U.S. Fish & Wildlife Service

Alaska's Fish Passage Program

Keeping Salmon in Alaska's Streams

The mission of the U.S. Fish and Wildlife Service Fish Passage Program is to restore native fish and other aquatic species by reconnecting habitat that has been fragmented by artificial barriers.

This culvert on Alaska's Kenai Peninsula is not properly "seated" in the streambed. It may not have been properly installed, or the force of the water may have scoured out a pool below the outfall. Whatever the cause, a high-speed waterfall has resulted, and juvenile fish are not able to safely pass this barrier. Note the salmon fingerlings that have died, probably in their struggle to pass through the culvert. Photo by Gary Wheeler, USFWS.

A State Revolving Around Salmon

Salmon are fundamental to Alaska's economy, and its social and ecological vitality. Salmon produced in Alaskan rivers support recreational and commercial fisheries valued at hundreds of millions of dollars annually, and are central to subsistence lifestyles. Salmon also play keystone ecological roles by transporting nutrients from marine to freshwater ecosystems, contributing to the productivity of rivers, lakes, wetlands, and forests.

Habitat loss, overexploitation, and introduction of non-native species pose well-known threats to Alaska's salmon populations. Lesser-known, but equally real, threats to healthy salmon runs are artificial barriers that block fish from essential freshwater habitats.

The Status of Fish Passage in Alaska

With tens of thousands of spawning streams crisscrossing the 49th state, many in largely undeveloped watersheds, the fact that fish passage could be a significant threat may come as a surprise. However, recent surveys have demonstrated that thousands of culverts – underlying major highways, city streets and forest trails – block fish. On the Tongass National Forest alone, more than 700 culverts may restrict salmon from their traditional spawning or rearing waters. In fast-developing regions such as the Matanuska Valley and the Kenai Peninsula, multiple barriers on single watersheds could contribute to decreased escapements and eventual reductions in angling and subsistence opportunities.

Fortunately, local, state and federal agencies are becoming increasingly aware of the threats that improperly-designed culverts pose to salmon. New structures are generally being designed to ensure passage for all species and all life stages. The Fish Passage Program is an important cooperative effort to correct existing fish passage problems.

What is the Fish Passage Program?
In Alaska, the Fish Passage Program provides technical assistance and federal funds to remove, replace, or retrofit culverts, weirs, abandoned dams, or other structures that impede fish movement. The program also supports surveys of fish barriers within important watersheds. Funds may be used for projects on both public and private lands; cost sharing by partners is encouraged.

The removal of this abandoned dam on the Chatanika River near Fairbanks has re-opened more than 100 miles of fish habitat. USFWS photo.

Program Accomplishments
Since program establishment in 1999, the Fish Passage Program and its partners have removed 16 barriers to anadromous fish across Alaska, opening more than 200 stream miles to salmon, trout, grayling, and other species. Most projects have replaced poorly-designed or undersized culverts with larger structures that allow movement by both adult and juvenile fish.

For example, a failed culvert on Cottonwood Creek in the Matanuska Valley was replaced with a footbridge. This simple project resulted in almost immediate use by adult salmon, and also improved safety for elementary schoolchildren who cross the creek daily.

Other projects have been larger, more expensive, and more complex. On Badger Slough near Fairbanks, a bermed stream crossing had blocked fish migration for decades. Our biologists brought Service funds and technical assistance to the collaborative project, resulting in an innovative solution that replaced the berm with a timber bridge, providing safe passage for fish and vehicles at a fraction of anticipated costs.

Still other projects produce results that ripple across broad watersheds. The January, 2002, removal of the FE Dam on the Chatanika River east of Fairbanks, in place since 1926 and abandoned for decades, opened more than 100 miles of Yukon River tributaries to the free movement of salmon and resident fish.

The culvert pictured at left, on Widgeon Creek in Dillingham, was perched and undersized. Partners in a Fish Passage project replaced this barrier with a bottomless arch culvert (right), opening 10 miles of historic spawning and rearing habitat for all five species of Pacific salmon. USFWS photo.

For more information on the Fish Passage program in Alaska, please contact:

Mike Roy, Program Coordinator
U.S. Fish & Wildlife Service
1011 East Tudor Road
Anchorage, AK 99503
Phone: 1 907/786 3925
Email: Michael_Roy@fws.gov

U.S. Fish and Wildlife Service
1 800/344 WILD
Http://www.fws.gov

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