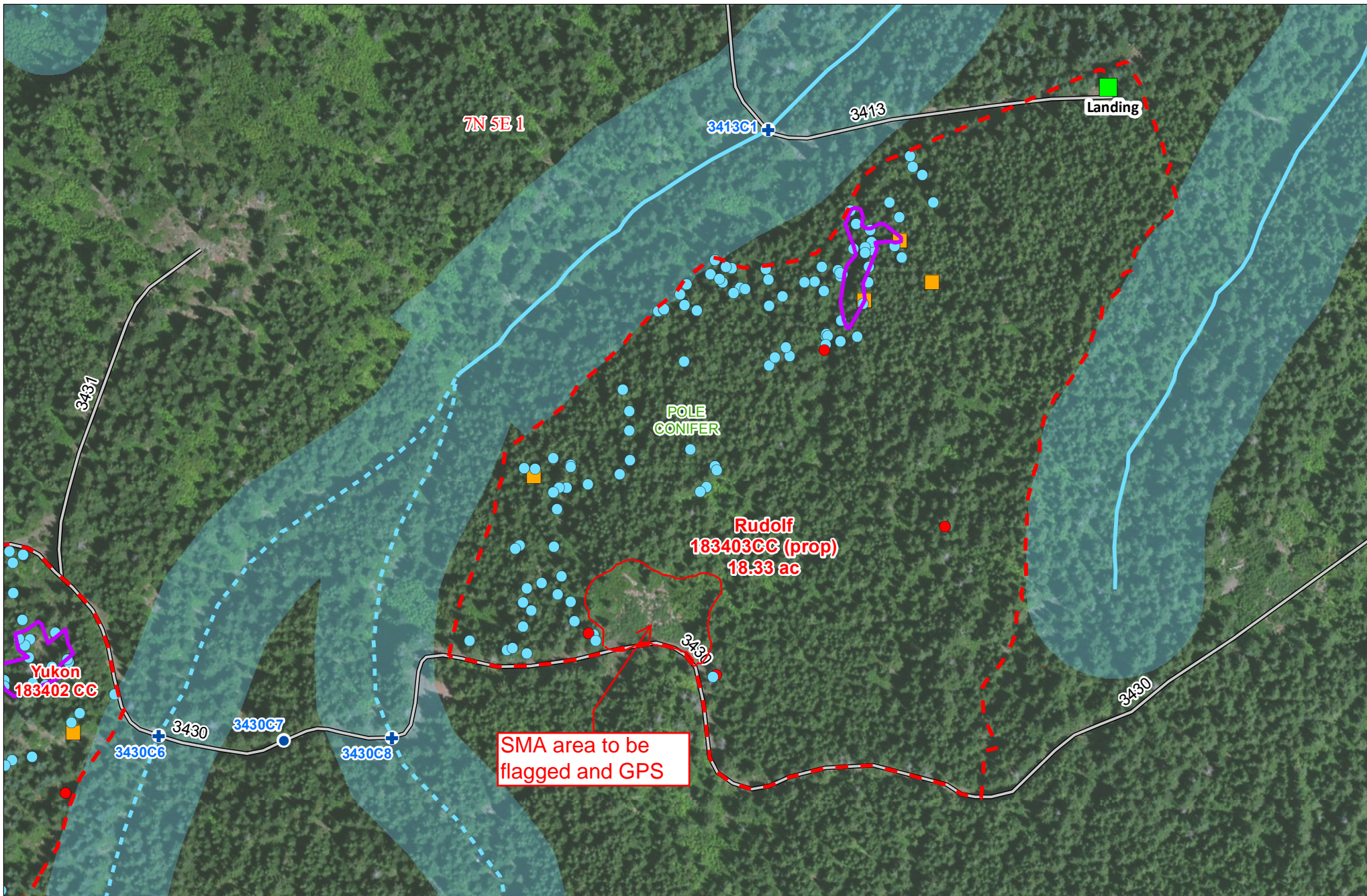
Douglas-fir Site index: Class 3 to Class 4

Primary species: Pacific Silver fir

Secondary species: Douglas-fir, western hemlock, and noble fir.

Trees per Acre: 323 to 328

Average dbh: 11 inches



WHMP - Unit 34

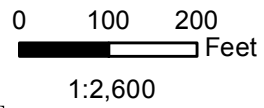
**2018 Proposed Harvest Areas
183403 CC Rudolf**

- Proposed Harvest
- Special Management Area
- Leave Tree
- Snag

- Log
- Road
- Vegetation Cover
- PacifiCorp Land

- Non-fish Perennial
- Non-fish Seasonal
- Stream Buffer
- Section

- Landing
- Ditch Culvert
- + Stream Culvert



Rudolf
183403CC
18.33 acres

Access: 3430 road and 3413 road. 3413C1 is log cribbed culvert that blew out. A temporary culvert will be installed and pulled to abandon the remainder of 3413.

Leave Trees and Snags: Requires a total of 147. Currently there 98 leave trees and 4 snags. Need to mark additional 45 trees.

Special Management Area: Northern SMA is open patch of huckleberries, large logs, and large trees. The southern SMA needs to flagged and GPS but is willow thicket with some vine maple and huckleberry. It thought to be an old landing, but has high elk use.

Timber Stand Type:

Age: 43 years

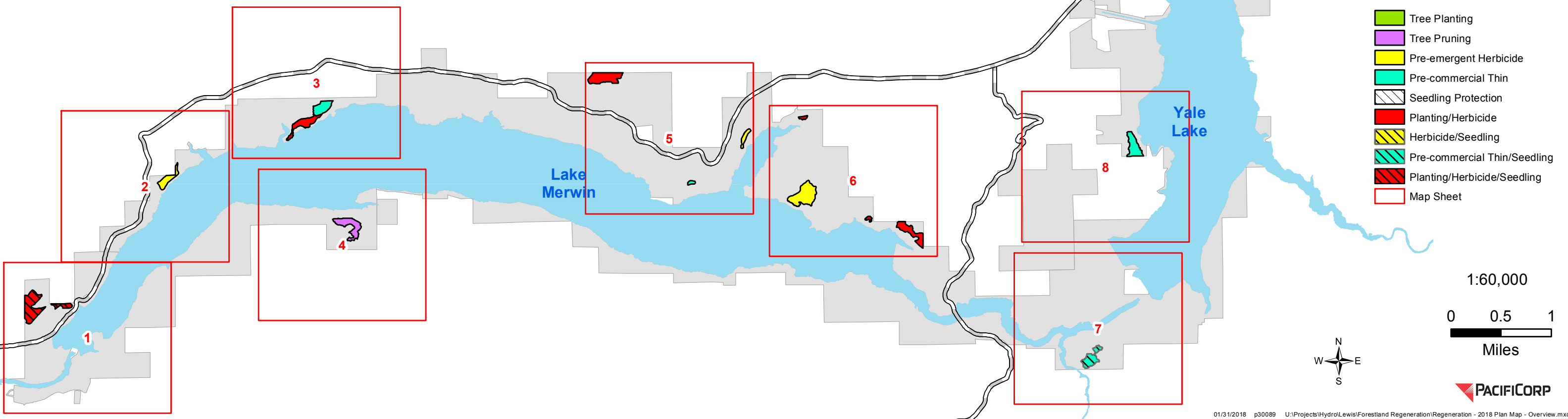
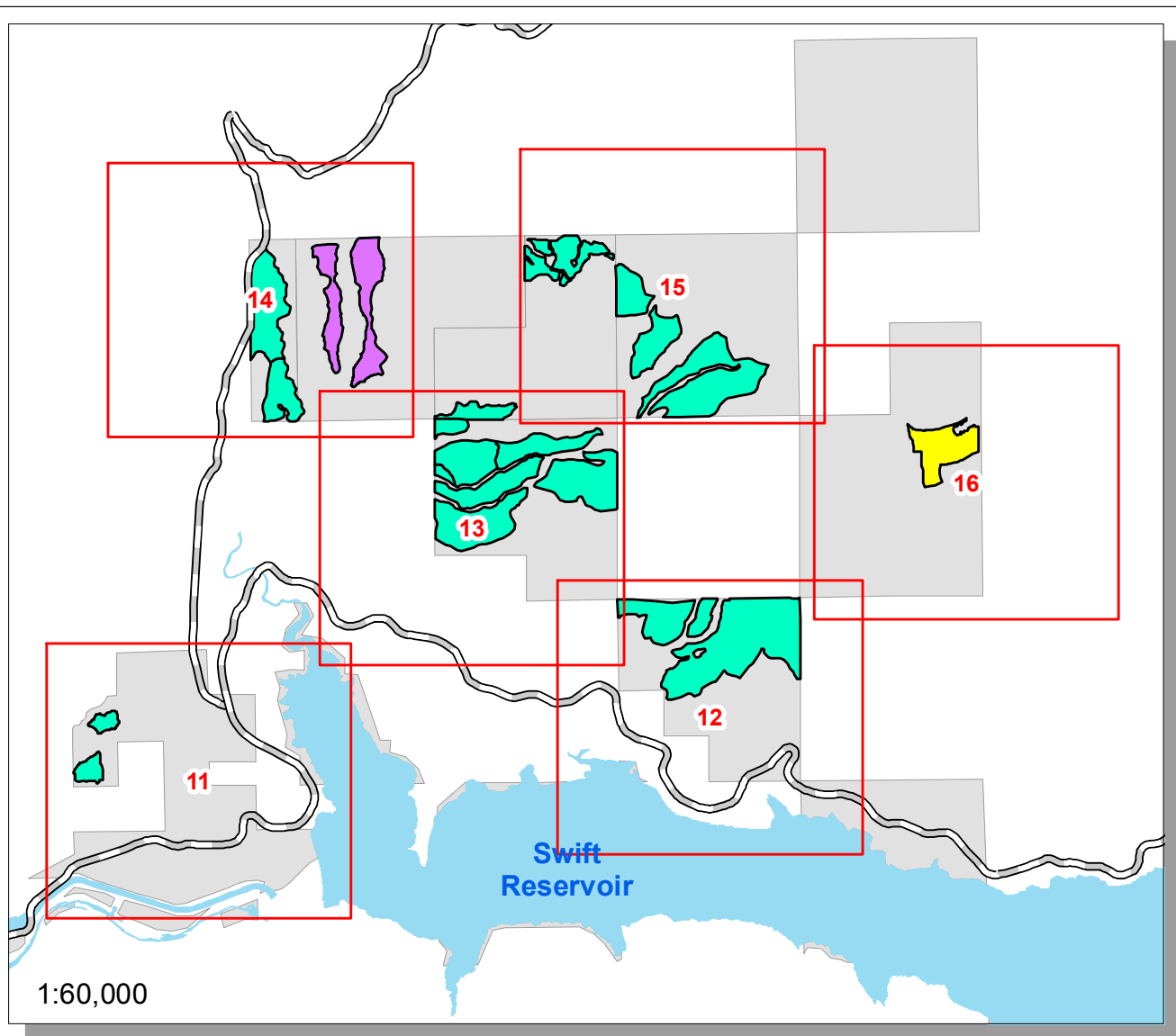
Douglas-fir Site index: Class 3

Primary species: Pacific Silver fir

Trees per Acre: 310

Average dbh: 11 inch

APPENDIX F
2018 REGENERATION PRACTICES MAPS



**Lewis River
Wildlife Habitat
Management Plan**

**2018 Forestland
Regeneration
Maintenance Actions**



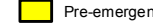
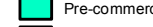
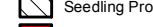

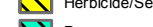
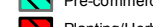
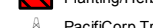
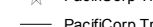


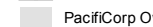

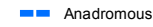
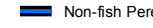
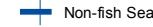
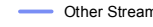
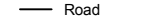
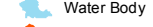
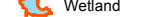

- Tree Planting
- Tree Pruning
- Pre-emergent Herbicide
- Pre-commercial Thin
- Seedling Protection
- Planting/Herbicide
- Herbicide/Seedling
- Pre-commercial Thin/Seedling
- Planting/Herbicide/Seedling
- Map Sheet

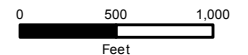
Lewis River Wildlife Habitat Management Plan

2018 Forestland Regeneration Maintenance Actions

Sheet 1 of 16

Legend

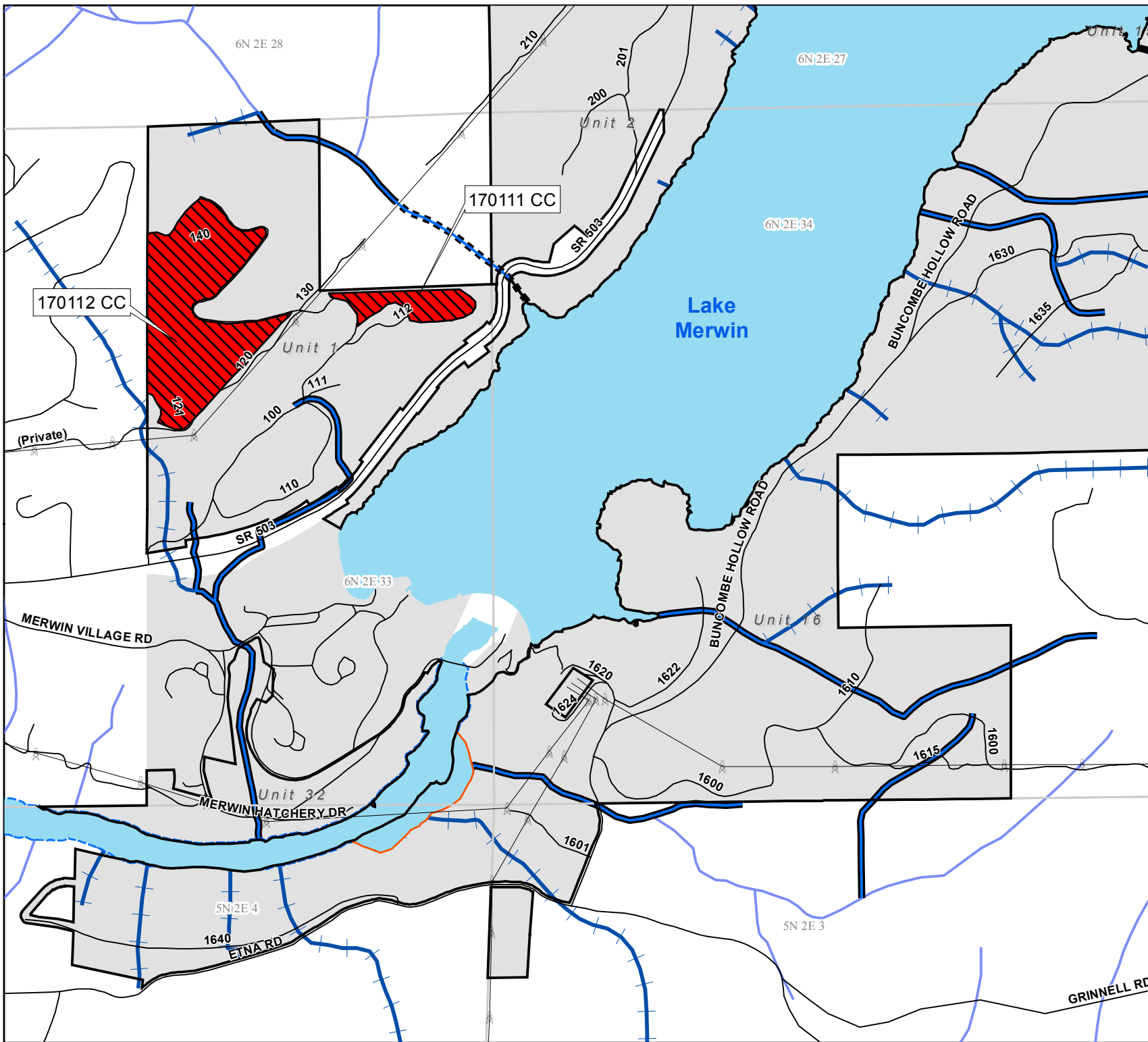
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-  Tree Pruning
-  Pre-emergent Herbicide
-  Pre-commercial Thin
-  Seedling Protection
-  Planting/Herbicide
-  Herbicide/Seedling
-  Pre-commercial Thin/Seedling
-  Planting/Herbicide/Seedling
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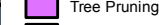
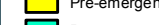
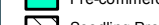
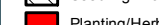


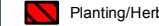
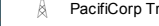
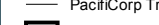

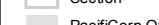


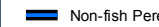
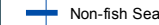
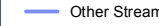

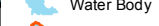
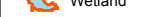




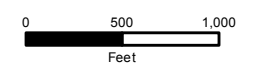
Lewis River Wildlife Habitat Management Plan

2018 Forestland Regeneration Maintenance Actions

Sheet 2 of 16

Legend

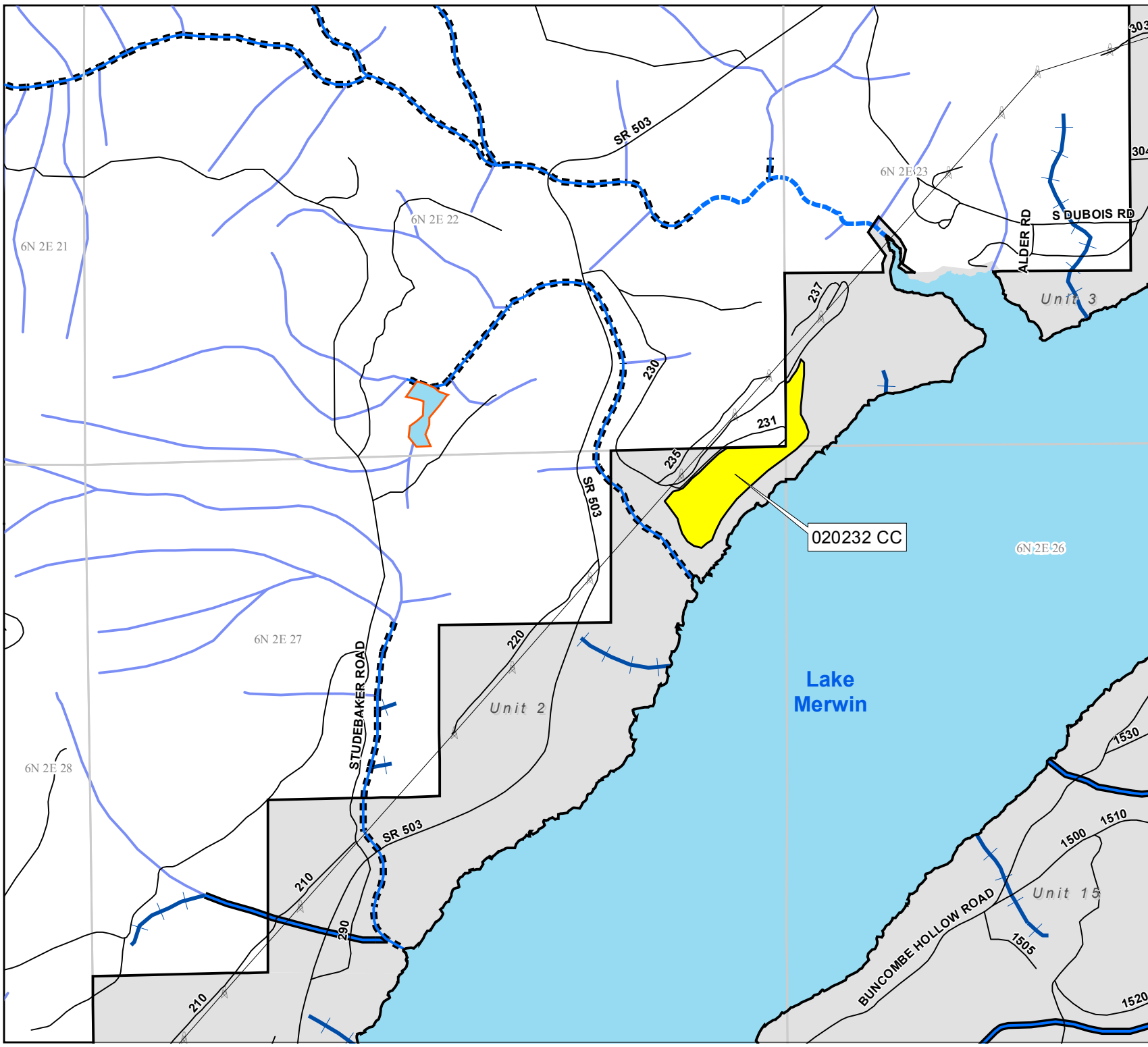
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-  Tree Pruning
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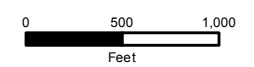
Lewis River Wildlife Habitat Management Plan

2018 Forestland Regeneration Maintenance Actions

Sheet 3 of 16

Legend

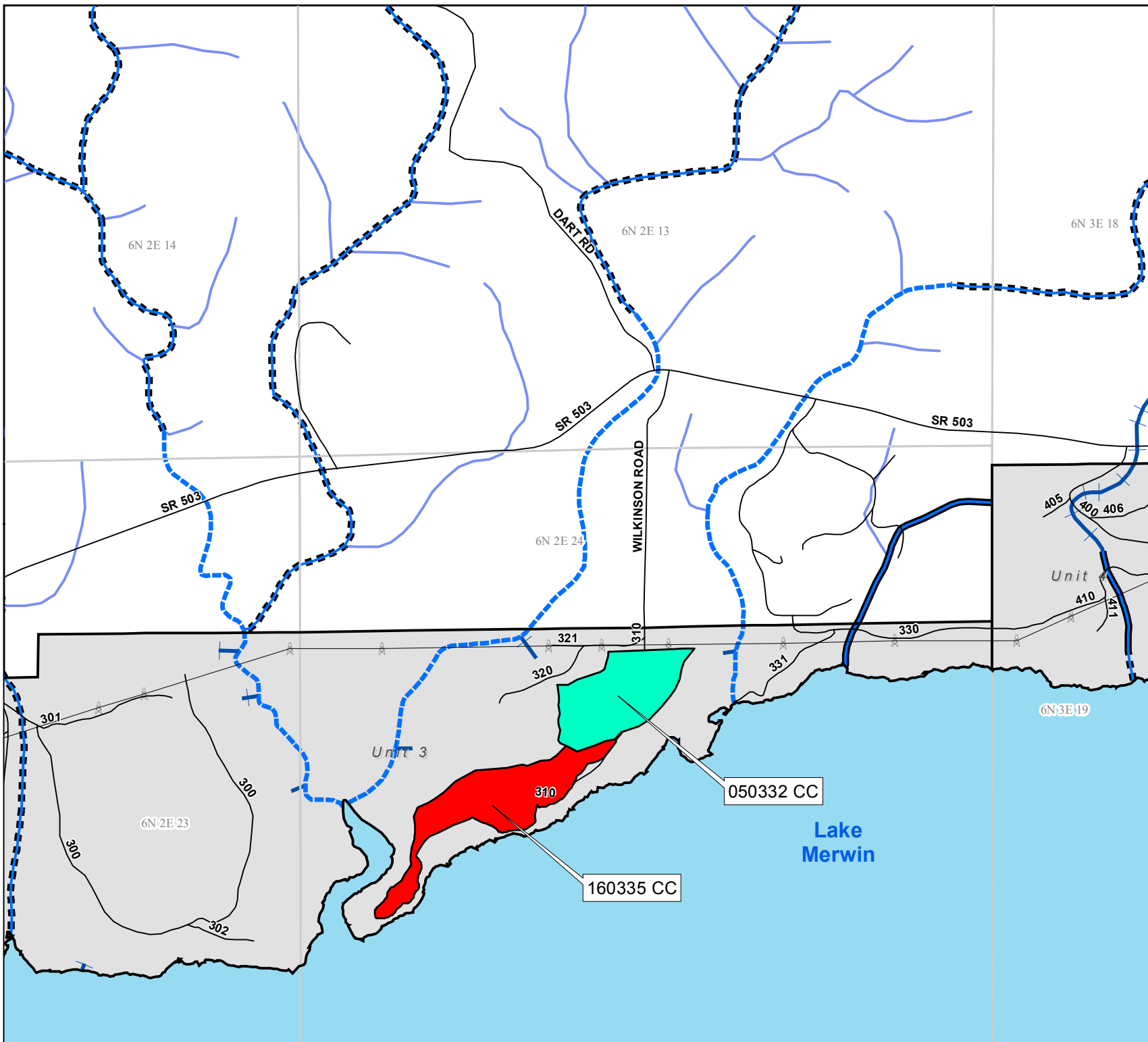
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- Pre-commercial Thin
- Seedling Protection
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6N2E23

6N2E24

6N3E19



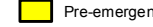
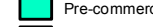
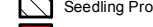

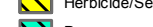
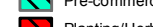
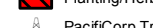
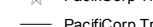


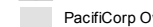

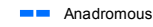
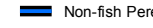
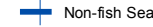
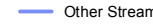
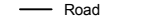
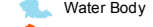
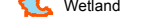

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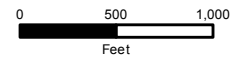
Lewis River Wildlife Habitat Management Plan

2018 Forestland Regeneration Maintenance Actions

Sheet 4 of 16

Legend

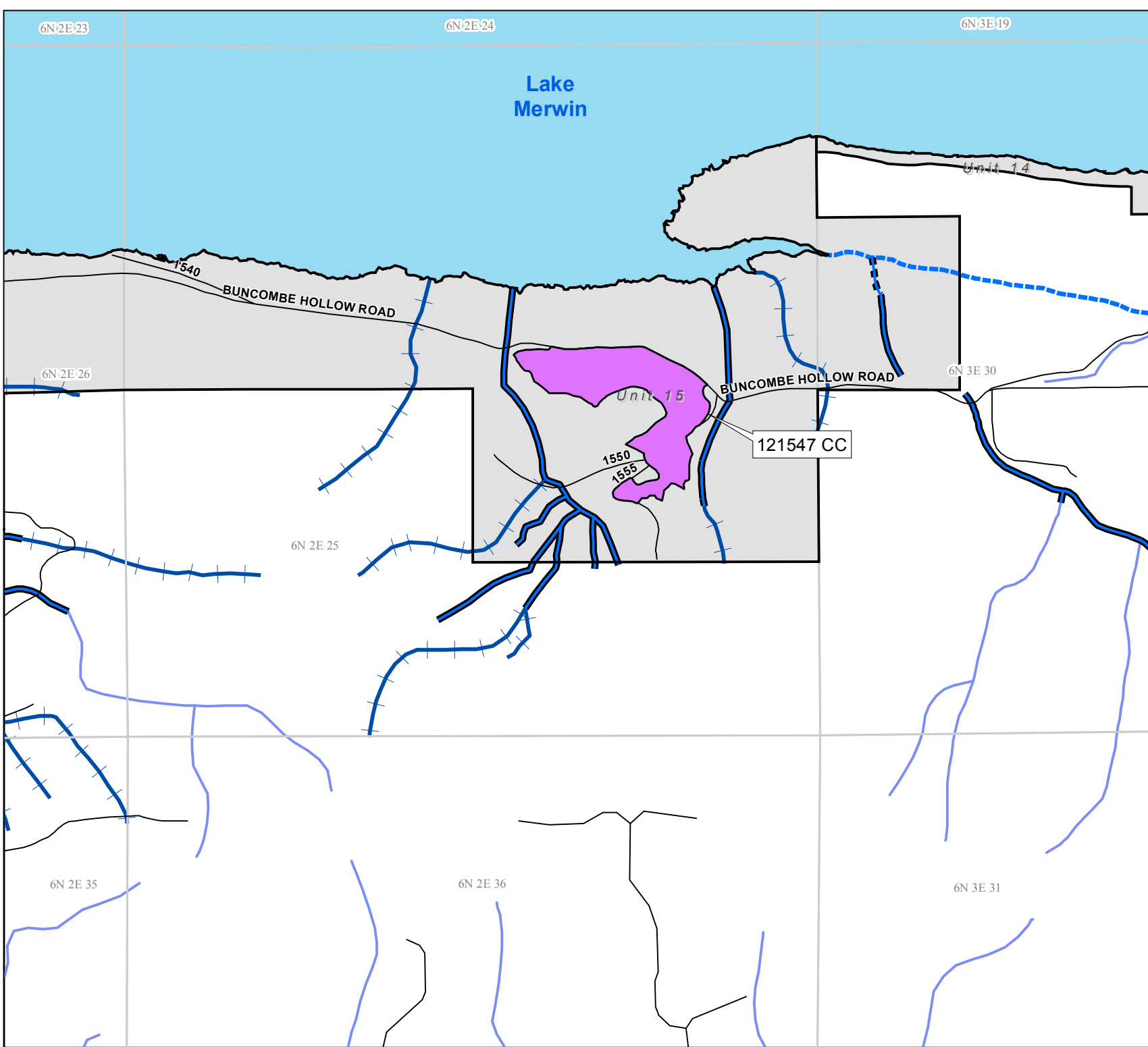
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6N2E26

6N3E30

6N2E25

6N2E35

6N2E36

6N3E31

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1550

1555

121547 CC

Unit 14

Unit 15

BUNCOMBE HOLLOW ROAD























BUNCOMBE HOLLOW ROAD

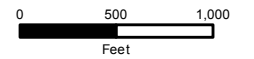
Lewis River
Wildlife Habitat
Management Plan

2018 Forestland
Regeneration
Maintenance Actions

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Legend

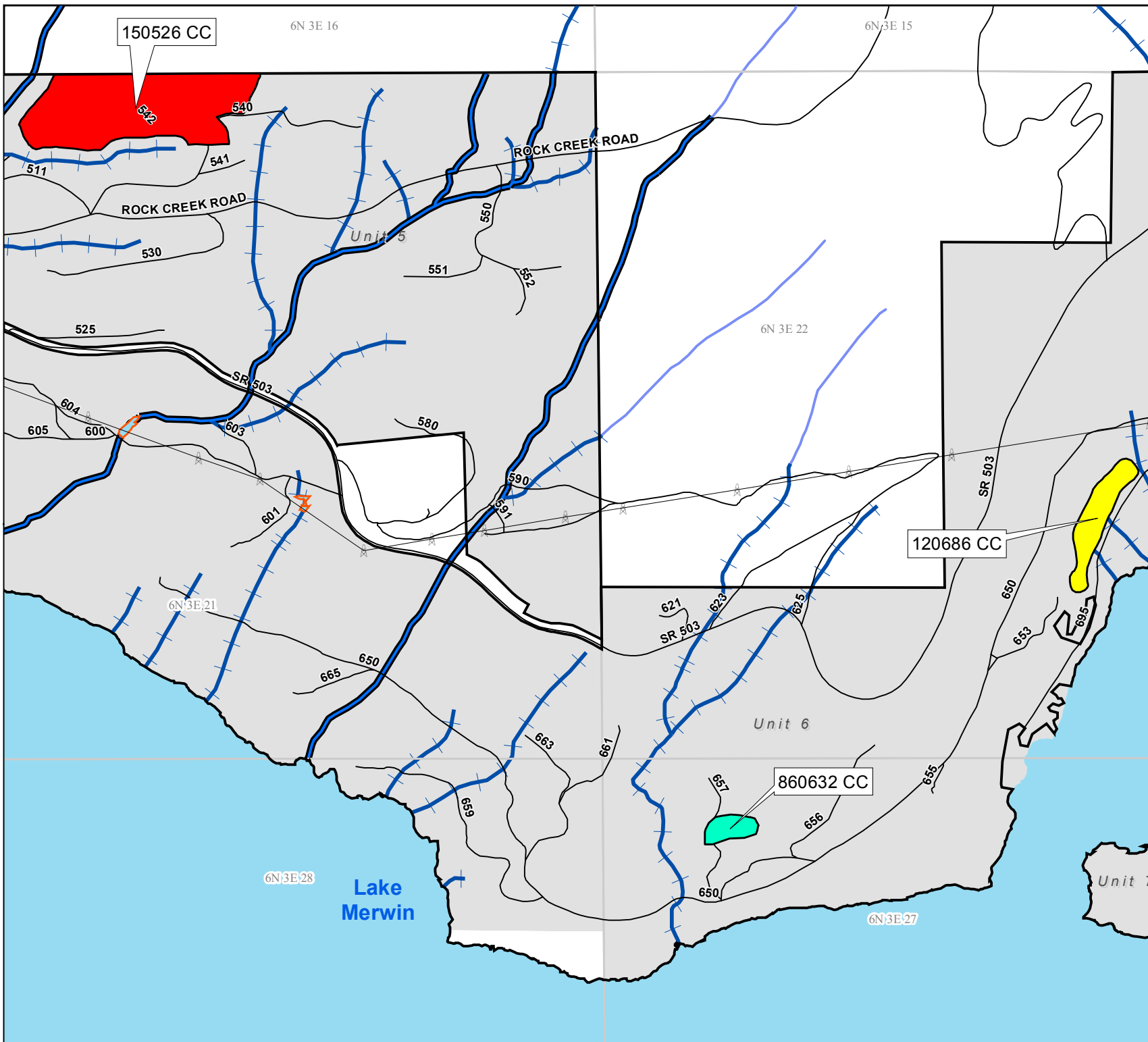
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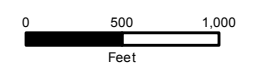
Lewis River Wildlife Habitat Management Plan

2018 Forestland Regeneration Maintenance Actions

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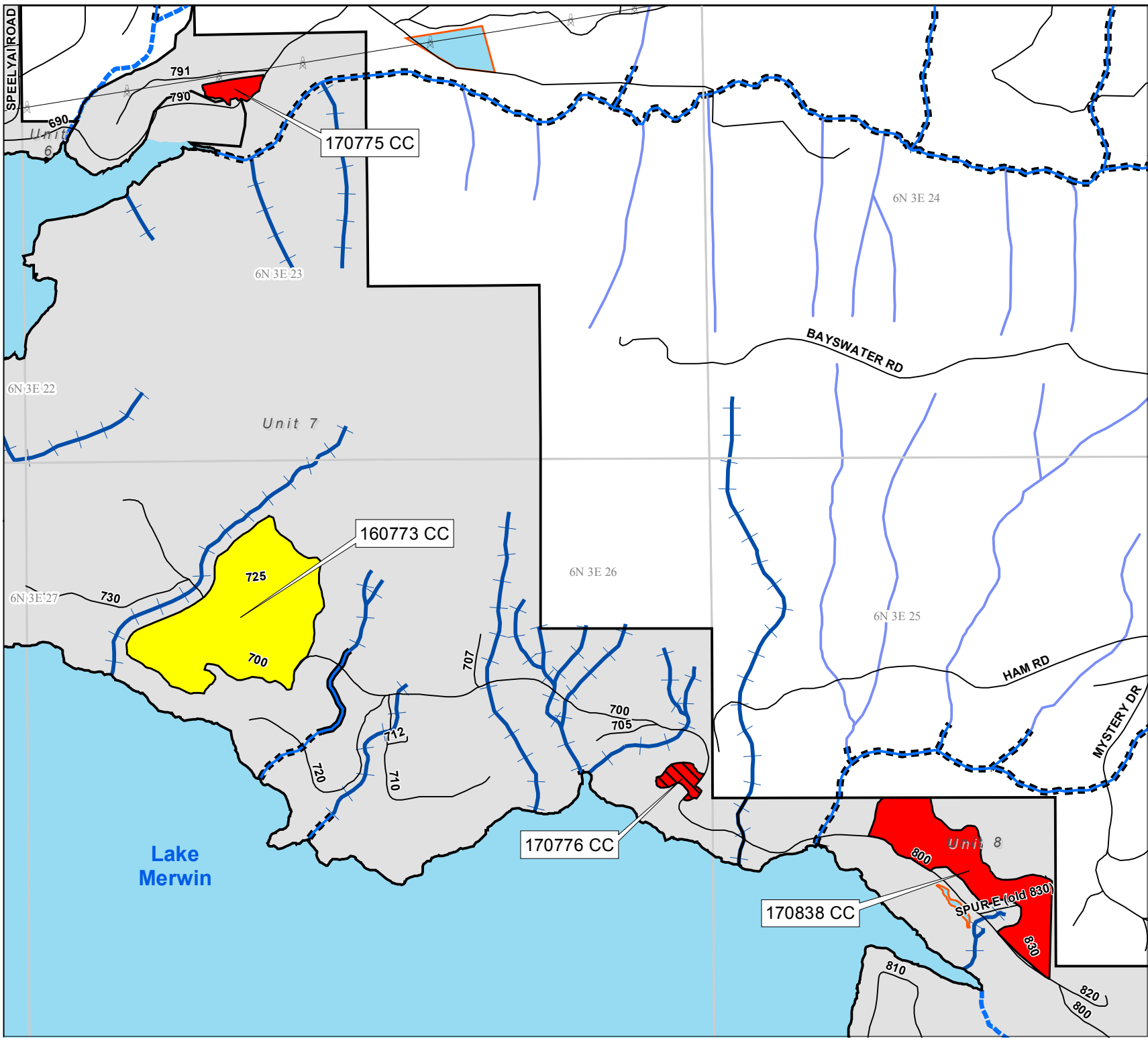
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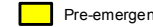
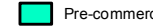
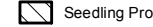


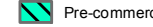

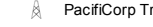
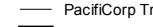
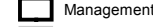
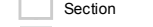
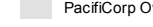
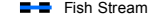
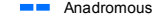
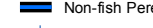
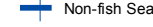
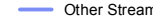
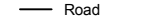
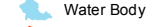
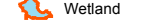


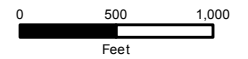
Lewis River
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2018 Forestland
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Legend

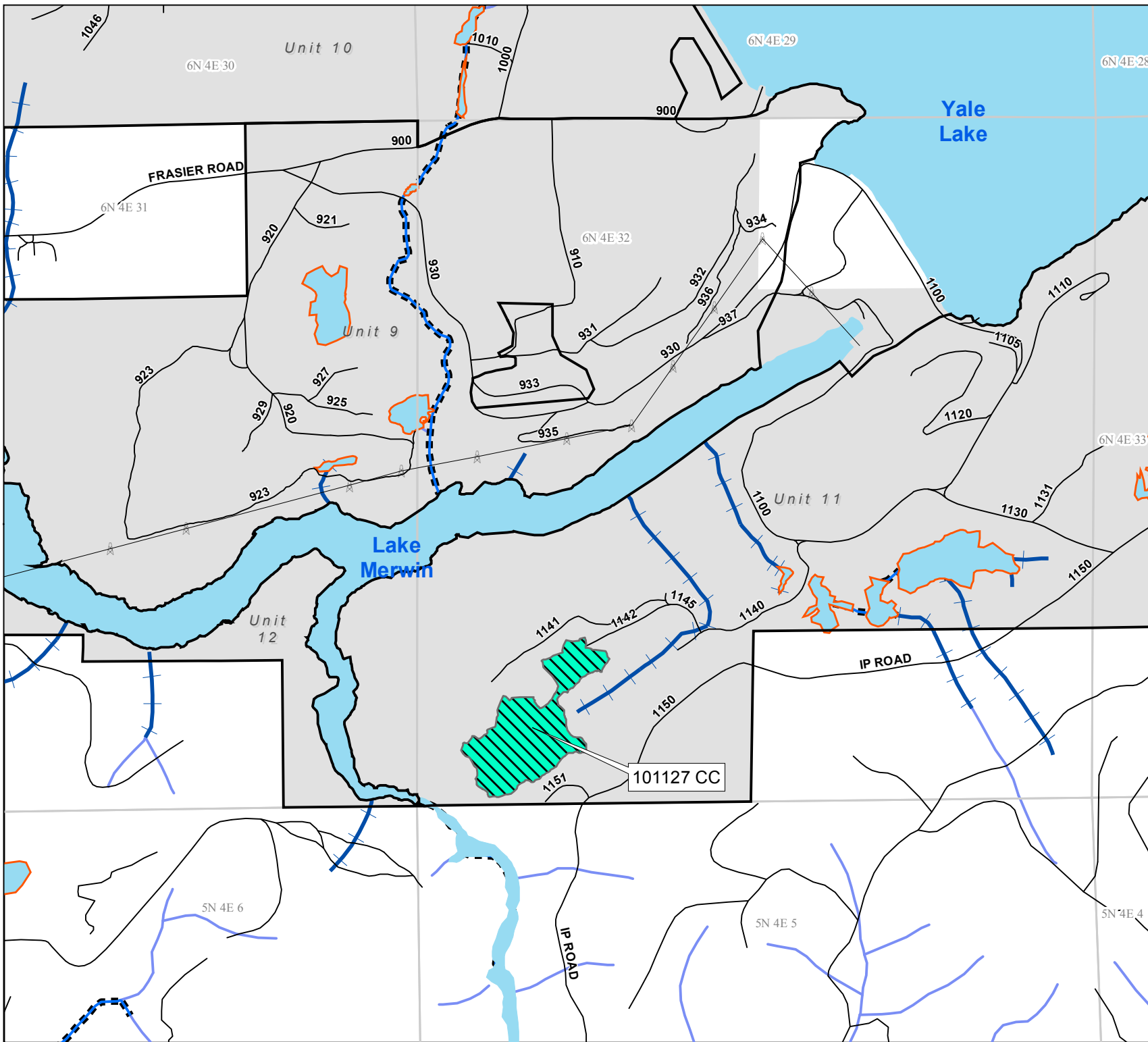
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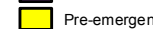
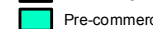
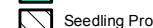


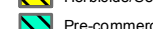
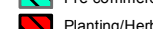
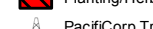
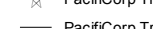
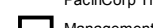
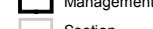
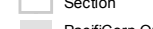
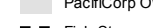
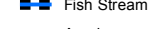
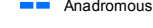
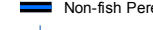
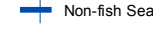
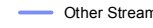
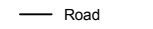
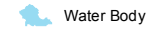


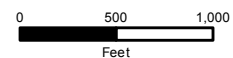
Lewis River Wildlife Habitat Management Plan

2018 Forestland Regeneration Maintenance Actions

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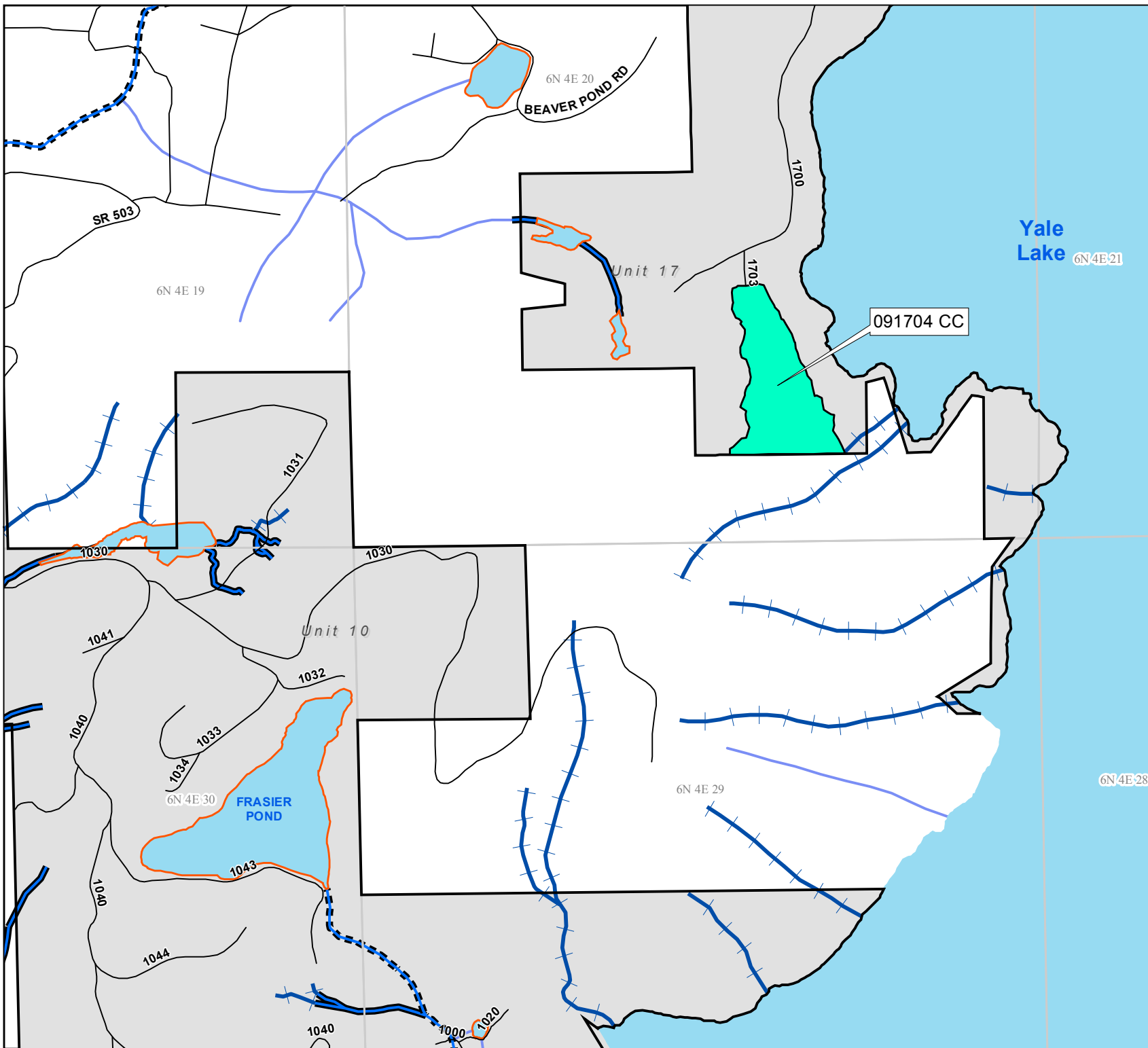
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-  Pre-commercial Thin
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-  Planting/Herbicide
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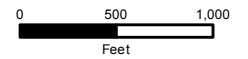
Lewis River Wildlife Habitat Management Plan

2018 Forestland Regeneration Maintenance Actions

Sheet 9 of 16

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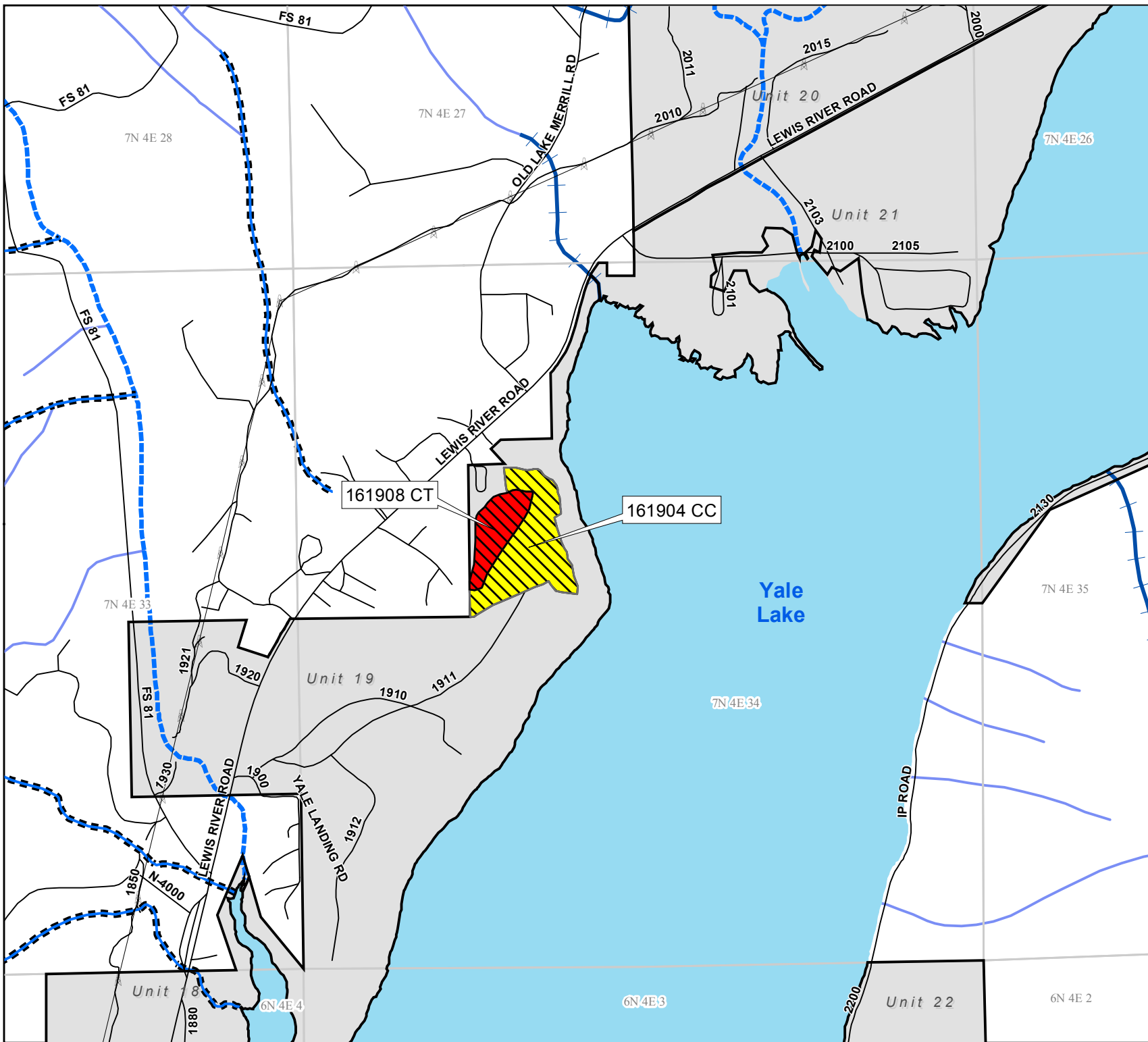
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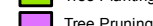
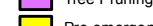
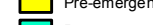
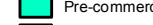
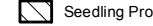


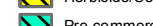
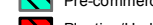

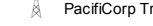
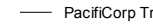


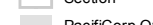
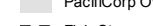
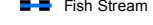
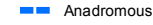
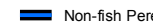

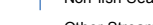


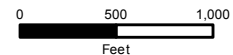
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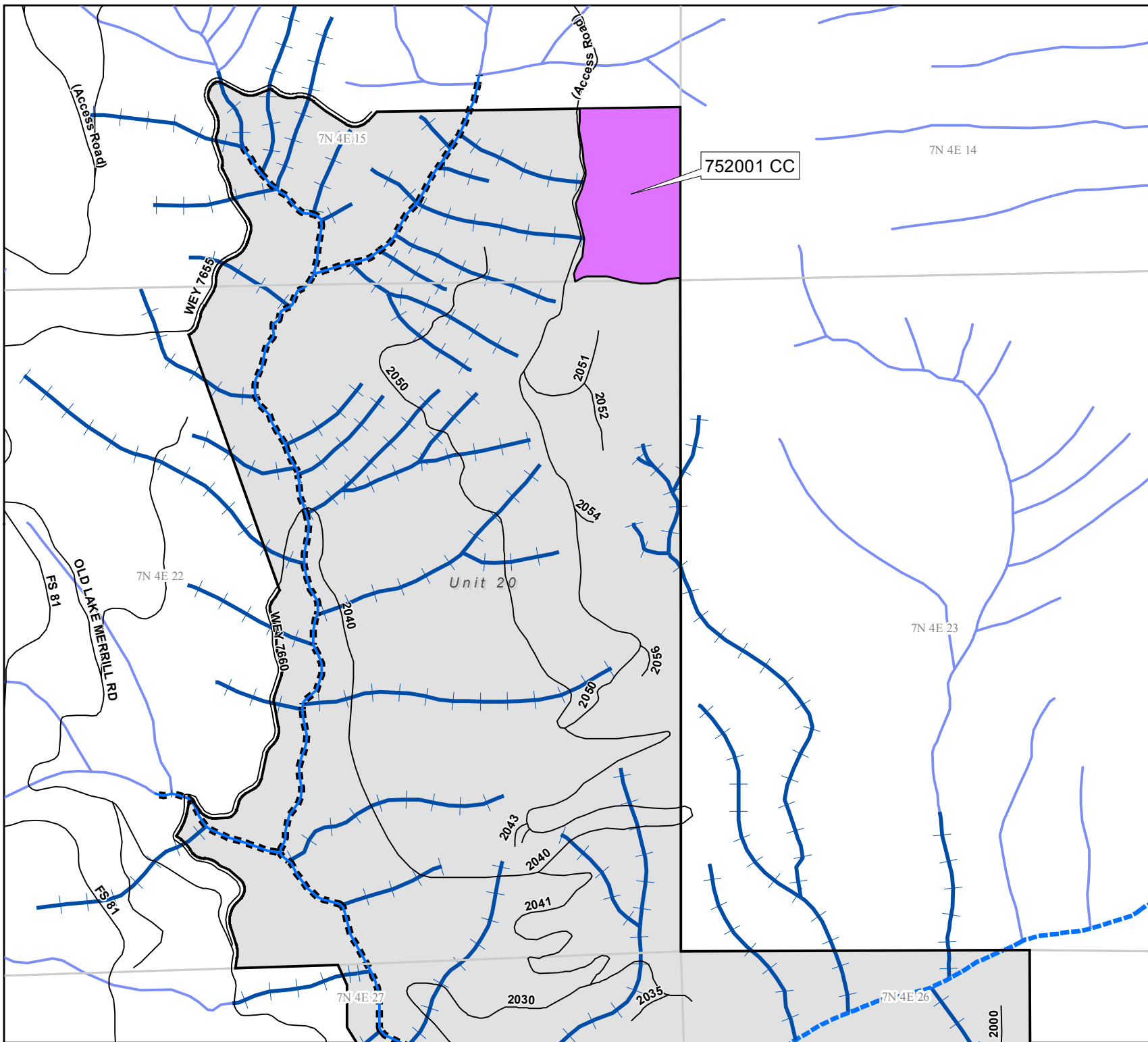
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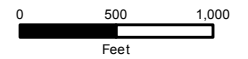
Lewis River Wildlife Habitat Management Plan

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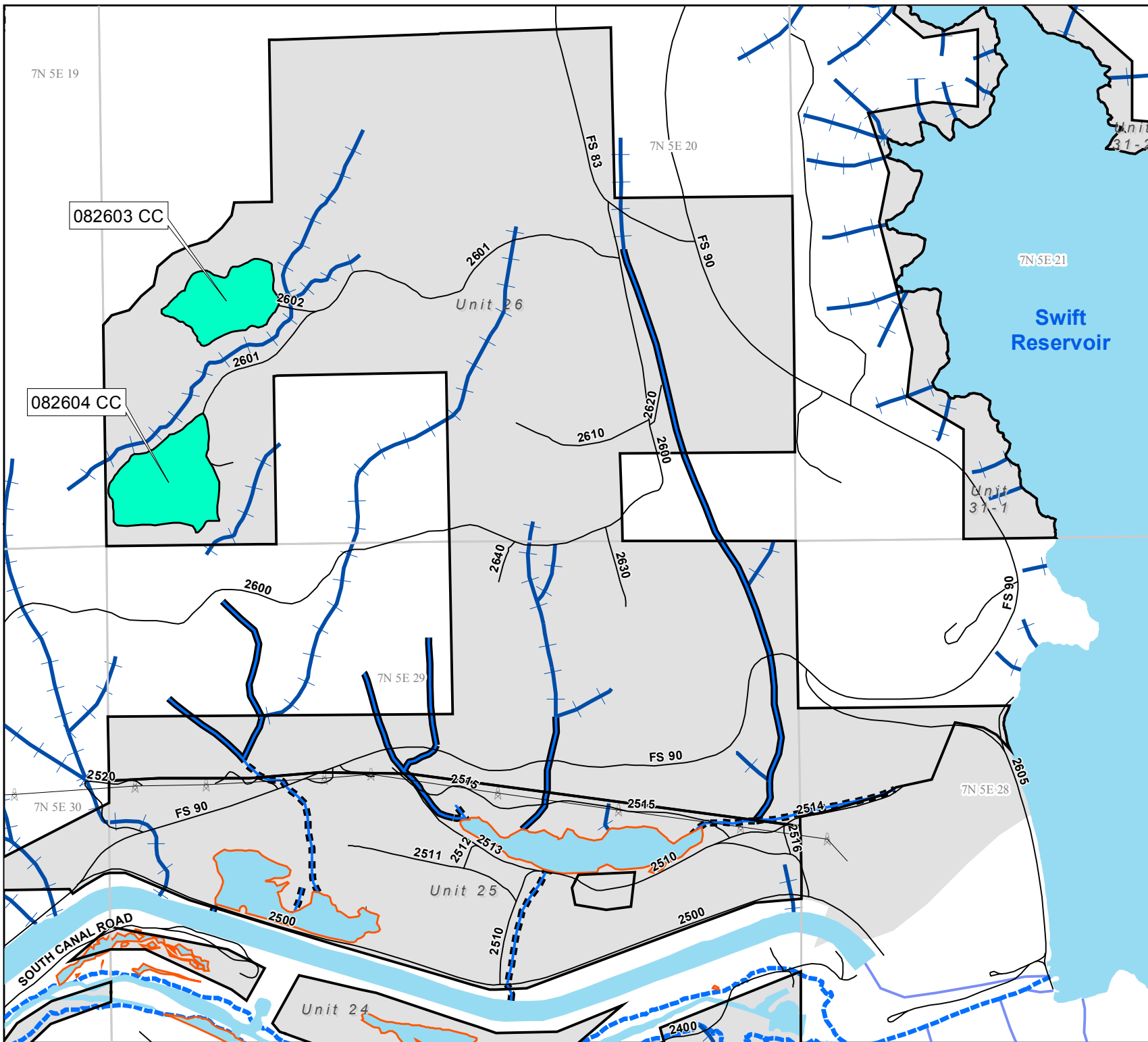
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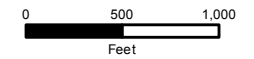
Lewis River Wildlife Habitat Management Plan

2018 Forestland Regeneration Maintenance Actions

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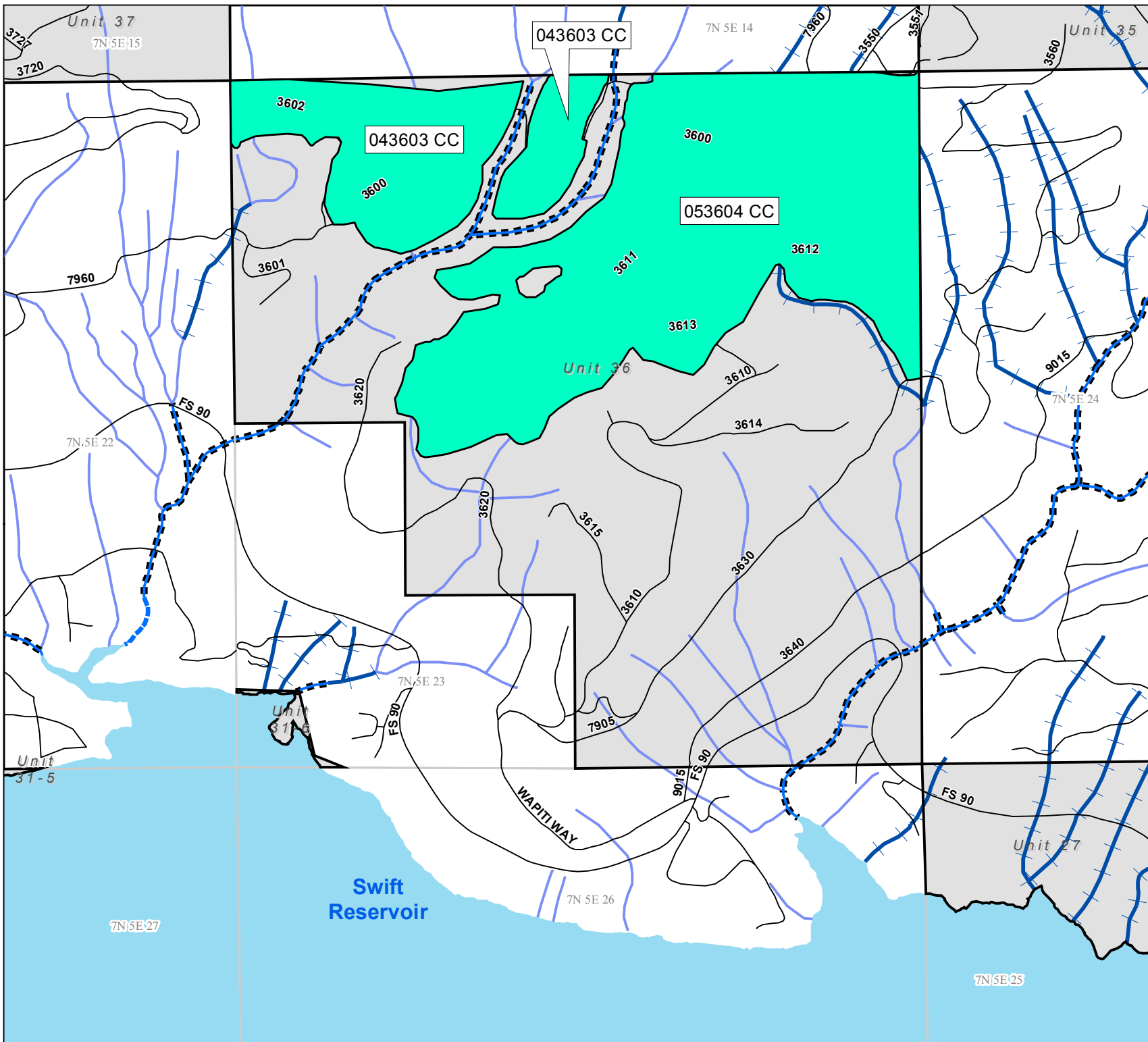
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






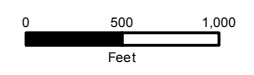
Lewis River Wildlife Habitat Management Plan

2018 Forestland Regeneration Maintenance Actions

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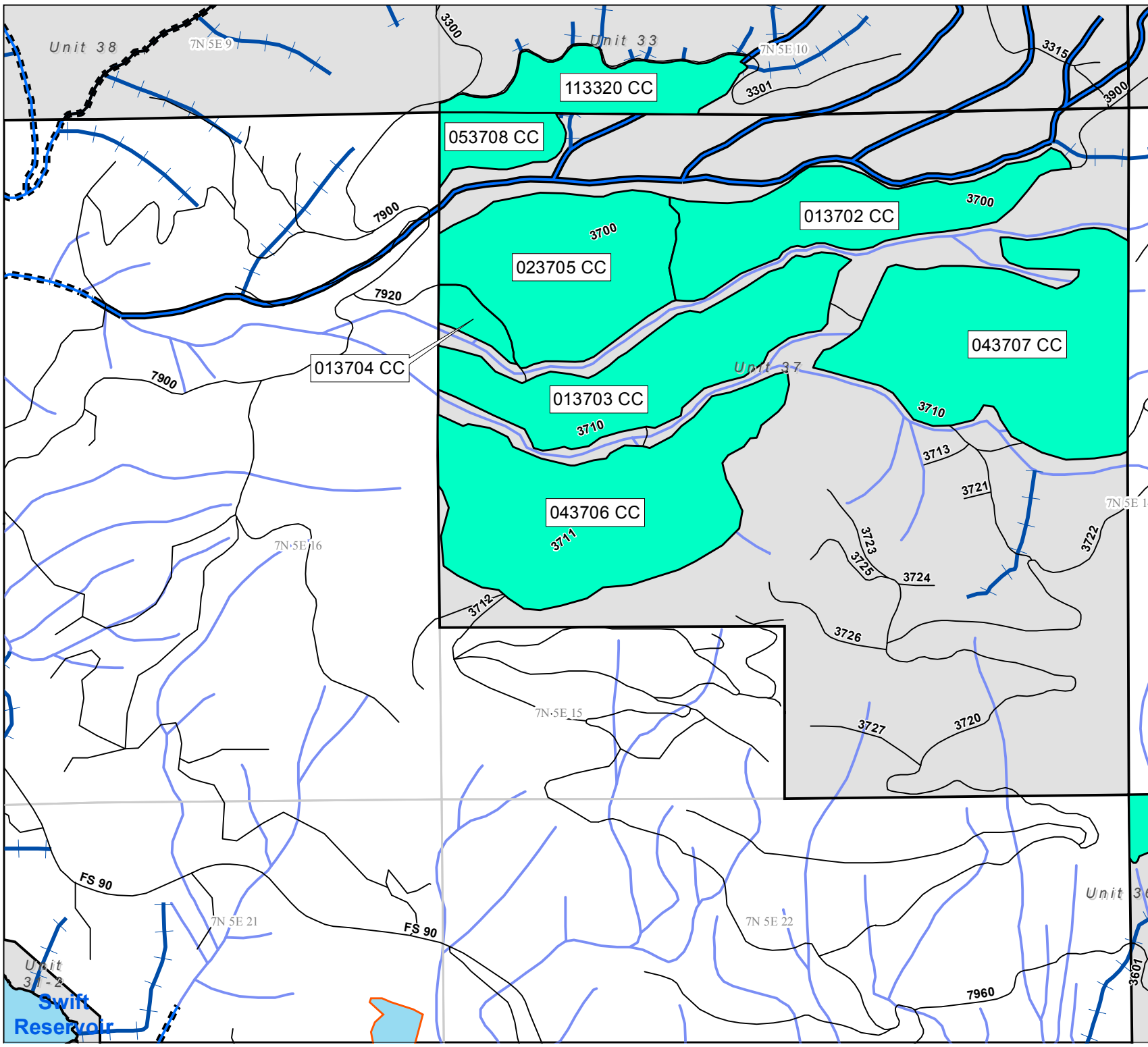
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






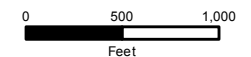
Lewis River Wildlife Habitat Management Plan

2018 Forestland Regeneration Maintenance Actions

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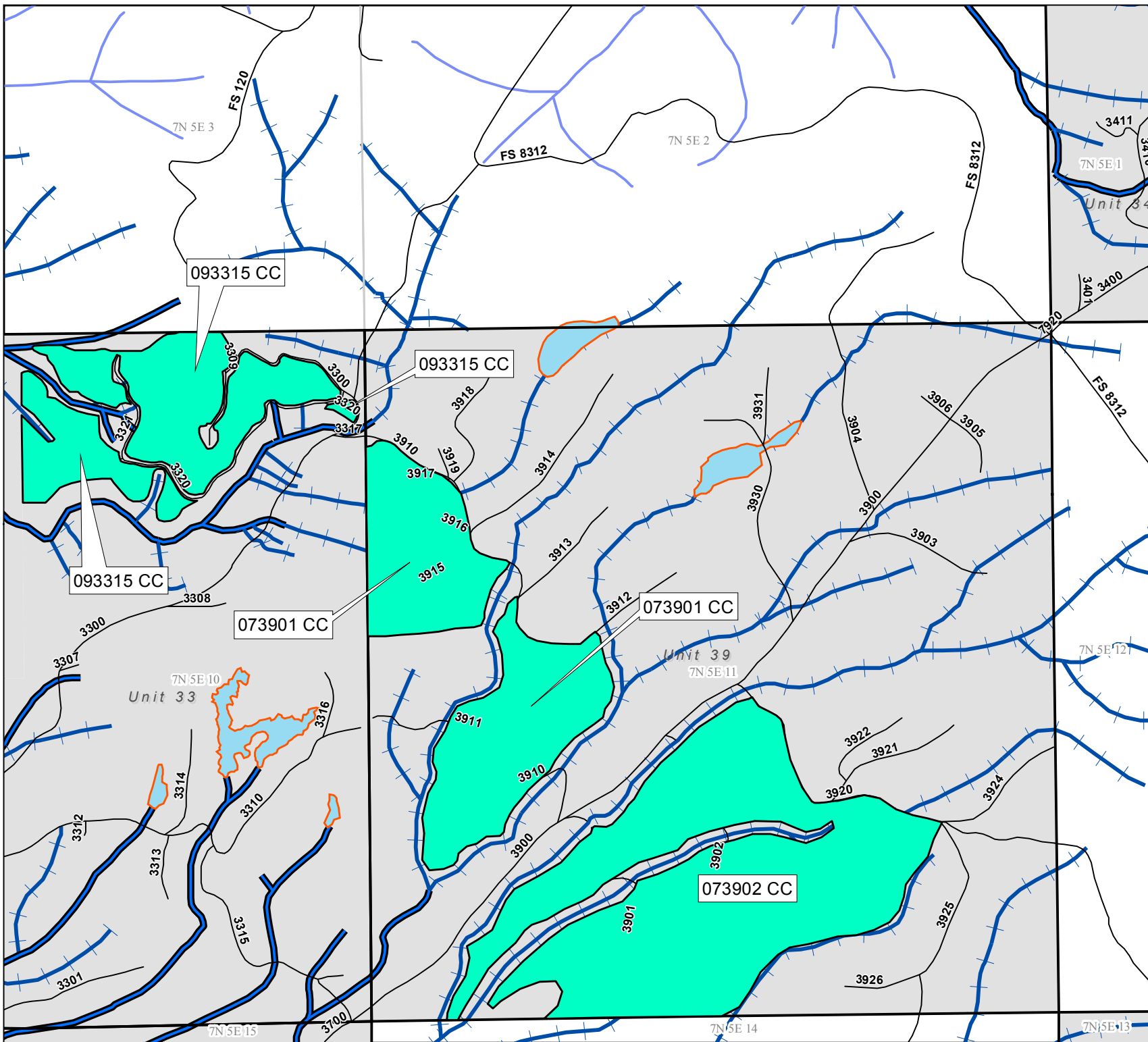
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





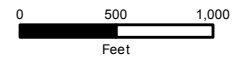
Lewis River Wildlife Habitat Management Plan

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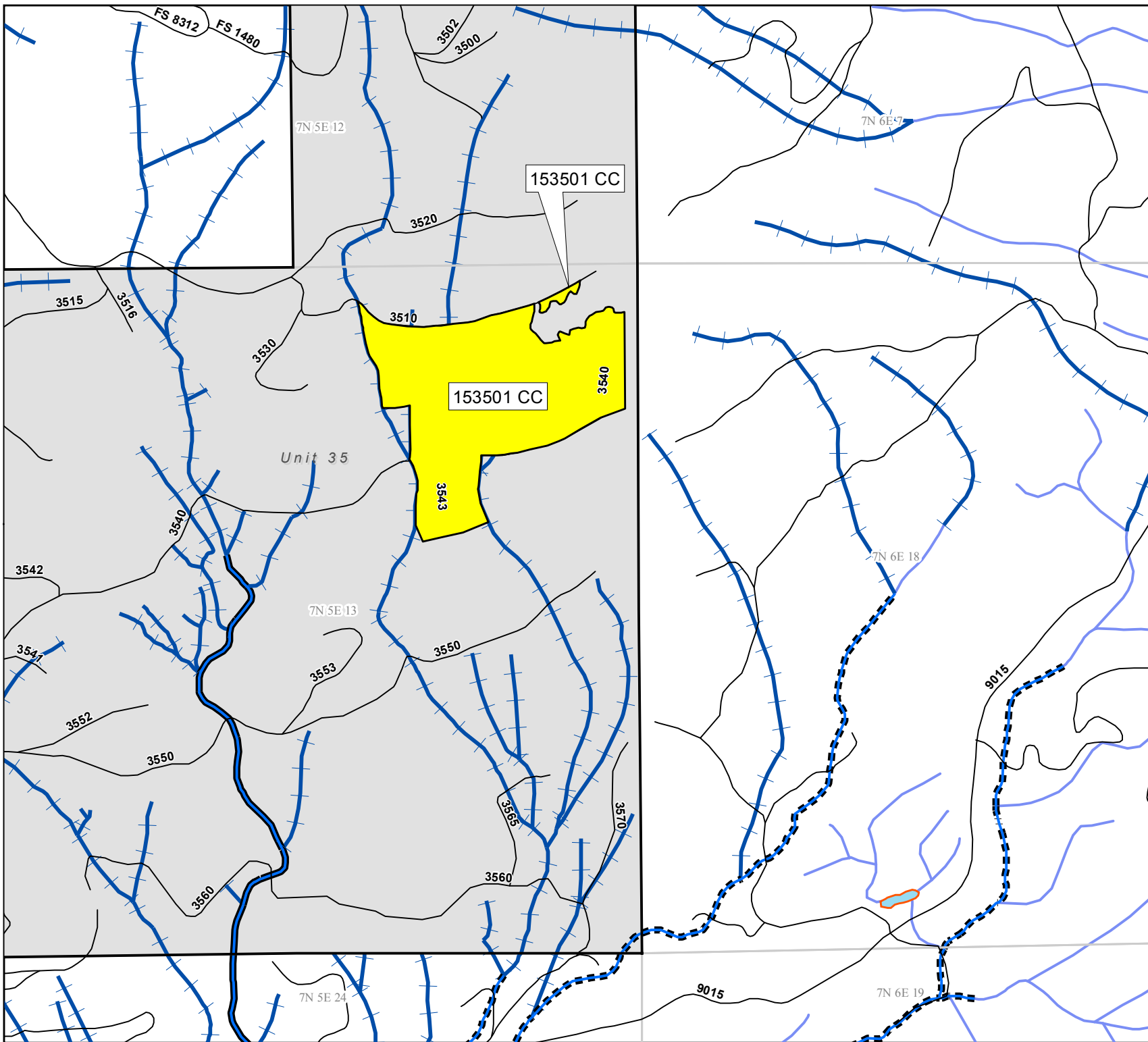
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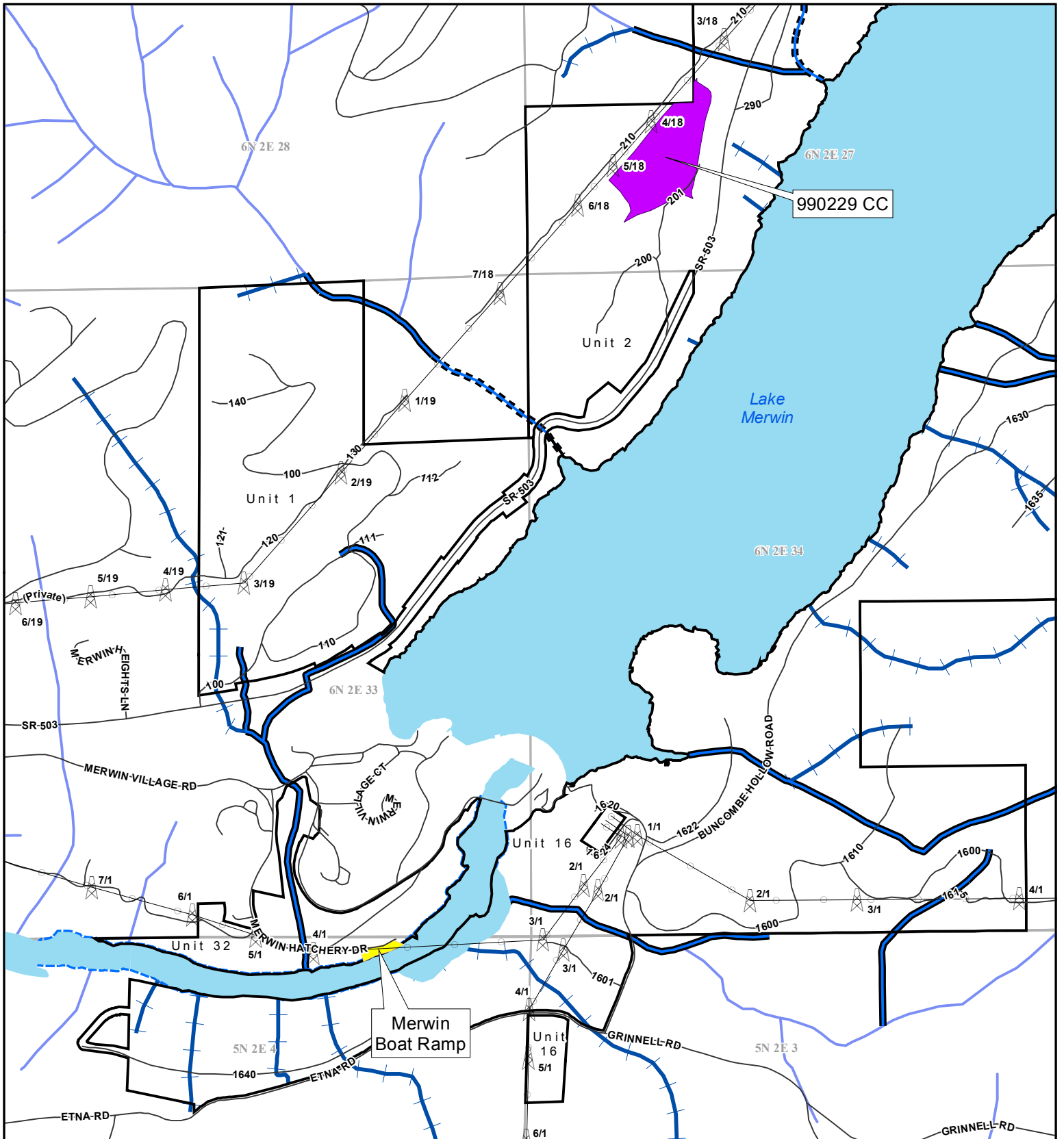
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APPENDIX G
2018 INVASIVE PLANT SPECIES CONTROL MAPS



Lewis River

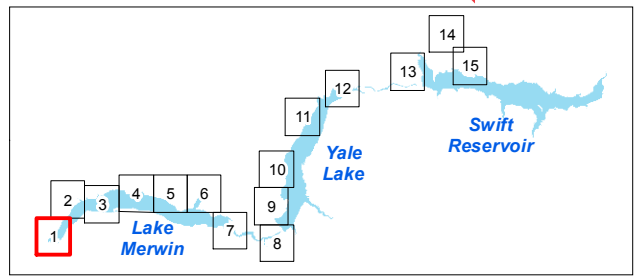
Wildlife Habitat Management Plan

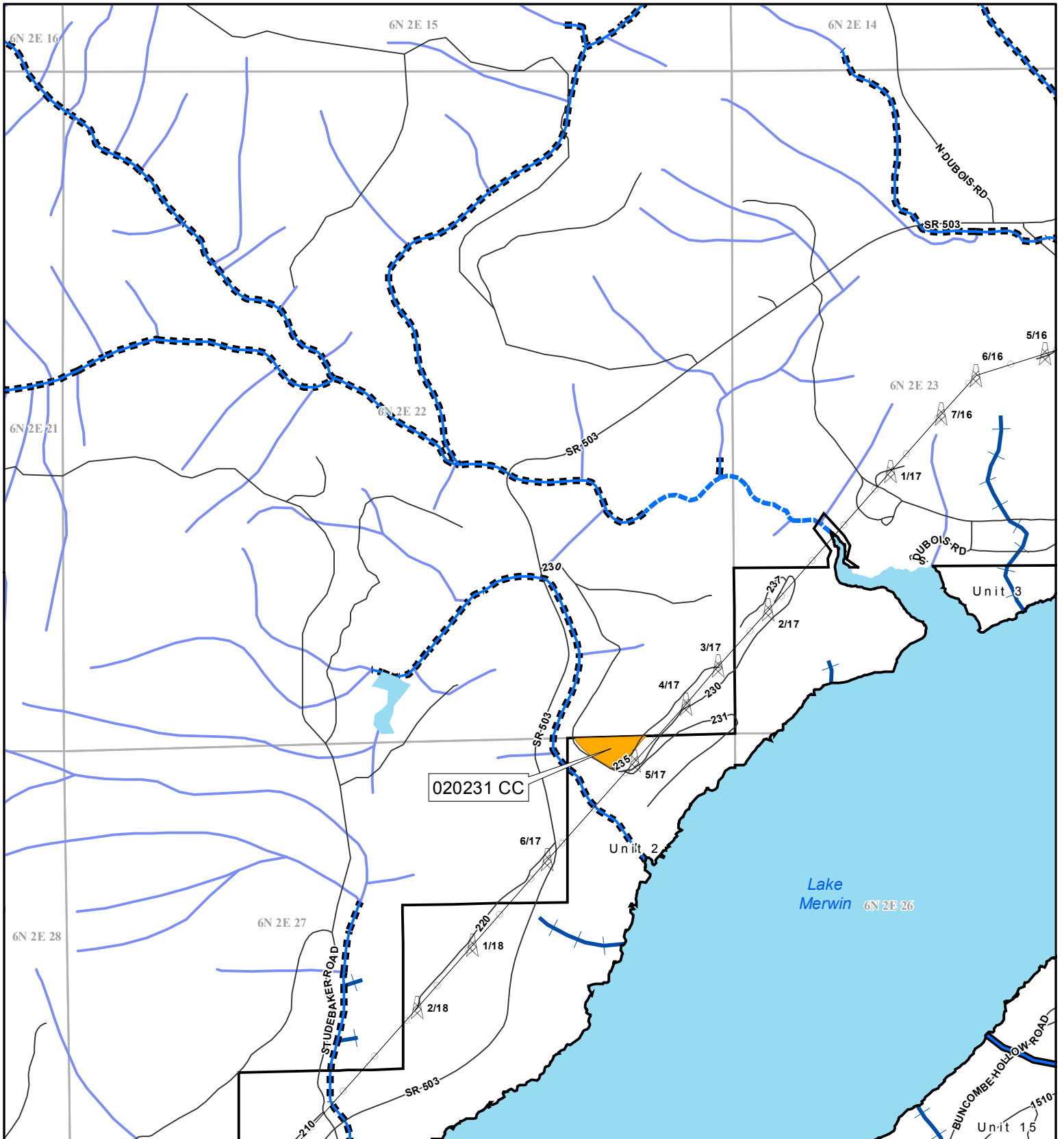
2018 Invasive Plant Control Areas



- | | |
|-------------------|---------------------------|
| Class A | Fish Stream |
| Class B | Anadromous Fish Stream |
| Class C | Non-fish Perennial Stream |
| Class B and C | Non-fish Seasonal Stream |
| Monitor | Other Stream |
| Not Classified | Water Body, Wetland |
| Transmission Pole | Management Unit |
| Transmission Line | Township/Range |
| Road | Section |

Sheet 1 of 15

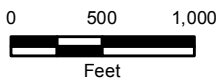




Lewis River

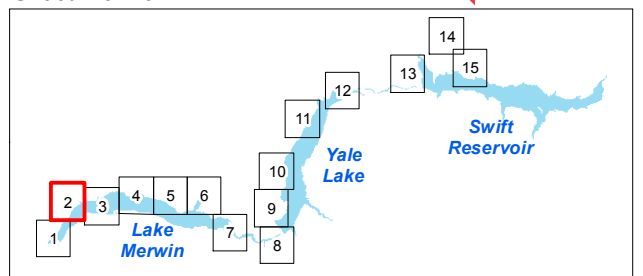
Wildlife Habitat Management Plan

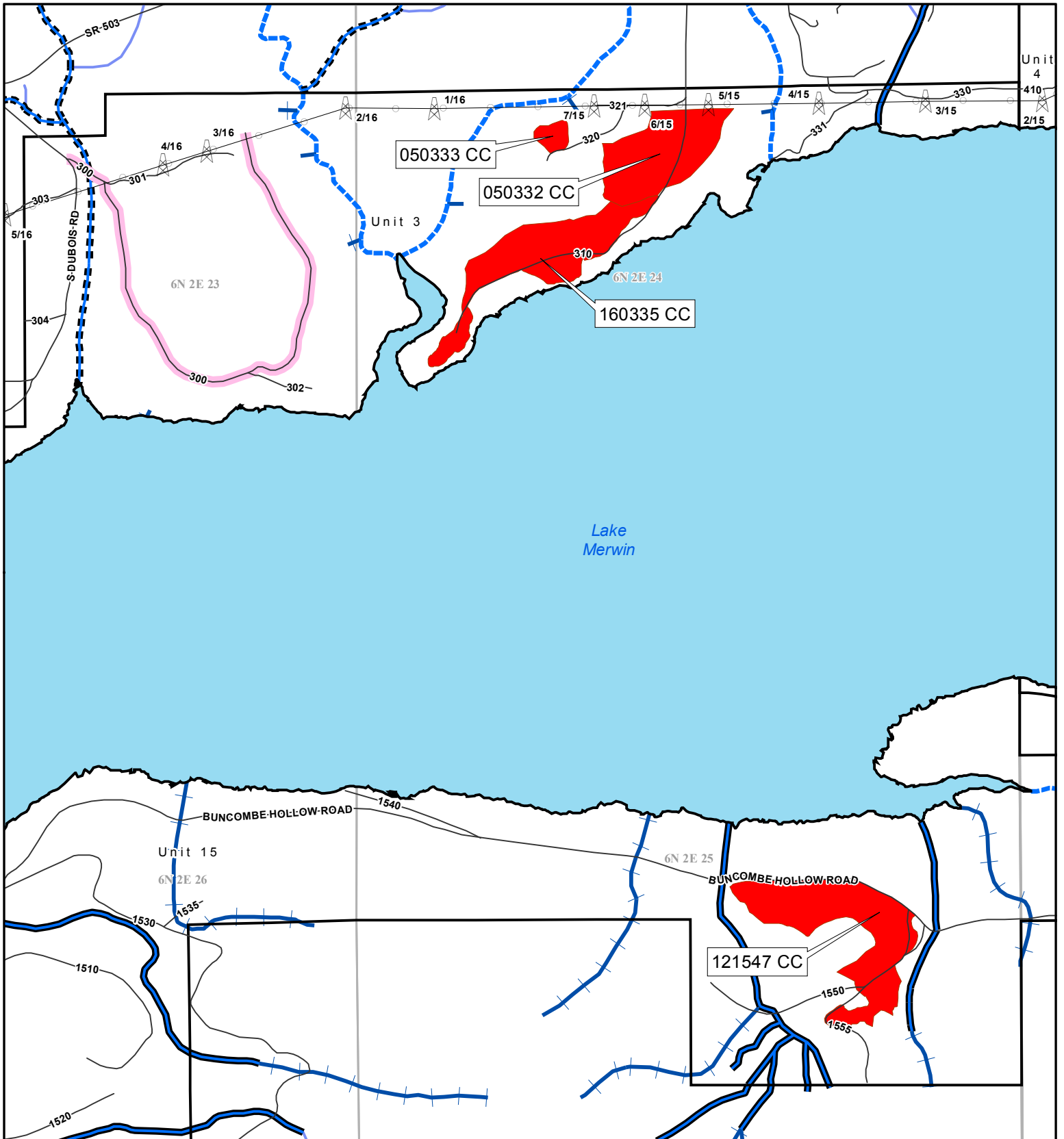
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|-------------------|---------------------------|
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| Class B | Anadromous Fish Stream |
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| Monitor | Other Stream |
| Not Classified | Water Body, Wetland |
| Transmission Pole | Management Unit |
| Transmission Line | Township/Range |
| Road | Section |

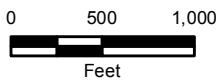
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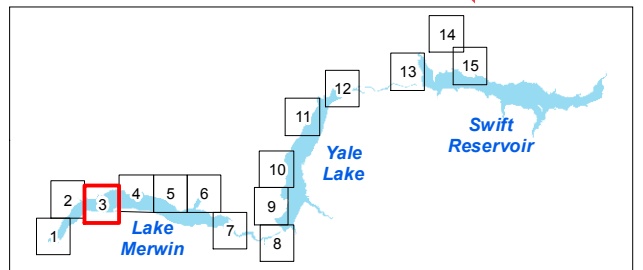


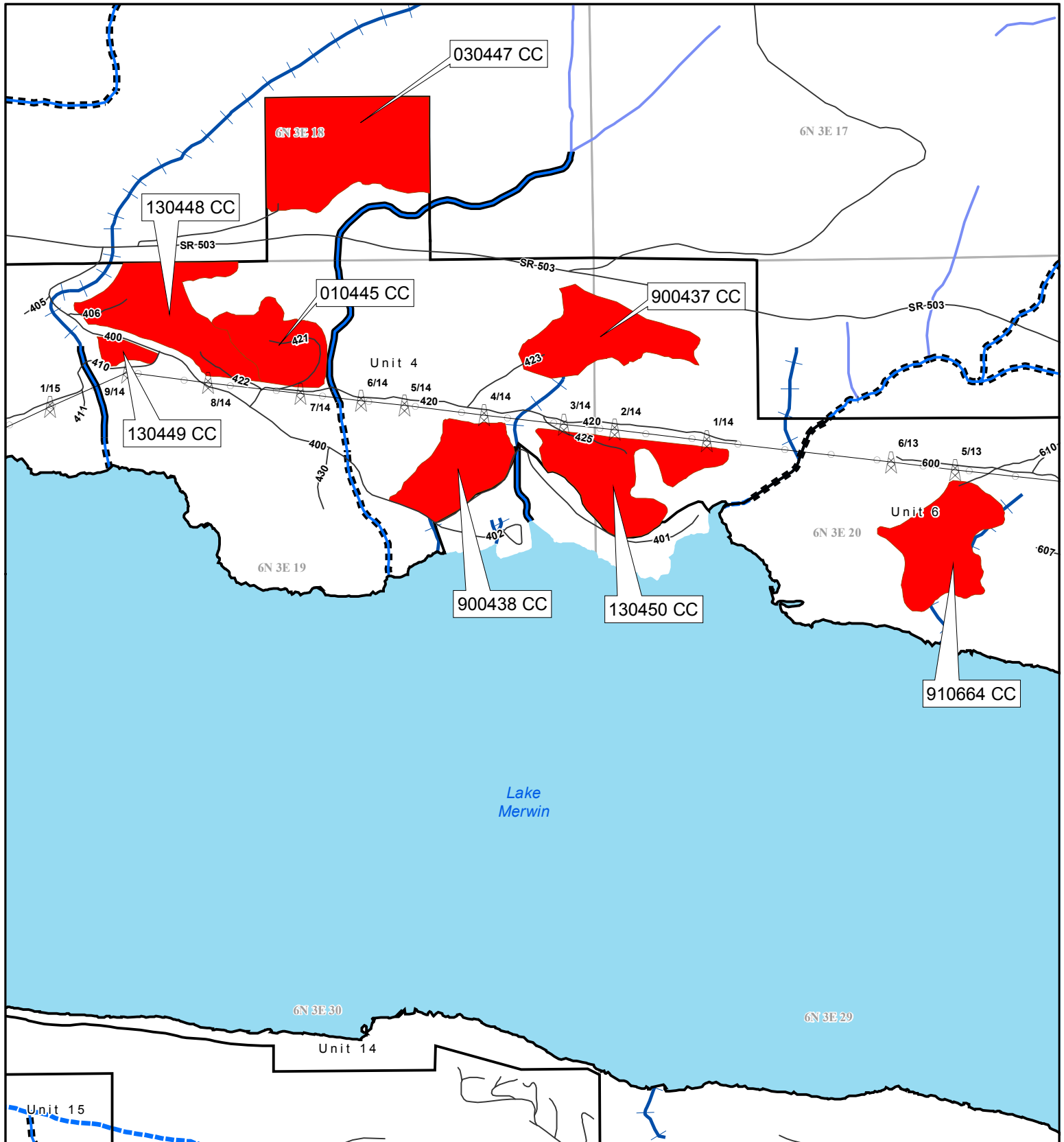
Lewis River
 Wildlife Habitat
 Management Plan
 2018 Invasive Plant
 Control Areas

- | | |
|-------------------|---------------------------|
| Class A | Fish Stream |
| Class B | Anadromous Fish Stream |
| Class C | Non-fish Perennial Stream |
| Class B and C | Non-fish Seasonal Stream |
| Monitor | Other Stream |
| Not Classified | Water Body, Wetland |
| Transmission Pole | Management Unit |
| Transmission Line | Township/Range |
| Road | Section |



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Lewis River

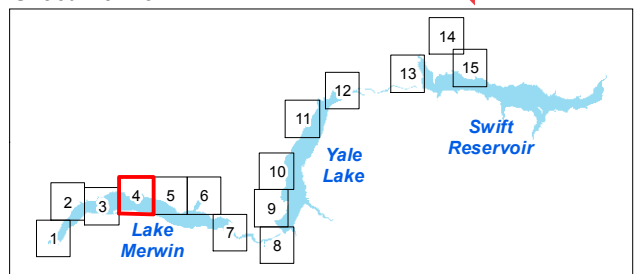
Wildlife Habitat Management Plan

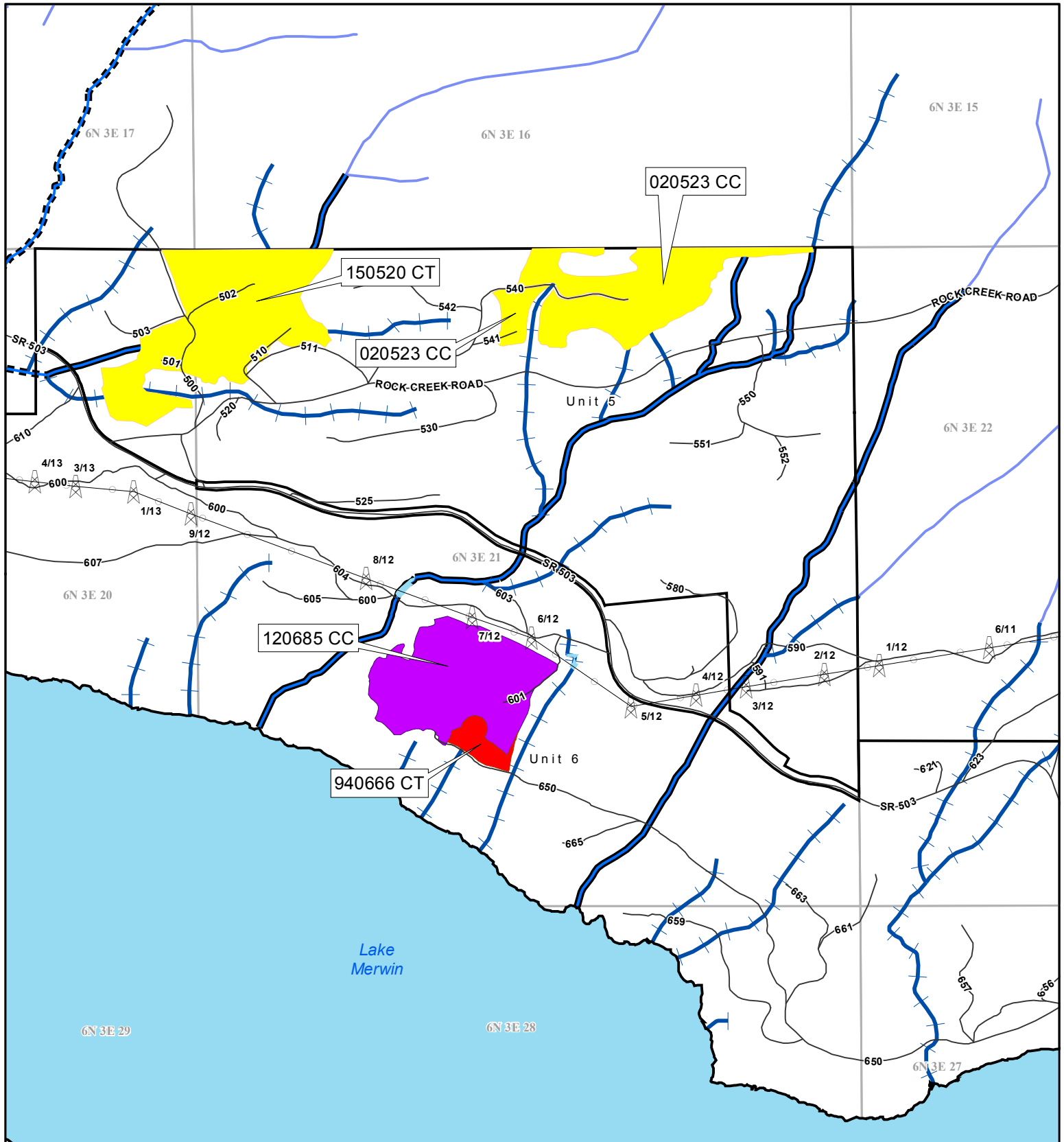
2018 Invasive Plant Control Areas





















- | | |
|-------------------|---------------------------|
| Class A | Fish Stream |
| Class B | Anadromous Fish Stream |
| Class C | Non-fish Perennial Stream |
| Class B and C | Non-fish Seasonal Stream |
| Monitor | Other Stream |
| Not Classified | Water Body, Wetland |
| Transmission Pole | Management Unit |
| Transmission Line | Township/Range |
| Road | Section |

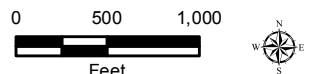
Sheet 4 of 15



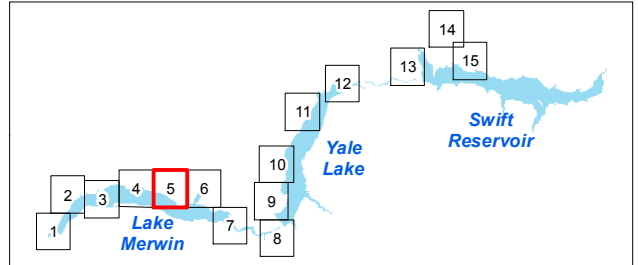


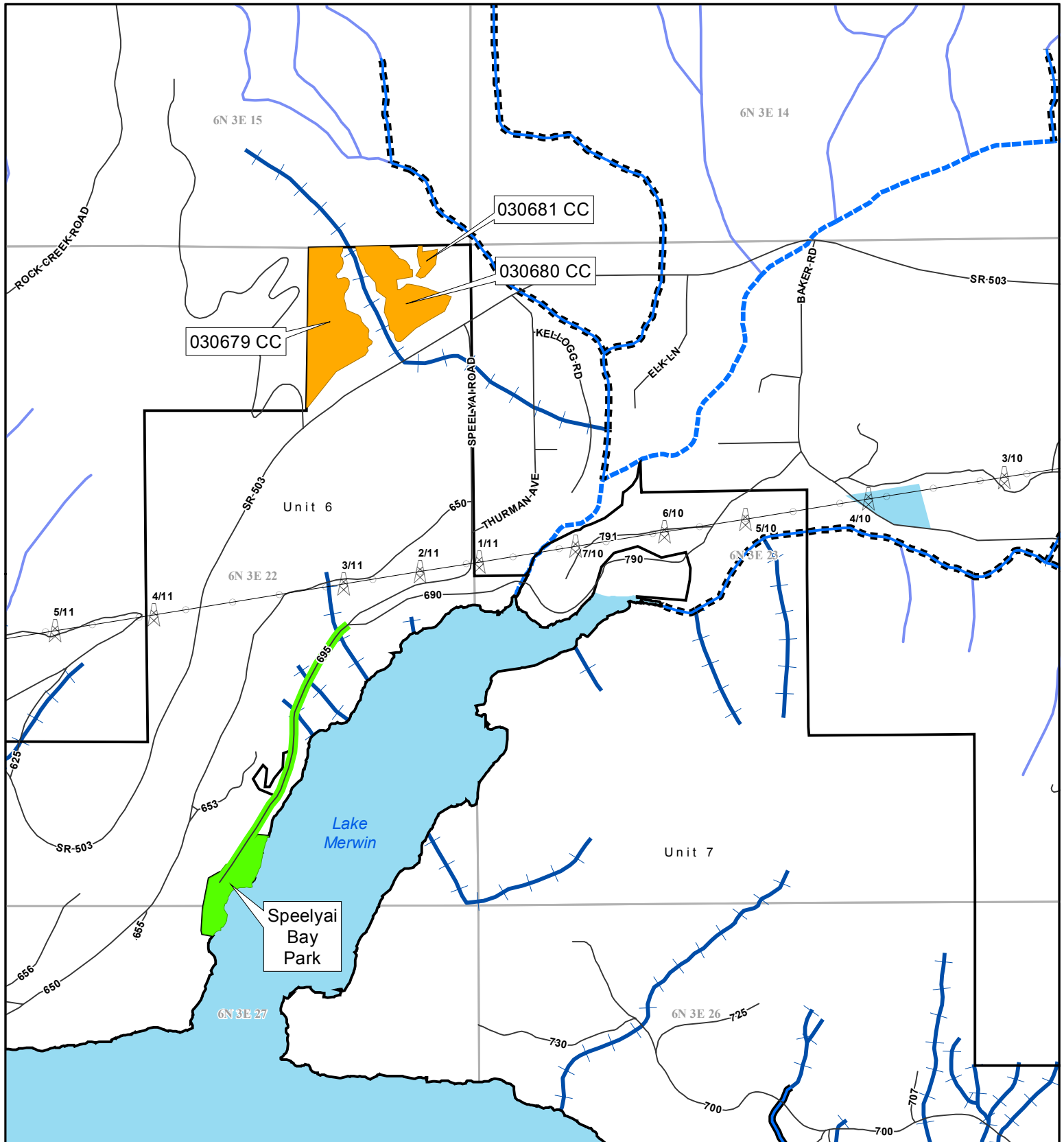
Lewis River
 Wildlife Habitat
 Management Plan
 2018 Invasive Plant
 Control Areas

- | | | | |
|---|-------------------|---|---------------------------|
|  | Class A |  | Fish Stream |
|  | Class B |  | Anadromous Fish Stream |
|  | Class C |  | Non-fish Perennial Stream |
|  | Class B and C |  | Non-fish Seasonal Stream |
|  | Monitor |  | Other Stream |
|  | Not Classified |  | Water Body, Wetland |
|  | Transmission Pole |  | Management Unit |
|  | Transmission Line |  | Township/Range |
|  | Road |  | Section |





















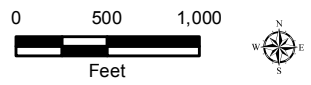
Sheet 5 of 15



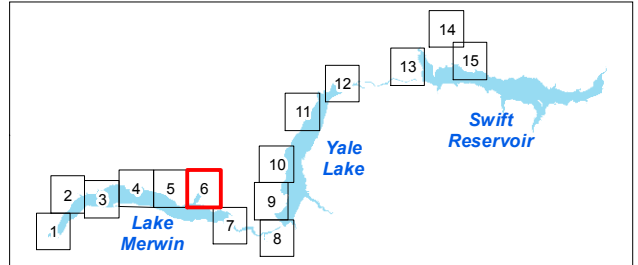


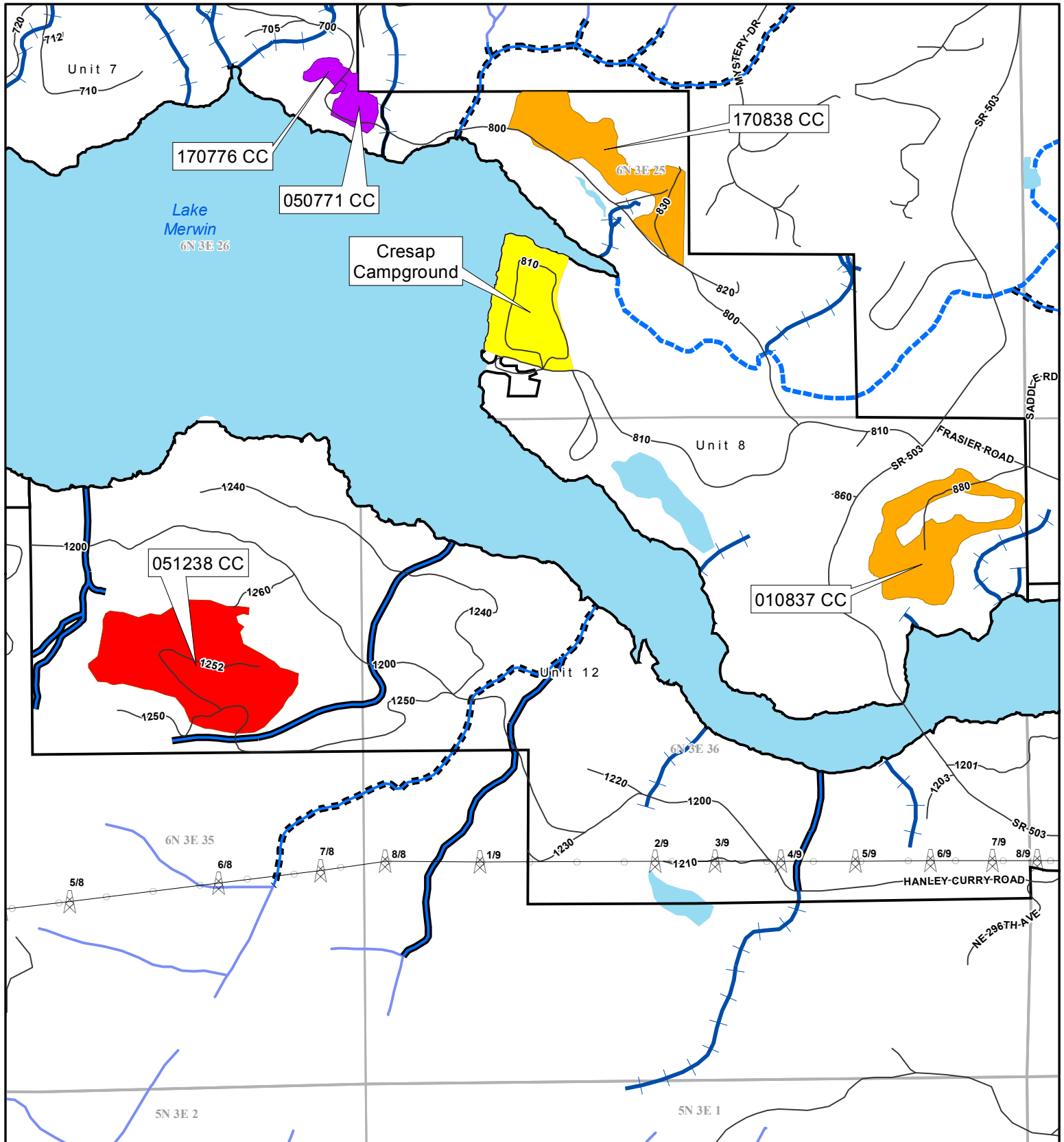
Lewis River
Wildlife Habitat
Management Plan
2018 Invasive Plant
Control Areas

- | | | | |
|---|-------------------|---|---------------------------|
|  | Class A |  | Fish Stream |
|  | Class B |  | Anadromous Fish Stream |
|  | Class C |  | Non-fish Perennial Stream |
|  | Class B and C |  | Non-fish Seasonal Stream |
|  | Monitor |  | Other Stream |
|  | Not Classified |  | Water Body, Wetland |
|  | Transmission Pole |  | Management Unit |
|  | Transmission Line |  | Township/Range |
|  | Road |  | Section |



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Lewis River

Wildlife Habitat Management Plan

2018 Invasive Plant Control Areas

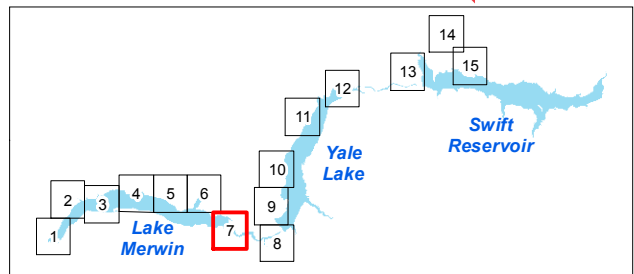


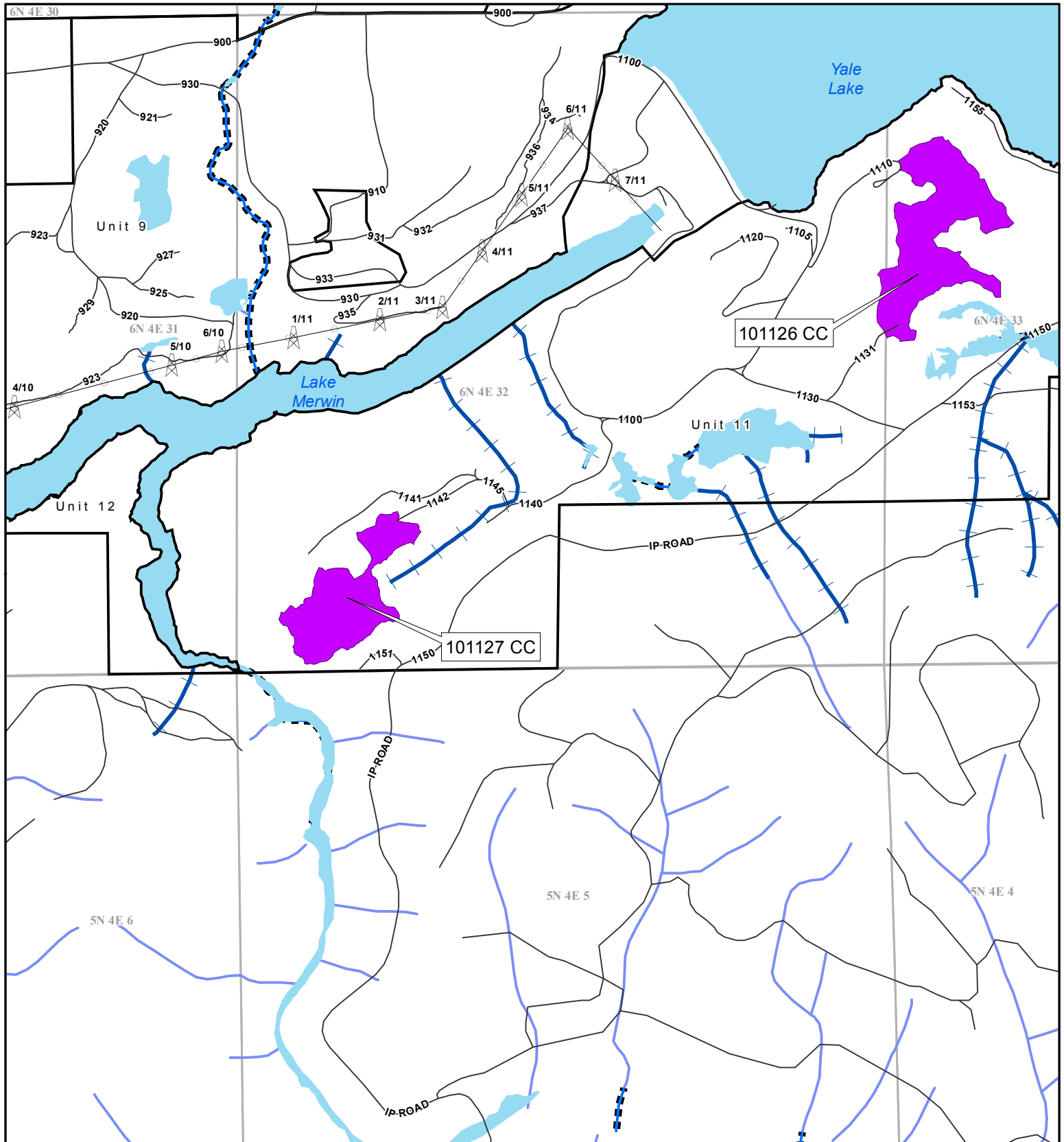
- Class A
- Class B
- Class C
- Class B and C
- Monitor
- Not Classified

- Transmission Pole
- Transmission Line
- Road

- Fish Stream
- Anadromous Fish Stream
- Non-fish Perennial Stream
- Non-fish Seasonal Stream
- Other Stream
- Water Body, Wetland
- Management Unit
- Township/Range
- Section

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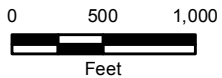


Lewis River

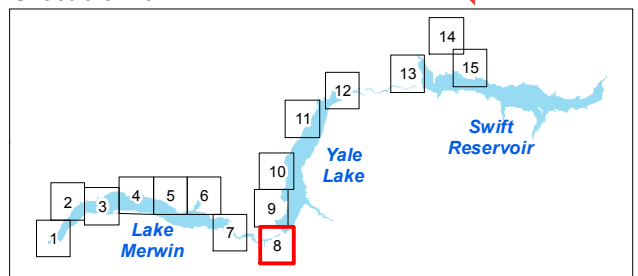
Wildlife Habitat Management Plan

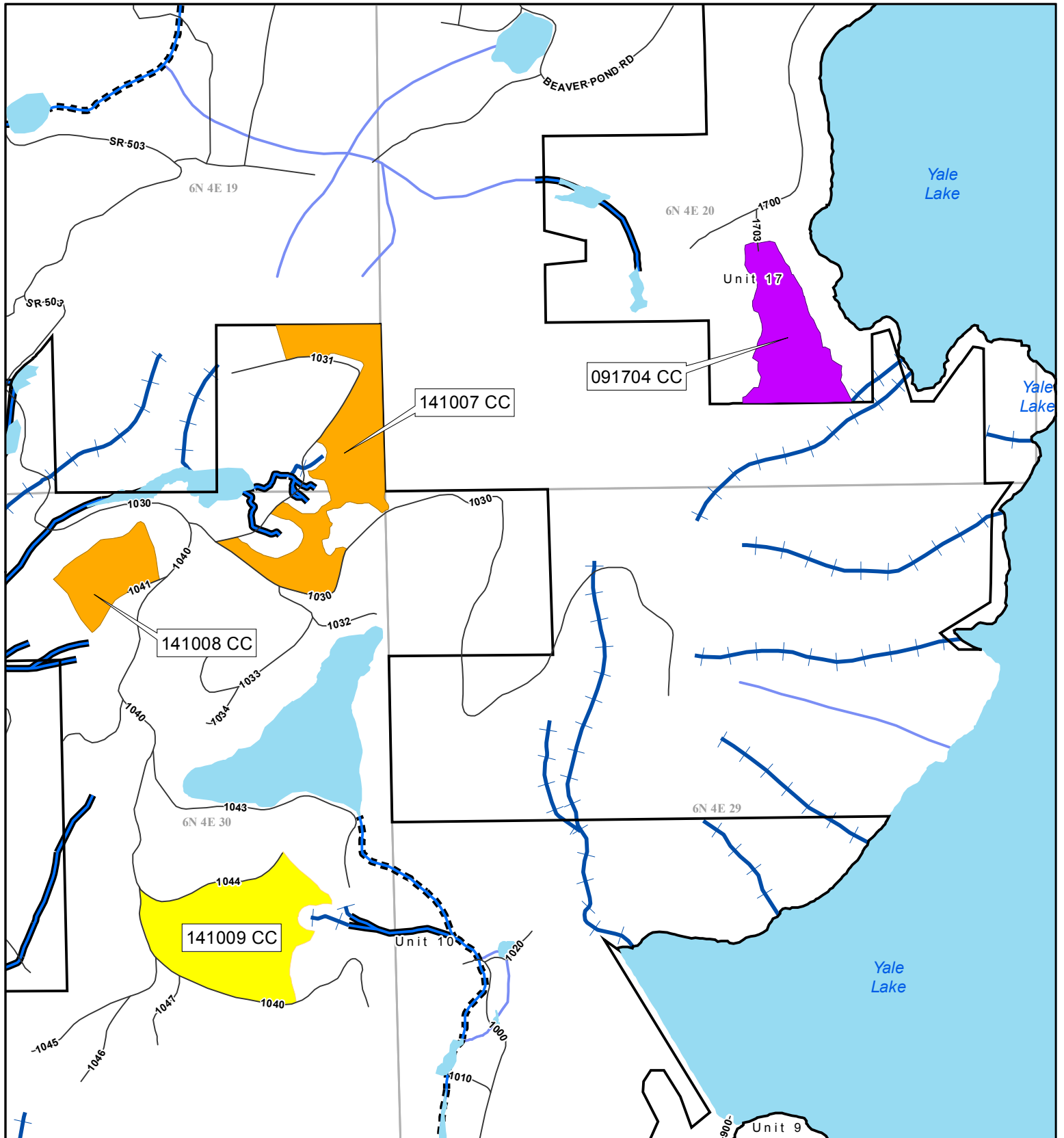
2018 Invasive Plant Control Areas

- | | |
|---|---|
|  Class A |  Fish Stream |
|  Class B |  Anadromous Fish Stream |
|  Class C |  Non-fish Perennial Stream |
|  Class B and C |  Non-fish Seasonal Stream |
|  Monitor |  Other Stream |
|  Not Classified |  Water Body, Wetland |
|  Transmission Pole |  Management Unit |
|  Transmission Line |  Township/Range |
|  Road |  Section |



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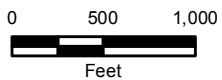




Lewis River

Wildlife Habitat Management Plan

2018 Invasive Plant Control Areas

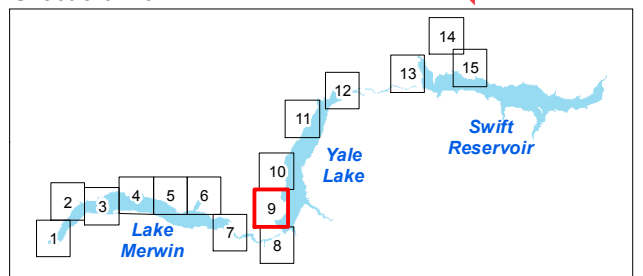


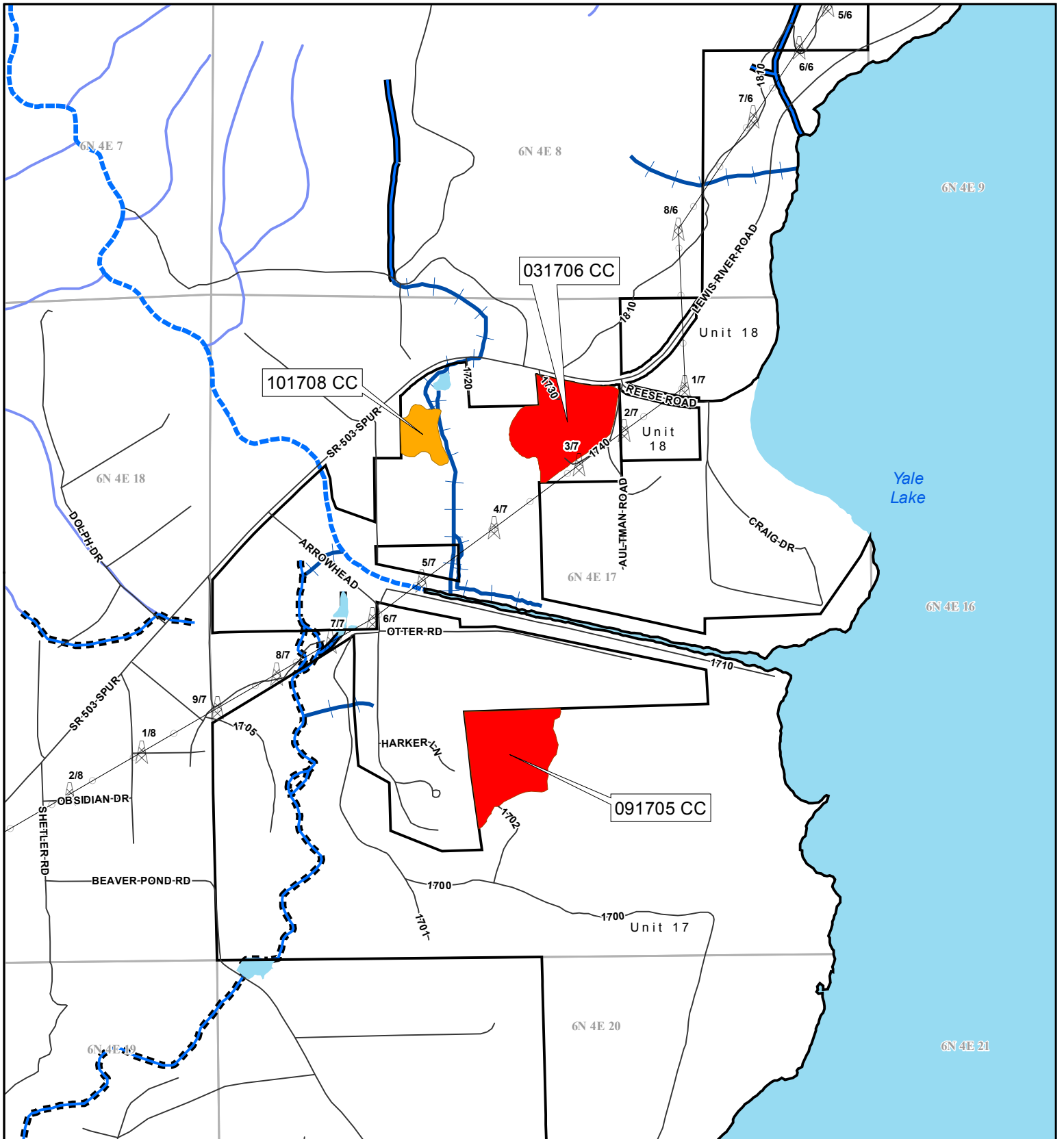
- Class A
- Class B
- Class C
- Class B and C
- Monitor
- Not Classified

- Transmission Pole
- Transmission Line
- Road

- Fish Stream
- Anadromous Fish Stream
- Non-fish Perennial Stream
- Non-fish Seasonal Stream
- Other Stream
- Water Body, Wetland
- Management Unit
- Township/Range
- Section

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Lewis River

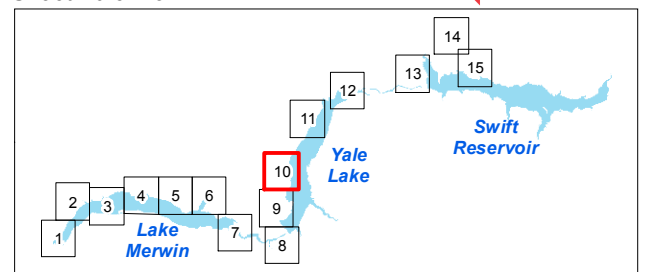
Wildlife Habitat Management Plan

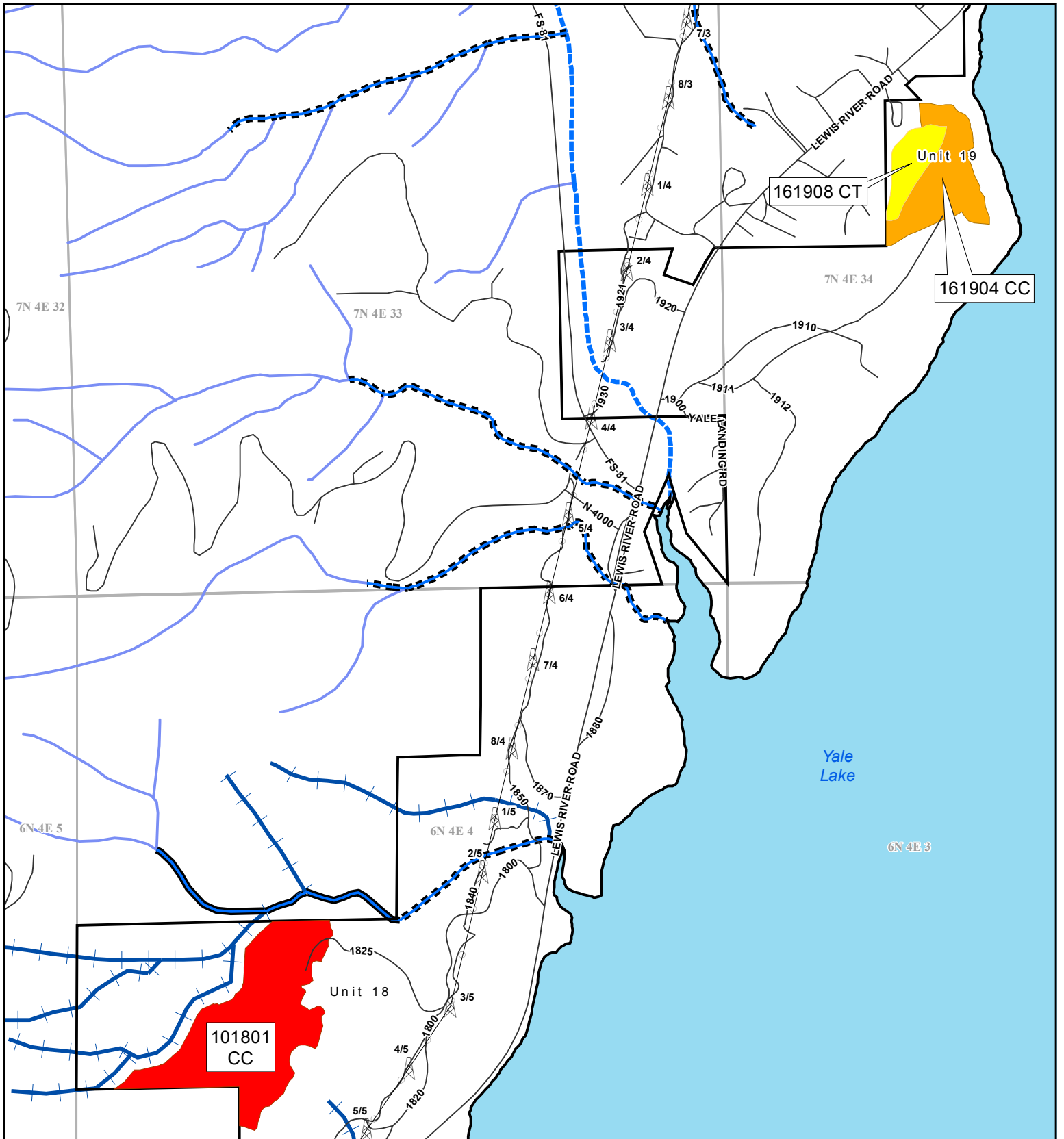
2018 Invasive Plant Control Areas



- | | |
|-------------------|---------------------------|
| Class A | Fish Stream |
| Class B | Anadromous Fish Stream |
| Class C | Non-fish Perennial Stream |
| Class B and C | Non-fish Seasonal Stream |
| Monitor | Other Stream |
| Not Classified | Water Body, Wetland |
| Transmission Pole | Management Unit |
| Transmission Line | Township/Range |
| Road | Section |

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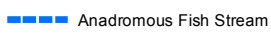



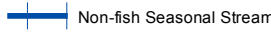

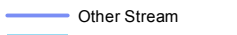

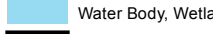

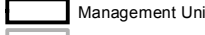

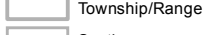



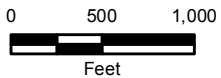


Lewis River

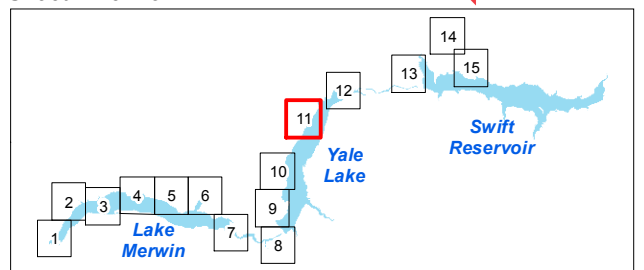
Wildlife Habitat Management Plan

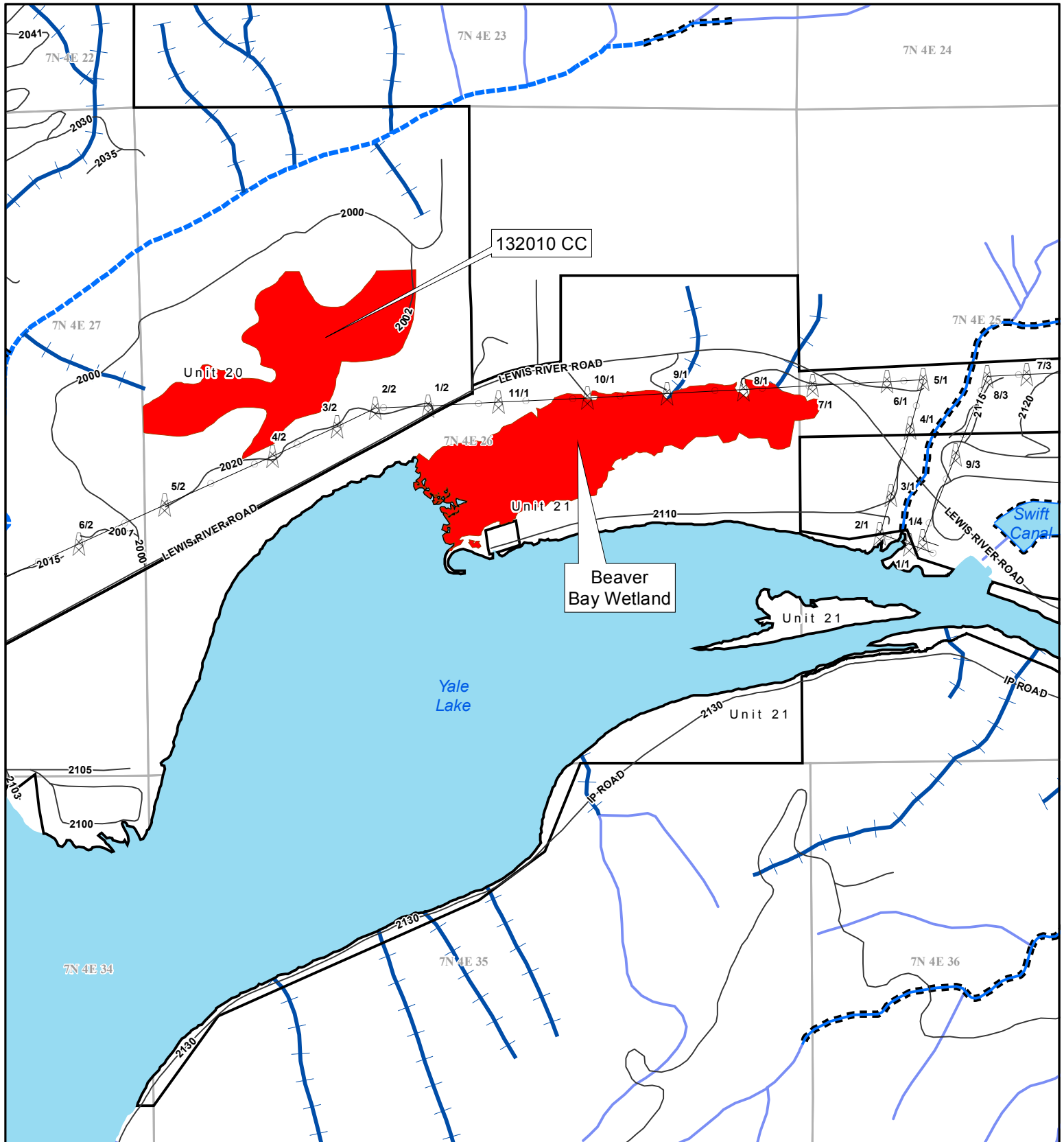
2018 Invasive Plant Control Areas

- | | | | |
|---|-------------------|---|---------------------------|
|  | Class A |  | Fish Stream |
|  | Class B |  | Anadromous Fish Stream |
|  | Class C |  | Non-fish Perennial Stream |
|  | Class B and C |  | Non-fish Seasonal Stream |
|  | Monitor |  | Water Body, Wetland |
|  | Not Classified |  | Management Unit |
|  | Transmission Pole |  | Township/Range |
|  | Transmission Line |  | Section |
|  | Road | | |



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132010 CC

Unit 20

Unit 21

Beaver Bay Wetland

Yale Lake

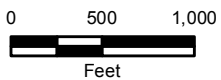
Unit 21




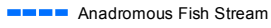

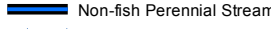

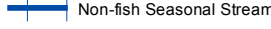

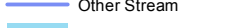



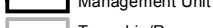

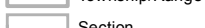


Swift Canal

Lewis River

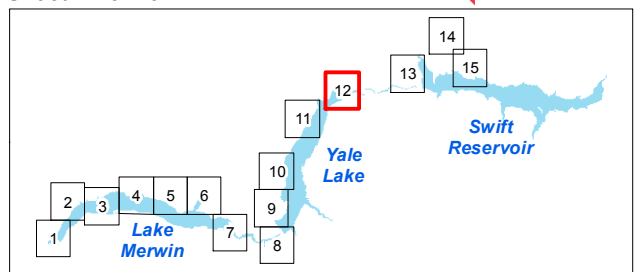
Wildlife Habitat Management Plan

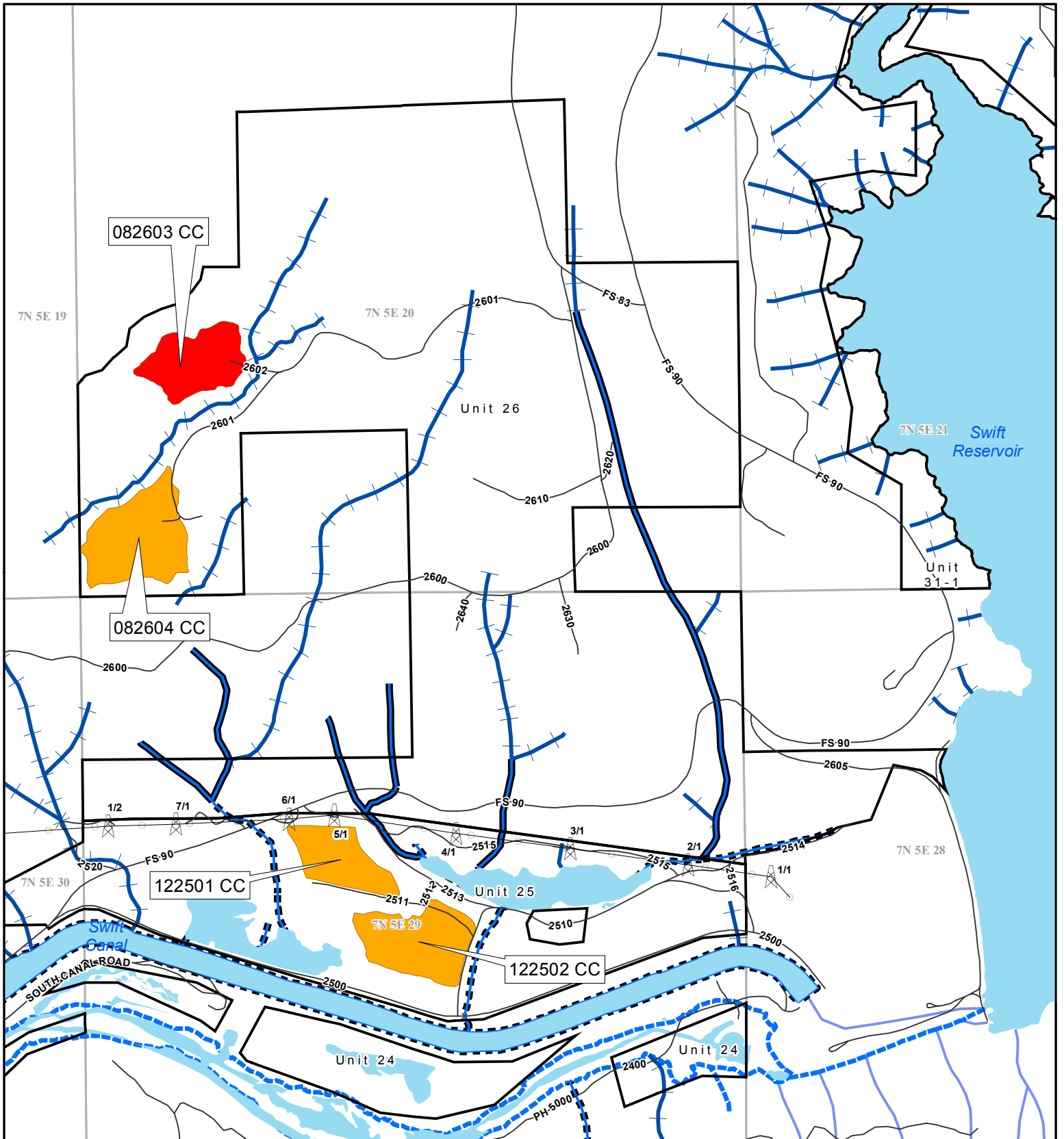
2018 Invasive Plant Control Areas



- | | |
|---|---|
|  Class A |  Fish Stream |
|  Class B |  Anadromous Fish Stream |
|  Class C |  Non-fish Perennial Stream |
|  Class B and C |  Non-fish Seasonal Stream |
|  Monitor |  Other Stream |
|  Not Classified |  Water Body, Wetland |
|  Transmission Pole |  Management Unit |
|  Transmission Line |  Township/Range |
|  Road |  Section |

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Lewis River

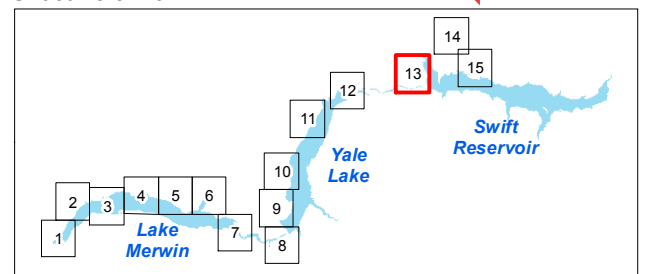
Wildlife Habitat Management Plan

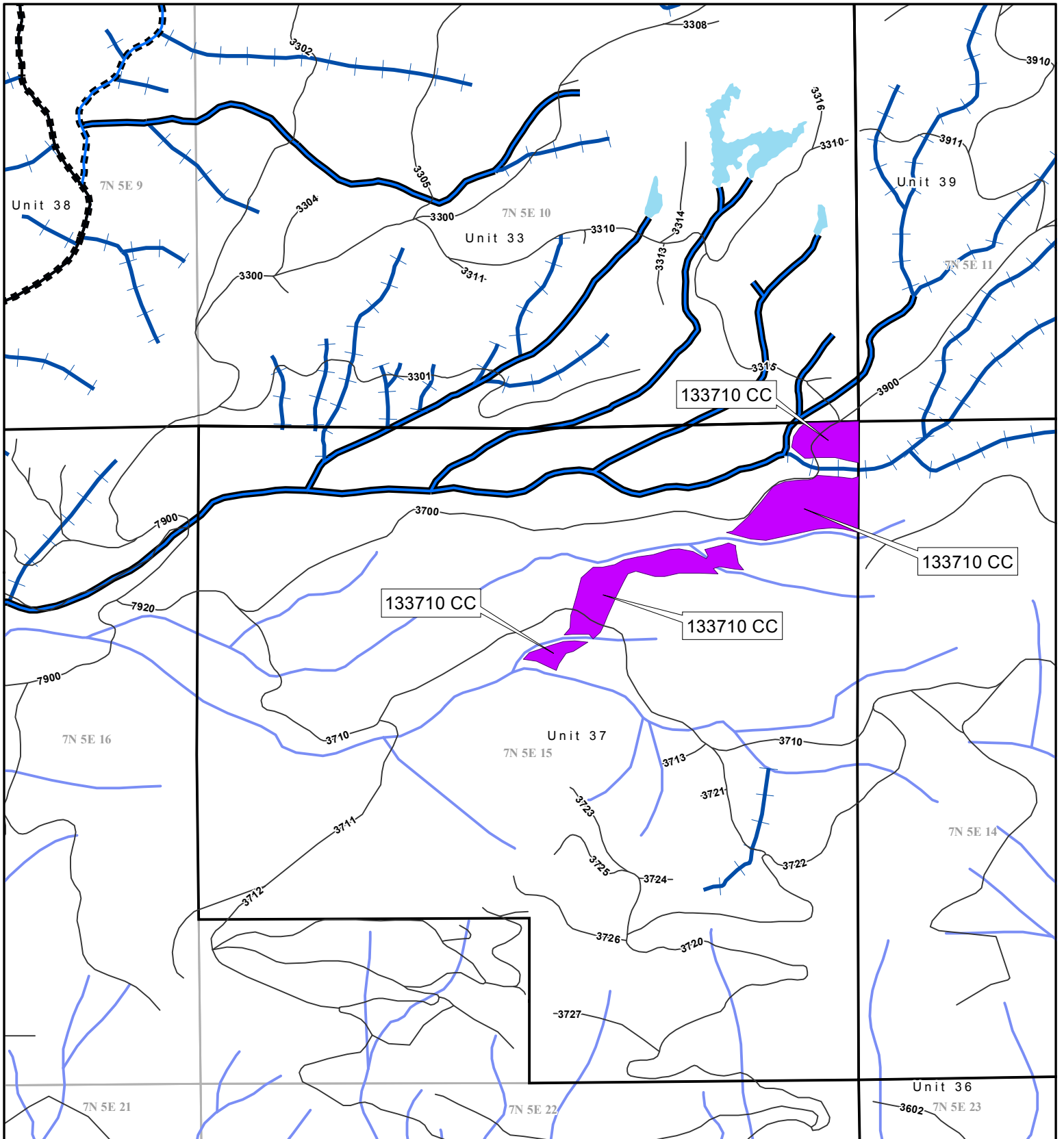
2018 Invasive Plant Control Areas



- | | |
|-------------------|---------------------------|
| Class A | Fish Stream |
| Class B | Anadromous Fish Stream |
| Class C | Non-fish Perennial Stream |
| Class B and C | Non-fish Seasonal Stream |
| Monitor | Other Stream |
| Not Classified | Water Body, Wetland |
| Transmission Pole | Management Unit |
| Transmission Line | Township/Range |
| Road | Section |

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Lewis River

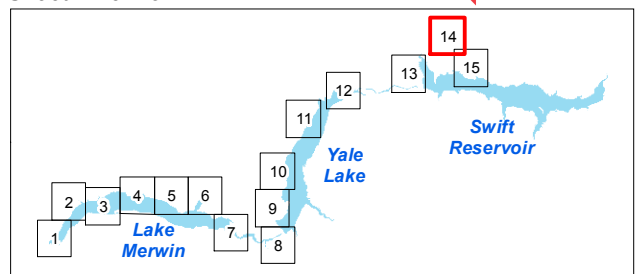
Wildlife Habitat Management Plan

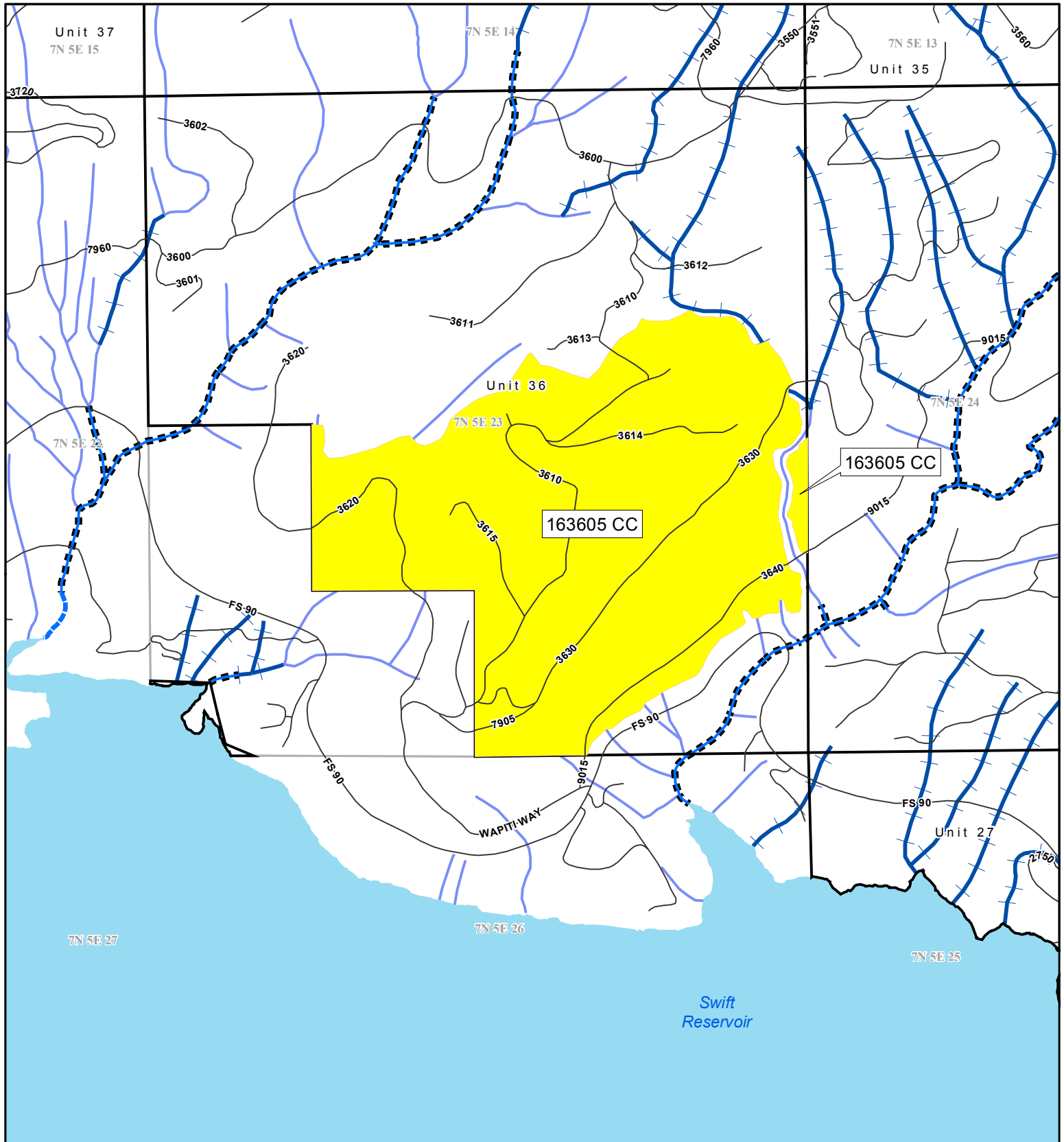
2018 Invasive Plant Control Areas

- | | |
|-------------------|---------------------------|
| Class A | Fish Stream |
| Class B | Anadromous Fish Stream |
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| Class B and C | Non-fish Seasonal Stream |
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| Not Classified | Water Body, Wetland |
| Transmission Pole | Management Unit |
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| Road | Section |



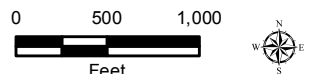
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Lewis River
Wildlife Habitat
Management Plan
2018 Invasive Plant
Control Areas

- | | |
|-------------------|---------------------------|
| Class A | Fish Stream |
| Class B | Anadromous Fish Stream |
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| Monitor | Other Stream |
| Not Classified | Water Body, Wetland |
| Transmission Pole | Management Unit |
| Transmission Line | Township/Range |
| Road | Section |



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