

## THE UPWELLING INFLUENCE ON BENTO-PELAGIC COUPLING AND ITS RELATIONSHIP TO THE WIND

**SANTOS, Julio Cesar Q. P.<sup>1,2</sup>; SIVIERO, Fernanda N.<sup>2</sup>; COUTINHO, Ricardo<sup>2</sup>**

*<sup>1</sup>Programa de Pós-Graduação em Dinâmica dos Oceanos e da Terra, LAGEMAR/UFF, <sup>2</sup>Dept<sup>o</sup> de Biotecnologia Marinha - Instituto de Estudos do Mar Almirante Paulo Moreira – MB, email: bio.julio@msn.com*

Winds and upwelling events can determine the recruitment period and intensity of barnacles. Adult barnacles (Cirripedia) are exclusively sessile marine crustaceans, which feed by filtration, conspicuous in rocky ecosystems. The present study was carried out in regions with influence of the upwelling phenomenon, in rocky shores with higher and lower frequency of this event. We selected three cirripeds species: *Chthamalus bisinuatus*, *Tetraclita stalactifera* and *Megabalanus* spp., as an attempt to improve the ecological descriptions of the processes associated to the recruitment as: food availability and larval supply. Thus, the present study had as general objective to evaluate the influence of wind's regimen over the recruitment rate of barnacles at sites with different upwelling frequency influence. The barnacle's plankton larvae supply in waters that directly bathed the shore was sampled at each point monthly. The samples were taken with the help of a motor-pump and use of a plastic bucket to measure until the final minimum volume of 350 liters per sample and was filtered in a mesh of 100  $\mu\text{m}$ . Recruitment rate was measured with PVC plate (8 cm x 8cm x 0,2cm), covered with anti-slip tape and fixed with stainless steel screws. This kind of substrate is common in innumerable works, and considered, by the literature, a stimulator for barnacle's larvae settlement. The frequency of winds was acquired from a local meteorological station of INMET. The wind was described using the following components: wind speed (ws) and wind direction (wd), and decomposed in intensity of the zonal (u) and southern (v) winds. Our results show higher larval concentration of the initial stages in the sites with less frequent upwelling, and in that ones with greater frequency of this event, higher concentrations of the competent stage (cypris). In general, the recruitment rate was higher in the region of higher frequency of upwelling ( $p < 0.001$ ). Through cross-correlation between recruitment rate and wind, it showed a negative correlation at the initial time, and positive correlation at the following time (lag = 1; 15 days after approximately), which shows influence of this factor. As many studies conducted over the past decades, this one has focused on determining which of the many physical processes, affecting coastal circulation, and the larvae supply in intertidal environments can interfere in larval settlement patterns at small scales.