

# MID-COLUMBIA COHO RESTORATION PROJECT

## ACCLIMATION POND REVEGETATION PLAN EIGHTMILE SITE – OKANOGAN COUNTY, WA

PREPARED FOR:

CORY KAMPHAUS  
YAKAMA NATION – MID-COLUMBIA COHO RESTORATION PROGRAM  
7051 HIGHWAY 97  
PESHASTIN, WA 98847

PREPARED BY:

**GRETTE ASSOCIATES<sup>LLC</sup>**  
151 S. WORTHEN STREET, SUITE 101  
WENATCHEE, WA 98801  
(509) 663-6300

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## **1 INTRODUCTION**

The Yakama Nation's Mid-Columbia Coho Reintroduction Program (MCCRP) is working to establish a locally adapted and self-sustaining population of coho salmon (*Oncorhynchus kitsutch*) in the Mid-Columbia basin. As part of the Natural Production Implementation Phase (NPIP) of the program, plans call for coho smolt acclimation and release at approximately 11 locations in the Methow watershed. This document addresses project activities that are proposed at Eightmile Ranch, a United States Forest Service owned property. The Eightmile ranch site is located along the Chewuch River in the Okanogan National Forest in Okanogan County in Section 26, Township 36, Range 21 East, W.M.; latitude 48.592, longitude -120.165 (Sheet 1).

## **2 PROJECT AREA CHARACTERISTICS**

The project area is located within an upland terrace area directly adjacent to the Chewuch River. Vegetation within the project area is comprised of two communities, a large herbaceous community and smaller area of forested community (Sheet 2). These communities are separated by an existing dirt road and fence, with the grassy herbaceous community to the northwest and the forested community to the southeast.

The herbaceous community includes multiple grass species such as Idaho fescue (*Festuca idahoensis*), Blue wildrye (*Elymus glaucus*), and Secar Bluebunch wheatgrass (*Pseudoroegneria spicata*). Black cottonwood (*Populus balsamifera ssp. trichocarpa*) and Ponderosa pine (*Pinus ponderosa*) are the dominant forest community species with additional tree/shrub species such as mountain alder (*Alnus incana*), Douglas hawthorn (*Crataegus douglasii*), Pacific mustow (*Salix lucida var. lasiandra*), Bebb's mustow (*S. bebbiana*), and red osier dogwood (*Cornus sericea*) interspersed. The forested community also includes a well-established understory of subshrubs and forbs, which is dominated by snowberry (*Symphoricarpos albus*), showy aster (*Eurybia conspicua*), and various grasses and sedges.

## **3 PROJECT DESCRIPTION**

The Yakama Nation proposes to install a fish acclimation pond at the Eightmile Ranch site north of Winthrop, WA. The overall project would include excavation of an acclimation pond, installation of a water intake from the Chewuch River, installation of a trenched supply line from the water intake to the acclimation pond, a discharge pipe and rock-lined ditch overflow outlet from the pond back to the Chewuch River, and an access road.

To mitigate for impacts related to the project, the completion of this revegetation plan is required which includes installing native riparian trees and shrubs around the proposed acclimation pond. Additionally, approximately 1,100 linear ft of the surface water supply line must occur in an area recently planted with Ponderosa pine saplings, which must be

unavoidably impacted. These must be replanted in the same area at a 1:1 ratio. A construction staging area must also be revegetated. Revegetation actions are described in detail in Section 4 below.

## 4 POST-CONSTRUCTION PLANTING DESIGN

Approximately 65,300 square feet (1.5 acres) of the project site must be required to be revegetated following construction activities. This chapter describes how specific elements of the project area must be replanted post construction as well as associated project goals, monitoring strategies and reporting requirements.

### 4.1 Planting Zones

#### 4.1.1 Acclimation Pond/Forested Community

The Acclimation Pond/Forested Community must have a total revegetation area of 12,400 square feet (0.29 acre) and would be comprised of three distinct sub-zones. The sub-zones are summarized as follows:

- An open water smolt acclimation area (approximately 10,100 square feet/0.23 ac). No planting must occur within this sub-zone;
- An access road to the pond (Approximately 2,200 square feet/0.05 ac)
- A forested perimeter (approximately 10,200 square feet/0.24 ac) located around the pond and over the dispersal pipe.

The acclimation pond installation area must be seeded with a native herbaceous seed mix, then planted with native shrubs. Proposed plantings for the forested perimeter are described in Tables 1 and 2 provided as follows and depicted on Sheets 4 and 5:

**Table 1: Herbaceous species**

Plant Species	Quantity
“Durar” Hard Fescue ( <i>Festuca trachyphylla</i> )	50%
“Covar” Sheep Fescue ( <i>Festuca ovina</i> )	30%
Sandberg Bluegrass ( <i>Poa secunda</i> )	10%
Idaho Fescue ( <i>Festuca idahoensis</i> )	10%
Yarrow ( <i>Achillea millefolium</i> )	0.15 lbs/acre

**Table 2. Forested species**

Plant Species	Size	Spacing	Quantity
Mountain Alder ( <i>Alnus incana</i> )	1 gallon	5' o.c.	350
Water Birch ( <i>Betula occidentalis</i> )	1 gallon	5' o.c.	
Red Osier dogwood ( <i>Cornus stolonifera</i> )	1 gallon	5' o.c.	
MacKenzie’s Mustow ( <i>Salix prolixa</i> )	Cutting/stakes	3' o.c.	
Pacific Mustow ( <i>Salix lucida var. lasiandra</i> )	Cutting /stakes	3' o.c.	

#### 4.1.2 Surface Water Intake Supply Line

As mentioned above, approximately 1,100 linear ft of the surface water supply line will be installed in an area previously planted with Ponderosa pine saplings; which must be unavoidably impacted. These must be replanted in the same area at a 1:1 ratio, using similar existing mulch material. Approximately 175 individuals must be impacted over approximately 14,000 square feet; thus, 175 must be planted. Deer browse protection will need to be included for all plantings.

**Table 3: Surface water supply line planting**

Plant Species	Size	Spacing	Quantity
Ponderosa pine ( <i>Pinus ponderosa</i> )	1 gallon	5' o.c.	175

#### 4.1.3 Herbaceous Community Reestablishment

After project construction, the remainder of the site not planted pursuant to the forested planting schedule, as well as the area in which Ponderosa pine must be replanted and the construction staging area, must be revegetated as herbaceous community (52,900 square feet/1.2 ac). A minimum of four inches of surface soils on the horizontal plane must be decompacted to provide a proper seed bed. Soil amendments, if necessary, may also be added at this time as needed to support plant growth. An herbaceous seed mixture, as described in Table 4, must be dispersed over the area.

**Table 4: Herbaceous Community**

Plant Species	Quantity
Secar Bluebunch wheatgrass ( <i>Pseudoroegneria spicata</i> )	30%
Mountain brome ( <i>Bromus carinatus</i> )	30%
Blue Wildrye ( <i>Elymus glaucus</i> )	30%
Idaho fescue ( <i>Festuca idahoensis</i> )	10%
Yarrow ( <i>Achillea millefolium</i> )	0.15 lbs/acre

This seed mixture must be applied at a rate of 20 pounds per acre. If necessary, seeded areas may be lightly raked to maximize seed-soil contact.

## 4.2 Performance standards

The following performance standards are required for this project:

1. Reestablish 10,000 square feet (0.22 acre) of forested community vegetation within the project area.
2. Reestablish 52,900 square feet (1.2 acres) of herbaceous community vegetation within the project area.
3. Reestablish 175 Ponderosa pine saplings along the surface water intake supply line.
4. Provide temporary irrigation to all plant areas for the three-year monitoring period.
5. A minimum of 80 percent survival of installed plant species must be achieved in years 1 through 3.

6. Volunteer native species must be included as acceptable plants within the planted areas and included for plant success.
7. Aerial coverage by invasive species shall not exceed 10 percent at the end of Monitoring Years 1 through 3. In the event that field review results in the determination that 10 percent invasive areal coverage is exceeded, invasive species must be removed mechanically in order to meet this standard.

### 4.3 Post-Construction Inspection

The post-construction inspection must consist of evaluating the plantings immediately after installation to confirm the planting plan was followed and the plants were installed appropriately. Planting of the project areas shall be completed after construction occurs and by the end of October, before the winter dormancy period begins.

Photo points must be established during the post-construction inspection and must be marked in the field. These points must be utilized for monitoring and documenting the development of restored vegetation over the course of the long-term monitoring period.

Following completion of the post-construction monitoring, an as-built drawing must be provided detailing any changes to the approved planting plan.

### 4.4 Long-term monitoring

Long-term monitoring must be conducted over a three year period with monitoring visits to be conducted three total times after growing seasons 1, 2 and 3. The purpose of the long-term monitoring program must be to evaluate the establishment and maintenance of the plant community within the project areas to determine if vegetation has been re-established in the impact area and if the performance standards have been met. Photos must be taken at the pre-established photo-points established during the Post-Construction Inspection to document the status of the plantings.

Monitoring must be conducted using the techniques and procedures described below to quantify the survival, relative health and growth of plant material. Monitoring must be conducted in late August or early September, with the annual monitoring report describing and quantifying the status of the project actions submitted following each monitoring visit.

Monitoring shall be conducted pursuant to the schedule provided within Table 5 below:

**Table 5: Monitoring Schedule**

<b>Monitoring Event</b>	<b>Timing</b>
Post Construction Inspection	Late fall after planting – report due by Dec. 15 <sup>th</sup>
Long Term Monitoring	Late summer, first year – report due by Oct. 15 <sup>th</sup>
	Late summer, second year – report due by Oct. 15 <sup>th</sup>
	Late summer, third year – report due by Oct. 15 <sup>th</sup>

#### *4.4.1 Vegetation*

As the disturbed areas are relatively small, monitoring of the forested community and forested perimeter of the acclimation pond must occur by count to determine percent survival. Areas of herbaceous and plantings must be reviewed visually for estimated surface coverage. In addition, inspection of the planted material within the project areas to determine health and vigor of the installation must occur during each monitoring visit. Analysis results for all planted vegetation communities must be compared against Performance Standards provided in Chapter 4.2. Monitoring reports must be provided pursuant to reporting requirements as identified in Chapter 4.5.

#### *4.4.2 Photographic Documentation*

Permanent photo-points must be established at the project site in order to obtain representative photographs of the project. Four photo-points must be established for each planting area during the post-construction inspection to document vegetation success. Photographs must be taken from the same locations yearly to document the project's appearance and progress. These photographs must be included within the monitoring reports.

### **4.5 Reporting**

Monitoring reports must be prepared following each site visit conducted (Years 1 through 3); these reports must summarize the results of each monitoring visit. The monitoring reports must document the changes that have occurred within the project planting areas and make recommendations for improvements and/or corrective measures for any problems noted during the monitoring visits.

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## APPENDIX A: PROJECT SHEETS

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Sheet 1: Project Area Vicinity Map

Sheet 2: Existing Vegetation Communities and Delineated Wetland Boundaries

Sheet 3: Construction/Project Boundaries

Sheet 4: Acclimation Pond and Forested Area Planting Plan

Sheet 5: Herbaceous Community and Ponderosa Pine Replacement Planting Plan

Sheet 6: Forested and Herbaceous Communities: Planting Schedule and Specifications