ICHTHYONEUSTON DISTRIBUTION OFF CENTRAL CALIFORNIA DURING THE 1991-1993 EL NIÑO

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Abstract

Ichthyoneuston surveys were conducted using a manta neuston sampler at five fixed stations along a transect, 1-19 km from shore, off Davenport, CA from December 1991-June 1992, October 1992, and January-April 1993. Larval and juvenile fishes were collected. Five taxa, *Engraulis mordax*, *Atherinopsis californiensis*, *Sebastes* spp., *Merluccius productus*, and *Hexagrammos* spp. (predominantly *H. decagrammus*) made up 94% of the mean density of total ichthyoneuston (859/1000 m^3). *Atherinopsis californiensis* and *Hexagrammos* spp. were obligate ichthyoneuston. Mean density of total ichthyoneuston from January-April was significantly greater in 1992 (1485/1000 m^3) than in 1993 (689/1000 m^3) and is due to the decreased abundance of 11 of 18 dominant taxa in 1993. Ichthyoneuston taxa formed nearshore, cosmopolitan, and offshore assemblages that generally remained cohesive between years as indicated by cluster analyses. However, distributions of abundant taxa within the cosmopolitan assemblage shifted offshore to varying extents in 1993. Separate cluster analyses of samples from January-April of each year indicated that species composition of samples from the first two or three months differed from that in later months, and that this shift from an "early" to "late" assemblage occurred earlier in 1993 (March) than in 1992 (April). Common obligate ichthyoneuston taxa, except for *Scorpaenichthys marmoratus*, were most abundant in samples from the first two or three months during both years. Regional wind patterns and local oceanography (*e.g.*, prolonged wind reversal event in February 1992; earlier onset of persistent upwelling-favorable winds in 1993; substantial fresh water

influence in 1993) may have contributed to the between-year differences in the temporal and spatial distribution of ichthyoneuston.

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