SFCWA State and Federal Contractors Water Agency

FACT SHEET

Tidal Marsh Rearing Habitats of Longfin Smelt Larvae in the Low Salinity Zone of the San Francisco Estuary (15-10)	
Deliverables: Fact sheets, quarterly reports, final report	
Status: In Progress	
Primary Investigator: Frederick Feyrer	**Recipient Organization:** USGS
Project Cost: $124,703	**SFCWA Funding:** $100,683
Partners: Lenny Grimaldo, ICF International, Metropolitan Water District of Southern California	

Figure 1. Longfin smelt larvae. Photo by US Bureau of Reclamation.

Introduction

Protecting and managing special status fish species requires an understanding of their ecology and habitat. The longfin smelt (Spirinchus thaleichthys) is listed as threatened under the California Endangered Species Act. Understanding the ecology of longfin smelt is critical to the management of California's water supply. Longfin smelt has undergone a substantial long-term decline in abundance leading to its listing while water exported from the Bay-Delta supplies approximately 25 million people in California and a multi-billion dollar agricultural industry in California's Central Valley. Managing water operations while protecting longfin smelt is a key management goal in the estuary. Presently, there is a need to better understand the habitats occupied by longfin smelt. Long-term monitoring programs sample in open water pelagic habitat and it is believed that shallow tidal marsh habitats probably represent a key under-sampled component of critical habitat.

Objective

The goal of this study is to generate information on the habitats occupied by longfin smelt larvae to better understand its ecology and to inform water management operations, species management, and habitat restoration efforts. Specific objectives include determining the density and distribution of longfin smelt larvae (and the ichthyoplankton community overall) in shallow tidal marshes of the low salinity zone (salinity ranging from approximately 1 to 6), determining if the density of longfin smelt larvae in tidal marshes differs from adjacent open water habitat of similar depth, and if water quality factors are meaningful drivers.

Results

To be determined

Conclusions

To be determined

Relevance

This study will provide much needed information on the ecology of a threatened fish species. It will provide new information on the habitats occupied by longfin smelt larvae, which will be useful for resource agencies managing the species and for informing habitat restoration actions in the future.

Next Steps

Field collections of fish larvae within tidal marshes and in nearby open water habitats will be conducted April-June, including collection of ancillary water quality and biological information. Samples will be submitted for processing immediately after collection. The resulting data will be analyzed using various statistical techniques during the remainder of the 2014 fiscal year. At least one draft journal article will be prepared in fiscal year 2015.