SR 270 Pullman to Idaho State Line (Sunshine Road) Mitigation Site

USACE IP 200500225

Eastern Region

2015 MONITORING REPORT

Wetlands Program

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SR 270 Pullman to Idaho State Line (Sunshine Road) Mitigation Site

USACE IP 20050022

General Site Information		
USACE IP Number	200500225	
Mitigation Location	South of SR 270 between mileposts 7.0 and 7.3, Whitman County	
LLID Number	1170895467311	
Construction Date	2007–2009	
Monitoring Period	2009–2018	
Year of Monitoring	7 of 10	
Area of Project Impact[1]	5.18 acres (USACE) 5.91 acres (Ecology)	
Type of Mitigation	Wetland Establishment	Buffer Establishment
Area of Mitigation (Sunshine Road Site Only)[2]	2.90 acres	1.12 acres

[1] The impact acreages were referenced from the USACE permit 200500225 (USACE 2006) and the Water Quality Certification Order #2847 (Ecology 2005)
[2] The mitigation acreages are referenced from the *Final Mitigation Report for Pullman to Idaho State Line* (WSDOT 2005). Additional mitigation for this project is provided by the SR 270 Patterson and SR 270 Jorstad Mitigation Sites which are reported on separately. See Appendix 3 for a summary of the mitigation areas on all three of the sites associated with this project.

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Summary of Monitoring Results and Management Activities (2015)

Performance Standards	2015 Results[3]	Management Activities
Presence of wetland hydrology	Present	
No more than 30% cover of reed canarygrass, blackberries, and Scotch broom	Qualitative: 45% to 50%	Ongoing mowing of reed canarygrass and spot spraying as needed. Weed fabric is removed when observed.
50% cover of native woody species in scrub-shrub and forested wetland areas	53% cover ($CI_{90\%}$ = 43-63%)	200 Mackenzie willow were planted in spring 2015
Two native woody plant species will achieve 5% or greater aerial cover in forested and scrub-shrub creation areas.	Present	
40% cover of native woody species in buffer areas	44% cover ($CI_{90\%}$ = 37-51%)	200 golden currents planted in fall 2014
Two native woody species will achieve 5% relative cover in buffer areas	Present	

Report Introduction

This report summarizes Year-7 monitoring activities at the State Route (SR) 270 Sunshine Road Mitigation Site. Included are a site description, the performance standards, an explanation of monitoring methods, and an evaluation of site success. Monitoring activities included vegetation surveys and photo-documentation from July 13 to 15, 2015.

[3] Estimated values are presented with their corresponding statistical confidence interval. For example, 53% cover ($CI_{90\%}$ = 43-63%) means we are 90% confident that the true cover value is between 43% and 63%.

What is the SR 270 Sunshine Road Mitigation Site?

This 4.02-acre mitigation site (Figure 1) was created as partial compensation for the loss of 5.91 acres of wetlands due to the widening of SR 270 from the City of Pullman to the Idaho state line. This project was designed to improve capacity and safety through the widening of the highway from a two-lane roadway to a four-lane facility with a 14-foot wide median left turn lane configuration. The Sunshine Road Mitigation Site was designed to improve wetland and riparian functions such as flood flow alteration, sediment and nutrient/toxicant removal, erosion control, habitat suitability, plant richness, stream shading, and production of woody debris. This mitigation site is one of three sites created as compensation for this project. The other two are the Patterson and Jorstad Mitigation Sites. See Appendix 3 for a summary of the mitigation acreages on all three sites.

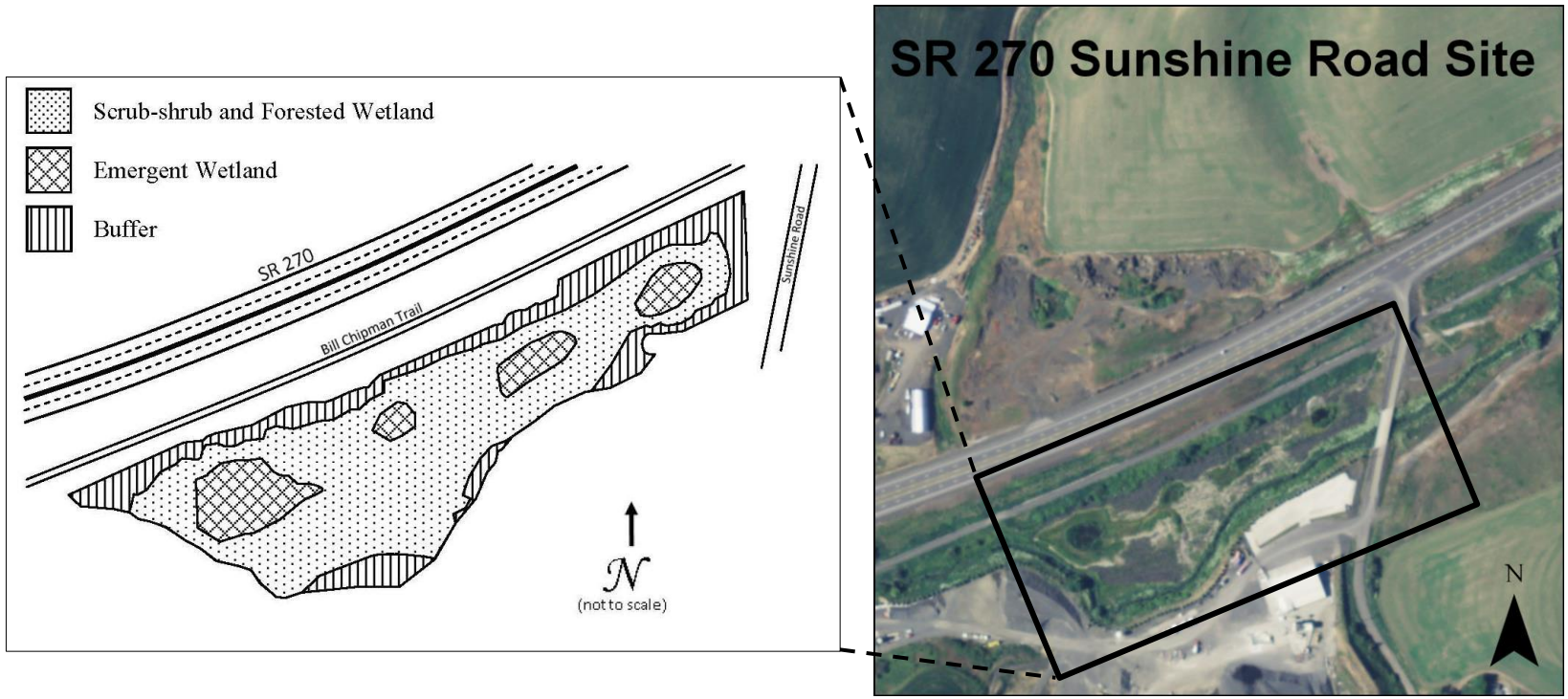


Figure 1 Site Sketch

The SR 270 Sunshine Road Mitigation Site consists of 2.90 acres of newly established emergent and scrub-shrub/forested wetland, as well as 1.12 acres of enhanced buffer. Appendix 2 contains site directions.

What are the performance standards for this site?

Performance Standard 1
The soils will be saturated to the surface, or ponded water will be present for at least 3 consecutive weeks (10 percent) of the growing season in years when rainfall meets or exceeds the 30-year average.

Performance Standard 2
No more than 30% coverage by the following non-native invasive species on the entire site: reed canarygrass (*Phalaris arundinacea*), non-native blackberries (*Rubus* sp.), and Scotch broom (*Cytisus scoparius*). Other invasive, non-native species will also be controlled if a problem becomes apparent on the mitigation sites.

Performance Standard 3
Native woody species will achieve 50% coverage in scrub-shrub (PSS) and forested (PFO) creation areas.

Performance Standard 4
Two native woody plant species will achieve 5% or greater relative cover in the forested and scrub-shrub wetland creation areas.

Performance Standard 5
Native woody species will achieve 40% coverage in buffer areas.

Performance Standard 6
Two native woody plant species will achieve 5% or greater relative cover in buffer areas.

Appendix 1 shows the as-built planting plan (WSDOT 2008).

How were the performance standards evaluated?

On February 26, 2015, a request to discontinue hydrology monitoring was sent to USACE and the Department of Ecology. This request was accepted on April 2, 2015. (Performance Standard 1).

The table below documents the sampling methodology utilized for all remaining performance standards (PS) as required by the mitigation plan or permits. For additional details on the methods see the WSDOT Wetland Mitigation Site Monitoring Methods Paper (WSDOT 2008).

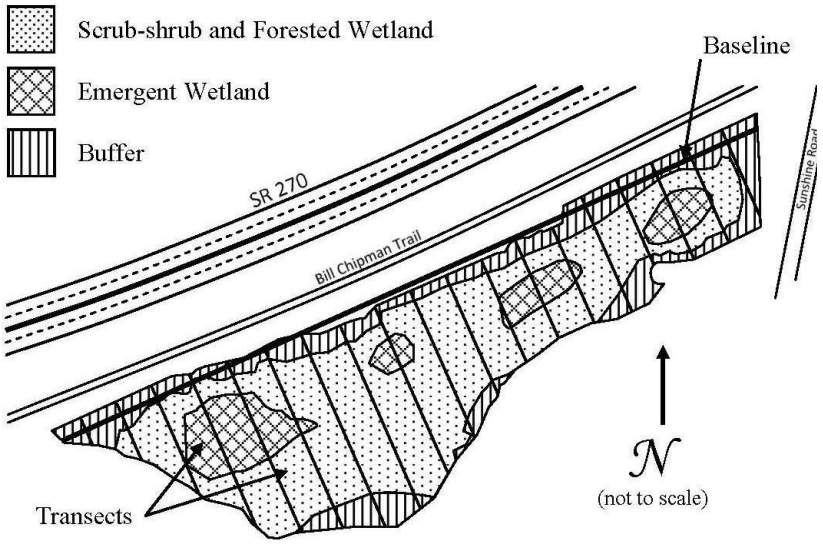


Figure 2 Site Sampling Design (2015)

Placement of Baseline: 300 meters long, east to west, parallel to the Bill Chipman Palouse Trail.

	PS 2	PS 3&4	PS 5&6
Attribute	Cover	Cover	Cover
Target pop.	Invasive sp.	Native Woody	Native Woody
Zone	Entire site	Wetland	Buffer
Sample method	Qualitative	Line Intercept	Line Intercept
SU length	N/A	5 meters	5 meters
SU width	N/A	N/A	N/A
Points per SU	N/A	N/A	N/A
Total # of SU	N/A	25	25

How is the site developing?

The mitigation site appears to be developing as planned. It has a diverse and robust native plant community and is providing many intended functions. The one exception is a portion of the western scrub-shrub wetland where overbank flooding has contributed to lower survival and cover of the woody plantings and higher cover of reed canarygrass.

The western-most emergent area has developed an area of deep water surrounded by a dense native herbaceous plant community dominated by broadleaf cattail (*Typha latifolia*). The other three emergent areas have developed similarly, dominated primarily by aquatic vegetation, each ringed with emergent vegetation. This emergent vegetation competes with the reed canarygrass as an understory component below woody species in the scrub-shrub wetland.

Over the last several years, overbank flooding from Paradise Creek has created a few partial breaches of the berm between the creek and the mitigation site. In earlier years, this flooding disturbed some of the weed matting, particularly in the central to western part of the scrub-shrub wetland. Most of the weed matting was removed and is still being removed when observed. This allowed heavier competition with the native woody plantings by noxious weeds, especially reed canarygrass. One of these breaches has developed to the point that there is now a permanent flow through the central western part of the scrub-shrub wetland. This flow does not seem to be causing significant erosion or other hydrologic problems, but it has created an area on the site where it has become harder to establish native vegetation. Fish stranding was observed near where the stream breached the berm and flows onto the site. The species of the dead fish is unknown; however, it is likely a species of sucker.

Six foot tall willows (*Salix spp.*) were planted in the areas dominated by reed canarygrass in an effort to outcompete/shade out the invasive grass and increase woody cover. Continued mowing of targeted areas is also helping the woody species establishment.

Overall, the site is developing well and is meeting all but one of its current (Year-7) performance standards. The lone exception is the cover of reed canarygrass (Performance Standard 2).

Results for Performance Standard 1
(Presence of wetland hydrology):

On February 26, 2015, a request to discontinue hydrology monitoring was sent to USACE and the Department of Ecology. This request was accepted on April 2, 2015. During our monitoring visit, the site was inundated in the ponds and through the middle of the site (Photo 1).

Results for Performance Standard 2
(No more than 30% cover of reed canarygrass, blackberries, and Scotch broom):

Non-native blackberry species or Scotch broom were not observed on site. However, reed canarygrass dominates the entire central portion of the site and continues to be a problem. Cover of reed canarygrass across the entire site is estimated at 45% to 50%.

Results for Performance Standard 3
(50% cover of native woody species in scrub-shrub and forested wetland areas):

Native woody species cover in the scrub-shrub and forested wetland areas is 53% ($CI_{90\%}$ = 43-63%). This is a slight increase from 2013. The planted woody species are still completing with the reed canarygrass monoculture (Photo 2). The areas that were mowed seemed to be helping the newly installed willow stakes become established.

Photo 1
Inundation in the Emergent Wetland (July 2015)

Results for Performance Standard 4
(Two native woody species with at least 5% relative cover in the forested and scrub-shrub wetland areas):

Several species in the forested and scrub-shrub wetland exceed this five percent relative cover standard. These species include Nootka rose (*Rosa nutkana*), willows, redosier dogwood (*Cornus alba*), and black cottonwood (*Populus balsamifera*) (Photo 2).

Results for Performance Standard 5
(40% cover of native woody species in buffer areas):

The cover of native woody species in the buffer area is 44% ($CI_{90\%}$ = 37-51%). The buffer appears to be developing slowly. Many of the golden currant (*Ribes aureum*) appeared to be dead or dying. It is most likely due to the very dry and hot summer experienced in 2015. Mowing reed canarygrass in the buffer area is helping upland vegetation become established (Photo 3).

Results for Performance Standard 6
(Two native woody plant species will achieve 5% or greater relative cover in buffer areas)

Several species in the upland buffer exceed this five percent relative cover standard. These species include Wood's rose (*Rosa woodsii*), golden currant, and snowberry (*Symphoricarpos albus*).

What is planned for this site?

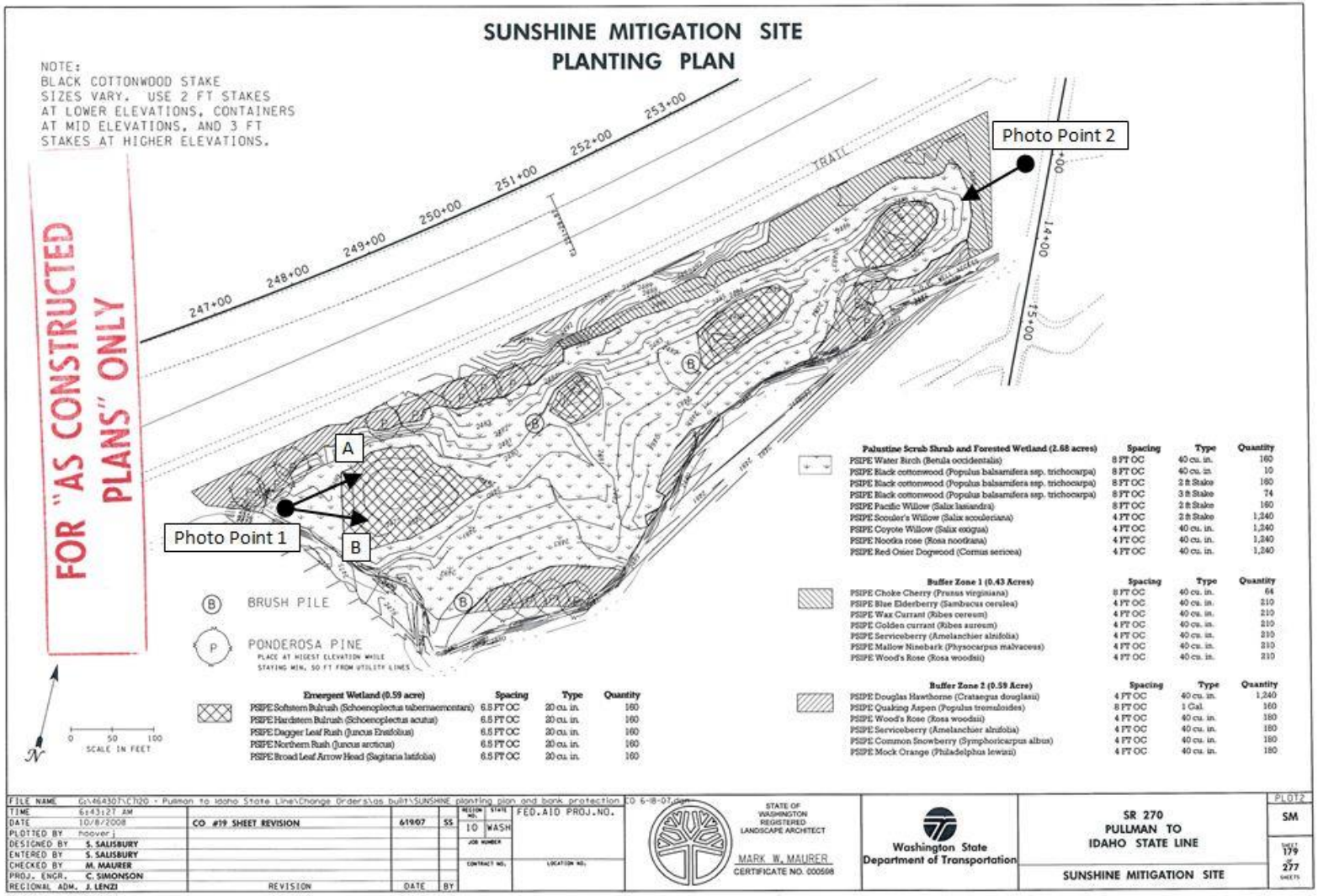
The region has plans for continued mowing and weed control and additional willow and cottonwood staking to shade reed canarygrass.

Photo 2
Woody cover in the Wetland (July 2015)

Photo 3
Woody cover in the Buffer (July 2015)

Appendix 1 – As-Built Planting Plan with Photo Point Locations

(from WSDOT 2008)



Appendix 2 – Photo Points

The photographs below were taken from permanent photo-points on July 15, 2015 and document current site development.

Photo Point 1a

Photo Point 1b

Photo Point 2

Driving Directions:
From Pullman, go east on SR 270. The site is between mileposts 7.0 and 7.3. Turn right off the highway onto Sunshine Road (MP 7.3) and the site will be immediately on the right after crossing over the Bill Chipman Palouse Trail.

Appendix 3 – Project Impacts and Mitigation Summary

(from WSDOT 2005)

Table 1 – Project Wetland Impacts

Type of Wetland Impact	Area of Impact (acres)
Impacts to wetlands regulated by the U.S. Army Corps of Engineers	5.18
Impacts to isolated wetlands regulated only by the Washington State Department of Ecology	0.73
Total Project Wetland Impacts	**5.91**

Table 2 – Project Mitigation by Site

Mitigation Site	Wetland Establishment (acres)	Wetland Enhancement (acres)	Riparian Enhancement (acres)	Buffer Establishment (acres)
Jorstad	0.00	0.64	2.09	0.00
Patterson	3.48	0.12	0.00	4.73
Sunshine Road	2.90	0.00	0.00	1.12
Project Mitigation Totals	**6.38**	**0.76**	**2.09**	**5.85**

Literature Cited

1. [Ecology] Washington State Department of Ecology. 2005. Water Quality Certification Order No. 2847.

2. [USACE] US Army Corps of Engineers. 2006. Department of the Army Individual Permit Number 200500225.

3. [WSDOT] Washington State Department of Transportation. 2005. Final Mitigation Report for Pullman to Idaho State Line. Spokane (WA): Washington State Department of Transportation, Eastern Region.

4. [WSDOT] Washington State Department of Transportation. 2008. SR 270 Pullman to Idaho State Line Patterson Mitigation Site As-built Planting Plan.

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