

April 29, 2016

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission (FERC)
888 First Street NE
Washington, DC 20426

**Re: Jackson Hydroelectric Project, FERC No. P-2157
Terrestrial Resources 5-Year Report**

Dear Secretary Bose:

Public Utility District No. 1 of Snohomish County (the District) is filing its 5-Year Report for the Terrestrial Resources Management Plan, Noxious Weed Management Plan, and Marbled Murrelet Habitat Protection Plan required by License of the Jackson Hydroelectric Project (Project) per the Commission Order Issuing New License dated September 2, 2011.

If you have any questions regarding the attached report, please do not hesitate to contact Keith Binkley, Natural Resources Manager, at (425) 783-1769.

Sincerely,

/s/ Giuseppe Fina

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Enclosed: 5-Year Report for Terrestrial Resources

Henry M. Jackson Hydroelectric Project FERC No. 2157

TERRESTRIAL RESOURCES 2015 ANNUAL REPORT 5-Year Report (2011-2015)



April 2016

Submitted by:

Public Utility District No.1 of Snohomish County



Everett, WA

Final – This document has been prepared for the District. It has been peer-reviewed by the District for accuracy and formatting based on information known at the time of its preparation and with that understanding is considered complete by the District. The document may be cited as:

Public Utility District No. 1 of Snohomish County (District). 2016. Terrestrial Resources 2015 Annual Report, 5-Year Report (2011-2015) for the Henry M. Jackson Hydroelectric Project, FERC No. 2157. April 2016.

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LIST OF ACRONYMS AND ABBREVIATIONS

City	City of Everett, Washington
CWD	coarse woody debris
District	Public Utility District No. 1 of Snohomish County
DLT	decaying live trees
DNR	Washington Department of Natural Resources
FERC	Federal Energy Regulatory Commission
MMHPP	Marbled Murrelet Habitat Protection Plan
NWMP	Noxious Weed Management Plan
Project	Henry M. Jackson Hydroelectric Project, FERC No. 2157
RRMP	Recreation Resource Management Plan
ROW	right-of-way
SCNWB	Snohomish County Noxious Weed Board
SRCT	Sultan River Canyon Trail
Tribes	Tulalip Tribes of Washington
TRMP	Terrestrial Resource Management Plan
WDFW	Washington Department of Fish and Wildlife
WHMP	Wildlife Habitat Management Plan
USFWS	U.S. Fish and Wildlife Service
USFS	U.S. Forest Service Mt. Baker-Snoqualmie National Forest

Executive Summary

Activities accomplished from 2011 through 2015 on the Terrestrial Resource Management Plan (TRMP), Noxious Weed Management Plan (NWMP), and Marbled Murrelet Habitat Protection Plan (MMHPP) for the Henry M. Jackson Hydroelectric Project (Project) are summarized in this report. Implementation of these three plans was initiated following the Federal Energy Regulatory Commission (FERC) Order Issuing New License effective on 2 September 2011. Requirements of each plan were met during the 2011 – 2015 time frame. No problems were encountered and no significant changes are proposed for the management plans. At the request of Washington Department of Fish and Wildlife, expressed during the 2012 annual report and meeting, the same number of woody habitat structures (snags, decaying live trees, and coarse woody debris) will be created as specified in the TRMP, but standing structures will be created in place of some of the coarse woody debris. Also, the TRMP nest box program was altered to include an additional monitoring visit during the nesting season. Tasks scheduled for 2016-2020 are also presented.

Tasks Accomplished during 2015

- Created snags, decaying live trees, coarse woody debris logs and canopy gaps on the Spada Lake Tract to promote mature forest characteristics in younger aged stands
- Maintained and monitored waterfowl nest boxes at Lost Lake
- Preserved and protected old growth forest, wetlands, and riparian forest on Project lands
- Implemented an intensive effort to manage noxious and invasive weeds on all TRMP tracts of land, with a concentrated effort to control weed infestations within the Spada Lake Reservoir watershed
- Followed the restrictions of the MMHPP in all Project related activities, including implementation of the Recreation Resources Management Plan
- District biologists coordinated with Project staff on work activities related to implementation of the TRMP, NWMP, and MMHPP to ensure that all Project activities were accomplished in accordance with plans

Tasks Scheduled for 2016-2020

- Annually evaluate approximately 180 acres of land on the Spada Lake Tract for creation of decaying live trees, snags, coarse woody debris logs and canopy gaps, to ensure that by the end of the initial 10-year period (2011-2020) all TRMP lands have been evaluated for woody habitat structure creation
- Continue to maintain and monitor waterfowl nest boxes at Lost Lake
- Continue to manage noxious and invasive weeds on all TRMP tracts of land
- Continue preservation and protection of old growth forest, wetlands, and riparian forest on Project lands
- Continue coordination with operations and maintenance staff on Project activities to ensure that the TRMP, NWMP and MMHPP are considered when activities are being planned, and adhered to when activities are conducted

1. INTRODUCTION

The Terrestrial Resource Management Plan (TRMP), Noxious Weed Management Plan (NWMP), and Marbled Murrelet Habitat Protection Plan (MMHPP) for the Henry M. Jackson Hydroelectric Project (Project) are requirements under the Federal Energy Regulatory Commission (FERC) Order Issuing New License, issued on 2 September 2011 (136 FERC ¶ 62,188), Ordering Paragraph E, License Appendix B, Condition 2; and Article 411 Marbled Murrelet Habitat Protection Plan. This 2015 Annual Progress Report for the TRMP, NWMP, and MMHPP was prepared by Public Utility District No. 1 of Snohomish County (the District) as required by each of these plans.

The TRMP describes the actions the District will take to protect, mitigate and enhance terrestrial resources associated with the Project on four management tracts (Figure 1-1). The TRMP was prepared in consultation with the U.S. Fish and Wildlife Service (USFWS), U.S. Forest Service Mt. Baker-Snoqualmie National Forest (USFS), Washington Department of Fish and Wildlife (WDFW), and the Tulalip Tribes (Tribes). The plan guides the management of approximately 4,456 acres of land and water within the Project boundary. The TRMP is available on the District's web site via the following link:

<http://www.snopud.com/PowerSupply/hydro/jhp/jhplicense.ashx?p=1978>).

The TRMP incorporates habitat enhancement methods for forest vegetation management, including old growth, young forest and understory management; lake, wetland and stream buffers; snags, decaying live trees and coarse woody debris; right-of-way management; and waterfowl nest boxes on the four tracts. The TRMP describes the existing habitat conditions and values, management constraints, habitat management objectives, habitat management methods, and management prescriptions for each tract. It also describes monitoring and reporting requirements and provides a schedule for implementation.

The TRMP requires that a report be prepared and submitted to the USFWS, WDFW, and the Tribes annually and submitted to FERC every five years. Reports summarize and document implementation of the TRMP during the intervening period and identify activities planned for the next period. Monitoring data is presented in summary form and analyzed. Problems and proposed changes in the TRMP, if any, are discussed. Review meetings are offered to the USFWS, WDFW and Tribes by the District, to discuss information included in the reports. This report represents the first 5-year report to FERC, and details activities that occurred over the last five years (from 2011-2015) and those that are planned over the next 5 years (from 2016-2020).

The NWMP describes the District's strategy for controlling and containing the spread of Class A, Class B Designate, and Snohomish County Selected noxious weeds, as well as other weeds the District manages within the Project boundary. The NWMP was developed in consultation with the Snohomish County Noxious Weed Board (SCNWB), the City of Everett (City), Washington Department of Natural Resources (DNR), USFWS, WDFW and USFS. The NWMP is available on the District's web site via the following link:

<http://www.snopud.com/PowerSupply/hydro/jhp/jhplicense.ashx?p=1978>).

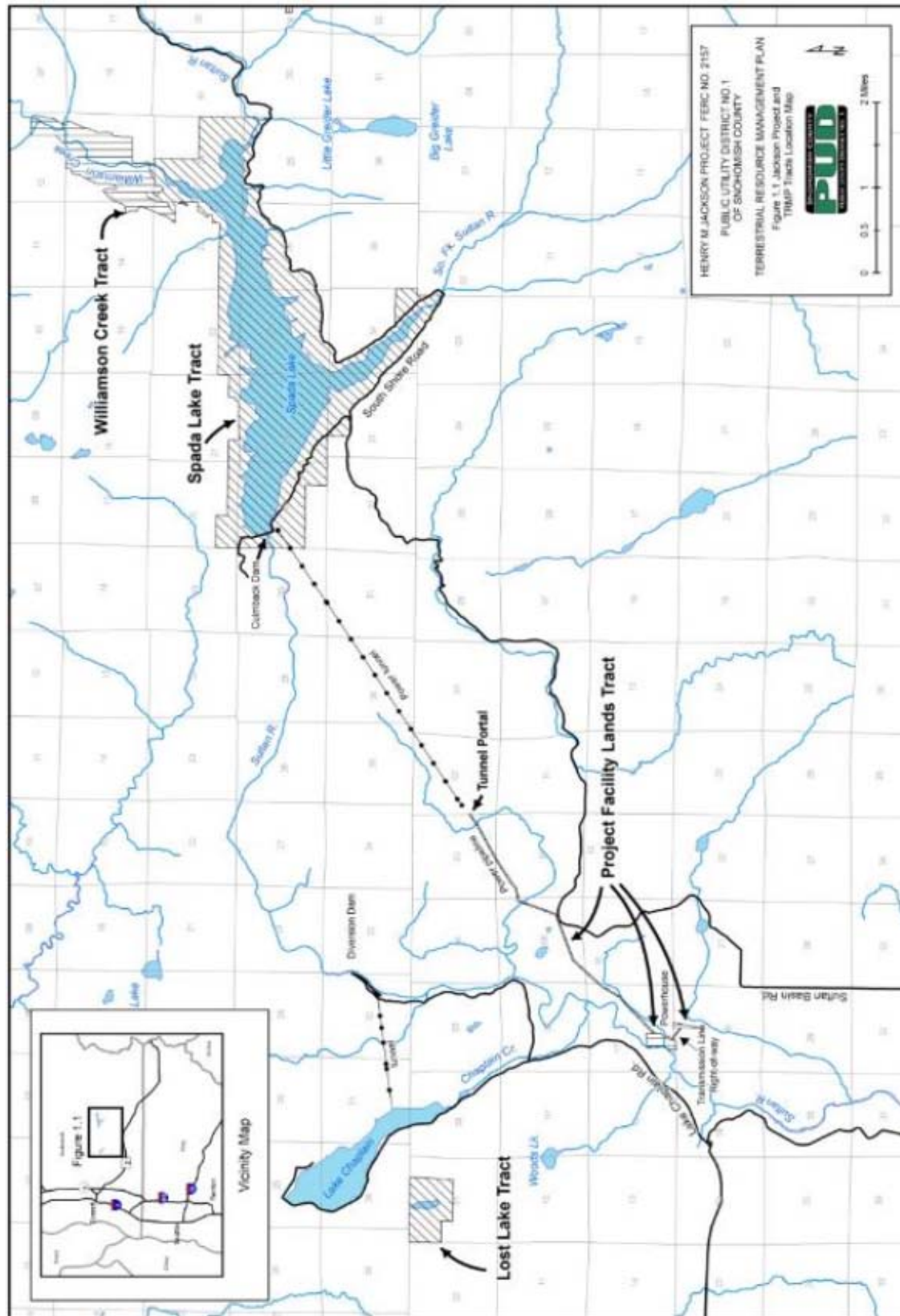


Figure 1-1. Location of Project and Terrestrial Resource Management Plan Tracts.

The NWMP includes:

- A list of Washington State Class A, Washington State Class B Designate and Snohomish County Selected Noxious Weeds, updated annually to reflect changes in State and County lists
- A summary of Washington State Class A, Washington State Class B Designate, Snohomish County Selected, and other target species of noxious weeds occurring within the Project boundary based on ongoing weed management work and the 2007 Noxious Weed Inventory
- A summary of ongoing weed management activities on Project lands
- Treatment options and recommendations for established and new infestations of target weed species, including management goals, measurable objectives, and priorities for treatment
- Prevention strategies (e.g., weed prevention practices for ground disturbing work, revegetation methods, and education information for Project employees)
- Monitoring and implementation schedules

The NWMP also includes annual consultation with SCNWCB and the other stakeholders. The annual consultation includes: updates to the noxious weed list, a summary of weed management actions taken since the previous report, and periodic (five-year) review of plan accomplishments and updates of lists and appendices, prepared in consultation with the stakeholders. This information is provided to FERC as part of this TRMP five-year report.

The MMHPP was developed after surveys by the District and others documented the presence of marbled murrelets (a federal Endangered Species Act (ESA) listed threatened species) in the Sultan Basin, which resulted in the designation of portions of the forest in and near the Project boundary as “occupied” by nesting marbled murrelets. The MMHPP describes specific measures that the District will implement to avoid or minimize Project-related impacts to marbled murrelets and their habitat. Three general types of Project-related activities are addressed in the plan: 1) pruning, topping and felling of road-side danger trees; 2) overstory thinning and creation of snags, decaying live trees, coarse woody debris and forest canopy gaps during implementation of the TRMP; and 3) the creation of new recreation trails and associated facilities as required in the Recreation Resource Management Plan (RRMP) under License Article 413.

In February 2011, the District updated the MMHPP to incorporate requirements of the USFWS Biological Opinion, Incidental Take Statement, Reasonable and Prudent Measures and Terms and Conditions for the proposed issuance of the license for the Project. These measures were reviewed by the Settlement Parties and USFWS concurred with the update. The updated MMHPP was included in the new license for the Project under Article 411. The MMHPP is available on the District’s web site via the following link:
<http://www.snopud.com/PowerSupply/hydro/jhp/jhplicense.ashx?p=1978>).

License Article 411 approved the MMHPP and specified that survey results and field notes of monitoring efforts for marbled murrelets will be documented and sent to the USFWS in conjunction with the TRMP annual reports for any year that surveys are conducted or maps are updated. The MMHPP states that at least every 10 years, the District will update the Project marbled murrelet habitat maps to reflect current habitat conditions. The District may conduct surveys for nesting marbled murrelets in all suitable habitat that is not known to be occupied and has not been surveyed for 10 years or more. If the District chooses not to survey suitable habitat, such habitat will be considered occupied for purposes of the MMHPP and will be described in the applicable report and update of the MMHPP. Article 411 requires that at least

every 10 years, the District will file for Commission approval, an updated MMHPP developed in consultation with USFWS and WDFW. Activities related to the MMHPP during 2011 through 2015 actions years are noted in this report.

2. TERRESTRIAL RESOURCES MANAGEMENT PLAN

2.1. PRIOR YEARS' SUMMARY – 2011 through 2015

This section includes background explanations of activities, and results summarized from the previous years' reports, for activities occurring between 2011 and 2015.

2.1.1. *Snags, Decaying Live Trees and Coarse Woody Debris*

TRMP management measures include the creation of snags, decaying live trees (DLTs) and coarse woody debris (CWD) from live trees, across the four tracts of land, exclusive of old-growth forest; these components are collectively referred to as "woody habitat structures" in this report. Trees are selected from the largest size class and are typically clustered in groups of about 30 trees, called "canopy gaps." Canopy gaps are usually triangular in shape, with the base of the triangle being on the south or southwest side in an effort to maximize light penetration to the forest floor during the growing season, to encourage understory growth. The apex of the triangle is typically on the north or northeast end. The target gap size is 0.10 to 0.25 acres, depending on local limitations.

Forest stands on the Spada Lake Tract were harvested in the 1960s and most have stem densities greater than 450 trees per acre. Gap size on the Spada Lake Tract is often limited by the presence of numerous drainages and their required buffers. The base of a typical gap within the tract measures about 120 feet, with the height of the triangle also being about 120 feet (7,200 square feet; 0.16 acres).

Stand age on the Lost Lake Tract is typically around 75 years, with a selective harvest having been performed in the 1980s. The result, compared to the Spada Lake Tract, is stands of lower density that are much more heterogeneous including individuals and pockets of deciduous trees. Due to lower stand density, average tree diameter and canopy coverage per tree is much greater than at Spada Lake. Consequently, fewer trees are required to be topped or felled in one area on the Lost Lake Tract to achieve a canopy gap similar in size to those at Spada Lake. A typical gap at Lost Lake contains 5-10 trees, and averages about 0.15 acres). Woody habitat structures may also be created individually or in smaller groups, as needed to maintain appropriate distribution and based on habitat limitations.

During the 5-year period, a total of 1,133 acres were treated resulting in 5,919 woody habitat structures being created. Some units include areas of excessively steep terrain or unstable slopes where creation of canopy gaps could increase slope instability. In these areas, fewer than the required 7 structures per acre are created. Where possible, the quantity created in adjacent units is increased to remedy this short fall. Figures 2-1 and 2-2 and Table 2-1 show woody habitat structure management on TRMP lands from 2011 through 2015.



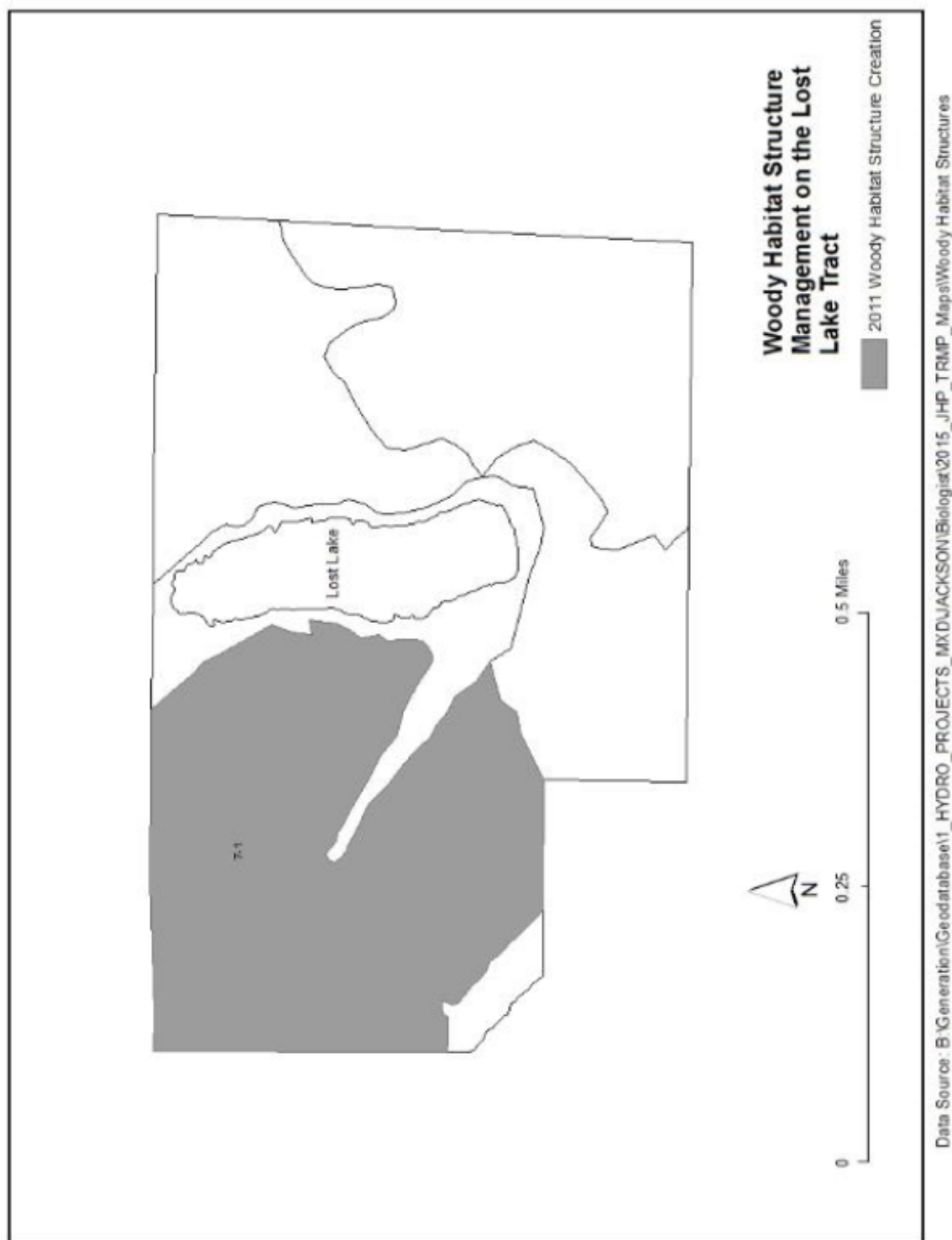


Figure 2-2. Cumulative woody habitat structure creation on the Lost Lake Tract, 2011-2015.

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Table 2-1. Woody habitat structure management, 2011 - 2015.

		2011: 218 acres; 1,019 created				2012: 248 acres; 1,367 created		2013: 175 acres; 1,052 created			2014: 215 acres; 1,290 created			2015: 277 acres; 1,191 created		
UNIT and Year Creation Occurred		Spada 9-36 Complex	Spada 9-38 2011	Spada 9-42 2011 & 2012	Lost Lake 7-1 2011 & 2012	Spada 9-25 complex 2012 & 2013	Spada 9-64 Complex	Spada 9-71 Complex	Spada 9-114	Spada 9-126 2013 & 2014	Spada 9-1 Complex	Spada 9-80 Complex	Spada 9-201 Complex	Spada 9-131 Complex	Spada 9-120	Spada 9-70 Complex
ACRES		56.3	39.3	45.9	81.0	90.4	18.4	53.0	53.0	35.1	99.8	35.4	44.7	121.0	32.0	124.1
DECAYING LIVE TREES																
	# CREATED	154	111	80	261	386	0	247	290	130	610	214	96	500	243	284
	AVG DBH (in)	14.5	16.3	13.7	21.0	15.6	0.0	15.3	14.5	13.7	14.1	15.3	16.3	14.7	13.8	14.7
	AVG HT (ft.)	49.0	61.1	65.8	87.5	70.4	0.0	69.1	61.5	58.6	58.7	6.0	67.1	67.3	57.2	71.8
	#/acre	2.7	2.8	1.7	3.2	4.3	0.0	4.7	5.5	3.7	6.1	6.1	2.1	4.1	7.6	2.3
SNAGS																
	# CREATED	166	94	9	67	147	128	104	38	9	89	8	266	61	36	44
	AVG DBH (in)	13.2	13.8	12.3	20.6	13.7	14.8	14.7	13.3	13.7	12.1	12.9	14.1	12.8	12.2	13.4
	AVG HT (ft.)	46.4	59.2	59.4	87.3	66.1	65.0	68.0	58.6	58.6	54.3	66.3	63.7	61.2	54.4	67.7
	#/acre	3.0	2.4	0.2	0.8	1.6	7.0	2.0	0.7	0.3	0.9	0.2	6.0	0.5	1.1	0.4
COARSE WOODY DEBRIS																
	# CREATED	193	149	2	94	100	10	20	44	7	0	3	11	10	1	12
	AVG DBH (in)	14.7	14.5	11.5	19.8	13.9	12.3	13.3	13.3	12.6	0.0	12.5	12.4	12.8	11.1	11.6
	#/acre	3.4	3.8	0.1	1.2	1.1	0.5	0.4	0.8	0.2	0.0	0.1	0.2	0.1	0.1	0.1
TOTAL #/ACRE		9.1	9.0	2.0	5.2	7.0	7.5	7.0	6.8	4.2	7.0	6.4	8.3	4.7	8.8	2.8
NOTES		Additional Woody Habitat Structures created to supplement reduced number in adjacent 9-42.		Numerous steep slide prone slopes. Reduced snag/DLT/CWD creation in this stand.	Fewer than the required 7.0/acre created due to heterogeneity of habitat.					Fewer than 7.0/ acre created due to close proximity to Culmback Dam Rd. and numerous drainages.			More than 7/acre due to unit boundary reconfiguration after creation began.	Unit will be completed in 2016.	Unit boundary was adjusted after Woody Habitat Creation occurred, resulting in more than 7/acre created.	Unit will be completed in 2016.

2.1.2. *Right-Of-Way Management*

Since TRMP implementation began in late 2011, work on the pipeline right-of-way (ROW) has consisted largely of weed control, but also included placement of bottomless culverts to span three creeks between manholes P1 and P4. This project allows continuous access to the ROW without the use of adjacent roads that are not under the District's control, as well as more expeditious monitoring of the pipeline in the event of seismic activity. Measures, including the use of gates, will be implemented as needed to ensure that unauthorized motor vehicle access does not increase as a result of the stream crossing placement.

2.1.3. *Waterfowl Nest Boxes*

A total of six nest boxes (Figure 2-3) are provided on the Lost Lake Tract, and are monitored several times during the year. Maintenance occurs in February to ensure six boxes are provided at the beginning of each nesting season. A mid-nesting season visit occurs in early May to more accurately document use, with the final check and box clean out occurring in early June. Over the past 5 years, use has ranged from 16-33% (Table 2-2) with no clear preference for a particular box or location around the lake/wetland complex exhibited by any species.

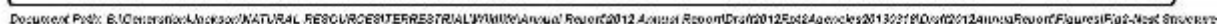
Table 2-2. Waterfowl nest box use on the Lost Lake Tract - 2011 through 2015.

YEAR	WATERFOWL NEST BOX USE SUMMARY DATA
2011	2 of 6 boxes successfully used, fledging 14 wood ducks
2012	2 of 6 boxes successfully used, fledging 7 buffleheads and 8 wood ducks
2013	1 of 6 boxes successfully used, fledging 4 buffleheads
2014	1 of 6 boxes successfully used, fledging 9 hooded mergansers
2015	1 of 6 boxes successfully used, fledging 10 hooded mergansers

2.1.4. *Stewardship Activities or Observations of Note*

District biologists met with Project staff to inform and educate them regarding the TRMP and worked with them to ensure that the TRMP was being followed during implementation of maintenance activities.

Table 2-3 provides a summary of incidental wildlife observations on Project mitigation lands from 2011 through 2015. These are incidental only and are not part of a systematic monitoring program.



Terrestrial Resources Annual Report 5-Year Report for 2011-2015
April 2016

Table 2-3. Incidental wildlife observations on Project lands.

DESCRIPTION	LOCATION	DATE
2011 Observations		
Osprey	Powerhouse site – one on nest near microwave tower and one on perch at nest.	4/27/11
Osprey	Powerhouse site – on nest near microwave tower	5/2/11
Osprey	In nest west of Spada Lake Tract on NFS lands	5/10/11
Osprey	Powerhouse site – on perch at nest near microwave tower	6/2/11
2 adult Canada Geese, 4 goslings	Spada Lake Reservoir near log boom; frequently seen foraging on dam as well	6/18/11
4 Osprey	Pipeline ROW – 4 osprey alternately flying and perching on nest platform near microwave tower	6/21/11
Deer – 1 doe, 1 fawn, 1 four pt. buck	Powerhouse site – near microwave tower	6/29/11
Western toad	On road just past Bear Creek Recreation Site	7/8/11
Osprey	One osprey on branch below nest flapping its wings and calling. Second osprey heard. This is same nest seen on 5 May 2011.	8/18/11
Common loon	On Spada Lake Reservoir, heard from Bear Creek Recreation Site and seen out from Nighthawk Site	8/26/11
Osprey	On shorter snag in Spada Lake Reservoir out from Bear Creek Recreation Site	8/26/11
Pika	Heard just west of Bear Creek Recreation Site	8/26/11
Northern Goshawk	Attacking 2 Douglas squirrels that had been chasing each other around large Hemlock tree; NW corner of Lost Lake Tract. Unknown result.	12/8/11
2012 Observations		
Mallard	N End Lost Lake; 4 pair	2/20/12
Black bear	Lake Chaplain; on road to Lost Lake	4/9/12
Harlequin duck	South Fork Sultan River just upstream of bridge	5/18/12
Deer	ROW; 4 does bedded down inside Lake Bronson gate	5/24/12
Pileated WP	Lost Lake; drumming on large hollow cedar snag	5/30/12
Kingfisher	Lost Lake; south end, calling and flying over lake	7/16/12
Common merganser	Spada; site 3 area; female and 4 immature swimming	8/21/12
In 2012, numerous other species were sighted by City of Everett watershed patrol, but date and location were not recorded. These include: blue grouse, yellow warbler, varied thrush, common loon, great blue heron, kinglets, western grebe, Rufus hummingbird, barred owl, American goldfinch, kingfisher, northern shrike, wood duck, spotted sandpiper, yellow-rumped warbler, black bear, coyote, bobcat, river otter, beaver, Western toad and garter snake.		
2013 Observations		
Osprey	Powerhouse site – pair circling near microwave tower nest platform	5/6/13
Common Merganser	Adult female with 2 ducklings near N Fork Sultan R. mouth.	6/25/13
Osprey	Adult flying east over log boom.	7/16/13
Osprey	2 in nest at Jackson Powerhouse	7/18/13
Barred Owl	Two juveniles in old growth northwest of dam.	7/18/13
Black-tailed deer	Mature buck, 3x3pt in full velvet off 6122 Rd	6/26/13
Canada Geese -	Three pairs of adults + 16 goslings near Williamson Cr.	7/19/13
Barrow's Goldeneye	Adult female with 2 ducklings, near N Fork Sultan R. mouth.	7/19/13
Common Merganser	Adult female with 7 ducklings near Williamson Cr mouth.	7/25/13
2014 Observations		
Hooded Merganser	Adult female + 3 ducklings near fishing platform	7/2/14
Beaver	Adult swimming mid-lake north to south	7/31/14

Grouse	Adult along roadside near north property line	9/5/14
Barred Owl	Flying into forest at north property line	9/5/14
Sightings recorded by City of Everett Watershed Patrol:		
Rufous Hummingbird	Site 3	5/29/14
Yellow Warbler	Site 3, near nest	5/29/14
White Crowned Sparrow	Site 3	5/29/14
Bushtits	Site 3	5/29/14
Western Tanager	Site 3, near nest	5/29/14
Pygmy Owl	Site 2	11/8/14
2015 Observations		
Coastal Giant Salamander	In small perennial stream within second growth stand along South Shore Rd.	10/21/15
Doe and fawn	Crossing Culmback Dam Rd	7/28/15
Pika	Running across top of dam into rock face	7/28/15
Sightings recorded by City of Everett Watershed Patrol:		
Great Blue Heron	4 juveniles at Site 3	9/22/15
Numerous sightings of deer, songbirds, woodpeckers and bobcat with no dates or locations recorded.		

2.2. WORK COMPLETED IN 2015

2.2.1. *Snags, Decaying Live Trees and Coarse Woody Debris*

TRMP management measures include the creation of woody habitat structures (snags, decaying live trees, and coarse woody debris) from live trees, on the 4 tracts of Project mitigation land. A brief history of land management as it relates to their creation is presented in Section 2.1.1.

In 2015, 1,191 woody habitat structures were created on 3 Spada Lake Tract stands/complexes totaling 277 acres (Figure 2-4, Table 2-4). Work will continue on two stand complexes that were not completed in 2015. A complex is one larger stand and multiple small stands (typically 1 acre or less) consolidated to allow easier management. Of the woody habitat structures created in 2015, 86 percent (1,027) were live-topped to become DLTs. These typically have at least 5 whorls of live limbs left to allow the tree to remain alive for at least several years following topping, in the hopes that infection by heart rotting fungi occurs. Typically, the largest trees are selected to be live-topped. As in the past, these woody habitat structures are typically created in groups to create an opening in the forest canopy. On the Spada Lake Tract, these groups can be made up of 30 or more trees, due to the high density of stems. On the Lost Lake Tract, where trees are larger and less dense, groupings are typically 5-7 trees. In both cases, the objective is to create canopy gaps up to 0.25 acres in size. Due to access difficulties, 2 stand complexes (9-131 and 9-70) did not have the full complement of woody habitat structures created. Both of these stand complexes will be completed in 2016.

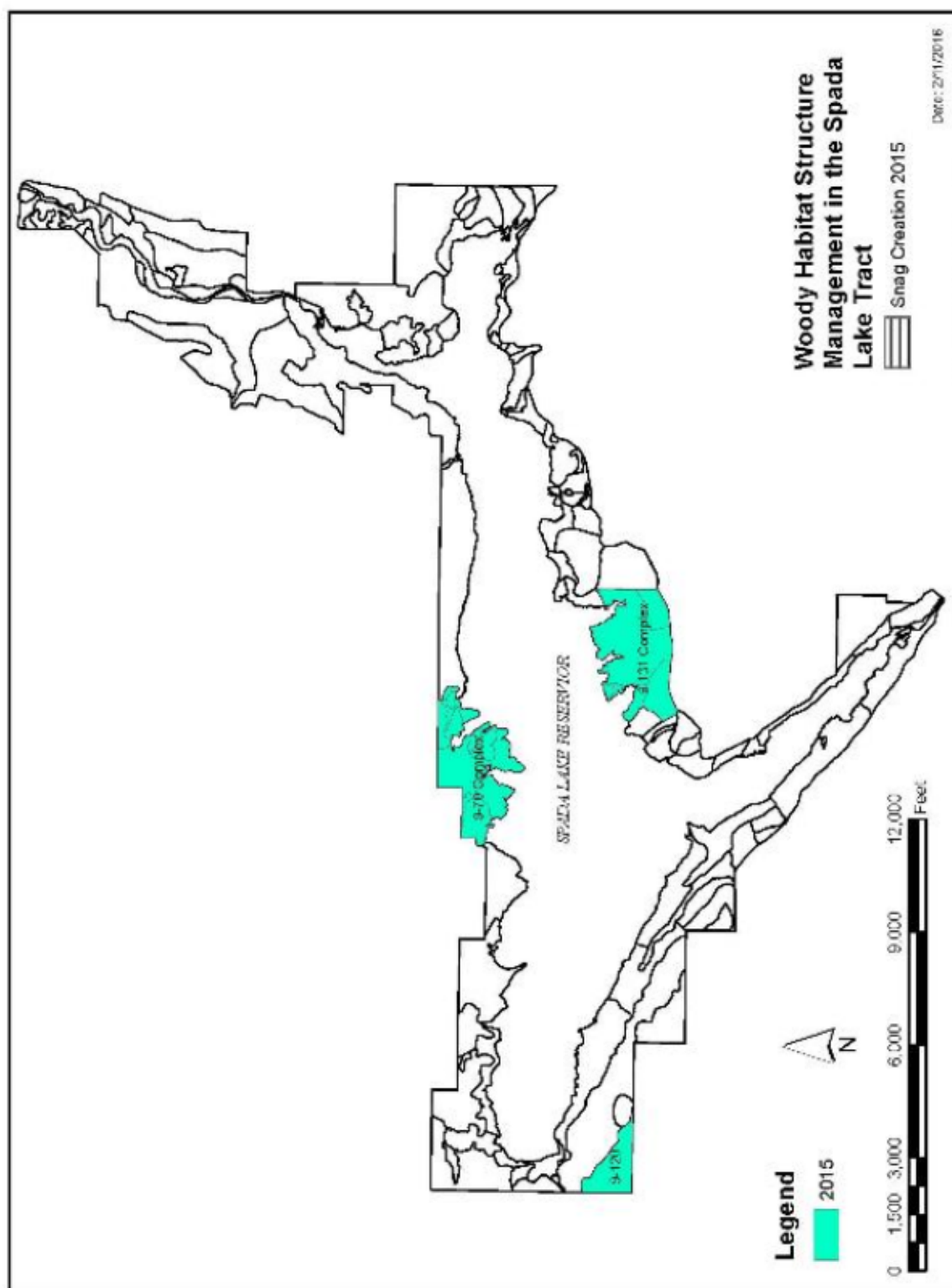


Figure 2-4. Woody habitat structure creation on the Spada Lake Tract, 2015.

Table 2-4. Snag, decaying live tree, and coarse woody debris creation in 2015.

		2015: 277 acres; 1,191 created		
UNIT and Year Creation Occurred		Spada 9-131 Complex	Spada Stand 9-120	Spada 9-70 Complex
ACRES Total 277.1		121.0	32.0	124.1
DECAYING LIVE TREES				
Total 1,027	# CREATED	500	243	284
	AVG DBH (in)	14.7	13.8	14.7
	AVG HT (ft.)	67.3	57.2	71.8
	#/acre	4.1	7.6	2.3
SNAGS				
Total 141	# CREATED	61	36	44
	AVG DBH (in)	12.8	12.2	13.4
	AVG HT (ft.)	61.2	54.4	67.7
	#/acre	0.5	1.1	0.4
COARSE WOODY DEBRIS				
Total 23	# CREATED	10	1	12
	AVG DBH (in)	12.8	11.1	11.6
	#/acre	0.1	0.1	0.1
TOTAL #/ACRE		4.7	8.8	2.8
NOTES		Unit will be completed in 2016.	Unit boundary was adjusted after Woody Habitat Creation occurred, resulting in more than 7/acre being created.	Unit will be completed in 2016.

2.2.2. Right-Of-Way Management

Control of noxious weeds continued along the pipeline ROW, with Canada thistle, hawkweed and Scotch broom being species most often encountered.

2.2.3. Waterfowl Nest Boxes

On the Lost Lake Tract, a total of six nest boxes were available for use during 2015, with one being used by cavity nesting waterfowl (Table 2-5). Boxes were checked, cleaned, repaired as needed, and provided with fresh nesting material on February 24. All boxes were visited again on 7 and 27 May to determine use, check for damage, and remove unwanted species, including native squirrels, starlings and their nests, per WDFW request. Nests of native birds are not removed if found. Eggs are not moved or handled for counting during nest checks, therefore

quantities should be considered estimates. The locations of the six existing nest structures on the Lost Lake Tract are depicted in Figure 2-3.

Table 2-5. Waterfowl nest box use on the Lost Lake Tract in 2015.

BOX #	RESULTS
BOX 3	No use.
BOX 5	No use.
BOX 13	Flushed female Hooded Merganser May 7; 10+ eggs. Remnants of 10 eggshells found; 10 fledged.
BOX 15	No use.
BOX 16	No use. Box had fallen off tree between 7 and 27 May checks. Bear band on tree intact with no claw marks. Will be re-installed for 2016 season.
BOX 17	No use.

2.2.4. Lake, Wetland and Stream Buffers

Activities occurring within buffers included nest box maintenance and woody habitat structure creation, as described in the previous sections of this document. The buffer restrictions for snags, DLT and CWD described in the TRMP were followed, which allow only individual or small groupings of woody habitat structures to be made within 100 feet of a lake, wetland or stream. Within the remainder of the buffers, which may be up to 500 feet wide, gap sizes are restricted to 0.25 acres.

2.2.5. Stewardship Activities or Observations of Note

Though potentially overshadowed in the annual report by proactive management, one of the key elements of the TRMP is the protection of old growth forests, wetlands and riparian forest on the four management tracts. The TRMP requires the preservation of 502 acres of existing old growth forest and promotion of old growth characteristics on 1,119 acres of second growth conifer forest. Approximately 57 acres of riparian forest and 40 acres of wetlands are protected from human disturbance and maintained as high-quality habitat under the TRMP. All management activities in 2015 considered these objectives. These habitat types were protected and received minimal management activity in 2015, primarily woody habitat structure creation within buffer zones. No overstory thinning, gap creation, snag creation or coarse woody debris creation occurred in old growth forest during 2015.

District wildlife biologists worked with Project staff throughout the year to ensure compliance with the TRMP.

Some incidental observations of wildlife species by District wildlife biologists and knowledgeable City of Everett personnel on TRMP lands are listed in Table 2-6. This list of observations is not the result of systematic surveys for wildlife, but is included in this report simply to document the presence of these species on management lands.

Table 2-6. Incidental wildlife observations in 2015.

DESCRIPTION	LOCATION	DATE
Coastal Giant Salamander	In small perennial stream within second growth stand along South Shore Rd.	10/21/15
Doe and fawn	Crossing Culmback Dam Rd	7/28/15
Pika	Running across top of dam into rock face	7/28/15
Sightings recorded by City of Everett Watershed Patrol:		
Numerous sightings of deer, songbirds, woodpeckers and bobcat with no dates or locations recorded.		

2.3. WORK PLANNED FOR 2016-2020

2.3.1. *Snags, Decaying Live Trees and Coarse Woody Debris*

Creation of woody habitat structures will continue on the Spada Lake Tract on an annual basis to ensure that all TRMP lands have been evaluated for woody habitat structure creation by the end of 2020. The focus will be on stands where woody habitat structure creation has not yet occurred, or where creation occurred more than 10 years ago. Approximately 180 acres per year will be evaluated and have woody habitat structures created, as needed, to meet the 10-year cycle outlined in the TRMP.

2.3.2. *Right-Of-Way Management*

Aggressive noxious and invasive weed control will continue on all Project lands to prevent seed production. Soil amendment on the pipeline ROW also will continue if biosolids from the City of Everett waste water treatment facility are available. All disturbed or amended soils will be promptly seeded with a mixture of non-invasive, weed-free grasses and forbs as listed in the TRMP. For erosion control, only certified weed-free straw is used on all District lands.

2.3.3. *Waterfowl Nest Boxes*

Each year, nest boxes on the Lost Lake Tract will be repaired as needed by the end of February, to ensure availability for the upcoming nesting season. An intermediate nesting season check will be performed (early May) and all non-waterfowl, including native squirrels, will be evicted, as requested by WDFW at the 2011 Annual TRMP meeting. A final nest box productivity check will be conducted in mid- to late June to ensure accurate determination of use, as specified in the TRMP.

2.3.4. *Lake, Wetland and Stream Buffers*

Aside from woody habitat structure creation and nest box maintenance, as summarized in this report and detailed in the TRMP, no other activities are planned in buffer zones.

2.4. ISSUES OR PROPOSED CHANGES

No issues have come up and no changes are proposed at this time.

NOXIOUS WEED MANAGEMENT PLAN

2.5. CUMULATIVE SUMMARY – 2011 through 2015

This section includes background explanations of activities, and results summarized from the previous years' reports, leading up to the five-year report covering implementation activities between 2011 and 2015.

Due to water quality concerns, noxious weeds and invasive species found within the Spada Lake Reservoir and City of Sultan (along the pipeline ROW) watersheds were treated with a naturally derived herbicide (20% acetic acid) by state-licensed contract herbicide applicators. Acetic acid is a non-selective herbicide (it will damage or kill any plant or portion of a plant that it contacts), and is non-systemic (it only affects the portion of the plant that it touches, and is not translocated through the plant's vascular system to kill the roots). Using this type of herbicide requires repeat applications, as it is not as effective as systemic herbicides, but is considered safer for water quality by the City of Everett (primary purveyor of drinking water in Snohomish County, serving 80% of county residents) and the City of Sultan.

Areas outside of the above mentioned watersheds have been treated with synthetic herbicides that are systemic and selective, and require fewer treatments. Again, all applications were performed by state-licensed contract herbicide applicators.

As part of re-licensing studies, botanical consultants were contracted to survey all project lands that had project structures, roads, prior forestry activities or other human disturbance for invasive or noxious weeds. A detailed map and GPS record was created to document presence and level of infestation for each invasive species. These sites are visited multiple times each year by District staff familiar with weed identification and treatment. Areas of the Project that were disturbed and weed-prone, where noxious weeds have been previously observed (particularly during the 2007 noxious weed surveys), and sites that have been previously treated, were evaluated for the presence of noxious weeds. Treatment locations were captured and recorded using a GPS device, with that data then incorporated into the District's GIS database, to allow tracking of weed occurrences and treatment efforts, to guide the following year's management. Figure 3-1 shows an overview of the project lands, figures 3-2 through 3-11 show weed locations identified around Spada Lake. Figures 3-12 through 3-18 show weed locations along the pipeline ROW. These figures include comparisons between weed locations identified by the botanical consultants in 2007 and those identified by District biologists in 2015.

Overall, the District's approach to invasive weed control has been successful in preventing most seed production and spread of known infestations. No new species of noxious weed have been documented on project lands since the original 2007 surveys, and most occurrences of weeds are becoming smaller and more intermittent in space. Availability of suitable spraying weather is the primary factor dictating the number of times weeds are sprayed over the course of the growing season, and therefore plays a large role in determining the overall effectiveness of control efforts.

District biologists met with Project staff to inform and educate regarding the NWMP and worked with them to ensure that the NWMP was being followed.

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Figure 3-1. Overview of Project Lands and sequence of noxious weed figures.

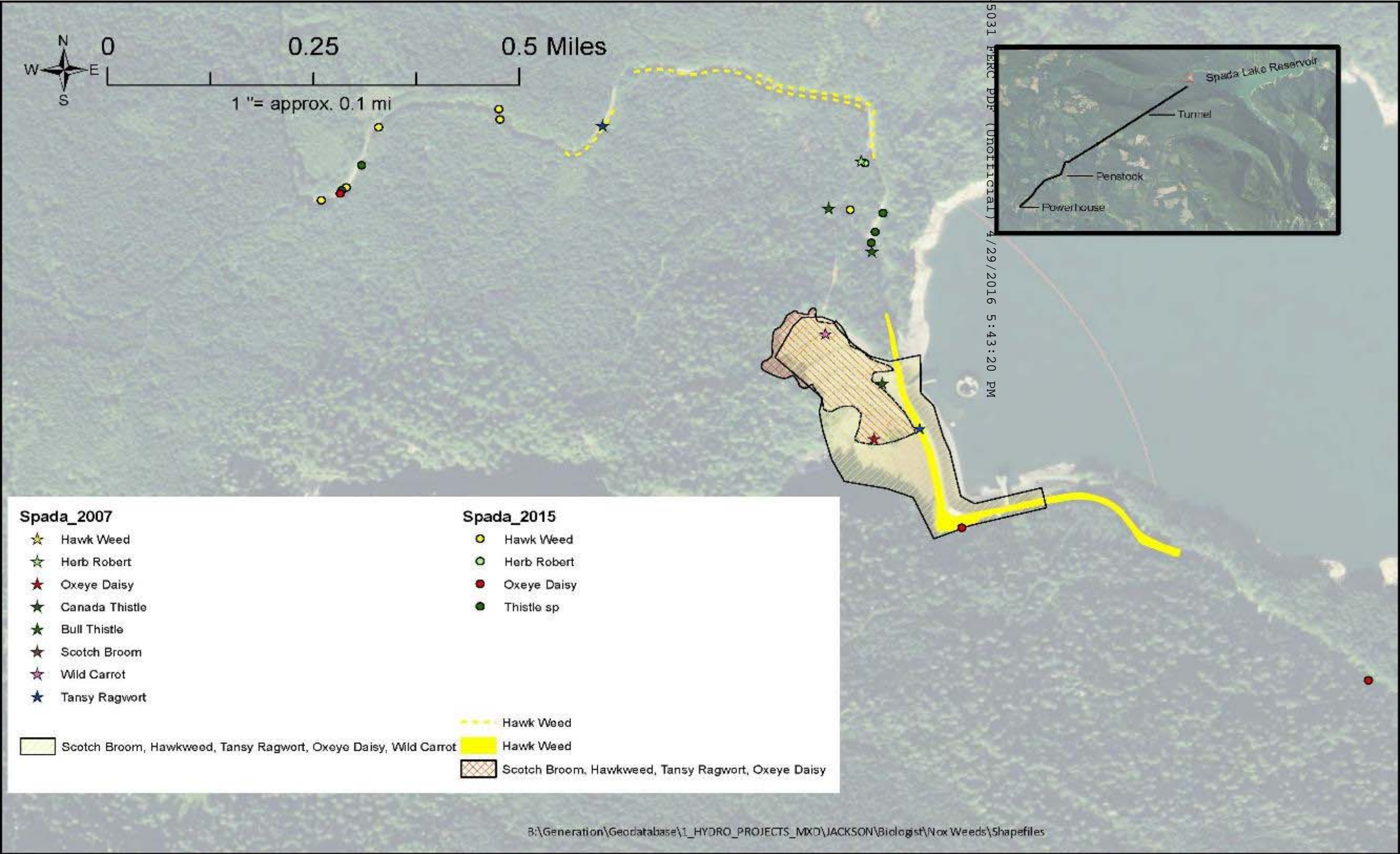


Figure 3-2. 2015 Noxious Weed Locations at Culmback Dam.

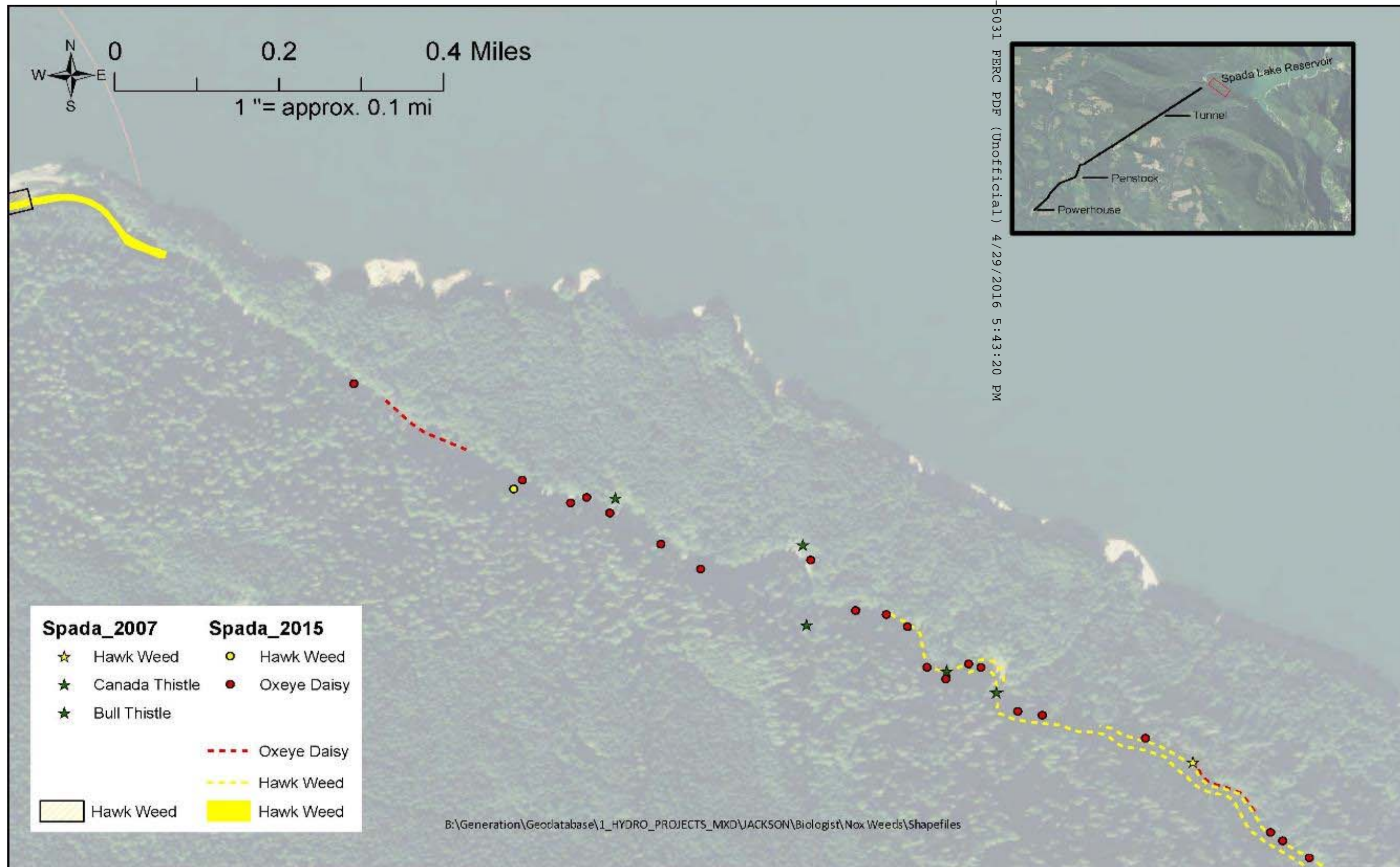


Figure 3-3. 2015 Noxious Weed Locations along Lower Culmback Dam Rd.

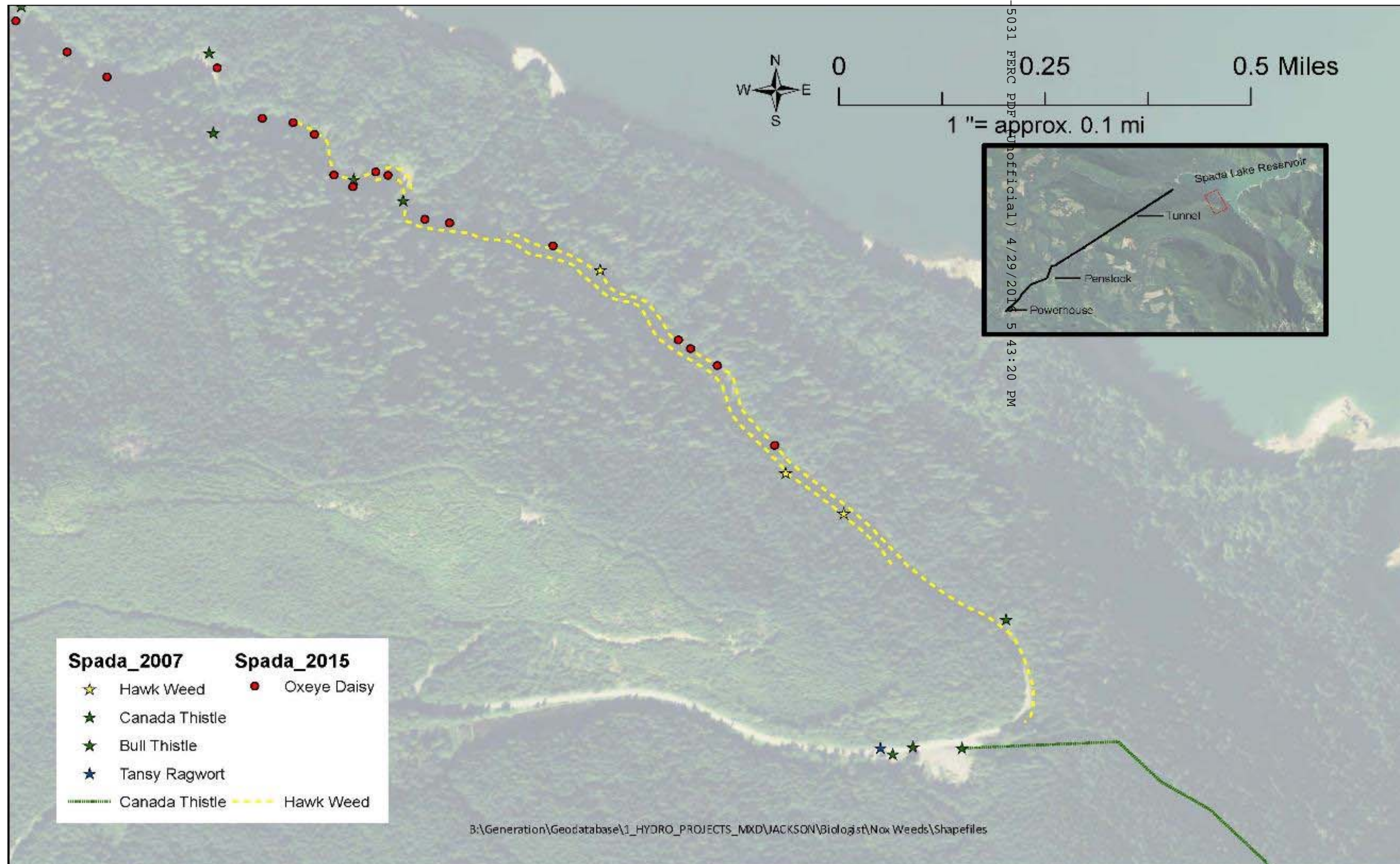


Figure 3-4. 2015 Noxious Weed Locations along Upper Culmback Dam Rd.

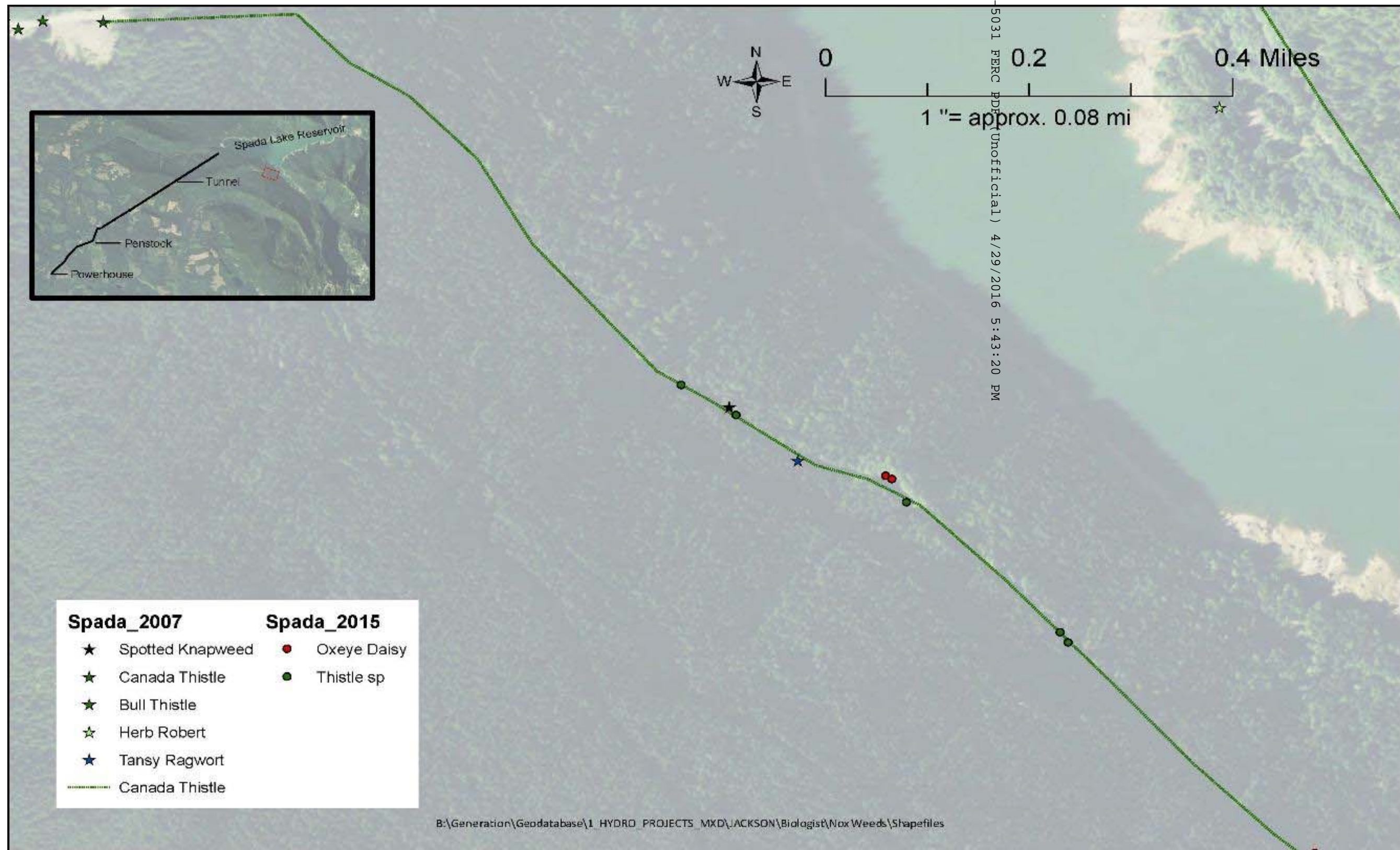


Figure 3-5. 2015 Noxious Weed Locations along South Shore Rd, section 1.

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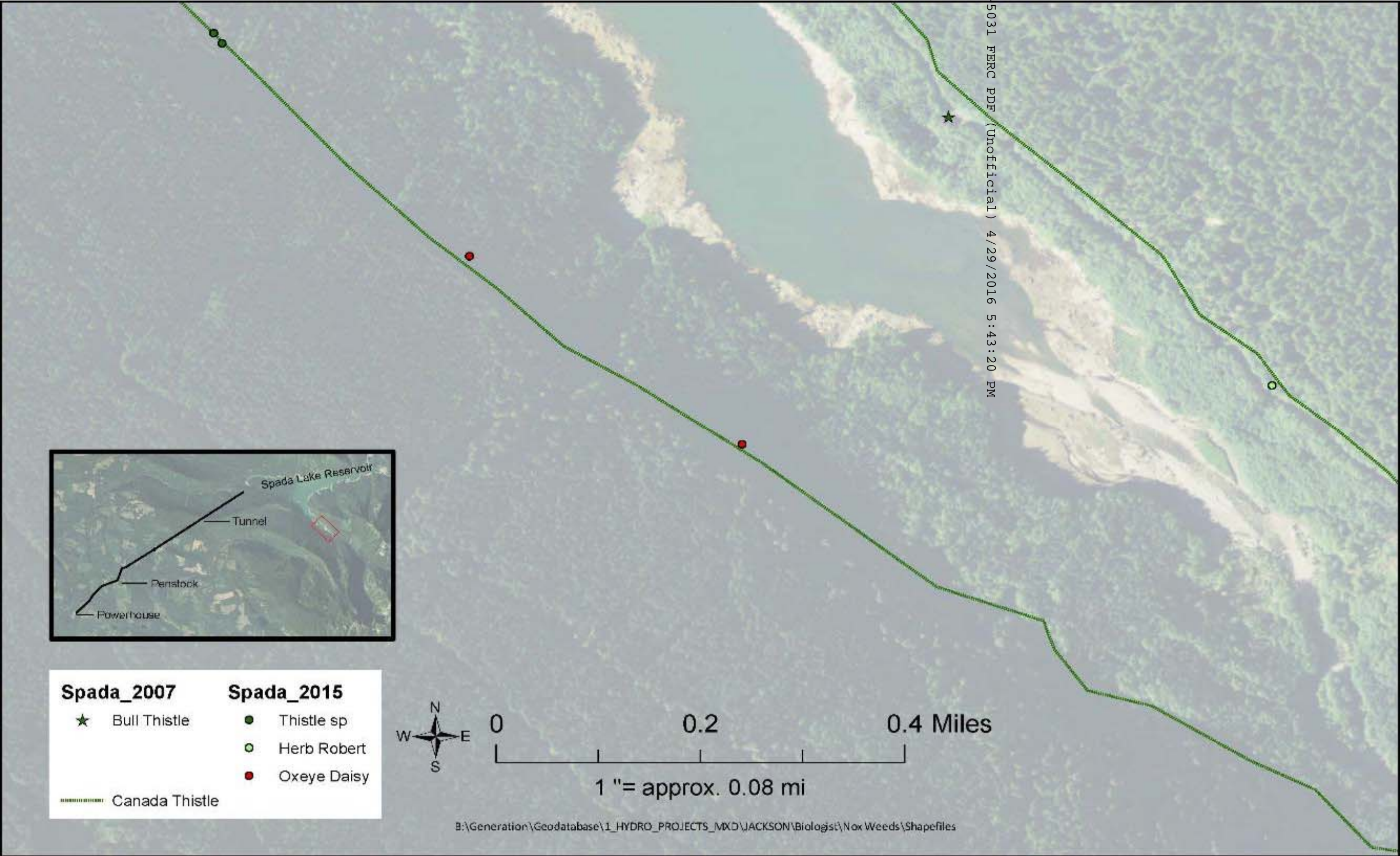


Figure 3-6. 2015 Noxious Weed Locations along South Shore Rd, section 2.

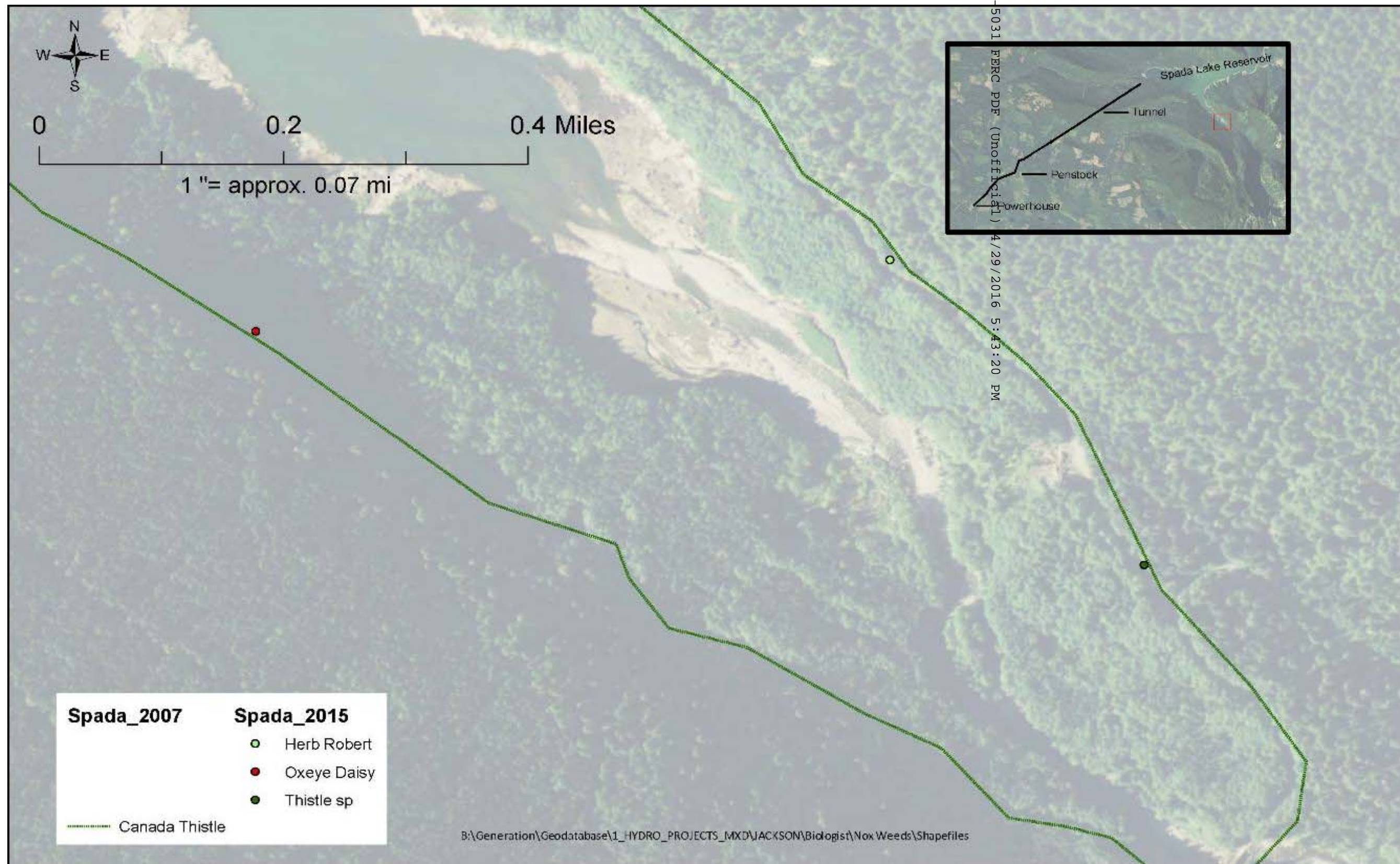


Figure 3-7. 2015 Noxious Weed Locations along South Shore Rd, section 3.

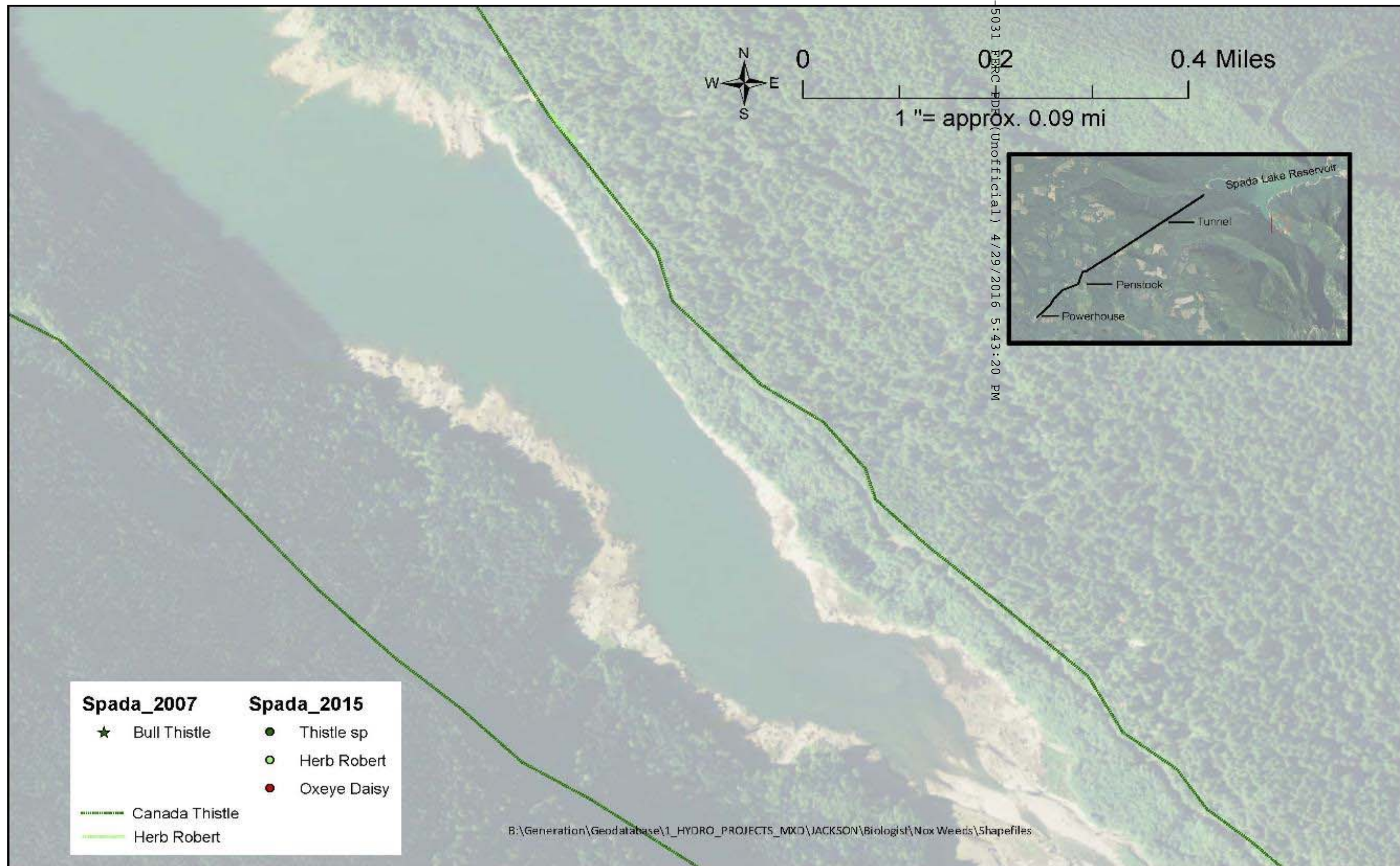


Figure 3-8. 2015 Noxious Weed Locations along South Shore Rd, section 4.

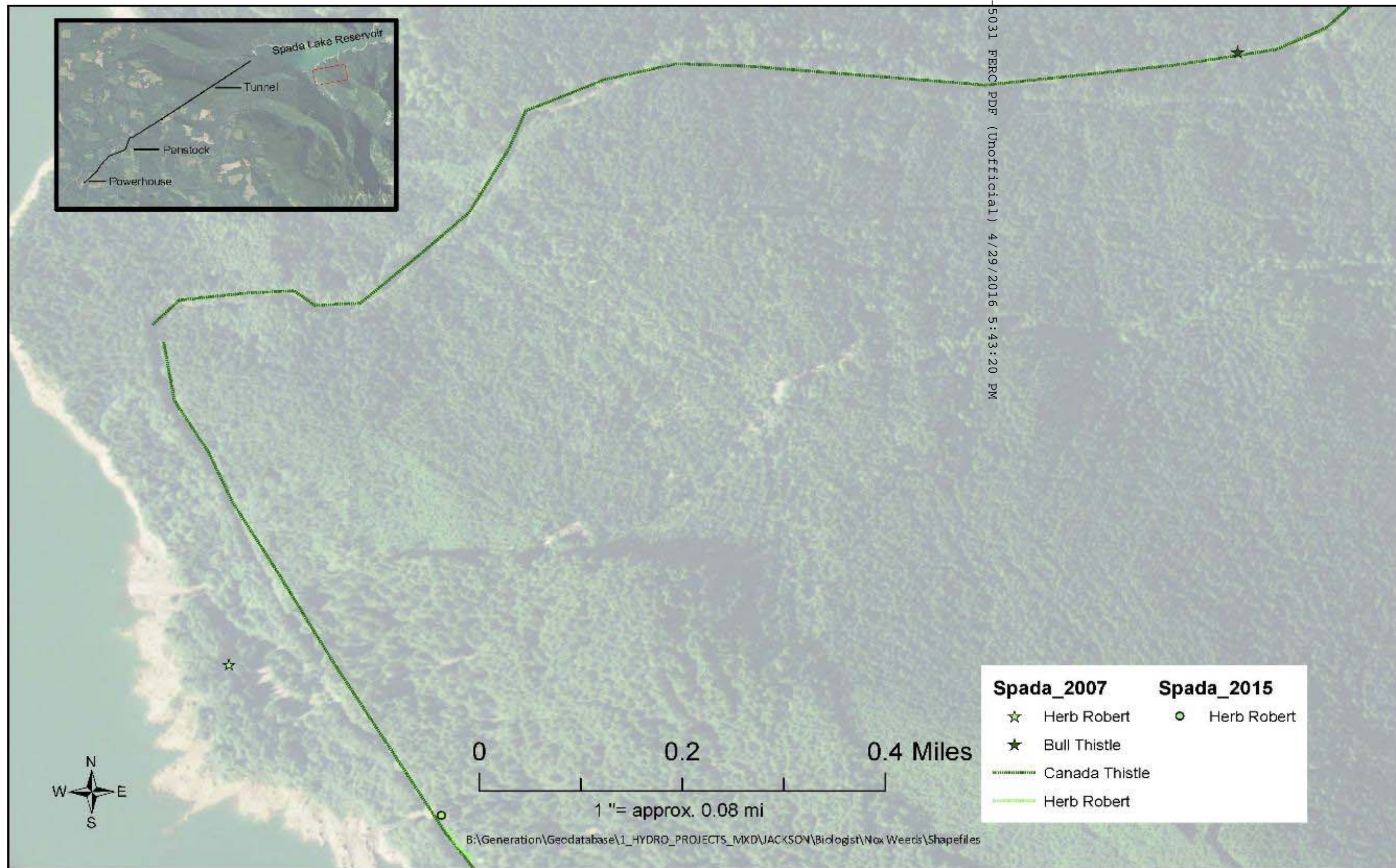


Figure 3-9. 2015 Noxious Weed Locations along South Shore Rd, section 5.

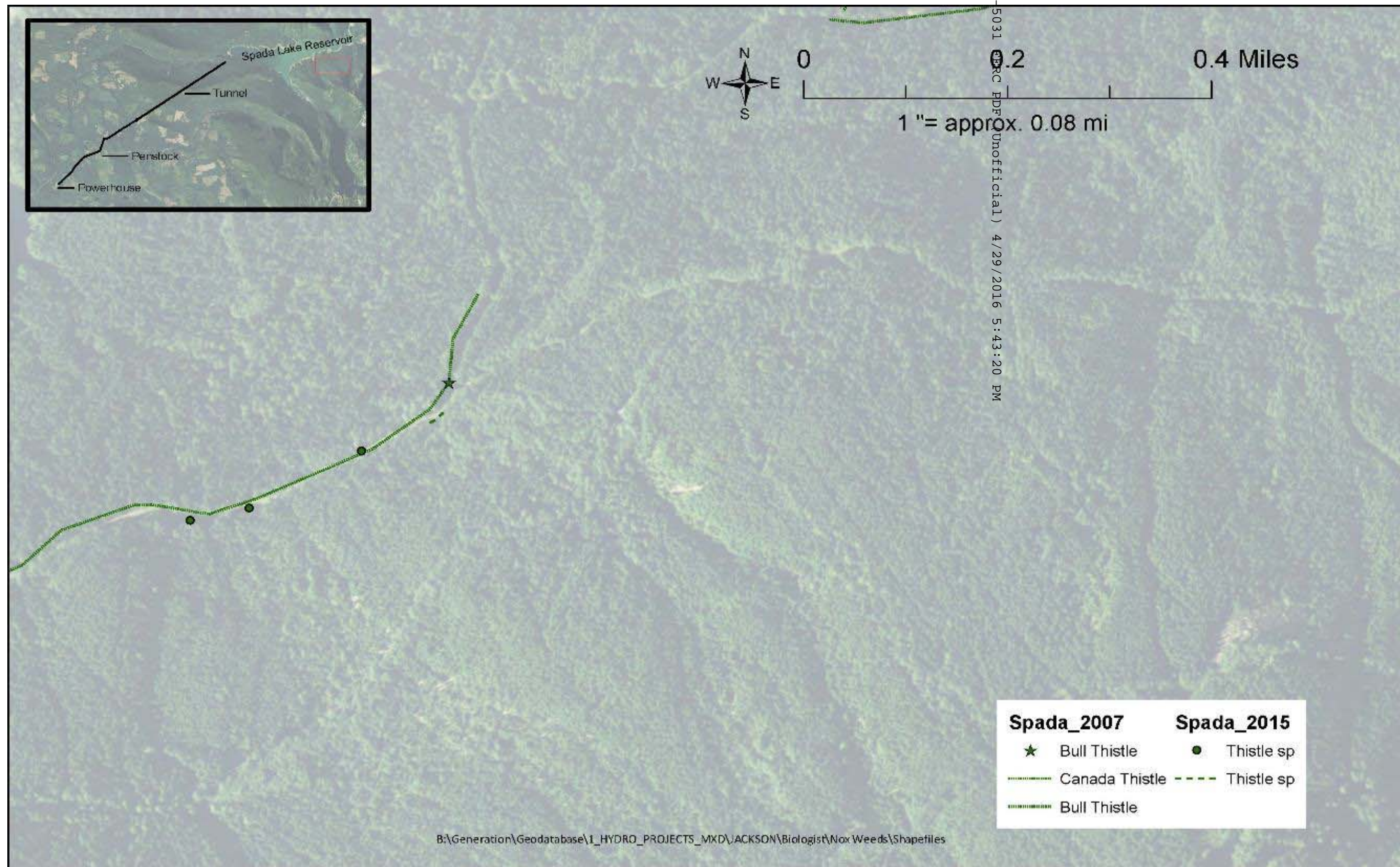


Figure 3-10. 2015 Noxious Weed Locations along South Shore Rd, section 6.

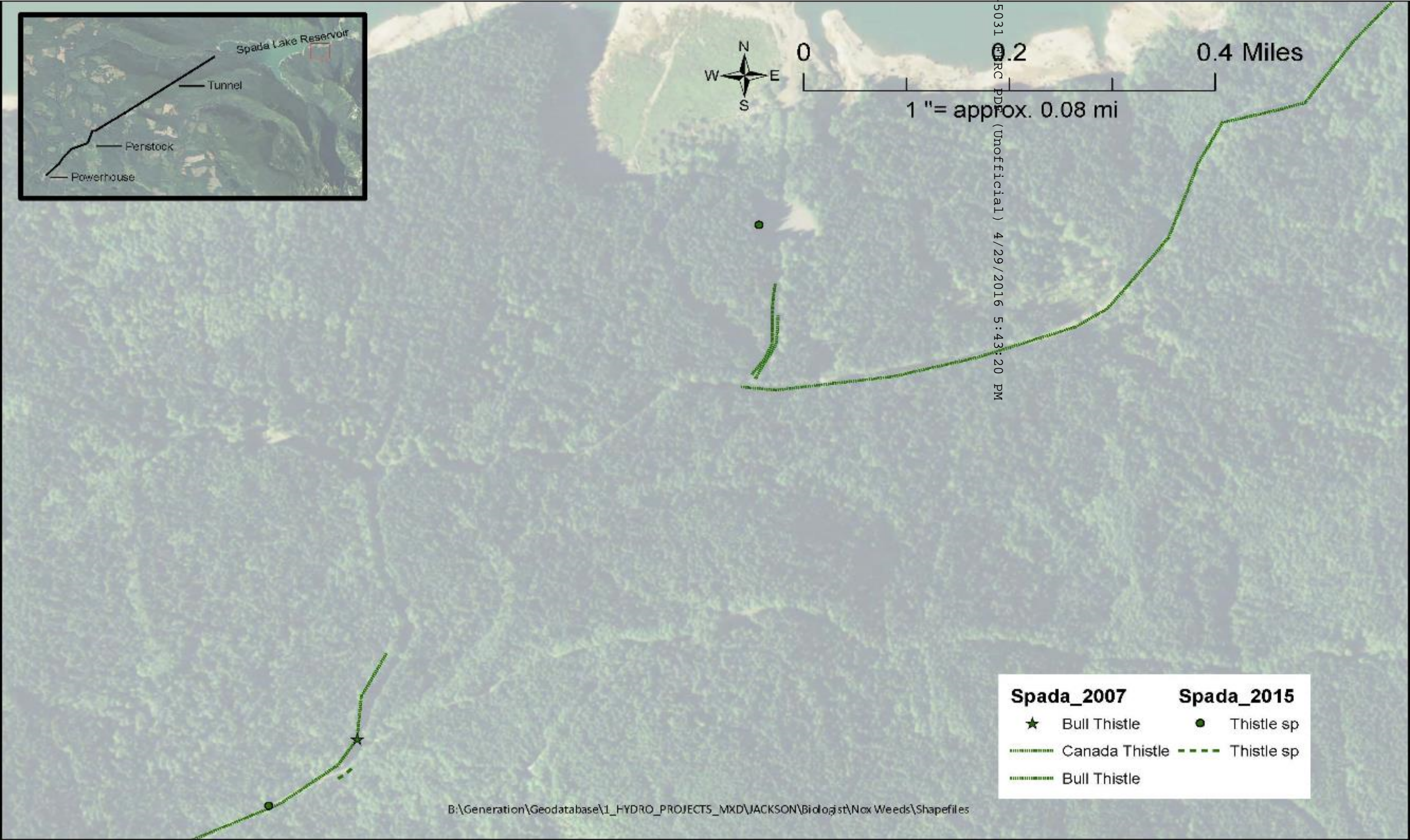


Figure 3-11. 2015 Noxious Weed Locations along South Shore Rd, section 7.

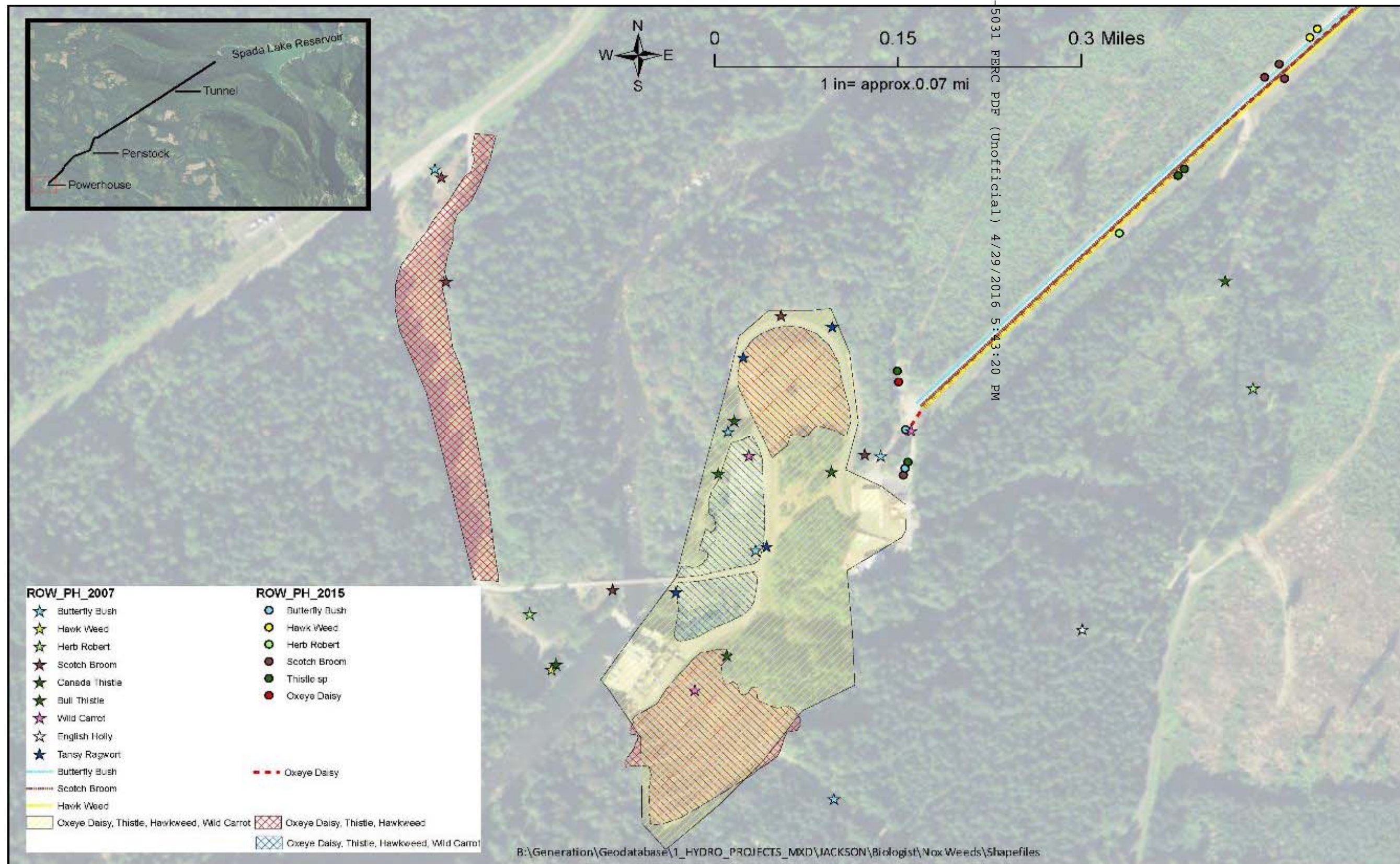


Figure 3-12. 2015 Noxious Weed Locations at the Powerhouse and along the Pipeline ROW, section 1.



Figure 3-13. 2015 Noxious Weed Locations along the Pipeline ROW, section 2.

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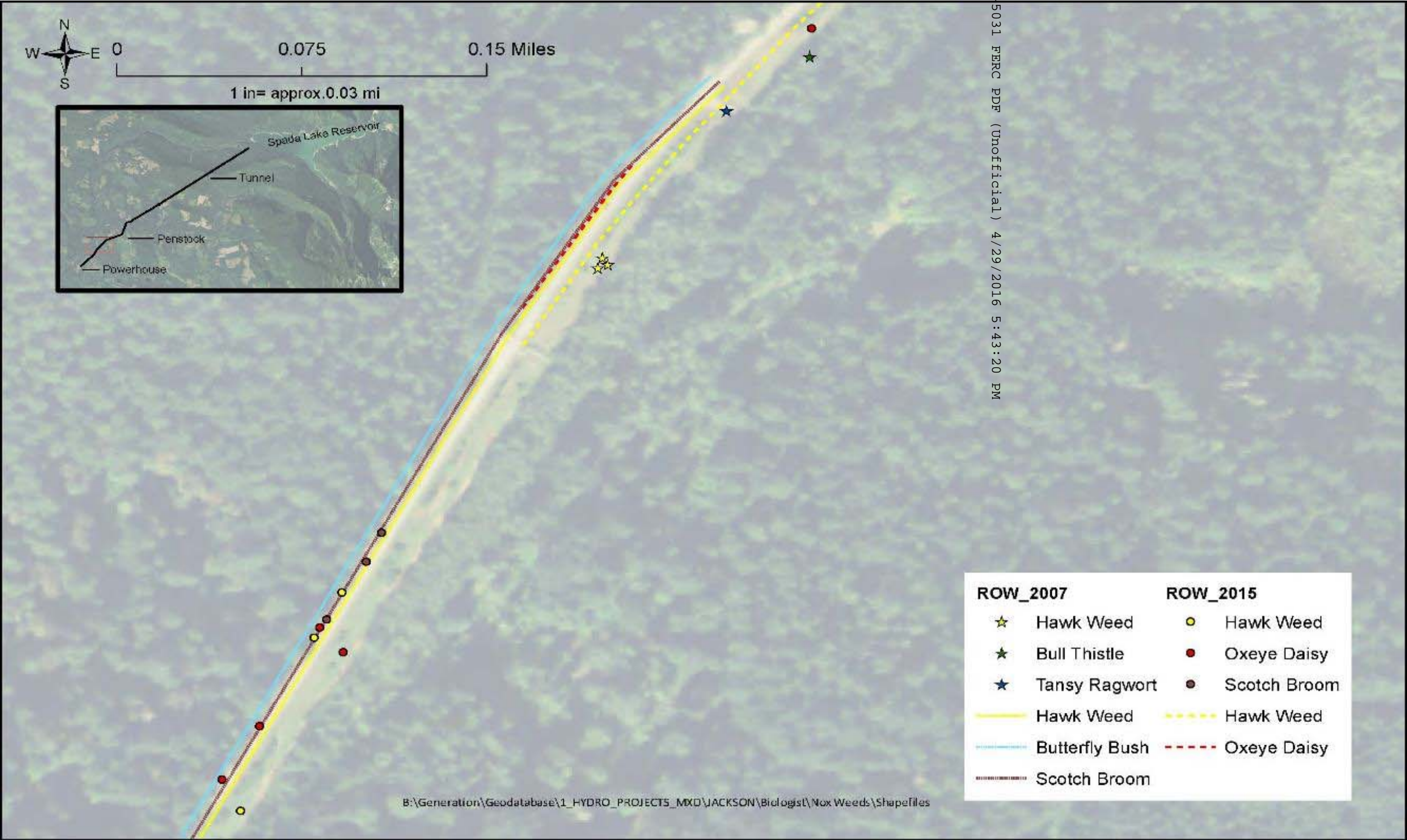
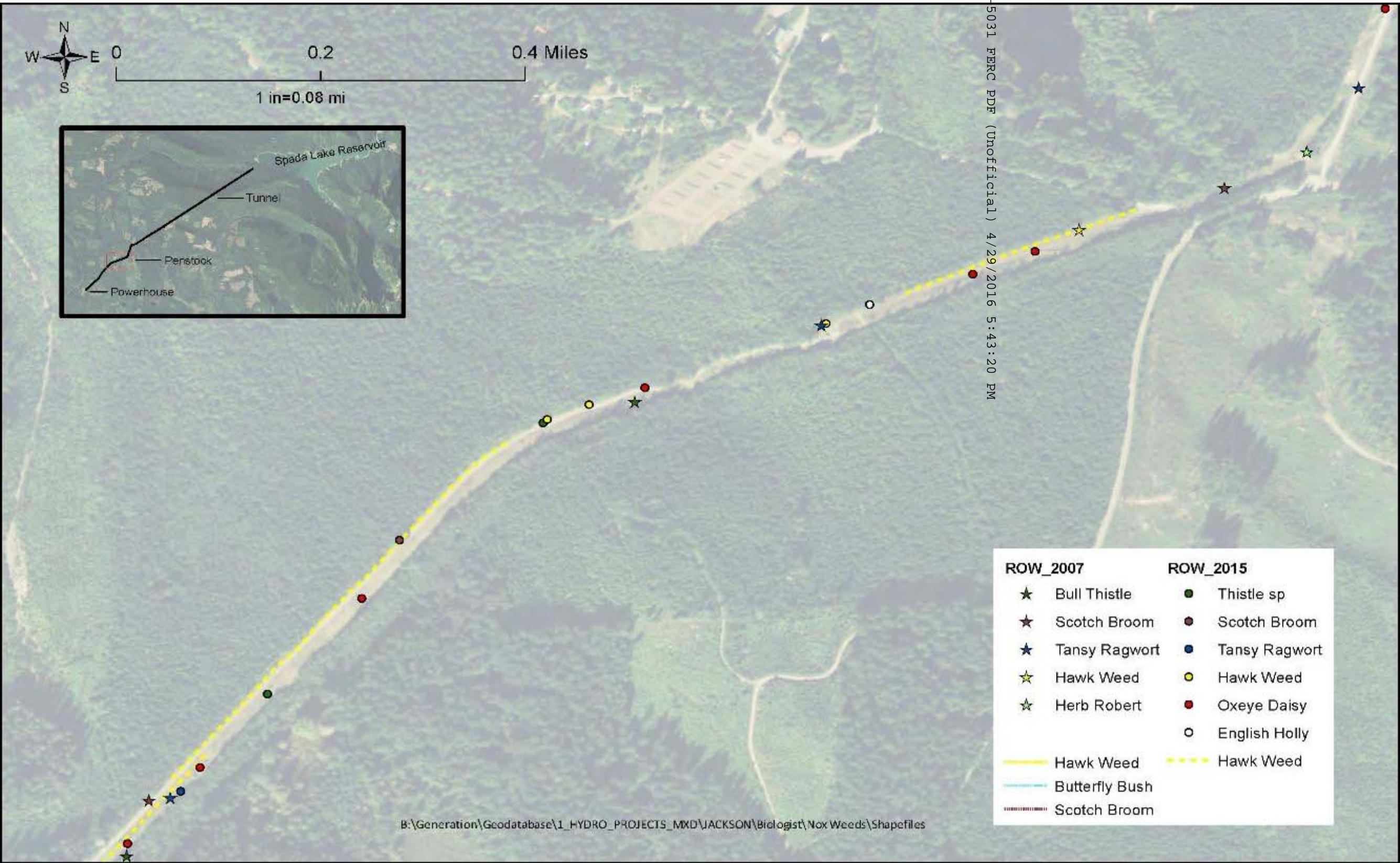


Figure 3-14. 2015 Noxious Weed Locations along the Pipeline ROW, section 3.





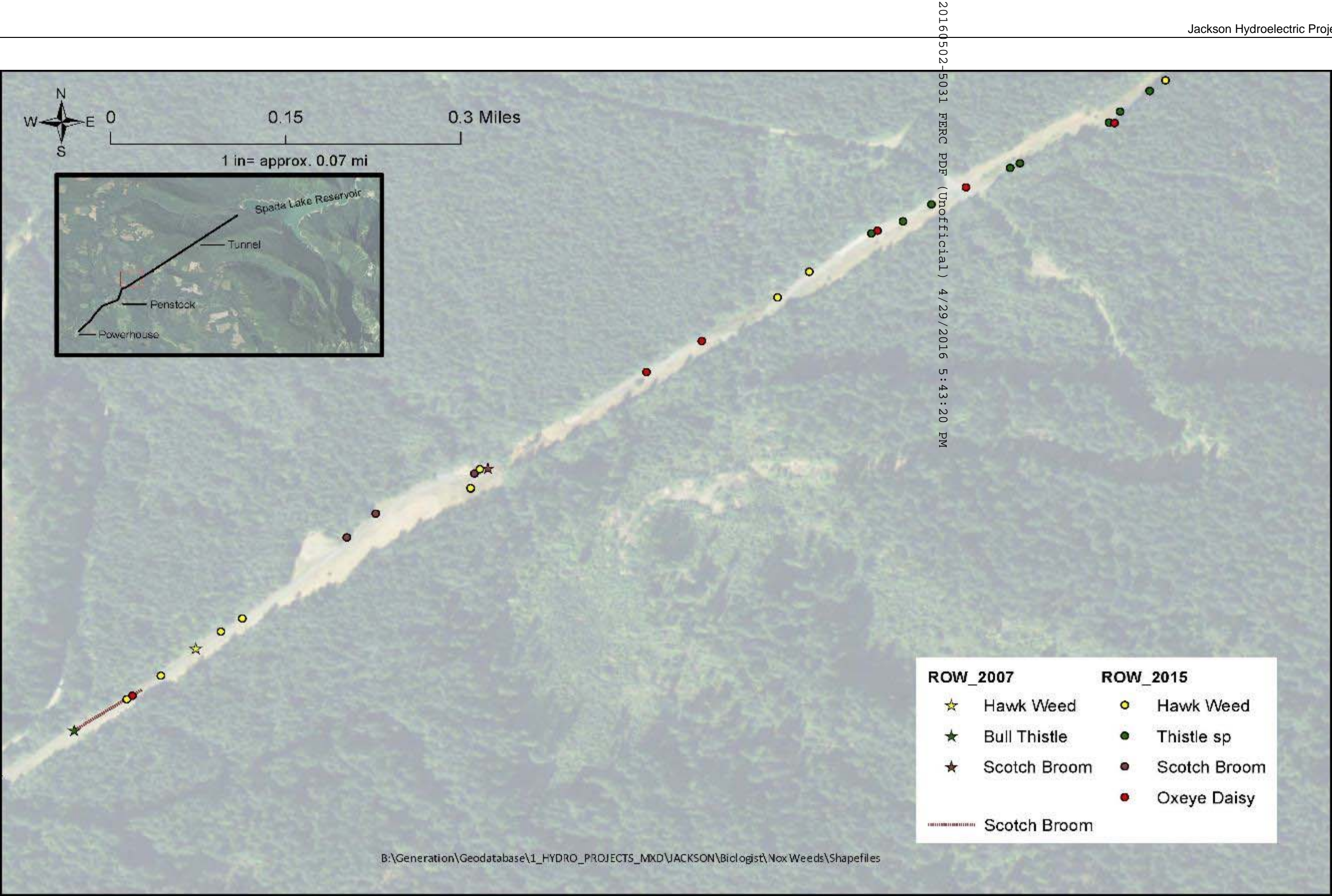


Figure 3-17. 2015 Noxious Weed Locations along the Pipeline ROW, section 6.

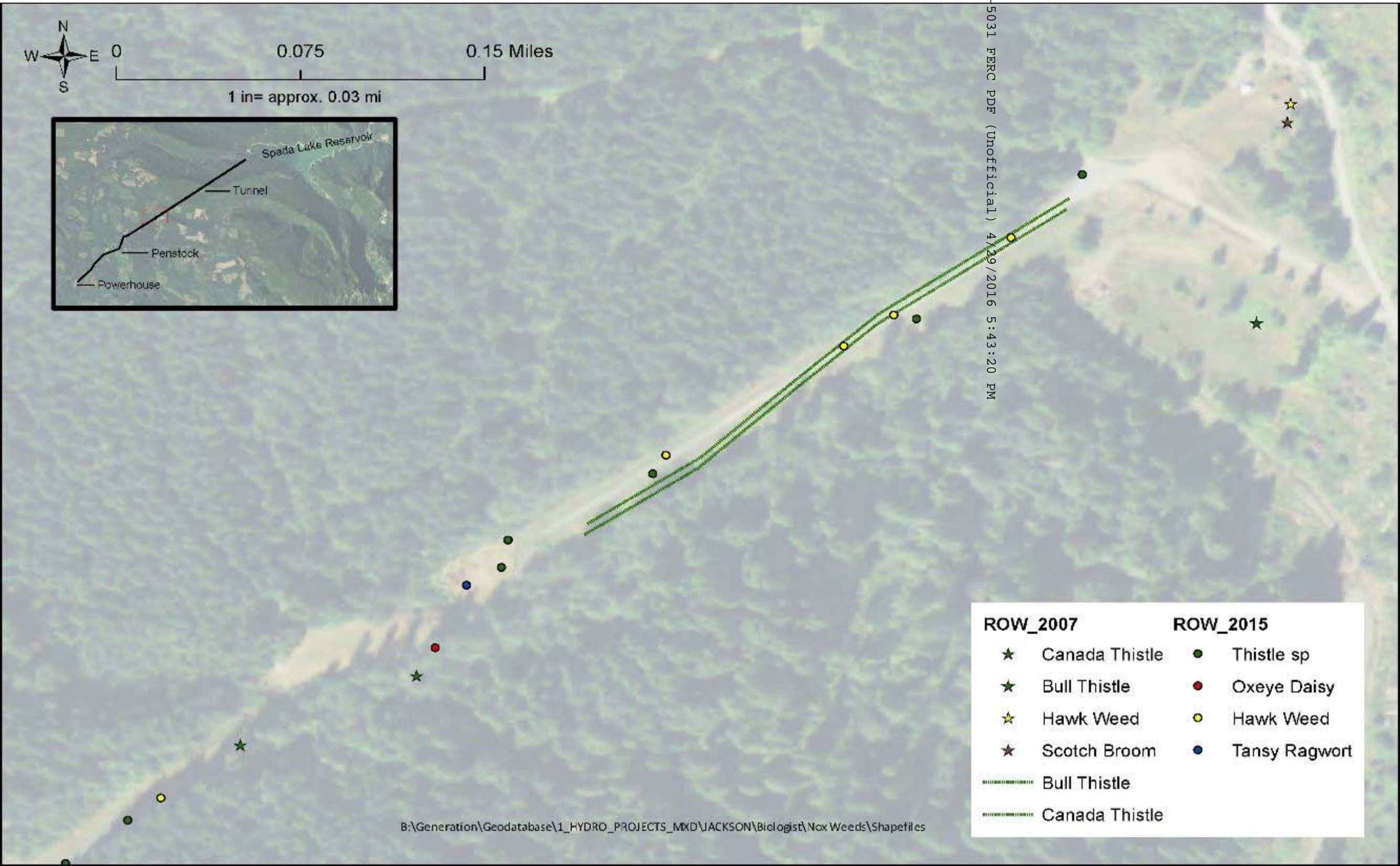


Figure 3-18. 2015 Noxious Weed Locations along the Pipeline ROW, section 7.

2.6. WORK COMPLETED IN 2015

Areas of the Project that were disturbed and weed-prone, areas where noxious weeds had been observed in the past, and sites that had been previously treated, were visited to control noxious weeds. In 2015, an unseasonably dry spring allowed weed treatment to begin earlier than normal, resulting in the ability to treat sites multiple times during the growing season.

2.6.1. *Lost Lake Tract Treatment and Monitoring*

The access road and the boat launch area at Lost Lake were visually inspected for noxious and invasive species several times during the growing season. Particular attention was paid to areas identified in the 2007 Noxious Weed Survey. Species of weeds treated include herb Robert, Canada thistle, and Himalayan and Evergreen blackberry. Weeds found were treated twice in 2015.

2.6.2. *Spada Lake Tract Treatment and Monitoring*

Weed species most commonly found along roads on the Spada Lake Tract were Canada thistle and oxeye daisy. Culmback Dam had large infestations of hawkweed and smaller patches of Scotch broom. Within the Spada Lake Reservoir Watershed, which supplies most of Snohomish County with drinking water, the City of Everett has requested that herbicides derived from inorganic compounds not be used. Naturally derived, high-strength acetic acid has proven to be successful in treating weeds, albeit not as effectively as synthetically derived herbicides, and has been approved by the City for use within the watershed. Multiple applications of acetic acid were required on weed infestations, with many of the treated plants displaying top-kill or reduced vigor for a considerable length of time after treatment. Plants were treated as early in the growing season as practicable, and were re-treated as needed and as allowed by weather conditions. Seed production was prevented in nearly all cases, as required by State and County regulations.

2.6.3. *Williamson Creek Tract Treatment and Monitoring*

Hawkweed, reed canary grass, and Canada thistle have been found on the Williamson Creek Tract during previous field visits. The abandoned road has become largely overgrown with alders, and as a result, these infestations are not expected to extend their range significantly. Based on this and the difficulty of accessing this now road-less area, other sites have received higher priority for treatment.

2.6.4. *Project Facility Lands Treatment and Monitoring*

The pipeline ROW was visited multiple times during the growing season to locate and treat invasive species. Typical weeds found here included Canada thistle, hawkweed, Scotch broom, and tansy ragwort. Areas of disturbed soil are over-seeded with a grass/clover mix when discovered and monitored to ensure that weeds do not become established.

Noxious weeds on the transmission line ROW were also sprayed several times during the growing season, with the primary species found here being English holly, Bull and Canada thistle, and blackberry species.

2.6.5. *Annual Review of Noxious Weed List*

The District reviewed the State and County's annual updated weed list for 2015. No changes were made that impacted weed control on Project lands.

2.6.6. *Update of Species-Specific Management Methods*

No updates to specific management methods have been proposed; emphasis will continue to be preventing new infestations and reducing the size and number of existing infestations. Cultural methods to prevent new infestations or reduce existing infestations continued to be employed, including 1) keeping ground disturbance to a minimum while mowing vegetation and 2) seeding/placing weed-free straw on open or disturbed soils as soon as possible. Where infestations exist, herbicides remained the most effective treatment due to the size and variety of locations.

2.7. WORK PLANNED FOR 2016-2020

Areas of the Project that are disturbed and weed-prone, where noxious weeds have been observed, and sites that have been previously treated will be visited several times each annual growing season to document and treat noxious weeds. Licensed contract herbicide applicators will be used to apply herbicides. Prior to initiation of any ground disturbing project, staff will meet to discuss pre- and post-project means to reduce the likelihood of increasing infestation size or spreading weed propagules to new areas, including, to the extent possible, treating existing weeds prior to those ground-disturbing activities.

2.8. ISSUES OR PROPOSED CHANGES

No issues have come up and no changes are proposed at this time. Any changes to the list of weeds requiring control, based on changes to the State and County weed lists, may necessitate changes to the NWMP.

MARBLED MURRELET HABITAT PROTECTION PLAN

2.9. CUMULATIVE SUMMARY – 2011 through 2015

This section includes background explanations of activities and results summarized from the previous years' reports.

Project-related activities conducted in the Spada Lake Reservoir Basin and on other Project lands during 2011-2015 were conducted according to the MMHPP. Plans and activities were prepared or modified as needed to comply with the MMHPP. These activities included:

- Planning and conducting Marsh Creek Slide Modifications under License Article 402
- Planning for Side Channel Enhancement under License Article 404
- Preparation for implementing the Whitewater Recreation Plan under License Article 412
- Replacing the valve on the auxiliary line at Culmback Dam to support water temperature conditioning under License Article 415
- Replacing culverts on the South Shore Road to support the Recreation Resource Management Plan (RRMP)
- Air-lifting toilets out of the Bear Creek and Nighthawk Recreation Sites to support the RRMP
- Conducting snow surveys to support project operations and water supply planning
- Conducting hazard tree maintenance activities to support operation and maintenance
- Planning and construction of the Sultan River Canyon Trail (SRCT) and modifications to the 6122 Road, under the RRMP
- Conducting habitat assessments and surveys in support of construction/modification planning to allow fish passage at the Diversion Dam
- Planning and construction of the New Recreation Sites which included Gateway Trailhead, Culmback Dam Recreation Site, and the new North Shore Recreation Site at Spada Lake Reservoir under the RRMP and Amendment to the RRMP
- Planning and construction of the Culmback Dam Trail as specified in the RRMP
- Signage was included at Spada Lake Reservoir recreation sites to alert users of the need to contain all refuse to protect nesting marbled murrelets
- Implementing all aspects of the TRMP
- Implementing all aspects of the NWMP

District biologists met and had numerous conversations with Project staff to inform them of, and ensure compliance with, the MMHPP. Project staff have been very cooperative and frequently call District biologists to ask about specific activities and restrictions.

2.10. WORK COMPLETED IN 2015

Project-related activities conducted in the Spada Lake Reservoir Basin and on other Project lands during 2015 were conducted according to the MMHPP. Plans and activities were prepared or modified as needed to comply with the MMHPP. These activities included:

- Conducting habitat assessments and surveys in support of construction/modification planning to allow fish passage at the Diversion Dam
- Air-lifting toilets into and out of the Bear Creek and Nighthawk Recreation Sites to support the RRMP
- Conducting snow surveys to support operation and water supply planning

- Maintaining recreation facilities in support of the RRMP
- Implementing the TRMP
- Implementing the NWMP

District biologists met and had numerous conversations with Project staff to coordinate Project related work and ensure compliance with the MMHPP.

2.11. WORK PLANNED IN 2016-2020

The District biologists will continue to stay informed of Project-related activities that might affect marbled murrelets and their habitat, and advise and educate those working on the Project of the MMHPP requirements. Forest stand structure and composition will be evaluated to determine if any suitable habitat has developed since the last forest inventory, which occurred as a precursor to creation of the MMHPP.

Construction activities related to the City of Everett's diversion dam volitional fish passage (DDVP) will be conducted in accordance with the MMHPP, including but not limited to daily and seasonal timing restrictions. Figures 4-1 and 4-2 show the location of suitable habitat in the project area, as well as occurrences of murrelets documented during the 2014 and 2015 survey seasons.

2.12. ISSUES OR PROPOSED CHANGES

No issues have come up and no changes are proposed for the MMHPP.

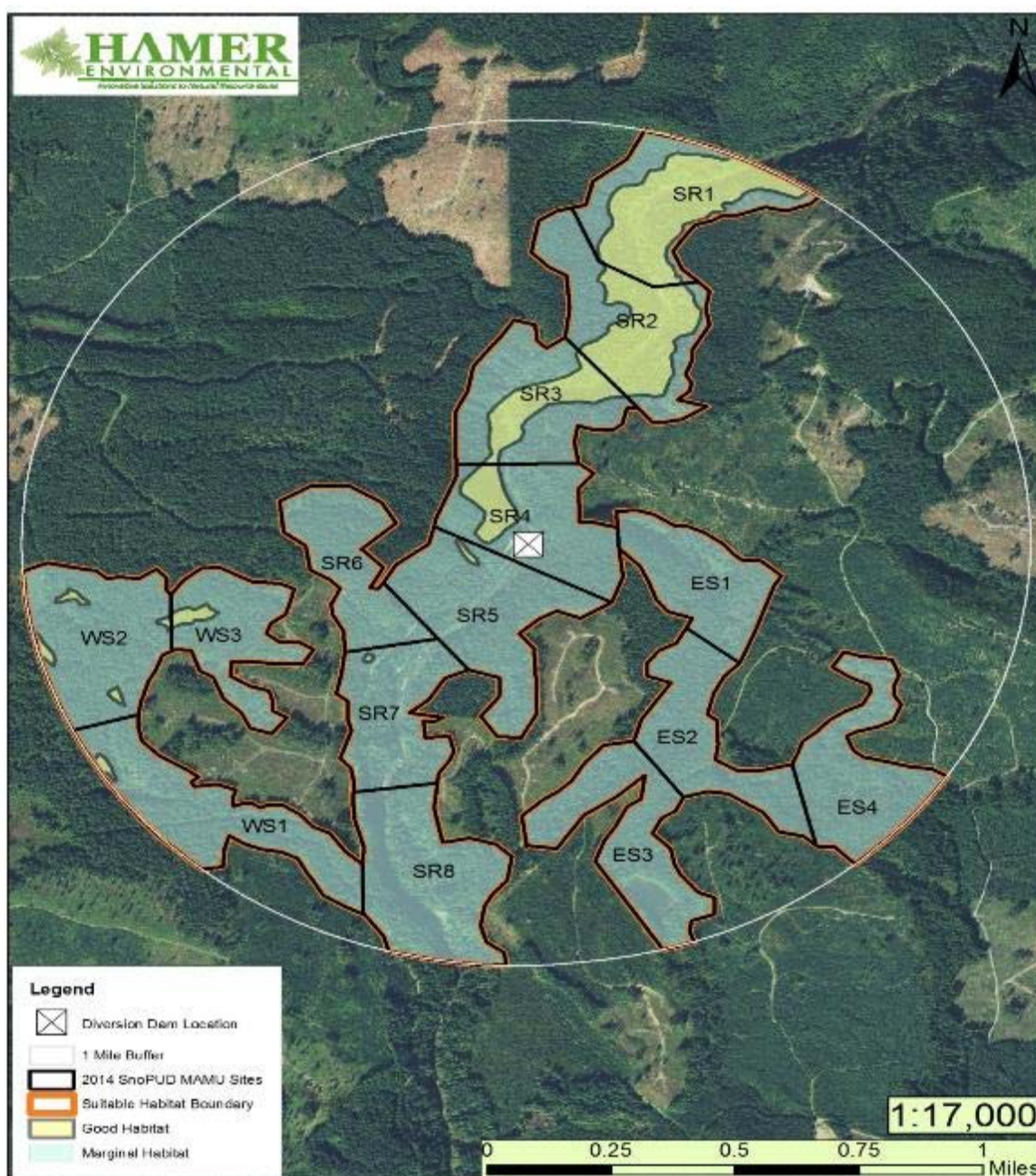


Figure 4-1. Suitable Marbled Murrelet habitat within the DDVP study area.

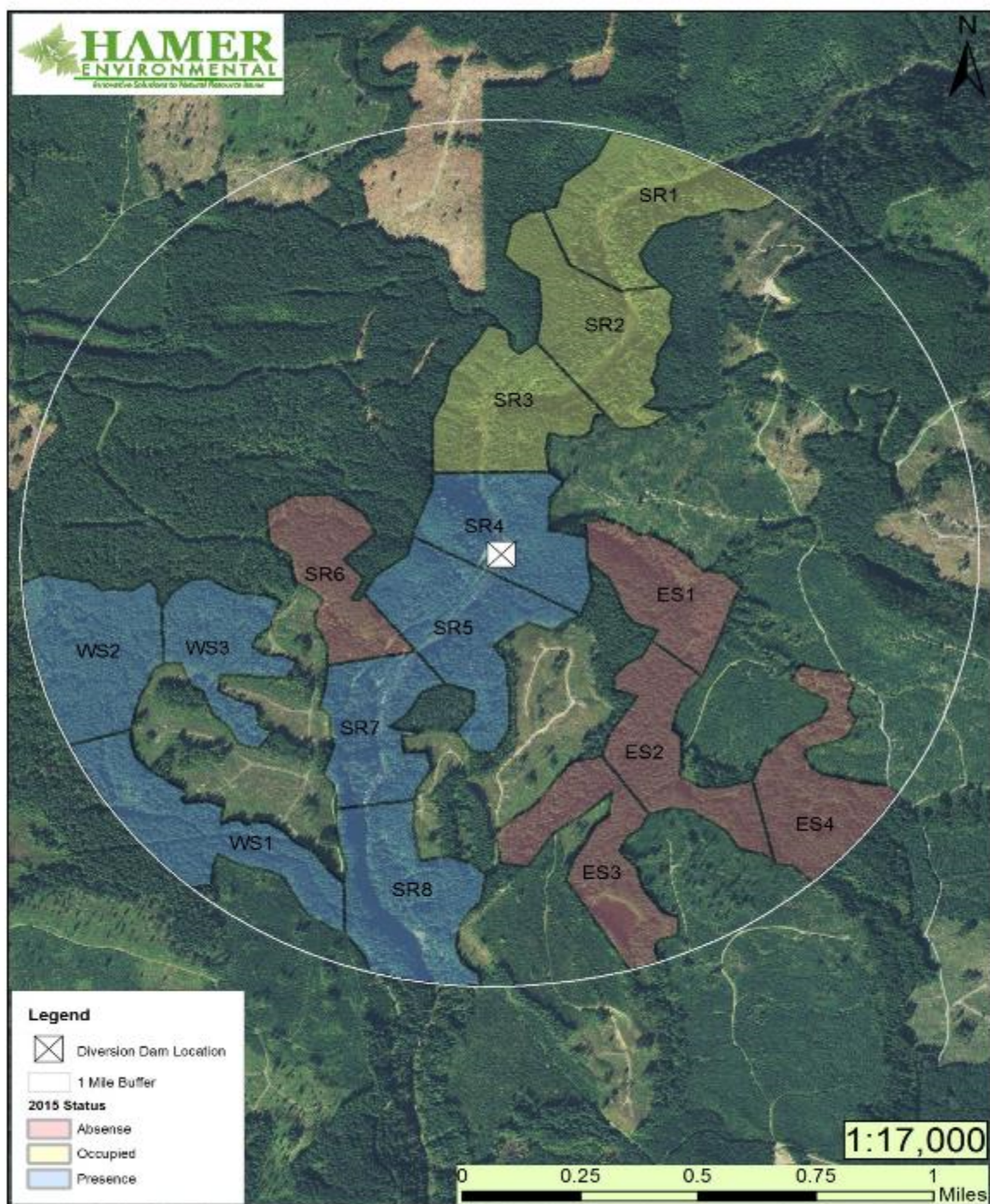


Figure 4-2. Final Marbled Murrelet survey site classifications for 2014-2015.

APPENDIX A

2016 Agency Correspondence

1. Annual Meeting Notice from District to Agencies

Presler, Dawn

From: Schutt, Mike
Sent: Tuesday, February 16, 2016 3:12 PM
To: Tim Romanski (Tim_Romanski@fws.gov); Brock Applegate (brock.applegate@dfw.wa.gov); Michael Seigny (mseigny@tulaliptribes-nsn.gov); Shauna Hee (shee@fs.fed.us); greg.anderson@dnr.wa.gov; 'geraldine.saw@snoco.org'; Paz, Sonny (spaz@fs.fed.us)
Cc: Spangler, Brad; Binkley, Keith; McDonnell, Andrew; Presler, Dawn
Subject: Jackson Project Terrestrial Resources 2015 Annual Report Meeting
Categories: Important

Greetings,

We are currently preparing the 2015 Annual Report for the Jackson Hydroelectric Project Terrestrial Resources Mitigation Plan (TRMP). Included will be a summary of activities completed in 2015, as well as a cumulative summary of activities accomplished from 2011 through 2015, and activities planned for 2016, for the TRMP, Noxious Weed Management Plan (NWMP), and Marbled Murrelet Habitat Protection Plan (MMHPP). These plans can be found on the PUD's web site at

<http://www.snopud.com/PowerSupply/hydro/jhprelicense/jhprdocol/mgmtplans.ashx?p=1891>.

Implementation activities conducted on the Lost Lake, Project Facility Lands, Spada Lake, and Williamson Creek Tracts are included in this report. This is the fifth annual report under our 2011 Jackson Project license. The summary report will go to FERC in April 2016.

You should receive the report on or about March 14, with 30 days for review. We would be happy to meet to discuss our activities and provide an on-site visit if desired. The week of March 28 – April 1 is available for a meeting/field visit. This meeting is optional, at your request, and we have not identified any problems or issues that we feel merit discussion. The meeting would be held at the PUD's Everett office, unless a field visit is requested, in which case we would meet at the Jackson powerhouse prior to the site visit.

Please let me know as soon as possible if you would like to attend a meeting, and whether you prefer a field visit as well. If so, please indicate your availability during the week of March 28.

Thanks for your time,

Mike Schutt

Sr. Environmental Coordinator – Wildlife

Snohomish County PUD

Generation Services

Office) 425-783-1712

Cell) 425-210-5816

2. Agency Review Notice of Draft 5-Year Report

Presler, Dawn

From: Presler, Dawn
Sent: Tuesday, March 15, 2016 8:11 AM
To: 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov); 'brock.applegate@dfw.wa.gov' (brock.applegate@dfw.wa.gov); 'msevigny@tulaliptribes-nsn.gov'; 'spaz@fs.fed.us'; 'Shauna Hee (shee@fs.fed.us)'; 'LISA.EGTVEDT@dnr.wa.gov'; 'greg.anderson@dnr.wa.gov'; 'geraldine.saw@snoco.org'
Cc: Binkley, Keith; Schutt, Mike
Subject: JHP (FERC No. 2157) - Terrestrial Resources 5-Year Draft Report for 30-day review and comment
Attachments: Draft 2015 JHP Annual Terrestrial Report 031116.pdf

Dear Jackson Project Terrestrial Resource Group Members:

Attached for your 30-day review and comment is the draft report for the Jackson Hydro Project's Terrestrial Resource Management Plan (TRMP), Noxious Weed Management Plan, and Marbled Murrelet Habitat Protection Plan. The Plans can be found on the District's web site at: <http://www.snopud.com/PowerSupply/hydro/jhp/jhpllicense.ashx?p=1978>. The attached report summarizes activities accomplished pursuant to the License and associated terrestrial management plans for the Jackson Hydro Project for the past 5 years (from 2011-2015) and those planned for the next 5 years (2016-2020). If you have any comments on the draft report, please email them to me with a cc: to Mike Schutt by Thursday April 14, 2016 COB. Comments will be reviewed and responded to as appropriate prior to finalizing the report; the report will then be e-filed with the Federal Energy Regulatory Commission as required by the TRMP.

If you have any questions regarding the attached draft report or management plans, please contact Mike Schutt at MSSchutt@snopud.com or 425-783-1712.

Sincerely,

Dawn Presler
Sr. Environmental Coordinator
(425) 783-1709

PUD No. 1 of Snohomish County
PO Box 1107
Everett, WA 98206-1107

3. Agency Comments on the Draft 5-Year Report

Presler, Dawn

From: Schutt, Mike
Sent: Wednesday, March 23, 2016 4:26 AM
To: 'Applegate, Brock A (DFW)'; Presler, Dawn; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov); 'msevigny@tulaliptribes-nsn.gov'; 'spaz@fs.fed.us'; 'Shauna Hee (shee@fs.fed.us)'; EGTVEDT, LISA (DNR); ANDERSON, GREG (DNR); 'geraldine.saw@snoco.org'
Cc: Binkley, Keith; Allegro, Justin K (DFW); Milner, Ruth L (DFW)
Subject: RE: Jackson Hydro -- Comment for the Terrestrial Resources 5-Year Draft Report for 30-day review

Categories: Important

Thanks for the clarification Brock. That is our current policy; only non-avian (or invasive starling) nests are removed and we will continue that practice. I will make sure the final report reflects that point clearly.

From: Applegate, Brock A (DFW) [mailto:Brock.Applegate@dfw.wa.gov]
Sent: Tuesday, March 22, 2016 8:28 PM
To: Presler, Dawn; 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov); 'msevigny@tulaliptribes-nsn.gov'; 'spaz@fs.fed.us'; 'Shauna Hee (shee@fs.fed.us)'; EGTVEDT, LISA (DNR); ANDERSON, GREG (DNR); 'geraldine.saw@snoco.org'
Cc: Binkley, Keith; Schutt, Mike; Allegro, Justin K (DFW); Milner, Ruth L (DFW)
Subject: RE: Jackson Hydro -- Comment for the Terrestrial Resources 5-Year Draft Report for 30-day review

Hi Dawn, Thanks for sending out the 5-Year Draft Report for our review. I only have one comment pertaining to the cavity-nesting duck nest boxes.

2.3.3. Waterfowl Nest Boxes, second sentence. Please note that WDFW requested that SnoPUD remove squirrel nests from the nest boxes when found. Please retain all native non-waterfowl bird nests, especially owls, as well as nests by waterfowl. Removal of native bird nests from the nest boxes may violate the Migratory Bird Treaty Act.

SnoPUD has done a wonderful job with the Lost Lake Duck Nest Box Program. WDFW simply wants to clarify this sentence in the 5-Year Report to accurately represent our consultation during the 2011 Annual Report meeting.

Thanks for putting the 5-Year report together.

Sincerely, Brock

Brock Applegate
Renewable Energy/Major Projects Mitigation Biologist
Washington Department of Fish and Wildlife
P.O. Box 1100
111 Sherman St. (physical address)
La Conner, WA 98257-9612

(360) 466-4345 x244 (office)
(360) 789-0578 (cell)
(360) 466-0515 (fax)

From: Presler, Dawn [<mailto:DJPresler@SNOPUD.com>]

Sent: Tuesday, March 15, 2016 8:11 AM

To: 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov); Applegate, Brock A (DFW); 'msevigny@tulaliptribes-nsn.gov'; 'spaz@fs.fed.us'; 'Shauna Hee (shee@fs.fed.us)'; EGTVEDT, LISA (DNR); ANDERSON, GREG (DNR); 'geraldine.saw@snoco.org'

Cc: Binkley, Keith; Schutt, Mike

Subject: JHP (FERC No. 2157) - Terrestrial Resources 5-Year Draft Report for 30-day review and comment

Dear Jackson Project Terrestrial Resource Group Members:

Attached for your 30-day review and comment is the draft report for the Jackson Hydro Project's Terrestrial Resource Management Plan (TRMP), Noxious Weed Management Plan, and Marbled Murrelet Habitat Protection Plan. The Plans can be found on the District's web site at:

<http://www.snopud.com/PowerSupply/hydro/jhp/jhplicense.ashx?p=1978>. The attached report summarizes activities accomplished pursuant to the License and associated terrestrial management plans for the Jackson Hydro Project for the past 5 years (from 2011-2015) and those planned for the next 5 years (2016-2020). If you have any comments on the draft report, please email them to me with a cc: to Mike Schutt by Thursday April 14, 2016 COB. Comments will be reviewed and responded to as appropriate prior to finalizing the report; the report will then be e-filed with the Federal Energy Regulatory Commission as required by the TRMP.

If you have any questions regarding the attached draft report or management plans, please contact Mike Schutt at MSSchutt@snopud.com or 425-783-1712.

Sincerely,

Dawn Presler

Sr. Environmental Coordinator

(425) 783-1709

PUD No. 1 of Snohomish County

PO Box 1107

Everett, WA 98206-1107

Presler, Dawn

From: EGTVEDT, LISA (DNR) <LISA.EGTVEDT@dnr.wa.gov>
Sent: Thursday, April 14, 2016 2:24 PM
To: Presler, Dawn
Cc: Schutt, Mike
Subject: RE: JHP (FERC No. 2157) - Terrestrial Resources 5-Year Draft Report for 30-day review and comment

Hello, Dawn & Mike,

Thank you for the opportunity to review the draft report for the Jackson Hydro Project's Terrestrial Resource Management Plan (TRMP), Noxious Weed Management Plan, and Marbled Murrelet Habitat Protection Plan. I have specifically reviewed the section regarding the marbled murrelet plan, in conjunction with the final 2014-2015 report from Hamer Environmental regarding the audio-visual surveys and habitat assessment for marbled murrelets associated with the proposed Diversion Dam project.

Following are my comments on the draft report based on the information that I was provided:

- First, some *very minor editorial* input: there are *two* page 43's and *two* page 44's. I don't doubt that this has already been detected, but I just want to point it out.
- The *first* page 43 refers to daily & seasonal timing restrictions. Can you report where these restrictions have been/will be implemented, and for what activities (e.g., was it applied for air lifts or snow surveys, if these involved helicopters flying over occupied/suitable stands? Or has the focus been solely/primarily on the Diversion Dam project?)? If this is greater detail than you are required to report, please disregard this comment. However, please know that I ask primarily with public scrutiny in mind; others may wonder the same, and more complete documentation/reporting may avoid future concerns or questions.
- The *second* page 43 shows Figure 4-2, "Final marbled murrelet survey site classifications for 2014-2015". I would like to stress that this can only be considered the final *site* classification, **not** the official classification/definition of **occupied stands**. As stated in the 2003 PSG Inland Survey Protocol, sites are an artifact of survey logistics, and are not necessarily representative of habitat classification. Please see the following excerpt from the 2003 PSG protocol, page 23:
 - "...when a survey area is divided into more than one site, the outcomes at the sites, collectively, determine the status of the survey area. For example, if a block of continuous potential habitat is divided into three contiguous survey sites, and one of those three sites yields subcanopy detections, the entire survey area is considered occupied, not just that one site, because all the sites form one large piece of continuous habitat (see 'importance of continuous habitat', p. 6). However, the application of status to the survey area does not, by default, mean that the status is applied to all continuous habitat beyond the survey area, although there could be situations where a regulatory agency decides that it does. For example, if only 40 ha (100 acres) of a large block of habitat (e.g., 405 ha [1000 acres]) was defined as a survey area and occupied detections were recorded, at a minimum the defined survey area would be classified as occupied. The status of the vast habitat beyond, but continuous with, the survey area boundary should be determined with the appropriate regulatory agency."

Because the draft report mentions consultation with USFWS and WDFW, perhaps this issue has been addressed, but I just want to mention this as a concern.

- Aside from survey site vs. survey area classification, I also question the interpretation of some of the survey results (in the Hamer report). From what I am able to discern in this report, survey site “SR7” would be considered “occupied” per Washington Forest Practices Rules (7/9/2014 *circling* @ 1.5 canopies, 8/1/2014 *circling* @ 1.3 canopies... i.e., both are *circling* <2 canopies). These types of detections are also shown in Figures 4 & 9, with additional circling behavior at SR5 (apparently observed from a station in SR7, as it is shown as a continuation of an observation from that location). I have reservations about the ability to watch a bird from that distance, but if it truly was seen *circling over* the stand assigned to SR5, then that stand should also be considered to be “occupied”, per Forest Practices Rules.

Perhaps consultation was conducted with the appropriate regulatory agency and an alternative interpretation was approved (is that documented anywhere?). However, I do want to mention that **any adjacent DNR land (at least) would have to apply the interpretation that these sites had occupied detections.**

I also want to note that the interpretation of circling <2 canopies as “occupied” is not only addressed in the Forest Practices Rules, but is also in the **proposed revised Inland Survey Protocol** (at least in the last version that I was able to review). I realize that the revised ISP is not officially adopted, but it is still an indication of the most current science.

The extra effort that was made by the consultants to determine whether murrelets were using the Sultan River as a flight corridor is commendable, and I want to acknowledge some of the results related to this effort. However, this does not dismiss the circling depicted in Fig. 9 over the stand in SR7 (uphill from the river), or in SR5... unless consultation occurred with the appropriate regulatory agency and concurrence was received regarding the determination of “presence” at these locations. There is no mention of such consultation in the draft report, but I realize that this may have involved an internal process. I would recommend that a brief statement be added to document such consultation, if it did indeed occur.

- Finally, I would like to address the delineation of habitat that occurred in the vicinity of the Diversion Dam. The methods section of the full report from Hamer Environmental states that the Washington Forest Practices definition/criteria was applied, but it is not very specific about how the stands were actually delineated. I would like to know whether the field crews employed transects, or only conducted general walk-throughs. I am also curious whether platform trees were identified and GPSd, or if only general observations of platform trees were recorded.

The reason I ask about this is that I can safely state that **at least a portion of one of the “marginal suitable” polygons shown on DNR land does NOT contain suitable platform structures (specifically, SR6).** It was somewhat alarming to see a suitable habitat polygon depicted on DNR land, particularly when a portion of that polygon overlaps with a current timber sale proposal. Fortunately, a field visit confirmed the lack of habitat at least in the area of the timber sale. However, this raises a question about the accuracy of the habitat assessment (or at least of the mapping as a result of the assessment).

Depending on where/when/how the daily and seasonal timing restrictions will be applied for disturbance-causing activities in the vicinity of the Diversion Dam project (or any other projects that are near stands that are likely to be occupied by marbled murrelets), **much of my input regarding technical details may be a moot**

point in terms of risk management. However, I hope that they may be of some assistance for future considerations, if applicable.

Thank you again for the opportunity to review and comment on the draft 2015 report for the Jackson Hydro Project's Marbled Murrelet Habitat Protection Plan. I wish you the best for the numerous resource management projects that the Snohomish County PUD has proposed and is implementing in relation to the Henry M Jackson Hydroelectric Project, and I look forward to future reports regarding these projects.

Lisa Egtvedt

Fish and Wildlife Biologist

Northwest Region

Washington Department of Natural Resources (DNR)

360-333-5769

lisa.egtvedt@dnr.wa.gov

www.dnr.wa.gov

From: Presler, Dawn [mailto:DJPresler@SNOPUD.com]

Sent: Tuesday, March 15, 2016 8:11 AM

To: 'Tim_Romanski@fws.gov' (Tim_Romanski@fws.gov) <Tim_Romanski@fws.gov>; Applegate, Brock A (DFW) <Brock.Applegate@dfw.wa.gov>; 'msevigny@tulaliptribes-nsn.gov' <msevigny@tulaliptribes-nsn.gov>; 'spaz@fs.fed.us' <spaz@fs.fed.us>; 'Shauna Hee (shee@fs.fed.us)' <shee@fs.fed.us>; EGTVEDT, LISA (DNR) <LISA.EGTVEDT@dnr.wa.gov>; ANDERSON, GREG (DNR) <GREG.ANDERSON@dnr.wa.gov>; 'geraldine.saw@snoco.org' <geraldine.saw@snoco.org>

Cc: Binkley, Keith <KMBinkley@SNOPUD.com>; Schutt, Mike <MSSchutt@SNOPUD.com>

Subject: JHP (FERC No. 2157) - Terrestrial Resources 5-Year Draft Report for 30-day review and comment

Dear Jackson Project Terrestrial Resource Group Members:

Attached for your 30-day review and comment is the draft report for the Jackson Hydro Project's Terrestrial Resource Management Plan (TRMP), Noxious Weed Management Plan, and Marbled Murrelet Habitat Protection Plan. The Plans can be found on the District's web site at: <http://www.snopud.com/PowerSupply/hydro/jhp/jhplicense.ashx?p=1978>. The attached report summarizes activities accomplished pursuant to the License and associated terrestrial management plans for the Jackson Hydro Project for the past 5 years (from 2011-2015) and those planned for the next 5 years (2016-2020). If you have any comments on the draft report, please email them to me with a cc: to Mike Schutt by Thursday April 14, 2016 COB. Comments will be reviewed and responded to as appropriate prior to finalizing the report; the report will then be e-filed with the Federal Energy Regulatory Commission as required by the TRMP.

If you have any questions regarding the attached draft report or management plans, please contact Mike Schutt at MSSchutt@snopud.com or 425-783-1712.

Sincerely,

Dawn Presler

Sr. Environmental Coordinator

(425) 783-1709

PUD No. 1 of Snohomish County

PO Box 1107

Everett, WA 98206-1107

4. Responses to Agency Comments on the Draft 5-Year Report

No.	Comment	District's Response
B. Applegate of WDFW, email dated		
1	<p>2.3.3. Waterfowl Nest Boxes, second sentence. Please note that WDFW requested that SnoPUD remove squirrel nests from the nest boxes when found. Please retain all native non-waterfowl bird nests, especially owls, as well as nests by waterfowl. Removal of native bird nests from the nest boxes may violate the Migratory Bird Treaty Act.</p> <p>SnoPUD has done a wonderful job with the Lost Lake Duck Nest Box Program. WDFW simply wants to clarify this sentence in the 5-Year Report to accurately represent our consultation during the 2011 Annual Report meeting.</p>	That is the District's current policy; only non-avian (or invasive starling) nests are removed. Section 2.2.3 of the report has been updated to reflect this clarification.
L. Egtvedt of DNR, email dated April 14, 2016		
2	First, some very minor editorial input: there are two page 43's and two page 44's.	Page numbering has been fixed.
3	The first page 43 refers to daily & seasonal timing restrictions. Can you report where these restrictions have been/will be implemented, and for what activities (e.g., was it applied for air lifts or snow surveys, if these involved helicopters flying over occupied/suitable stands? Or has the focus been solely/primarily on the Diversion Dam project?)? If this is greater detail than you are required to report, please disregard this comment. However, please know that I ask primarily with public scrutiny in mind; others may wonder the same, and more complete documentation/reporting may avoid future concerns or questions.	All suitable Murrelet habitat on Jackson Hydroelectric Project (JHP) lands was surveyed in 2007/8 to determine presence/occupancy status, except the area near the Diversion Dam, which was not surveyed at that time because the structural modification work currently underway was not yet scheduled. For all JHP lands, all activities involving noise-producing equipment are restricted in time and space based on the table in Section 2.2.4 of the Marbled Murrelet Habitat Protection Plan (MMHPP), as approved by the USFWS and FERC. This includes fly overs to bring in or remove vault toilets at remote recreation sites, snow surveys, hazard tree removal, habitat tree creation, earthwork, heavy equipment operations, etc.
4	The second page 43 shows Figure 4-2, "Final marbled murrelet survey site classifications for 2014-2015". I would like to stress that this can only be considered the final site classification, not the official classification/definition of occupied stands. As stated in the 2003 PSG Inland Survey Protocol, sites are an artifact of survey logistics, and are not necessarily representative of habitat classification. Please see the following excerpt from the 2003 PSG protocol, page 23:...	The USFWS and WDFW were consulted during the creation of the MMHPP. The MMHPP requires surveys be conducted within a 1-mile radius around the Diversion Dam because the activities at the site have the potential to generate noise that could disturb nesting Marbled Murrelets (MaMu) at that distance. The characterization of habitat within that area is solely intended to inform the District's decisions as to the methods of demolition and construction to be used and the types and timing of restrictions that will be enacted to avoid harming nesting MaMu. Those determinations should not be interpreted as habitat

	Because the draft report mentions consultation with USFWS and WDFW, perhaps this issue has been addressed, but I just want to mention this as a concern.	classification for lands outside of the JHP Project Boundary.
5	<p>Aside from survey site vs. survey area classification, I also question the interpretation of some of the survey results (in the Hamer report). From what I am able to discern in this report, survey site "SR7" would be considered "occupied" per Washington Forest Practices Rules (7/9/2014 circling @1.5 canopies, 8/1/2014 circling @1.3 canopies... i.e., both are circling <2 canopies). These types of detections are also shown in Figures 4 & 9, with additional circling behavior at SR5 (apparently observed from a station in SR7, as it is shown as a continuation of an observation from that location). I have reservations about the ability to watch a bird from that distance, but if it truly was seen circling over the stand assigned to SR5, then that stand should also be considered to be "occupied", per Forest Practices Rules.</p> <p>Perhaps consultation was conducted with the appropriate regulatory agency and an alternative interpretation was approved (is that documented anywhere?). However, I do want to mention that any adjacent DNR land (at least) would have to apply the interpretation that these sites had occupied detections.</p> <p>I also want to note that the interpretation of circling <2 canopies as "occupied" is not only addressed in the Forest Practices Rules, but is also in the proposed revised Inland Survey Protocol (at least in the last version that I was able to review). I realize that the revised ISP is not officially adopted, but it is still an indication of the most current science.</p> <p>The extra effort that was made by the consultants to determine whether murrelets were using the Sultan River as a flight corridor is commendable, and I want to acknowledge some of the results related to this effort. However, this does not dismiss the circling depicted in Fig. 9 over the stand in SR7 (uphill from the river), or in SR5... unless consultation occurred with the appropriate regulatory agency and concurrence was received regarding the</p>	<p>During the 2007/8 surveys, the Sultan River was identified as a primary travel corridor for MaMu flying to the upper Sultan Basin. The consultant determined that the flights below 2 canopy heights, over marginal habitat did not justify classifying the habitat as "occupied", but that "presence" was more appropriate. They concluded that the birds likely flew over the habitat and continued further upstream. USFWS concurred with these determinations during consultation.</p> <p>The observation locations were relatively open in this area, including the river corridor, and with binoculars, the consultants routinely watch birds from 450 meters.</p>

	determination of "presence" at these locations. There is no mention of such consultation in the draft report, but I realize that this may have involved an internal process. I would recommend that a brief statement be added to document such consultation, if it did indeed occur.	
6	<p>Finally, I would like to address the delineation of habitat that occurred in the vicinity of the Diversion Dam. The methods section of the full report from Hamer Environmental states that the Washington Forest Practices definition/criteria was applied, but it is not very specific about how the stands were actually delineated. I would like to know whether the field crews employed transects, or only conducted general walk-throughs. I am also curious whether platform trees were identified and GPSd, or if only general observations of platform trees were recorded.</p> <p>The reason I ask about this is that I can safely state that at least a portion of one of the "marginal suitable" polygons shown on DNR land does NOT contain suitable platform structures (specifically, SR6). It was somewhat alarming to see a suitable habitat polygon depicted on DNR land, particularly when a portion of that polygon overlaps with a current timber sale proposal. Fortunately, a field visit confirmed the lack of habitat at least in the area of the timber sale. However, this raises a question about the accuracy of the habitat assessment (or at least of the mapping as a result of the assessment).</p>	<p>SR6 is shown in Figure 1 of the final report as marginal habitat, as is much of the forest land in the vicinity, but was included with the goal of being conservative of the resource, per the JHP Terrestrial Resource Management Plan (TRMP) and associated MMHPP. These plans lean toward inclusion, rather than exclusion, of potentially marginal stands within the study area. The area within the 1-mile radius circle around the worksite would be 2,011 acres, and would have required an enormous effort to catalog and/or GPS suitable platform trees. Instead, it was determined that the most appropriate measure would be to perform loose transects and note platform trees or habitat breaks of 300 feet or more. Combining this on-the-ground assessment with aerial photos, the consultant determined where the boundaries of the habitat stands were. Again, the intent was to be inclusive of potential or marginal habitat rather than using strict definitions that may have excluded less than ideal habitat. Therefore, this determination is only intended to be used as guidance for JHP related projects that have the potential to disturb MaMu during the nesting season, and should not necessarily be applied to other landowners' planned use of their lands.</p>
7	Depending on where/when/how the daily and seasonal timing restrictions will be applied for disturbance-causing activities in the vicinity of the Diversion Dam project (or any other projects that are near stands that are likely to be occupied by marbled murrelets), much of my input regarding technical details may be a moot point in terms of risk management. However, I hope that they may be of some assistance for future considerations, if applicable.	To avoid disturbance during the nesting season, and in accordance with the MMHPP, noise producing activities do not occur until 2 hours after sunrise and terminate 2 hours before sunset, from April 1 through September 22.

Document Content(s)

20160429 TRMP 5Yr Report.PDF.....1-62