Geophysical Research Abstracts
Vol. 18, EGU2016-7656-2, 2016
EGU General Assembly 2016

Atmospheric and oceanologic conditions favouring large bioproduction of northern Adriatic

Romina Kraus (1), Davor Lučić (2), Jakica Njire (2), Tamara Djakovac (1), Robert Precali (1), and Nastjenjka Supić (1)

(1) Institute "Rudjer Boškovic", Center for Marine Research, Rovinj, (supic@cim.irb.hr), (2) University of Dubrovnik, Institute for Marine and Coastal Research

An interdisciplinary study based on long term data collected in the northern Adriatic relieved winter period to be crucial for the total annual zooplankton production in the region. Namely, yearly averages of some investigated zooplankton species in the 2000-2007 interval were highly related to their February and/or March abundances. The large winter zooplankton abundances appeared in winters of the “A type”, in which freshened waters from the Po River spread over the region. Also, the production of phytoplankton was in winters of the “A type” higher than in winters of the “B type”, in which these waters are restricted to the coastal areas and do not impact the open sea. That was presumably due to increase in nutrients. In fact, the total inorganic nitrogen and ortophosphate concentration in eastern part reached maximal February values in the 1990-2007 interval in winters of the “A type”. Spreading of the Po River water across the northern Adriatic and appearance of the two winter types depends on the existing geostrophic circulation patterns and atmospheric and hydrologic conditions in the preceding months, thus enabling forecast. Obtained results are basis for the future theoretical ecological model which can explain long term changes in bioproduction in the region and be used in planning future environment actions aimed to sustained development, especially as winter phytoplankton and zooplankton production seems to reflect on annual catch of small pelagic fish important for Adriatic fishery, anchovy (*Engraulis encrasicolus*).