



# Ecosystem Credit Calculator

## Pilot Summary: Dairy Creek Bridge

A product funded by an NRCS Conservation Innovation Grant

**DRAFT: Version 1**  
**April 3, 2009**

### **Project Overview and Purpose**

This bridge replacement project will have unavoidable impacts that require mitigation. Mitigation credits for these impacts could be purchased from the Gales Creek restoration project. This project will replace the bridge (# 02673) on US26 about 4,800 feet east of Staley's Junction with a 4-lane, 68 foot wide 90 foot long bridge (possibly single span) to accommodate future highway widening. Traffic volume in 2024 is projected to be 17,600 ADT, not accounting for seasonal increases.

The highway presently has two lanes (total width of 32 feet) in this bridge location. To maintain mobility, construction is proposed to be staged as follows: (1) remove 15 feet of the north side of the existing bridge and leave the remaining 32 feet open to traffic. (2) Next, construct 32 feet of bridge to the north side of the existing structure and shift traffic over to it. (3) Then, remove the old bridge and replace it with 32 feet of new bridge width.

When the north half of the bridge is being constructed, the roadway will need to be shifted about 7.5 feet to the south. Conversely, when the south half of the bridge is being constructed, the roadway will be shifted back to the north about 24 feet. At the same time the highway will be widened 17 feet for a distance of 1,500 feet from each end of the bridge. After construction is completed, the roadway will be realigned about 24 feet south to its final position, back to its original centerline.

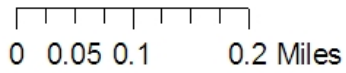
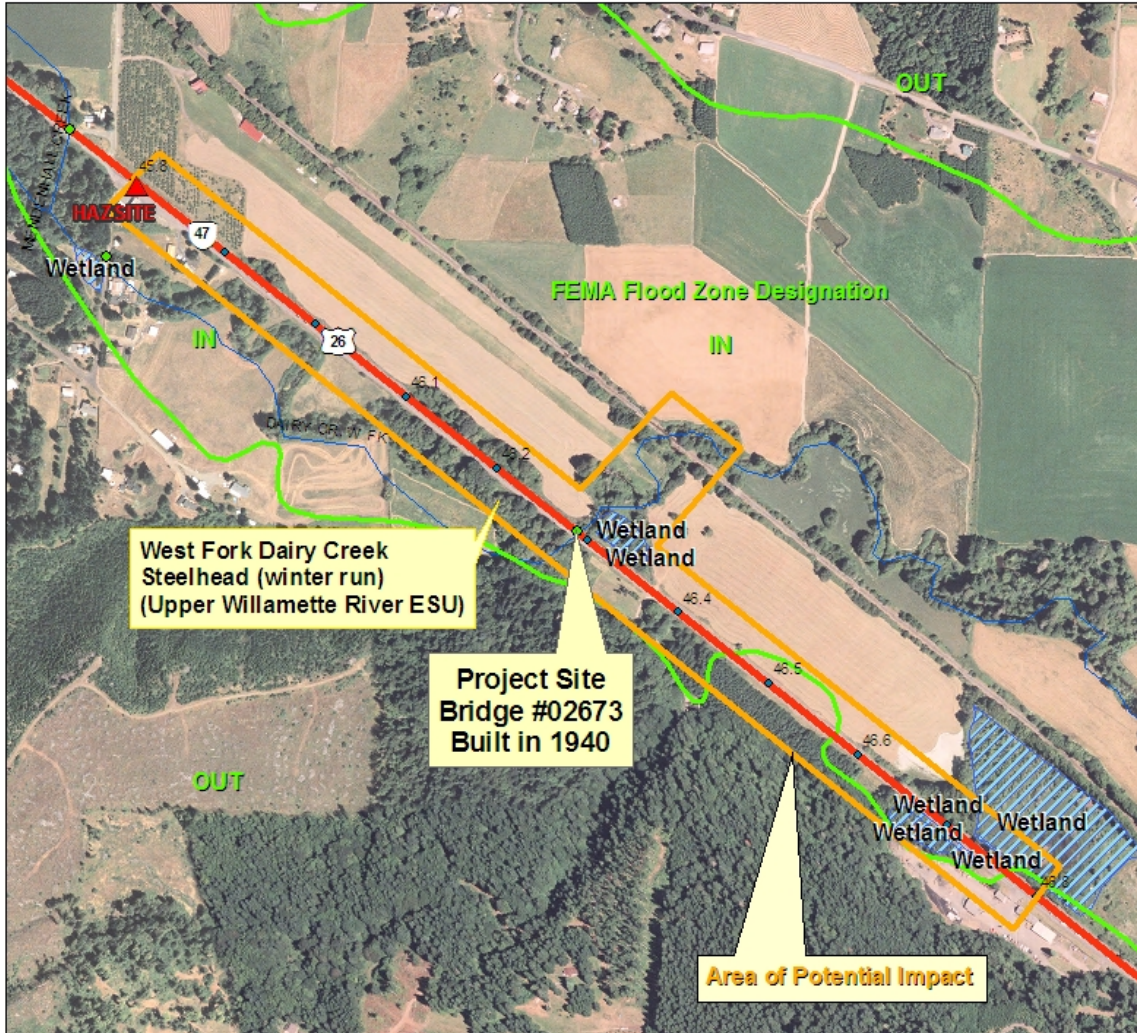
This project will require a removal/fill permit from Oregon Department of State Lands and the U.S. Army Corps of Engineers. It is expected to impact wetlands. The project is also expected to have impacts to Dairy Creek which supports a federally listed salmon species.

### **Anticipated Impacts**

- Wetlands    Salmonids    Prairie    Water temperature  
 Other Potential Credits

# Project Map

## Environmental Resource Baseline Map



OREGON DEPARTMENT OF TRANSPORTATION  
US26 West Fork Dairy Creek Bridge

Date October 21, 2008

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This product is for informational purposes only and may not have been prepared for or suitable for legal, engineering or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.



### Baseline Conditions

Baseline conditions were assessed for the entire project site. The project area includes 585 linear feet along Dairy Creek with no fish passage barriers. Based on the data collected for all the map units in the project area, this reach of Dairy Creek currently provides 35% of the ideal functions needed to support salmonids. This number represents weighting for factors that support anadromous fish, habitat formation, channel diversity, and temperature regulation functions. The baseline for salmon credits includes 585 linear feet of stream, but only 204.82 functionally-weighted linear feet. Current vegetation for this project blocks 2,645,307 kcal/day of the sun's energy.

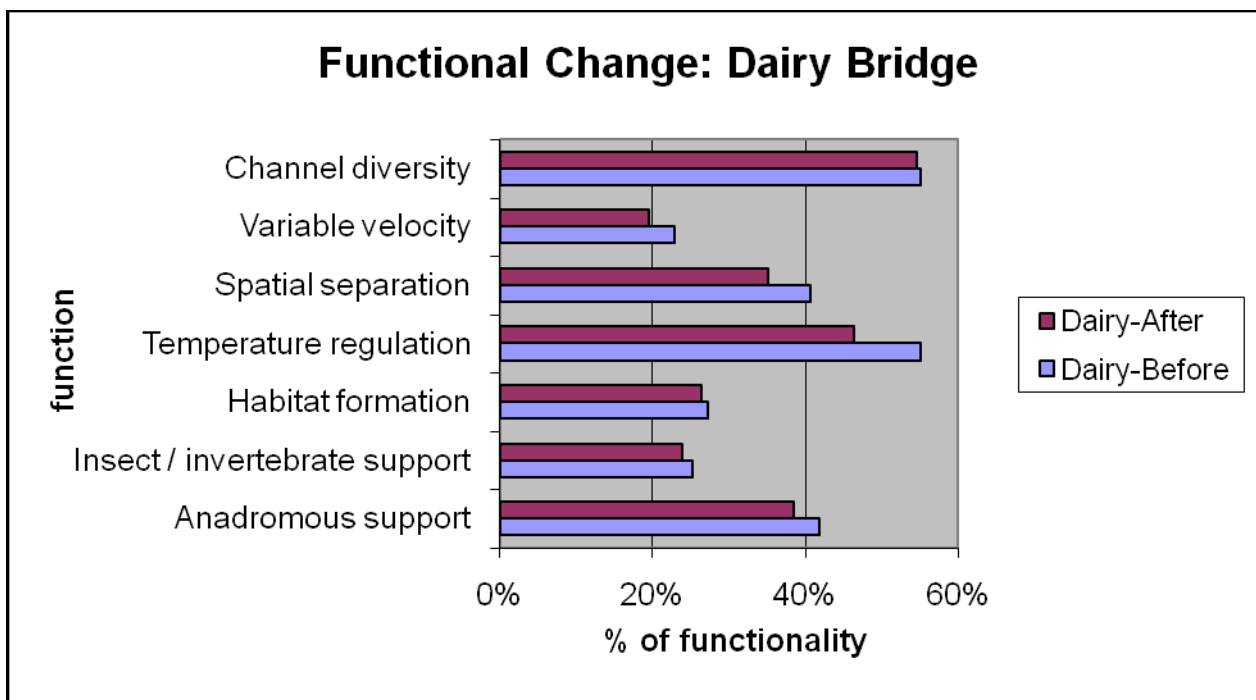
This project will also impact wetlands. Current wetland conditions at the site provide important functions that will be lost. Relative to other functions, the site provides important amphibian, invertebrate and waterbird functions in addition to carbon sequestration. A summary of the current wetland functions and values is listed below. They include:

Key ORWAP Functions	Combined Function Score	Combined Values Score
Hydrologic Services	0.30	0.81
Water Quality Services	0.27	0.04
Carbon Sequestration	0.60	
Fish Support	0.06	0.67

Amphibian, Invertebrate, & Waterbird Support	0.67	0.07
Plants, Pollinators, Songbirds, Raptors, & Mammals	0.34	0.57
Public Recognition & Use		0.28
Provisioning Services		0.00

### Post-Project Condition

This project will impact conditions and habitat for salmon. These actions will decrease the salmon function performance on this reach of Dairy Creek from 35% to 30% decreasing the total weighted linear feet from 204.82 to 177.66 incurring a debit of 27.16 salmon credits. Development at the project will impact vegetation resulting in an increase in solar heating by about 185,000 kcals/day. The chart below illustrates the changes in performance functions important for salmon that will result from the planned actions.



### Project credits

Subtracting baseline conditions from this number to get a number for improvement, the Gales Creek Half Mile project is likely to generate 706 weighted linear feet of salmonid credit, and almost 3 million kcal/day of temperature credit.

Credit Type	Baseline	Post-Project	Projected Impacts
Salmonid (Wght. ln ft)	204.82	176.66	27.16
Prairie (acres)	N/A	N/A	N/A
Water Temp. (kcal/day)	2,645,307	2,459,600	185,707
Wetland (acres)	Pending	Pending	pending

**Remaining work**

This project is currently in early design. The Oregon Department of Transportation has not completed full bridge design and gone through its analysis to avoid and minimize impacts. Additional baseline calculations will need to be completed for the entire footprint of the project rather than just the span replacement area. Once full designs and permits are in hand, full credit calculation, verification, and registration can be completed.