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Larval fish assemblages and geostrophic circulation in Bahía de La Paz and surrounding SW region of the Gulf of California

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We analyze spatial-temporal relationship between larval fish assemblages and geostrophic surface flow in Bahía de La Paz and the neighboring Gulf of California (May, July and October 2001 and February 2002). The analysis of fish larvae distribution in relation to geostrophic circulation and hydrography is an innovative interdisciplinary approach for the understanding of fish larvae ecology. The Bray-Curtis Index defined two larval fish assemblages with spatial-temporal variations: coastal assemblage dominated by epipelagic coastal species (e.g. *Sardinops caeruleus*) and oceanic assemblages—oceanic and transitional oceanic assemblages both dominated by mesopelagic species (e.g. *Vinciguerria lucetia* and *Benthoosema panamense*) but with different larval morphology. The coastal assemblage appears during winter-spring when the geostrophic flow through the bay is strong, and the oceanic assemblages spread in the whole bay, whereas during February-May when the geostrophic transport is weak, the coastal assemblage is distributed over the whole bay. The strong summer-autumn water interchange between bay and gulf is in agreement with the annual evolution of the surface water properties inside the bay, from high-salinity Gulf of California Water during winter-spring to fresher Tropical Surface Water during summer-autumn, when the highest species number was recorded.

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