Project Number: EMC-2015-007
Project Name: Monitoring habitat of anadromous species in forested watersheds

Background and Justification:

Anadromous fish, such as coho and chinook salmon and steelhead trout, have complex life histories. Their populations can fluctuate from year to year and their numbers are subject to impacts from large scale events such as drought and ocean conditions, among other influences. Relatively smaller scale impacts, such as contemporary timber harvesting practices under current regulations may be slow to show any negative impacts to salmonid populations given their complex life cycle. Population monitoring is widely conducted across the northern part of the California Coast Ranges, but data are geographically and temporally limited. Population monitoring is labor intensive and costly, and even with good data it is usually difficult to determine trends from anthropogenic impacts for several years. Therefore, fisheries biologists often rely on aquatic habitat monitoring as a surrogate for determining impacts to a salmonid fishery over short times to determine trends. Habitat monitoring includes measuring stream temperature and turbidity, habitat typing, large woody debris surveys, and macroinvertebrate sampling, among others.

Objective(s) and Scope:

The scope of the project would involve any Class I watercourse where listed anadromous salmonids are present in order to adequately determine effectiveness of regulations. Currently, industrial timberland owners are conducting these various types of habitat monitoring. Reporting of trends to determine effectiveness will be critical in answering these questions. Anadromous salmonid habitat monitoring will be nested within watersheds that have information on the implementation and effectiveness of site-scale management measures, so that linkages can be inferred from site specific management measures to in-channel response.

There are three main objectives to this project:

1. Determine the status and trend of anadromous salmonid aquatic habitat.
2. Relate this monitoring data to local and watershed scale controls on habitat variability (e.g., stream flow, watercourse gradient, etc).
3. Relate this monitoring data to local and watershed scale measures of Forest Practice implementation and effectiveness.

A potential fourth objective may be to identify 14 § CCR 916.9, Option V projects and determine if alternatives proposed provide equal or better protection to salmonid habitat.

FPRs and regulations: 14 CCR §916.4[936.4, 956.4](a)(2), 14 CCR §916.9, 14 CCR §916.9[936.9, 956.9](v), Technical Rule Addendum No. 2

EMC Critical Question or Priority: See Section 2.3, Theme 5
Are the Anadromous Salmonid Protection rules effective in improving salmonid habitat such as

increasing pool-riffle ratios, recruiting large woody debris, reducing infilling of pools, and providing optimal stream temperatures for salmonids.

Collaborators: CAL FIRE, CDFW, NOAA Fisheries, NCRWQCB, CVRWQCB, private timberland owners

Existing or Needed Funding: CAL FIRE provides staff to conduct implementation monitoring. No additional funding required.

Timeline and Fiscal year (s): Estimated minimum two years

Principal Investigator or Contact: Stacy Stanish, CAL FIRE

Submitted by Stacy Stanish, CAL FIRE