2019 WETLAND MONITORING REPORT

US 101 Middle Nemah River Bridge Replacement MP 33.70 to MP 33.99 (Middle Nemah River Bridge) Compensatory Mitigation Site

USACE NWP (23) NWS-2012-134

Southwest Region

Wetlands Program
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## Site Summary

US 101 Middle Nemah River Bridge Replacement MP 33.70 to MP 33.99 (Middle Nemah River Bridge) Compensatory Mitigation Site

USACE NWP (23) NWS-2012-134

<table>
<thead>
<tr>
<th>General Site Information</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>USACE NWP 23</strong></td>
<td>NWS-2012-134</td>
</tr>
<tr>
<td><strong>Mitigation Location</strong></td>
<td>US 101 MP 33.70 to 33.99, Pacific County</td>
</tr>
<tr>
<td><strong>LLID Number</strong></td>
<td>1238883464937</td>
</tr>
<tr>
<td><strong>Construction Date</strong></td>
<td>2012–2014</td>
</tr>
<tr>
<td><strong>Monitoring Period</strong></td>
<td>2015–2019</td>
</tr>
<tr>
<td><strong>Year of Monitoring</strong></td>
<td>5 of 5</td>
</tr>
<tr>
<td><strong>Type of Impact</strong></td>
<td>Temporary Wetland</td>
</tr>
<tr>
<td><strong>Area of Project Impact</strong></td>
<td>0.37 acre</td>
</tr>
<tr>
<td><strong>Type of Compensation</strong></td>
<td>Buffer Enhancement</td>
</tr>
<tr>
<td><strong>Planned Area of Compensation</strong></td>
<td>0.25 acre</td>
</tr>
</tbody>
</table>

1 Impact and compensation numbers sourced from the [Final Critical Areas Mitigation Report US 101 –Middle Nemah Bridge Replacement MP 33.70 to MP 33.99 (WSDOT 2012)](https://www.wsdot.wa.gov/projects/dte/101/final_critical_areas_mitigation_report.pdf). Additional mitigation for 1.05 acres permanent wetland impacts for this project is provided by the Tarlatt Slough Compensatory Mitigation Site which is reported on separately.
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1. Introduction

1.1. Summary

This report summarizes final-year (Year-5) monitoring activities at the 101 Middle Nemah River Bridge Compensation 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 on August 20-21, 2019.

1.2. Monitoring Results and Management Activities

<table>
<thead>
<tr>
<th>Performance Standards</th>
<th>2019 Results²</th>
<th>Management Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>70% cover of native woody vegetation in the buffer establishment</td>
<td>71% cover (CI₈₀% = 62-79%)</td>
<td>Installed evergreen huckleberry, western red cedar, and western swordfern on 11/26/19</td>
</tr>
<tr>
<td>At least three species of native trees and/or shrubs will be present in the buffer establishment</td>
<td>Seven species present</td>
<td>Weed control performed in November 2019</td>
</tr>
<tr>
<td>Less than 15% cover of blackberry species and Class A noxious weeds</td>
<td>2% (qualitative)</td>
<td>None observed</td>
</tr>
<tr>
<td>Reed canarygrass (<em>Phalaris arundinacea</em>), purple loosestrife (<em>Lythrum salicaria</em>), and paleyellow iris (<em>Iris pseudacorus</em>) will be removed from the site</td>
<td>None observed</td>
<td></td>
</tr>
</tbody>
</table>

² Estimated values are presented with their corresponding statistical confidence interval. For example, 71% cover (CI₈₀% = 62-79%) means we are 80% confident that the true cover value is between 62% and 79%.
2. Site Description

2.1. Location
The compensation site is located along the US 101-Lynn Point Road intersection in Pacific County, Washington.

Driving Directions:
From Interstate 5 take Exit 104 for US 101 North. Continue onto US 101 North. Keep left to continue onto State Route (SR) 8 and follow signs for SR 8 West/Montesano/Aberdeen. Continue onto US 12 West. Take the exit towards SR 107/Montesano/Raymond. Turn left onto SR 107 South/South Main Street. Turn left onto US 101 South.

2.2. Purpose and Description
This compensation site is an established buffer area adjacent to the US 101 Middle Nemah Bridge Replacement project. This site was created to compensate for the temporary impacts to 0.042 acre buffer and permanent impacts to 0.25 acre buffer due to construction during the bridge replacement. The buffer areas are designed to provide compensation for lost buffer functions including wildlife habitat, biological support, and flood flow attenuation.
2.3. **Study Area**

The US 101 Middle Nemah Compensatory Mitigation Site contains an established buffer area north of Lynn Point Road that is dominated by a native shrub community (Figure 1).

![Figure 1. Site Sketch](image)
3. Performance Standards and Methods

3.1. Performance Standards

Year 5

Performance Standard 1
At monitoring Year 5, there will be a minimum cover of native vegetation (planted and volunteer) in the buffer establishment area as follows: minimum 70 percent cover of native woody vegetation (planted and volunteer trees and shrubs).

Performance Standard 2
At monitoring Year 5, there will be a minimum cover of native vegetation (planted and volunteer) in the buffer establishment area as follows: at least three species of native trees and/or shrubs will be present in the buffer establishment area.

Performance Standard 3
The aerial extent of blackberry species and Class A noxious weeds in the on-site mitigation areas will not exceed 15 percent of that area.

Performance Standard 4
In all monitoring years, invasive species noted in standard 4a [Reed canarygrass, Purple loosestrife, and Iris pseudocoris] will be documented and completely removed from the site.

Appendix 1 shows the planting plan (WSDOT 2011).
3.2. Methods

The table below documents sample methods used for all of the performance standards (PS) required by the mitigation plan or permits. Additional details on our methods are located here: WSDOT Wetland Mitigation Site Monitoring Methods Paper (WSDOT 2008).

**Placement of Baseline:** One baseline, running east to west was placed through the center of the buffer zone.

**Baseline:** Length of 62 meters with transects 1-12 (Buffer).

<table>
<thead>
<tr>
<th>Attribute</th>
<th>PS 1&amp;2</th>
<th>PS 3</th>
<th>PS 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover and Number</td>
<td>Cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Target population</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native woody species</td>
<td></td>
<td>Noxious weeds Class A</td>
<td></td>
</tr>
<tr>
<td>Noxious weeds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zone</td>
<td>Buffer</td>
<td>Entire</td>
<td>Entire</td>
</tr>
<tr>
<td>Sample method</td>
<td>Line Intercept</td>
<td>Qualitative</td>
<td>Qualitative</td>
</tr>
<tr>
<td>SU length</td>
<td>5 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total # of SU</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. Sample Design
4. Discussion

4.1. Site Development

The planted vegetation in the buffer is doing very well despite some competition from field horsetail (*Equisetum arvense*) and invasive species on the eastern edge of the zone. This area is meeting final-year diversity and cover standards. Noxious weed cover for targeted species is low and below the performance standard threshold. Field bindweed (*Convolvulus arvensis*) is dense on the eastern edge and appears to be choking out some of the conifer plantings.

Original palustrine scrub-shrub wetland planting areas (as seen on the planting plan in Appendix A) were removed from the project because they were never planted. Performance standards addressing wetland cover in the mitigation plan no longer apply to this site due to a reduced project area.

The site was intended to provide wildlife habitat and biological support. Over the five year monitoring period, numerous garter snakes and birds have been observed. Deer were observed in the buffer planting area in 2019.
4.2. Results

Performance Standard 1
(70% cover of native woody vegetation in the buffer establishment)

The cover of native woody vegetation in the buffer is estimated at 71% (CI$_{80\%} = 62$-$79\%$) (Photo 1).

Performance Standard 2
(At least three species of native trees and/or shrubs will be present in the buffer establishment)

At least seven species were identified in the buffer. Dominant species included salal (*Gaultheria shallon*) and evergreen huckleberry (*Vaccinium ovatum*).

Performance Standard 3
(Less than 15% cover of blackberry species and Class A noxious weeds)

The cover of Himalayan blackberry (*Rubus armeniacus*) in the buffer is qualitatively estimated at 2% (Photo 2). There were no other blackberries or Class A noxious weeds found on site.

Photo 1. Woody cover in the buffer (August 2019)

Photo 2. Blackberry growing adjacent to upland buffer (August 2019)
Performance Standard 4
(Reed canarygrass, purple loosestrife, and paleyellow iris will be removed from the site)

None observed at the time of monitoring.

4.3. Adaptive Management
The region has plans to replant buffer portions of this site in the winter of 2020 to fill in bare ground where invasive or noxious weeds are establishing. Subsequent activities will include weed control throughout the buffer and removal of field horsetail.
5. References


Appendix A. Planting Plan

(from WSDOT 2011)