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**Project Title**

Salmon and Steelhead Stream  
Assessment Monitoring

**Applicant**

California Inland Fisheries Foundation  
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**Project Description & Primary Biological Objectives**

The project is intended to provide and equip twelve (12), four (4) person crews for monitoring critical streams that flow into the Delta. The 12 stream survey crews will perform survey work on approximately 300 miles of streams during a variety of stream flows and levels to identify, describe and measure distinct fish habitat features.

The equipment will be used to monitor stream conditions and associated riparian/watershed impacts utilizing gravel samplers, electrofishers, block nets, scales, a variety of survey equipment, coded wire tagging, stream flow meters and temperature sensors.

The objective will be to utilize the retrieved data for evaluation and comparisons made with the criteria and guidelines established by the State of California, Department of Fish and Games "California Salmonid Stream Habitat Restoration Manual". Recommendations for correction to unhealthy and non-productive habitats will be made upon final evaluations.

**Approach/Tasks/Schedule**

It is anticipated that the crews will be deployed throughout the year and during critical stream flow conditions. The variety of data collected will be utilized in a variety of ways. As an example Data from temperature monitoring will be entered into a stream temperature data base. Thermograph deployment objectives include: a) baseline descriptions of critical temperature conditions and b) long-term monitoring to describe changes in temperature as a result of restoration or land use changes. Temperature sensing devices will be placed in stream reaches based on channel type criteria and as described in the California Salmonid Stream Habitat Restoration Manual published by the State Department of Fish and Game. Core samples of approximately the top 12 inches of stream bed substrate will be taken to determine quality and availability of spawning gravels. We also hope to have gravel samples taken that will allow sample retrieval and laboratory processing. A one-time measure of gravel quality provides a "snapshot" of relative stream and watershed health. Long-term monitoring of spawning gravel quality is a useful tool in determining whether habitat conditions are improving or declining over time.

**Justification for Project and Funding by CALFED**

Priority species include San Joaquin River and east side tributary fall run Chinook salmon, winter and spring run Chinook salmon, Steelhead trout, Striped bass and migratory birds. The noted stressors include Alteration of flows and other effects of water management, Channel form changes, Water quality, water temperature, Undesirable species interactions, Adverse fish and wildlife harvest impacts, Population management, Land use, Artificial propagation of fish, Human disturbance and Wildfire.

### **Budget Costs and Third Party Impacts**

Equipment costs will be approximately \$90,000, Administration/Engineering/Analysis costs approximately \$200,000 and Seasonal staff costs of approximately \$400,000.

Impacts to other parties of the resultant surveys will be positive if measures are implemented to improve riparian and stream conditions for improved fisheries, water quality and wildlife.

### **Applicant Qualifications**

The California Inland Fisheries Foundation supports the State Department of Fish and Game who will be conducting the stream survey work. This is a collaborative effort between the Foundation and DF&G. Qualifications of the fisheries biologists and seasonal staff must comply with civil service rules and it goes without saying that the DF&G has an extensive roster of qualified biologists in their department.

### **Monitoring and Data Evaluation**

In addition to tasks mention above, the other equipment will aid in measuring and recording about thirty-five (35) individual features related to each habitat unit. Habitat inventory information, along with other factors, will be used by the department to prioritize streams or watersheds in need of restoration. The information will provide "present condition status" that may be used for comparison with subsequent appropriate survey data.

### **Local Support/Coordination with other Programs/Compatibility with CALFED objectives**

According to the CALFED Bay-Delta Program objectives, the resultant work of the this project will assist in determining factors that 1) will provide good water quality, 2) assess aquatic and terrestrial habitats in and along streams which influence delta flows and 3) assist in determining factors that will aid in reducing risk to the delta system.