

EFFECTS OF EL NIÑO ON MACROBENTHIC COMMUNITIES FROM SANDY BEACHES IN ECUADOR: A RESEARCH PREVIEW

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ENSO (El Niño Southern Oscillation) is a well documented climatological phenomenon, composed of El Niño en La Niña, with a major impact on both human society and biological communities. An El Niño event is mainly characterised by a raise in temperature, accompanied by high precipitation and changes in the currents off the South-American west coast. The subsequent La Niña has opposite characteristics. Periodicity of ENSO ranges between 3 and 7 years.

In 1994 an international network of universities and research institutes in Western South-America, RIBEN, was established, with the purpose of investigating the influence of ENSO on biological communities. So far, the effects of ENSO on pelagic communities have drawn a lot of attention. Yet, evidence is accumulating that El Niño also has a strong influence on benthic communities.

In this study, a link between ENSO and the macrobenthic communities of sandy beaches along the Ecuadorian coast will be investigated. Three beaches in Ecuador and one on the Galapagos Islands are being monitored both quantitatively and qualitatively during a 5-year period, started in 2000 and containing the current 2003 El Niño. Sampling takes place on a monthly basis with replicate sampling of a 0.1m² surface at low tide. This sampling strategy will allow us to follow the changes in densities of the macrobenthos over a whole ENSO-cycle.

An intensive monitoring of one beach over a period of 13 months, with bi-weekly replicate transect sampling, was performed in 2000-2001 and will be repeated in 2003 and 2005. The aim of this sampling strategy is to investigate in detail the community structure and the population dynamics of several important species with respect to short and medium long period fluctuations.

In a second phase of the project, the trends and hypotheses found during the field campaigns will be tested accordingly with both *in situ* and mesocosmos experiments.

Keywords: Macrobenthos; Sandy beaches; El Niño; Ecuador.