

Part I

## REPORTS, REVIEW, AND PUBLICATIONS

### REPORT OF THE CALCOFI COMMITTEE

CalCOFI has now completed 45 years of sampling physical, chemical, and biological variables in the California Current. With each passing year the databases become larger, and conclusions that can be made about the environment and its inhabitants become more robust (cf. Mantyla et al. and Cisneros-Mata et al., this volume). At the same time, we learn more about sampling design and the importance of consistent and long-term sampling (cf. Ohman and Smith, this volume). More data and better understanding of the physics and chemistry of the California Current, and their effect on the food chain, make it possible to view current oceanographic and biological conditions in the context of the long term (cf. Sakuma and Ralston; Mullin; VenTresca et al., this volume).

Physical, chemical, and biological measurements taken during 1994 and early 1995 on CalCOFI cruises have indicated a return to "normal" conditions after anomalous conditions that dominated the two preceding years. Electronic gathering and evaluation of data have permitted increasingly prompt assessment of the state of the California Current system off southern California, relative to the long-term mean (cf. Hayward et al., this volume). Individual research projects, complementing long-term, standard measurements, have continued to provide additional understanding of the processes in the system, and new and useful time series have been developed (e.g., pelagic bird studies by R. Veit of the University of Washington).

Generating long time series of data, a science in which CalCOFI excels, requires not only persistence and continuity, but also the infusion of new ideas to maintain its vitality. We were fortunate to recruit into the Scripps Institution of Oceanography's team a group of five postdoctoral fellows; one is funded by the Mellon Foundation, another by the NOAA/SIO Joint Institute for Marine Observations, two by other extramural grants, and one from departmental funds of the Marine Life Research Group. California Department of Fish and Game reassigned four of its staff to La Jolla to form the California Stock Assessment and Fisheries Evaluation unit (CalSAFE) in collaboration with NMFS. These scientists are located at the Southwest Fisheries Science Center (NMFS, NOAA), adjacent to the facilities of the

Scripps Institution of Oceanography at UC San Diego. CalSAFE biologists work cooperatively with NMFS fishery scientists and SIO researchers to investigate sport and commercial fish populations and other resources. CalSAFE makes the cooperative relationship between the two agencies, which has flourished for decades, more formal and more effective, and facilitates discussion and interaction with SIO personnel.

NMFS, CDFG, and Mexican governmental agencies collaborated in sardine surveys carried out in 1994. Using results from the survey, CalSAFE biologists estimated the biomass of the Pacific sardine to be approximately 350,000 MT. A harvest limit of 54,645 MT was recommended for U.S. fisheries, based on the estimated biomass. Scientific papers from the collaborative study will be presented at the 1995 CalCOFI Conference and published in the 1996 *CalCOFI Reports*.

The SWFSC has developed statistical models that evaluate how spawning biomass and environmental factors associated with warm sea-surface temperatures affect Pacific sardine recruitment. For decades it has been hypothesized that environmental conditions related to warmer water enhance sardine reproductive success, but that total recruitment also depends on the amount of spawning biomass. The work builds a bridge between the two primary hypotheses that originally attempted to account for the collapse of the sardine fishery.

The biomass of Pacific mackerel in the California Current has declined precipitously during recent years, to about 60,000 MT in 1994. Several sources of data, including U.S. and Mexican landing statistics, aerial observations, and ichthyoplankton surveys, indicate declining abundances compared to the early 1980s. Northern anchovy has also declined to about 130,000 MT.

The CalCOFI editorial board was pleased to publish, in late 1994, the second of two CalCOFI atlases that summarize the distribution and abundance of fish larvae collected on CalCOFI surveys from 1951 to 1984. These atlases (31 and 32) describe the seasonal, inter-annual, and areal distribution and abundance of all species of fish eggs and larvae identified in the CalCOFI time series. As the fruit of a joint project between the Minerals Management Service and NMFS, CalCOFI will publish, in 1995, *Atlas 33*, which will serve as a guide to the

identification of the eggs and larvae of some 500 species of fishes from the California Current.

We were saddened to lose during 1994, in a sailing accident, Kenneth Plummer, who had served the Scripps Institution of Oceanography for many years as an analyst of CalCOFI data.

The Committee is very appreciative of the work of the reviewers for this volume: Larry Allen, Dan Anderson, Pablo Arenas, Kevin Bailey, Barney Balch, Tom Barnes, Patricio Bernal, George Boehlert, John Butler, Gregor Caillet, Dan Cayan, Martin Dorn, Richard Eppley, Walterio Garcia Franaco, Guillermo Gomez, Don Gunderson, Gregory Hammann, George Hemingway, Adriana Huyer, Larry Jacobson, Sharon Kramer, Ralph

Larson, Michael Laurs, Bob Lavenberg, Bill Lenarz, Alec MacCall, Arnold Mantyla, Alan Mearns, Geoff Moser, Richard Parrish, Steve Ralston, Leslie Rosenfeld, Keith Sakuma, Paul Smith, Gail Theilacker, Al Tyler, Peter Wiebe, and Mary Yoklavich. The reviewers were conscientious in their work, contributing their time and energies wholeheartedly for the good of our profession. Editor Julie Olfe has once again shepherded the authors and manuscripts to produce a volume of excellent quality, within budget, and on time.

The officers and crews of the R/V *Mako*, NOAA Ship *David Starr Jordan*, and R/V *New Horizon* contributed greatly to the success of data collection at sea, for which we are deeply grateful.