

Summary of Final Report

Organization Name: Humboldt Bay Harbor, Recreation and Conservation District

Project Title: Eelgrass Fish Communities in Humboldt Bay

Amount of Grant Award: \$45,000

Date of Final Report: August 2005

1. What were the project goals and were they achieved?

The potential use of eelgrass beds by salmonids listed under the Endangered Species Act required that project sponsors operating within Humboldt Bay collect more data on the utilization of these habitats by the juvenile stages of these species. The utilization of eelgrass beds within Humboldt Bay by various fish species was poorly understood.

The goal of this study was to describe the fish community structure in eelgrass, mudflat and oyster culture habitats in the North Bay of Humboldt Bay. Specific objectives were:

- Test the effectiveness and selectivity of six different gear types in sampling fish communities in three different habitats present in North Humboldt Bay
- Document baseline fish community composition, including season and spatial distribution of fishes in North Humboldt Bay
- Compare fish community structure and catch rates of fishes in eelgrass, oyster culture and mudflat habitats in North Humboldt Bay

The study was successfully concluded by the US Fish and Wildlife Service – Arcata Fisheries Technical Report Number TR2005-02.

2. What were the activities undertaken and accomplishments through the completion of this grant?

Fish communities were surveyed in eelgrass meadows, oyster culture and mudflat habitats in North Humboldt Bay from August 2003 to August 2005. Six gear types were qualitatively assessed to determine their effectiveness in capturing fishes in different habitats. Of all the gear types used during this study, shrimp trawl and fyke nets were the most effective at sampling a wide variety of species in the tidal flats and the fyke net was the most effective at sampling somewhat discrete habitat units. Catch rates and species diversity indices were calculated from catch data to compare seasonal distributions and relative abundance of fishes and fish community structure.

Forty-nine fish species representing 22 families were collected. No juvenile salmonids were captured. Shiner surfperch, English sole, northern anchovy, speckled sanddab, and Pacific herring were captured in the largest numbers.

3. What are the lasting benefits of the project?

This data can be used in future management decisions to guide resource agencies and potential project sponsors during evaluation of project alternatives, which could affect eelgrass ecosystems.

4. How will you continue work started by this project?

This project is part of a larger project funded by the USDA (Western Regional Aquaculture Committee, Coast Seafoods, and the Humboldt Bay Harbor District to determine best management practices for mariculture operations in Humboldt Bay. The goal is to minimize disturbance to Humboldt Bay's natural resources. The results of this research will be applied to commercial mariculture practices in the future.