

**US 97/North of Goldendale – Wildlife Habitat  
Connectivity/Fish Passage at Butler Creek Mitigation Site**

**USACE NWP (23, 27) NWS-2011-944**

**Southwest Region**

**2015 MONITORING REPORT**

**Wetlands Program**

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# US 97/North of Goldendale – Wildlife Habitat Connectivity/Fish Passage at Butler Creek Mitigation Site USACE NWP (23, 27) NWS-2011-994



General Site Information		
<b>USACE NWP #</b>	NWS-2011-994	
<b>WDFW HPA #</b>	1255619-2	
<b>Mitigation Location</b>	Klickitat Co, past MP 21, north of Goldendale, WA on US 97	
<b>LLID Number</b>	1207053459150	
<b>Construction Date</b>	2012	
<b>Monitoring Period</b>	2015-2021	
<b>Year of Monitoring</b>	Year 1 of 5	
<b>Area of Project Impact</b>	<b>Permanent Wetland</b>	<b>Temporary Buffer</b>
	0.01 acre	0.38 acre
<b>Type of Mitigation</b>	On site, out of kind	
<b>Planned Area of Mitigation</b>	200 feet of creek channel and 0.06 acres of floodplain bench	

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## Summary of Monitoring Results and Management Activities (2015)

Performance Standards	2015 Results	Management Activities
90% survival in the native woody planting area	46% survival	Replanting scheduled for 2016
Blackberry species and Class B noxious weeds will not exceed 15% in the planted areas	Less than 5%	
Japanese knotweed and purple loosestrife will not be present	Not present	
Reed canarygrass will not exceed 25% cover in the planted areas	No reed canarygrass observed	
<b>WDFW HPA:</b> 80% survival for three years	46% survival	

## Report Introduction

This report summarizes Year-1 monitoring activities at the United States (US) 97 Butler Creek Mitigation Site. Included are a site description, the performance standards, an explanation of monitoring methods, and an evaluation of site development. Monitoring activities included vegetation surveys and photo-documentation on August 11, 2015.

### What is the US 97 Butler Creek Mitigation Site?

This mitigation site (Figure 1) is a channel reconstruction and buffer planting area created north of Goldendale where Butler Creek passes under US 97. The existing culvert was replaced with a bridge to eliminate a documented fish barrier and improve wildlife connectivity. Impacts include temporary wetland buffer and permanent wetland impacts. The buffer was replanted with native woody species and the wetland impacts were mitigated on-site, out of kind by re-grading 200 feet of the Butler Creek channel associated with the culvert removal. This has provided a fish-passable stream profile and approximately 0.06 acres of floodplain bench.

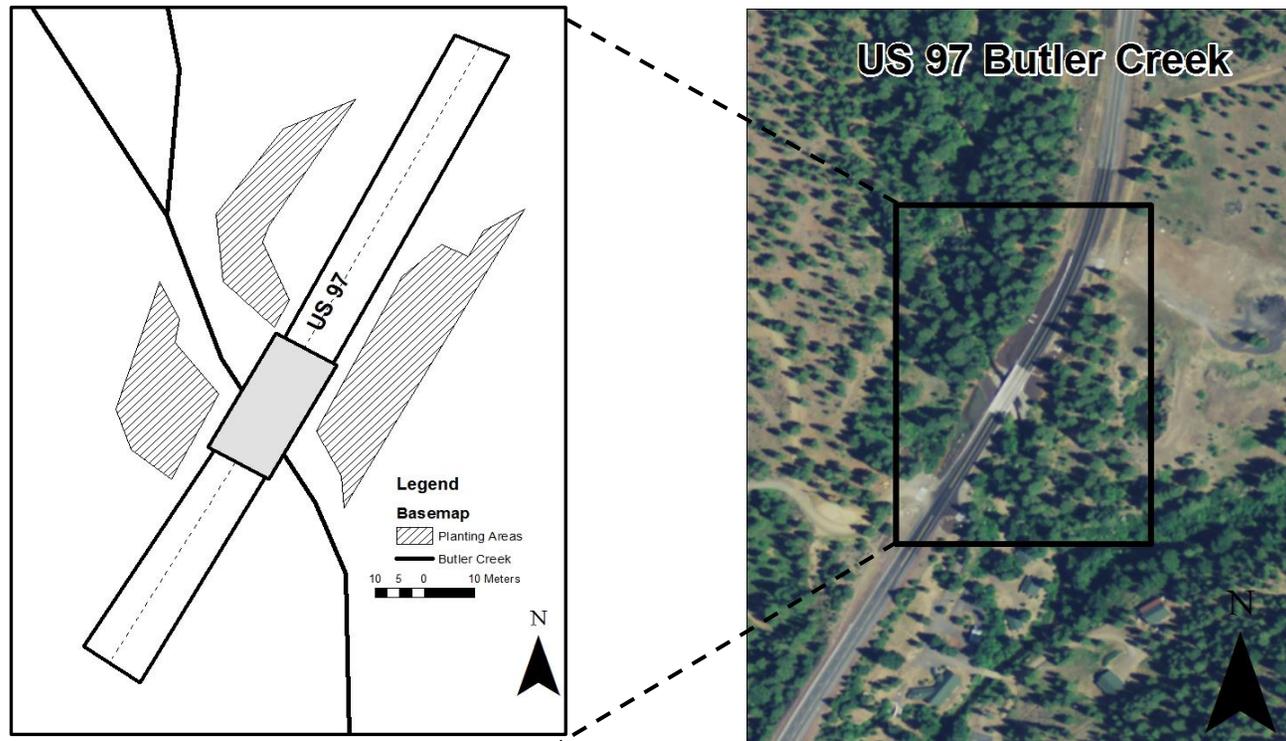


Figure 1 Site Sketch

The US 97 Butler Creek wildlife habitat connectivity and fish passage project planting area includes planting areas on three corners where the road and the creek intersect. Appendix 2 includes site directions.

## **What are the performance standards for this site?**

### **Year 1**

#### Performance Standard 1

At monitoring year 1, there will be a minimum survival rate of 90 percent in all areas identified on the Revegetation Concept as native woody planting area.

#### Performance Standard 2

The aerial extent of Blackberry Species and Class B (WA Dept of Agriculture and Klickitat County Weed Board) noxious weeds will not exceed 15 percent in the woody planting areas.

#### Performance Standard 3

If/when detected, Class A and B Noxious Weeds (WA Dept. of Agriculture and Klickitat County), Japanese Knotweed, and Purple Loosestrife shall be treated so that the species do not exist on the site. These species shall not be included in the 15 percent cover allowed for invasive species.

#### Performance Standard 4

At monitoring years 1 and 3, the aerial extent of Reed Canarygrass shall not exceed 25 percent total cover in the native woody planting areas.

#### WDFW HPA #125619-2

Vegetative cuttings shall be planted at a maximum interval of three feet (on center) and maintained as necessary for three years to ensure 80 percent survival.

Appendix 1 shows the planting plan (WSDOT 2012).

## How were the performance standards evaluated?

The table documents the sampling methodology used for all of the performance standards (PS) as required by the mitigation plan and permits. For additional details on the methods see the [WSDOT Wetland Mitigation Site Monitoring Methods Paper](#) (WSDOT 2008).

	PS 1	PS 2	PS 3	PS 4	HPA
<b>Attribute</b>	Survival	Cover	Presence/ Absence	Cover	Survival
<b>Target pop.</b>	Native Woody	Noxious Weeds/ Invasive sp.	Noxious Weeds	Invasive sp.	Native Woody
<b>Zone</b>	Entire site	Entire site	Entire site	Entire site	Entire site
<b>Sample method</b>	Total Count	Qualitative	Qualitative	Qualitative	Total Count
<b>SU length</b>	N/A	N/A	N/A	N/A	N/A
<b>SU width</b>	N/A	N/A	N/A	N/A	N/A
<b>Points per SU</b>	N/A	N/A	N/A	N/A	N/A
<b>Total # of SU</b>	N/A	N/A	N/A	N/A	N/A

## How is the site developing?

This site was planted according to plan and appears to be on track for Year 1. Some of the plantings struggled through the summer and suffered high mortality. This is most likely due to the dry and hot summer experienced in 2015. The grand fir (*Abies grandis*) and redosier dogwood (*Cornus alba*) did not survive or survived in low numbers. The ponderosa pine (*Pinus ponderosa*) and snowberry (*Symphoricarpos albus*) were thriving even in the extreme conditions. During the winter of 2015-2016, the southeast planting area eroded to the point that the plantings that were counted during the summer are no longer present.

Many wildlife signs were observed, including browse, on several plants in the mitigation area. This is an indication that the new bridge is providing habitat connectivity, allowing elk and other species to avoid the road and safely cross to the other side.

The area disturbed by construction of the bridge was replanted appropriately and the plant community should blend into the surrounding landscape as it develops.

Results for Performance Standard 1

(At least 90% survival of woody vegetation in native woody planting area):

Survival of planted woody species is 46 percent. A total count of living plants was completed and compared to the planting totals. Dominant species include snowberry (*Symphoricarpos albus*), western serviceberry (*Amelanchier alnifolia*), and Lewis' mock orange (*Philadelphus lewisii*). Conifers were suffering except the ponderosa pine (*Pinus ponderosa*).

The southeast planting area was originally included in the survival numbers reported above. However, this area has eroded during the winter and no longer exists.

Results for Performance Standard 2

(Blackberry species and Class B noxious weeds will not exceed 15% in the planted areas):

Class B weeds observed include rush skeleton weed (*Chondrilla juncea*), tansy ragwort (*Jacobaea vulgaris*), and diffuse knapweed (*Centaurea diffusa*). One small Himalayan blackberry (*Rubus armeniacus*) sprout was observed in the middle off the NW corner of the site. Cover is estimated at less than five percent across the site.

Results for Performance Standards 3 and 4

(Japanese knotweed and purple loosestrife will not be present and cover of reed canarygrass will not exceed 25%)

No reed canarygrass (*Phalaris arundinacea*), Class A weeds, Japanese knotweed, or purple loosestrife were observed at the time of monitoring.



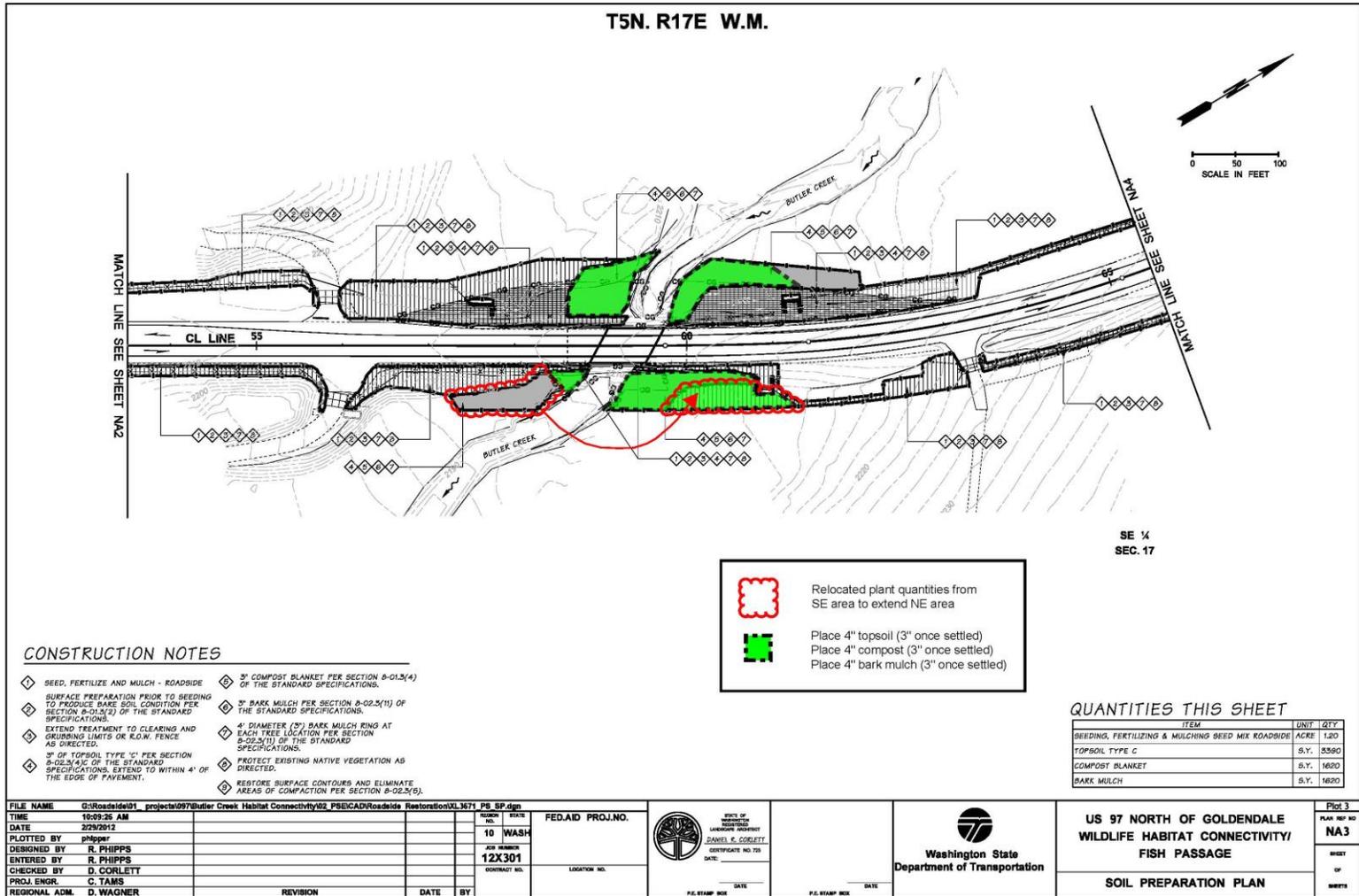
**Photo 1**  
**Woody cover in the scrub-shrub wetland (July 2015)**

**What is planned for this site?**

The region has plans to continue routine weed control throughout the 2016 growing season. Intensive replanting is scheduled for the winter of 2016 as well.

# Appendix 1 – As-Built

(from WSDOT 2012)



## Appendix 2 – Photo Points and Photo Point Map

The photographs below were taken from permanent photo-points on August 10, 2015 and document current site development.



**Photo Point 1**



**Photo Point 2**



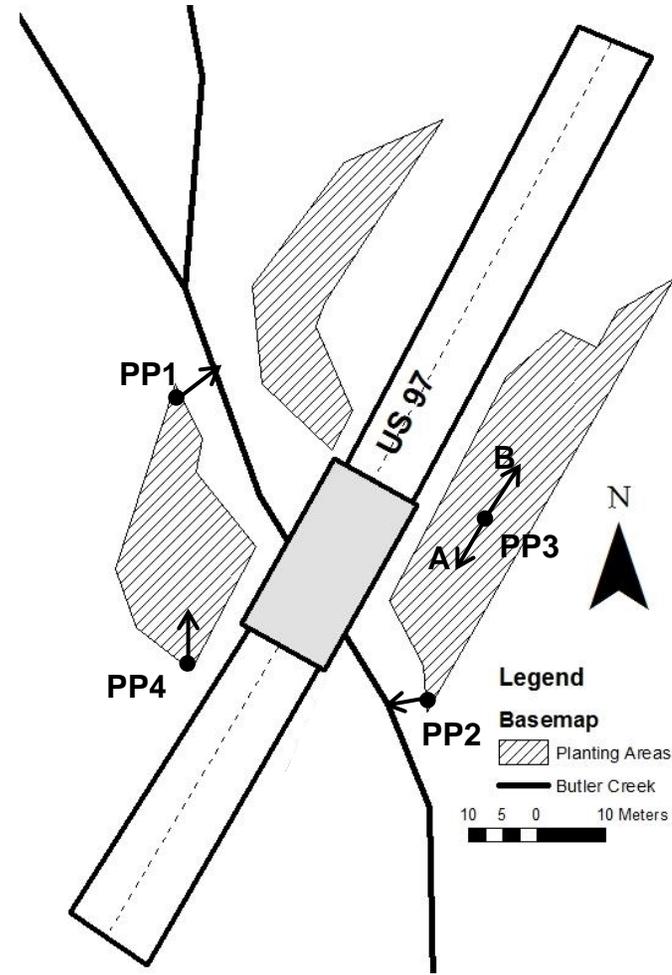
**Photo Point 3a**



**Photo Point 3b**



**Photo Point 4**



**Driving Directions:**

Head south on I-5 and connect with I-205 when you reach Woodland. Continue south on I-205 and connect with SR 14. Travel east on SR 14 for approximately 90 miles. Head north on US 97 towards Goldendale. The site is just past the town of Goldendale in Klickitat County near mile post 21.

## Literature Cited

1. [USACE] US Army Corps of Engineers. 2012. Department of the Army Individual Permit Number NWS-2011-944.
2. [WDFW] Washington State Department of Fish and Wildlife. 2012. Hydraulic Project Approval #125619-2.
3. [WSDOT] Washington State Department of Transportation. 2011. US-97/North of Goldendale – Wildlife Habitat Connectivity/Fish Passage at Butler Creek Mitigation Summary. Vancouver (WA): Washington State Department of Transportation, Southwest Region.
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5. [WSDOT] Washington State Department of Transportation. 2008. WSDOT Wetland Mitigation Site Monitoring Methods. <http://www.wsdot.wa.gov/NR/rdonlyres/C211AB59-D5A2-4AA2-8A76-3D9A77E01203/0/MethodsWhitePaper052004.pdf>