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Pelagic fish assemblages at the Espiritu Santo seamount in the Gulf of California during El Niño 1997-1998 and non-El Niño conditions

A. Muhlia Melo, P. Klimley, Rogelio González Armas, S. Jorgensen, Armando Trasviña Castro, Jesús Rodríguez Romero & A. Amador Buenrostro

Plankton samples and visual census from December 1995 to December 1998 were obtained to study adult and larvae assemblages of fish at El Bajo Espiritu Santo (EBES) seamount. Tagging experiments of yellow fin tuna were carried out from April to September 1998. Records of tagged fish at EBES were registered until February 2000. Five oceanographic cruises were also carried out. Visual census of adult fish suggest that El Niño conditions favor migration of tropical species to EBES. Diversity index showed higher values of 4.5 compared to non-El Niño years of 3.5 in 1996. An increased number of species, 85, in 1998 was observed in comparison to 53 of 1996. Larval fish assemblages indicate a decreased diversity index values during El Niño conditions. However, more than 50% of larval fishes during El Niño conditions belong to mesopelagic species of tropical affinity. Rarefaction curves of larval fish showed higher than expected number of species during non-El Niño years. Conversely, rarefaction curves of El Niño years showed lower than expected number of species. Two groups of samples were obtained from cluster analysis, corresponding to non-El Niño and El Niño conditions. Results of tagged yellow fin tuna showed residence on a daily basis, and homing with absence of 15 days. During El Niño the mixed layer deepened to 70 m in the area of EBES. Sea surface temperature was about 2 °C higher in comparison to non-El Niño conditions.

Palabras clave: Seamount, tuna fish, pelagic fishes, ultrasonic tagging, diversity

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