Copper River Watershed Project

Voices for a Wild Salmon Economy

DATE: 8/23/2010
PARTNER: COPPER RIVER WATERSHED PROJECT
PROGRESS REPORT for USFWS AGREEMENT 701819J001
REPORTING PERIOD: January 14, 2009 – December 31, 2010 // **FINAL REPORT**

PROJECT TITLE

Eccles Creek Fish Passage Improvement: providing technical assistance in researching the removal of barriers in Eccles Creek to restore access to Coho salmon, pink salmon, and coastal cutthroat trout.

PROJECT BACKGROUND

Eccles Creek is an anadromous stream that flowed under Whitshed Road in Cordova, Alaska through a corrugated metal pipe 103-feet long with a 96-inch diameter. In 2002 ADF&G and DOT&PF inventoried culverts within the Copper River Watershed. Three levels were outlined for fish passage conditions: "red" indicates inadequate, "gray" indicates that more information is needed, and "green" indicates conditions are favorable. Eccles Creek was classified as a "red" culvert, inadequate for fish passage.

Eccles Creek provides an important rearing and spawning habitat for cutthroat trout, spawning habitat for pink salmon, and rearing habitat for coho salmon. CRWP worked during 2009 and 2010 to permit, design, construct, and revegetate Eccles Creek with a larger, embedded culvert to simulate more natural stream conditions. The goal is to open up .5 miles of upstream spawning and rearing habitat.

During the community outreach process, neighbors shared their concerns for a tributary to Eccles Creek, Whiskey Creek. Whiskey Creek is a tributary north of Eccles Creek that flowed through an undersized culvert and created flooding problems for local residents. Whiskey Creek was also being polluted by stormwater with a heavy discharge of sediment, degrading the spawning and rearing habitat. Finally, a local resident notified us he had obtained permits to reroute Whiskey Creek from the middle of his property to the northern property line. CRWP, along with DOWL HKM and ADF&G, helped this property owner better align the new stream channel to avoid additional 90-degree bends and offered to install a new culvert to restore fish passage for rearing coho salmon as part of the Eccles Creek culvert replacement since the road would already be torn up.

PROJECT ACTIVITIES AND ACCOMPLISHMENTS

Engineering work was contracted to Dowl HKM. For Eccles Creek, DOWL HKM proposed replacing the 8-ft Eccles Creek culvert with a 19-ft x 9-ft embedded single-radius arch culvert constructed of galvanized steel. The culvert was designed with a slope of 2.72% and included ten rock steps.

Dowl HKM surveyed Whiskey Creek and found three culverts below the normal flood capacity. The current culvert carrying Whiskey Creek under Whitshed Road has a capacity of 13.2 cfs which is undersized to meet even the five-year peak flow. "Fish Xing" software calculated the culvert was a barrier for fish passage. Whiskey Creek was to be rerouted by the property owner and CRWP would install a 64" x 51" arch pipe with a slope of .73% to carry Whiskey Creek under Whitshed Road.

Permitting was completed on June 1, 2010, after ADOT&PF approved the Special Use permit. ADOT&PF required an inspector from DOWL HKM to be onsite during the month of construction. Daily inspection reports were written by DOWL HKM and CRWP and were sent to USFWS project officer. ADOT&PF also required reimbursement for their travel expenses to have a presence onsite during the weekly SWPPP inspections.

Big R Bridge won the contract for manufacturing the Eccles Creek culvert, $59,524. Contech won the contract for manufacturing the two Whiskey Creek culverts, $15,286. Due to the decline in the price of steel, we were able to afford all three culverts with NFWF funds. All three culverts were delivered to Cordova by May 10, 2010. CRWP bid and purchased the culverts instead of the contractor to save time.

A request for bids was circulated and we received four responsive bids. Wilson Construction won the bid for $484,900 and began construction on June 1, 2010. Two change orders were requested. The removal of an unexpected concrete bridge abutment equaled $35,220 and the additional labor required for a change in culvert design equaled $3,921.50. The $3,921.50 change order was sent to Big R Bridge for reimbursement.

All in-water work was completed by June 30, 2010 as required by our ADF&G Fish Habitat permit. Guardrail installation and asphalt paving were completed by August 6, 2010. CRWP organized volunteers to revegetate the upstream bank of Eccles Creek and the upstream bank of Whiskey Creek on July 14, 2010.

On August 1, 2010 the first documented pink salmon successfully passed through the Eccles Creek culvert. On August 18, 2010 seven pink salmon were observed spawning in the culvert.

Pre-construction and post-construction monitoring on Eccles Creek was contracted to the Prince William Sound Science Center. Visual surveys were conducted and baited minnow traps were deployed on two occasions during the 2009 season and four times during the 2010 season. Post-construction monitoring for fish passage will continue over the next three years.

TOTAL PROJECT EXPENSES:

Engineering	$84,941
CRWP Project Management	$33,000
Construction	$520,120
Culvert Purchase	$74,536
Site Inspections / Testing	$51,376
TOTAL	**$763,973**

PROJECT FUNDING BREAKDOWN:

Western Native Trout Initiative	$50,000
US Fish & Wildlife Service: Fish Passage	$40,000
US Fish & Wildlife Service: ARRA	$233,000
National Fish & Wildlife Foundation	$100,000
National Oceanic Atmospheric Admin: ARRA	$340,973
TOTAL	**$763,973**

COPPPER RIVER WATERSHED PROJECT
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Inspection Report

Project Name: Fish Passage Restoration at Eccles Creek, Cordova, Alaska		
Work Order Number: 1124.60259.01	Report No: 035	Date: August 10, 2010
Contractor: Wilson Construction, Inc.		
Inspector: Tracey Nuzzi (CRWP)		Page 1_____ of __5_____

Construction of the Eccles Creek / Whiskey Creek culvert project is complete.

Figure 1: Looking south at Eccles Creek / Whitshed Road.

Figure 2: Looking upstream at the outlet of the new Eccles Creek culvert.

Figure 3: Looking north at Eccles Creek crossing from the north end of SE retaining wall.

Figure 4: Looking downstream at the upstream end of the new Eccles Creek.

Figure 5: Looking downstream Eccles Creek on the downstream side of the culvert.

Figure 6: Looking south from Whitshed Road at the recently paved portion at Eccles Creek.

Figure 7: Looking east at the upstream side of the Eccles Creek culvert.

Figure 8: Looking upstream at the downstream side, inside the Eccles Creek culvert.

Figure 9: Looking north on Whitshed Road at the recently paved portion at Whiskey Creek.

Figure 10: Looking west (downstream) at the upstream side of the Whiskey Creek culvert.

Figure 11: Looking east (upstream) at the downstream side of the Whiskey Creek culvert.

Figure 12: Looking downstream at the upstream side of the Bartley driveway culvert. This ditch now drains stormwater from the City Baler.

Figure 13: Looking upstream at the downstream side of the Bartley driveway culvert. This ditch now drains stormwater from the City Baler.

REPLACEMENT PLANS

Watershed project sees culverts as culprits

New culvert will help salmon to migrate

TRACEY NUZZI
For The Cordova Times

During the month of June, the Copper River Watershed Project is replacing the Eccles Creek culvert on Whitshed Road. Culverts are the metal tunnels that cross under roadways, helping salmon and other aquatic inhabitants access habitat both up and downstream of our roadways. Fish passage can be inhibited when a culvert is not properly constructed or maintained and it is important we take note to fix such barriers. The Eccles Creek culvert was determined by Alaska Department Fish and Game to be impassable to fish.

Currently, the 22-foot wide stream channel is forced into an 8-foot pipe. Often the water flows at a rate too swift for juvenile Coho to swim through. The Copper River Watershed Project will use funding from the National Oceanic Atmospheric Administration, United States Fish and Wildlife Service, and National Fish and Wildlife Foundation to install a 19-foot arched embedded culvert. The new design will reduce the speed of the water flowing through the culvert and reduce the jump fish currently face when swimming upstream.

Culverts are the culprits in the loss of fish passage, but culverts can also cause hydrology problems. Whiskey Creek is a tributary to Eccles Creek and the culvert carrying flows under Whitshed Road has caused flooding problems in the neighborhood. The Copper River Watershed Project also plans to replace this undersized culvert during construction on the Eccles Creek project.

Wilson Construction has been hired for the June construction. Wilson is working on traffic control plans to reduce the inconvenience to residents. A 13-foot wide detour lane will be built to accommodate neighboring residents. Although the one lane detour will only affect approximately 300 feet of Whitshed Road, neighbors should anticipate this delay when driving through the intersection.

After June construction, restoration work begins in July and the Copper River Watershed Project will be asking for community volunteers interested in helping plant new vegetation along the roadway and stream banks. Residents also can help in making Cordova's fisheries sustainable by looking at culverts in their neighborhood to examine if the culvert exits above the water level, the rate of water velocity, if there is a resting pool below the culvert or if the water in the culvert is too low. Residents can bring this information to the Copper River Watershed Project Office for assistance in assessing culverts and if necessary developing a plan that supports fish passage.

COURTESY PHOTO

After June construction, restoration work begins in July and the Copper River Watershed Project will be asking for community volunteers interested in helping plant new vegetation along the roadway and stream banks.

Tracey Nuzzi can be reached at the Copper River Watershed Project at 424-3334 or tracey@copperriver.org.

THOMAS KLINE / COURTESY PHOTO

Pink salmon and cutthroat trout fry lined up as they make way through the new fish passage at Eccles Lagoon.

Neighbors celebrate return of humpies

Eccles Creek culvert finished, fish-friendly

TRACEY NUZZI
For The Cordova Times

After a two-month project by the Copper River Watershed Project to restore fish passage on Eccles Creek, the first documented pink salmon were seen swimming through the newly installed 19-foot arch culvert under Whitshed Road on Aug. 1.

As Wilson Construction finished paving Whitshed Road, neighbors helped celebrate the completion of construction at Eccles Creek and Whiskey Creek crossings that began on at the beginning of June.

The Eccles Creek project is the second major culvert replacement tackled by the Copper River Watershed Project. In 2008 three undersized, perched culverts east of the city airstrip on Power Creek Road were replaced with a 19-foot box culvert. By the summer of 2009, pinks and cutthroat were seen returning to the stream to spawn.

"We hope to have the same success with the Eccles Creek culvert as we did on Power Creek Road," said executive director Kristin Smith.

"Our goal is to remove a passage barrier for pink and coho salmon with stimulus money to provide jobs for our local economy."

In 2002, the ADF&G and DOT&PF inventoried culverts within the Copper River Watershed. Three levels were outlined for fish passage conditions: "red" indicates inadequate, "gray" indicates that more information is needed, and "green" indicates conditions are favorable.

Eccles Creek was classified as a "red" culvert. Sixty-seven percent of all culverts in the watershed were assessed as barriers to fish passage, if a "red" culvert was installed on a fish stream.

The Dowl engineering firm was hired to assess the fish passage barrier using the USFS FishXing software with juvenile coho salmon as the design fish. FishXing reported that coho salmon would reach exhaustion 24 feet through the 103-foot long culvert.

These data were confirmed by monitoring data from the Prince William Sound Science Center, which has been hired to conduct pre and post construction monitoring in Eccles Creek. Pre-

■ See Page 11, **PINKS**

PINKS

From Page 1

construction showed an absence of coho juveniles and pink adults upstream when compared to the count downstream.

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Whiskey Creek was also being polluted by stormwater with a heavy discharge of sediment, degrading rearing habitat for coho salmon and cutthroat trout.

A local resident notified the Copper River Watershed Project that he had obtained permits to reroute Whiskey Creek from the middle of his property to the northern property line.

The Watershed Project, along with Dowl and ADF&G, helped this property owner better align the new stream channel to avoid additional 90-degree bends and offered to install a new culvert to restore fish passage for rearing coho salmon as part of the Eccles Creek culvert replacement since the road would already be torn up.

On June 1, Wilson Construction began constructing a detour lane, excavating Whitshed Road, installing three new culverts on Eccles Creek and Whiskey Creek, and re-stabilizing the banks.

Thanks to the patience of local residents commuting through the site each day, the Copper River Watershed Project was able to keep a local contractor busy for a month and half of construction and restore natural stream conditions back to Eccles Creek.

On Aug. 1, Tom Kline of the Prince William Sound Science Center sent the Copper River Watershed Project an underwater photograph he had taken upstream of the Eccles Creek culvert to document fish passage. Over the next three years, the Prince William Sound Science Center will continue to conduct visual surveys and deploy minnow traps to observe changes within Eccles Creek.

A community education program on the Copper River Watershed Project's restoration work will be held on Oct. 12 at the Forest Service courtroom at 7 p.m.

Tracey Nuzzi can be reached at the Copper River Watershed Project at 424-3334.