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Subject: Lake Chelan Wildlife Plan 5-year Reports (30 day review)
Date: Friday, February 23, 2018 4:54:14 PM
Attachments: [Lake Chelan WHP 5_YR Summary Final Draft_2018.docx](#)
[Lake Chelan WHP 2018_2022 Final Draft 2_22_2018.docx](#)

Hello Lake Chelan Wildlife Forum Members,

Attached for your review is the Lake Chelan Wildlife Habitat Plan 5-year Summary Report (2012-2017) and the updated Lake Chelan 5-year Plan (2018-2022). These reports are due to the FERC by April 10, 2018. Please review the reports and provide any comments back to me by March 26, 2018 (30 day review period). While the new 5-year plan is under review by the FERC, we will continue to operate under the current Lake Chelan Wildlife Habitat Plan until the FERC issues an action on the new plan.

The 5-year Summary Report summarizes our efforts to purchase conservation easements on the north shore of Lake Chelan as required. Unfortunately, we were unable to complete the project due to lack of landowner participation. The 5-year Plan contains proposed changes to the wildlife survey effort that were discussed during our Lake Chelan Wildlife Forum meeting back in July of 2017. Please review the proposed changes and provide any comments.

Thank You,

Von

Von R. Pope
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WILDLIFE HABITAT SUMMARY REPORT 2013-2017

LICENSE ARTICLE 406

5-Year Summary DRAFT

**LAKE CHELAN HYDROELECTRIC PROJECT
FERC Project No. 637**

April X, 2018



**Public Utility District No. 1 of Chelan County
Wenatchee, Washington**

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EXECUTIVE SUMMARY

The Federal Energy Regulatory Commission (FERC) Order on Offer of Settlement and Issuing New License (License) and Order on Rehearing for the Lake Chelan Hydroelectric Project No. 637 (Project) were issued November 6, 2006, and April 19, 2007, respectively, to the Public Utility District No. 1 of Chelan County (Chelan PUD). Article 406 of the new Project License required Chelan PUD to submit to FERC a Wildlife Habitat Plan (WHP) by November 6, 2007. On April 10, 2008, the FERC issued its order modifying and approving the initial WHP. In accordance with the order, Chelan PUD is required to file a five-year summary of the upland and riparian habitat improvement measures implemented during the initial WHP as well as a summary of the wildlife surveys to FERC. On April 10, 2013, Chelan PUD filed the updated 5-year WHP (2013-2017) and a summary of the work completed under the first WHP (2008-2012). The second WHP (2013-2017) was approved by the FERC on September 18, 2013.

Implementation of the second WHP (2013-2017) began soon after plan approval. Progress was made toward acquiring conservation easements on the north shore of Lake Chelan on behalf of the Washington Department of Fish and Wildlife (WDFW) with conservation easement language agreed to by stakeholders and a new contract to pursue easements on approximately 308 acres of private land. In August of 2017, interested landowners were provided with a copy of the conservation easement and appraisals for the conservation value of their land. Unfortunately, only one landowner committed to the proposal and no easements were purchased due to lack of landowner participation. On February 1, 2018, the conservation easement project was terminated.

During the second WHP (2013-2017), the USDA Forest Service (USFS) initiated several habitat improvement projects, including native plant propagation and planting, forest thinning, whitebark pine habitat management, and noxious weed control. The USFS also planted ponderosa pines and western cedar trees along Lake Chelan to improve riparian habitat. Chelan PUD also supported USFS efforts to control common crupina, a class A noxious weed that occurs along Lake Chelan.

As required, Chelan PUD conducted winter wildlife surveys along Lake Chelan and maintained three upland bird feeders. Only 50 winter wildlife surveys were completed out of the 60 scheduled. Ten surveys were cancelled due to poor weather. Overall, wildlife numbers were lower during the second WHP (2013-2017) compared to the first WHP (2008-2012). Winter Wildlife Survey summary reports were provided annually to the National Park Service (NPS), USFS, U.S. Fish and Wildlife Service (USFWS), Washington Department of Fish and Wildlife (WDFW), and FERC.

SECTION 1: INTRODUCTION

The Federal Energy Regulatory Commission (FERC) Order on Offer of Settlement and Issuing New License (License) and Order on Rehearing for the Lake Chelan Hydroelectric Project No. 637 (Project) were issued November 6, 2006, and April 19, 2007, respectively, to the Public Utility District No. 1 of Chelan County (Chelan PUD). Article 406 of the new Project License required Chelan PUD to submit to FERC a Wildlife Habitat Plan (WHP) by November 6, 2007. On April 10, 2008, the FERC issued its order modifying and approving the initial WHP. In accordance with the order, Chelan PUD is required to file a five-year summary of the upland and riparian habitat improvement measures implemented during the initial WHP as well as a summary of the wildlife surveys to FERC

The second WHP (2013-2017) addressed both upland and riparian habitat improvements and winter wildlife monitoring in the Lake Chelan basin. Implementation of the second WHP (2013-2017), as specified in Article 406 and Settlement Agreement¹ Article 9 of Appendix A of the License, entails Chelan PUD providing funds for: 1) upland habitat improvements consisting of conservation easement acquisition, upland habitat improvements, noxious weed control; and 2) riparian habitat improvements. Additionally, Chelan PUD conducted winter wildlife surveys in the Lake Chelan basin. None of the habitat improvement measures (riparian or upland) required annual or periodic maintenance to ensure their success; therefore, no habitat lands were brought into the Project boundary.

The second WHP (2013-2017) was developed in consultation with the Lake Chelan Wildlife Forum (LCWF), which includes the National Park Service (NPS), USDA Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), WDFW, Confederated Tribes of the Colville Reservation, Yakama Nation, Wenatchee Sportsman's Association, Lake Chelan Sportsman's Association, NCW Mule Deer Foundation, Foundation for North American Wildlife Sheep, Audubon Society, and National Wild Turkey Federation. Documentation of the consultation that occurred during preparation of this summary report is attached as Appendix A.

From 2013 to 2017, funds allocated under the initial WHP were expended on resources that were the most valuable to wildlife and most compatible with wildlife land use in Chelan County. Those lands will include key habitat types, migration corridors, and shrub steppe, grassland, and riparian/wetland habitats that offer restoration or improvement opportunities. The primary goal of the WHP is to enhance wildlife habitat within portions of Chelan County bordering Lake Chelan to:

- i) Restore, maintain, or improve ecological quality and diversity;
- ii) Restore, maintain, or increase habitat for key indicator wildlife species; and
- iii) Provide for public use compatible with the ecological quality, diversity, and carrying capacity for key wildlife species goals.

¹ Chelan PUD, on behalf of the signatories, filed a Comprehensive Settlement Agreement on October 17, 2003. The settlement agreement includes articles that were included in the License as Appendix A.

Primary wildlife indicator species for purposes of the WHP include: 1) mule deer and bighorn sheep; 2) threatened, endangered, sensitive, species of concern, or survey and management species; and 3) riparian and wetland indicator bird and amphibian species.

The second WHP (2013-2017) focuses primarily on big game species because the LCWF places a high value on protecting and enhancing habitat for species that overwinter in the Chelan Basin, which include mule deer, bighorn sheep, and mountain goats. However, it was important to the LCWF that the same measures implemented for the benefit of big game also benefit a broad community of terrestrial wildlife, including avian species. Most of acreage surrounding Lake Chelan is shrub-steppe and riparian habitat; hence, the plan emphasizes enhancement projects for these types of habitats.

This second WHP (2013-2017) 5-year summary report summarizes the work completed from 2013 through 2017, in order to complete the summary report to be filed for Commission approval by April 10, 2018.

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SECTION 2: UPLAND HABITAT IMPROVEMENTS & WILDLIFE SURVEYS

Implementation of upland habitat improvements, as specified in License Article 406 and Settlement Agreement Article 9 of Appendix A of the License, entails Chelan PUD providing funds for conservation easement acquisition, habitat improvements, and noxious weed control. Additionally, Chelan PUD conducted wildlife surveys in the Lake Chelan basin and filled three upland bird feeders annually.

None of the upland habitat improvement measures implemented required annual or periodic maintenance to ensure their success; therefore, no lands were brought into the project boundary.

2.1 Conservation Easement Acquisition

Settlement Agreement Article 9(a) of Appendix A of the Project License describes Chelan PUD making funds available for acquiring conservation easements on private lands on the north shore of Lake Chelan.

(1) **Easement Acquisition (LC09a1).** (1) Chelan PUD shall make available \$220,000 to the Chelan-Douglas Land Trust, for the acquisition of conservation easements in perpetuity on privately-owned lands located on the north shore of Lake Chelan, in accordance with section 4.1.1 of the Comprehensive Plan. For purposes of this License Article, all references to the Chelan-Douglas Land Trust refer to the Chelan-Douglas Land Trust or another organization selected pursuant to paragraph (a)(6) of this License Article. The goal is to secure easements on 400 acres of land, and priority shall be given to acquiring easements on lands between elevations 1,100 and 1,400 ft.

(2) **Administrative Fees (LC09a2).** Chelan PUD shall make available additional funding of up to 15 percent of the cost of easement acquisition, not to exceed \$33,000 to the Chelan-Douglas Land Trust, for fees associated with easement acquisition. Associated fees include administrative costs, appraisals, baseline inventories, escrow fees, hazardous substance assessments, legal fees, recording fees, stewardship fees, surveys, and fees relating to title reports and insurance.

(3) **Habitat Improvements (LC09a3).** Chelan PUD shall make available \$32,000 to the Chelan-Douglas Land Trust, for shrub-steppe/mule deer winter-range habitat restoration efforts on the lands, if any, for which an easement is acquired under paragraph (a)(1) of this Article. Beyond making the \$32,000 available, Chelan PUD shall have no responsibility for the success of the restoration efforts to be carried out by the Chelan-Douglas Land Trust, in coordination with Washington Fish and Wildlife. In its contract with the Chelan-Douglas Land Trust, Chelan PUD shall require the Chelan-Douglas Land Trust to coordinate with Washington Fish and Wildlife in order to assure the highest likelihood of habitat restoration success.

2.1.1 Easement Acquisition (LC09a1)

In 2011, landowner outreach showed that there was sufficient interest by private landowners on the north shore of Lake Chelan to pursue conservation easements in the area between Gold Creek and Grade Creek (Figure 1). However, the conservation easement language had not yet been developed. From 2013–2014 Chelan PUD drafted conservation easement language that was reviewed and approved by WDFW (See Consultation Record). In June of 2015, with approval from WDFW, Chelan PUD entered into a contract with the Cascadia Conservation District to review and approve the conservation easement language as the entity that would hold the easements. However, in July of 2016, the Cascadia Conservation District withdrew their commitment to hold the easements in perpetuity, but were willing to facilitate the easement acquisition for another entity. Therefore, with assistance from the Cascadia Conservation District and WDFW, a new partner was sought to hold the conservation easements if acquired. In September 2016, the Mule Deer Foundation (MDF) agreed to hold the easements in perpetuity. With continued support from WDFW (See Consultation Record), MDF, the Cascadia Conservation District and the landowners, the contract with the Cascadia Conservation District was amended allowing them to pursue the easements and transferring them to the MDF at closing. Interested landowners (representing approximately 308 acres) were presented with a final version of the conservation easements in the fall of 2016 and granted permission for land surveys and appraisals. Land surveys were completed in April of 2017 and conservation easement appraisals were completed by July, 2017.

On August 24, 2017, the interested landowners were sent a letter (Attachment A) containing; 1) a letter offering to purchase conservation easements from the landowners, 2) an independent appraisal of the property, 3) a copy of the conservation easement, and 4) a signature page to be returned by November 30, 2017. As of the requested response date, only one landowner had signed the commitment letter. For the next two months, several attempts were made to engage the other interested owners that had not formally responded with no success. On February 1, 2018, a letter (Attachment B) was sent to the landowners stating that due to lack of landowner participation, the project was being terminated.

2.1.2 Administrative Fees (LC09a2)

Nearly all the administrative fees have been spent through contracts with the Cascadia Conservation District working toward easement acquisition. As of January 1, 2018, a balance of \$10,552.99 in administrative fees was available for work related to easement acquisition. Expenses in 2018 for final closeout of the contract may will consume additional funds.

2.1.3 Habitat Improvements (LC09a3)

Since the conservation easement acquisition was unsuccessful due to lack of landowner participation, the easement acquisition funding (LC09a1) and the habitat improvement funding (LC09a3) will be made available to WDFW for habitat restoration within the Chelan basin, per the Lake Chelan Settlement Agreement (Chelan PUD 2003).

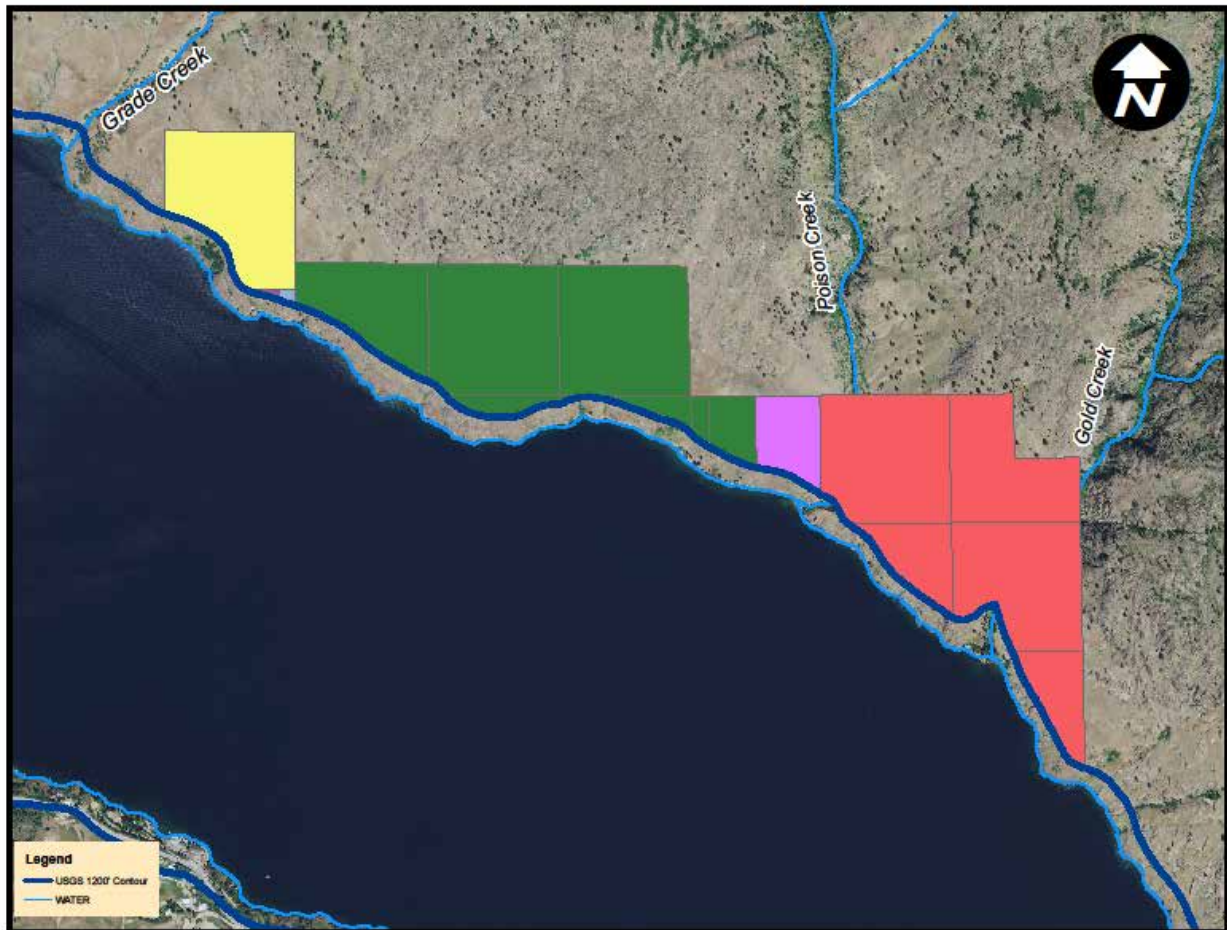


Figure 1: Private parcels on the north shore of Lake Chelan where conservation easements are being pursued.

2.2 Funding for USFS

Settlement Agreement Article 9(b) of Appendix A of the Project License describes the methods and funding for USDA Forest Service habitat and wildlife enhancement measures.

(1) Chelan PUD shall make available to the USDA Forest Service (USFS) \$20,000 per year during the term of the New License, and any subsequent annual licenses, for habitat and wildlife enhancement measures identified in section 3 of Chapter 9 of the Comprehensive Plan.

2.2.1 Upland Habitat Improvements under LC09b1

The following is a list of approved tasks included in the second WHP (2013-2017) with a summary of work completed by the USFS during the period of 2013 to 2017. Table 1 summarizes the status of the USFS tasks and if these projects have been completed or will be carried over to the 2018-2022 WHP. Projects include native plant seed collection and propagation, thermal cover planting, habitat restoration through planting and thinning, and prescribed burning.

Prescribed burning is a treatment method used extensively by the USFS for forest restoration (USFS 2002), illustrated by projects described in section 2.2. Prescribed burning provides benefits to all species dependent on shrub steppe habitat by reducing the amount of available fuels and, therefore, the severity of summer wildfires. Prescribed burning also rejuvenates plant communities that have evolved with fire, thereby improving habitat conditions for all species dependent on shrub steppe and grassland habitats. Recent USFS research has focused on the benefits to, and responses of, avian species from prescribed burns (Lyons et al. 2007; Gaines et al. 2007). Additionally, prescribed burning provides acceleration of a sustainable dry late-successional ponderosa pine forest and the species dependent on this type of forest such as pileated woodpeckers, marten, white-headed woodpeckers, pygmy nuthatch, Western gray squirrel and spotted owls.

Several wildfires occurred in the Lake Chelan Basin during the second WHP (2013-2017). As a result, many of the projects that were scheduled for prescribed burning or forest thinning were affected by the wildfires. The Wolverine Creek fire in 2015 impacted several scheduled projects, burning over 46,000 acres of habitat, most of which was in the Lake Chelan Basin.

Table 1. Summary of USFS upland tasks (LC09b1) approved in the initial WHP and current status of each task.

| Task | Initiated? | Status | Carryover |
|--|-----------------|--------------------|-----------|
| Task 1: Plant/Seed Propagation | | | |
| Task 2: 4 th of July Mtn. Winter Cover Planting | Yes | Ongoing | Yes |
| Task 3: Coyote Creek | No ¹ | USFS Task | No |
| Task 4: Lucerne | Yes | Completed | No |
| Task 5: Safety Harbor burn | No ¹ | USFS initiated | No |
| Task 6: N 25 Restore | No | Scheduled | Yes |
| Task 7: Bear Mountain | No | Scheduled | Yes |
| Task 8: 25-Mile Creek | Yes | Completed | No |
| Task 9: Antilon Lake | No | Postponed | Yes |
| Task 10: Echo Ridge | No | Scheduled | Yes |
| Task 11: White Bark Pine | No | Scheduled | Yes |
| Task 12: Crupina control | Yes | Scheduled | Yes |
| Task 13: N. shore weed control | Yes | Ongoing | Yes |
| Task 14: Weed control for completed tasks | No | Ongoing | Yes |
| Task 15: Lucerne LSR – control burn | No | Scheduled | yes |
| Task 16: Pot Peak | No | Postponed | Yes |
| Task 17: First Creek Forest Restoration | No | Wildfire-completed | Yes |
| Taks 18: 25-mile Creek key winter range burn | No | Scheduled | Yes |

¹Projects complete with USFS funding, no funding requested from Chelan PUD.

Task 1: Native Plant/Seed Propagation and Increase Program.

Funds were used to purchase native grass seed to be used on future planting/restoration projects within the Lake Chelan Basin. In the fall of 2016, approximately 150 lbs of native grass seed was

sown over a 12-acre area (Figure 2) where *Crupina vulgaris* control has been employed for several years. This project will be carried over into the next WHP (2018-2022).



Figure 2. *Crupina vulgaris* infestation area seeded with native grass in the fall of 2016.

Task 4: Lucerne Late-Successional Reserve Restoration

No work was completed on this project during the second WHP (2013-2017). This work is current being re-evaluated after the Wolverine Fire of 2015, no PUD funding is currently planned for this task.

Task 5: Prescribed burning on the North shore between Safety Harbor and Antilon Creek

No treatments have occurred under this task to date. This task will be proposed in the 2018-2022 WHP, as part of the Coyote Implementation.

Task 6: North 25 (Shady Pass Late-Successional Reserve) Restoration

No treatments have occurred under this task to date. This task will be combined with tasks 8, 16, and 17 under the proposed in the 2018-2022 WHP.

Task 7: Bear Mountain Thinning – Key Winter Range

In 2011, funds were used to develop, administer, layout, and inspect the contract for pre-commercial thinning. Contracted work for thinning, pruning, and piling in key ungulate winter range has been completed on 71 acres in 2011 and 76 acres in 2012. In the spring of 2013, pre-commercial thinning was completed on 76 acres of USFS land on the Bear Mountain project. This project is considered complete and will not carry over to the 2018-2022 WHP.

Task 8: 25-Mile Creek Key Winter Range Prescribed burning

No treatments have occurred under this task to date. This task will be combined with task 6 in the 2018-2022 WHP.

Task 9: Antilon Lake

No treatments have occurred under this task to date. This task will be expanded and titled Lower North Shore Forest Restoration task in the 2018-2022 WHP and renamed North Shore Forest Restoration.

Task 10: Echo Ridge Forest Recovery

The USFS conducted multiple efforts to spray weeds along the Echo Ridge Trails System from 2013-2017. Chelan PUD reimbursed the USFS for a portion of their weed spraying efforts conducted in the fall of 2014, spring of 2016, and again in the spring and summer of 2017. This task will continue in the third WHP (2018-2022).

Task 11: Whitebark Pine Habitat Protection and Enhancement

Chelan PUD continued to support work conducted by the USFS to conserve White Bark Pine trees and its habitat from 2013-2017. In 2013 and 2014 Chelan PUD funds were used to facilitate the NEPA planning process for the whitebark Pine project as well as to conduct a stand exam on 550 acres and another 750 acre of walk-thru exams. Data collected included, tree species, trees/ acres, canopy cover, tree age, height, and diameter, presence of insects and disease and fuel loadings. In the fall of 2016, Chelan PUD reimbursed the USFS for planting 4,860 whitebark pine trees in the Crescent Hill and Chelan Basin areas (Figure 3). In 2016, Chelan PUD reimbursed the USFS for Interdisciplinary Team site visits and preparations for a plan to improve tree vigor, increase cone production, and reduce mortality due to fires. In 2017, the USFS drafted and submitted letters and reports for project consultation with the U.S. Fish and Wildlife Service and the tribes. This task will be carried over into the 2018-2022 WHP.

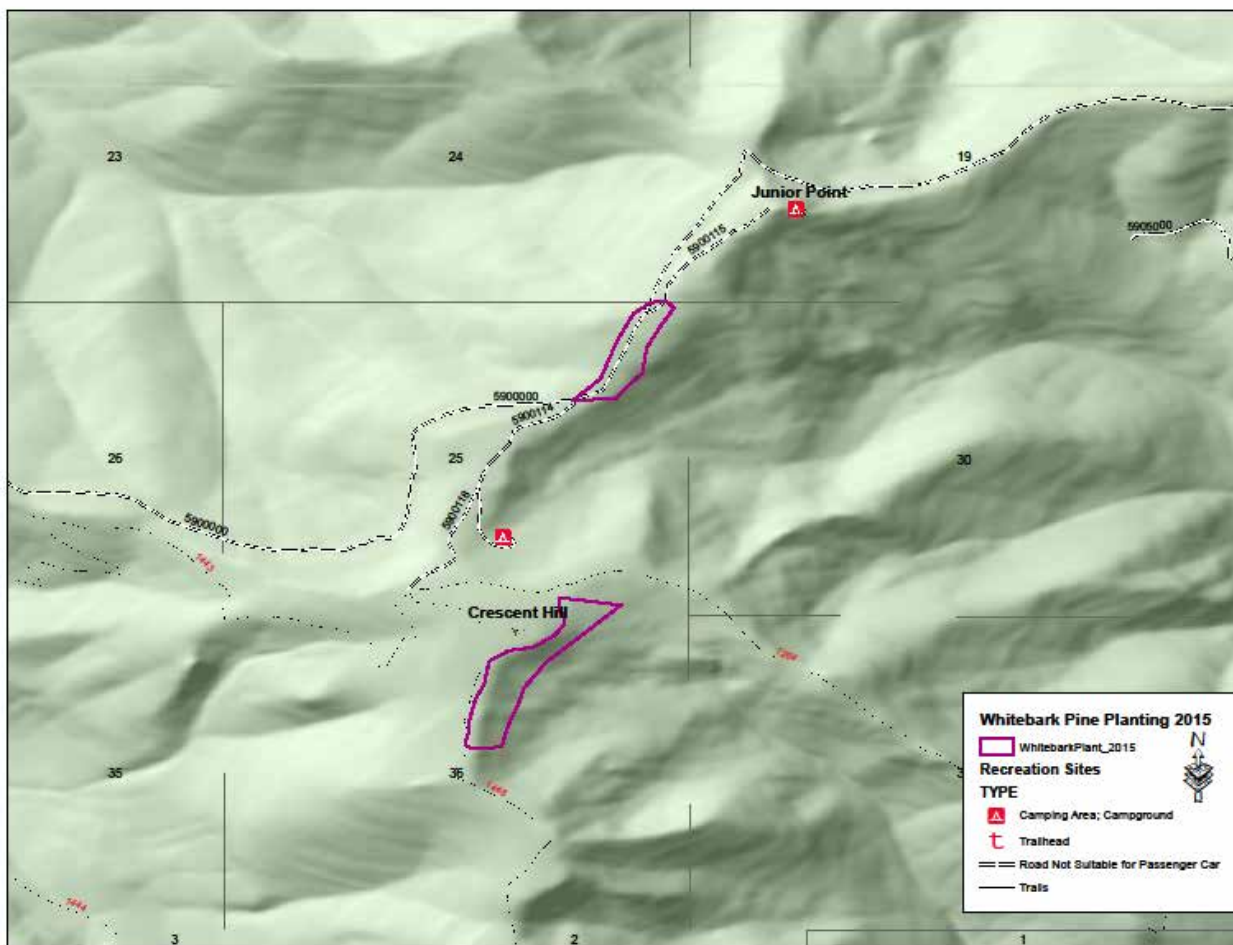


Figure 3. Whitebark pine planting locations, 2015.

Task 12: Common *Crupina* Control on wilderness winter range

During each year of second WHP (2013-2017), Chelan PUD funds were combined with USFS funds to manage common crupina (*Crupina vulgaris*), a Class A noxious weed in Washington State, on approximately 300-400 acres of USFS land (Figure 4). Chelan PUD provided funds for personnel that were used in the control effort. Work related to this task will be carried over in the 2018-2022 WHP and combined with other invasive weed control proposals.

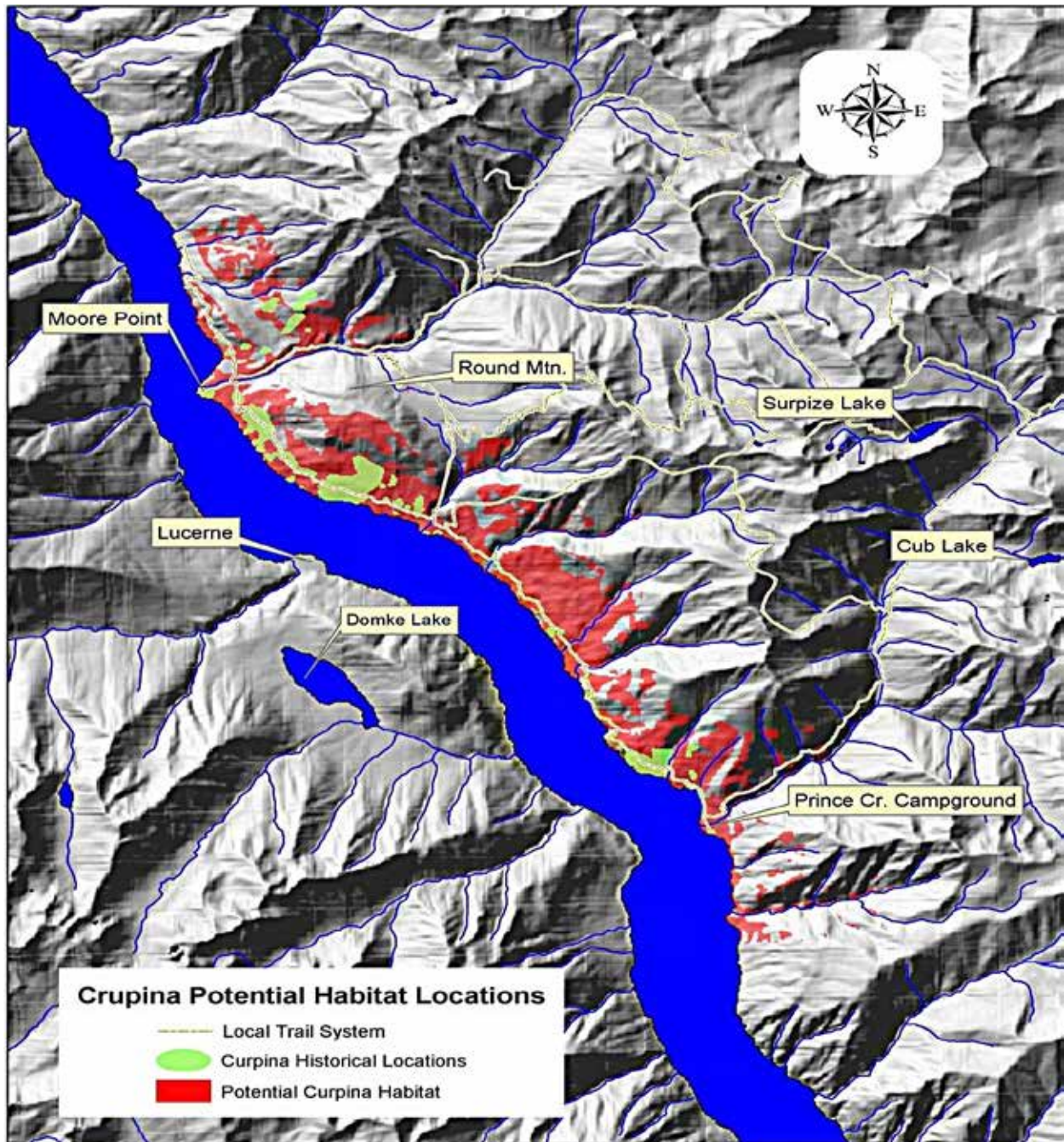


Figure 4. Common crupina control areas along Lake Chelan, 2013-2017.

Task 13: North Shore Winter Range Weed Control Program

No treatments have occurred under this task to date. The USFS proposed to include this task with task 12 in the 2018-2022 WHP.

Task 14: Weed control for activities

No treatments have occurred under this task to date. The USFS proposed to include this task with task 12 in the 2018-2022 WHP.

Task 15: Lucerne LSR Controlled Burn

No treatments have occurred under this task to date. The USFS proposed to include this task with task 6 in the 2018-2022 WHP.

Task 16: Pot Peak

No treatments have occurred under this task to date. The USFS proposed to include this task with task 6 in the 2018-2022 WHP.

2.3 Washington Department of Fish and Wildlife

Settlement Agreement Article 9(b) of Appendix A of the Project License describes Chelan PUD's requirement to conduct wildlife surveys:

(3) Chelan PUD, in coordination with WDFW, shall continue to conduct wildlife surveys similar to those conducted during the second FERC license for the Project, maintain upland bird feeders, and/or conduct habitat improvement projects for a cost not to exceed \$10,000 per year during the term of the New License, and any subsequent annual licenses.

2.3.1 Winter Wildlife Surveys

Chelan PUD has conducted winter big game surveys along Lake Chelan annually since the winter of 1982-1983 (Fielder and McKay 1984). The results were reported annually in a Lake Chelan Big Game Status Report provided to WDFW, the USFWS, USFS, and the NPS.

In 2008, as recommended by the LCWF, Chelan PUD began to include observations of waterfowl (ducks, geese) and other waterbirds (loons, swans, grebes, etc.), raptors (eagles, hawks, accipiters, etc.) and other all easily identifiable wildlife, such as furbearers, during winter surveys conducted along the Lake Chelan. These observations were first included in the annual report beginning in the winter of 2007-2008 following issuance of the new Lake Chelan Operating License. The intent of the LCWF was to change the emphasis of the surveys from a winter big game survey to a more comprehensive winter wildlife survey along Lake Chelan. Thus, the name of the annual report was changed to the Lake Chelan Annual Winter Wildlife Survey Report. As provided in Article 406(a), Chelan PUD coordinates the winter wildlife surveys with WDFW. Annual reports are sent to the FERC, WDFW, USFS, USFWS, and NPS by April 30 of each year as required.

The Winter Wildlife Surveys on Lake Chelan are conducted from a boat with two or more observers using binoculars and spotting scopes. The survey alternates the beginning and end point for each survey from First Creek and Willow Point (Figure 1). The survey progresses uplake from the starting point along one shoreline with a stop at Stehekin to count waterbirds and waterfowl, then progresses down the opposite bank to the end point. All easily identifiable wildlife is recorded by species and to the nearest tenth of a mile along the lake.

Each year the winter surveys are conducted between mid-November and the end of March. Each winter season (November – March) is divided into four periods (early, mid, late, and green-up) with three surveys scheduled in each. The early and mid-winter period surveys occur between Thanksgiving and the first week of January, while the late and green-up period occurs between the first of February and the end of March.

From the 2012-13 winter through the 2016-17 winter, Chelan PUD conducted 50 winter wildlife surveys of the 60 scheduled surveys. An unusually high number of surveys were cancelled due to poor weather conditions, particularly during the 2014-2015 winter, when only 8 surveys were completed. The Winter of 2016-17 was also a harsh winter with only 9 surveys completed due to cold temperatures and more snow accumulation at the lower elevations making travel to Lake Chelan particularly challenging. These two winters accounted for 7 of the 10 missed Lake Chelan Winter Wildlife Surveys for the second WHP (2013-2017). Where possible, wildlife species observed are classified by age and/or sex. Due to the long observation distances, mountain goats are not classified by sex, only age. Mule deer bucks are only classified in the early and mid-winter periods prior to shedding their antlers.

Results from the first five years of winter survey (2012-13 to 2016-17) data are summarized in Table 2 and in more detail below. For more detailed winter survey data, please refer to the individual annual Lake Chelan Winter Wildlife Survey Reports from 2013-14 through 2016-17. The first 6 surveys for the 2017-2018 winter have been completed, but results will not be available until data collection and report writing are completed by April 30, 2018.

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Table 2. Number of surveys completed and maximum counts by winter period for annual Winter Wildlife Surveys conducted by Chelan PUD along Lake Chelan including overall maximum and minimum counts for the 5-year period (2013 - 2017).

| Winter | Period | Number of Surveys | Mountain Goat | Mule Deer | Bighorn Sheep | Bald Eagle | Golden Eagle | Aquatic Birds |
|-----------------|----------|-------------------------|------------------|--------------|------------------|---------------|-----------------|------------------|
| 2012- 2013 | Early | 3 | 107 | 49 | 51 | 5 | 3 | 412 |
| | Mid | 3 | 144 | 320 | 104 | 7 | 2 | 712 |
| | Late | 3 | 24 | 151 | 84 | 7 | 9 | 427 |
| | Green-up | 3 | 98 | 215 | 38 | 2 | 2 | 270 |
| 2013- 2014 | Early | 2 | 36 | 33 | 32 | 11 | 1 | 558 |
| | Mid | 2 | 33 | 25 | 41 | 10 | 0 | 906 |
| | Late | 3 | 30 | 402 | 100 | 7 | 4 | 408 |
| | Green-up | 3 | 65 | 118 | 47 | 7 | 5 | 792 |
| 2014- 2015 | Early | 1 | 67 | 4 | 14 | 2 | 0 | 598 |
| | Mid | 2 | 79 | 44 | 60 | 10 | 4 | 1,039 |
| | Late | 2 | 15 | 108 | 39 | 3 | 3 | 410 |
| | Green-up | 3 | 52 | 149 | 75 | 4 | 4 | 403 |
| 2015- 2016 | Early | 3 | 90 | 89 | 57 | 11 | 3 | 747 |
| | Mid | 2 | 63 | 110 | 36 | 8 | 8 | 872 |
| | Late | 3 | 38 | 386 | 90 | 12 | 4 | 753 |
| | Green-up | 3 | 54 | 187 | 61 | 3 | 2 | 463 |
| 2016- 2017 | Early | 3 | 53 | 15 | 39 | 3 | 1 | 603 |
| | Mid | 1 | 43 | 47 | 45 | 3 | 0 | 862 |
| | Late | 3 | 37 | 461 | 107 | 9 | 7 | 1,171 |
| | Green-up | 2 | 33 | 175 | 61 | 8 | 3 | 730 |
| 5 -year Maximum | | 3 | 144 | 461 | 107 | 12 | 9 | 1,171 |
| 5-year Minimum | | 1 | 15 | 4 | 14 | 2 | 0 | 270 |

2.3.1.1 Mountain Goats

A total of 2,230 mountain goat observations were made during the 50 Winter Wildlife Surveys conducted from 2013-2017. The average number of mountain goats observed for each winter ranged from 31.3 to 65.8 mountain goats. The highest number of mountain goats observed in one single survey was 144 (Table 2), observed on 3 January 2013, which is the highest number of goats ever recorded on a single survey since surveys began in 1982. The average number of goats observed per survey from the first 5-year Plan (2008-2012) to the second Plan (2013-2017) has declined substantially from 72.8 goats per survey to 44.6, respectively.

The number of mountain goats observed on both the north and south shore of Lake Chelan declined from a high estimate of 180, in the 2012-13 winter, to an estimate of 70 mountain goats in the 2016-17 winter period (Figure 5). The 2016-17 winter estimate of 70 is the lowest estimate since the 1996-97 survey, when a minimum of 43 goats were observed (Fielder, 1997). During the first

5-year WHP (2008-2012), an average of 72.8 mountain goats were observed on the Lake Chelan Winter Wildlife surveys (n = 58), for the WHP current plan (2013-17), an average of 44.6 mountain goats were observed during the winter surveys (n = 50).

While the average numbers of mountain goats observed per survey has decreased in the recent years (Table 2) the number of kids/100 adults has not changed much over the past 5-years. For the second WHP (2012-2017) the average number of kids/100 adults was 25.5, which is not much lower than the average number observed (29.9 kids/100 adults) during the first WHP (2008-2012). During the second WHP (2012-2017) a maximum of 32.4 kids/100 adults was observed on the north shore (winter of 2012-13) with a minimum ratio of 22.7 observe during the winter of 2013-14. Along the south shore, a maximum ration of 28.6 kids/100 adults was observed during the winter of 2014-15 and a minimum of 10 kids/100 adults was observed in the winter of 2013-14. However, an unusually high proportion of mountain goats were recorded as unclassified (48%) during the winter 2013-14, resulting in a very small sample size for calculating kid/adult ratios in that winter.

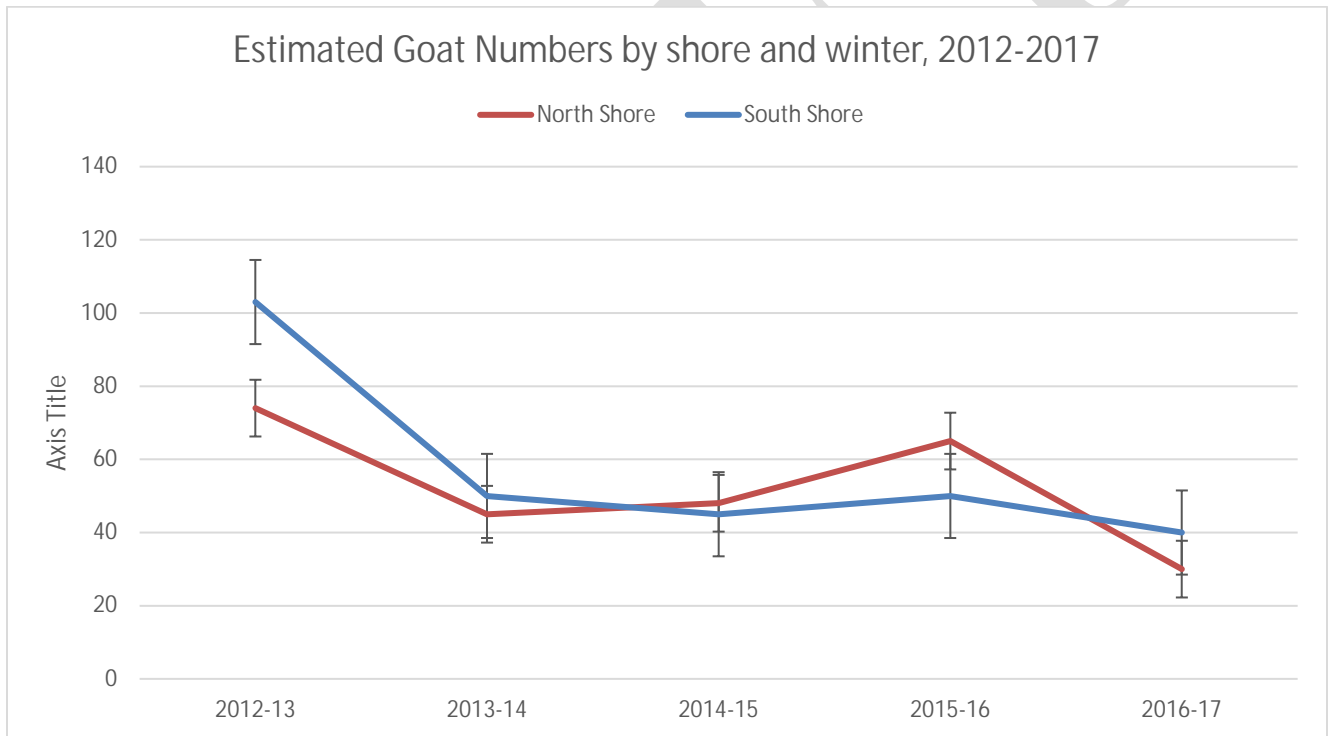


Figure 5. Estimated mountain goat numbers by shore and winter Lake Chelan, 2013-2017.

2.3.1.2 Mule Deer

A total of 5,987 mule deer and 10 black-tailed deer (5,987 deer total) were observed over the 50 winter wildlife surveys conducted from the 2012-13 winter to the 2016-17 winter. The average number of deer observed per survey was 109.0. For the 5-year period, 2012-2017, the maximum number of deer observed on any one survey was 461 on February 14, 2017. This high count came almost 2 years after the lowest maximum count recorded of 149 deer/survey on January 7, 2015. The average number of deer observed during the winter surveys for the second WHP (2013-2017)

was much lower than the average number of deer observed (169.0 deer/survey) during the first 5-year WHP (2008-2012).

Over the 5-year winter monitoring period (2013-2017), more deer were observed on the north shore (69.5%) during most surveys (Figure 6) with an average of 83.4 deer/survey compared to 36.4 deer/ survey on the south shore (30.5%). Along the north shore a high proportion (43.9%) of deer were observed in a 5-mile stretch between Gold Creek and Grade Creek. Conservation easements are being sought along a portion of this stretch where many of the deer winter along the north shore. Most of the deer observed on the south shore are observed along the lower portion of the lake, much of which is developed, with 66.5% of the deer observed during the survey period recorded between First Creek and Fields Point.

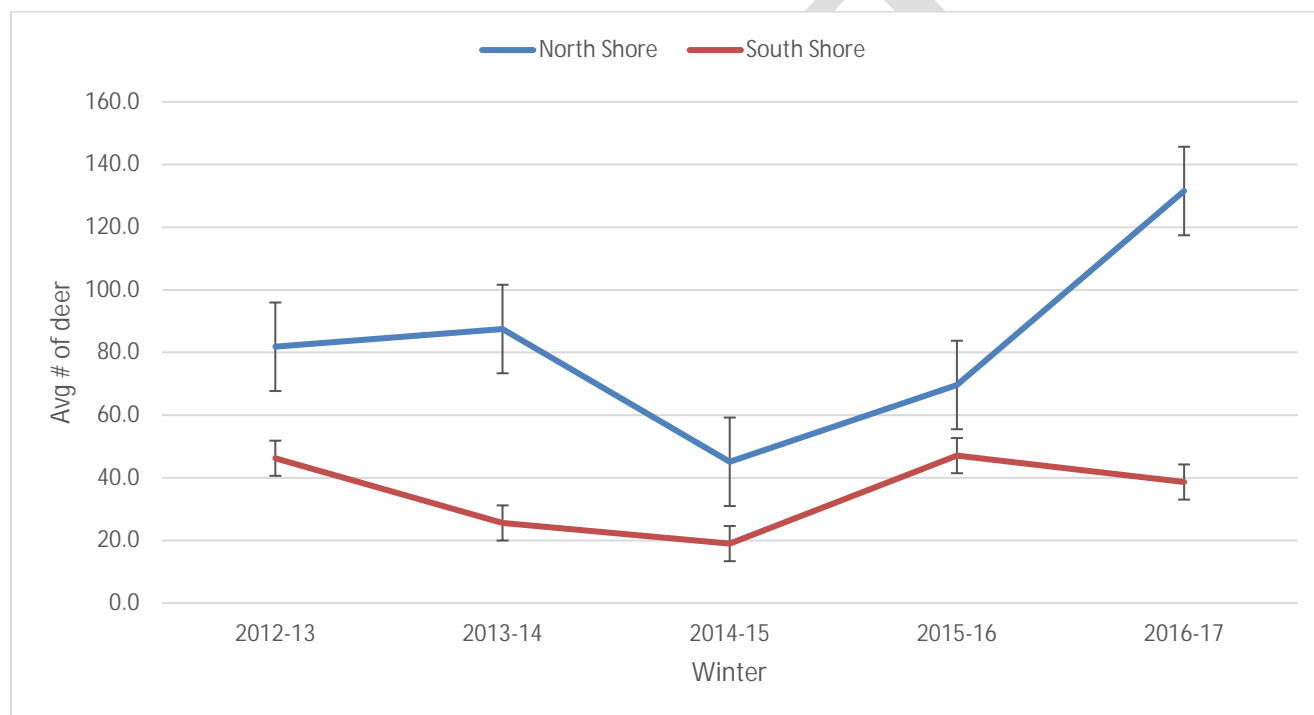


Figure 6. Average number of mule deer observed by shore, Lake Chelan winter 2013 – 2017.

Nearly 70% (69.8%) of all deer observed along Lake Chelan were classified by age and/or sex for all surveys from 2012-2017. Along the north shore, 2,380 adults, 609 fawns, and 71 bucks were observed, while along the south shore, 796 adults, 301 fawns, and 31 bucks were observed. Bucks are only classified in the early and mid-winter period after which deer are only classified by age.

Since the winter of 1996-1997, relatively fewer deer were observed along Lake Chelan during annual winter surveys (Pope and Cordell 2017). The winter of 1996-1997 was particularly harsh and an estimated 70% of the deer population in Chelan County was lost (WDFW 2003). During the first WHP, the deer population appeared to be increasing with an average of 169 deer/survey for the 2008-2012 period. For the current WHP, the numbers were much lower especially in the first four years (2012-2016) of monitoring, however, the numbers in the 2016-17 winter period

showed marked improvement with 119.9 deer/survey. The 2016-17 winter was probably one of the hardest winters over the past 10 years or so, with snow cover and ice throughout much of the winter.

2.3.1.3 Bighorn Sheep

Bighorn sheep were re-introduced onto the north shore of Lake Chelan in 1999 and have increased in numbers since then. A total of 2,090 observations of bighorn sheep were observed for the 2012-13 to 2016-17 winters with over 78% classified by age and sex. The average number of bighorn sheep observed per survey during the 2012-13 to 2016-17 winter was 41.8. A maximum of 107 bighorn sheep were observed on February 7, 2017 with a low count of 75 on February 7, 2015. Rams were further classified (where possible) according to Geist (1971) into four different age classes (class I-IV). the maximum number of rams observed on any one survey was 30 (2 class I, 8 class II, 10 class III, and 10 class IV rams) on February 25, 2016. The maximum number of lambs observed was 15 on January 3, 2013.

The numbers of sheep observed during the second WHP (2013-2017) was greater than during the first WHP (2008-20012), both in maximum and average numbers. During the first WHP (2008-2012), the maximum number for bighorn sheep observed was 58, while the maximum number observed during the second WHP (2012-2017) was 107. Similarly, the average number of bighorn sheep observed per survey were much greater during the second WHP (2013-2017) with 41.8 sheep observed per survey compared to 28.4 bighorn sheep per survey during the first (2008-2012).

2.3.1.4 Bald and Golden Eagles

Eagle numbers observed during winter surveys along Lake Chelan have been recorded since 1982. Eagle species are observed sporadically along either shore of the lake and are often found in large numbers associated with carrion along or near the shoreline. The average number of bald eagles observed during the second 5-year WHP (2013-2017) was 4.5 bald eagles/survey, which is only slightly higher than the historical average (4.2 bald eagles/survey). The maximum number of bald eagles observed during any one survey was 12, recorded on February 9, 2016.

Golden eagles are also observed regularly along the lake, though not in great numbers. The average number of golden eagles observed during the second 5-year WHP was 2.2 golden eagles/survey, slightly lower than the long-term average of 2.6 golden eagles/survey. The maximum number of golden eagles observed on any one survey was 9, recorded on February 7, 2013.

2.3.1.5 Aquatic birds

Lake Chelan is a large body of water that supports a diverse group of aquatic birds during the winter season. For the Lake Chelan Winter Wildlife Survey reports, aquatic birds are divided into waterfowl (ducks and geese) and waterbirds (loons, grebes, swans, herons, and gulls) During the second 5-year WHP (2013-2017) a total of 26,991 aquatic birds were recorded over the 50 winter wildlife surveys conducted (625.8 aquatic birds/survey on Lake Chelan. The highest number of aquatic birds observed was during the 2016-17 winter with 7,254 aquatic birds observed. The lowest total number observed was during the winter of 2014-15 with 3,804 aquatic birds observed. The majority of aquatic birds (73.1%) were recorded near Stehekin at the confluence of the Stehekin River. Another 22.3% were observed at the lower end of the survey area, between Twenty-five Mile Creek and First Creek (Figure 1). The remaining 4.6 % were observed along the

remaining 30 miles between the upper and lower survey area. The average number of aquatic water birds per Lake Chelan Winter Wildlife survey is shown in Table 3.

Waterfowl were the most common group of aquatic bird observed for all surveys (n = 50) accounting for 89.9% of all aquatic birds observed. The most common waterfowl species was the American wigeon ($\bar{x} = 163.4$), followed by ring-necked duck ($\bar{x} = 99.0$), and Canada goose ($\bar{x} = 94.4$). The most common waterbird for all survey combined was the horned grebe ($\bar{x} = 46.8$), with all other waterbirds being much less common Table 3.

Table 3 Mean number of aquatic birds observed by species and type for all Lake Chelan Winter Wildlife Surveys, 2012-13 to 2016-17.

| Species | Type | Mean |
|--------------------------|-----------|-------|
| American wigeon | Waterfowl | 163.4 |
| Ring-necked duck | Waterfowl | 99.0 |
| Canada goose | Waterfowl | 94.4 |
| Horned grebe | Waterbird | 46.8 |
| Mallard | Waterfowl | 43.8 |
| Bufflehead | Waterfowl | 37.8 |
| Red head | Waterfowl | 25.3 |
| Trumpeter Swan | Waterfowl | 20.6 |
| Green-winged teal | Waterfowl | 15.0 |
| Barrow's goldeneye | Waterfowl | 13.5 |
| Unknown dabbler | Waterfowl | 11.8 |
| Common goldeneye | Waterfowl | 8.1 |
| Northern shoveler | Waterfowl | 6.0 |
| Lesser scaup | Waterfowl | 5.6 |
| American coot | Waterbird | 5.0 |
| Gadwall | Waterfowl | 4.7 |
| Common merganser | Waterfowl | 4.6 |
| Hooded merganser | Waterfowl | 3.6 |
| Pied-billed grebe | Waterbird | 2.4 |
| Canvasback | Waterfowl | 2.0 |
| Double-crested cormorant | Waterbird | 2.0 |
| Northern pintail | Waterfowl | 2.0 |
| Pacific loon | Waterbird | 2.0 |
| Unknown grebe | Waterbird | 1.8 |
| Unknown gull | Waterbird | 1.7 |
| Eared grebe | Waterbird | 1.6 |
| red-necked grebe | Waterbird | 1.5 |
| Common Loon | Waterbird | 1.4 |
| Great-blue heron | Waterbird | 1.3 |

2.3.1.6 Other Wildlife

A variety of other wildlife may be observed during the winter wildlife surveys on Lake Chelan. Coyotes are frequently observed during the winter wildlife survey with a total of 14 coyotes observed for the 2013-2017 5-year period. Other carnivores observed less frequently include mountain lion (n = 6) black bear (n = 3) and bobcat (n = 2) for the 5- year period.

2.3.2 Upland Bird Feeders

Three upland bird feeders (Deer Point, Poison Creek, and Grade Creek) were inspected for damage and filled with wheat (~ 30 gallons) each fall prior to the onset of winter. The chart below shows the dates the feeders were inspected and filled.

| Winter Year | Date filled |
|-------------|-------------|
| 2013-14 | Oct. 17 |
| 2014-15 | Oct. 7 |
| 2015-16 | Oct. 6 |
| 2016-17 | Oct. 4 |
| 2017-18 | Oct. 4 |

SECTION 3: RIPARIAN HABITAT IMPROVEMENTS

As specified in License Article 406 and Appendix A of the License, Chelan PUD provided funds for riparian habitat improvements. Ordering Paragraphs (D) and (E) of the Project License both provide that Settlement Article 9 (WHP) is made part of the license.

None of the riparian habitat improvement measures described in this section required annual or periodic maintenance to ensure their success; therefore, no additional lands were brought into the project boundary.

3.1 Funding for National Park Service Riparian Habitat Improvements

Many of the habitat improvements to be implemented on NPS land under Article 406(b) and Settlement Agreement Article 9(c) overlap and interrelate with measures to be implemented in the Stehekin area pursuant to Article 403 and Settlement Agreement Article 4. Consequently, to provide FERC with a single, complete picture regarding NPS-related measures, the NPS and Chelan PUD have agreed to combine the description and implementation of all such measures in the Stehekin Area Implementation Monitoring Plan.

3.2 Funding for USFS Riparian Habitat Improvements under LC09c2A

Settlement Agreement Article 9(c) of Appendix A of the Project License describes Chelan PUD's requirement for making funds available to the USFS for riparian habitat improvements:

(2) Chelan PUD shall make available:

(A) \$50,000 to the USDA Forest Service (USFS) to enhance riparian habitat in the Lake Chelan basin;

The following list includes riparian habitat enhancements initiated by the USFS in the second WHP (2013-2017).

Task 1 Low elevation riparian planting

In the spring of 2013, the USFS planted 985 ponderosa pine and 132 cedar trees in the Prince Creek and Lucerne areas.

Task 1, Mid-elevation riparian planting

In the spring of 2013, the USFS planted 170 ponderosa pine at mid-elevation in Meadow Creek.

3.3 Funding for Washington Department of Fish and Wildlife Habitat Improvements under LC09c2c

Settlement Agreement Article 9(c) of Appendix A of the Project License describes Chelan PUD's requirement for making funds available to the WDFW for habitat improvements describes the:

(2) Chelan PUD shall make available:

(C) \$35,000 to the WDFW to enhance habitat in the Lake Chelan basin.

WDFW and Chelan PUD have agreed to reserve this funding until conservation easements are acquired. As noted in section 2.1, the area of primary focus for acquisition of conservation easements on private lands is located on the north shore, Lower Basin Zone, between Gold Creek and Camas Creek (Figure 1) at elevations between 1,200 and 1,400 feet mean sea level (MSL) (i.e., from 100 feet about lake level to approximately 300 feet above). Once easements are acquired, funding from this source could be used to provide additional habitat restoration or enhancement activities on lands where easements are acquired, or for other habitat enhancements projects in the Chelan basin.

SECTION 4: FUNDING

4.1 Chelan PUD and Agency Payment Agreement

All payments for work conducted by the USDA Forest Service and WDFW were in accordance with Section 19 of the Settlement Agreement. Reimbursement for work completed on approved projects was made after invoices with supporting documentation were provided to Chelan PUD.

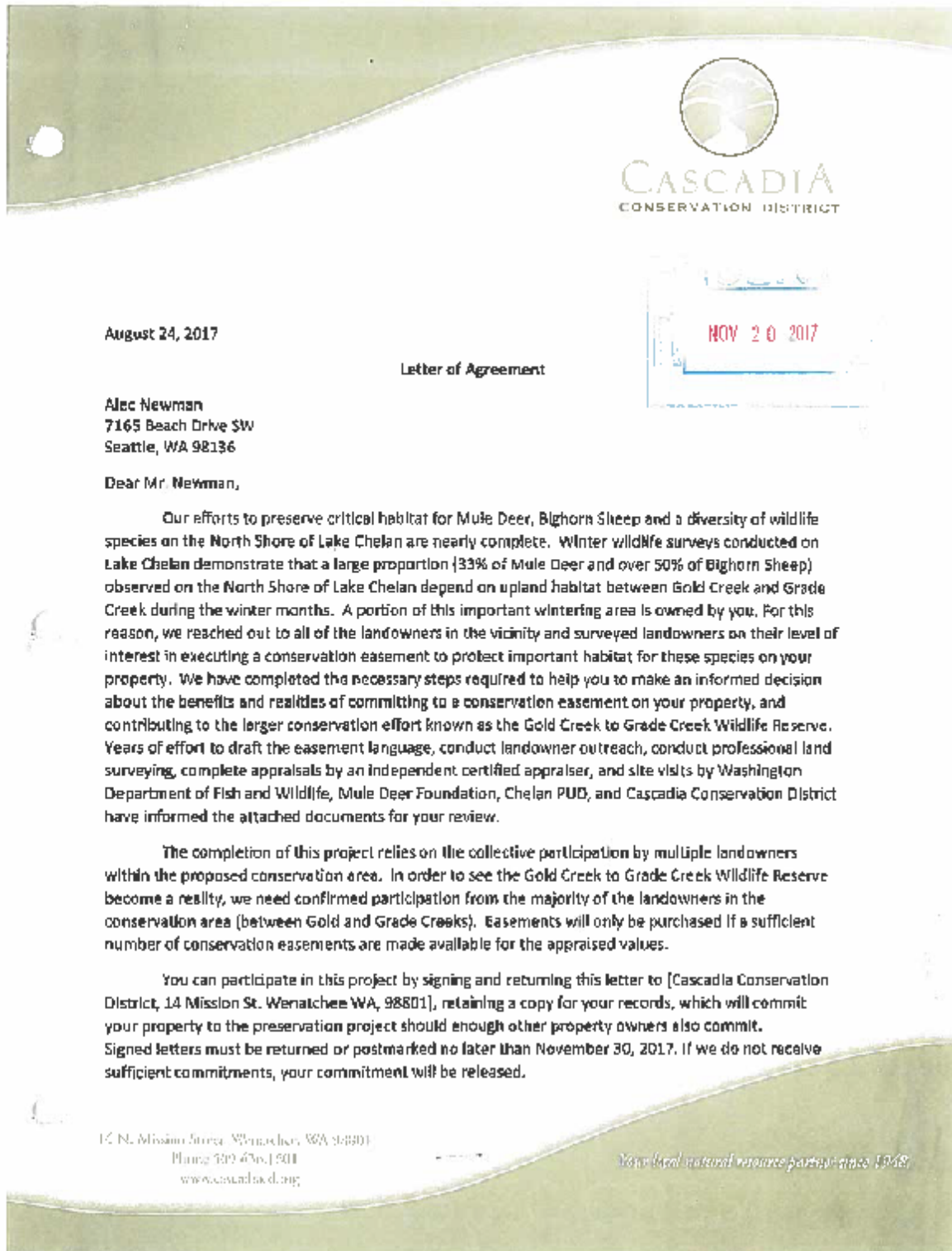
Table 4. Expenses incurred during the second WHP, September 2013 - December 2017.

| AGMT ARTICLE | DESCRIPTION | 5-YEAR ACTIVITIES SUMMARY | TOTAL SPENT (2013-2017) |
|--------------|---|--|-------------------------|
| LC09a1 | WDFW Conserv Easement Fund (Wildlife Plan) | Pursue conservation easement acquisition | ----- |
| LC09a2 | Cascadia Conservation Easement Fees (WDFW – Wildlife Plan) | Task 1: Conservation easement acquisition | \$18,038.57 |
| | | Task 2, Item 1: Phase 1, Cascadia (COMPLETED) | ----- |
| | | Task 2, Item 4: Phase 2, Cascadia | \$12,549.36 |
| LC09a3 | WDFW Habitat Fund (Wildlife Plan) | Task 1: Land Restoration | ----- |
| LC09b1 | USFS Upland Habitat (Wildlife Plan) | Task 1: Plant/Seed Propagation..... | \$4,990.00 |
| | | Task 2: 4 th of July Mtn. Planting | ----- |
| | | Task 3: Coyote Creek | ----- |
| | | Task 4: Lucerne Burn Plan Prep | ----- |
| | | Task 5: Safety Harbor Burn | ----- |
| | | Task 6: North 25 Restoration | ----- |
| | | Task 7: Bear Mountain Thinning | \$16,720.00 |
| | | Task 8: 25-Mile Creek Burn..... | ----- |
| | | Task 9: Antilon Lake Fence Removal | ----- |
| | | Task 10: Echo Ridge Forest Recovery | \$7,904.44 |
| | | Task 11: White Bark Pine Habitat Protection | \$33,794.39 |
| | | Task 12: Crupina Control..... | \$41,814.89 |
| | | Task 13: North Shore Weed Control | ----- |
| | | Task 14: Weed Control Activities | ----- |
| | | Task 15: Lucerne Late Successional Reserve Restore | ----- |
| | | Task 16: Pot Peak Restoration | ----- |
| LC09b2 | USFS Noxious Weeds (Y1-3) (Wildlife Plan) | Task 1: Weed Control (10-017) (COMPLETED)... | ----- |
| LC09c1 | NPS Stehekin Habitat (made part of SAIMP) | Refer to the SAIMP Annual Reports..... and Work Plans. | ----- |
| LC09c2A | USFS Riparian Habitat (Wildlife Plan) | Task 1: Planting..... | \$2,147.03 |
| | | Task 2: Plant Cedar Trees at Mid-Elevation | \$374.29 |
| | | Task 3: LWD Highgrade & Move at Prince Creek . | ----- |
| LC09c2B | NPS Lake Chelan Basin Riparian Habitat (made part of SAIMP) | Refer to the SAIMP 2011 Annual Report | ----- |
| | | and 2012 Work Plan. | ----- |
| LC09c2C | WDFW Riparian Habitat (Wildlife Plan) | No activity | ----- |
| | | TOTALS | \$138,332.97 |

SECTION 5: LITERATURE CITED

- Chelan County PUD, 2003. Lake Chelan Comprehensive Plan, Attachment B to the Settlement Agreement. Lake Chelan Hydroelectric Project, FERC project No. 637.
- Eldred, T. E. 2007. Lake Chelan Wildlife Forum meeting, July 10, 2007.
- Fielder, P.C. and C.E. McKay, Jr. 1984. Lake Chelan wildlife studies with emphasis on mountain goats and mule deer. Technical report of the Public Utility District No. 1 of Chelan County and the WA. Dept. of Game, Wenatchee, WA.
- Geist, V. 1971. Mountain Sheep. A Study in Behavior and Evolution. University of Chicago Press, Chicago, Ill. USA.
- Gaines, W.L., M. Haggard, J. F. Lehmkuhl, A.L. Lyons, and R.J. Harrod. 2007. Short-term response of land birds to ponderosa pine restoration. In Press, *Journal of Restoration Ecology*.
- Lyons, A.L., W.L. Gaines, J.F. Lehmkuhl, and R.J. Harrod. 2007. Short term effects of fire and fire surrogate treatments on foraging tree selection by cavity-nesting birds in dry forests of central Washington. In Review, *Forest Ecology and Management*.
- Pope, V. R., and Cordell, K. C. 2017. Lake Chelan Annual Winter Wildlife Survey Report, winter of 2016-2017. Public Utility District No. 1 of Chelan County, Wenatchee, WA.
- USFS 2002. Okanogan and Wenatchee National Forests Fire Management Plan, Chapter III, Section E - Fire Regimes and Disturbance Processes, Resource Benefits (pages 16-52).

Attachment A. Example of letter sent to interested landowners along the north shore of Lake Chelan in August of 2017 offering to purchase conservation easements.





CASCADIA
CONSERVATION DISTRICT

The Mule Deer Foundation will hold these easements and will manage the easements in coordination with the Washington Department of Fish and Wildlife. Our goal is to be open and transparent with all landowners throughout this process, and we will be happy to discuss these logistics in more detail at any time.

Attached are copies of the Conservation Easement Agreement and the Appraisal Report for your property. Please be advised that the appraisal provides the value of ONLY the upland portion of your property, from the 1200-foot elevation line and above. This means the waterfront portion of your property below 1200 feet to the water level (typically 1100 feet) is NOT considered in the appraisal and would remain unrestricted by the attached easement. Exhibit A in the attached Conservation Easement Agreement shows the area that will be bound by the terms of the easement.

With your participation and that of adjoining neighbors, we can work together to protect this important landscape for wildlife now and into the future. We hope to hear from you soon regarding the Gold Creek to Grade Creek Wildlife Reserve. Please contact us with any questions.

Sincerely,

Patrick Haggerty

Cascadia Conservation District
Project Coordinator

Jeff Smith

Chelan County PUD
Executive Director, Shared Services

Graham Simon

Washington Department of Fish and Wildlife
Fish and Wildlife Biologist, Region 2

Dan McKinley

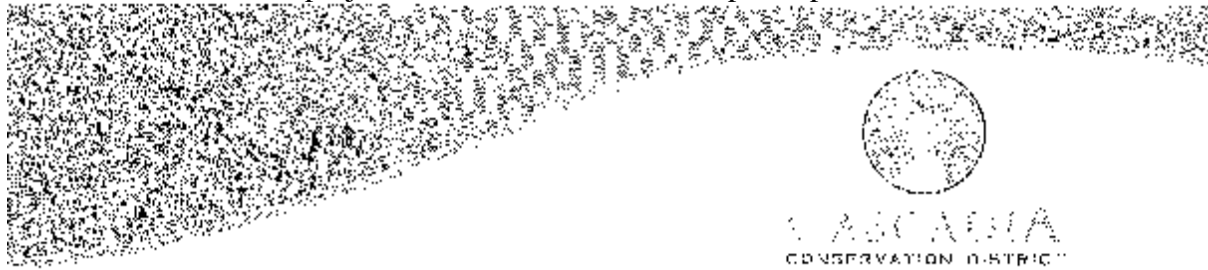
Mule Deer Foundation
Regional Director

Enclosure

141 N. Mission Street, Wenatchee, WA 98801
Phone: 509-636-7301
www.cadacascade.org

Your local natural resource partner since 1988.

Attachment B. Example of letter sent to landowners, on February 1, 2018, terminating the conservation easement project due to lack of landowner participation.



February 1st, 2018

Alec Newman
7165 Beach Drive SW
Seattle, WA 98136

Dear Mr. Newman,

This letter is to inform you that the Gold Creek to Grade Creek Wildlife Preserve Project will be terminated due to lack of sufficient landowner participation. This multi-year, joint-effort was a partnership between Chelan Public Utility District, Cascadia Conservation District, Washington Department of Fish and Wildlife, and the Mule Deer Foundation with a goal of preserving critical winter mule deer habitat on private lands along the north shore of Lake Chelan. For the project to be successful 200 acres, or more, needed to be preserved through landowner conservation easements. Unfortunately we were not able to meet that threshold. As a result, the project will be terminated as of February 16th, 2018.

We appreciate your permission to allow access for surveys and appraisals, for your consideration of a conservation easement on your land, and your willingness to work with the partners to explore the feasibility of making the Gold Creek to Grade Creek Wildlife Preserve a reality. Your land remains critical to the survival and health of mule deer in the Chelan Basin, and we encourage you to contact us with any future questions about how to best steward your land to preserve and enhance wildlife habitat.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick Haggerty". The signature is fluid and cursive, with a long horizontal stroke at the end.

Patrick Haggerty
Cascadia Conservation District



APPENDIX A: CONSULTATION WITH STAKEHOLDERS

Article 406 of the Project License requires that:

The Lake Chelan Wildlife Forum (LCWF) meets as necessary to implement measures in the approved WHP. More frequently, Chelan PUD and representatives with funding in the approved WHP meet to discuss annual work plans, schedules, and budgets relative to the WHP.

October 25, 2016 - The LCWF was notified by e-mail that a new 5-year plan and 5-year summary were due to the FERC by September, 18, 2017.

March 29, 2017 - the USFS provided a draft of projects to be included in the new 5-Year WHP.

June 6, 2017 – Chelan PUD met with WDFW to discuss changes to the wildlife monitoring section of the WHP.

June 8, 2017 – A draft of the new 5-year WHP and the 5-year summary report were e-mailed to the LCWF. A LCWF meeting date was scheduled for July 25, 2017 to discuss draft 5-year summary plan and a new 5-year WHP.

September 5, 2017 – Since the conservation, easement project was nearing a conclusion and work under the current plan was continuing. It was decided that we would wait until early 2018 to file the 5-year summary and new 5-year plan for FERC approval.

February XX, 2018 – Final draft of the 5-year Summary and 5-year Plan sent to LCWF for 30 day review.

LCWF Membership List

Washington State Department of Fish and Wildlife
United States Department of Agriculture Forest Service
National Park Service
United States Fish and Wildlife Service
Confederated Tribes of the Colville Reservation (CCT)
Confederated Tribes of the Umatilla Indian Reservation (CTUIR)
Yakama Nation
Wenatchee Sportsman's Association
Lake Chelan Sportsman's Association
NCW Mule Deer Foundation
Foundation for North American Wild Sheep
Audubon Society
National Wild Turkey Federation.

30 Day Comments

A draft of this 5-year summary was sent to the LCWF on February XX, 2018, the following comments were received:

Letter from WDFW on November 26, 2014 approving the initial conservation easement language and approving Chelan PUD to enter into a contract with the Cascadia Conservation District to pursue easements.



STATE OF WASHINGTON
DEPARTMENT OF FISH AND WILDLIFE
1550 Alder Street NW • Ephrata, Washington 98823 • (509) 754-4624 • FAX (509) 754-5257

November 26, 2014

Mr. Von Pope
Chelan County PUD
321 N. Wenatchee Avenue
Wenatchee, WA 98801

Dear Mr. Pope:

Following our review of the Draft Grant Deed of Conservation Easement provided by Chelan County PUD to fulfill articles 4.1.1 a1 and 4.1.1 a2 of the Lake Chelan Settlement Agreement, Washington Department of Fish and Wildlife (WDFW) agrees that the draft easement, as written, appears to meet the intent of the settlement articles as negotiated. It is our recommendation that Chelan PUD continue to move forward with the process of contacting the identified landowners to gauge their interest in entering into a Conservation Agreement. WDFW understands that it is Chelan PUD's intent to contract with the Cascadia Conservation District to carry out negotiations with land owners in this process, and that the Cascadia Conservation District will hold the final contacts once signed. WDFW will not hold the contracts for any conservation easements signed, and will not be responsible for monitoring compliance or any costs associated with the conservation easements over the contract's life.

If any changes are made to the draft contract language during negotiations, those changes will be presented to WDFW for review and approval. In addition, prior to signing, Chelan PUD and the Cascadia Conservation District will present the final agreements and language for WDFW approval before signing. Once easement contracts are reviewed, completed and signed, WDFW will work with Chelan PUD and provide the required documentation to meet the PUD's FERC license requirements.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Brown".

Jim Brown
Regional Director for
North Central Washington

Second letter from WDFW on October 26, 2016 approving modifications to the conservation easement language, approving the Cascadia Conservation District to pursue the easements and allowing the Mule Deer Foundation to hold and the final easements.



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

1550 Alder St. NW · Ephrata, WA 98823 · (509) 754-4624 · FAX (509) 754-5257

October 25, 2016

Von Pope
Chelan County PUD
321 N. Wenatchee Avenue
Wenatchee, WA 98801

Dear Mr. Pope:

Following our review of the Draft Grant Deed of Conservation Easement provided by Chelan County PUD to fulfill articles 4.1.1 a1 and 4.1.1 a2 of the Lake Chelan Settlement Agreement, Washington Department of Fish and Wildlife (WDFW) agrees the draft easement, as written, appears to meet the intent of the settlement articles as negotiated. It is our recommendation that Chelan PUD move forward and identify landowners interested in entering into a Conservation Agreement. WDFW recognizes Chelan PUD's intent to contract with the Cascadia Conservation District to carry out negotiations with landowners, and that the Mule Deer Foundation will hold the final contracts once signed. It should be understood that WDFW will not hold contracts for any conservation easements signed, and will not accept responsibility for monitoring compliance, or any costs associated with the conservation easements over the contract's life.

If any changes are made to the draft contract language during negotiations, those changes must be presented to WDFW for review and approval. In addition, prior to signing, Chelan PUD and the Cascadia Conservation District will present the final agreements and language for WDFW approval before signing. Once easement contracts are reviewed, completed and signed, WDFW will work with Chelan PUD and provide the required documentation to meet the PUD's FERC license requirements.

WDFW is pleased with the progress toward development of these Conservation Easements. We have provided initial and follow-up recommendations to address our concerns. Therefore, we recommend a site visit in the coming months with the partners to better discuss next steps. We appreciate the opportunity to provide feedback on the Conservation Easement. Consultation and technical assistance requests, or questions and comments related to the proposal should be directed Graham Simon at (509) 670-0742, or by email graham.simon@dfw.wa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Brown", with a horizontal line extending to the right.

Jim Brown
Regional Director
Region 2

cc: Graham Simon, WDFW Habitat Program Region 2

WILDLIFE HABITAT PLAN 2018-2022

LICENSE ARTICLE 406

DRAFT

**LAKE CHELAN HYDROELECTRIC PROJECT
FERC Project No. 637**

April 2018



**Public Utility District No. 1 of Chelan County
Wenatchee, Washington**

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EXECUTIVE SUMMARY

The Federal Energy Regulatory Commission (FERC) Order on Offer of Settlement and Issuing New License (License) and Order on Rehearing for the Lake Chelan Hydroelectric Project No. 637 (Project) were issued November 6, 2006, and April 19, 2007, respectively, to the Public Utility District No. 1 of Chelan County (Chelan PUD). Article 406 of the new Project License required Chelan PUD to submit to FERC a Wildlife Habitat Plan (WHP) by November 6, 2007. On April 10, 2008, the FERC issued its order modifying and approving the initial WHP. In accordance with the order, Chelan PUD is required to update and file the WHP for FERC's approval every five years.

On April 10, 2013, Chelan PUD submitted the second WHP (2013-2017) for FERC approval. The second WHP (2013-2017) was approved by the FERC on September 18, 2013.

This updated 5-year WHP (2018-2022) includes many projects that were approved under the previous WHP's, but not implemented, some new projects, and some project that have been completed or modified because they could not be completed. Similar to past WHP's for Lake Chelan, this WHP includes provisions for upland and riparian habitat improvements by the USDA Forest Service. Habitat improvements on USDA Forest Service lands are intended to improve habitat for wildlife species or protect and enhance habitat for rare plants like whitebark pine. Habitat improvements include weed control, forest thinning, controlled burns, pruning, planting, and native plant and seed propagation.

For the Washington Department of Fish and Wildlife (WDFW), this WHP contains several changes from the previous WHP's. After 8 years of trying to obtain conservation easements on the north shore of Lake Chelan, this effort was terminated due to lack of landowner participation. As a result, remaining funding will now become available for WDFW to conduct habitat improvements in the Lake Chelan Basin, as directed by the Lake Chelan Comprehensive Plan (Chelan PUD 2003). WDFW is also proposing to replace the annual winter wildlife surveys conducted on Lake Chelan by Chelan PUD with species-specific aerial surveys conducted by WDFW that will provide more empirical data on mountain goat, mule deer, and bighorn sheep herds found along Lake Chelan. Chelan PUD would reimburse WDFW, in accordance with the annual payment amount agreed to in the Lake Chelan Comprehensive Plan (Chelan PUD 2003), for providing an annual report to the Lake Chelan Wildlife Forum (LCWF) summarizing the annual wildlife surveys.

SECTION 1: INTRODUCTION

The Federal Energy Regulatory Commission (FERC) Order on Offer of Settlement and Issuing New License (License) and Order on Rehearing for the Lake Chelan Hydroelectric Project No. 637 (Project) were issued November 6, 2006, and April 19, 2007, respectively, to the Public Utility District No. 1 of Chelan County (Chelan PUD). Article 406 of the new Project License required Chelan PUD to submit to FERC a Wildlife Habitat Plan (WHP) by November 6, 2007. On April 10, 2008, the FERC issued its order modifying and approving the initial WHP. In accordance with the order, Chelan PUD is required to update and file the WHP for FERC's approval every five years.

Similar to the previous WHP's, this 2018-2022 WHP includes: (1) a detailed description of the habitat improvement measures, including the methods to be used, (2) a detailed description of the location where the improvements will occur, including maps, and (3) some contingency measures to allow flexibility around an ever changing landscape. Figure 1 shows the WHP project area and the overall location for some of the projects.

Implementation of the 2018-2022 WHP, as specified in Article 406 and Settlement Agreement¹ Article 9 of Appendix A of the License, entails Chelan PUD continuing to provide funds for: 1) upland habitat improvements and 2) riparian habitat improvements. Rather than conducting boat-based winter wildlife surveys, this WHP (2018-2022) proposes to support WDFW in conducting aerial surveys for specific species annually to better estimate populations of mountain goat, bighorn sheep, and mule deer.

None of the upland or riparian habitat improvement measures require annual or periodic maintenance to ensure their success. Therefore, no additional lands need be brought into the Project boundary. Sections 2 and 3 of this WHP address habitat improvement measures and methods, the location where the improvements will occur, and an implementation schedule. However, the level of detail available at this time is somewhat limited due to, among other things, the dynamic nature of the Chelan basin environment (e.g., uncertainty regarding the location and extent of future wildfires) and the adaptive management practices to be used in implementing the measures contained in the plan. Further detail will become available as implementation progresses, and updates will be provided to the FERC. Upon approval, this 2018-2022 WHP will supersede the previous WHP's for the Lake Chelan project.

Funds allocated under this WHP will be expended on resources that are most valuable to wildlife and most compatible with wildlife land use in Chelan County. Those lands will include key habitat types, migration corridors, and shrub steppe, grassland, and riparian/wetland habitats that offer restoration or improvement opportunities. The primary goal of the WHP is to enhance wildlife habitat within portions of Chelan County bordering Lake Chelan to:

¹ Chelan PUD, on behalf of the signatories, filed a Comprehensive Settlement Agreement on October 17, 2003. The settlement agreement includes articles that were included in the License as Appendix A.

- i) Restore, maintain, or improve ecological quality and diversity;
- ii) Restore, maintain, or increase habitat for key indicator wildlife species; and
- iii) Provide for public use compatible with the ecological quality, diversity, and carrying capacity for key wildlife species goals.

Primary wildlife indicator species for purposes of the WHP (2018-2022) include: 1) mule deer and bighorn sheep; 2) threatened, endangered, sensitive, species of concern, or survey and management species; and 3) riparian and wetland indicator bird and amphibian species.

The WHP (2018-2022) focuses primarily on big game species because the LCWF places a high value on protecting and enhancing habitat for species that overwinter in the Chelan Basin, which are mule deer, bighorn sheep, and mountain goats. However, it was important to the LCWF that the same measures implemented for the benefit of big game also benefit a broad community of terrestrial wildlife, including avian species. Most of acreage surrounding Lake Chelan is shrub-steppe and riparian habitat; hence, the plan emphasizes enhancement projects for these types of habitats.

This WHP (2018-2022) was developed in consultation with the Lake Chelan Wildlife Forum (LCWF), which includes the National Park Service (NPS), USDA Forest Service, U.S. Fish and Wildlife Service (USFWS), Washington Department of Fish and Wildlife (WDFW), Confederated Tribes of the Colville Reservation, Yakama Nation, Wenatchee Sportsman's Association, Lake Chelan Sportsman's Association, NCW Mule Deer Foundation, Foundation (MDF) for North American Wild Sheep, Audubon Society, and National Wild Turkey Federation. Documentation of the consultation that occurred during development of this plan is attached as Appendix A.

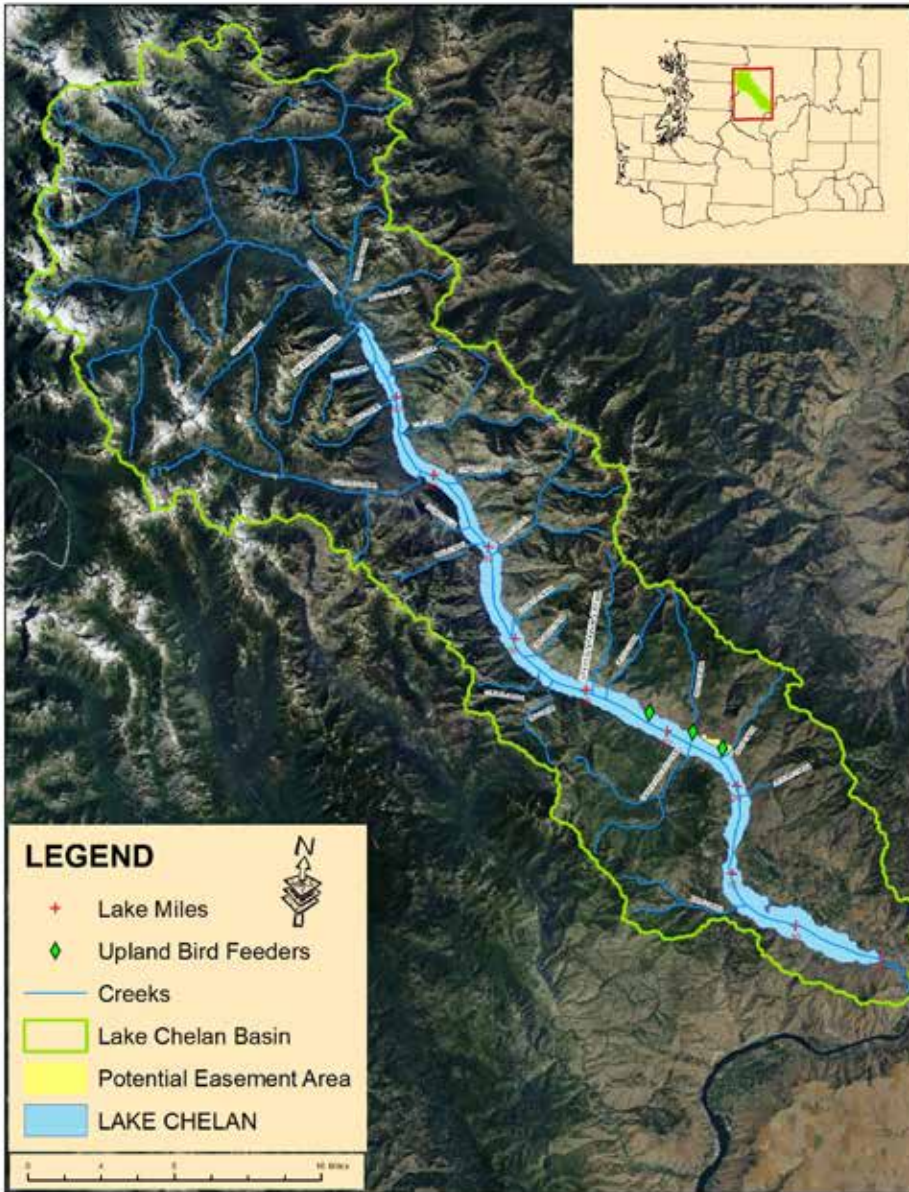


Figure 1. Lake Chelan Wildlife Habitat Plan vicinity map, 2017.

SECTION 2: UPLAND HABITAT IMPROVEMENTS

Implementation of upland habitat improvements, as specified in License Article 406 and Comprehensive Plan Article 9 of Appendix A of the License, requires Chelan PUD to provide funds for conservation easement acquisition and habitat improvements. Additionally, Chelan PUD will maintain three upland game feeders and support WDFW in conducting aerial surveys to estimate mountain goat, bighorn sheep, and mule deer populations in the Lake Chelan Basin.

None of the upland habitat improvement measures described in this section requires annual or periodic maintenance to ensure their success; therefore, no upland habitat lands need be brought into the Project boundary.

2.1 Conservation Easement Acquisition

Comprehensive Plan Article 9(a) of Appendix A of the Project License describes making funds available for acquiring conservation easements on private lands on the north shore of Lake Chelan.

(1) **Easement Acquisition** (LC09a1). (1) Chelan PUD shall make available \$220,000 to the Chelan-Douglas Land Trust, for the acquisition of conservation easements in perpetuity on privately-owned lands located on the north shore of Lake Chelan, in accordance with section 4.1.1 of the Comprehensive Plan. For purposes of this License Article, all references to the Chelan-Douglas Land Trust refer to the Chelan-Douglas Land Trust or another organization selected pursuant to paragraph (a)(6) of this License Article. The goal is to secure easements on 400 acres of land, and priority shall be given to acquiring easements on lands between elevations 1,100 and 1,400 ft.

(2) **Administrative Fees** (LC09a2). Chelan PUD shall make available additional funding of up to 15 percent of the cost of easement acquisition, not to exceed \$33,000 to the Chelan-Douglas Land Trust, for fees associated with easement acquisition. Associated fees include administrative costs, appraisals, baseline inventories, escrow fees, hazardous substance assessments, legal fees, recording fees, stewardship fees, surveys, and fees relating to title reports and insurance.

(3) **Habitat Improvements** (LC09a3). Chelan PUD shall make available \$32,000 to the Chelan-Douglas Land Trust, for shrub-steppe/mule deer winter-range habitat restoration efforts on the lands, if any, for which an easement is acquired under paragraph (a)(1) of this Article. Beyond making the \$32,000 available, Chelan PUD shall have no responsibility for the success of the restoration efforts to be carried out by the Chelan-Douglas Land Trust, in coordination with Washington Fish and Wildlife. In its contract with the Chelan-Douglas Land Trust, Chelan PUD shall require the Chelan-Douglas Land Trust to coordinate with Washington Fish and Wildlife in order to assure the highest likelihood of habitat restoration success.

2.1.1 Conservation Easement Acquisition – Project Termination

With continued support from WDFW, The Mule Deer Foundation (MDF), the Cascadia Conservation District and the landowners, the contract with the Cascadia Conservation District was amended in 2016 allowing them to pursue the easements and transferring them to the MDF at closing. Interested landowners representing approximately 308 acres (Figure 2) were presented with a final version of the conservation easements in the fall of 2016 and granted permission for land surveys and appraisals. Land surveys were completed in April of 2017 and conservation easement appraisals were completed by July 2017.

On August 24, 2017, the interested landowners were sent a letter packet (Attachment A) containing; 1) a letter offering to purchase conservation easements from the landowners, 2) an independent appraisal of the property, 3) a copy of the conservation easement, and 4) a commitment letter to be returned by November 30, 2017. As of the requested response date, only one landowner had signed the commitment letter. For the next two months, several attempts were made to engage the other interested owners that had not responded with no success. On February 1, 2017, a letter (Attachment B) was sent to the landowners stating that due to lack of landowner participation, the project was being terminated.

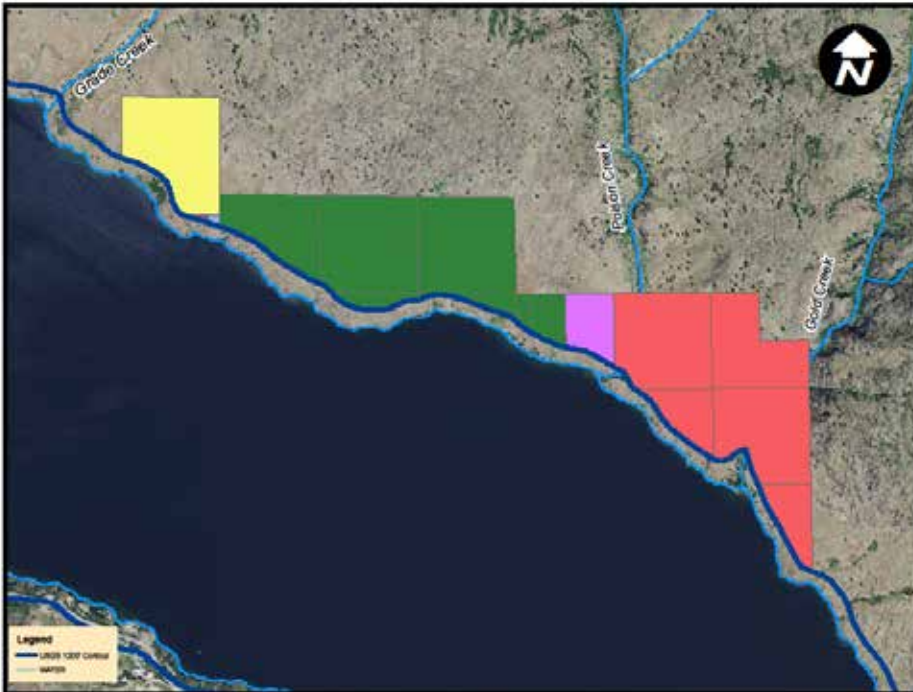


Figure 2. Private lands where conservation easements were being sought on the northern shore of Lake Chelan.

2.1.2 Alternate to Conservation Easements (2018-2022)

Comprehensive Plan Article 9(a) of Appendix A of the Project License describes making funds available for acquiring conservation easements on private lands on the north shore of Lake Chelan. Paragraph 9(a)4 states that:

(4) Chelan PUD and WDFW recognize the uncertainty of acquiring conservation easements on 400 acres, due to the variability of landowner participation. If less than 400 acres of conservation easement can be acquired, the funds remaining available under paragraphs (a) (1) and (a) (3) of this subsection shall be made available by Chelan PUD to WDFW for habitat restoration within the Chelan basin.

Only one landowner was willing to accept the conservation easement offer, however, WDFW did not support getting easements on less than 200 acres. Therefore, with just over 125 acres available, no conservation easements were purchased. As a result, the funds allocated in the Comprehensive Plan Chapter 9, sections (a) 1 and (a) 3 (as stated above) will be made available

Table 1) to WDFW for habitat improvements in the Chelan base per the Lake Chelan Comprehensive Plan (Chelan PUD 2003).

2.2 USDA Forest Service Habitat and Wildlife Enhancement

Comprehensive Plan Article 9(b) of Appendix A of the Project License describes the methods and funding for USDA Forest Service habitat and wildlife enhancement measures:

(1) Chelan PUD shall make available to the USDA Forest Service \$20,000 per year during the term of the New License, and any subsequent annual licenses, for habitat and wildlife enhancement measures identified in section 3 of Chapter 9 of the Comprehensive Plan.

Below are USDA Forest Service upland habitat improvement projects scheduled to be implemented with the funding identified above, which include native plant seed collection and propagation, habitat restoration through planting and thinning, pheromone treatments to protect forests from bark beetle infestation, control of invasive species, closure and rehabilitation of unauthorized travel routes, and prescribed burning. Prescribed burning is a treatment method used extensively by the USDA Forest Service for forest restoration (USFS 2002) and is illustrated by projects described in this section. Prescribed burning provides benefits to all species dependent on shrub steppe habitat by reducing the amount of available fuels and, therefore, the severity of summer wildfires. Prescribed burning also rejuvenates plant communities that have evolved with fire, thereby improving habitat conditions for all species dependent on shrub steppe and grassland habitats. Recent USDA Forest Service research has focused on the benefits to, and responses of, avian species from prescribed burns (Lyons et al. 2007; Gaines et al. 2007). Additionally, prescribed burning provides acceleration of a sustainable dry late-successional ponderosa pine forest and the species dependent on this type of forest such as pileated woodpeckers, marten, white-headed woodpeckers, pygmy nuthatch, Western gray squirrel, and spotted owls.

These projects are placed in order of project readiness to some degree but due to the changing nature of our fire prone landscape, and the unpredictability of opportunities to partner these projects with both internal and external funding sources and implement projects with the greatest potential benefit to wildlife and habitats, the priority of these projects will change as conditions and circumstances warrant. None of the planned projects will require periodic maintenance. Any monitoring and maintenance needs will be accomplished with Forest Service program funds. Therefore, none of these projects need to be included in the project boundary.

Task 1: Native Plant/Seed Propagation and Increase Program

Continue native seed collection and propagation for use in habitat improvement projects. Native seed to be collected and increased would include blue bunch wheatgrass, Idaho fescue, pinegrass, Sandberg's bluegrass, other native grasses, low elevation cedar, Pacific dogwood, native shrubs such as kinnikinnick, and native forbs including penstemon, yarrow, and lupine. Estimate \$1,500 per year to produce seed for 5-20 acres (cost effectiveness will increase as yields increase over time). Seeding native species to compete with non-native invasive plants will be essential mitigations to prescribed burning conducted for habitat improvement in some portions of the winter range. Seeding in itself constitutes an improvement in habitat by improving forage for wildlife. Projects may be conducted in conjunction with propagation of native plants for Chelan

PUD funded erosion control, which could include shrubs and trees such as bitterbrush and dogwood.

Task 6: South Shore Forest Restoration Project- (Combines Tasks 6, 8, 16, and 17 from 2013-2018 WHP)

This project area includes several projects from the previous WHP (2013-2017) including Pot Peak and the Twenty-five Mile Creek and the First Creek drainages. NEPA has been recently completed for both of these watersheds including the Twenty-five Mile Creek Forest Restoration Project and the First Creek Forest Restoration Project (Figure 3). This project is designed to help maintain and restore habitats within both drainages. Within these project areas, we propose to use treatments including: small tree thinning, pruning, pile burning and prescribed fire. Small tree thinning would reduce stand densities and help to accelerate the development of large trees across the landscape. Pruning would help reduce ladder fuels by raising tree canopy heights while thinning would help to reduce the overall risk of losses due to wildfire. Prescribed fire treatments would reduce accumulated fuels and help maintain/restore natural fire return intervals of these Dry Forest ecosystems. Treatment areas and treatments are identified in the 2015 Twenty-five Mile Creek Restoration Planning project and the 2016 First Creek Restoration Planning Project. The First Creek Restoration Planning Project includes an area known as the “pumice pit.” This one acre area would be restored by riparian restoration planting, soil enhancements and enforcement of current road closures. Treatment costs for the pumice pit restoration would be approximately \$10,000. The vegetation treatments identified in the First Creek and Twenty-five Mile Creek Forest Restoration Planning projects would range from \$450-\$500 per acre on up to 3,962 acres total acres. In addition, prescribed burning costs would range from \$25 - \$100 per acre across a total of 8,325 acres. Estimated prescribed burning cost is \$130,000 and would likely include contributing funds from the fuels and watershed restoration programs. Species that would likely benefit from these treatments would include spotted owls, white-headed woodpeckers, pygmy nuthatches, and other species dependent on dry forest habitat that support large old-growth ponderosa pine.

Approximately \$50,000 would be allocated for this project and likely partnered with funds from fuels and watershed restoration programs as well as other partnerships to increase the scale of acres treated.

Commented [VP1]: Move riparian projects to Section 3, Riparian Habitat Improvements

Commented [VP2]: This should be a new task under Section 3

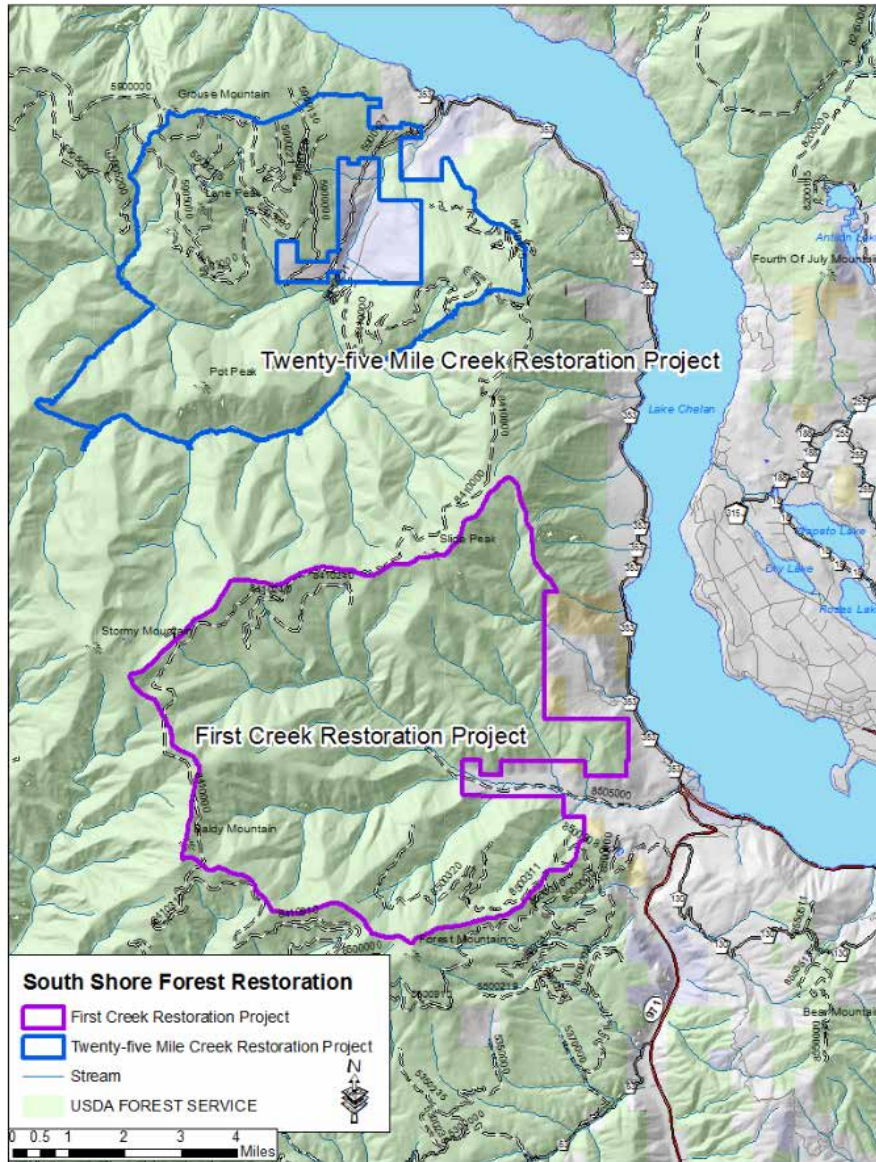


Figure 3. South Shore Forest Restoration

Task 11: Whitebark Pine Habitat Protection and Enhancement

Whitebark pine habitat, with reasonable access, on the Chelan Ranger District covers approximately 6,037 acres (Figure 4). This high elevation habitat, above 5,500 feet, is extremely important to ecosystem function and to several key species including the Grizzly Bear. These whitebark pine systems have been impacted by recent wildfires with many of the residual stands susceptible to additional fire caused mortality. Past activities included helicopter applications of Verbenone (an anti-aggregate pheromone to deter mountain pine beetle attack), tree planting, seed collection, stand data collection, cone surveys, cone collection, and whitebark pine habitat restoration planning. Future whitebark pine habitat enhancement measures include: habitat surveys, cone surveys, brood tree removal, whitebark pine release/reduction of ladder fuels, seed collection, propagation, and planting of white pine blister rust resistant strains. Approximately \$50,000 would be allocated to the planning and treatment of high elevation stands of whitebark Pine on both the North Shore and South Shore of Lake Chelan.

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Figure 4. Whitebark Pine Habitat Protection and Enhancement.

Task 15: Wolverine Wildfire Restoration and protection

Approximately 1,400 acres are proposed for planting within the 2015 Wolverine Wildfire area (Figure 5). The purpose of this project is to plant conifers and speed recovery time for developing a forested landscape. Benefiting Resources include: Wildlife-establish forested areas for species dependent on conifer habitat, Hydrology-contribute to long term slope stability. The planting areas are located in the lower Railroad Creek drainage. Implementation would largely be completed by contracted crews. The estimated planting cost is \$290 per acre and includes, tree planting, seedling transport, storage, unit layout, contract preparation and administration. Estimated costs would be up to \$406,000 for the entire project, not including the seed and seedling costs which are estimated at an additional \$190,000.

Portions of the 2015 Wolverine Wildfire burned at low and moderate intensities near Lucerne and around Holden Village that are within critical habitat for spotted owls. The resulting stand conditions include fire weakened Douglas-fir trees that are now susceptible to Douglas-fir beetle attack. The susceptible trees are typically larger than 14 inches diameter and are important structural components to these forest systems, they also have important aesthetic value to forest visitors in these areas. These stands will continue to be monitored for evidence of increased Douglas-fir beetle activity. Should this activity increase to a point that unacceptable mortality is predicted, there would be an opportunity to deploy anti-aggregation pheromones (MCH) that would offer protection to the residual trees (Figure 6). Approximately 30 MCH bubble caps per acre would be deployed to offer stand level protection or 2 bubble caps per tree to offer individual tree protection. The estimated cost to treat 210 acres is \$20,000.

Approximately \$50,000 would be allocated for this project and likely partnered with funds from fuels and watershed restoration programs as well as other partnerships to increase the scale of acres treated.



Figure 5. Wolverine Creek fire restoration area.

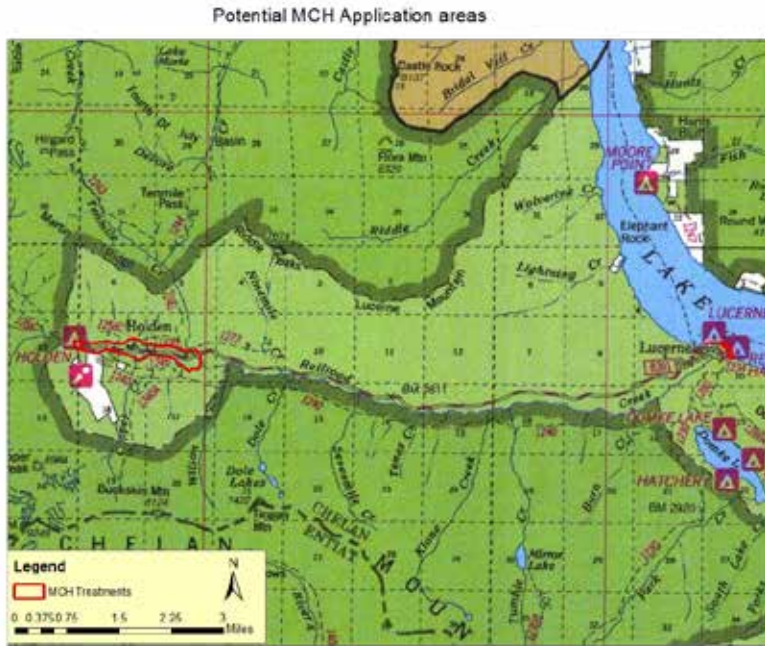


Figure 6. Locations for MCH application to protect large diameter trees.

Task 9: Lower North Shore Forest Restoration

The project area spans from Purtteman Gulch, uplake to Grade Creek, totaling over 40,000 acres of Forest Service owned lands on the north shore of Lake Chelan (Figure 7). The majority of this area burned during the 2002 Deer Point fire with varying degrees of severity. Given this history, much of the higher elevations of the project are still recovering from this disturbance. Vegetation in the area ranges from shrub steppe in the lower elevations to mixed conifer in the upper elevations. Much of this area is at or past the point where fuel reduction work needs to be initiated to reduce the chance of additional high severity large fires. Specific treatments and project units will be identified in the Lower North Shore planning project. Treatments that increase the sustainability and improve the reestablishment of forested conditions in the associated watersheds will benefit all species dependent on late-successional habitat conditions in ponderosa pine and other dry forest types, as well as in more mesic habitats at higher

elevation. Thinning and burning in young stands at lower elevations will also improve thermal cover conditions for ungulates and their predators.

In order to inform wildlife habitat enhancement recovery goals for this area, baseline wildlife information regarding threatened, endangered, sensitive, and management indicator species needs to be collected. This involves not only surveying for specific wildlife, but also validating the quantity and quality of habitat that currently exists. Funding a crew to collect this valuable information will not only provide additional baseline wildlife data to inform the Chelan Wildlife Habitat Plan, but also to drive restoration goals in the Lower North Shore Project Area.

Included in the project area is Antilon Lake. The Antilon Lake area is a unique riparian habitat located in an area of dry forest and shrub steppe habitat that is very close to the local communities of Chelan and Manson. The area is heavily used by recreationists at certain times of the year, and the habitat has been impacted by unauthorized motorized travel, excessive dispersed camping, lack of adequate sanitation facilities, harvest of and other damage to green trees and vegetation, removal of downed woody debris important to small mammals, garbage dumping, and other forms of resource damage. The situation is further complicated by multiple ownerships and mixed jurisdiction.

Commented [VP3]: Perhaps the entire Antilon Lake project should be moved to Section 3 and be part of riparian effort?

This project involves working with the District Recreation staff and other landowners to focus recreational use on designated campsites and restrict all motor vehicles to designated routes (implement the new US Forest Service Travel Management Plan). Dispersed riparian campsites would be rehabilitated. Specific wildlife components of the project include removing old fences that are a hazard to wildlife (up to 1,100 feet), enhancing aspen stands, implementing travel restrictions per the new USDA Forest Service travel management plan, and partnered use of funds to rehabilitate riparian sites impacted by recreation. Improvement of habitat in this area would benefit all riparian dependent species and species associated with dry forest and shrub steppe habitats. Habitat improvement will also result through a greater appreciation of wildlife resulting from development of Watchable Wildlife opportunities. Recreation infrastructure portions of the project may be implemented through grant funding, cooperative agreements, and in-kind services with other land management agencies in the Antilon Lake Area.

Commented [VP4]: Consider moving riparian components to Section.

Approximately \$30,000 would be allocated for this project and likely partnered with funds from fuels and watershed restoration programs as well as other partnerships to increase the scale of acres treated.

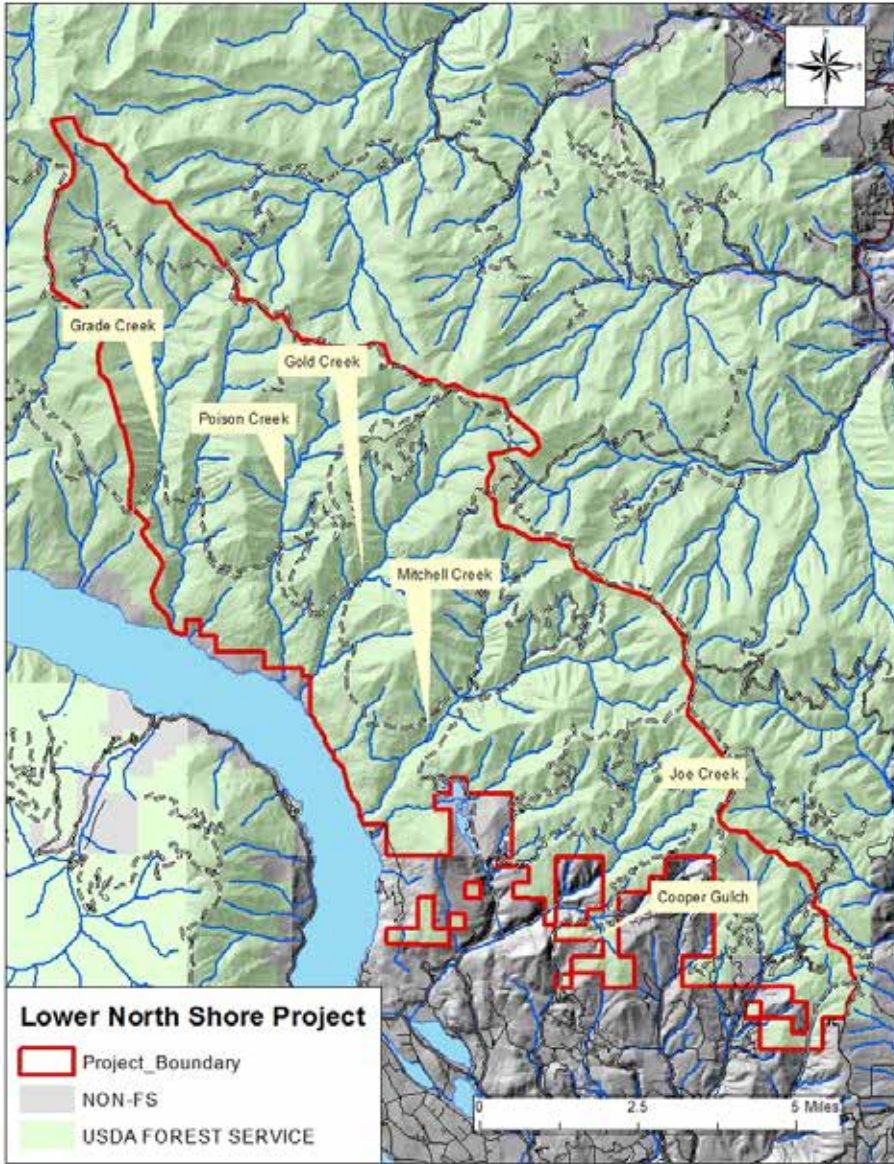


Figure 7. Lower North Shore Restoration Project Area.

Task 5: Falls Coyote Implementation

The Falls Coyote project lies between Safety Harbor and Deer Point on the north shore of Lake Chelan. The project includes 570 acres of thinning activities and 6,200 acres of prescribed fire treatments (Figure 8). Prescribed fire and thinning treatments benefit all species dependent on shrub steppe, grassland and low elevation dry forest habitats by reducing fuels and, therefore, the severity of future wildfires. Prescribed burning also rejuvenates plant communities that have evolved with fire, thereby improving foraging habitat conditions for all species dependent on these habitats on the North Shore. Treatment costs range from as low as \$25 acre for prescribed burning utilizing aerial ignition, \$100 per acre for hand ignitions and \$450-\$550 per acre for thinning, pruning and piling treatments. Approximately \$40,000 would be set aside for this project and likely partnered with funds from fuels and watershed restoration programs to increase the scale of acres treated.

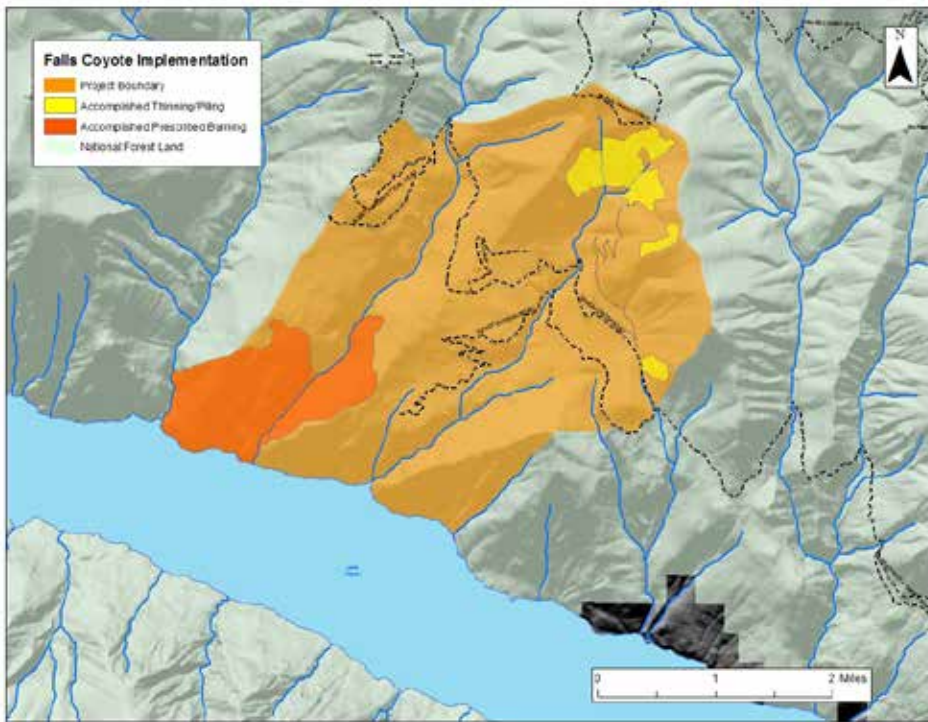


Figure 8. Falls Coyote project area.

Task 10: Echo Ridge Forest Recovery – This 12,000-acre area continues to suffer the adverse effects of severe stand replacement fire. The severity of the fire removed most of the nutrients and organic matter in the soil, which has limited the establishment and growth of the

young forest. Where vegetation is limited, recreationists have created user built trails and off-road vehicle routes, and/or reestablished use on closed roads.

Restoration activities include micro-site planting of conifers to establish seed sources in key areas, soil amendments to boost soils depleted by the severity of past fires, obliteration of unauthorized routes, pre-commercial thinning, invasive plant control, and burning activities to improve forest growth and reduce the risk of losing the recovering forests and additional soil nutrients to future wildfires. Approximately \$16,000 would be allocated to this project. Restoration of the ponderosa pine and Douglas-fir dry forest in this area will improve habitat conditions for many key species of concern in the area, particularly those dependent on ponderosa pine ecosystems (e.g. white-headed woodpeckers and Western gray squirrels).

Tasks 12: Invasive Plant Control Program

Continue *crupina* control and native grass seeding. *Crupina*, which is a Class A noxious weed that requires eradication, infests the majority of the winter range that lies within the Lake Chelan Sawtooth Wilderness. Eradication of this weed, and restoration of the native plant community, will result in restoration of a wilderness winter range for both mule deer and mountain goats. Winter range protected by wilderness status is extremely rare and valuable, as it has the capability of providing for ungulates as well as their predators, including threatened and endangered species such as the grizzly bear and gray wolf that require remote habitat conditions for security. Additionally, control and eventual eradication of this noxious weed population (the only known *crupina* infestation in the State of Washington) will protect the productivity and functionality of shrub steppe habitats throughout the Lake Chelan Basin, and the state. The project is currently partnered with the Washington Conservation Corp, the Washington State Department of Agriculture, various land owners, and various research entities.

Utilize integrated weed management (IWM) program to effectively reduce weed infestations in winter range on the north shore of Lake Chelan. The IWM that includes herbicides is a precursor to initiation of any effective weed control projects on the winter range. Weed control is an essential mitigation to other habitat improvement activities such as prescribed burning. Weed control on winter range would benefit mule deer and big horn sheep, as well as carnivores dependent on these ungulates, and other species dependent on shrub steppe, grassland and low elevation ponderosa pine habitats.

On-going in all project areas, but may be stand-alone projects in all areas within the project boundary. Treatment areas will be determined during the environmental analysis process to develop an integrated weed management plan for the winter range or other project areas. The Forest Wide Invasive Plant EIS will allow for treatment of all weeds. Approximately \$5,000 per year will be allocated to weed control activities.

Up to \$30,000 per year may be allocated per year for this project.

Task 19: Fire Response

Areas burned by wildfire within the planning area will be assessed for treatment needs and may become the priority for project work based on the needs identified in assessments. Typical fire response treatments would include control of invasive species for three years following wildfire, seeding of native grass/forb/shrub species, and planting of containerized native grasses/forbs/shrubs.

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SECTION 3: RIPARIAN HABITAT IMPROVEMENTS

As specified in License Article 406 and Comprehensive Plan Article 9 of the Appendix A of the License, Chelan PUD will provide funds for riparian habitat improvements.

None of the riparian habitat improvement measures described in this section requires annual or periodic maintenance to ensure their success; therefore, no riparian habitat lands need be brought into the Project boundary.

3.1 Funding for USDA Forest Service Riparian Habitat Improvements

Comprehensive Plan Article 9(c) of Appendix A of the Project License describes Chelan PUD's requirement for making funds available to the USDA Forest Service for riparian habitat improvements:

(2) Within 180 days of the effective date of the New License, Chelan PUD shall make available:

(A) \$50,000 to the USDA Forest Service to enhance riparian habitat in the Lake Chelan basin;

The following list includes activities within the Lake Chelan basin associated with riparian habitat enhancement for the USDA Forest Service.

Task 1: Low Elevation Tree Planting

Seed for low elevation lakeshore plant species (cedar, cottonwood, dogwood, various shrubs, and ponderosa pine for lakeshore perching habitat) needs to be collected in order to have seedlings available for planting. Collection would occur in August or September of 2013. Work for low elevation seed collection and propagation include two people plus boat and operator for 2-3 days (\$3,000) and seed processing and management (\$500) for a total cost of \$3,500. Once the lakeshore trees and/or shrubs are ready, two to three sites per day can be planted at a cost of approximately \$1,000 per day including boat transportation. Costs will continue to accrue with continued lakeshore plant species propagation.

Task 2: Mid Elevation Tree Planting

Western cedar trees (510) propagated under the initial WHP will be available for riparian planting in 2013. Planting should take two days, three people and cost approximately \$1,600-\$2,000. Trees will be planted in mid-elevation areas along streams.

Task 3

Commented [VP5]: Riparian components from Upland section including Antilon Lake and Pumic pit on First Creek.

3.2 Funding for WDFW Riparian Habitat Improvements

Comprehensive Plan Article 9(c) of Appendix A of the Project License describes Chelan PUD's requirement for making funds available to the USDA Forest Service for riparian habitat improvements:

(2) Within 180 days of the effective date of the New License, Chelan PUD shall make available:

(B) \$35,000 to the USDA Forest Service to enhance riparian habitat in the Lake Chelan basin;

Initially, WDFW anticipated using this funding to improve riparian habitat on private lands to be held under conservation easements. Since, no conservation easements were acquired, no projects have been identified for this funding under this WHP.

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SECTION 4: WILDLIFE SURVEYS AND FEEDERS

Comprehensive Plan Article 9(b) of Appendix A of the Project License describes Chelan PUD's requirement to conduct wildlife surveys:

(3) Chelan PUD, in coordination with WDFW, shall continue to conduct wildlife surveys similar to those conducted during the second FERC license for the Project, maintain upland bird feeders, and/or conduct habitat improvement projects for a cost not to exceed \$10,000 per year during the term of the New License, and any subsequent annual licenses. Chelan PUD shall provide an annual wildlife survey report to WDFW.

For the 2018-2022 WHP, WDFW proposes to modify the wildlife monitoring effort to provide more empirical data for mountain goat, bighorn sheep and mule deer management. WDFW is proposing to use the annual funding amount of \$10,000 agreed to in the Comprehensive Plan (current value of approximately \$13,300) to support aerial wildlife surveys to be conducted by WDFW. Chelan PUD would reimburse WDFW, up to the amount agreed to in the Comprehensive Plan once WDFW provided a report summarizing the results of the annual aerial wildlife survey to the LCWF. The report delivery date would likely depend on the time of year the wildlife survey was completed, but would be no later than December 1, annually. If approved, Chelan PUD would no longer conduct winter wildlife surveys or fill the upland bird feeders.

4.1 2018-2022 Wildlife Monitoring Proposal

Chelan PUD's long-term winter boat survey data are not showing correlations between yearly survey observations and population sizes and trends for mountain goats, mule deer, and bighorn sheep. This is likely due to the fact that boat-based surveys offer a small chance to see the majority of individuals in the rugged terrain, and there is not an equal opportunity of sighting all animals. The month to month and year to year variability in species observations make using these data to monitor populations trends problematic. High counts are recovered during some survey years, but are not predictable, and not always correlated with obvious environmental conditions, such as annual snowfall. It is equally probable that surveys in adjacent years may return drastically different numbers of observed individuals. While a high count may give us insight to minimum numbers in the population, low counts provide no relevant information, and we cannot assume that the overall population has dropped significantly based on low count numbers. Several Chelan PUD and WDFW staff have analyzed these data and come to similar conclusions. The weaknesses in the data are not a result of execution or observation protocols, but in due to the fact that a boat does not provide the optimal platform for assessing these populations in the rugged terrain along Lake Chelan.

WDFW is proposing a shift in resources away from boat-based surveys to yearly aerial surveys using helicopters as the platform. Aerial surveys provide a significantly greater probability of seeing a representative number of individuals and increasing equal probability of observation. Surveys conducted this way are the standard for population monitoring and management of large ungulates within the US and most of the world. Methodologies for addressing sightability bias in aerial surveys are common and WDFW uses these techniques for mountain goat, bighorn sheep, and mule deer surveys across the state. These methods account for and correct the differences in

detectability for species, sex, group size, snow cover, vegetative cover, etc., allowing for better estimates with confidence intervals. By pairing these methods with survey timeframes, we expect to establish baseline population estimates for these species, and to monitor the trends of their populations.

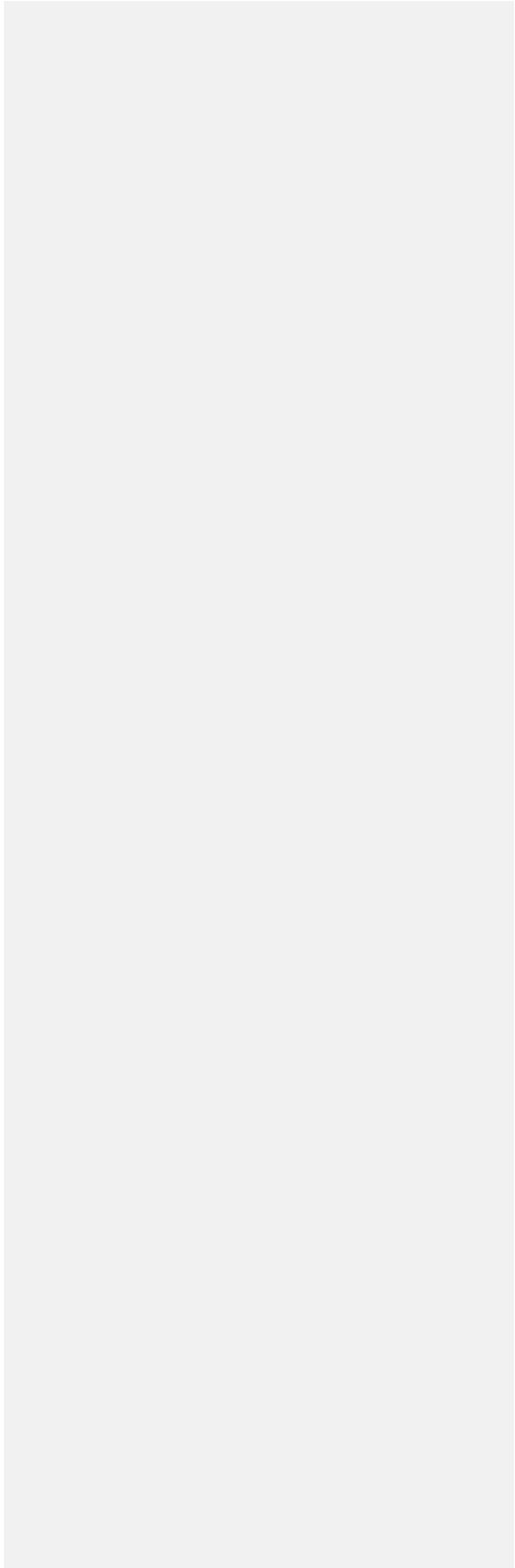
Timing of the wildlife surveys would be species dependent. Surveys for mountain goats would likely occur in July- August, while mule deer surveys would be done in December, and surveys for bighorn sheep could occur in May or October November depending on management objectives (i.e., recruitment vs. population estimates).

Our proposal is to divert those financial resources normally expended on annual boat surveys (up to \$10,000 annually per the 2003 Comprehensive Plan (Chelan PUD 2003)) and apply them to aerial surveys within the Lake Chelan Basin (Figure 1). If approved, we anticipate focusing efforts on mountain goats initially. Even with the multiple decades of boat observations, we have yet to develop a population estimate for the areas around Lake Chelan. It may take several survey years to complete an assessment by refining search areas and conducting replicates. Once the mountain goat surveys are established, we can focus on bighorn sheep and mule deer, refining our understanding of their numbers and distribution. We propose that WDFW staff conduct the surveys as the agency has trained staff available, experienced with the methodology and the application of sightability models, and developing population estimates.

Preliminary examples of mountain goat (Figure 9) and bighorn sheep (Figure 10) survey areas are shown below. These units, while having been used in previous WDFW surveys, will be refined over time to return better population estimates. While they are not final, they are a reasonable depiction of the areas that would be covered in these types of aerial surveys in order to produce a population estimate. It will also be possible to combine these efforts with the additional resources of other agencies (WDFW, USFS, NPS, etc.) to expand surveys beyond the scope of the Chelan PUD project area if there is a shared interest.

Figure 9. A selection of preliminary mountain goat survey units within the Lake Chelan Basin.

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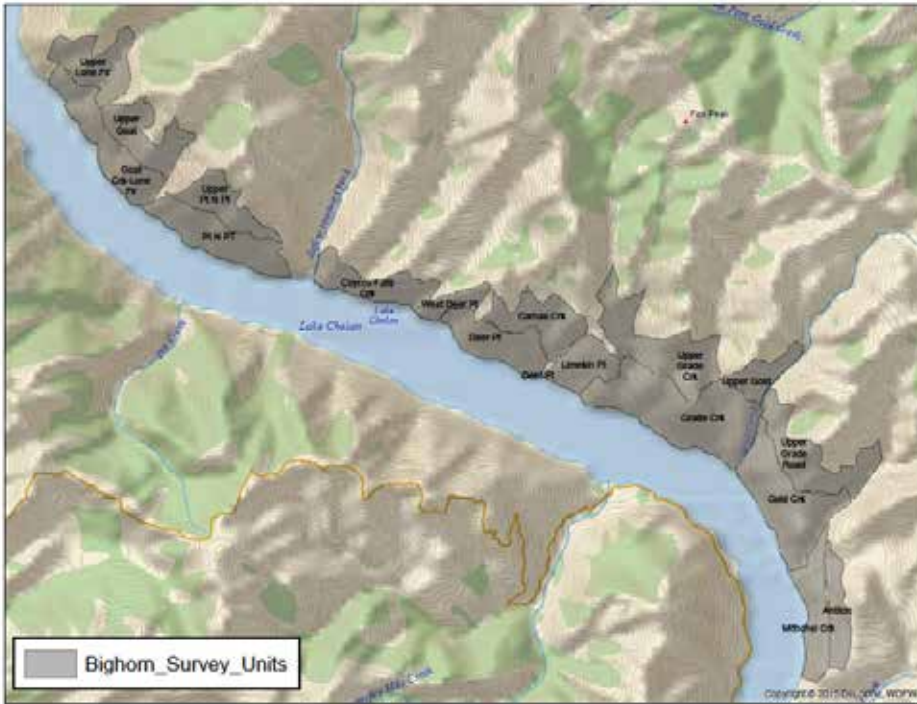


Figure 10. Bighorn sheep survey units along Lake Chelan.

SECTION 5: FUNDING FOR WASHINGTON DEPARTMENT OF FISH AND WILDLIFE HABITAT IMPROVEMENTS

Comprehensive Plan Article 9(c) of Appendix A of the Project License describes Chelan PUD's requirement for making funds available to the WDFW for habitat improvements:

(2) Within 180 days of the effective date of the New License, Chelan PUD shall make available:

(C) \$35,000 to the WDFW to enhance habitat in the Lake Chelan basin.

WDFW intended to use all or a portion of these funds improving riparian habitat for the conservation easements (Section recommends reserving expenditure of these funds until the conservation easements are acquired. As noted in section 2.1, the area of primary focus for acquisition of conservation easements on private lands is located on the north shore, Lower Basin Zone, between Gold Creek and Camas Creek (Figure 2) at elevations between 1,200 and 1,400 feet MSL. Once easements are acquired, funding from this source could be used to provide additional habitat restoration or enhancement activities on lands where easements are acquired, or for other habitat enhancements projects in the Chelan basin. Due to the uncertainty at this time of the precise location of lands where restoration efforts would be most valuable, WDFW desires that Chelan PUD retain this funding until such time as specific habitat enhancement needs and projects are identified.

SECTION 6: IMPLEMENTATION SCHEDULE

Article 406 requires this plan to include a schedule for conducting improvements. Projects contained in this plan are placed in order of priority. However, due to the changing nature of our fire prone landscape, the unpredictability of opportunities to partner, projects having both internal and external funding sources, and the desire to implement projects with the greatest potential benefit to wildlife and habitats, the priority of these projects will change as conditions and circumstances warrant. Once approved, this 2018-2022 WHP will supersede any previous WHP for the Lake Chelan Project.

6.1 Reporting

6.1.1 Annual Reports

Per the Approval Order issued on April 10, 2008 (FERC 2008), Chelan PUD will file (by April 30 annually) an annual progress report with the FERC on work planned and completed each year. Included in this plan are activities that would be completed in 2018, if approved, therefore, this This 5-Year Plan serves as the annual work plan.

Article 406(a) requires Chelan PUD to provide the results of winter wildlife surveys to WDFW. However, if section 4.1 of the current plan is approved, then WDFW would provide annual reports on wildlife surveys conducted under section 2.2 of this plan to be shared with the LCWF by April 30 for the next four years of this plan to the FERC, WDFW, USFWS, USDA Forest Service, and the NPS.

6.1.2 Five-Year Summary Report and Updated 5-Year Plan

In the original WHP Approval Order, issued April 10, 2008 (FERC 2008), Chelan PUD is required to file a 5-year Summary report and updated 5-year Plan at a minimum of every 5 years. Chelan PUD will update and file the WHP for FERC approval, at a minimum, of every five years. A separate summary of work completed under each approved plan will be filed on the fifth year.

SECTION 7: FUNDING

7.1 Chelan PUD and Agency Payment Agreement

Reimbursement for work related to approved projects conducted by the USDA Forest Service and WDFW will be made in accordance with Section 19 of the Settlement Agreement. Table 1 reflects funding available and includes annual adjustments consistent with Section 19 of the Lake Chelan Settlement Agreement.

All payments for work conducted by the USDA Forest Service and WDFW will be in accordance with Section 19 of the Settlement Agreement. Funding will be provided on a reimbursement basis once the agency submits an invoice/variance form and only after review and approval by Chelan PUD. As a condition of payment for any work performed under the Settlement Agreement, the USDA Forest Service and WDFW must submit a certification that the work was performed in a manner consistent with the Settlement Agreement, as well as annual planning reports. The annual planning reports must document all work that was completed during the preceding year, and the actual cost of that work. In addition, they must contain a detailed description of the work to be undertaken in the current year, a general description of the work to be undertaken in the following year, and the estimated costs of that work. Planned and completed work provided by the USDA Forest Service and WDFW is summarized in the annual reports submitted to FERC by Chelan PUD.

Table 1. Funding for USDA Forest Service and WDFW for habitat projects 2018-2022.

| AGENCY | 5-YEAR ESTIMATED ACTIVITIES | ESTIMATED COSTS | TOTAL ACTUAL FUNDING AVAILABLE AS OF JANUARY 31, 2018 |
|----------------------------|---|---------------------|--|
| UPLAND HABITAT | | | |
| WDFW | LC09a1 Task 1: Conservation easement acquisition.(Transfers to habitat improvements Task) | TBD | \$299,722.23 |
| | LC09a2 Task 2, Item 4: Phase 2, Cascadia | | \$4,681.98 |
| | LC09a3 Task 1, Habitat improvements | TBD | \$43,595.96 |
| USFS | LC09b1 Task 1: Plant/Seed Propagation | \$7,500 | NVP balance as 1/31/18 prior to plan spent. |
| | LC09b1 Task 5: Coyote/Fall Implementation..... | \$40,000 | |
| | LC09b1 Task 6: South Shore Restoration | \$50,000 | |
| | LC09b1 Task 9: Lower North Shore Forest Restoration | \$30,000 | \$577,950.24 |
| | LC09b1 Task 10: Echo Ridge Forest Recovery | \$16,000 | Projected NPV balance as of 12/31/2022 (based on average five-year split of plan spent). |
| | LC09b1 Task 11: White Bark Pine Habitat Protection | \$50,000 | |
| | LC09b1 Task 12: Invasive Plant Control..... | \$150,000 | |
| | LC09b1 Task 15: South Shore Restoration..... | \$50,000 | |
| | LC09b1 Task 22: Fire Response | \$0.00 | |
| Total for all Tasks | | \$393,500.00 | \$317,067.33 |
| RIPARIAN HABITAT | | | |
| USFS | LC09c2A Task 1: Planting..... | TBD | \$59,604.52 |
| | LC09c2A Task 2: Plant Cedar Trees at Mid-Elevation | | |
| | LC09c2A Task 3: LWD Highgrade & Move at Prince Creek | | |
| WDFW | LC09c2C Task 1, Habitat Restoration, Chelan Basin | TBD | \$47,683.08 |

SECTION 8: LITERATURE CITED

Chelan PUD 2013. Lake Chelan Wildlife Habitat Report 5-Year Summary (2008-2013). Public Utility District No. 1 of Chelan County. Wenatchee, WA.

Eldred, T. E. 2007. Lake Chelan Wildlife Forum meeting, July 10, 2007.

Fielder, P.C. and C.E. McKay, Jr. 1984. Lake Chelan wildlife studies with emphasis on mountain goats and mule deer. Technical report of the Public Utility District No. 1 of Chelan County and the WA. Dept. of Game, Wenatchee, WA.

Gaines, W.L., M. Haggard, J. F. Lehmkuhl, A.L. Lyons, and R.J. Harrod. 2007. Short-term response of land birds to ponderosa pine restoration. In Press, Journal of Restoration Ecology.

Lyons, A.L., W.L. Gaines, J.F. Lehmkuhl, and R.J. Harrod. 2007. Short term effects of fire and fire surrogate treatments on foraging tree selection by cavity-nesting birds in dry forests of central Washington. In Review, Forest Ecology and Management.

USDA Forest Service 2002. Okanogan and Wenatchee National Forests Fire Management Plan, Chapter III, Section E - Fire Regimes and Disturbance Processes, Resource Benefits (pages 16-52).

APPENDIX A: CONSULTATION WITH STAKEHOLDERS

Article 406 of the Project License requires that the Wildlife Habitat Plan (WHP):

“... be developed in consultation with the U.S. National Park Service (Park Service), U.S. Forest Service (Forest Service), U.S. Fish and Wildlife Service, Washington Department of Fish and Wildlife, Confederated Tribes of the Colville Reservation, Yakama Nation, the Wenatchee Sportsman’s Association, the Lake Chelan Sportsman’s Association, the NCW Mule Deer Foundation, the Foundation for North American Wild Sheep, the Audubon Society, and the National Wild Turkey Federation. The licensee shall include with the plan documentation of consultation, copies of recommendations on the completed plan after it has been prepared and provided to the above entities, and specific descriptions of how the entities’ comments are accommodated by the plan. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee’s reasons, based on project-specific information.”

The LCWF was notified via e-mail on October 25, 2016 that a new 5-year WHP and 5-year summary report were due by September 18, 2017. On June 5, 2017, WDFW provided a proposal for modifying the Lake Chelan wildlife surveys. A draft of the new 5-year WHP (2018-2022) and the 2013-2017 5-year Summary Report was sent to the LCWF on June 8, 2017. Comments were received from the USFS on July 12, 2017 (Paul Willard) and July 21 (Ana Cerro-Timpone). The LCWF convened on July 25 2017 to the draft 5-year summary report and a new 5-year WHMP (2018-2022).

LCWF Membership List

Washington State Department of Fish and Wildlife
United States Department of Agriculture Forest Service
National Park Service
United States Fish and Wildlife Service
Confederated Tribes of the Colville Reservation (CCT)
Confederated Tribes of the Umatilla Indian Reservation (CTUIR)
Yakama Nation
Wenatchee Sportsman’s Association
Lake Chelan Sportsman’s Association
NCW Mule Deer Foundation
Foundation for North American Wild Sheep
Audubon Society
National Wild Turkey Federation.

30 –day Comments

On February XX, 2018 final draft of 5-year Summary Report and 5-year Plan (2018-2020) sent out to LCWF for 30 day review. **The following comments were received:**