

Final Progress Report

Date: April 8, 2016

Prepared by: Kenai Watershed Forum, Jack Sinclair & Robert Ruffner

Project Name: Beaver Loop Road Fish Passage Improvement Project

FBMS Award Number: F10AC00716

FFS DCN: 70181AJ079

The purpose of this project is to remove the fish passage barriers on Beaver Loop Road by replacing the undersized culverts with structures that allow for the stream channel to maintain natural conditions. These improvements will promote healthy fish habitat to support successful salmon runs in the future. This project is being carried out by the Kenai Watershed Forum (KWF), in conjunction with USFWS and the Alaska Department of Transportation and Public Facilities (ADOT&PF).

All work has been completed on this project (100%), including the successful hydroseeding of the approaches to each side of the creek. The red fescue mix has established itself securely over the entire disturbed area.

Project Objective:

The overall objective of this project is to enhance rearing habitat for Coho and Sockeye salmon. The funds requested in this proposal will assist project managers in the replacement of an undersized culvert with a suitably sized culvert. Working in partnership with the USFWS, ADOT, and project contractors, KWF's approach will be to remove and replace the culvert with a stream simulation design. At a minimum the stream simulation design involves sizing the culvert larger than the ordinary high-water stream width, matching the stream slope to within one percent of the natural stream bed, and mimicking the stream substrate in the culvert with that of the naturally occurring streambed materials. KWF and USFWS have conducted numerous field visits to the site over the years under varying stream flow conditions and have collected a number of measurements and observations, including running the US Geological Survey Alaska Streamflow Statistics Program for ungaged sites (Curran et al.), in order to mitigate against peak-streamflow frequency estimates and to mimic the natural stream characteristics.

Project Background:

Anadromous and resident fish species on the Kenai Peninsula are ecologically and economically vital to the region. Unrestricted access to available spawning and rearing habitat is critical for these fisheries to be maintained as self-sustaining populations. Passage of juvenile and/or adult fish is being impaired or blocked by improperly designed or failed culverts. In the face of changing climate conditions, it is expected many organisms will experience distributional changes (Seavey et al. 2009). Providing and or restoring habitat connectivity in aquatic systems is widely
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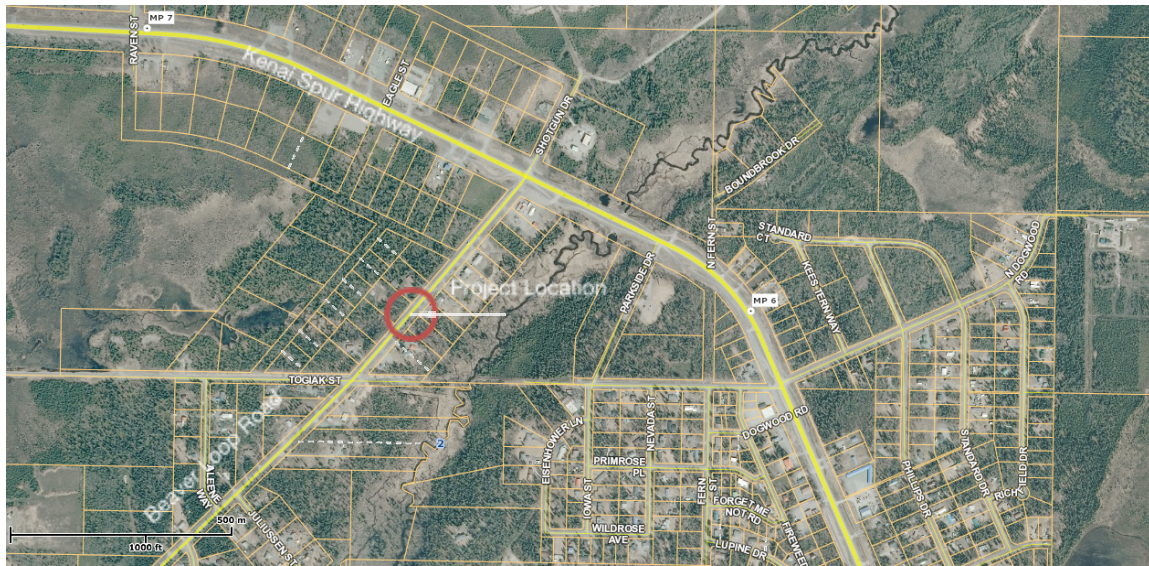
considered a fundamental approach to sustain biodiversity in lieu of changing climate (Heller and Zavaleta 2008). This project will assist aquatic organisms in responding to climate change by reconnecting fragmented habitat.

Project Description:

By doing a complete culvert replacement of the existing impaired culvert, this project will open up approximately 1.08 river miles of documented juvenile Coho and Sockeye salmon rearing habitat on an unnamed tributary of Beaver Creek, the latter being a tributary of the Kenai River. In addition, this stream continues upstream from that point into a vast wetland complex that borders the edge of the Kenai National Wildlife Refuge, adding an unquantifiable amount of access to this increasingly vital habitat. The potential of salmon using this wetland habitat for rearing is high and there exists within this project the opportunity to document their presence further upstream in this wetland complex; potentially adding critical documentation of habitat to the ADF&G managed Anadromous Waters Catalog. KPTU members have qualified experience documenting this habitat and will conduct this aspect of the project.

In addition to opening up the habitat mentioned above, this culvert replacement is within 2.37 documented anadromous river miles of the world-class Kenai River. The Kenai supports four species of Pacific salmon – Chinook, Coho, Sockeye, and Pink – as well as Rainbow and Dolly Varden trout and nearly 34 other unique species of fish. Within those 2.37 miles, there is another potential fish barrier – an illegally used ATV crossing of Beaver Creek. Under State regulation, crossing an anadromous stream, such as Beaver Creek, is illegal. This crossing has been addressed by KWF, USFWS, and ADF&G and in the summer of 2014 will be blocked using signs and either a fence or boulders in order to mitigate illegal crossings. This area also has a large infestation of Reed Canary Grass (RCG), an invasive species which ranks high on many environmental “to do” lists. RCG has been treated in this area with digging and tarpping techniques in the past and will receive a chemical treatment, independent of this proposal, during the 2014 field season.

Project location:



Lat. 60.561277 Long.-151.128898



An employee with Endries Company stands on a new culvert being installed beneath Beaver Loop Road in June of 2014. The Kenai Watershed Forum is overseeing the project that will allow juvenile fish to migrate from Beaver Creek to the Kenai River. Excessive groundwater delayed the completion of the project for three more weeks but was completed the second week in July. A section of the road was closed, cutting residents off from the Kenai Spur Highway intersection. (Credit: Peninsula Clarion)

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High levels of groundwater delayed the culvert replacement project on Beaver Loop Road that pushed the completion timeline back three weeks before the section of road could be reopened. (Credit: Peninsula Clarion)



Completed bulkhead and culvert, downstream portion. Beaver Loop Road Culvert project 2016.

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Completed bulkhead and culvert, downstream portion. Beaver Loop Road Culvert project 2016.



Completed bulkhead and culvert, upstream portion. Beaver Loop Road Culvert project 2016.

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Previous Progress reports

Annual Progress Report

Date: December 30, 2014

Prepared by: Kenai Watershed Forum

Project Name: Beaver Loop Road Fish Passage Improvement Project

FBMS Award Number: F10AC00716

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We are happy to report that this project is 99% complete. We are holding the project open to ensure that vegetation will take root next spring as the hydroseeding was conducted very late. We are aware that the project engineer has been updating everyone with details on the progress. We are including the last (#113) progress report from the field for your reference.

Annual Progress Report

Date: December 30, 2011

Prepared by: Kenai Watershed Forum

Project Name: Beaver Loop Road Fish Passage Improvement Project

FBMS Award Number: F10AC00716

FFS DCN: 70181AJ079

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During the last reporting quarter no new progress occurred on this project. Due to a setback from the installation of a new water main along Beaver Loop Road, additional time and funding were requested and approved in September, 2011. Pending successful negotiations between ADOT &PF and the City of Kenai over ownership of Beaver Loop Road, construction should begin in the summer 2012 construction season.

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