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Latitudinal changes of euphausiid assemblages related to the morphological variability of the sound scattering layer along Baja California, October 1994

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Latitudinal changes in the euphausiid assemblages were compared to the morphological structure (size and compactness) of the sound scattering layer (SSL) during ten 24-h surveys made in October 1994 along the west coast of Baja California, México. During October, upwelling was found in the northern area from Punta Eugenia (28°N) to Ensenada (30°N) dominated by temperate species from the California Current System. In the southern sector of the peninsula, a northward movement of tropical waters transports a tropical zooplankton assemblage near Bahía Magdalena (24°N). The aggregation and the dispersion of the whole SSL (plankton and nekton) were investigated using a single beam vertical echosounder, Simrad EY-200, working at 200 kHz and the Hydro Acoustic Data Acquisition System (HADAS) that estimates patch variables of density and compactness. The size and shape of the SSL were obtained from the echogram visualization. The euphausiid species composition was obtained using an Isaacs-Kidd midwater trawl, bongo nets, and opening-closing nets. At Ensenada and Punta Eugenia, an area inhabited by a temperate euphausiid assemblage, large and dense SSLs were recorded over the continental shelf (mean sizes were 10-km and 7-km long with mean compactness of 15% and 19%). These regions were dominated by the neritic species *Nyctiphanes simplex* and the temperate species *Nematoscelis difficilis*, *Euphausia pacifica*, and *Thysanoessa spinifera*. In the southern area, a tropical euphausiid assemblage, dominated by *Euphausia eximia*, *E. tenera*, and *E. distinguenda*, inhabits smaller and dispersed SSLs (mean size 5-km long and 11% compactness) located in the offshore area. The euphausiid biomass of the most abundant species indicated, *N. simplex* and *N. difficilis*, had their highest standing stock in the north (393 and 643 mg C 1000 m⁻³), with *E. eximia* in the southern area (186 mg C 1000 m⁻³). Euphausiid assemblage development in different biological environments, is evidenced by SSL morphology along the west coast of Baja California during autumn, is caused by strong latitudinal changes in physical oceanography that affect the biological interactions in each region.

Palabras clave: valoración económica, Euphausiids, sound scattering layer

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