

NATIONAL MARINE FISHERIES SERVICE -
SOUTHWEST FISHERIES SCIENCE CENTER REPORT ON
COASTAL PELAGIC SPECIES - SCIENTIFIC RESEARCH UPDATE

The following discussion highlights important areas of research recently completed, currently being addressed, or planned for the future by the Southwest Fisheries Science Center (SWFSC) concerning coastal pelagic species (CPS), e.g., Pacific sardine, Pacific mackerel, and market squid. In many of the following areas of scientific study, the SWFSC works directly or indirectly with state fishery agencies (e.g., California Department of Fish and Game, Oregon Department of Fish and Wildlife, and Washington Department of Fish and Wildlife), academic institutions (e.g., University of California San Diego, Scripps Institution of Oceanography-SIO and University of California Davis), and the fishing industry (e.g., Coastal Pelagic Species Advisory Subpanel and Market Squid Industry-Agency Cooperative Research Program).

- The first, formal Stock Assessment Review (STAR) for Pacific mackerel and sardine took place in June 2004 at the La Jolla Laboratory of the SWFSC.
 - In this context, the alternative statistical population models that were developed over the last year for these species were supported and ultimately, recommended as assessment tools to be used in future stock assessments.
 - Finally, based on recommendations from the Panel, population dynamicists are well underway with critical evaluations of both baseline input data, such as catch-at-age time series from recently available data from Mexico and Canada, as well as important assumptions and model parameterization methods.
- For the first time, three CPS-related research cruises were conducted off the 'Pacific NW' (42° to 48°N latitude / inshore waters out to 127°W longitude, roughly 15-150 mi offshore) over the last year in efforts to better understand stock distribution of particularly sardine; cruise objectives included:
 - Obtaining fishery-independent data to examine: (1) biological parameters of adult sardines and occurrence/distribution of early life stages, such as eggs and larvae; (2) oceanographic parameters; and (3) hydroacoustic sampling gear/design for potential alternative monitoring programs.
 - Each research survey spanned roughly three weeks; a summer 2003, winter 2004, and summer 2004 cruise.
 - A winter 2005 cruise is being planned; however, funds, ship time, and sampling design have not been finalized to date.
 - A one-week spring 2004 cruise was also conducted off central and northern California to examine biological parameters of adult sardines early in the annual migration north that is generally hypothesized for this species.

- The ongoing *CalCOFI Conference* will be held this November at the Scripps Institution of Oceanography, in conjunction with the *Trinational Sardine Forum*.
 - Efforts continue to strengthen collaborative research and data exchange between Canada and in particular, Mexico researchers, given the vast range (say distribution) of this trans-boundary species in any given year, depending on environmental conditions.
- The newly developed assessment method on market squid (i.e., Egg Escapement Method) has received much bolstering over the last six months, including: field collection and laboratory processing of field samples over a broad spatial/temporal design to better understand the variability of reproductive parameters important to the population analysis; simulation modeling research to further examine biological reference points important in the management of this species; and finally, plans are being constructed for a collaborative age/growth study with international researchers in efforts to gain more insight into squid biology on a global scale.
- An economic-based study is underway that generally addresses fisher and processor cost/earnings data by Pacific coast ‘regions’ (i.e., southern California, northern California, and Pacific NW) in efforts to assess the economic-related impacts of various industry options for allocating the harvest guideline on sardine.