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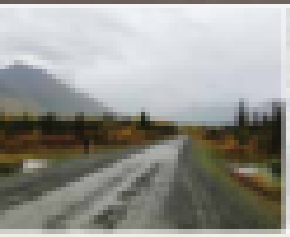
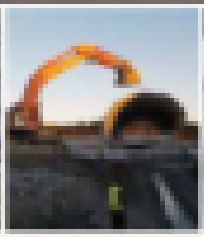
COPPER RIVER WATERSHED PROJECT

COPPER RIVER *Runner*

FALL 2018





HOW DO SALMON CROSS THE ROAD?

Replacing Culverts, Restoring Watershed Connectivity

BY KATE MORSE, PROGRAM DIRECTOR

Our work on fish passage and stream simulation culverts began 10 years ago with the idea of looking at the relationship between culvert condition (poor vs. good) and the value of the fish stream on which a culvert is located. With participation from a multi-agency partnership, we developed a scoring system, evaluated dozens of culverts throughout the drainage, and set up a database of all the culverts in our region that's used as a planning tool by us and our agency partners.

In May this year, we learned that the Exxon Valdez Oil Spill Trustee Council (EVOSTC) approved an award to our multi-agency partnership of $8.1 million to restore connectivity at 13 problem culverts on the Copper River Highway – that's a nice return on investment for that decade of field work and analysis on fish passage barriers!

To identify high priority crossings for restoration, scores have been calculated for the condition and the quality of habitat for each crossing. Specific culvert scores are awarded based on constriction (size of the pipe vs. the stream width), perch, and gradient (or slope) of the culvert. Specific habitat scores are awarded for quality and amount of fish habitat on the upstream side of the culvert and the diversity of fish species present in the stream.

Over the course of multiple field seasons CRWP completed a total of 234 habitat surveys and 78 culvert surveys to gather the data necessary to generate a fish passage score and a habitat score for each culvert. By calculating these scores we were able to identify the subset of crossings that have the highest quality and quantity of fish habitat associated with the poorest functioning culverts. As a result, our requests for funding are stronger because we can demonstrate a watershed-scale approach to restoring fish passage. Over the decade leading up to the recent award from the EVOSTC, we have secured roughly $2 million to replace or remove culverts at five other crossings in the watershed and are working on installing a bridge at one of the highest priority sites in the Copper Basin.

Not only does replacing culverts support our mission by restoring a salmon rich, intact watershed but it provides an economic boost to our communities. Restoration work provides local jobs and brings project partners and engineers to the region whose travel results in income to local businesses. Properly functioning culverts also protect our valuable roadway from flood erosion.

Replacing culverts with stream simulation culverts, or crossings designed to mimic natural stream conditions, is good for all inhabitants of our local waterways. They benefit salmon because they help provide connectivity to both spawning and rearing habitat. While it is easy to see (and catch!) adult salmon trapped on the downstream side of a culvert, what we often forget are the fry that can live for multiple years in fresh water before migrating out to the ocean.

Poorly installed culverts might be passable by spawning adults, however smaller fish have less energy reserves for overcoming swift waters and large perches. Restricting the free migration of juvenile salmon to limited stretches of nursery habitat will limit the number of smolts making it out to the ocean, which in turn limits the number of

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