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Utilities of larval densities of Pacific mackerel *(Scomber japonicus)* off California, USA and west coast of Mexico from 1951 to 2008, as spawning biomass indices

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Fish larval densities are frequently used as an index of spawning biomass. Three time series of larval densities of Pacific mackerel (*Scomber japonicus*) per 10 m2 were estimated from 1951 to 2008 based on data collected by California Cooperative Oceanic Fisheries Investigations (calcofi) survey during Peak spawning season off California: April to July, and by the Investigaciones Mexicanas de la Corriente de California (imecocal) survey off Mexico: June-September. *1)* Daily larval production at hatching; *2)* bias-corrected larval densities; and *3)* simple mean larval densities. All three time series were constructed for California in 1951-2008. The third was constructed for the Mexican waters in 1951-1984, 1996 and 1998-2000. Weighted mean larval densities were obtained for the combined area of California and Mexico. Daily larval production index showed a major peak in 1987 (46.39·10 m2 ·d-1) and two minor peaks, in 1981 and 1986. All three time series indicated that larval densities have been decreasing since 1997 and were particularly low in 2003-2008. Larval densities off Mexico, higher than those off California in recent years, were high in the mid-1960's, and low in the early 1980's. The cost-effective fishery-independent time series off California and Mexico is informative for assessing the population fluctuation and beneficial to the Pacific mackerel stock assessment. Due to the different peak spawning periods off California and Mexico, periodic extensive coast-wide surveys to cover the whole time period are recommended, as they would contribute to a better understanding of the dynamics of the population along the Pacific coast.

Palabras clave: Coastal pelagic species, Pacific mackerel, larval production, time series, spawning biomass index, west coast of American continent