

SOUTHWEST FISHERIES SCIENCE CENTER
FOURTH QUARTER REPORT - FY 2001
For the period July 1, 2001 through September 30, 2001

Submitted by: John Hunter, Division Director, Fisheries Resources Division

Title of accomplishment: Produce a final report on results of the California Sea Grant College System project: Egg and larval fish production from marine ecological reserves.

Current status of accomplishment: Four research cruises were completed in 1998 and 1999 and a report of findings based on the 1998 cruises ("Fine-scale distributions of planktonic fish eggs in the vicinities of Big Sycamore Canyon and Vandenberg Ecological Reserves, and Anacapa and San Miguel Islands, California") was published in *CalCOFI Reports* volume 40 (1999). Sample analysis and data entry have been completed for all cruises, and the data bases have been error-checked and verified. Currently, statistical analyses of the full data sets are being conducted and a preliminary draft of the text of the final report is being prepared.

Background: The MERRP plankton study was initiated to 1) determine the taxonomic composition and fine-scale distributions of nearshore ichthyoplankton in, and around, two coastal marine ecological reserves in southern California, and using this information, 2) determine the production of fish eggs from the reserves. To accomplish these goals, two "winter" and two "summer" cruises were scheduled, sampling along a station grid at each site with the Continuous Underway Fish Egg Sampler (CUFES) system, and with a conventional bongo net towed vertically through the water column. This is the first time that an attempt has been made to use the CUFES system to measure fine-scale distributions in shallow coastal waters.

Purpose of activity: To evaluate the feasibility of a fine-scale, near-shore survey of distributions and abundances of planktonic shorefish eggs and larvae. To estimate the production of planktonic shorefish eggs and larvae in the vicinities of the Big Sycamore Canyon and Vandenberg Marine Reserves.

Significance of accomplishment: All scheduled cruises were completed successfully and statistical analyses of the full data set currently are underway. A scientific paper summarizing results of the first year of the study has been published and, in addition to a report of findings to the California Sea Grant College System, it is anticipated that up to three additional scientific papers will result after all analyses are complete.

Significance of accomplishment: Results of the first year of the study suggested that the Big Sycamore Canyon and Vandenberg Marine Reserves do not extend far enough seaward to encompass the primary spawning depth ranges of most of the local shorefish species that are of sport or commercial fishery value. However, those results did demonstrate the importance of the Channel Islands for spawning of some valuable species such as white seabass and sheephead. Results from the second year were largely in accord with those from the first. More generally, the results suggest that fine-scale ichthyoplankton surveys can be a useful tool in determining where marine reserves should be established.

Problems: None.

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