



**Washington State
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March 25, 2011

Ms. Gail Terzi
US Army Corps of Engineers Seattle
District
Regulatory Branch CENWS OD RG
PO Box 3755
Seattle, WA 98124-3755

Ms. Penny Kelley
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

RE: SR 20 Bannon Creek to Aenas Valley Road Mitigation Site
(SR 20 Bonaparte Creek)
USACE NWP (23) 1999-4-01382 and Ecology Order 1999-4-01382

Dear Ms. Terzi and Ms. Kelley:

The Washington State Department of Transportation completed qualitative monitoring of the site on June 2, 2010 to address Year-5 (2007) and Year-10 (2012) performance measures, and assess planting enclosures, growth of woody species and activity of beavers on site. Monitoring activities included vegetation observations, photo documentation and a wetland delineation. This Year-8 report is being issued for compliance with the USACE NWP Number 1999-4-01382 and Ecology Order 1999-4-01382 reporting requirements.

General Site Information		
USACE NWP 23 Number	1999-4-01382	
Mitigation Location	North of SR 20 at MP 268.4, Okanogan County	
Construction Date	2002	
Monitoring Period	2003 to 2012	
Year of Monitoring	8 of 10	
Area of Project Impact	1.53 acres	
Type of Mitigation	Restoration/ Establishment	Enhancement
Area of Mitigation	1.40 acres	0.70 acre

Summary of Monitoring Results and Management Activities

Performance Criteria ¹	2010 Results	Management Activities
Performance Standards		
Wetland area will be 0.81 ha (2.1 ac) and will also meet the criteria for Category II wetland. (Year-5)	2.04 acre; Category I ²	
Within the palustrine forested wetland area aerial cover of planted and volunteer woody species will be 40%. (Year-10)	15% cover	
< 15% Okanogan County Noxious Weeds in emergent area (Year-5)	None observed	Continued ongoing weed control
70% herbaceous species cover in upland enhancement areas (Year-5)	80% cover	
70% native species relative cover in upland enhancement areas (Year-5)	More than 70% relative cover	
Permit Requirements		
Check the planted areas for girdling by rodents and ungulates during each monitoring period (Year 1-10)	Browse apparent, no girdling apparent	

How is the Site Developing?

This mitigation site appears to be providing many of its intended wetland functions. A bird's nest was observed while on site (Photo 1). Woody species showed signs of browse by ungulates. Coyote (*Canis latrans*), and elk (*Cervus canadensis*) were observed onsite indicating that the site provides the intended wildlife habitat and food chain support functions. Significant beaver activity and browse is diminishing the cover in the forested wetland and influencing the hydrology of the system. However, many of the woody species chewed by beaver have vegetative re-growth sprouting from coppiced trunks. Year-10 cover targets may not be achieved by 2012 with the continued beaver activity, however, the site is providing wildlife habitat for these wetland-associated species and is creating a dynamic braided river system with riffles and pools. The site still appears to be providing many of the intended goals: wildlife habitat, fish habitat, native plant richness, water quality, flood storage, and cattle exclusion.



Photo 1 – Bird nest in an inundated area

¹ For performance standards and permit requirements, see:

Washington State Department of Ecology. 2004. Shoreline Substantial Development/Conditional Use Permit SDP99-4.
Washington State Department of Transportation. 1999. Bannon Creek to Aeneas Valley Road SR20. Detailed Wetland Mitigation Plan. Environmental Affairs Office.

² Wetland delineation and wetland rating were conducted in 2010. Previous delineations were conducted in 2008 and a third in 2010.

Active management of invasive species has been effective. An upland community dominated by native grasses is establishing. The site blends into the surrounding landscape and appears to increase habitat value and connectivity of the adjacent areas.

Results for Performance Standard 1(Year-5)
(2.1 acre of Category II wetland present):

Results from a mid-course delineation conducted in 2007 revealed that SR 20 Bonaparte Creek mitigation site provided 2.02 acres of wetland. A second delineation was conducted in the spring of 2008 and resulted in a determination of 1.46 acres of wetland (not all areas on the south side of Bonaparte Creek may have been included in this delineation). The most recent delineation, conducted in 2010, indicates 2.04 acres of wetland. This site is obviously very dynamic. Beaver have been active on-site. Three dams were observed in Bonaparte Creek onsite and another dam was observed offsite on the other side of the bridge over SR 20 during the last monitoring period.

In 2010, using the *Washington State Wetland Rating System for Eastern Washington – Revised* (Ecology 2004, Version 2, updated in 2008), a wetland rating indicated the site is a Category I wetland. The following information supports the rationale for this rating. Surface depressions and varied vegetation structure provide potential for improved water quality and hydrologic functions during flood events. The wetland protects downstream properties and infrastructure from flood damage by reducing velocities and storing excess water. Agricultural activities and livestock are present in the surrounding areas providing opportunity for improved water quality. The site supports several Cowardin (1979) vegetation classes and provides habitat for wildlife. A variety of wildlife species have the opportunity to utilize the site and the connections to other wetlands and upland habitats through the riparian corridor and upland buffer areas. These wetland functions contribute to the Category I rating.

Results for Performance Standard 2 (Year 10)
(Planted and volunteer woody species will be 40 percent in the palustrine forested wetland):

A qualitative cover estimate for native woody species in the forested wetland is fifteen percent (Photo 2). The majority of this cover is made up of short woody plantings and volunteer species. The enclosures have been repaired and expanded which are helping to protect small native woody plants establish. The area where the initial enclosure was established has native woody species ranging from approximately two to four meters tall. Some of the woody species in and adjacent to the creek that previously experienced beaver herbivory appear to be re-sprouting. Reduced beaver activity has resulted in lower water levels these newly exposed areas have received additional plantings.



Photo 2 – Forested wetland

Results for Performance Standard 3 (Year 5)

(<15% Okanogan County Noxious Weeds in emergent area):

Weed control efforts have been effective in maintaining low cover of invasive species and noxious weeds. No Okanogan County Noxious Weeds were observed on site this year during monitoring activities. Current site management activities appear to promote native species plant establishment across the site.

Results for Performance Standard 4 (Year 5)

(70% herbaceous species in upland enhancement area):

Cover of herbaceous species in the open grassland is qualitatively estimated at 80 percent. The vegetation community in the upland enhancement area is dominated by native species with dominant species including: *Leymus cinereus* (basin wildrye), *Carex praegracilis* (clustered field sedge), and *Distichlis spicata* (saltgrass).

Results for Performance Standard 5 (Year- 5)

(70% native species in upland enhancement areas):

Native species dominate the vegetation community in this area. It appears that the relative cover of native plant species in the upland areas will meet the Year-10 target of 70 percent. Current weed and invasive species control efforts create areas for native species to colonize.

There are invasive species in the upland areas of the site. Species observed included: *Bassia scoparia* (Mexican fireweed), *Chenopodium album* (lambsquarters), *Cirsium vulgare* (bull thistle), *Cirsium arvense* (Canada thistle), *Lepidium latifolium* (perennial pepperweed), *Lepidium perfoliatum* (clasping pepperweed), and *Cicuta douglasii* (western water hemlock). These species were scattered throughout but seemed more heavily concentrated on the dirt access road. Continued weed control is expected to contribute to the achievement of future performance criteria for native herbaceous species in the upland enhancement areas.

Results for Permit Condition 1 (Yearly)

(Check the planted areas for girdling by rodents and ungulates):

Woody plants throughout the site continue to show signs of browse. Girdling was not evident. Beaver activity continues on site.

For questions about this report or the mitigation site please contact me at 360-570-6640 or by e-mail at busht@wsdot.wa.gov.

Sincerely,

Tony Bush
Wetland Assessment and Monitoring Program

