

***Scientific events: International Symposium „Protection and sustainable management of the Black Sea ecosystem, imperative of the third millennium”, fourth edition, October 29-30, 2009, Constantza / Romania***

The National Institute for Marine Research and Development "Grigore Antipa" Constanta hosted between October 29 – 30, 2009 the fourth edition of the International Symposium "*Protection and sustainable management of the Black Sea ecosystem, imperative of the third millennium*".

**The opening session**

The official opening session of the symposium was chaired by:

- Dr. Eng. Simon Nicolaev, Director General of NIMRD "Grigore Antipa" Constanta,
- Prof. Dr. Adrian Bavaru, Honorary Rector of the University "Ovidius" Constanta and Honorary Consul of the Republic of Italy in Constanta,
- Prof. Dr. Gheorghe Brezeanu, Vice-President of the Commission of Oceanology - Limnology / Romanian Academy,
- Ms. Carmen Neagu, adviser in the Ministry of Environment,
- Mr. Mihai Daraban, President of the Chamber of Commerce, Industry, Navigation and Agriculture, Constanta.

The opening word of the Director General of NIMRD consisted of a statement on organization and activities of the institute, its national and international relations and its responsibilities as a representative institution in the field of Romanian oceanological research.

Local officials, personalities from Romania and abroad transmitted their related messages.

Dr. Alexandru S. Bologna, Scientific Director of NIMRD "Grigore Antipa", read messages of greeting sent by the Ministry of Education, Research and Innovation, the Balkan Environment Association - Thessaloniki / Greece and the National Institute of Oceanography and Experimental Geophysics Sgonico-Trieste/Italy.

## **Scientific session "The tradition and continuity of Romanian oceanology"**

### **Section A: Oceanography and coastal engineering**

Moderators: Dr. Eng. S. Nicolaev, Drd. V. Malciu

In the opening, Drd. Viorel Malciu, Head of Department of Oceanography, marine and coastal engineering, presented the department he leads.

In the section 4 papers and 2 posters were presented.

Research areas addressed were:

1. Oceanography: 1 paper
2. Coastal oceanography: 1 poster
3. Chemical oceanography: 2 papers and 1 poster
4. ICZM: 1 paper
5. Development of oceanographic infrastructure: 1 paper

The papers focused on highlighting the current conditions of the marine environment and related coastal zone, the development of hydro-chemical parameters and the need for spatial planning issues in coastal areas under increasing human impact.

The need for integration of Romanian oceanography in international programmes undertaken by the Intergovernmental Oceanographic Commission (IOC) to which Romania joined has been stressed.

Research outcomes depend on the existence of long-term observations and measurements on marine environmental parameters and allowed detection of slight improvement of their quality, but with the risk of degradation, if the marine and coastal environmental pressures will continue or will increase.

From the delivered presentations and discussions the following conclusions and recommendations have been drawn:

- need to develop and implement a new planning of the maritime area in a coherent manner, in line with international standards and enhancing implementation of Integrated Coastal Zone Management concept,
- introduction of GIS data base and satellite remote sensing techniques for coastal zones and marine areas in accordance with the principles of ICZM,
- need to integrate national oceanography in regional and global systems to allow an integrated approach in order to increase capacity of modeling and forecasting,
- need to complete data sets on the evolution of inorganic nutrients in the Danube river and the Romanian coastal and offshore waters with special reference to the recent period, an evaluation of intake

of heavy metals and persistent organic pollutants of the Danube river, aiming to better understand the bioaccumulation of heavy metals and organochlorine pesticides, which is more obvious in shellfish when compared with fish species, justifying the need for their monitoring.

Subsequent discussions have been focused in particular on chemical oceanography projects, where they raised the following issues:

- spatial and temporal evolution of the Black Sea anoxic layer, indicating that it lies at depths of 140 to 160 m as not 200 m as in previous periods; for a better knowledge of this phenomenon the institute will identify funding opportunities for expeditions dedicated to this subject,
- differential accumulation of heavy metals in fry and adult populations is due to various causes out of which different rates of metabolism, different mechanisms of detoxification, a.o. may be indicated,
- another issue raised was the use of archival data of the institute for the completion of the present data sets, which will enable a comprehensive approach of current problems.

## **Section B: Ecology and marine environment protection**

In the opening, Dr. Valeria Abaza, Head of Department of Marine Ecology and Environment Protection, presented the main research directions addressed by the department she leads.

At this section 11 papers were submitted and 9 sustained. The main issues addressed in the papers were:

- assessing the current status of the main biotic components of marine ecosystems and coastal lakes (Taşaul, Mangalia, Tatlageac) subjected to the influences of human activities undertaken in the coastal zone,
- opportunities for ecological rehabilitation of lake ecosystems affected by very pronounced human impact in recent decades,
- ecological education of young generations as to the importance of protecting marine and coastal environment.

Under current conditions, reducing the intake of nutrients and pollutants through the Danube river continues to show signs of slight recovery of the main biotic components expressed by continuing increase of biodiversity by restored populations of species considered rare or nearly extinct. An excellent example are macrophyte algae species such as brown alga *Cystoseira barbata* which develops populations becoming more stable at

the southern Romanian coast (Mangalia, 2 Mai, Vama Veche), some red algae belonging to genera *Phyllophora* or *Lomentaria*, but also marine phanerogame *Zostera nana*, considered an extremely rare presence in the Romanian marine sector. Also noted in zooplankton abundance of species of cladocera and copepoda which had suffered much due to the proliferation of ctenophore *Mnemiopsis leidyi*. The main species of marine molluscs have stable populations well represented by individuals of all ages. The increased impact of snail *Rapana venosa* on the most important bivalve species in areas designated for growth and exploitation of mollusks is also highlighted.

Today coastal lakes continue to be affected by eutrophication and algal blooms. Research in Lake Taşaul has identified the need for intervention, development of protection and rehabilitation measures, as well as institutional capacity for public involvement in these efforts. Similar problems were identified in Tatlageac lake and recommendations made for its ecological rehabilitation and sustainable use for aquaculture and fisheries.

A particularly important role in protecting marine and coastal environment is the education of young generations, carried out by various institutions and NGOs in programmes and projects developed for this purpose.

Considering the several issues presented in the field of ecology and marine environment protection, there is evidence of improvement in the major biotic components of the marine ecosystem, but ecosystem sense of evolution continues to be strongly influenced by global climate changes and anthropic pressures.

Accordingly following considerations resulted:

- need for further diversification of research for understanding the functioning of marine ecosystems,
- need for continuous monitoring of marine biodiversity, identification and promotion of solutions to protect endangered species and habitats, sustainable management of coastal ecosystems,
- to develop regional cooperation, realization of joint projects for better understanding of the marine ecosystem, to develop solutions for sustainable management of marine ecosystems,
- to continue educating the young generation, "beneficiary" of natural capital represented by the marine environment and its resources.

### **Section C: Living marine resources**

In the opening, Dr. Tania Zaharia, Head of Department of Marine Living Resources, presented "Holistic approach to the study of marine living

resources of the Romanian sector in view of their sustainable exploitation and management".

Within the section 11 papers were presented, belonging to Romanian and Bulgarian authors; research topics addressed were:

- living resources: 7
- dolphin protection 1
- marine aquaculture: 2
- exploitation of marine living resources: 1

Scientific communications in the field of living resources were related mainly to the knowledge of population status of the main fish species of economic interest in the Black Sea, the evolution trends and assessing of their stocks under the current changes of abiotic and biotic environmental conditions, but also included research results on marine aquaculture and exploitation of marine living resources.

Discussions revealed the importance of living marine resources that provide humankind many economic, environmental, aesthetic and cultural benefits. In the last decades, the fisheries sector contributed significantly to the continuous need for food, especially by the culture of marine species that offer important opportunities for increasing global food production and nutrition security.

During the session, research goals have been identified for a better understanding of marine living resources, such as:

- understanding processes and consequences of changes in marine biodiversity by highlighting the environmental features and their effects,
- strengthening the connections between marine ecology and oceanography,
- deepening of marine taxonomy research,
- *in situ* and *ex situ* research on jellyfish with a negative impact on fisheries resources,
- ecosystem approach in the study of marine living resources.

All above considerations will contribute to the use of advanced technologies in sampling, experimental techniques, investigative techniques, prediction models for the development of hypotheses, testing and extrapolation, and the use of historical data to investigate processes and their consequences on marine bioresources.

The continuous collaboration between specialists from Romania and Bulgaria, in collecting data of marine fishing, stock assessment of the main commercial species of marine fish (sprat and turbot), requested by the

European Commission following the application of community fishing policies were highlighted.

So, it is advisable and necessary to continue, deepen, diversify and apply modern methods of investigation in complex, integrative Black Sea research projects and under European Union coordination in order of transfer of knowledge and the creation of scientific partnerships.

Discussions were animated and interesting.

In the evening of the first day of the Symposium, at the initiative of the organizers, participants were invited to a joint dinner.

In the first part of the second day, the reports of the three scientific sections of the Symposium were presented and final conclusions were discussed and adopted.

A **Festive meeting**, during the second day, to celebrate the International Black Sea Day, conducted under the aegis of the Romanian National Committee for Oceanography (RNCO) has been led by a presidium consisting of:

- Dr. Eng. Simion Nicolaev, Director General of NIMRD Constanta - President RNCO,
- Dr. Nicolae C. Papadopol - Scientific Director of Dolphinarium Constanta, Vice-president RNCO,
- Dr. RA (R) Eugen Laurian - member of the negotiating team of Romania in the Hague Process on the Black Sea continental shelf delimitation,
- Dr. Eng. Tania Zaharia, Head of the Department of Marine Living Resources.

The festive meeting was opened by Dr. Eng. S. Nicolaev, who expressed his greetings to those present.

The meeting was also attended by Board members of NIMRD.

As the first item on the agenda, Dr. Eng. S. Nicolaev gave the floor to Scientific Director of NIMRD Dr. Alexandru S. Bologa, to present the report on the state of marine and coastal environment in 2008.

Following speakers further indicated the importance of developing investigations and regular reporting on the state of the marine environment: Dr. Nicolae C. Papadopol, Prof. Gheorghe Brezeanu, representative of the Romanian Academy, Dr. Eng Vasile Patrascu, Technical Director of NIMRD.

The festive meeting allowed the public launching of the "Messages for the Black Sea in 2009" project promoted by 4ACE-pr & publicity agency in partnership with NIMRD "Grigore Antipa" Constanta.

Public launch of the project was performed by Ms. Irena Olteanu, Director General of 4ACE-pr & publicity agency.

The main objective of the project consists in obtaining the necessary funds for equipping the National Institute for Marine Research and Development "Grigore Antipa", Constanta, for *ex-situ* study of the ecology of endangered marine organisms (sturgeon, turbot, sea horse).

Secondary objectives consists in:

- informing and raising of public awareness about the present state of the Black Sea ecosystem and need to increase the chances of future generations to enjoy the Black Sea and its species,
- implementing an integrated online campaign in the mass media for highlighting the importance of marine ecosystems,
- stimulating interest around the topic by reaching an as large as possible audience.

A spot presented the project and leaflets of the advertising campaign were distributed.

Next item on the agenda was the round table: " Romanian horizons at the Black Sea", moderated by Dr. Eng S. Nicolaev.

The contribution *Delimitation of the continental shelf and exclusive economic zones of Romania and Ukraine through the International Court of Justice - the fair and equitable solution based on international law* was presented by Dr. RA (R) Eugen Laurian.

The presentation raised the interest of the audience and generated numerous related discussions.

At the end of the celebratory meeting, activities concerning environmental education and public awareness on the marine environment took place with students from the General School with classes I – VIII 2 Mai (Junior Rangers of Marine Reserve 2 Mai - Vama Veche) who have delivered an artistic programme.

Dr. Eng. Nicolaev handed Junior Rangers Club of Marine Reserve 2 Mai - Vama Veche and their mentors diploma of merit.

During the Symposium, duration, NIMRD hosted posters concerning the three scientific sections.

Dr. Alexandru S. Bologa  
Eng. Catalina Ispas - Sava

