



Your Northwest renewables utility

December 16, 2022

VIA ELECTRONIC FILING

Kimberly D. Bose, Secretary
Nathaniel J. Davis, Sr., Deputy Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

**Re: Youngs Creek Hydroelectric Project, FERC No. 10359
License Article 403 - Wildlife Habitat Mitigation Plan Five Year Summary Report**

Dear Secretary Bose:

Public Utility District No. 1 of Snohomish County (the District) is filing the attached Wildlife Habitat Mitigation Plan (WHMP) Five-Year Summary Report pursuant to License Article 403 and the order approving modifications to the WHMP issued September 8, 2011.

The District consulted with Washington Department of Fish and Wildlife (WDFW) and US Fish and Wildlife Service, no comments were received.

If you have any questions on the report, please contact Keith Binkley, Natural Resources Manager.

Sincerely,

Keith Binkley

Keith Binkley
Manager, Natural Resources
Snohomish County PUD
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(425) 783-1769

**Youngs Creek Hydroelectric Project
FERC No. 10359**



WILDLIFE HABITAT MITIGATION PLAN
License Article 403

COMPREHENSIVE REPORT
2018-2022

Prepared By:



Everett, WA
December 2022

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

Wildlife Habitat Mitigation Plan (License Article 403) Comprehensive Report 2018-2022 for the Youngs Creek Hydroelectric Project (FERC No. 10359). December 2022.

This document should not be cited or distributed without this disclaimer.

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LIST OF ACRONYMS AND ABBREVIATIONS

CAPA	Critical Area Protection Area
FERC	Federal Energy Regulatory Commission
GIS	Geographic Information System
OMRI	Organic Materials Review Institute
Project	Youngs Creek Hydroelectric Project, FERC No. 10359
ROW	right-of-way
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WHMP	Wildlife Habitat Mitigation Plan

1. INTRODUCTION

A license was issued by the Federal Energy Regulatory Commission (FERC) on May 5, 1992, for the Youngs Creek Hydroelectric Project (Project) located south of Sultan, Washington. As part of the Order Issuing License, Article 403 directed that a final wildlife habitat mitigation plan be prepared. In 2011, Public Utility District No. 1 of Snohomish County (the District), current owner and operator of the Project, filed for an amendment to the 1992 Wildlife Habitat Mitigation Plan (WHMP). The amendment was approved by the FERC on September 8, 2011.¹

This WHMP identifies the elements of habitat protection, revegetation, and enhancement of Project lands that occurred between October 2018 and October 2022. Monthly nest box and raptor perch pole results are presented in Appendix A. The District is to provide a written report to the FERC every five years,² and a written summary report to the Washington Department of Fish and Wildlife (WDFW) and the U.S. Fish and Wildlife Service (USFWS) annually.

¹ (136 FERC ¶ 62,206).

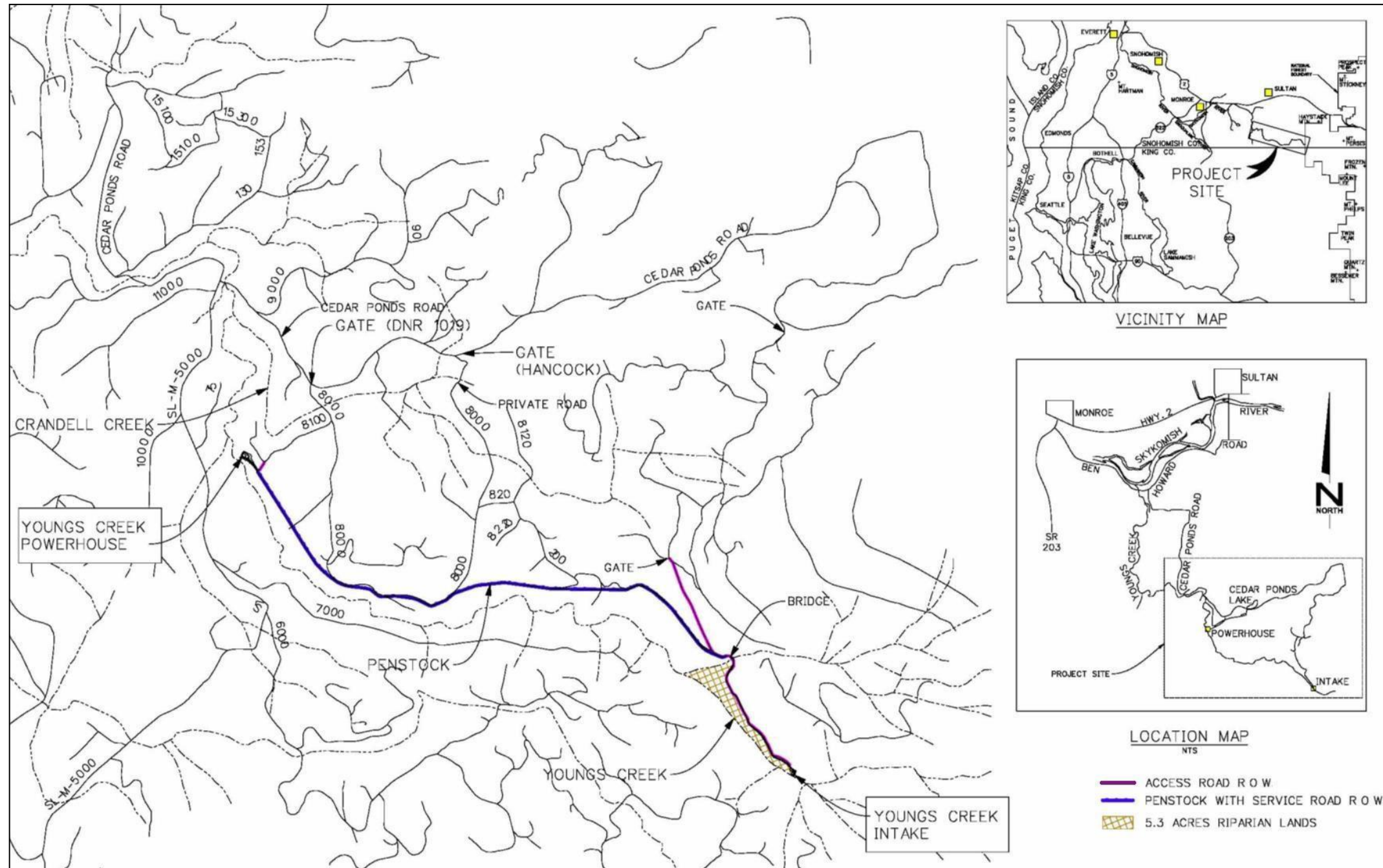


Figure 1. Map identifying penstock and access road rights-of-way.

2. VEGETATION MANAGEMENT AND MONITORING

As specified in the WHMP Section 3.0 (g) and (h), all mitigation areas were monitored each year to ensure the objectives of the WHMP are being met. Monitoring of Project lands consisted of periodic checks on vegetative conditions and documentation or treatment of occurrences of noxious or invasive species. Revegetated and reseeded areas were monitored and will continue to be annually for the duration of the License. Coverage of shrubs and grasses will also be visually evaluated on an annual basis. If surveys indicate that coverage by bare ground is estimated to be more than 20 percent, reseeded areas will occur with the appropriate erosion control seed mix from Tables 1 or 2, as noted in the WHMP. Noxious weeds will continue to be controlled during the growing season, as necessary. Monitoring of riparian and upland forest mitigation areas consisted of periodic checks of overstory vegetation.

2.1. Cumulative Summary – 2018 through 2021

2.1.1. Penstock Right-of-Way Revegetation

Following completion of Project construction activities, the penstock right-of-way (ROW) (Figure 1) was seeded in the fall of 2011 and reseeded, where necessary, in the spring of 2012. Additional seeding has not been necessary.

Table 1. Erosion Control Seed Mix – longer term maintenance areas/no deep-rooted vegetation allowed.

Seed variety	% by weight
Annual Ryegrass	25%
Perennial Ryegrass	25%
Creeping Red Fescue	20%
White Clover	15%
Chewings Fescue	15%
TOTAL	100%
*Apply at a rate of 100 lbs./acre	*Must be certified as "free of noxious weeds"

Table 2. Erosion Control Seed Mix – natural revegetation/deep rooted vegetation allowed.

Seed variety	% by weight
Soft white winter wheat	53%
Slender wheatgrass	21%
Annual Ryegrass	21%
Austrian winter peas	5%
TOTAL	100%
*Apply at a rate of 100 lbs./acre	*Must be certified as "free of noxious weeds"

Monitoring has occurred annually, and no further revegetation or seeding has been necessary since the initial effort.

2.1.2. Line of Sight Reduction/Establishment of Hiding Cover

Growth of native vegetation has been allowed along the penstock ROW to the extent practical without impeding visual monitoring of pipeline integrity. Trees have also been allowed to grow in the outer 10 feet on either side of the ROW (Figure 2). In-seeding by native shrubs and trees has occurred in pockets adjacent to native vegetation existing on the edge of the disturbed ROW. In 2018 several piles of woody debris from minor slides were placed on selected areas of the upper ROW.

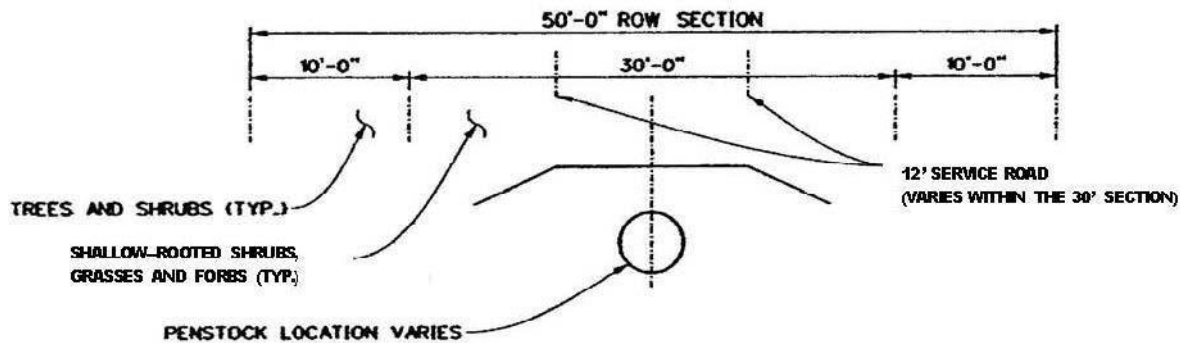


Figure 2. Typical cross section of penstock ROW with service road, per FERC-approved construction drawing YCH-1116.

2.1.3. Noxious Weed Management

Pursuant to WHMP Section 3.0(a), a Noxious Weed Management Plan was developed for the Project in 2013. Accordingly, noxious and invasive weed control has been performed each year during the growing season to comply with applicable noxious weed regulations. The primary weeds controlled have been Oxeye Daisy, Bull and Canada thistle, Butterfly bush, Scotch broom and Herb Robert. Bull and Canada thistle, Scotch broom, and Butterfly bush were the most dominant species in the first several years of treatments. By 2016 Butterfly bush and Scotch broom had been mostly controlled and limited spatially to former laydown areas and borrow pits. Thistle populations have been controlled along the ROW as a result of repeated annual treatments. Thistle species and Oxeye Daisy continued to be the dominant invasive plant on the landscape. Treatments were done using a systemic broadleaf herbicide under the direction of a state-licensed contract herbicide applicator. The contractor and District biologist each make 4-5 visits to the project annually to control or map weed occurrences.

Since 2015, monitoring of weed populations on Project lands has been incorporated into a Geographical Information Systems (GIS) database. Spatial information was partitioned into three forms of symbology: points (discrete locations along the ROW), intermittent lines (weeds commonly intermixed with native ROW vegetation), and polygons (weeds intermixed with native vegetation confined to specific areas beyond the ROW boundary). Spatial representation of invasive weeds encountered in 2017 (the last 5-year report to FERC) and 2022 are presented in Figure 3. Oxeye Daisy and Herb Robert were the most widespread weeds in 2017; consequently, these species have shown the largest decrease in coverage. Following the 2022 field season, both species have been relegated to intermittent locations along the ROW.

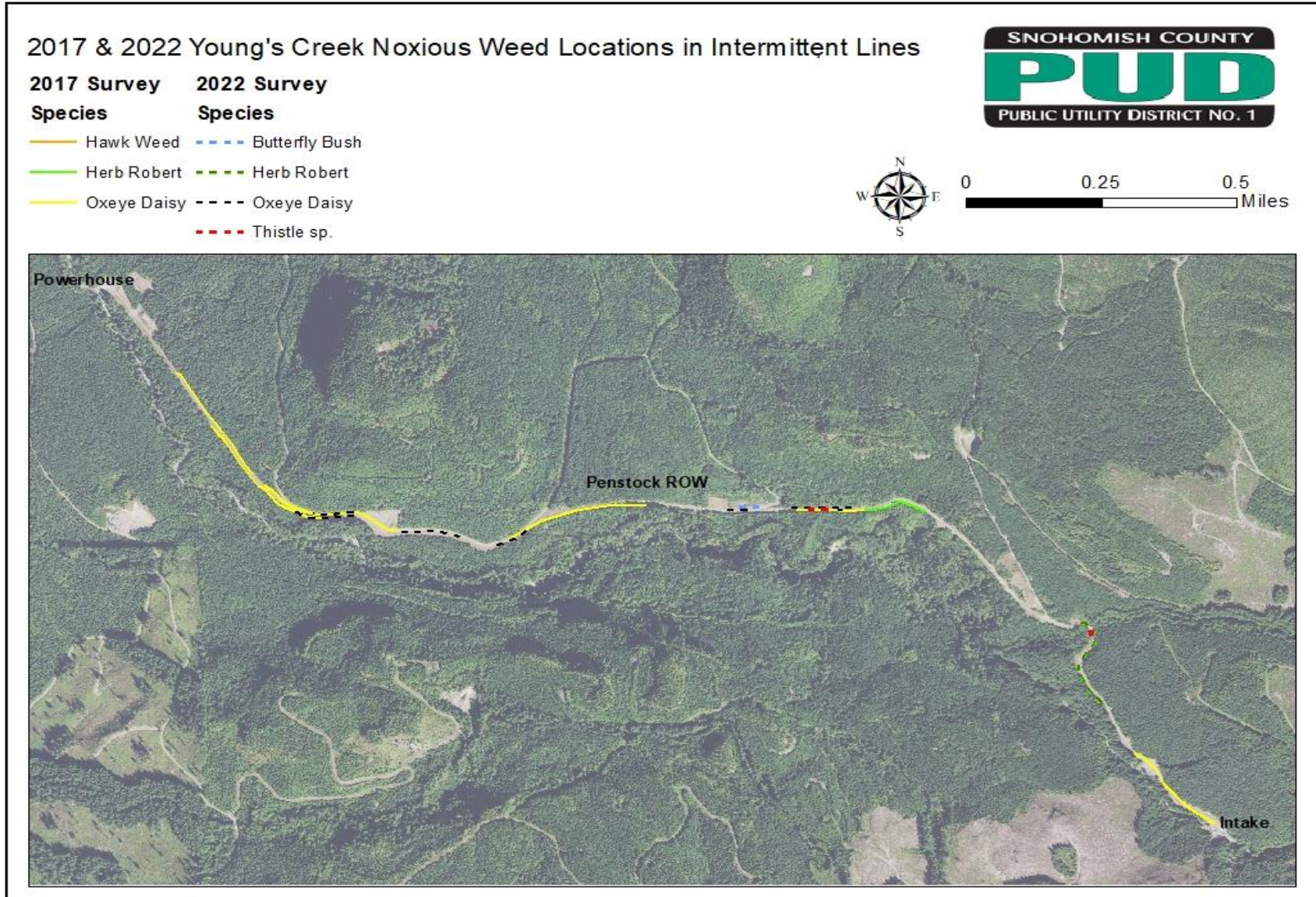


Figure 3. Map comparing noxious weed locations along the pipeline right of way between 2017 and 2022.

2.1.4. Access Road ROW Revegetation

The ROW along the Project access roads (Figure 1) have been revegetated with the grass/forb mix noted in the WHMP. The former laydown areas have been planted with Douglas-fir seedlings.

2.2. Work Completed in 2022

2.2.1. Penstock ROW Revegetation

Vegetation continued to meet coverage requirements and no activities have occurred post-construction that have warranted the need to re-seed any portion of the ROW.

2.2.2. Line of Sight Reduction/Establishment of Hiding Cover

To date, native shrubs have begun to re-establish in some areas along the ROW margins. Efforts to break up the line of sight and increase hiding cover for wildlife was determined necessary during a site visit with WDFW on November 16, 2017. Several piles of woody debris have been strategically placed along the upper mile of right-of-way to provide small mammal habitat and to break up the line-of-sight.

2.2.3. Noxious Weed Management

Noxious weed treatment was performed several times during the growing season. Methods of control consisted of manual removal of Scotch broom and Butterfly bush, and use of a non-selective, post-emergent Organic Materials Review Institute (OMRI) listed herbicide for all other weeds. All treatments were made by a state-licensed contract herbicide applicator. Thistle populations decreased significantly along the ROW as a result of repeated treatments. At this juncture, the dominant noxious weeds on Project lands are Oxeye Daisy and Bull and Canada Thistle, although populations of each are decreasing and nearly all seed production has been prevented. Locations of noxious weeds encountered and treated in 2022 are presented in Figure 4.

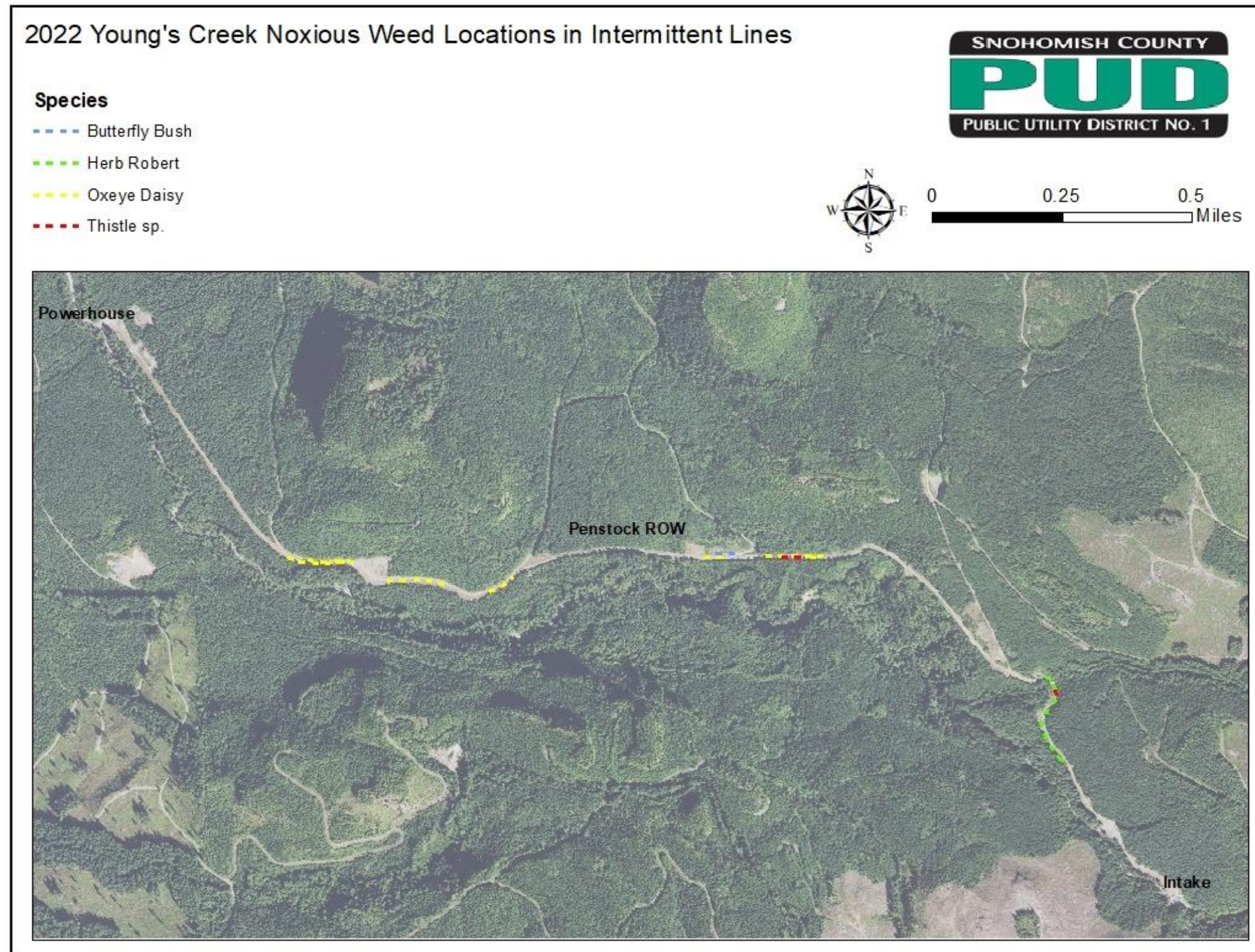


Figure 4. Map identifying noxious weed infestations in intermittent lines and polygons in 2022.

2.2.4. Access Road ROW Revegetation

No revegetation work occurred along access roads in 2022. Vegetation continues to mature following the initial post-construction revegetation effort along both the access road ROW margins and former laydown areas.

2.3. Work Planned for 2023 – 2027

The District will continue to monitor and control noxious and invasive weeds on Project Lands. Additional woody debris or rock piles may be placed along the ROW when material and equipment is available.

3. GATES

As required under WHMP Section 3.0(c), gates restricting access to the powerhouse and intake areas have been installed (Figure 1). Access has been provided to the District and its contractors for normal Project maintenance and to surrounding landowners for forest management activities.

4. AVIAN NESTING AND PERCHING HABITAT

4.1. Prior Years' Summary – 2018 Through 2021

4.1.1. Nest Boxes

Prior to and following the nesting season, nest boxes were maintained by removing any debris and/or old nesting material from within the cavity of the boxes. Since the female gathers nesting materials in preparation for egg-laying, boxes are not provided with any supplemental nesting materials in advance of the nesting season. Nests were checked by the District biologist as required by the WHMP schedule (Appendix A).

Prior to the 2020 nesting season, two of the nest boxes were relocated and re-numbered. Box 1 was destroyed by a small land and rockslide in the 5.3-acre CAPA and replaced with a solo tree mounted box between Boxes 2 and 3 and re-numbered Box 14 (Figure 5). The pole that Box 12 was mounted to was struck by a tree and damaged. Box 12 was discontinued and re-numbered to Box 13 which was mounted to a tree along the right-of-way between Box 10 and Box 11 (Figure 5).

From 2018-2021, an estimated total of 49 nestlings fledged from 13 boxes (several boxes were used multiple years). To date, very few unwanted guests have used the nest boxes, with the exception of an occasional deer mouse or yellow jacket nest. Starlings have not been observed at Young's Creek.

In 2018, three owl boxes were placed in the 5.3-acre forested mitigation parcel. Target species were Northern saw-whet (*Aegolius acadicus*) and western screech (*Megascops kennicottii*) owls. Each box was placed between 10 and 15 feet above the ground on dominant trees within the densest areas of the forest. In 2022, the owl boxes had no observed use (Appendix A).

4.1.2. Raptor Perch Poles

Seven raptor perch poles were erected on the penstock ROW in late 2011, based on field consultation between WDFW and District biologists. Perch poles were monitored concurrent with monitoring of nest boxes. Between 2018 and 2021, no usage was documented by raptors on any of the seven perch poles. Raptors are occasionally seen perching on trees adjacent to the right-of-way.

4.2. Work Completed in 2022

4.2.1. Nest Boxes

Tree swallows nested in four of the pole-mounted nest boxes and began nest construction in one additional box. To avoid excessive disturbance, eggs and chicks discovered in the nests were not moved during the counting process; as a result, numbers of eggs or fledglings are minimum estimates. In total, at least 18 eggs or chicks were observed in the nest boxes, and it is therefore presumed that a minimum of 18 tree swallows fledged from the 4 boxes. Box selection was similar to previous years with Coveside slant front boxes being selected most frequently. Nest box monitoring results for 2022 are located in Appendix A.

4.2.2. Raptor Perch Poles

Locations of perch poles can be viewed on Figure 5. During site visits in 2022, the immediate vicinity of each perch pole was inspected for signs of raptor use, including whitewash or owl pellets. No use of the perch poles was documented in 2022.

4.3. Work Planned for 2023 – 2027

Monitoring associated with other nest box programs suggests that the installation of additional boxes should not be considered until a threshold of 50 to 80 percent successful usage is attained (Bellrose & Holm, 1994). The only occurrence of this threshold being met was in 2016 when 58 percent usage was attained. After discussions with WDFW, the District installed an additional 3 nest boxes in 2018 specifically targeting Northern Saw-Whet or Western Screech Owls. These were placed on live trees within the 5.3 acre second-growth forest between the pipeline ROW and Youngs Creek.

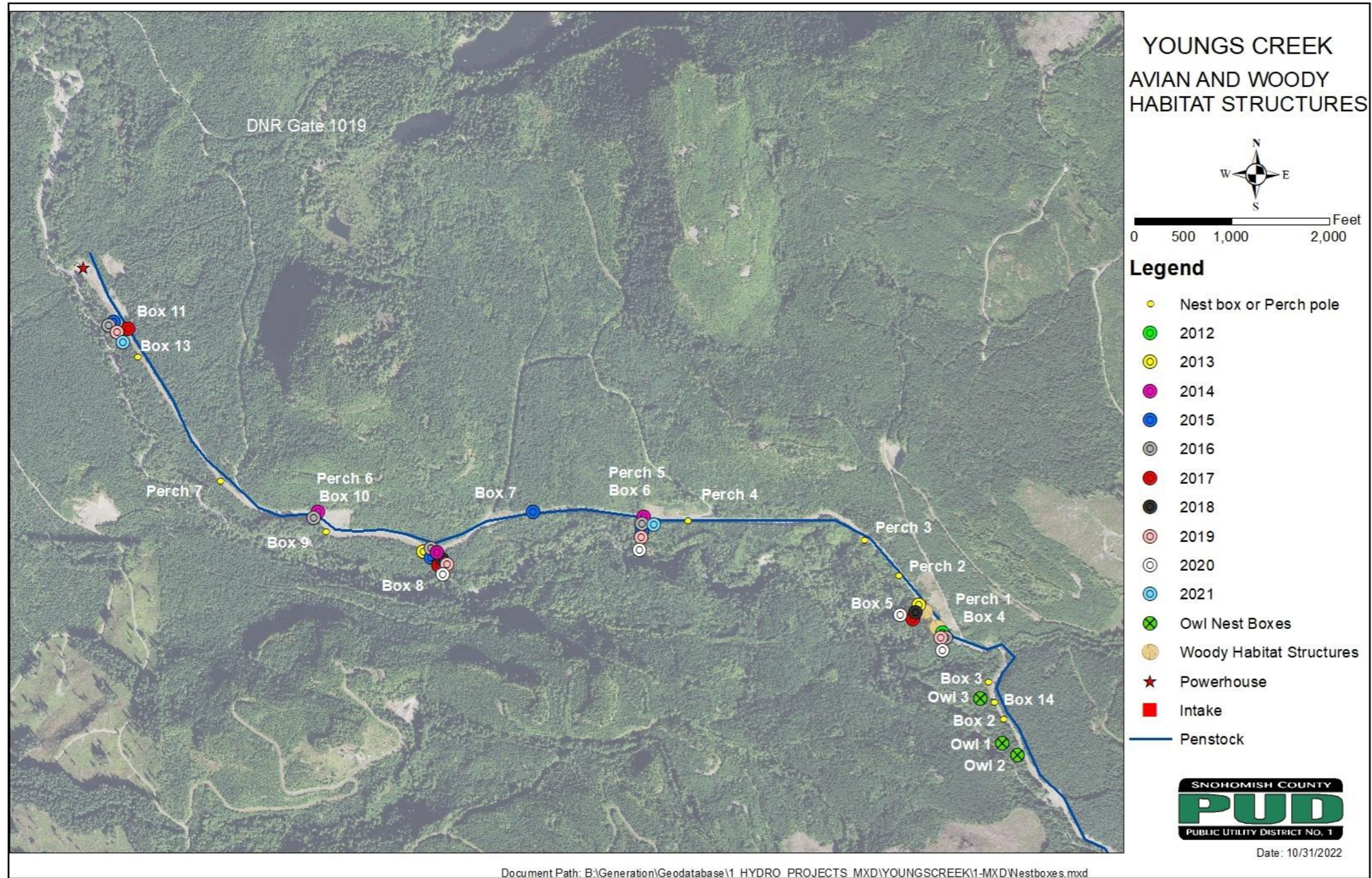


Figure 5. Map showing locations of nest boxes and perch poles.

5. MITIGATION LANDS

As required under WHMP Section 3.0(e), 5.3 acres of mitigation lands were put into Critical Area Protection Area (CAPA) status in fall 2009 (Figure 1).⁴ Visual observations of the overstory were conducted concurrent with owl box checks. The site consists of mature second growth forest, approximately 75 years old, on a steep hillside above Youngs Creek. Tree diameter ranges between approximately 15 inches and 28 inches. Snags and coarse woody debris are present within the site. Understory exists primarily as sword fern and local patches of Devil's club. At this point, habitat is of good quality with natural conditions allowing for development into mature forests.

6. LITERATURE CITED

Bellrose, F.C. and D.J. Holm (eds.) 1994. Ecology and Management of the Wood Duck. Stackpole Books, Mechanicsburg, PA. 588p.

⁴ The 5.3 acres are recorded as CAPA under Snohomish County number 200910160192. The Snohomish County Assessor's property tax parcel/account number is 27083300100200 for this land.

APPENDIX A

Nest Box and Perch Pole Monitoring Results

2018-2022 Nest Box Details			
Box #	Style	Location	Monitoring Results
Box 1	Audubon	Tree Mount in CAPA	2018: No use. 2019: No use. 2020: Box damaged prior to nesting season and was removed.
Box 2	Bluebird Trailbox	Tree Mount in CAPA	2018: No use. 2019: No use. 2020: No use. 2021: No use. 2022: No use.
Box 3	Audubon	Tree Mount in CAPA	2018: No use. 2019: No use. 2020: No use. 2021: No use. 2022: No use.
Box 4	Woodlink	Co-mounted on perch pole	2018: No use. 2019: Successful nest; unknown # fledged. 2020: At least 4 eggs hatched & fledged. 2021: Unsuccessful; 4 abandoned eggs. 2022: At least 4 eggs hatched & fledged.
Box 5	Bluebird Trailbox	Solo mounted on pole	2018: 6 eggs hatched & fledged 2019: No use. 2020: At least 3 eggs hatched & fledged. 2021: No use. 2022: No use.

Box 6	Bluebird Trailbox	Co-mounted on perch pole	2018: No use. 2019: At least 2 eggs hatched & fledged. 2020: At least 3 eggs hatched & fledged. 2021: At least 4 eggs hatched & fledged. 2022: No use.
Box 7	Audubon	Solo mounted on pole	2018: Partial nest 2019: Partial nest 2020: Partial nest 2021: No use. 2022: At least 7 eggs hatched & fledged.
Box 8	Coveside Slant front	Solo mounted on pole	2018: Successful nest, unknown # fledged. 2019: At least 5 eggs hatched & fledged. 2020: At least 3 eggs hatched & fledged. 2021: At least 5 eggs hatched & fledged. 2022: No use.
Box 9	Woodlink	Mounted on mature riparian tree	2018: No use. 2019: No use. 2020: No use. 2021: No use. 2022: No use.
Box 10	Woodlink	Co-mounted on perch pole	2018: No use. 2019: Nest constructed; not used. 2020: No use. 2021: No use. 2022: No use.

Box 11	Coveside Slant front	Solo mounted on pole	2018: Partial nest built
			2019: 6 eggs hatched & fledged
			2020: Partial nest built.
			2021: 4 eggs hatched and fledged.
			2022: At least 2 eggs hatched & fledged.
Box 12	Coveside Slant front	Solo mounted on pole	2018: 6 eggs hatched & fledged.
			2019: No use.
			2020: Box damaged prior to nesting season and was removed.
Box 13	Coveside Slant front	Solo mounted on tree	2020: No use.
			2021: No use.
			2022: No use.
Box 14	Audubon	Tree Mount in CAPA	2020: No use.
			2021: No use.
			2022: No use.
<p>TOTAL: At least 46 tree swallows fledged from 13 successful nest boxes. An additional 7 boxes had nesting activity that did not result in reproductive success.</p>			

APPENDIX B

Consultation Documentation Regarding Draft Report

From: [Spahr, Jessica](#)
To: [Brock Applegate](#); "jeffrey_garnett@fws.gov"
Subject: Youngs Creek Hydro - Draft Wildlife Habitat Monitoring Plan
Date: Thursday, November 17, 2022 11:21:00 AM
Attachments: [2022 YC WHMP AnnRpt DRAFT.pdf](#)

Hello Brock and Jeff,

Please see attached for the Draft 2022 Youngs Creek Hydro WHMP. Please respond with any comments by December 15, at which time we will respond to comments, finalize the document, and submit to FERC. If you would like a site visit, please contact Mike Schutt, environmental coordinator for wildlife, at msschutt@snopud.com or 425-210-5816 prior to December 1 to arrange.

Thank you,

Jessica Spahr
Senior Environmental Coordinator
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