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TOWNLEY DOBBIN AND MILL CREEK FISH PASSAGE

Completion Report

Performance Period
June 1, 2009 to December 31, 2010

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TOWNLEY DOBBIN FISH PASSAGE

Background

The Catherine Creek system contains three ESA listed species: Snake River spring chinook and summer steelhead, and bull trout. All of these populations are severely depressed from historic levels. Catherine Creek was rated one of the highest habitat restoration priorities in the Grande Ronde Subbasin Plan. Elimination of passage barriers is one of the highest priority actions. There are a total of nine major irrigation diversions on Catherine Creek. Four have been reconstructed to provide satisfactory fish passage. One of the diversions is not a fish barrier. Passage at the Townley Diversion is being corrected by this project. The remaining three diversions will be reconstructed in 2011.

Existing Condition

The pre-project water diversion structure was a channel-spanning, deteriorating concrete wall on which check boards were placed to divert irrigation water into the Townley Dobbin ditch on the north side of the channel. The structure was a complete barrier to juvenile salmonids and other resident fish after diversion boards were installed, usually sometime in July. The diversion boards usually remain in place until mid-October. There was no fish ladder on the structure.

Project Location

The project was implemented on Catherine Creek in the City of Union at the Townley Dobin Diversion, approximately RM 17. Legal description: T3N, R39E, Sec. 35, NE ¼ of the SW ¼ .

Project Description

The GRMW contacted the Townley Dobbin irrigators in 2008 and inquired if they would be interested in upgrading the facility to provide fish passage. The irrigators were interested so GRMW staff initiated the planning and design process. The project cooperators were the Townley Dobbin irrigators, GRMW and BPA.

Specific objectives were:

- Provide year-round fish passage for all life stages of all native species, particularly Snake River spring Chinook, summer steelhead and bull trout
- Maintain streambed and streambank stability

The GRMW accomplished the following planning, design and implementation activities:

- Contracted with Anderson Perry & Associates to do a site survey and prepare engineering designs.
- Completed ESA consultation with NOAA Fisheries and U.S. Fish and Wildlife Service (USFWS).
- Completed Cultural Resource Section 106 consultation with Oregon State Historic Preservation Office, the Confederated Tribes of the Umatilla Indian Reservation and the Nez Perce Tribe.
- Coordinated and obtained fish passage design approval from NOAA Fisheries and the Oregon Department of Fish and Wildlife (ODFW).
- Contracted with Anderson Perry & Associates to conduct construction engineering inspections.

Completed Construction Activities

Construction was on-going from mid-July to the end of August, 2010. The in-water work window was July 1 to August 15. Start of construction was delayed two weeks due to

unseasonably high stream flows. The GRMW requested and was granted an in-water extension approved by NOAA Fisheries, USFWS, ODFW and the Oregon Department of State Lands.

The following construction activities were completed:

- Isolated the work area with concrete eco-blocks
- Conducted fish salvage and release
- Removed all of the existing structure with the exception of the concrete abutment on the south side of the channel
- Excavated the work site
- Placed five precast concrete cells spanning the entire channel
- Installed a steel sheet-pile cutoff wall (5% of area perforated) six feet below grade
- Filled concrete cells with 18" minus angular rock
- Excavated a low-flow channel leading up to the fishway
- Constructed a 16'x 4' step-pool fishway (3 pools)
- Installed new slide gate leading to irrigation ditch
- Placed approximately 450 cubic yards of bed class 16 stream simulation material below the new diversion and continuing downstream approximately 200 feet
- Construct one J-hook rock vane approximately 150 feet below the new diversion structure
- Reshaped streambanks and seeded with native grasses

Monitoring

GRMW and ODFW will periodically monitor the site for stability of the structure, correct diversion board placement and debris blockage of the fishway during the irrigation season.

MILL CREEK FISH PASSAGE

Background

Mill Creek contains ESA listed Snake River summer steelhead, resident rainbow trout and other native species. The steelhead population is severely depressed from historic levels. Elimination of passage barriers is a high priority action wherever listed species occur. The project site is the McNeill Diversion.

Existing Condition

Each year the irrigators enter the stream with heavy equipment to construct a pushup dam to divert water into the irrigation ditch, disturbing the streambed, creating excessive sediment and creating a fish passage barrier. Passage is restricted for juvenile steelhead, resident rainbow trout and other native species after the pushup dam in constructed. The pushup dam remains in place usually from early-July through the end of October.

Project Location

The project is located on Mill Creek approximately six miles upstream of the confluence with Catherine Creek and a mile above Cove, Oregon. Legal description: T3S, R40E, Sec. 23, SE ¼ of the SW ¼ .

Project Description

The Union Soil and Water Conservation District (SWCD) sponsored the project. BPA funds were used to install one vortex rock, channel-spanning weir. The weir installation was part of a larger project the SWCD implemented which rebuilt the diversion headgate structure, installed a new slide gate, installed a measuring device, installed a new fish screen and piped 1400 feet of

open irrigation ditch. The SWCD acquired funding from the Oregon Watershed Enhancement Board for all elements of the project except the rock weir.

The weir was constructed using 55 cubic yards of 30" minus angular rock designed for a jump height of less than six inches. Lindley Construction constructed the rock weir. The ODFW constructed the headgate structure and installed the slide gate, measuring device and fish screen. ODFW provided in-kind construction services.

Specific objectives were:

- Provide year-round fish passage for all life stages of all native species, particularly Snake River summer steelhead and rainbow trout.
- Reduce sediment transport

Monitoring

The ODFW will periodically check the structure for rock displacement, stability and jump height during the course of their regular fish screen maintenance activities.

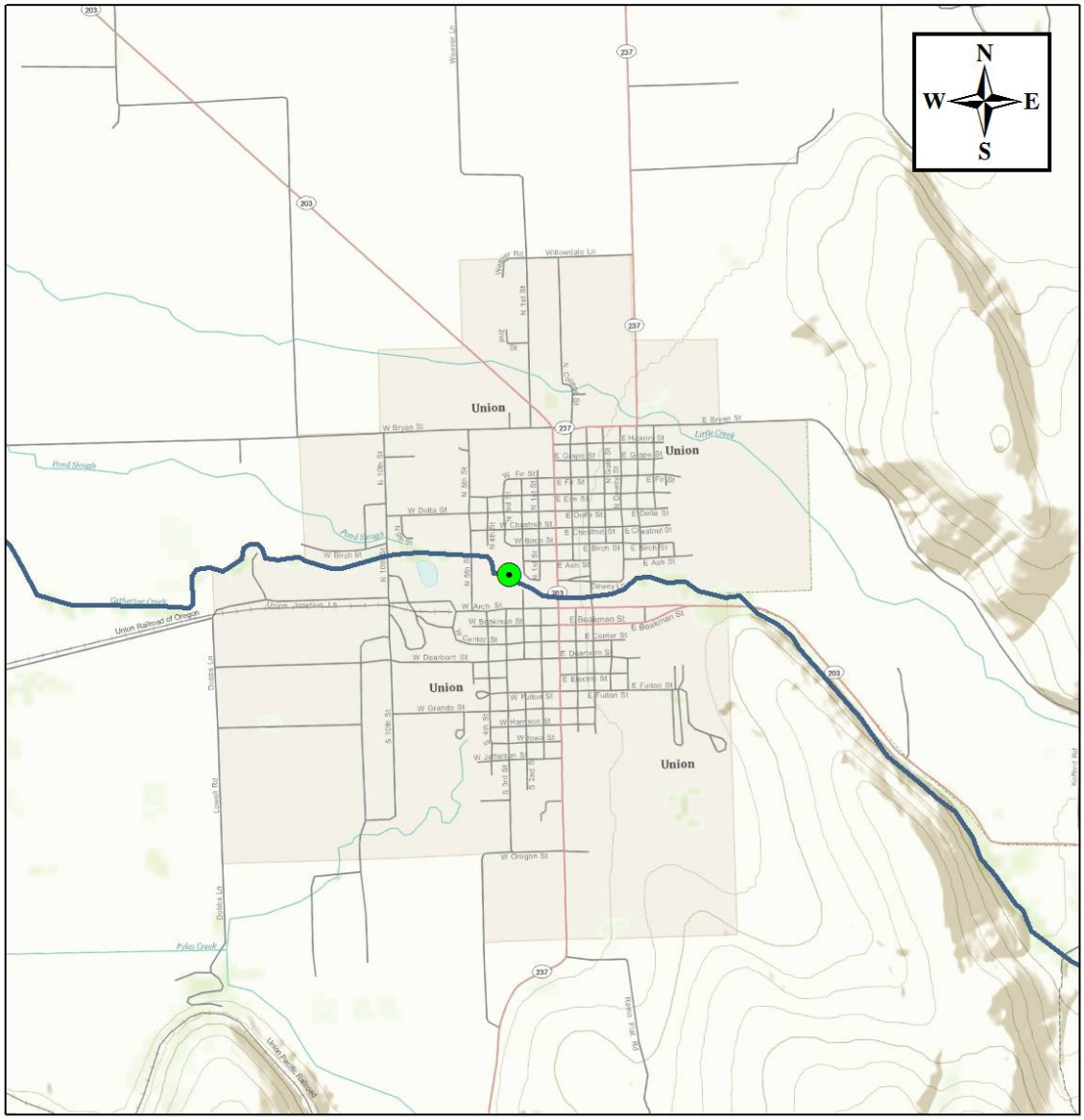
Budget and Expenditures

Townley Dobbin was entirely funded by BPA. BPA provided only a small portion of the funds for Mill Creek. Cost share for Mill Creek is not shown.

Townley Dobbin and Mill Creek Fish Passage - Expenditures			
		Approved BPA Budget	**Total Project Invoices**
Townley Dobbin Fish Passage:			
Mobilization- Mike Becker		$6,200.00	$5,575.71
Remove existing concrete divers - Becker		$10,000.00	$10,000.00
Excavation & prep work divers-Becker		$8,000.00	$8,000.00
Place irrigation diversion sect-Becker		$25,000.00	$25,000.00
Place sheet piles-Becker		$16,800.00	$16,800.00
Install stream simulation mat-Becker		$19,000.00	$7,000.00
Relocate existing slide gate-Becker		$4,000.00	$4,000.00
Install J-Hook vane-Becker		$6,000.00	$6,000.00
Water control - Mike Becker		$15,000.00	$7,250.00
Construct engin & insp- Anderson Perry		$14,000.00	$2,085.91
	Subtotal	$124,000.00	$91,711.62
Mill Creek Warnock Fish Passage:			
Pollution control- Steve Lindley		$375.00	$375.00
Work isolation		$2,140.00	$0.00
Excavation - Steve Lindley		$580.00	$431.00
Rock weir structure - S. Lindley		$3,300.00	$3,300.00
Revegetation		$750.00	$0.00
Contingency		$1,259.00	$0.00
	Subtotal	$8,404.00	$4,106.00
	Total	$132,404.00	$95,817.62

Townley Dobbin Fish Passage

Vicinity Map



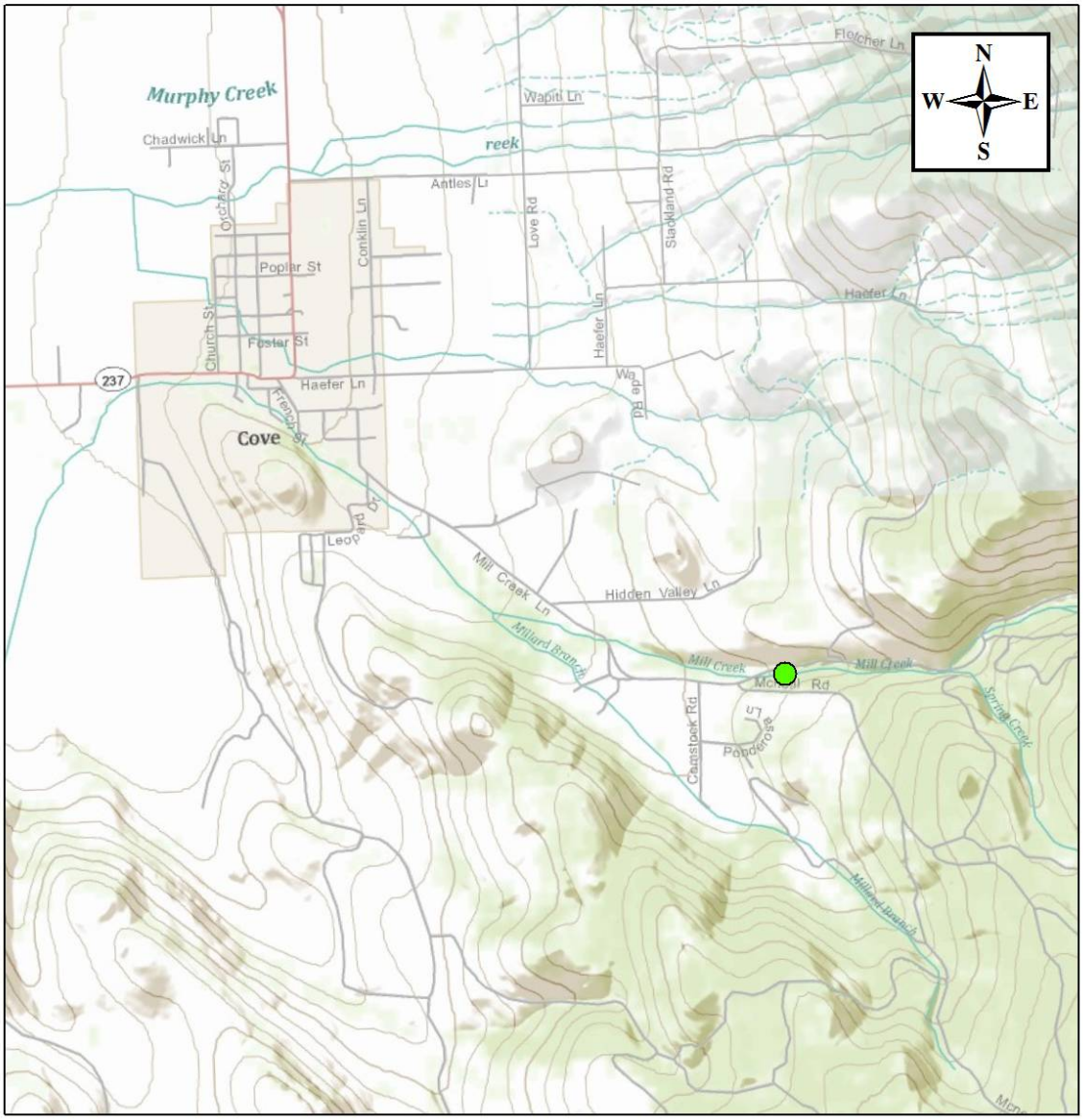
0 0.25 0.5 1 Miles

- Project Location

GRANDE RONDE MODEL WATERSHED

Mill Creek Fish Passage

Vicinity Map



0 0.25 0.5 1 Miles

● - Project Location

GRANDE RONDE MODEL WATERSHED

Pre-project looking upstream during the irrigation season. Note jump height of approximately two feet creating barrier to juvenile fish.

During construction. View shows concrete cell installation

Townley Dobbin Fish Passage

Post-construction. Irrigation check boards are in place and water is flowing through the fishway.

Pre-project – View looking upstream at the head of the irrigation ditch. Note water cannot be checked up to provide flow to the irrigation ditch. Gravel pushup dam in not in place.

Post-project – View looking upstream at the head of the irrigation ditch. Note that the weir is barely visible and does not create an excessively high jump

View of new ODFW installed irrigation ditch headgate