

**ROCKY REACH WILDLIFE HABITAT
MANAGEMENT PLAN
5-Year Summary (2010 – 2014)**

Draft for RRWF Review
(Sept 19, 2014)

**ROCKY REACH HYDROELECTRIC PROJECT
FERC Project No. 2145**

September, 2014



Prepared by
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EXECUTIVE SUMMARY

The Federal Energy Regulatory Commission (Commission) Order on Offer of Settlement and Issuing New License (License) for the Rocky Reach Hydroelectric Project No. 2145 (Project) was issued February 19, 2009 to the Public Utility District No. 1 of Chelan County (Chelan PUD). Article 403 of the new Project License required Chelan PUD to file for Commission approval a five-year Wildlife Habitat Management Plan (WHMP). The plan is to be updated every five years thereafter.

On January 22, 2010, Chelan PUD submitted the first Rocky Reach Wildlife Habitat Management Plan (RRWHMP) developed in consultation with the Rocky Reach Wildlife Forum (RRWF). On September 22, 2010, the FERC issued the Order Approving Wildlife Habitat Management Plan Pursuant to Article 403. Shortly after approval, Chelan PUD entered Payment Agreements with WDFW (December 29, 2010), the USFS (June 27, 2011), and the BLM (January 11, 2012) consistent with the Rocky Reach Comprehensive Settlement Agreement (Chelan PUD, 2006). At the request of the RRWF, Chelan PUD filed a revised RRWHMP on March 19, 2012, that included projects to address recent wildfires within the Rocky Reach Wildlife Area (RRWA). The Revised RRWHMP was approved by the FERC on July 31, 2012.

The primary goals of the RRWHMP from 2010 to 2014 were to protect and enhance wildlife habitats within and immediately adjacent to RRWA. Habitat improvement projects that implemented within the first five years included the following: 1) planning for and implementing wildlife habitat improvement projects with the WDFW, USFS, and BLM, 2) riparian buffer on Sun Cove Property, 3) implementation of an integrated noxious weed program and, 4) conducting wildlife surveys as required under Article 403 of the new Rocky Reach operation license.

SECTION 1: INTRODUCTION

The Federal Energy Regulatory Commission (Commission) Order on Offer of Settlement and Issuing New License (License) for the Rocky Reach Hydroelectric Project No. 2145 (Project) was issued February 19, 2009 to the Public Utility District No. 1 of Chelan County (Chelan PUD). Article 403 of the new Project License requires Chelan PUD to file for Commission approval a five-year Wildlife Habitat Management Plan (WHMP). The plan is to be updated every at a minimum of 5 years thereafter.

The first WHMP described implementation measures for Chelan PUD over the first five years of the plan (2010 – 2014) to address requirements under Article 403 to protect and enhance wildlife habitats within the Rocky Reach Project boundary and in a corridor within the Rocky Reach Wildlife Area (RRWA). The RRWA is defined as state and public lands in Chelan and Douglas counties within an approximate 6-mile corridor of the Rocky Reach Reservoir (Figure 1).

Federal public lands in the RRWA include those of the US Forest Service (USFS), Bureau of Land Management (BLM), and US Fish and Wildlife Service (USFWS). State lands owned adjacent to the project include those owned and maintained by the Washington Department of Fish and Wildlife (WDFW) and Washington Department of Natural Resources (WDNR). WDFW owns and operates the Chelan Wildlife Area (approximately 30,221 acres, WDFW 2006) which is comprised of the Swakane (11,273 acres), Entiat (9,851 acres), and Chelan Butte (9,097 acres) Wildlife Units.

As required under Article 403, this 5-year report summarizes the habitat improvement measures completed under the first approved WHMP, and its revisions, implemented during the first 5 years.

The primary goals of the Rocky Reach WHMP from 2010 to 2014 were to protect and enhance wildlife habitats adjacent to the project reservoir. Habitat improvement projects that were implemented within the first five years included:

1. Planning for and implementing wildlife habitat improvement projects within the Rocky Reach Wildlife Area which surrounds Rocky Reach Reservoir, including:
 - Projects¹ to restore and improve habitat on the Chelan Wildlife Area managed by WDFW; including the Chelan Butte, Swakane, and Entiat Wildlife Units.
 - Projects¹ for habitat restoration on US Bureau of Land Management (BLM) lands;
 - Projects¹ for habitat restoration on USDA Forest Service lands;
2. Providing a riparian buffer zone on Sun Cove property owned by Chelan PUD;
3. Implementing an integrated noxious weed control program;
4. Conducting annual wildlife surveys; and
5. Providing annual wildlife monitoring reports to the RRWF.

¹ Projects proposed do not require maintenance or monitoring to ensure success, rather, all projects are one-time treatments, or a progression of one time treatments. Therefore, no additional lands need be incorporated into the Rocky Reach Project boundary.

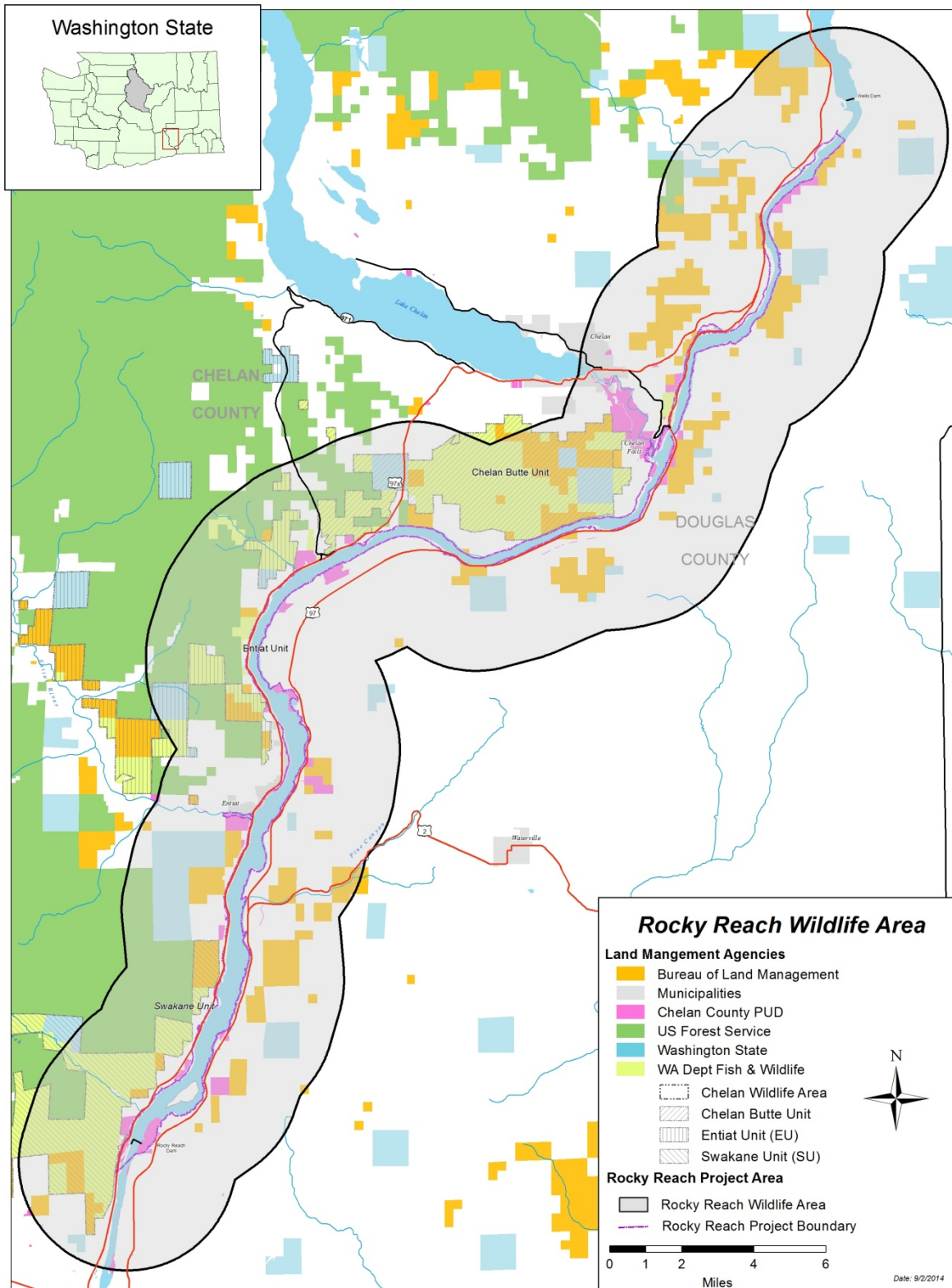


Figure 1. Rocky Reach Wildlife Area (RRWA) Rocky Reach Reservoir.

SECTION 2: WILDLIFE HABITAT IMPROVEMENTS, 2010-20104

2.1 Habitat Improvements on WDFW Lands

WDFW manages approximately 30,000 acres of land within the Chelan Wildlife Area that includes the Chelan Butte, Swakane, and Entiat Wildlife Units located within the RRWA (Figure 1). With approval of the RRWHMP and signed Payment Agreements, WDFW began field restoration in the fall of 2010 with chemical and mechanical fallowing operations. From 2010 to 2014, WDFW continued efforts to restore abandoned agricultural fields on both the Chelan Butte and Swakane Wildlife Units as well as implementing other wildlife habitat improvements approved in the first RRWHMP. Implementation progress by WDFW with reimbursement from Chelan County PUD is summarized below by Wildlife Units.

Funding for approved projects initiated or completed on all three WDFW Wildlife Units were either partially or fully reimbursed by Chelan PUD through monthly certification of work completed in accordance with Section 18 of the Settlement Agreement (Appendix 1).

2.1.1 Chelan Butte Wildlife Unit

2.1.1.1 Field Restoration

From 2010 through 2014, WDFW initiated restoration activities on approximately 1,100 acres including fields in all groups (1-5) within the Chelan Butte Wildlife Unit (Figure 2). During initial evaluation, it was determined that some fields needed to be managed differently, some areas were in relatively good shape and some areas had been left out of the initial delineation. As a result, the number of fields has changed from the original map developed, but the total number of acres has not been affected by these changes.

To date, 566 acres of fields (40%) have been managed by WDFW to the point of being seeded with native grasses. This includes all the fields in groups 1 and 2 and 3 fields in group 3 (Figure 2). These fields are nearing the final stages of restoration and should only need one more year of limited weed management before shrubs are seeded and/or planted, completing the restoration effort (Appendix 1). Rather than collecting native grass, forb, and shrub seeds to be used, local native seeds were purchased by WDFW from local sources for the restoration efforts (i.e., the native shrub and tree propagation and collection efforts were abandoned).

2.1.1.2 Other Wildlife Improvements

In addition to field restoration, several other wildlife habitat improvement measures were approved in the first RRWHMP. For the Chelan Butte Wildlife area, 20 nest boxes were built and installed throughout the wildlife area, one guzzler and one bird feeder were installed, and one spring (Huni Spring) was developed as a water source for wildlife). The list of projects proposed on the Chelan Butte Wildlife Unit and their current status are shown in Table 1.

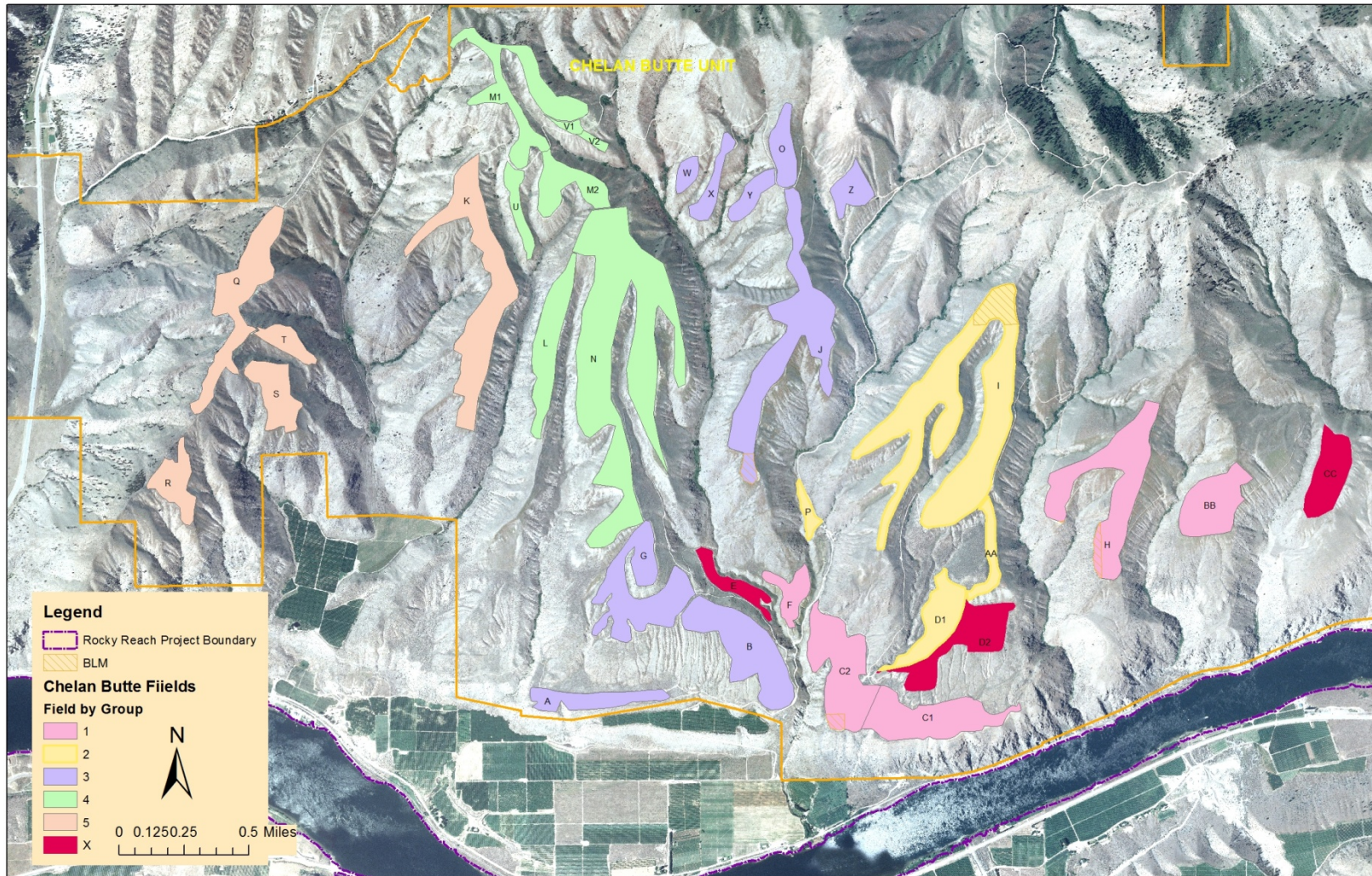


Figure 2. Chelan Butte Unit field restoration project showing individual fields by group, 2012- 2014.

Table 1. List of projects and their status by Wildlife Unit for WDFW improvements during the first Rocky Reach Wildlife Habitat Management Plan (2010-2014). Projects initiated or competed were partially or fully reimbursed by Chelan PUD.

Project	Wildlife Unit(s)	Activity	Status
Native seed collection	All	Collect seeds from native shrubs and trees	Cancelled – WDFW will purchase native plant/seeds for restoration work
Native seed collection	All	Collect seeds from native shrubs and trees	Cancelled – WDFW will purchase native plant/seeds for restoration work
Install 6 feeders	Chelan Butte	Install 6 feeders	Initiated – 1 feeder installed in Homestead Canyon
Install 3 guzzlers	Chelan Butte	Install 3 guzzler	Initiated – 1 guzzler installed – Downie Ridge
Kestrel and Bluebird nest boxes	Chelan Butte	Build and install 20 nest boxes	Complete
Spring development	Chelan Butte	Develop a spring	Complete – Huni Spring
Install watering basin	Entiat - OK gulch	Develop spring	Complete – Horse Draw Spring
Develop watering basins	Entiat - Roundy	Develop spring	Complete – Maple Draw Springs
Construct a pond	Swakane	Create a pond	Complete
Develop pond - Burch Mountain	Swakane	Create pond at spring	Complete – location moved to Swakane Canyon
Forest thinning - Burch Mtn.	Swakane	Thin forested areas	Pending
Install 1 guzzlers	Swakane	Install 1 guzzler	Complete
Install 5 feeders	Swakane	Install 5 feeders	Initiated – 4 feeders installed
Irrigation System	Swakane	Purchase materials	Complete – irrigation system installed for shrub plots.
Kestrel and Bluebird nest boxes	Swakane	Build and install 20 nest boxes	Complete
Shrub/tree plantings	Swakane	Establish 3 acres of riparian habitat	Complete – 2 acres of shrub plots completed with irrigation
Wildlife Watering Basins (6)	Swakane	Install 6 water basins	Complete (see Map)
Field Restoration	Swakane/Chelan Butte	Field prep –group 1	Complete
Field Restoration	Swakane/Chelan Butte	Field prep – group 2	Complete
Field Restoration	Swakane/Chelan Butte	Field prep - group 3	Complete
Field Restoration	Swakane/Chelan Butte	Field prep - group 4	Initiated – chemical and mechanical fallow
Field Restoration	Swakane/Chelan Butte	Field prep group 5	Initiated
Field Restoration	Swakane/Chelan Butte	Seeding -group 1	Complete – seeded with native grasses
Field Restoration	Swakane/Chelan Butte	Seeding - group2	Complete – seeded with native grass seed.
Field Restoration	Swakane/Chelan Butte	Seeding – group3	Initiated –3 fields planted with native grass
Field Restoration	Swakane/Chelan Butte	Tree and shrub planting – Group 1	Pending

Project	Wildlife Unit(s)	Activity	Status
Field Restoration	Swakane/Chelan Butte	Tree and shrub planting – group 2	Pending
Field Restoration	Swakane/Chelan Butte	Weed management - group 1	Complete?
Field Restoration	Swakane/Chelan Butte	Weed management - group 2	Complete?
Field Restoration	Swakane/Chelan Butte	Weed management - group 3	Initiated
Field Restoration	Swakane/Chelan Butte	Weed management - group 4	Initiated
Field Restoration	Swakane/Chelan Butte	Weed management/shrub planting group 1	Pending
Shrub and tree propagation	Swakane/Chelan Butte	Propagate native shrubs and trees	Cancelled – WDFW will purchase native plants/seeds for restoration work
Shrub and tree propagation	Swakane/Chelan Butte	Propagate native shrubs and trees	Cancelled – WDFW will purchase native plants/seeds for restoration work
Shrub and tree propagation	Swakane/Chelan Butte	Propagate native shrubs and trees	Cancelled – WDFW will purchase native plants/seeds for restoration work
Shrub and tree propagation	Swakane/Chelan Butte	Propagate native shrubs and trees	Cancelled – WDFW will purchase native plants/seeds for restoration work
Shrub and tree propagation	Swakane/Chelan Butte	Propagate native shrubs and trees	Cancelled – WDFW will purchase native plant/seeds for restoration work

2.1.2 Swakane Wildlife Unit

2.1.2.1 Field Restoration

Restoration of approximately 103 acres of abandoned fields (Figure 3, Appendix 2) in the Swakane Wildlife Unit are nearly complete. These fields have received both mechanical and chemical treatments prior to being seeded with native grasses in the fall of 2012 and a native forbs and shrubs in the fall of 2013. Rather than collecting native grass, forb, and shrub seeds to be used, local native seeds were purchased from local sources for the restoration efforts (i.e., the native shrub and tree propagation and collection efforts were abandoned).

The Swakane Wildlife Unit was impacted by two wildfires from 2007- 2014. The Easy street fire of 2007 burned only a small portion of the southern end of the Swakane Wildlife Area and did not impact RRWHMP measures. The Swakane fire of 2010 was a much larger and hotter fire that burned native habitat over a large portion of the Swakane Wildlife Area. Several feeders and guzzlers were destroyed in this fire. Fortunately, the Swakane fire did not impact field restoration efforts or riparian plots being established. Perhaps the greatest impact from the Swakane fire was the invasion of Dalmation toadflax post-fire, which was addressed through the newly developed Integrated Terrestrial Invasive Plant Control Plan (Section 2.4).

2.1.2.2 Other Wildlife Improvements

In addition to field restoration work, several other wildlife habitat improvement measures were approved in the first RRWHMP for the Swakane Wildlife Unit. Completed projects include construction and installation of 20 nest boxes, creation of two ponds (Appendix 2) develop 6 water basins which were associated with spring improvements, 4 wildlife feeders installed and one guzzler. In addition, two acres of shrub plots (riparian habitat) were installed and are supported with drip irrigation system (Appendix 2).

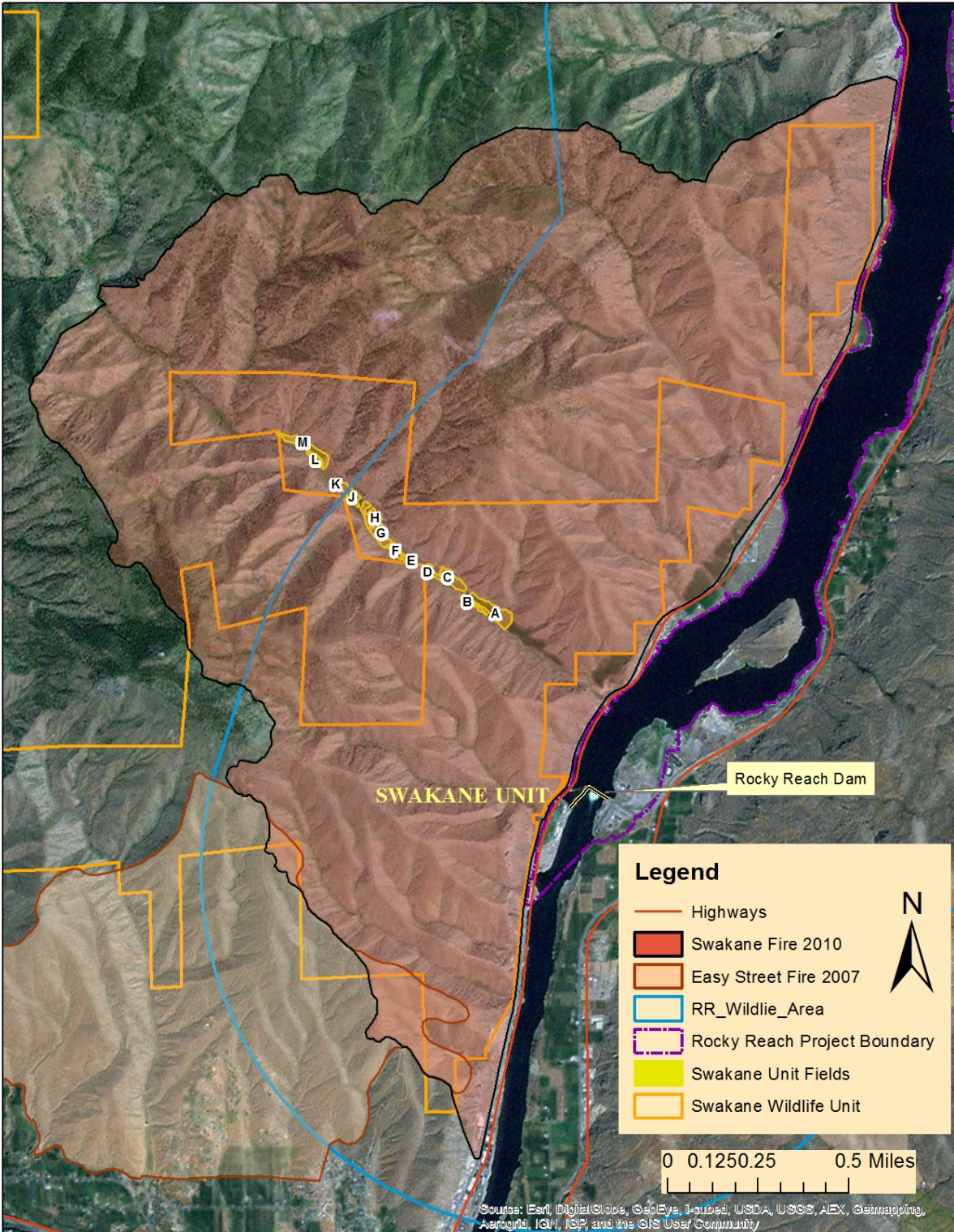


Figure 3. Swakane Wildlife Unit WDFW and the Rocky Reach Wildlife Area including Swakane fields and fire history in the area, 2010-2014.

2.1.3 Entiat Wildlife Unit

The only measures approved in the first RRWHMP were spring developments. Both planned spring improvements have been completed, including the Horse Draw and Maple Springs.

2.2 Habitat Restoration on BLM Lands

The Bureau of Land Management (BLM) is responsible for approximately 12,000 acres within the RRWA. These lands are relatively low elevation ranging from 750 – 3200 feet. Shrub-steppe habitat with an over-story of sagebrush or bitterbrush and an under-story of various grasses and forbs are most common on these lands. Some mesic sites, which are often found at higher elevation or on north exposures, support conifers. Riparian areas support a mixture of deciduous shrubs and trees as well as conifers. Much of the area has burned during the past 15 years. In most cases, these recently burned areas support fewer trees and shrubs and more grasses and forbs. About half of the BLM lands in this area are considered part of the Swakane, Entiat or Chelan Butte Wildlife Units which comprise the CWA (Chelan Wildlife Area).

In order to complete desired habitat improvements, the BLM was required to follow the National Environmental Policy Act (NEPA) and consult with tribes for ground disturbing activities. The BLM has conducted NEPA and tribal consultation for the Swakane area habitat improvements that were requested as a result of the Swakane fire and the subsequent erosion on BLM lands. In addition, the BLM has been preparing overall Environmental Assessments for the proposed shrub planting and weed control projects. Progress on these NEPA processes will facilitate implementation for proposed habitat improvement projects in the second (2015-2019) RRWHMP.

Using WDFW as the contractor, progress was made on the restoration of BLM lands which are part of the Chelan Butte Wildlife Unit field restoration effort. Under WDFW management, the BLM portions of fields have been chemically and mechanically fallowed and most of the BLM lands have been reseeded with native grasses.

Funding for approved projects initiated or completed on BLM lands within the RRWA were either partially or fully reimbursed by Chelan PUD through quarterly certification of work completed in accordance with Section 18 of the Settlement Agreement (Appendix 1).

2.3 Habitat Restoration on USDA Forest Service Lands

From 2010 – June of 2012, the USFS conducted weed control and grass seeding to improve winter range habitat, particularly in areas that burned in the Swakane Fire of 2010 (Figure 3). In 2012, Chelan PUD submitted a revised RRWHMP to include restoration of lands impacted by the 2010 wildfires and subsequent erosion in Tenas George Canyon. With approval of the revised RRWHMP from the FERC on July 31 2012, seeding in the Tenas George area was completed. Some planning efforts for prescribed burn treatments have been conducted; however, no prescribed burns have been conducted by the USFS under the RRWHMP.

Funding for approved projects initiated or completed on USFS lands within and adjacent to the RRWA were either partially or fully reimbursed by Chelan PUD through quarterly certification of work completed in accordance with Section 18 of the Settlement Agreement (Appendix 1).

2.4 Noxious Weed Control.

Consistent with the Rocky Reach Settlement Agreement (Chelan PUD 2006) and Article 403 of the new operating license, Chelan PUD implemented an integrated noxious weed control program in consultation with the RRWF. In 2012, the RRWF approved the Rocky Reach Wildlife Area Integrated Terrestrial Invasive Plant Control Plan (ITIPCP) (Chelan PUD 2012). The purpose of this plan is to address weed control on a broad scale within the Rocky Reach Wildlife Area (Figure 1) that considers the potential benefits and risks of weed control.

The ITIPCP is a guidance document that considers the responsible implementation of weed control across a wide variety of public lands and habitats. Under this plan, proposals are made, reviewed, and, if appropriate, approved by the RRWF for implementation. For each proposal, consideration of agency limitations with regard to herbicide use and the presence of listed (State or Federal) plant species is considered during the review process.

In 2012, the RRWF approved the first action completed under the ITIPCP, which included limited weed spraying on public lands in Swakane Canyon and the release of 21,010 biological control insects through the Washington State University Douglas County Extension to control Dalmatian toadflax and diffuse knapweed, (both Class B noxious weeds in Chelan County). These releases were done between Burch Mountain, adjacent to Rocky Reach Dam, and the Entiat River on the Chelan County side of Rocky Reach Reservoir.

In 2013, a similar project was proposed and approved releasing 12,100 biological control agents for diffuse knapweed within the RRWA between Entiat and Knaps tunnel. These areas were affected by the 2012 Byrd Canyon Fire in Chelan County.

In 2014, the RRWF once again proposed to release additional biological control agents for diffuse knapweed (9,355 insects) and dalmation toadflax (8,450 insects) in the same areas as 2012 to bolster biological control populations from Entiat to Knapp Coulee. The 2014 Mills Canyon Fire along the Entiat River likely had direct impacts to biological control populations released in this area over the past three years. Biological controls may be released in the areas yet again, as noxious weeds will likely be some of the first species to colonize these areas post fire. In total, the Washington State University Douglas County Extension released 56,095 biological control agents within or adjacent to the RRWA between 2012 and 2014 (Figure 4).

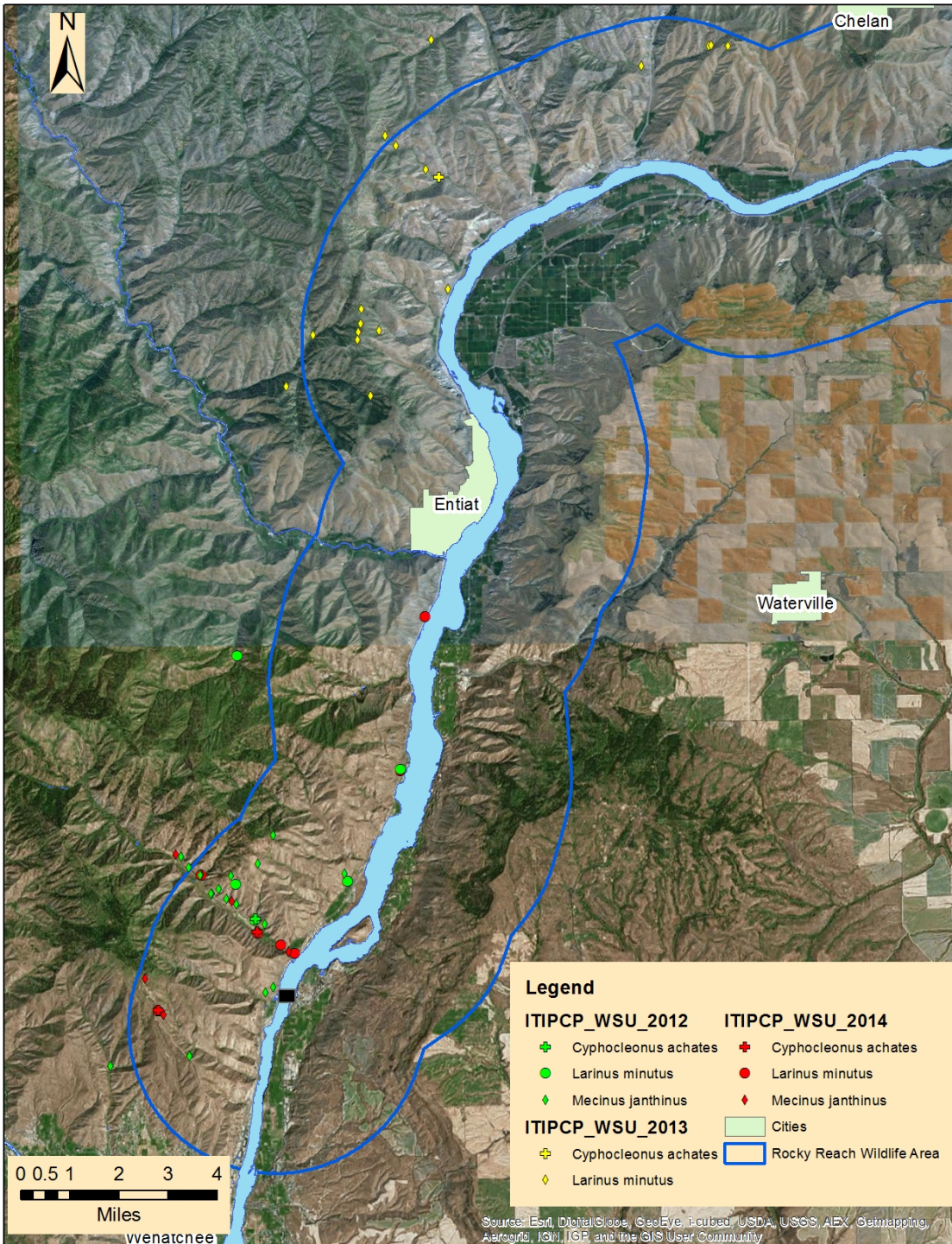


Figure 4. Release sites for biological control agents for diffuse knapweed (*Cyphocleonus achates* and *Larinus minutus*) and Dalmation toadflax (*Mecinus janthinus*) within or adjacent to the Rocky Reach Wildlife Area under the Rocky Reach Integrated Terrestrial Plant Control Plan (ITIPCP), 2012- 2014.

SECTION 3: SUN COVE PROPERTY

3.1 Sun Cove Property Riparian Buffer

As directed by the Commission in Article 403 and consistent with the Settlement Agreement, Chelan PUD will provide a 50-foot wide by 3,500-foot long riparian buffer zone on the District's Sun Cove property to preserve its relatively natural condition except for two 100-foot-long access corridors to provide community access.

Since Chelan PUD owns the Sun Cove property and it is within the Rocky Reach Project Boundary, the area will be maintained as natural habitat and conservation rights will be retained to meet the license requirement should the Chelan PUD ever divest itself of this property. Access corridors will be identified when necessary.

SECTION 4: WILDLIFE SURVEYS

Article 403 of the new license directs the licensee to conduct annual winter bald eagle surveys and Canada goose nesting surveys for the term of the license in coordination with the RRWF. For the first RRWHMP, Chelan PUD continued winter bald eagle monitoring monthly (November – March), annual bald eagle nest monitoring within the RRWA and Canada Goose monitoring along Rocky Reach Reservoir. Results of these monitoring efforts are listed below.

4.1.1 Winter Bald Eagle Monitoring

From 2010 – 2014, Chelan PUD conducted 19 of the scheduled 20 winter bald eagle monitoring surveys. The December 2014 monthly survey was not conducted due to poor weather. During the 2010 – 2014 period, the highest number of wintering bald eagles recorded was 62, in January of 2013. For all years, the highest counts occurred in January (n = 4) or February (n = 1). The highest average count from 2010 -2014 was in January with an average of 39.3 wintering bald eagles followed closely by February with 37.5 and much lower 5-year averages in March (27.5), November (14.3) and December (12.0).

For the 2015-2019 RRWHMP, we recommend that the frequency of monthly winter bald eagle surveys be reduced from five each winter (November – March) to one in January, which will coincided with the National Mid-winter Bald Eagle Survey. For almost three decades (1988-2014), Chelan PUD has conducted winter bald eagle monitoring from March – November. In all winters the maximum winter count is recorded in either January or February with 60% of the high counts occurring in January. A single mid-winter count will still provide an index of relative numbers of wintering eagles over time.

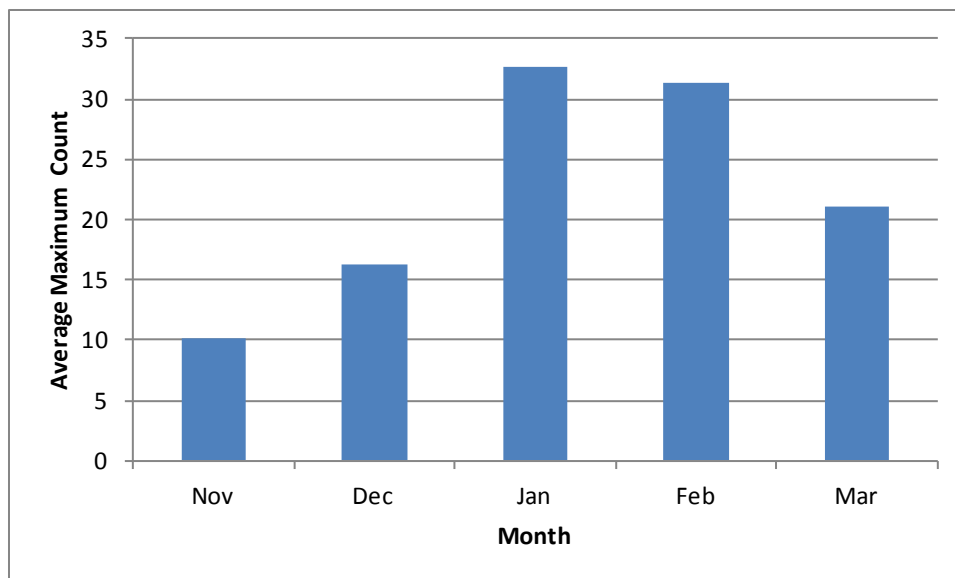


Figure 5. Average maximum count of wintering bald eagles on Rocky Reach Reservoir, 1983-2014.

4.1.2 Canada Goose Nest Monitoring

Per the RRWHMP, Chelan PUD conducted Canada goose nest monitoring each spring along Rocky Reach Reservoir from 2010 – 2014. The highest number of nests initiated was in 2012, with 69 nests initiated (with 29% of the nests in man-made tubs) and the remaining 49 nests occurring on island sites (Table 2). Overall, nest success was high (75%) during the 5-year period with an average number of 233 goslings produced each year (Table 2).

Table 2. Summary of Canada goose nest monitoring along Rocky Reach Reservoir during the first Rocky Reach Wildlife Habitat Plan (2010-2014), Chelan PUD 2014.

Year	# of initiated nests	Avg. clutch size	% successful nests	# successful nests	# Goslings fledged
2010	49	6.0	67%	33	180
2011	59	5.5	75%	44	214
2012	69	5.7	74%	51	280
2013	60	5.6	82%	49	257
2014	56	5.4	77%	43	234
5-Year Avg.	59	6	75%	44	233

For the 2010 – 2014 period, occupancy of man-made tubs by Canada geese was high with an average of 87.4 % occupancy of nest tubs available (avg. = 19.4 tubs/year) with an average nest success of 77.8% (Table 3). The success rate of natural nests was similar, with a success rate of 73.8% compared to 77.8% nest success for man-made nests (Table 3).

Table 3. 5-Year summary of Canada goose nest monitoring on Rocky Reach Reservoir, including man-made nest occupancy and success and natural nest success, 2010-2014.

YEAR	Man-made nest tubs					Natural Nests		
	# available	# occupied	% occupied	# successful	% success	# nests	# successful	% success
2010	20	17	85.0	11	64.7	32	22	68.8
2011	22	14	63.6	11	78.6	45	33	73.3
2012	20	20	100.0	15	75.0	49	36	73.5
2013	18	17	94.4	12	70.6	43	37	86.0
2014	17	16	94.1	16	100.0	40	27	67.5
5 -Year Avg.	19.4	16.8	87.4	13.0	77.8	41.8	31	73.8

Per the RRWHMP, the need for maintained man-made goose nest will be evaluated in the 5-year plan cycles. Overall, man-made tubs structures help increase gosling production by about 33% over natural nests.

SECTION 5: REPORTING

As required under the first RRWHMP, reports of annual monitoring for wintering bald eagles, bald eagle nesting and Canada goose nest monitoring were provided to the Rocky Reach Wildlife Forum on the dates shown in Table 4.

Table 4. Summary of monitoring report submitted to Rocky Reach Wildlife Forum (RRWF) by year, Rocky Reach 2010-2014.

Date Report Provided to RRWF			
YEAR	Canada Goose Nest Monitoring	Bald Eagle Nesting	Wintering Bald Eagle
2010	October 4*	December 10*	October 4*
2011	July 20	September 20	April 6
2012	July 16	September 24	April 13
2013	July 26	September 30	April 8
2014	July 31	September 12	April 14

*The RRWHMP was not approved until September 22, 2010. Required monitoring reports for winter and spring surveys were provided after plan approval.

SECTION 6: LITERATURE CITED

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- Myers, W. L. 2003. Observations of mule deer habitat use, movements, and survival in Chelan County, Washington. Prepared by WDFW for Chelan PUD. W. L. Myers, ed. June 6, 2003. 77 pp.

Appendix 2. Financial table showing reimbursements for work completed – 2010 – 2014.

Appendix 1. Photographs of projects.