

# INTERANNUAL VARIABILITY OF ZOOPLANKTON BIOMASS AND STRUCTURE IN RÍA DE VIGO (GALIZA, NW SPAIN) AND ADJACENT SHELF WATERS BETWEEN 1994 AND 2000.



Ana Miranda & Gerardo Fernández

Instituto Español de Oceanografía. Cabo Estai. Canido. Apdo. 1552. 36280 Vigo. España.

## ABSTRACT.

Changes in zooplankton biomass and structure in relation to hydroclimatological indexes in Ría de Vigo and adjacent shelf waters are presented for the period 1994-2000. Zooplankton biomass showed an inverse relation with NAO, the Gulf Current and upwelling indexes. The interannual variations in zooplankton composition showed a good correlation to changes in the hydroclimatological indexes. The presence of warm water species of Copepoda (i.e., *Temora stylifera*) and Cladocera (i.e., *Evadne spinifera*, *Penilia avirostris*) between 1996 and 1998 is reported. In the same years a high abundance of oceanic copepods, such as: *Parauchaeta hebes*, *Centropages chierchiae*, *Oithona plumifera* and copepodits of *Calanus helgolandicus* have been observed inside Ría de Vigo.

## METHODS.

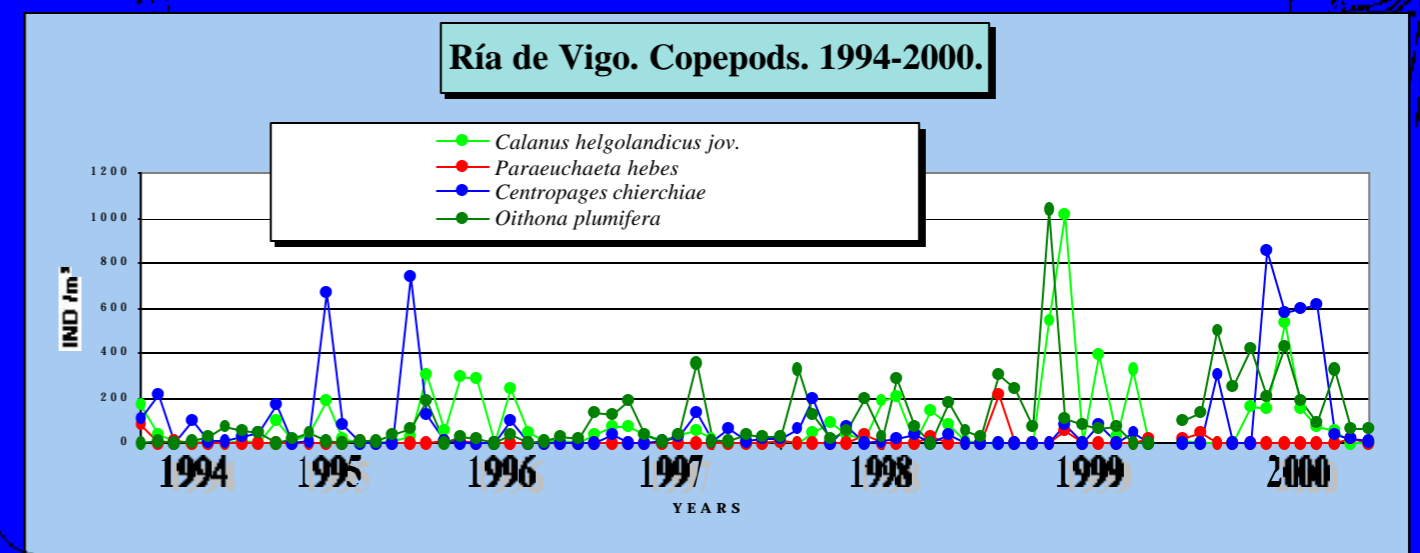
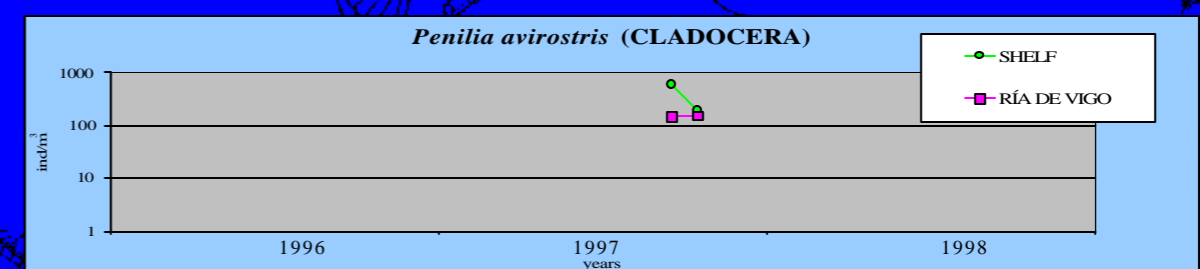
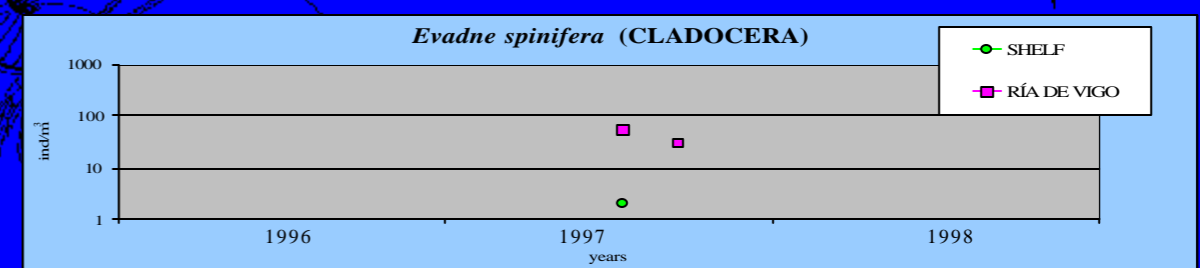
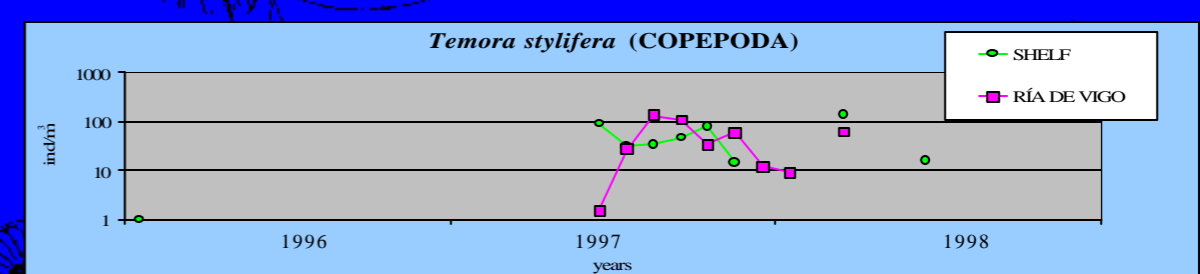
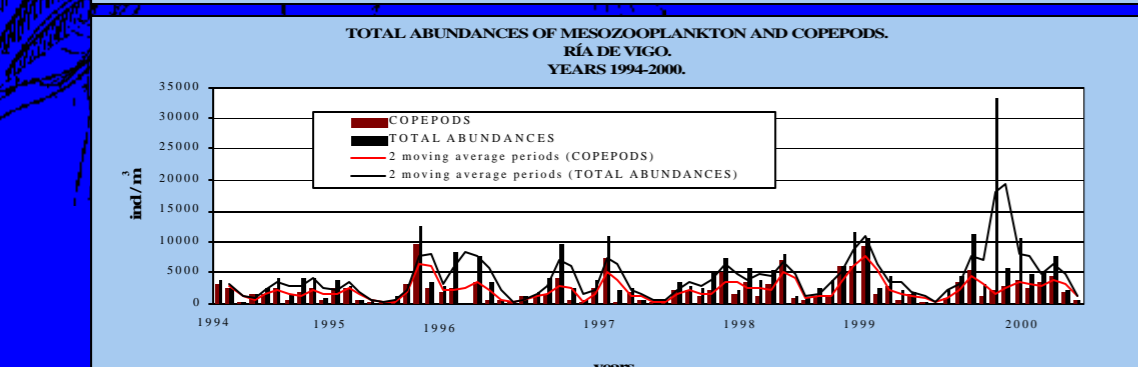
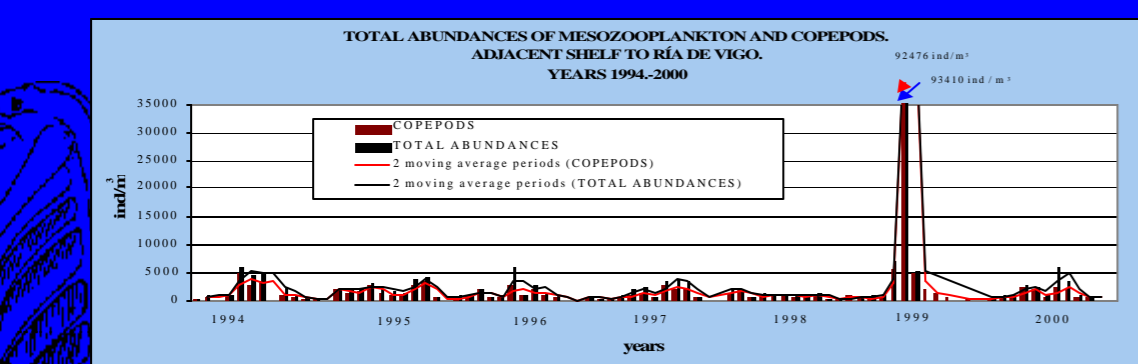
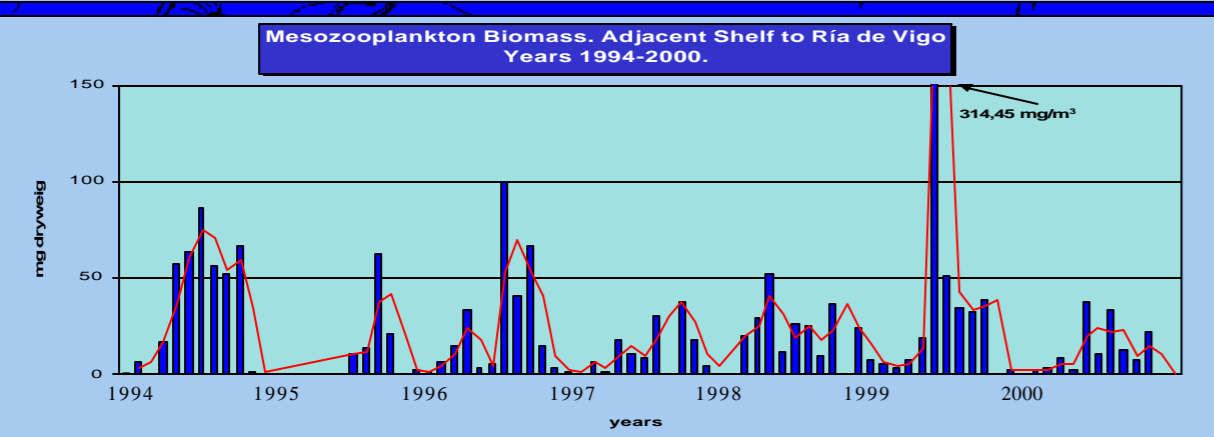
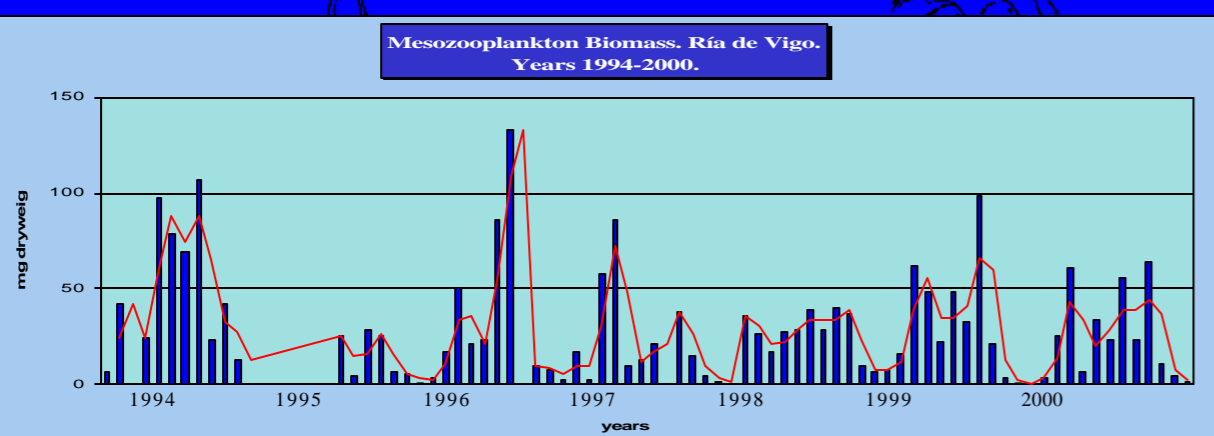
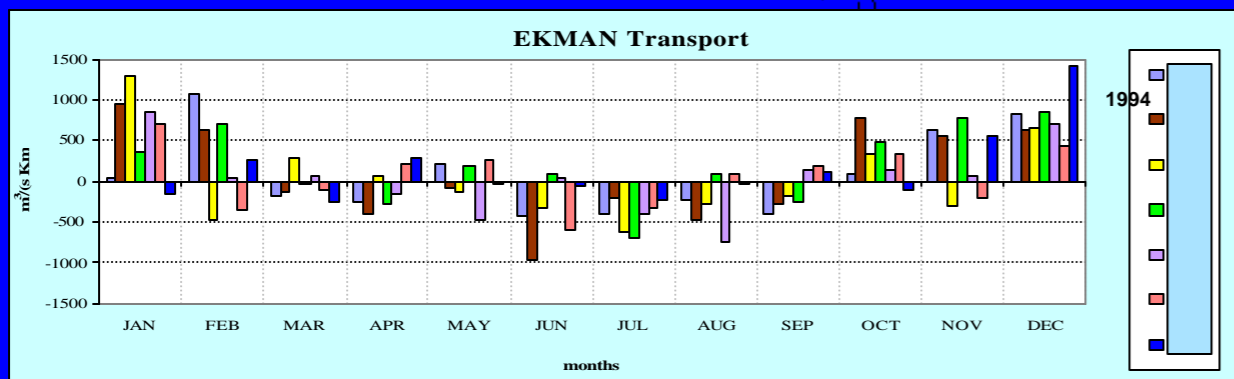
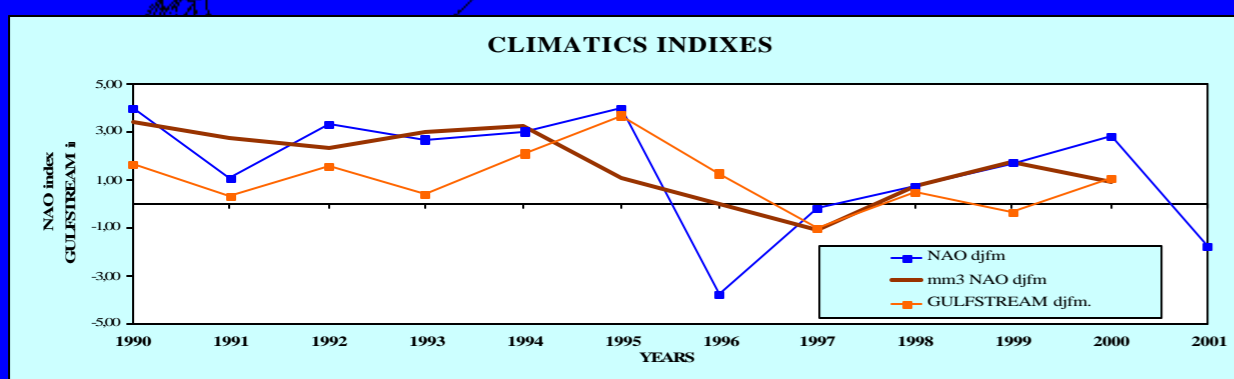
The climatic indexes (NAO and Gulfstream) were taken of webs in INTERNET and the EKMAN transport index were acquired of the paper (Lavin et al., 2000) and Casas, G. (pers. comm.).

The samples of zooplankton community were relected monthly in the Ría de Vigo (42° 12.8' N, 08° 51.3' W, depth: 39 m) and in adjacent shelf (42° 08.5' N, 08° 57.5' W, depth 97 m) between the years 1994-2000.

The tows were oblique with BONGO nets (meshes of 200 µm) equipped with flowmeters and depthmeter. Zooplankton biomass were dried in oven at 60° C during 24 hours.

Zooplankton community structure was preserved in formalin 4-5% buffered with BORAX in seawater and was studied in alicuots observed to stereoscope microscope.

## RESULTS.



## CONCLUSIONS.

Influence of changes in NAO index (Hurrell, J.W. & H. Van Loon, 1997) in variations in zooplankton biomass.

NAO index low implicate MESOZOOPLANKTON BIOMASS high and vice versa.

NAO variations bring about changes in mesozooplankton structure community.

Warm species of COPEPODA (*Temora stylifera*) and CLADOCERA (*Penilia avirostris*, *Evadne spinifera*) have been observed in adjacent shelf and Ría de Vigo in the years 1996, 1997 and 1998.

Bigger abundances of oceanic copepods inside of Ría de Vigo

## REFERENCES.

- Hurrell J.W. & H. Van Loon (1997).- Decadal variations in climate associated with the North Atlantic oscillation. *Clim. Change* 36, 301-326.  
Lavin, A, G. Díaz del Río, G. Casas and J.M. Cabanas (2000).- DATOS y RESULTADOS. Instituto Español de Oceanografía. Nº 15. 25pp.