## **COPPER RIVER WATERSHED**

Page 14



# RESTORATION AND RENEWAL in the Copper River Watershed

### MICHELLE MCAFEE

Copper River Watershed Project communications@copperriver.org

Restoring fish habitat is much like constructing a house. The process starts by breaking ground and removing any previous structures that aren't working. Next, the landscape is reshaped with slopes adjusted to manage water runoff. Once the new structure is built, the area surrounding the construction site must be replanted. Replacing culverts and installing bridges to remove fish passage barriers and restore habitat begins with deconstruction and ends with renewal.

Replanting native species in the restoration zone is critical. Plant roots stabilize the soil, prevent erosion, and keep sediment from washing into the stream during rain events. Establishing native plants also reduces the spread of invasive species, which can quickly take hold in newly disturbed soils. Restoring the disturbed area to its natural ecosystem improves habitat along river banks and affects water quality and fish passage.

#### REPLANTING NATIVE SPECIES ON THE LITTLE TONSINA

The Little Tonsina Bridge, installed at Milepost 74.2 on the Richardson Highway, replaced two old failing culverts and successfully opened over 70 miles of upstream fish spawning and rearing habitat. Once construction was successfully completed, the renewal began. Using permaculture principles—designing sustainable ecosystems based on natural processes the Copper River Watershed Project, in collaboration with the Copper River Native Association (CRNA), meet bilished pairing unpath for a plane the interbapted

reestablished native vegetation along the riverbanks. Volunteers and staff planted nearly 210 sedges, 200 mature vetch root wads, and 500 plugs of dwarf fireweed and sweet vetch. They knell on the damp ground, dug small divots in the soil, and tamped the dirt around new native plants to ensure the roots were firmly earthed. Additionally, they planted species like wild geranium, common yarrow, bluebells, and spruce to prevent erosion and provide wildlife habitat. Siberian yarrow, alder, and chamisso sedge were cultivated to help with soil structure and erosion control and to fix nitrogen, feeding the soil and surrounding plants. Lupine and fireweed seeds were also scattered throughout the area to add a splash of beauty and promote biodiversity. This summer, make a point of stopping by the Little Tomisna Bridge, and res on the David Phillips

This summer, make a point of stopping by the Little Tonsina Bridge, and rest on the David Phillips Memorial Bench. You'll see the newly established plants along the banks of the Little Tonsina River. Some species establish and grow quicker than others, but the replanting effort ensures the landscape will return to equilibrium and benefit future generations of Alaskans.







The Little Tonsina riverbank during the 2023 construction of the bridge that replaced two undersized culverts opening over 70 miles of upstream salmon habitat. *Phato credit Michelle McKee* 



LEFT: CRWP board member Tenley Nelson and staff member Alexis Cooper tamp down earth around newly planted native species along the Little Tonsina riverbank. Photo credit Colleen Merrick



The Little Tonsina bridge during construction in 2023. Photo credit Michelle McAfee

# **COPPER RIVER WATERSHED**

PRINCE WILLIAM SOUND SCIENCE CENTER PWSSC.ORG

Page 15



The Eyak Lake outlet structure is failing, reducing water levels, exposing salmon spawning beds, and impacting drinking water in Cordova. Photo by Ashley Taylor/CRWP

## **RESTORING FUNCTION** AND FLOW IN EYAK LAKE In Cordova, the 1964 Good Friday

In Cordov, the 1964 Good Friday earthquake caused a six-foot uplift in the surrounding area, altering the water levels of Eyak Lake. Eight years later, a sheet pile outlet structure (or weir as the locals call it) was installed to bring the water surface back to pre-earthquake levels and keep nearshore Sockeye spawning beds submerged. In 2025, the original outlet struc-ture is failing, and the lake is drain-ing. The Coper River Watershed Project, in partnership with 16 orga-nizations, is working to replace the outdated infrastructure with a new, resilient structure that will stabilize water flow at the outlet. This project will protect critical salmon spawning sites and maintain Eyak Lake as a drinking water source for Cordova.

sites and maintain Eyak Lake as a dirinking water source for Cordova. Eyak Lake provides habitat for nine fish species, including hump back whitefish, prickly sculpin, sitck-leback, sockeye salmon, coho salmon, pink salmon, cutthoat trout, Dolly Varden, and eulachon. Seventy-six percent of sockeye use gravel beaches to spawn along Eyak Lake's shoreline, adjacent to inflowing streams where zooplankton is more plentful. The augacent to innowing streams were the zooplankton is more plentifiul. The Alaska Department of Fish & Game estimated Eyak Lake at \$1,742,050 to \$2,917,210 for the overall exvessel value of commercial harvest of sock-eye and coho salmon returns. In collaboration with The Eyak Commercial values with the Eyak

In collaboration with The Eyak Corporation, this project will install a new, well-designed outlet structure to permanently restore function and stabilize flow protecting Eyak Lake's drinking water and near shore salm-on spawning beds.

Eyak Lake is draining due to a failing outlet structure (known as the weir) that was installed after the 1964 Good Friday Earthquake. Photo by Kate Morse/CRWP

#### LOOKING AHEAD

Both the Little Tonsina Bridge and Both the Little Tonsina Bridge and the Eyak Lake outlet structure are major restoration projects that have a profound impact on salmon habitat in the Copper Basin and Cordova. Yes, it's messy when dirt is turning.

and old structures are dismantled and old structures are dismantled and removed. But renewal follows. Restoring salmon habitat in our region is worth the work and inspires our commitment to keep the Copper River watershed thriving now and in the future for people and fish.

SCAN THE QR CODE TO FIND OUT MORE ABOUT THE EYAK LAKE OUTLET STUCTURE →

