

# Lower Mid-Klamath Habitat Protection — Road Decommissioning Implementation Project

KARUK TRIBE



## STATEMENT OF THE PROBLEM

Thirty miles of road within the Mid-Klamath Watershed near the town of Orleans, California are a source of anthropogenic sediment discharge in Red Cap and Peach Creek, 303(d) listed water bodies in the Klamath River Basin. The Red Cap Creek drainage does not meet fines or embeddedness values for the National Marine Fisheries Service Matrix of Factors and Indicators, or reference streams. These road networks are the primary threat to function of salmonid refugia, spawning, overall water quality, wildlife, and cultural beneficial uses in these waterbodies.

The road and culverts were designed and constructed using a 20-year flood standard and do not meet the current design standard (100-years). A Hydrologist with Six Rivers National Forest has predicted the culverts will fail during a 10–15 year storm event, which includes events with 6 to 8 inches of precipitation during a 24 hour period. The culverts also present an erosion risk from failure, potentially delivering 98,700 to 5,800,000 cubic yards of sediment to the watershed during such a year storm event.

## PROJECT GOALS

1. Protect and enhance salmonid habitat
2. Benefit local economically disadvantaged communities

## THE SOLUTION

This project decommissions roads to remove and stabilize unstable fill and reestablish the natural hillslope drainage pattern along the intervening road reaches.

## PROJECT IMPLEMENTATION

The prescribed treatments include site-specific plans that will be implemented to reduce sediment sources and protect habitat with maximum efficiency. This project will implement proven decommissioning methods to remove and stabilize unstable fill at road/stream crossings, swales and springs, and reestablish the natural hillslope drainage pattern along the entire road using heavy equipment and hand labor.

Post-project erosion and sediment control measures and revegetation include sowing native grass seed and fertilizer by hand and using a 750 gallon hydroseeder when feasible, followed by the spreading of onsite native mulch material (brush, trees) where suitable material exists. If suitable mulch material is not onsite, certified weed-free rice straw will be utilized.

Willow cuttings/stakes may be used in post-excavated stream crossings, swales,

and seeps. In addition, each excavated live stream crossing will be rock armored to minimize post project adjustments.

## PROJECT BUDGET

<i>IRWM funds:</i>	\$ 300,000
<i>Leveraged funds:</i>	\$ 75,000
<b>TOTAL</b>	<b>\$ 375,000</b>

## BENEFITS

### Economic

- Approximately \$560 annually for reduced probability of culvert failure
- Approximately \$212,344 annually for avoided costs associated with sedimentation
- Approximately \$1,800 per year for avoided costs associated with reduced road maintenance
- Approximately \$1,106 over the next 50 years for passive-use values associated with enhanced riparian habitat

### Water Quality

- Sediment reduction efforts contribute towards meeting goals of the Klamath TMDL for sediment

### Watershed Rehabilitation

- Improved fish and wildlife habitat
  - » Enhanced salmonid habitat through decreasing sediment deposition is expected to lead to increased salmonid populations

### Cultural and Social

- Reducing the number of road-related landslides will protect access
- Salmon are an important part of Karuk traditions and culture and provide material and spiritual sustenance

### Jobs and Local Economy

- About \$375,000 will be spent locally using local labor and supplies when possible, thus contributing to State goals for environmental justice and social equity

## NEXT STEPS & RECOMMENDATIONS

This project is a continuation of restoration efforts in the Mid Klamath and initiates restoration efforts in the Red Cap and Peach Creek watersheds. It will be implemented in relation to the restoration strategy outlined in the Orleans Transportation and Road Restoration Project Environmental Assessment findings.

### CONTACT

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