

MINISTRY OF ECOLOGY AND NATURAL RESOURCES OF UKRAINE

STATE ECOLOGY INSPECTION OF THE BLACK SEA

UKRAINIAN SCIENTIFIC CENTER OF MARINE ECOLOGY

**ODESSA BRANCH INSTITUTE OF BIOLOGY OF SOUTHERN SEAS
OF NATIONAL ACADEMY OF SCIENCE OF UKRAINE**

**SHIPPING SAFETY INSPECTION
OF MINISTRY OF TRANSPORT OF UKRAINE**

EUROPEAN UNION FOR COASTAL CONSERVATION

**ECOLOGICAL SAFETY DEPARTMENT
OF THE CITY EXECUTIVE COMMITTEE OF ODESSA**

**STATE CENTRE FOR SCIENTIFIC
AND ECONOMIC INFORMATION OF ODESSA**

International symposium

**THE BLACK SEA
ECOLOGICAL PROBLEMS**

*Black Sea Strategic Action Plan Implementations
(1996 - 2000)*

Odessa
SCSEIO
2000

ББК 26.221 (922.8)
Э40
УДК 551.46.9:628.5(262.5)

Друкується за рішенням **Редакційно-видавничої Ради** при **Одеському ЦНТЕІ**.
Протокол № 6 від 24. 10. 2000 р.

Екологічні проблеми Чорного моря: 36. наук. ст. / ОЦНТЕІ; - Одеса: ОЦНТЕІ, 2000. - 405с.

Цей збірник наукових доповідей присвячений основним підсумкам виконання Стратегічного плану дій по реабілітації і охороні Чорного моря (1996-2000 рр.), підсумкового документа першого етапу виконання Міжнародної Чорноморської Екологічної Програми ООН. У цьому зв'язку надруковані матеріали відображають основні розділи Програми, а саме: швидке реагування при надзвичайних ситуаціях, моніторинг забруднення і стандарти якості навколишнього середовища, захист біологічної різноманітності, розробка загальної методології управління прибережною зоною моря, рибальство, освіта і громадська поінформованість в природоохоронній області. В статтях представлені результати раніше не надруковані результати наукових досліджень. Подані дані, їх інтерпретація і закінчення належать авторам повідомлень і ні в коєму разі не можуть бути приписані членам організаційного комітету, які склали даний збірник.

Збірник призначень для широкого кола спеціалістів у галузі біології і екології моря, океанографії, техногенної безпеки і охорони природи.

Відповідальні редактори: канд. біол. наук Б.Г. Александров
канд. хім. наук Б.М. Кац
докт. геол.-мін. наук Т.А. Сафранов

The Black Sea ecological problems: Collected papers / SCSEIO, Odessa: SCSEIO, 2000.- 405 p.

Present issue is devoted to the main results of Strategic Action Plan for the Rehabilitation and Protection (SAPRP) of the Black Sea (1996-2000) implementation. The SAPRP is a resulting document of the Black Sea Environmental Program (GEF/UN/UNDP) first step. The published materials have been reflected by the main Program sections: emergency response, pollution monitoring and environmental quality standards, protection of biodiversity, integrated coastal zone management, fisheries, environmental education and public awareness. These papers are the results of scientific research haven't been unpublished earlier. The findings, interpretations and conclusions expressed in papers, are in own property of the authors and should not be attributed in any manner to the members of organization committee, which prepared this issue.

The issue was design for specialists in the field of marine biology and ecology, oceanology, technogenic safety and environmental protection.

Э 1903040000

ИНБЮМ Ан УССР

] БК 26.221(922.8)

Одесский филиал

' ДК 551.46.9:628.5(262.5)

БИБЛИОТЕКА
№ 298-4

ISBN 966-7635-08-2

©"Оклади". '

Одеський центр науково-технічної і економічної інформації, 2000.

**BS-SAP IMPLEMENTATION: ACTIVITIES FROM
31 OCTOBER 1996 TO DATE**

Yu. Zaitsev

*Odessa Branch Institute of Biology of Southern Seas, National
Academy of Sciences of Ukraine*

The signature and adoption of the Strategic Action Plan for the Rehabilitation and Protection of the Black Sea (BS-SAP) on 31 October 1996 was the beginning of a new stage in the Black Sea conservation biology, ecology and international collaboration. This document was triggered an intensive development of publications on the topic, international research projects and adequate actions at regional and national levels. The main part of these activities were impossible out of conditions of agreement, exchange of experience and international collaboration, which were firstly created in the area by the GEF Black Sea Environmental Programme (BSEP).

Among different criterions, biological diversity (Biodiversity) is the main standart for evaluating the state of the environment, both terrestrial and aquatic, including marine biocycle. This follows from the tenets of classical ecology first formulated by August Thienemann [10] and which still remain relevant today. One of these tenets says that the more living conditions within a habitat depart from the norm, the poorer the location in terms of the number of species, and the larger the populations of the remaining species. With regard to the Black Sea this sounds fully up-to-date.

The Biodiversity Convention was opened for signature on 5 June 1992 at the United Nations Conference on Environment and Development (the Rio "Earth Summit") and entered into force on 29 December 1993. All the Black Sea countries have signed and ratified it. The biological diversity has changed from being a purely theoretical concept to become one of the most accurate yardsticks of the health of the environment. This criterion was often used in the Black Sea during BSEP activities and in following period.

A short list of the main, on author's opinion, achievements after 31 October 1996, concerning biological diversity comprehension and protection, is given below.

1997.

Elaboration of the Black Sea Transboundary Diagnostic Analysis (BSEP, Programme Coordination Unit), 142 p. [6]. This is the first comprehensive diagnosis of the today state of the Black Sea ecosystem as a whole. A special attention was focused on biological diversity. Over 100 specialists from the Black Sea countries and from outside have been involved in gathering the information for its preparation. Overall concept, design and editing of the TDA was conducted by Dr. Laurence D. Mee, BSEP Coordinator.

The book Marine Biological Diversity, A study of Change and Decline, written by Yu. Zaitsev and V. Mamaev, XIV+208 p., 1997, New York: United Nations Publication is a first comprehensive analysis of the current state of the Black Sea ecosystem from the perspective of biodiversity [12]. It draws both on published data and the national reports on the state of the coastal marine ecosystem prepared by the littoral states under the BSEP as well as the results of as yet unpublished scientific surveys and research.

The coastal zone of the only Black Sea island situated far from the coast, the Zmeiny (Snake) Island was investigated by scientists from the Odessa Branch IBSS [10]. In absence of land-based sources of pollution, tourists and fishermen this habitat proved to be populated by a great number of marine organisms, which are practically lacking now on the north-western shelf and have been entered in the Red Data Book of Ukraine [8] and in the Black Sea Red data Book [7]. There are, in particular, crabs *Pachygrapsus marmoratus*, *Xantho poressa*, *Pilumnus hirtellus* and *Eriphia verrucosa*. A peculiar "island gigantism" of island fauna was observed. Many invertebrates and fish from this zone are much larger than in other parts of the shelf. Such are the mussel *Mytilus galloprovincialis*, the exotic gastropod *Rapana thomasi*, the goby *Gobius melanostomus* and the rockling *Gaidropsarus mediterraneus*.

1998.

In 1997-1998, a series of National Reports on the Black Sea Biodiversity was published by riparian countries. All of them are first modern inventories of marine and coastal wetlands species of plants and animals in national waters.

The Romanian National Report on Black Sea Biological Diversity, was compiled by Dr. Adriana Petranu from the Romanian Marine Research Institute and Published in 1997 [3]. Authors of different chapters of this document are 38 Romanian scientists.

1998.

The Bulgarian National Report on Black Sea Biological Diversity was compiled by Prof. Dr. Sci. Asen Konsulov from the Institute of Oceanology,

Bulgarian Academy of Sciences, Varna, and Published in 1998 [1]. Authors of different chapters of this document are 18 Bulgarian scientists. This is a first inventory of the modern flora and fauna of the Bulgarian sector of the Black Sea and coastal wetlands.

The Georgian National Report on Black Sea Biological Diversity was compiled by Dr. Akaki Komakhidze and Dr. Nicolay Mazmanidi from the Georgian Scientific Research Institute of Fisheries and Ecology and Published in 1998 [2]. Authors of different chapters of this document are 27 Georgian scientists. This is a first inventory of the modern flora and fauna of the Georgian sector of the Black Sea and coastal wetlands.

The Turkish National Report on Black Sea Biological Diversity was compiled by Dr. Bayram Ozturk from the University of Istanbul, Faculty of Fisheries and Published in 1998 [4]. Authors of different chapters of this document are 9 Turkish scientists. This is a first inventory of the modern flora and fauna of the Georgian sector of the Black Sea and coastal wetlands.

The Ukrainian National Report on Black Sea Biological Diversity was compiled by Prof. Yu. Zaitsev and Dr. B. Alexandrov from the Odessa Branch, Institute of Biology of Southern Seas and published in 1998 [5]. Authors of different chapters are 70 Ukrainian scientists from 12 institutions.

Within the framework of the long term interdisciplinary research projects EROS 2000 and EROS 21 (The interactions between the Danube, Dnestr and Dnepr rivers and the North Western Black Sea), supported by the European Commission, extensive investigations of pelagic and benthic ecosystems in the North western Black Sea were carried out in 1995-1998. Among the important results of four cruises on R/V "Professor Vodyanitsky" and "Sprut", was the evidence of the rehabilitation process of populations of several marine species, which were decreased in the 1970s and 1980s. There are the neustonic isopod *Idothea ostroumovi*, ghost shrimp *Upogebia pusilla*, hermit crab *Diogenes pugilator* and fish, sea horse *Hippocampus ramulosus*, sole *Solea nasuta* and dragonet *Callionymus risso*.

According to the decree of the President of Ukraine from 9 December 1998, on the Zmiyny Island (Snake Island) the Reserve "Ostriv Zmiyny" was created for the protection of biological diversity of this unique Black Sea habitat.
1999.

Black Sea Red Data Book (BS RDB) was published in 1999 by the United Nations Office for Project Services in the context of a project funded by the Global Environment Facility implemented by the United Nations Development Programme [8]. The authors of the BS RDB are 44 scientists from riparian countries and Prof. H.J. Dumont from Belgium who is the author

of files concerning some of Black Sea coastal wetlands dragonflies. The BS RDB includes 160 descriptions of endangered marine and wetland species, maps of its distribution and species pictures.

Within the framework of the GEF project "Conservation of the Danube delta biological diversity" large investigations were carried out in the delta and the adjacent Black Sea zone. Results of these research were generalized in the book "Biodiversity of the Danube Biosphere Reserve. Protection and management" [9].

According to the decision of the UNESCO coordination committee of the programme "Man and Biosphere" from 2 February 1999, a bilateral Romanian/Ukrainian Biosphere Reserve "Danube Delta" was founded. It was inaugurated on 23 September 1999 in Vilkove, Ukraine and a Co-ordinating Council of the UNESCO Transboundary Danube Delta Biosphere Reserve (Romania/Ukraine) composed by Romanian and Ukrainian scientists and environmentalists was elected. Organisation of a transboundary reserve means a progressive ecosystem approach in the biodiversity conservation activities. To date there are only six bilateral reserves in the world.

Accidental introduction of harmful exotic species is a strong and unmanaged impact on biological diversity and native organisms. The Black Sea it turned out an ecological target of this kind of human activities. More than 20 species of plants and animals from different parts of the World Ocean have been naturalized in the Black Sea and some of them proved to be very harmful. With the purpose of investigation of this process in the region and elaboration of proposals for its mitigation, in Odessa, Ukraine a special Research Unit, supported by the International Maritime organization (IMO) was created. This is one of six such centres in the world recently organized by IMO. First Scientific Workshop on Ballast Water Management and Control on the R/V "Georgij Ushakov" was conducted from 14 to 17 September 1999. The Workshop was attended by 40 participants from Azerbaijan, Bulgaria, Georgia, Germany, Kazakhstan, Romania, Russian Federation, Turkey, Turkmenistan, Ukraine and the International Maritime Organization. The Sailing Plan included visits to the ports of Odessa (Ukraine), Constantza (Romania) and Varna (Bulgaria).

An important impact on the Black Sea ecosystem and its biological diversity is the man made eutrophication. According to the BS SAP recommendations, this process needs a permanent monitoring. A workshop take place in PIU (Istanbul, Turkey) with the purpose to identify which indicators of eutrophication can be successfully applied in monitoring programmes. A list of such indicators was prepared as a support for the

Regional Activity Centre for the pollution monitoring and assessment, according to the TACIS project: ENVRUS9602: Phase 1.

In order to support the Regional Activity Centre for the Conservation of Biological diversity (Batumi, Georgia), a Biodiversity Conservation Strategy is elaborated by Halcrow Group and EU Tacis project ENVRUS9602. The aim of this work is to assist in implementing the BS-SAP obligations of Georgia, Russia and Ukraine in the field of Black Sea biological diversity understanding and protection.

This is only a short enumeration of activities, which have been stimulated by the Black Sea Strategic Action Plan. It is a good beginning, but there is a lot of work to do.

References

1. *Black Sea Biological Diversity: Bulgaria. 1998. Compiled by A. Konsulov. New York: United Nations Publications, 131 p. (in English).*
2. *Black Sea Biological Diversity: Georgia. 1998. Compiled by A. Komakhidze and N. Mazmanidi. New York: United Nations Publications, 167 p. (in English).*
3. *Black Sea Biological Diversity: Romania. 1997. Compiled by A. Petranu. New York: United Nations Publications, 314 p. (in English).*
4. *Black Sea Biological Diversity: Turkey. 1998. Compiled by B. Ozturk. New York: United Nations Publications, 144p. (in English).*
5. *Black Sea Biological Diversity: Ukraine. 1998. Compiled by Yu. Zaitsev and B. Alexandrov. New York: United Nations Publications, 351 p. (in English).*
6. *Black Sea Transboundary Diagnostic Analysis, 1997. Istanbul: PCU, 142 p, (in English).*
7. *Dumont, H.J. 1999 (ed). Black Sea Red Data Book. New York: United Nations Office for Project Services, 413 p. (in English).*
8. *Scherbak, M.M., (ed), 1994. Red Data Book of Ukraine. Kiyv: Ukr. Entsiklopedia, 464p, (in Ukrainian).*
9. *Shelyag-Sosonko, Yu.R. (ed), 1999. Biodiversity of the Danube Biosphere Reserve. Protection and management. Kiyv: Naukova Dumka, 702 p, (in Ukrainian).*
10. *Thienemann, A. 1939. Grundzuge einer allgemeinen Oecologie. Archiv Hydrobiol, 35, p. 267-285, (in German).*
11. *Zaitsev, Yu. 1998. The Most Blue in the World. New York: United Nations Publications, 142 p, (in Russian).*
12. *Zaitsev, Yu. And Mamaev, V. 1997. Marine Biological Diversity in the Black Sea. A Study of Change and Decline. New York: United Nations Publications, 206p, (in English).*