Gómez Gutiérrez, J. & C.J. Robinson (2006). Tidal current transport of epibenthic swarms of the euphasiid *Nyctiphanes simplex* in a shallows, subtropical bay on Baja California peninsula, México. Marine Ecology Progress Series, 320: 215-231.

Tidal current transport of epibenthic swarms of the euphasiid *Nyctiphanes simplex* in a shallows, subtropical bay on Baja California peninsula, México

Jaime Gómez Gutiérrez & Carlos J. Robinson

Nyctiphanes simplex is the most prominent neritic euphausiid along the southwest coast of the Baja California peninsula, México. It was thought that this species is usually distributed in areas deeper than 50 m. However, in the mouth of a subtropical bay (Bahía Magdalena, 28 to 50 m depth) using a 120 kHz split-beam echosounder, a submarine video camera, and a 1 m plankton net, we discovered that high-density swarms of adult *N. simplex* enter the bay near the seafloor during spring and summer but not in winter, even though flood current speeds were statistically indistinguishable among seasons. Euphausiid transport was modulated by their abundance over the continental shelf, their daily vertical migration, and the semidiurnal tidal currents. From 6 series of 48 h sampling runs along a 18 km long transect located through the mouth of the bay, we estimated a set of acoustic parameters to identify euphausiid swarms and distinguish them from aggregations of the abundant local micronektonic galatheid *Pleuroncodes planipes*. The euphausiid swarms were vertically segregated from the dense aggregations of *P. planipes*. Euphausiids that entered the bay were completely dispersed within strong spring tidal currents (>125 cm s^{-1}) and subsequently formed dense aggregations inside the bay, where current speed decreased substantially. Euphausiid distribution inside the bay never extended farther than the continental-shelf water mass delineated by the tidal front. In the bay, adult *N. simplex* remained close to the sea-bottom day and night. We hypothesized that the large euphausiid and red crab biomass transported from the continental shelf into Bahía Magdalena may contribute significantly to the trophodynamics of this eutrophic subtropical bay.

Palabras clave: Tendencias espaciales, parámetros texturales, Tidal currents, Euphausiid, Acoustics, Nyctiphanes simplex, Epibenthic aggregation, Swarm formation