

Report of the CIESM Round Table on

HARMONIZATION OF ZOOPLANKTON TIME SERIES

The Round-table on Harmonization of zooplankton time series was held during the 37th CIESM annual meeting in Barcelona on June 8 and 9, 2004. More than 60 scientists from 14 countries attended the session.

Gabriel Gorsky and Kostas Stergiou introduced the aims of the meeting stressing the need of harmonization of the work on zooplankton in the Mediterranean and adjacent seas in the framework of Global Change: there is an urgent need to monitor the impact of environmental changes on zooplankton and higher trophic levels.

Summary of the contributions:

Miquel Alcaraz from the Institut de Ciències del Mar, CMIMA-CSIC, Barcelona, Spain, gave a tribute to the late Ramon Margaleff who passed away on May 23. The original ideas and contribution of Ramon Margaleff to oceanography will remain an example for the future generations of scientists.

Kostas Stergiou from Aristotle University of Thessaloniki, Greece, introduced the questions that can be answered by the biological data sets and illustrated them by fish data sets. He highlighted the facts that availability of biological time series decreases from higher to lower trophic levels, from North to South, with distance from coast and with depth.

Several talks were presented in order to give an overview on the administrative structures and scientific background of organizations dealing with oceanographic studies and the relevance and need of these to understand and monitor i) global and regional changes in the marine ecosystems, ii) the impact of these changes on higher trophic levels. Several speakers presented international programs that could be linked to the Mediterranean project.

Giovanni Coppini, Project Director of MFS (The Mediterranean ocean Forecasting System) presented the evolution of this project: from Mediterranean Forecasting System Pilot Project (MFSPP 1998-2001) aimed at the implementation of observing system backbone, pre-operational forecast experiments at basin scale, the project evolved toward the MFSTEP - Mediterranean Forecasting System Toward Environmental Predictions (2001-2005) : integration and extension of observing system, trial forecasts in the shelf areas and ecosystem model implementation.

Francois Carlotti (Centre d'Océanologie de Marseille), the French GLOBEC and ICES representative introduced the organisation and the aims of the GLOBEC program. The GLOBEC program (Global Ocean Ecosystem Dynamics) objective is: *“To advance our understanding of the structure and functioning of the global ocean ecosystem, its major subsystems, and its response to physical forcing so that a capability can be developed to forecast the responses of the marine ecosystem to global change”* and it constitutes an important part of the ICES community's scientific activity.

Gabriel Gorsky (Laboratoire d'Océanographie de Villefranche-sur-mer, France) gave an overview of the different international programmes included in the Earth System Science Partnership. The ESSP is a partnership of four global change research programmes (DIVERSITAS, IGBP, IHDP and WCRP) for the integrated study of the Earth System. These programmes are covering a wide range of international projects in the fields of biodiversity, biogeography and biogeochemistry as well as the programmes dedicated to monitoring and forecasting.

Paul Nival and **Lars Stemmann** from Laboratoire d'Océanographie de Villefranche-sur-mer, France, discussed the regime shifts observed after the analysis of long-term series obtained by the Continuous Plankton Recorder in the Mediterranean and the North Atlantic respectively.

The different regional datasets and main results were described by the following speakers: **Miquel Alcaraz** (ICM Barcelona) presented the Barcelona data set, **M^a Luz Fernandez** (Spanish Institut of Oceanography) the Balears data set, **Grazia Mazzocchi** (Laboratory of Biological Oceanography, Naples, Italy) the Naples data set, **Erhan Mutlu** (Institute of Marine Sciences-METU, Mersin, Turkey) the Turkish data set, **Sami Lakkis** (Lebanese University) the Lebanese data set, **Negib Daly Yahia** (Faculté des Sciences de Bizerte, Tunisia) the Tunisian data set, **Ioanna Siokou-Frangou** (Institute of Oceanography Hellenic Centre for Marine Research, Greece) the Greek data set and on the next day **Jean Henri Hecq** (Université de Liège, Belgium) the zooplankton sampling in Calvi Marine Station in Corsica. All the talks were of high quality and highlighted the long-term sampling effort of Mediterranean waters.

Finally, the ICES observer, **Luis Valdés** (Instituto Español de Oceanografía, Spain) gave details on the ICES Summary Status Report 2002/2003. This report may be delivered to the participants of the CIESM Round Table upon the request. ICES Working Group on Zooplankton Ecology considers collaborative approaches in time series measurements and interpretations, reviews impacts of climate change on plankton communities using biological indicators and considers among other topics new technologies for identification and enumeration of plankton species.

The discussion that followed focused among other subjects on the use of Internet as a communication tool, Miquel Alcaraz recalled that GLOBEC Spain started with communication through Internet. Ioana Soikou-Frangou proposed to contact international organisms such as UNEP and Negib Daly Yahia proposed to consider the opportunity of the Copepoda meeting in Tunisia in summer 2005 for the promotion of the harmonization of zooplankton time series. Maria Gracia Mazzochi proposed to follow EU calls for proposals and Yussef Halim, underlined the importance of the bottom up communication.

Most of the participants agreed upon the urgency to enhance the collaboration between the members of the Mediterranean scientific community dealing with biodiversity and biogeography of zooplankton. The proposed objectives for collaborations are: 1) identification

of representative Mediterranean sets of zooplankton time series; 2) re-analysis of existing samples; 3) organisation of interactive database on zooplankton indicators in relation with the Climate Change monitoring programs; 4) comparative studies based on the Mediterranean data sets.

The proposed instruments to realize these objectives are: a) development of a network of Mediterranean experts in zooplankton taxonomy; b) development of an Internet site and of a discussion forum; c) harmonization of sampling and samples treatment; d) exchange of scientists and students; e) targeted workshops and training courses in order to extend and deepen the zooplankton expertise around the Mediterranean; f) building of joint proposals; g) creation of bridges with other monitoring programmes.

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