

Oceanographic observations in the Mexican sector of the California Current from 1997 to 2005

B.E. Lavaniegos^{1,3}, G. Gaxiola-Castro¹, R. Durazo²,
J. Gómez-Valdés¹, T.R. Baumgartner¹, J. García-Córdova¹
E-mail: berlav@cicese.mx

¹ División de Oceanología, Centro de Investigación Científica y Educación Superior de Ensenada, Apdo. Postal 2732, 22800 Ensenada, Baja California.

² Facultad de Ciencias Marinas, Universidad Autónoma de Baja California, Apdo. Postal 453, 22800 Ensenada, Baja California.

³ Integrative Oceanography Division, Scripps Institution of Oceanography, La Jolla, CA 92093-0218.

One third of the California Current spans along Baja California in Mexico. This region, the less known of the California Current System (CCS), is of great interest due to the high latitudinal variability as it reaches the Inter-Tropical Convergence Zone. The IMECOCAL program was created to advance in the oceanographic research of this region through intensive oceanographic surveys of the pelagic ecosystem. Hydrographic and biological data from 30 IMECOCAL quarterly cruises have made possible the improvement of a regional climatology and the documentation of the evolution of anomalous events as El Niño 1997-1998, La Niña 1998-1999, and the intrusion of subarctic waters in 2002-2005.

Temperature and salinity positive anomalies during El Niño 1997-1998 showed coherence with other regions of the CCS, but not in the changes observed in macrozooplankton biomass, which could be related with moderate concentrations of chlorophyll off Baja California. During this warm event and the further cool conditions, strong changes were observed in zooplankton structure. The increase of biological production in other regions of the CCS from La Niña 1998-1999 suggested the beginning of a new climate regime. However, the recovery in the Baja California region has been slower, with low mean zooplankton biomass until January 2003. The data generated by IMECOCAL have showed also sub-regional differences between north and central Baja California and the existence of a complex circulation.

Keywords: California Current, Baja California, zooplankton, El Niño, La Niña, subarctic intrusion