

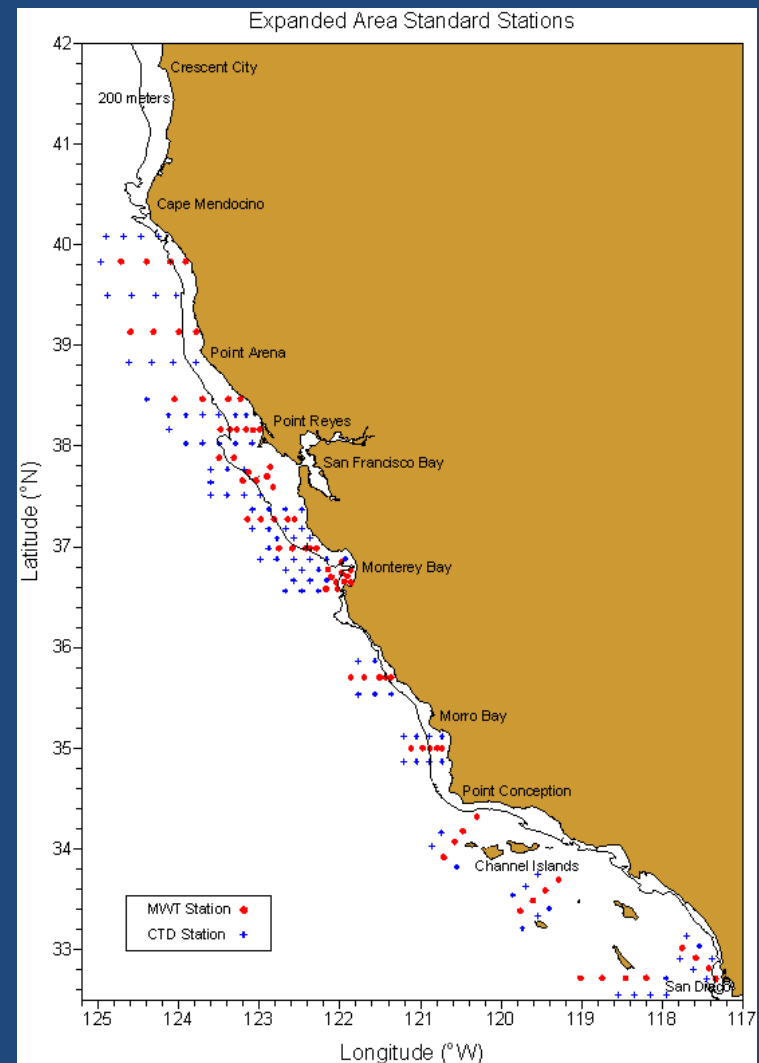
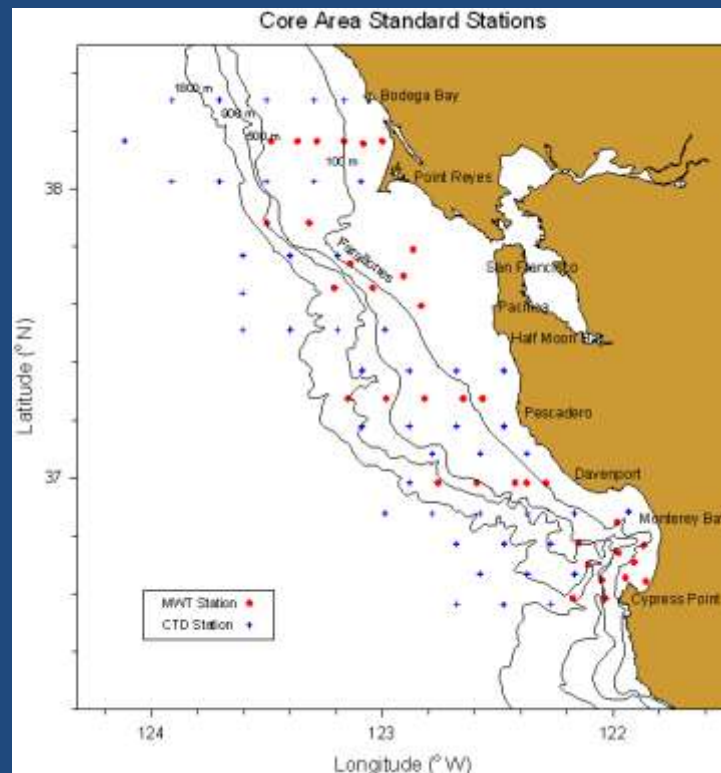
NOAA NMFS Southwest Fisheries Science Center Fisheries Ecology Division Rockfish Recruitment and Ecosystem Assessment Survey

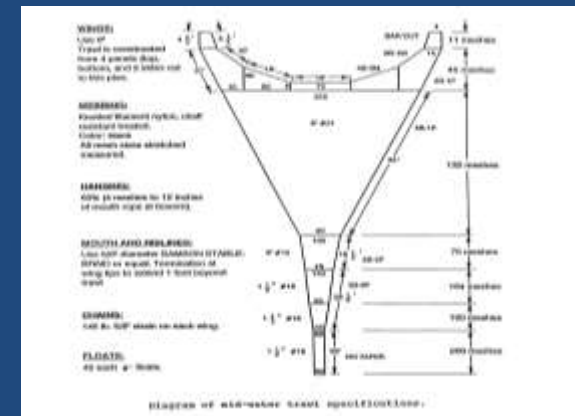


Core area standard trawl stations off central California sampled annually since 1983.

CTD stations added in 1987.

Survey area expanded in 2004 to encompass the majority of the California Coast.





All trawls are conducted at night using a modified Cobb trawl with 3/8" codend liner.

Trawl duration is 15 minutes at ~30 meter headrope depth.

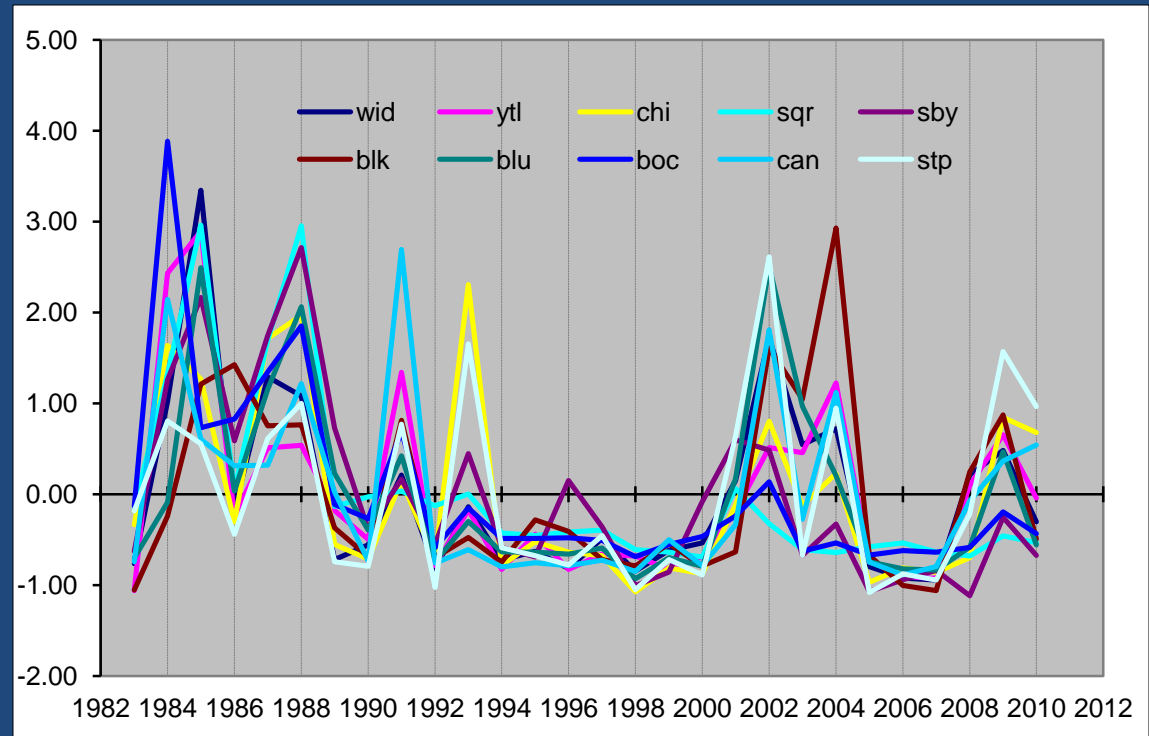
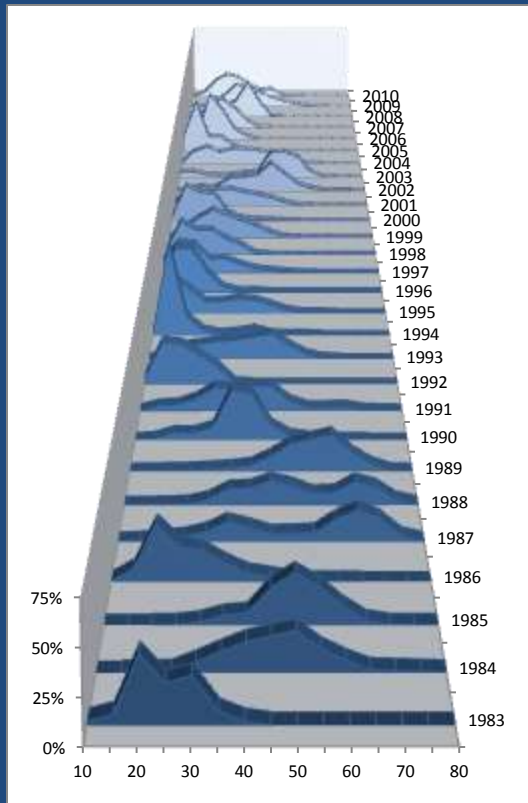
Surveys were conducted aboard the NOAA R/V *David Starr Jordan* from 1983-2008, the NOAA R/V *Miller Freeman* in 2009, and the F/V *Frosti* in 2010.

All fish and select invertebrates are sorted and enumerated.

Length measurements are taken on a minimum subsample of 30 specimens of the following species: Adult and YOY Pacific hake, adult northern anchovy, adult Pacific sardine, adult Pacific herring, YOY lingcod, YOY sablefish, Humboldt squid, and market squid.

All YOY rockfish are frozen and returned to the laboratory where identifications are confirmed, length measurements are taken, otoliths are pulled, and genetic tissue samples are collected.

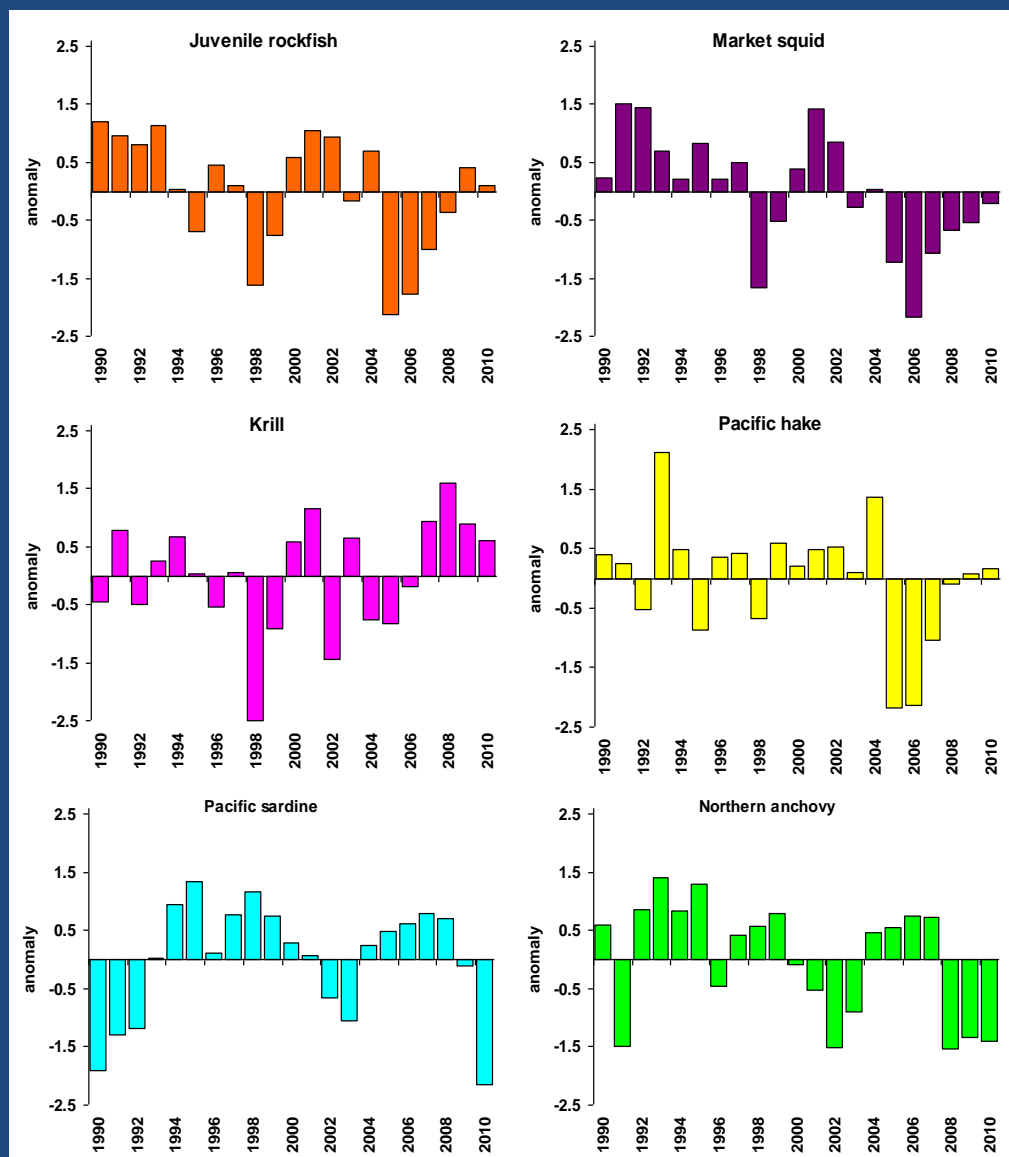


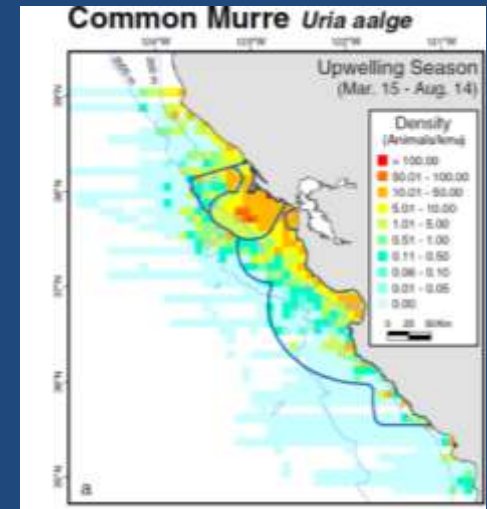
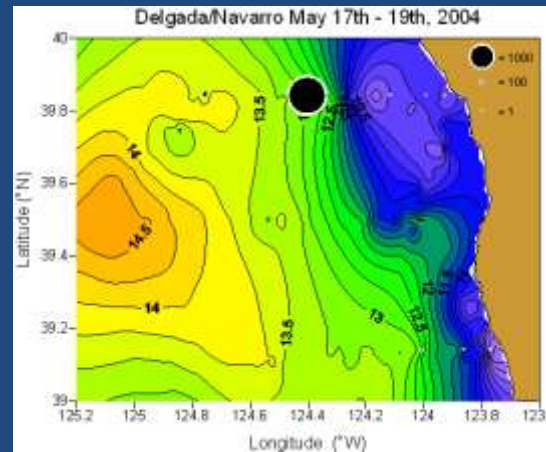
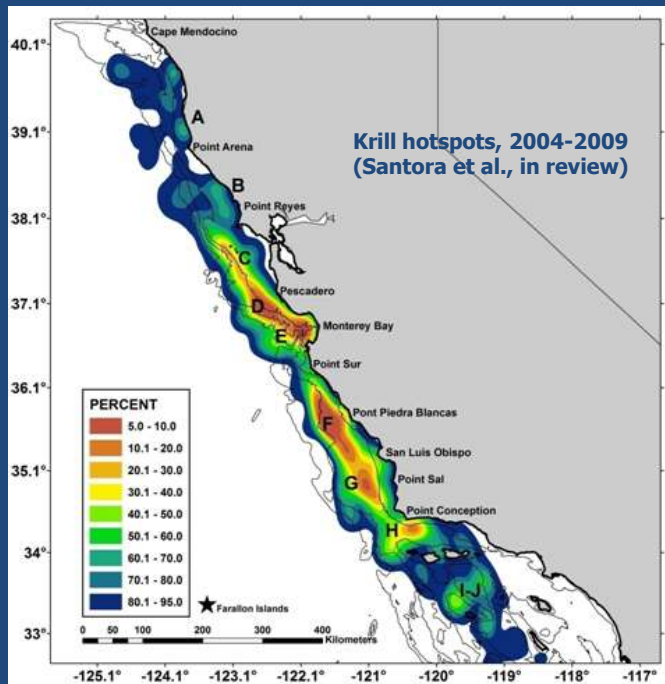


Interannual variability in size of YOY rockfish observed.

Annual index of 10 key YOY rockfish species calculated for the core area stations adjusted for fish size shows similar trends in abundance amongst species.

Standardized anomalies of log-transformed catch show YOY rockfish abundance covaries with other species.





Analysis of acoustic data resolves spatial patterns for krill along the California coast. Krill abundance has a broad scale impact on the ecosystem.

Juvenile salmon abundance correlated with krill catches.

CTD data analyzed to examine prevailing hydrographic conditions and their potential effect on the ecosystem.

Marine mammal and seabird data collected during daytime transects by PRBO and Farallon Institute since 1985.