

Distribution of chlorophyll 'a' in the equatorial Pacific Ocean (82°W-92°W), during 1988-1999 (Ecuador)

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During the last decade (1988-1999) 23 Oceanographic Cruises were carried out on board the B/I-ORION of the Oceanographic Institute of the Navy (Instituto Oceanográfico de la Armada INOCAR) in the Tropical Pacific Equatorial. The study area is geographically located between 81°W-94°W and 2°N - 3.23°S. These data are organized by season: dry season (May-October), with a total of 11 cruises, 258 stations and 1650 data; and humid season (December-April), with a total of 12 cruises, 228 stations and 1477 data.

The samples for chlorophyll (1 liter) were taken using Niskin bottles incorporated in a sampling rosette, deployed at eight depth levels. They were filtered with glass-fibre filters, placed in 10 ml of Acetone 90% and refrigerated for 24 hours; the optic densities were read in a Turner Fluorometer (10-005-R). The graphics of averages for both seasonal times of depth levels using the Surfer program.

The results emphasized two areas of higher than average productivity: Galapagos and Gulf of Guayaquil.

A high biomass of chlorophyll ($>0.5 \text{ mg/m}^3$) was found toward the south region of Galapagos. Even higher readings (1.5 mg/m^3) were found during the dry season in the neighbourhood of Islands Isabela and Fernandina. In the humid season two regions of high chlorophyll (1.0 mg/m^3) were registered: a nucleus to the west of Galapagos associated with Cromwell Current and another nucleus southeast of Island San Cristobal, possibly associated with a mixture of upwelling Cromwell and Humboldt.

In the Gulf of Guayaquil some of the highest readings for the South American Pacific were recorded, with peaks ranging from 1 to 3 chlorophyll mg/m^3 . The readings were highest between 0 and 30 m, the precise depth depending on the intensity of the area of mixtures of upwelling waters and warm waters. During El Niño events the chlorophyll biomass dropped to values of less than 0.2 mg/m^3 , due to the discontinuity of the upwelling and/or masses of waters warm poor in nutrients. These areas of more biological productivity in chlorophyll a are associated to areas of higher catches of pelagic fishes and of tuna.