

Assess salmonid distribution, habitat use and food habits within the Cosumnes River Preserve floodplain

Applicant: Fisheries Foundation of California.

Scope: This is the continuation of an AFRP-funded project that began in FY99. The project includes four main tasks.

The first task is to conduct field studies to document habitat conditions, including food organism distribution and abundance and juvenile salmonid habitat use and food habits.

Prior to inundation, a surveyor's level will be used to identify potential stranding sites. Low spots will be recorded for future sampling. Sites will be checked daily and sampled using seines or electrofishing when it is determined that pooling has occurred. Relevant physical variables (instream flow, distance from channel, temperature, etc.) will be recorded when instances of stranding are observed. Data will be analyzed and used to identify factors contributing to stranding in existing and future floodplain restoration projects.

Nutrient supply to the Preserve will be quantified by estimating inflow and sampling for total phosphorus, nitrogen and total and volatile suspended solids at the main inlets to the Preserve. To characterize conditions within the Preserve, samples will also be collected at several locations representing the main habitat types where invertebrate and fish sampling is conducted. Nutrient export from the Preserve will be estimated by sampling the outflow areas.

Fyke nets will be placed at selected sites along major points of entry and exit within the preserve. Sampling will be carried out in a manner that facilitates correlation between emigration and immigration and various conditions within the preserve including temperature, time of day, and flow.

A combination of sampling methods, including beach seines, purse seines and electrofishing will be employed in various locations within the Preserve to establish habitat preferences. Mark and recapture methods (in conjunction with a screw trap located upstream of the Preserve) will be used on all salmonids captured to assess distribution patterns and movement within various habitat types on the Preserve. Additionally, two reference sites will be established upstream and downstream of the preserve. Length and weight frequencies will be run on both the reference site and the Preserve salmonids for comparative purposes. Salmonids captured outside the Preserve will also be marked for potential recapture within the Preserve. Stomach contents of captured fish will be analyzed and compared with abundance indices of available food to evaluate preferences.

The second task is to process and analyze aquatic invertebrate and fish gut samples collected during Task 1. Analysis will include estimation of abundance and dry weight and taxonomic identification to genus.

The third task is to prepare a written report presenting the results of the study. Task 4 includes coordination, administration and other activities required to facilitate the execution of the project.

Justification and benefits: The objectives of this project are to assess the distribution and habitat use of juvenile salmonids within the Cosumnes River Preserve; to determine the extent and frequency of stranding and identify the problem areas within the preserve; to document movement into and out of the Preserve and determine which factors contribute to this movement; and to identify trends in habitat use and observe spatial and temporal distribution patterns of salmonids within the Preserve; and to assess food habits of juvenile salmon rearing in the study area. This information will help ensure effective management of this area for purposes of restoring anadromous fish populations in the Cosumnes and other stream ecosystems.

Monitoring and data evaluation:

Work to be performed and deliverables:

TASKS

1. Field studies

Due: June 30, 2000

2. Laboratory analysis

Due: August 31, 2000

3. Final report

Due: September 30, 2000

4. Project management

Due: September 30, 2000

Deliverables will include:

- 1 Final report (due September 30, 2000)
- 2 Electronic copies of field and lab data (due September 30, 2000)
- 3 Quarterly meetings to update FWS and other cooperators on results to date

Budget:

Lump sum grant (contract amendment) of \$44,040 to Fisheries Foundation of California.

Task	Field Labor Costs	Lab Analysis Labor Costs	Supplies	Overhead
Stranding	\$ 2,400	\$ -	\$ -	\$ 240
Emigration/ Immigration	\$ 9,600	\$ -	\$ 2,500	\$ 1,100
Habitat	\$ 4,800	\$ 3,200	\$ 250	\$ 825
Food	\$ 4,500	\$ 4,800	\$ 250	\$ 955
Water Chemistry	\$ 800	\$ 2,000	\$ -	\$ 140
Predation	\$ 2,400	\$ -	\$ -	\$ 240
Paper production/Data	\$ -	\$ 2,400	\$ -	\$ 240
Total	\$ 24,900	\$ 12,400	\$ 3,000	\$ 3,740
Total Budget	\$ 44,040			