

Final Technical Report
ONR N00014-95-1-0040

Principal Investigators: Kenric E. Osgood, Scripps Institution of Oceanography
David M. Checkley, Jr., Scripps Institution of Oceanography
Michael M. Mullin, Scripps Institution of Oceanography

Concentration of Pelagic Copepods in the Santa Barbara Basin

A combination of instruments (zooplankton nets, optical plankton counter, and acoustic Doppler current profiler) was used to assess the temporal and spatial extent of a dense, deep aggregation of diapausing, C5 *Calanus pacificus* in the Santa Barbara Basin (SBB) and to determine whether the abundances of *C. pacificus* and/or other copepods are elevated within the SBB compared to nearby locations. The study found high concentrations of diapausing, C5 *C. pacificus* built up in the deep waters of the SBB during the summer and into the fall. During the buildup, the deep aggregation moved up from the bottom as the oxygen became depleted in the basin's deep waters. The deep aggregation apparently builds up due to the basin trapping C5s that migrate below the sill depth from water advected over the basin. The C5s are retained within the basin until they swim, or are forced, above the sill depth. The concentrations of diapausing C5s in the deep waters outside the SBB stayed approximately constant during the summer and fall. No other zooplankton was concentrated in the SBB like the C5 *C. pacificus* were.

Two papers in peer reviewed journals have resulted from this research.

Osgood, K.E., and D.M. Checkley, Jr. 1997. Seasonal variations in a deep aggregation of *Calanus pacificus* in the Santa Barbara Basin. Mar. Ecol. Prog. Ser. in press.

Osgood, K.E., and D.M. Checkley, Jr. 1997. Observations of a deep aggregation of *Calanus pacificus* in the Santa Barbara Basin. Limnol. Oceanogr. in press.