



NATIONAL *fish, wildlife & plants*
CLIMATE ADAPTATION STRATEGY

Restoring Access to Salmon Habitats

Project Title: Chickaloon Native Village's Moose Creek Fish Passage Restoration Project in Alaska

Brief Summary (Abstract): A multi-year effort to restore fish passage past man-made waterfall barriers to miles of salmon spawning and rearing habitats. Expanding healthy salmon habitats may help salmon be resilient to climate changes.

Project Location: south central Alaska

Partners: Chickaloon Native Village, US Fish and Wildlife Service

Background: For centuries Moose Creek was a flourishing salmon stream. However, in 1923 this essential fish habitat was drastically changed, when a railroad spur was constructed up Moose Creek for a coal mining industry. This construction straightened and realigned much of the creek as a means to increase the space available for railroad operations and resulted in the creation of several waterfalls. The largest fall was completely impassable to spawning salmon, and the others were challenging barriers that only the strongest salmon could overcome. Originally the creek was a winding salmon stream, however after the coal mining and railroad development the creek was straighter and steeper, causing faster water velocity and challenges for fish.

Salmon have always been central to the way of life of the Ahtna people, including members of Chickaloon Native Village, who continue to use traditional sources for sustenance. The Chickaloon Native Village, in collaboration with other agencies and the local community, restored fish passage and improved habitat on Moose Creek for anadromous fish, particularly salmon, over a 3-year period (2005-2007).

Project Goals: The goals were to restore fish passage and habitat quality on Moose Creek by: 1) realigning two sections of Moose Creek from a straight, steep channel to the original (pre-railroad), meandering, lower gradient channels and therefore bypassing the waterfall barriers; 2) enhancing fish habitats on Moose Creek at our realignment project sites, including the construction of logjams for habitat and bank protection; 3) monitoring salmon escapement annually on Moose Creek to ensure fish passage is maintained.

Strategy Goals Implemented: 1.3.2: Restore degraded habitats as appropriate to support a diversity of species assemblages and ecosystem structure and function.

1.3.3: Restore or enhance areas that will provide essential habitat and ecosystem services during ecosystem transitions under a changing climate.

Climate Impacts Addressed: Impacts on species and habitats

Status of Project Implementation (Timeline, Milestones, Next Steps): Restoration phase of project is complete. Annual salmon escapement monitoring is ongoing. In 2005 and 2006 a total of nearly half a mile of stream was realigned into its original, pre-railroad, curvature which bypassed several waterfall barriers including one complete barrier to fish passage. In 2007 logjams were built to increase habitat



options and provide stream bank protections. Annual foot surveys to count spawning Chinook salmon are conducted by Chickaloon Native Village.

Project Outcomes: Fish passage was restored on Moose Creek and anadromous fish now have access to more than 5 miles of upstream habitats for spawning and rearing. Fish passage has been maintained during two major floods since the restoration phases were completed. More than 200 adult Chinook salmon were counted upstream of the previous waterfall barrier immediately after the restoration actions of Phase 1 in 2005. Salmon have restored access to ancestral spawning and rearing habitats that were blocked for many decades.

Funding Sources: Chickaloon Native Village, US Fish and Wildlife Service, NOAA, ConocoPhillips Alaska, National Fish Habitat Partnership, 5-Star Restoration Partnership, Coastal America Foundation

Photos/Attachments: See Chickaloon Native Village website at <http://www.chickaloon.org/departments/environmental-stewardship/moose-creek>