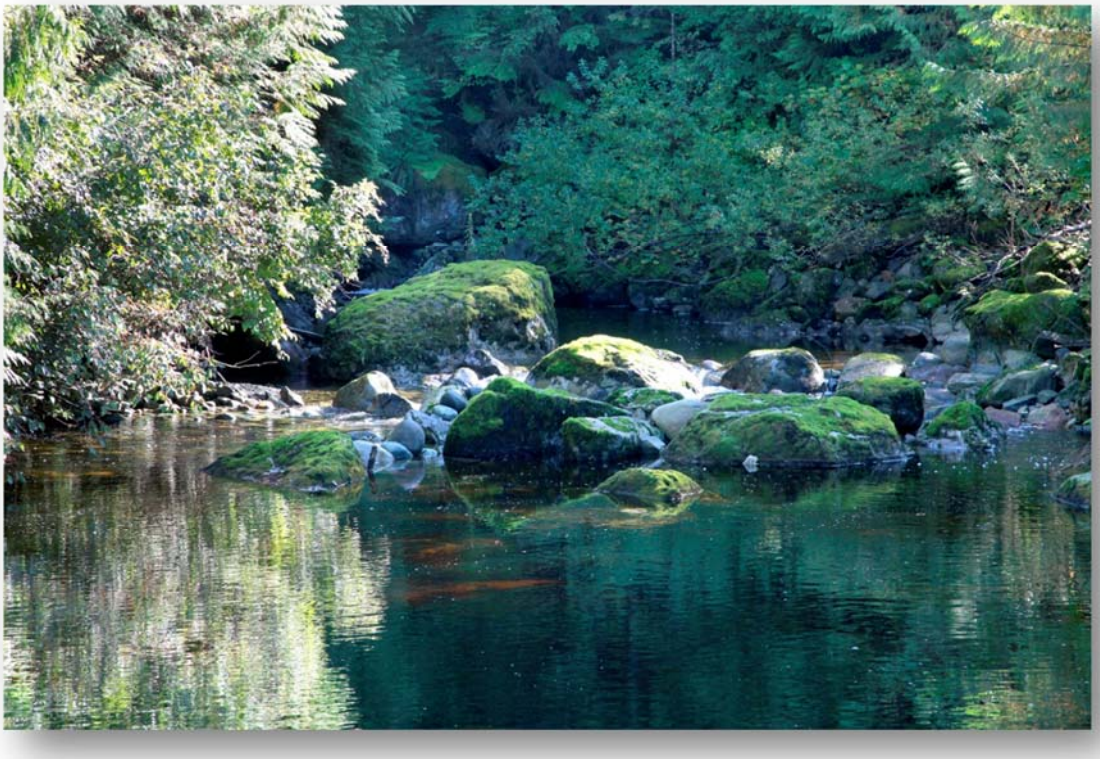
Youngs Creek Hydroelectric Project
FERC No. 10359



WILDLIFE HABITAT MITIGATION PLAN
License Article 403

2016 ANNUAL REPORT

Prepared By:

SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO. 1

Everett, WA

December 2016

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. Wildlife Habitat Mitigation Plan (License Article 403) 2016 Annual Report for the Youngs Creek Hydroelectric Project (FERC No. 10359). December 2016.

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LIST OF ACRONYMS AND ABBREVIATIONS

CAPA	Critical Area Protection Area
FERC	Federal Energy Regulatory Commission
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]

The WHMP identifies the elements of habitat protection, revegetation, and enhancement of Project lands and addresses ongoing monitoring and reporting. 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. These agencies were provided a copy of the draft report on November 16, 2016, for a 30-day review and comment period (Appendix A). This WHMP Annual Report details activities that were conducted from December 2015 through November 2016.

[1] (136 FERC ¶ 62,206).
[2] The next 5-year report will be filed with FERC by December 31, 2017.

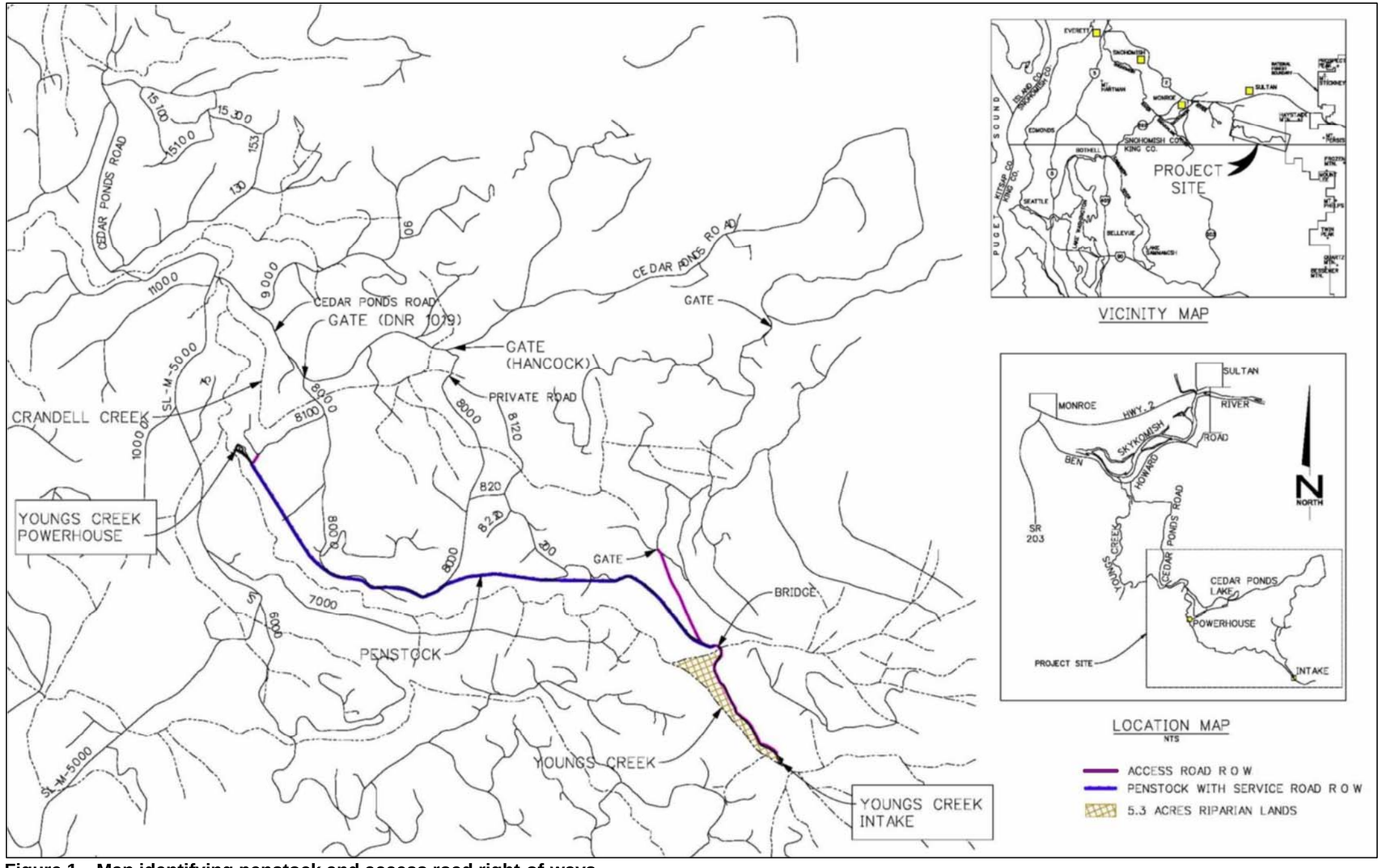

Figure 1. Map identifying penstock and access road right-of-ways.

2. VEGETATION MANAGEMENT AND MONITORING

As specified in the WHMP Section 3.0 (g) and (h), all mitigation areas were monitored during 2016 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 will continue to be monitored 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, reseeding will occur with the appropriate erosion control seed mix, as noted in the WHMP. Noxious weeds will be controlled during the growing season, as necessary. Monitoring of riparian and upland forest mitigation areas will consist of periodic checks of overstory vegetation.

2.1. 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 2011and reseeded, where necessary, in the spring of 2012. Vegetation continues to meet coverage requirements and no construction activities occurred during 2016 that precipitated the need to re-seed any portion of the ROW.

2.1.1 Line of Sight Reduction/Establishment of Hiding Cover

Growth of native vegetation will continue to be allowed along the penstock ROW to the extent practical without impeding visual monitoring of pipeline integrity. Trees will be allowed to grow in the outer 10 feet on either side of the ROW. To date, native shrubs have begun to re-establish in only a few locations along the ROW margins. Efforts to break up the line of sight and increase hiding cover for wildlife utilizing the ROW will be performed in conjunction with other activities; i.e. when heavy equipment is brought to the site for other work, boulders and/or woody debris may be placed as needed to break up the line of sight.

2.1.2 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 was performed over four days during the 2016 growing season to comply with applicable noxious weed regulations. The primary weeds controlled were Bull and Canada thistle, invasive hawkweeds, Oxeye Daisy and Scotch broom. Under the direction of the District biologist, a broadleaf herbicide was applied by a state-licensed contract herbicide applicator.

Monitoring of weed populations on Project lands was conducted by District biologists with locations of weed infestations noted and treatment measures implemented. Spatial information was partitioned into three forms of symbology: points (discrete locations along the ROW and spur roads), intermittent lines (weeds commonly intermixed with native ROW vegetation), and polygons (weeds intermixed with native vegetation confined to specific areas beyond the ROW boundary) (Figures 2 and 3). Road and penstock ROWs were patrolled multiple times during the growing season to identify areas where weed control was required.

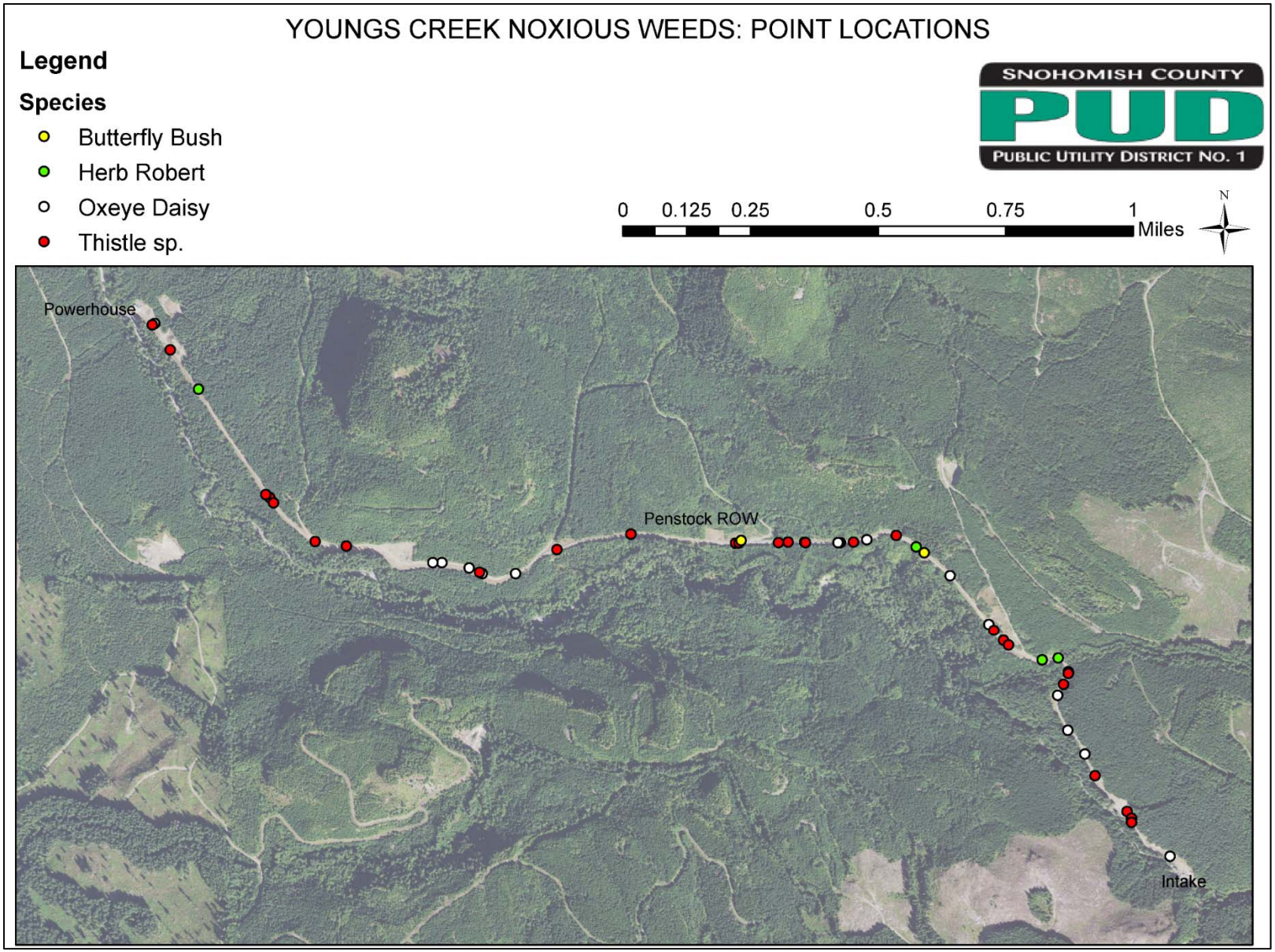

Figure 2. Map identifying discrete noxious weed locations.

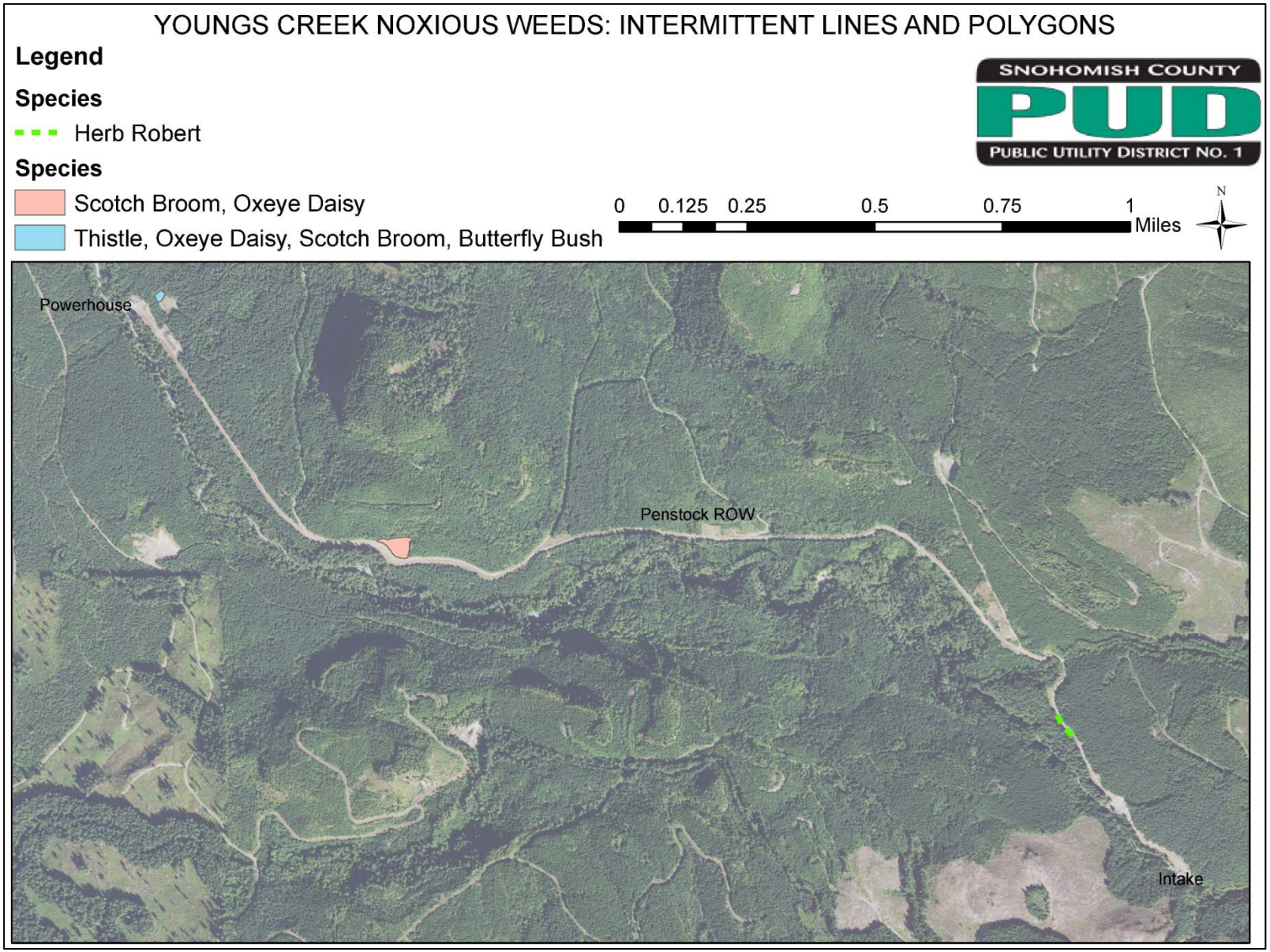

Figure 3. Map identifying noxious weed infestations in intermittent lines and polygons.

2.2 Access Road ROW Revegetation

The rights-of-way 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.

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. 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 (Table 1). Tree swallows nested in six of the pole-mounted nest boxes, and began nest construction in a seventh. One box has received use four years in a row and two boxes have been used three years in a row (Figure 2). 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 only estimates. A minimum of 24 chicks were observed in the nest boxes. No dead eggs or chicks were found during subsequent checks; it is therefore presumed that a minimum of 24 tree swallows fledged from the 6 boxes. 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). Four of the 12 boxes were initially placed in the forest adjacent to the penstock ROW to attract forest dwelling species such as nuthatches and chickadees. These boxes have not had any use since initiation of the nest box program and, as such, the District will relocate the forest dwelling boxes to existing poles located on the forest edge. No additional box installations are planned at this point.

Table 1. Nest box monitoring results.

Nest Box Details			
Box #	**Style**	**Location**	**2016 Monitoring Results**
Box 1	Audubon	Tree Mount in CAPA	5/10/16: No use. 5/27/16: No use. 6/7/16: No use. 6/23/16: No use. 7/18/16: No use. 8/15/16: No use. 9/1/16: No Use
Box 2	Bluebird Trailbox	Tree Mount in CAPA	5/10/16: No use. 5/27/16: No use. 6/7/16: No use. 6/23/16: No use.

			7/18/16: No use. 8/15/16: No use. 9/1/16: No Use
Box 3	Audubon	Tree Mount in CAPA	5/10/16: No use. 5/27/16: No use. 6/7/16: No use. 6/23/16: No use. 7/18/16: No use. 8/15/16: No use. 9/1/16: No Use.
Box 4	Woodlink	Co-mounted on perch pole	5/10/16: No use. 5/27/16: No use. 6/7/16: Nest built. 6/23/16: At least 3 eggs. Adult incubating. 7/18/16: 3 feathered chicks. 8/15/16: No use. 9/1/16: No Use. **Result: Successful tree swallow nest.**
Box 5	Bluebird Trailbox	Solo mounted on pole	5/10/16: No use. 5/27/16: No use. 6/7/16: No use. 6/23/16: No use. 7/18/16: No use. 8/15/16: No use. 9/1/16: No Use.
Box 6	Bluebird Trailbox	Co-mounted on perch pole	5/10/16: Nest built, 0 eggs. 5/27/16: Nest with 6 eggs. Adult incubating eggs. 6/7/16: Nest with 6 eggs. Adult incubating eggs. 6/23/16: Nest with at least 5 feathered chicks. 7/18/16: At least 5 fledged chicks. 8/15/16: No use. 9/1/16: No Use. **Result: Successful tree swallow nest.**
Box 7	Audubon	Solo mounted on pole	5/10/16: No use. 5/27/16: Partial nest built, 0 eggs. 6/7/16: Partial nest built, 0 eggs. 6/23/16: Partial nest built, 0 eggs. 7/18/16: Partial nest built, 0 eggs. 8/15/16: Partial nest built, 0 eggs. 9/1/16: Partial nest built, 0 eggs. **Result: Partial nest built.**

Box 8	Coveside Slant front	Solo mounted on pole	5/10/16: No use. 5/27/16: Nest with 4 eggs. 6/7/16: Nest with 5 eggs. Adult incubating eggs. 6/23/16: Nest with at least 3 eggs. 7/18/16: At least 4 feathered chicks. 8/15/16: No use. 9/1/16: No Use. **Result: Successful tree swallow nest.**
Box 9	Woodlink	Mounted on mature riparian tree	5/10/16: No use. 5/27/16: No use. 6/7/2016: No use. 6/23/16: No use. 7/18/16: No use. 8/15/16: No use. 9/1/16: No Use.
Box 10	Woodlink	Co-mounted on perch pole	5/10/16: No use. 5/27/16: Nest with 1 egg. 6/7/16: Nest with 5 eggs. Adult incubating eggs. 6/23/16: Nest with at least 1 egg and 1 non-feathered chick. Adult incubating. 7/18/16: Nest empty. Presumably at least 2 fledged chicks. 8/15/16: No use. 9/1/16: No Use. **Result: Successful tree swallow nest.**
Box 11	Coveside Slant front	Solo mounted on pole	5/10/16: Partial nest built, 0 eggs. 5/27/16: Nest with 4 eggs. 6/7/16: Nest with 6 eggs. Adult incubating eggs. 6/23/16: At least 5 feathered chicks. 7/18/16: Nest empty. Presumably 5 fledged chicks. 8/15/16: No use. 9/1/16: No Use. **Result: Successful tree swallow nest.**
Box 12	Coveside Slant front	Solo mounted on pole	5/10/16: Partial nest built, 0 eggs. 5/27/16: Nest built, 0 eggs. 6/7/16: Nest with 5 eggs. Adult incubating eggs. 6/23/16: Nest with at least 5 non-feathered chick. 7/18/16: Nest empty. Presumably 5 fledged chicks. 8/15/16: No use. 9/1/16: No Use. **Result: Successful tree swallow nest.**

TOTAL: 6 of 12 nest boxes were successfully used, 1 additional nest box had a partially constructed nest; minimum estimate of 24 fledglings produced.

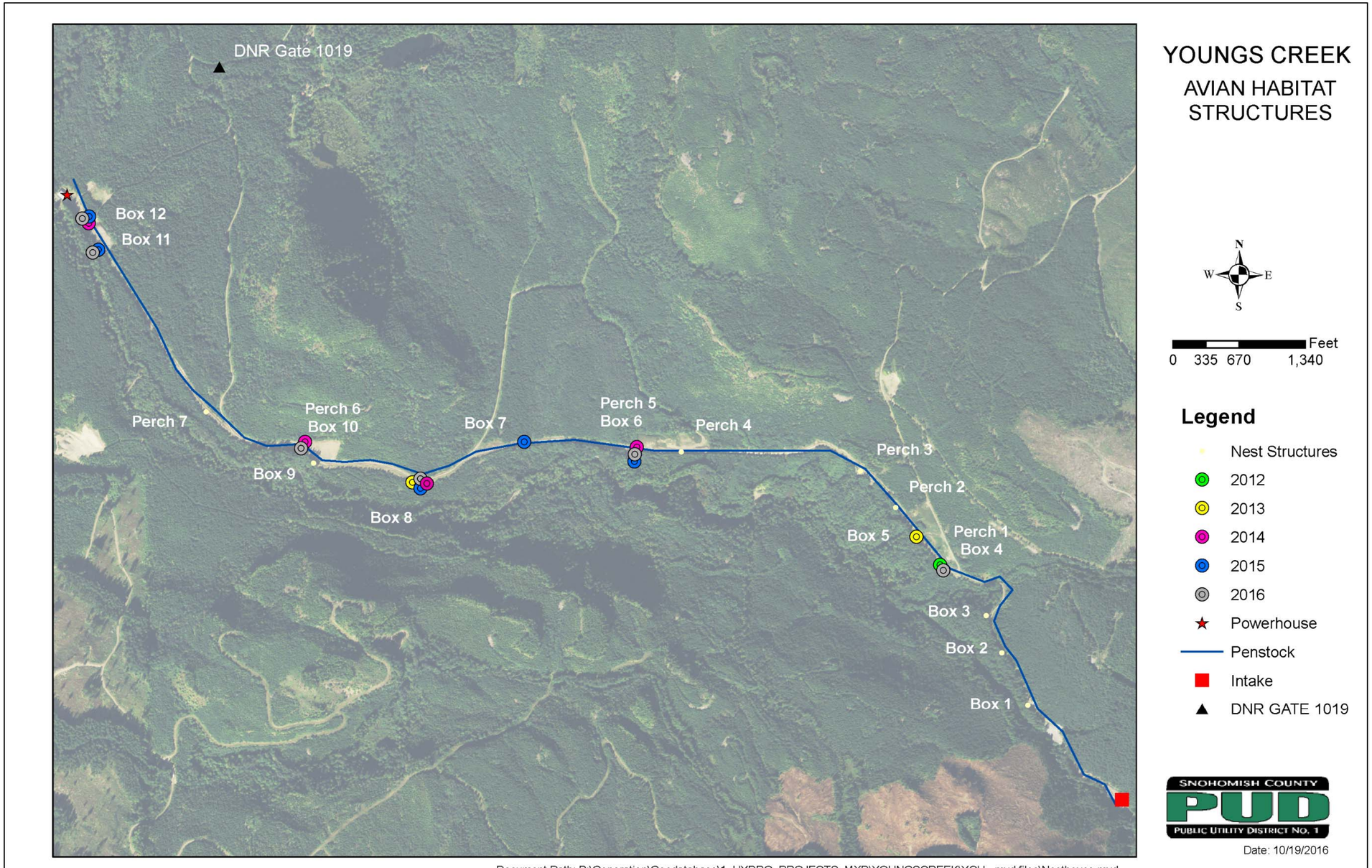

Figure 4. Map showing locations of nest boxes and perch poles.

4.2. 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. During site visits in 2016, 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 2016.

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).[3] Visual observations of the overstory were conducted concurrent with nest box and raptor perch pole checks. The site consists of mature second growth forest, approximately 70 years old, on a steep hillside above Youngs Creek. Tree diameter ranges between approximately 13 inches and 25 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.

[3] 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

Consultation Documentation Regarding Draft Report

No.	Stakeholder Comments	District Response
B. Applegate, WDFW, email dated 12/16/16		
1.	Please include in the annual report that you have maintained the nest box, such as cleaned out the old material, egg shells, etc at the beginning or end of the year, if you have done so. Please also include any nesting material that you may have used at the beginning at the season. I think noting these type of activities would help future nest box programs, particularly with your success. You have a chance to capture what works in a successful nest program.	A discussion of nest box maintenance was added to section 4.1. The District has not added nesting material to the nest boxes, as the female gathers materials from the local area when preparing for egg laying.
2.	As you may increase your nest box program up to 20 boxes, please consider boxes for western bluebird (*Sialia mexicana*). Unlike eastern and mountain bluebirds, western bluebird prefer "edge-habitat" among a moderately-harvested timberland. You may have that habitat around your project, especially on the edge of your wildlife mitigation lands. If western bluebird habitat exists and you decide to expand your nest program in that direction, feel free to consult with WDFW as we can involve our wildlife biologist. If feasible, we recommend that you expand your program with western bluebird nest boxes, because of its listing as a Washington State Monitor Species.	Existing boxes intended to attract western bluebird have not had use since placement. The District will relocate these boxes to further attract western bluebird. A description of this relocation was added to section 4.1.

From:	Spahr, Jessica
To:	Tim Romanski; Brock Applegate
Cc:	Schutt, Mike; Binkley, Keith; McDonnell, Andrew
Subject:	Youngs Creek (FERC No. 10359) - WHMP Draft 2016 Annual Report
Date:	Wednesday, November 16, 2016 10:03:17 AM
Attachments:	2016 YC WHMP AnnRpt.pdf

Hello Tim and Brock,

Attached for your review is the Wildlife Habitat Mitigation Plan Draft 2016 Annual Report for the Youngs Creek Project. Please review and let us know if you have any comments by Friday, December 16. We will respond to any comments and finalize the report after that date. Thank you!

Jessica Spahr
Senior Utility Analyst
Generation Natural Resources
Snohomish County PUD

425-783-8132
jlspahr@snopud.com

From: Romanski, Tim
To: Spahr, Jessica
Cc: Brock Applegate; Schutt, Mike; Binkley, Keith; McDonnell, Andrew
Subject: Re: Youngs Creek (FERC No. 10359) - WHMP Draft 2016 Annual Report
Date: Tuesday, November 29, 2016 10:49:58 AM

Thanks, Jessica.

I have no comments.

Tim Romanski
Branch Manager, Conservation and Hydropower Planning
U.S. Fish and Wildlife Service
Washington Fish and Wildlife Office
510 Desmond Drive SE, Lacey, WA 98503
360.753.5823 (phone)

On Wed, Nov 16, 2016 at 10:03 AM, Spahr, Jessica <JLSpahr@snopud.com> wrote:

> Hello Tim and Brock,
>
> Attached for your review is the Wildlife Habitat Mitigation Plan Draft 2016 Annual Report for the Youngs Creek Project. Please review and let us know if you have any comments by Friday, December 16. We will respond to any comments and finalize the report after that date. Thank you!
>
> **Jessica Spahr**
>
> Senior Utility Analyst
>
> Generation Natural Resources
>
> Snohomish County PUD
>
> 425-783-8132
>
> jlspahr@snopud.com

From:	Applegate, Brock A (DFW)
To:	Schutt, Mike; McDonnell, Andrew
Cc:	Romanski, Tim
Subject:	Comments on the Annual Report for the WHMP -- Youngs Creek Hydro
Date:	Friday, December 16, 2016 12:46:45 PM

Hi Mike and Andrew, I have a couple of comments about your Annual Report for the Wildlife Habitat Management Plan on the Youngs Creek Hydroproject.

4.1 Nest Boxes

First of all, you have done a great job with your nesting boxes for tree swallows. You obviously have done your research on how to create nest boxes with six successful nests.

1) Please include in the annual report that you have maintained the nest box, such as cleaned out the old material, egg shells, etc at the beginning or end of the year, if you have done so. Please also include any nesting material that you may have used at the beginning at the season. I think noting these type of activities would help future nest box programs, particularly with your success. You have a chance to capture what works in a successful nest program.

2) As you may increase your nest box program up to 20 boxes, please consider boxes for western bluebird (*Sialia mexicana*). Unlike eastern and mountain bluebirds, western bluebird prefer "edge-habitat" among a moderately-harvested timberland. You may have that habitat around your project, especially on the edge of your wildlife mitigation lands. If western bluebird habitat exists and you decide to expand your nest program in that direction, feel free to consult with WDFW as we can involve our wildlife biologist. If feasible, we recommend that you expand your program with western bluebird nest boxes, because of its listing as a Washington State Monitor Species. Thanks for any help on propagating bluebirds.

Thanks for putting this annual report together. I look forward to a site visit, once the weather permits.

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)