

# **SR 142 Glenwood Culvert Replacement Mitigation Site**

## **USACE NWP (3) NWS-2012-1333-DOT**

### **Southwest Region**

#### **2015 MONITORING REPORT**

#### **Wetlands Program**

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Environmental Services Office

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# SR 142 Glenwood Culvert Replacement Mitigation Site

## USACE NWP (3) NWS-2012-1333-DOT



General Site Information	
<b>USACE NWP 3 Number</b>	NWS-2012-1333-DOT
<b>Mitigation Location</b>	In Klickitat County, at the intersection of SR 142 and Glenwood road.
<b>LLID Number</b>	1209987458576
<b>Construction Date</b>	2013
<b>Monitoring Period</b>	2015-2017
<b>Year of Monitoring</b>	1 of 3
<b>Area of Project Impact</b>	0.001 acre
<b>Type of Mitigation</b>	Wetland Enhancement
<b>Planned Area of Mitigation</b>	0.0092 acre

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

Performance Standards	2015 Results	Management Activities
90% survival in the wetland enhancement areas	58% survival	
Class A noxious weeds, purple loosestrife, and paleyellow iris ( <i>Iris pseudacorus</i> ) will not be present	None present	
Reed canarygrass will be managed so as to not outcompete the woody plantings.	More management required	Weed control was conducted: July 15, 2014, October 16, 2014, August 4, 2015, and September 21, 2015

## Report Introduction

This report summarizes Year-1 monitoring activities at the State Route (SR) 140 Glenwood Culvert 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 10, 2015.

### What is the SR 142 Glenwood Culvert Replacement Mitigation Site?

This mitigation site (Figure 1) consists of enhanced wetland situated on both the inlet and outlet sides of a new culvert. This wetland was enhanced to compensate for permanent impacts to 30 square feet of wetlands due to the replacement of a failing three sided box culvert. The new four sided box culvert connects the existing wetland located on both sides of State Route 142. The culvert carries seasonal flow from the upstream existing wetland and eventually flows to the Klickitat River.

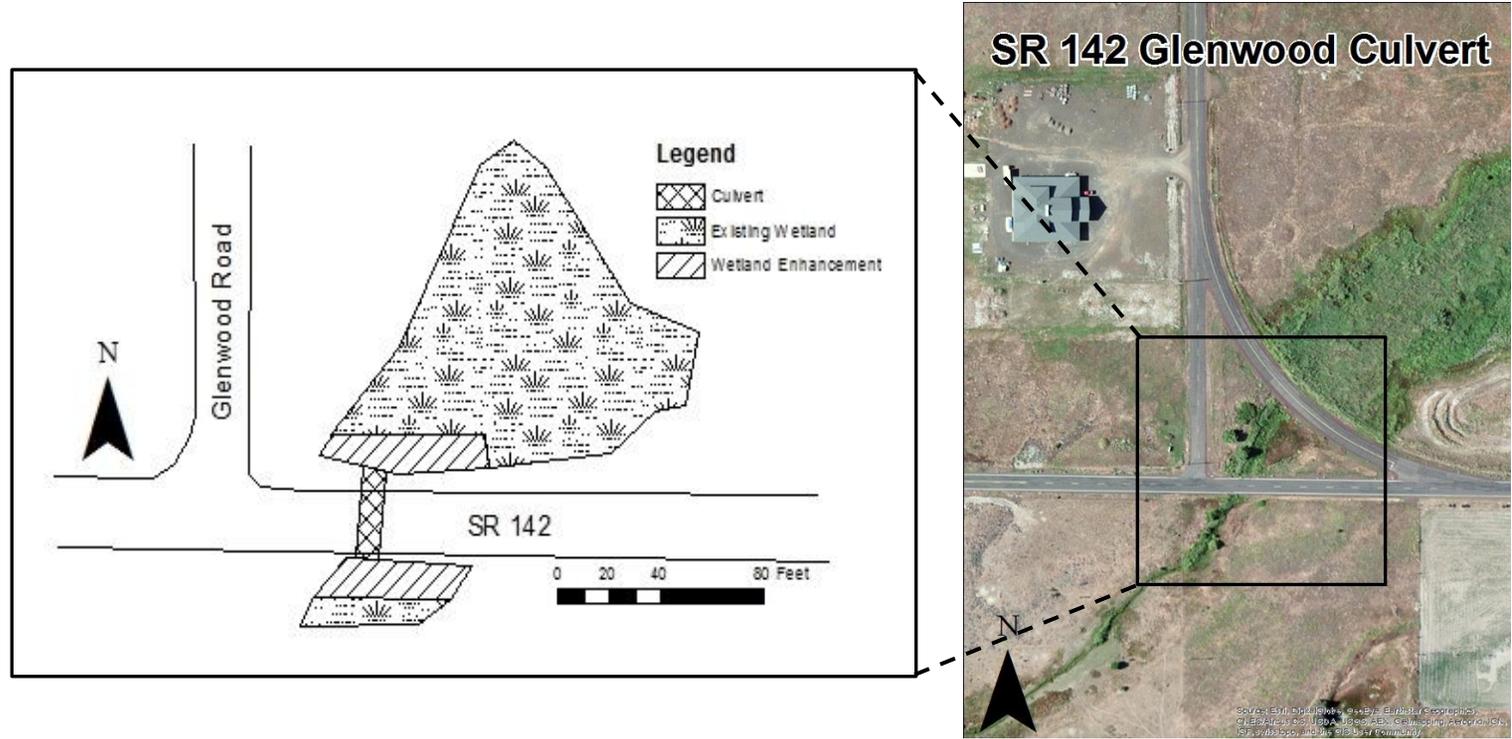


Figure 1 Site Sketch

The SR 142 Glenwood Culvert includes a permanent open water channel that provides habitat for wetland dependent species in an arid environment. 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 the area identified as wetland enhancement areas.

#### Performance Standard 2

In all monitoring years, all Class A noxious weeds, purple loosestrife, and *iris pseudoacoris* will be documented and completely removed from the site.

#### Performance Standard 3

Reed canarygrass will be managed so as to not out-compete planted woody species throughout the monitoring period.

Appendix 1 shows the proposed project impact plan (WSDOT 2012).

## How were the performance standards evaluated?

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

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

## How is the site developing?

This site is just becoming established. The area of impact is very small and the wetland near the new culvert has been enhanced. The area is fairly dry and hot in the summer. It is assumed that this was a factor for plant mortality in 2015 when these plants were becoming established.

Results for Performance Standard 1

(90% survival of woody plantings in the wetland enhancement area):

Survival of planted species is 58 percent. Our team counted a total of 69 live plants out of the 120 that were initially planted.

The Geyers willow had high survival and the Douglas hawthorn had approximately 50 percent survival (Photo 1). The plantings were clustered mostly around the culvert openings.

Results for Performance Standard 2 and 3

(Class A noxious weeds will be removed and reed canarygrass will not out-compete the planted woody species):

The invasive species observed on site include reed canarygrass (*Phalaris arundinacea*), climbing nightshade (*Solanum dulcamara*), and bull thistle (*Cirsium vulgare*). However, the reed canarygrass had the highest cover and has the potential to compete with the woody species.

**What is planned for this site?**

The region has plans to continue weed control and replant the enhancement area.

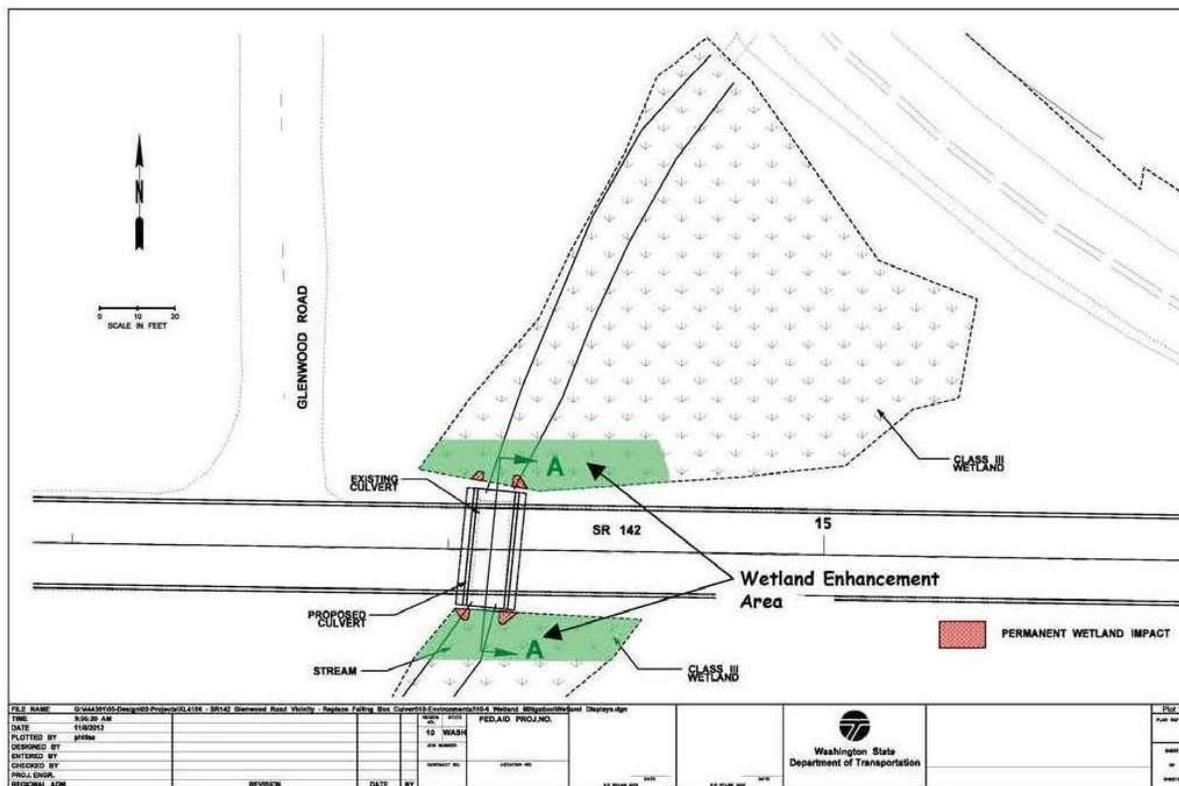


**Photo 1**  
**Woody species in the enhanced wetland (Aug 2015)**

# Appendix 1 – Impact Plan Sheet

(from WSDOT 2012)

## Proposed Project Impacts and Wetland Enhancement Areas



DOT Form 700-008 EF  
Revised 5/99

# Appendix 2 – Photo Points

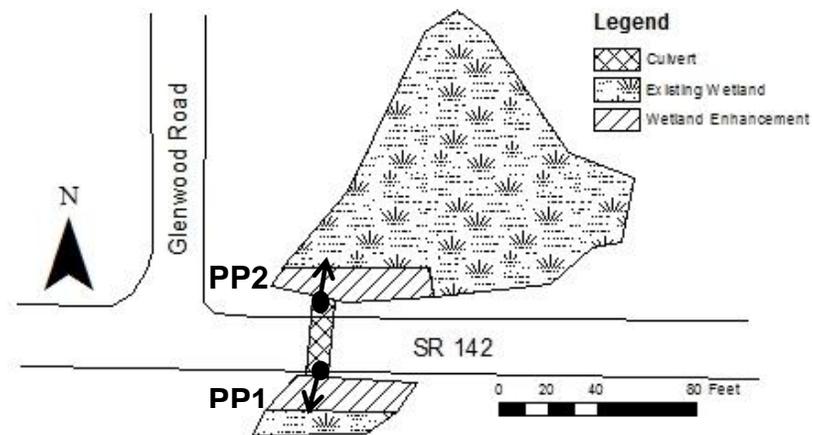
The photographs below were taken from permanent photo-points on August 10, 2015 and document current site development.



**Photo Point 1**



**Photo Point 2**



**Driving Directions:**

From I-5, head south to Vancouver, WA. Take Exit 1A for SR 14 East toward Camas. Travel east on SR 14 until you are close to the town, Lyle. Take a left onto SR 142 East. There will be signs for Klickitat/Wahkiacus. Travel northeast on SR 142 until you reach the intersection with Glenwood Road. The culvert and planting area is just past this turnoff.

## Literature Cited

1. [USACE] US Army Corps of Engineers. 2013. Department of the Army Nationwide Permit Number NWS-2012-1333-DOT.
2. [WSDOT] Washington State Department of Transportation. 2013. SR-142 Glenwood Culvert Replacement, Critical Areas Mitigation Memo. Vancouver (WA): Washington State Department of Transportation, Southwest Region.
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4. [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>