

Activities related to the Conservation of Biological Diversity in the Black Sea Region

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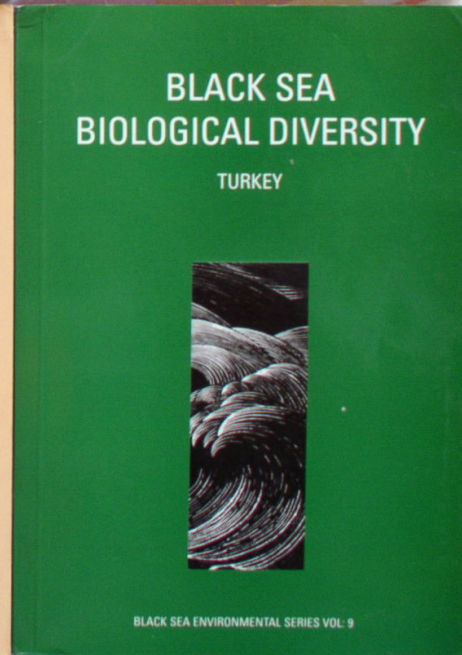
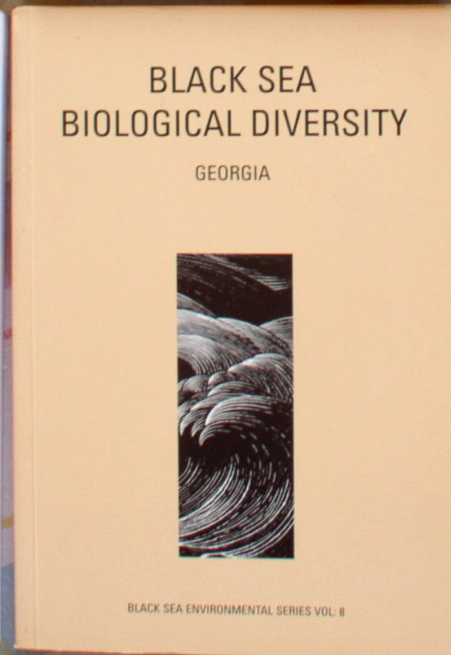
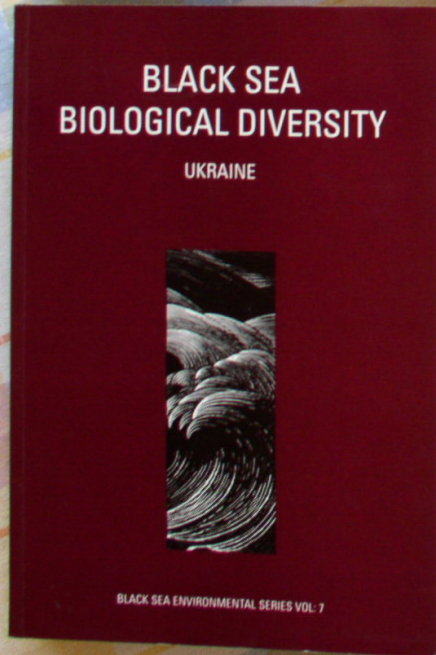
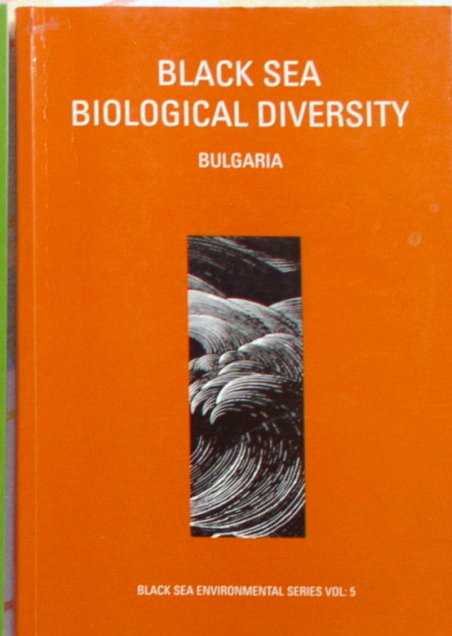
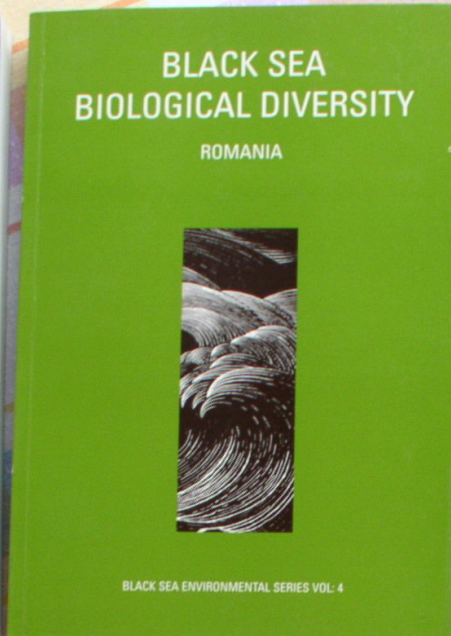
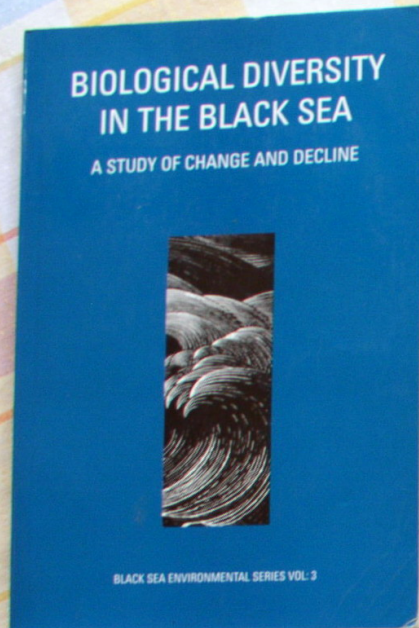


UNDP-GEF Black Sea Environmental Program BSEP, 1993-1998



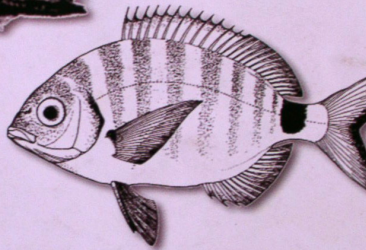
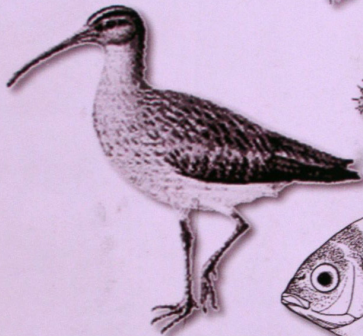
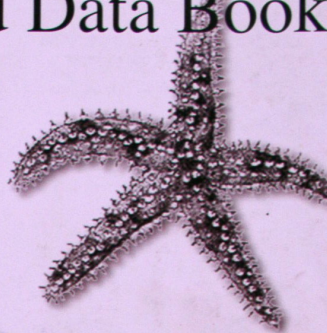
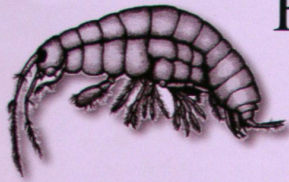
- **Purpose:** development of the long term measures of control and prevention of the pollution of marine ecosystem and rehabilitation of environmental economic of the region

National Reports of the BS countries



BLACK SEA

Red Data Book



Black Sea Transboundary Diagnostic Analysis



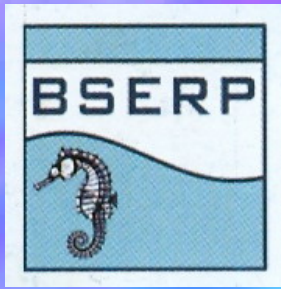
Black Sea GIS



*Strategic Action Plan for the
Rehabilitation and Protection
of the Black Sea*

31 October 1996

**31 October is
the Black Sea Day**



UNDP-GEF Black Sea Ecosystem Recovery Project



BSERP, 2000-2007



- **Purpose:** to provide a framework for coordination, dissemination and replication of successful measures for coastal zone management, protection of habitats and marine ecosystems and sustainable exploitation of resources

2003 - first report of the series that will be published by the Black Sea Commission annually.

ANNUAL REPORT of the COMMISSION on the PROTECTION of the BLACK SEA AGAINST POLLUTION

Implementation of the Strategic Action Plan for Rehabilitation and Protection of the Black Sea: 2003

CONTENT

- Introductory Remarks
 - I The Challenge: The State of the Black Sea Environment
 - II Basis for Cooperative Actions
 - III Policy Actions
- Pollution Reduction
- Management of Living Resources
- Sustainable Human Development
 - IV National Strategic Action Plans
 - V Financing of Strategic Action Plan
 - VI Arrangements for Future Cooperation

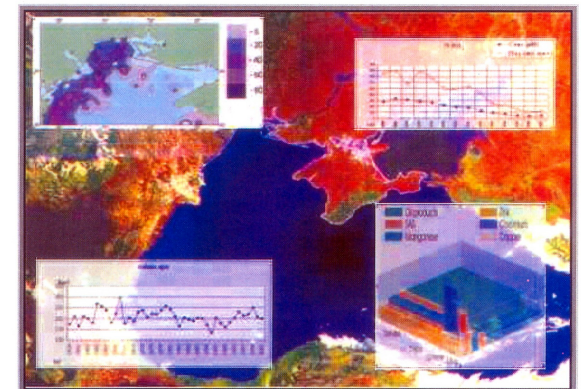


Commission for the Protection of the Black Sea Against Pollution

STATE OF THE ENVIRONMENT OF THE BLACK SEA

PRESSURES AND TRENDS

1996 -2000



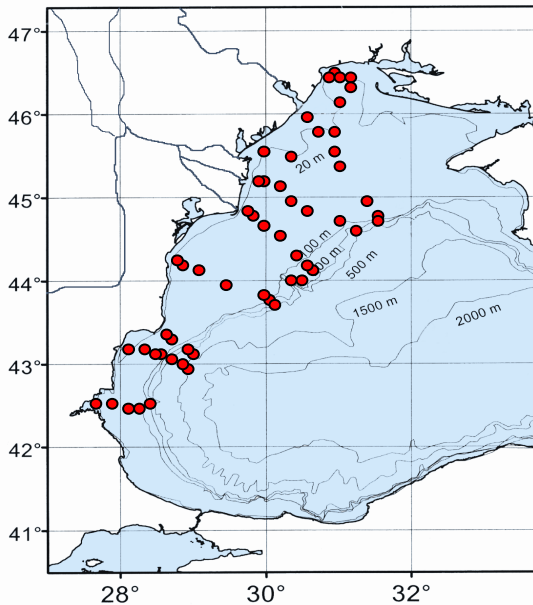
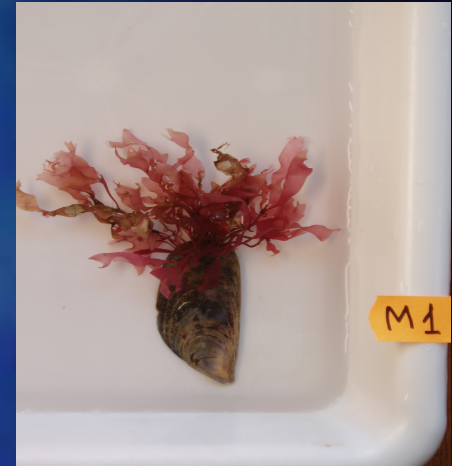
Istanbul, 2002

The background of the slide is an abstract, textured pattern of various shades of blue and purple, resembling a nebula or a close-up of a celestial body. A solid dark blue horizontal bar is positioned across the middle of the slide, serving as a background for the title text.

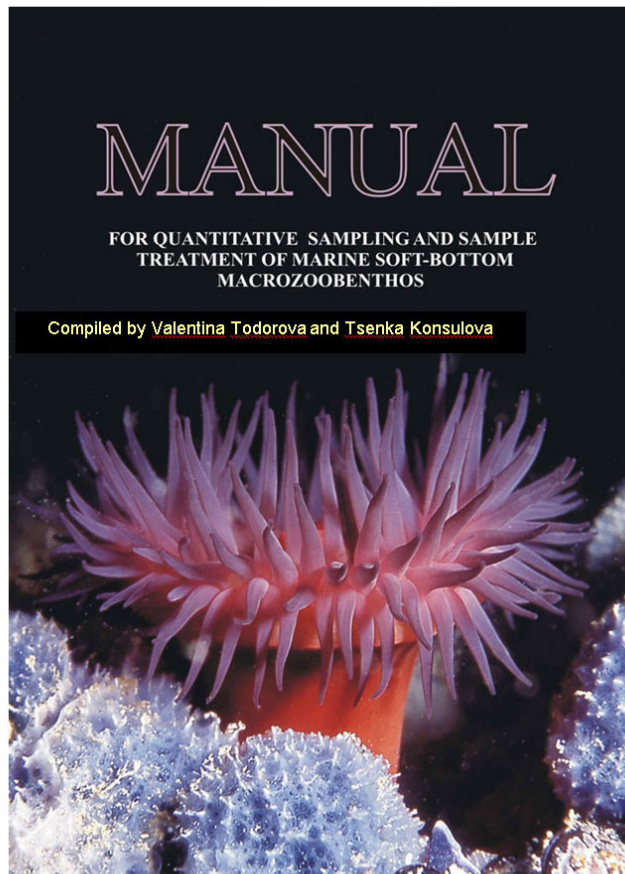
The State of the Black Sea Environment

International Expeditions

There were 4 International expeditions during 2004-2006 in Western Black Sea area



Manuals for biological monitoring

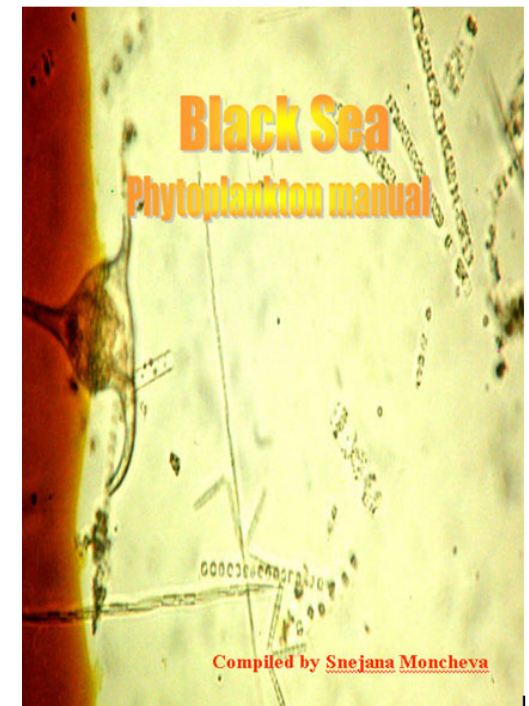


Manual for zooplankton* sampling and analysis in the Black Sea Region



Compiled by Alexander Korshenko and Boris Alexandrov on the basis of the HELCOM Manual (<http://sea.helcom.fi/Monas/CombineManual2/PartC/anxc7.html>)

Manual for Phytoplankton Sampling and Analysis in the Black Sea Region

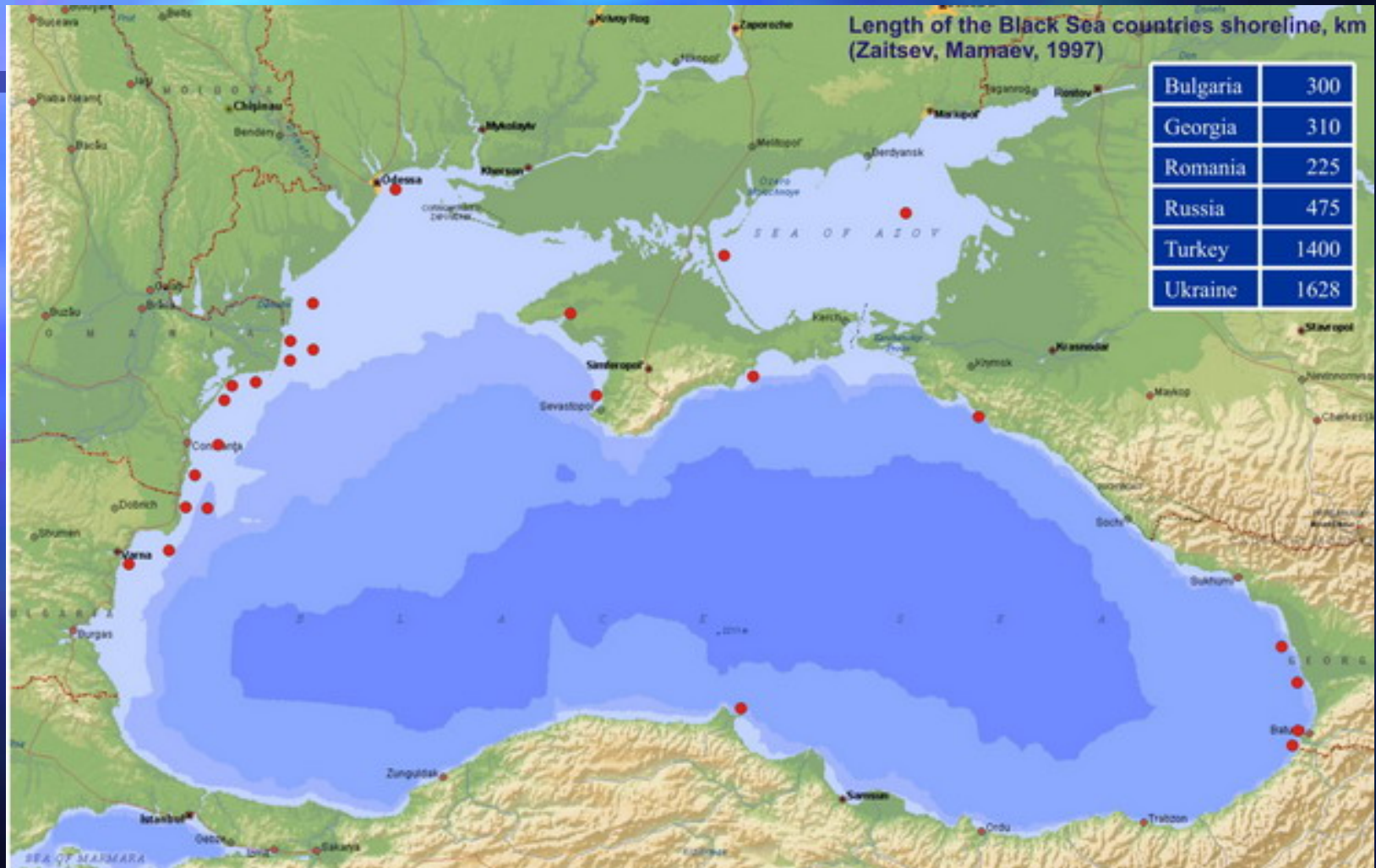


Compiled by Dr. Snejana Moncheva on the basis of HELCOM Manual (<http://www.helcom.fi/Monas/CombineManual2/PartC/CFrame.htm>)

Data Base

- Data base has been compiled on the analysis of long-term changes in the Black Sea ecosystem in the national waters of the six riparian countries.
- Format for the data base (EXCEL) was elaborated at meetings of the Advisory Group on Conservation of Biological Diversity BSC during 2002-2003 (22 sections in separate sheets).
- 58 experts from 10 institutions of the Black Sea states have made contributions to the data base.
- Investigated periods: 1950s, 1960s, 1970s, 1991-2006.

The State of the Black Sea Environment



Distribution of investigated marine areas in national zones of the Black Sea countries

2006 - first of biannual scientific conference of the Black Sea Commission

About 100 participants,
175 abstracts.

- Dedicated to 10th Anniversary of the Strategic Action Plan for Rehabilitation and protection of the Black Sea



Commission on the Protection
of the Black Sea Against Pollution

1st Biannual Scientific Conference

**Black Sea Ecosystem
2005 and Beyond**



8-10 May 2006 Istanbul, Turkey

Some topics

Biodiversity:

- long-term changes as the result of anthropogenic impact,
- state of Black Sea ecosystem biological components,
- reference conditions,
- indicators.

Marine living resources:

- critical habitats,
- pelagic and benthic biomes,
- impact of fisheries on Black Sea ecosystem.

Preparation of the Chapter on Biodiversity for the State of the Black Sea Environment Report

- Analysis of the Black Sea Data Base
- Trends and modern state of BS ecosystem in national waters

There are 35 authors of Chapter 4 “Biodiversity” including:

S. Moncheva, L. Kamburska, K. Stefanova, K. Dencheva, V. Todorova, T. Konsulova
(**Bulgaria**);

T. Gvarishvili, M. Khalvashi, T. Gvarishvili, M. Varshanidze, E. Mickashavidze (**Georgia**);

L. Boicenco, F. Timofte, A. Sburlea, V. Abaza (**Romania**);

O. Maximova, N. Moruchkova, U. Simakova, A. Azovsky, M. Chikina, N. Kucheruk,
Y. Mazei, V. Mokievsky (**Russia**);

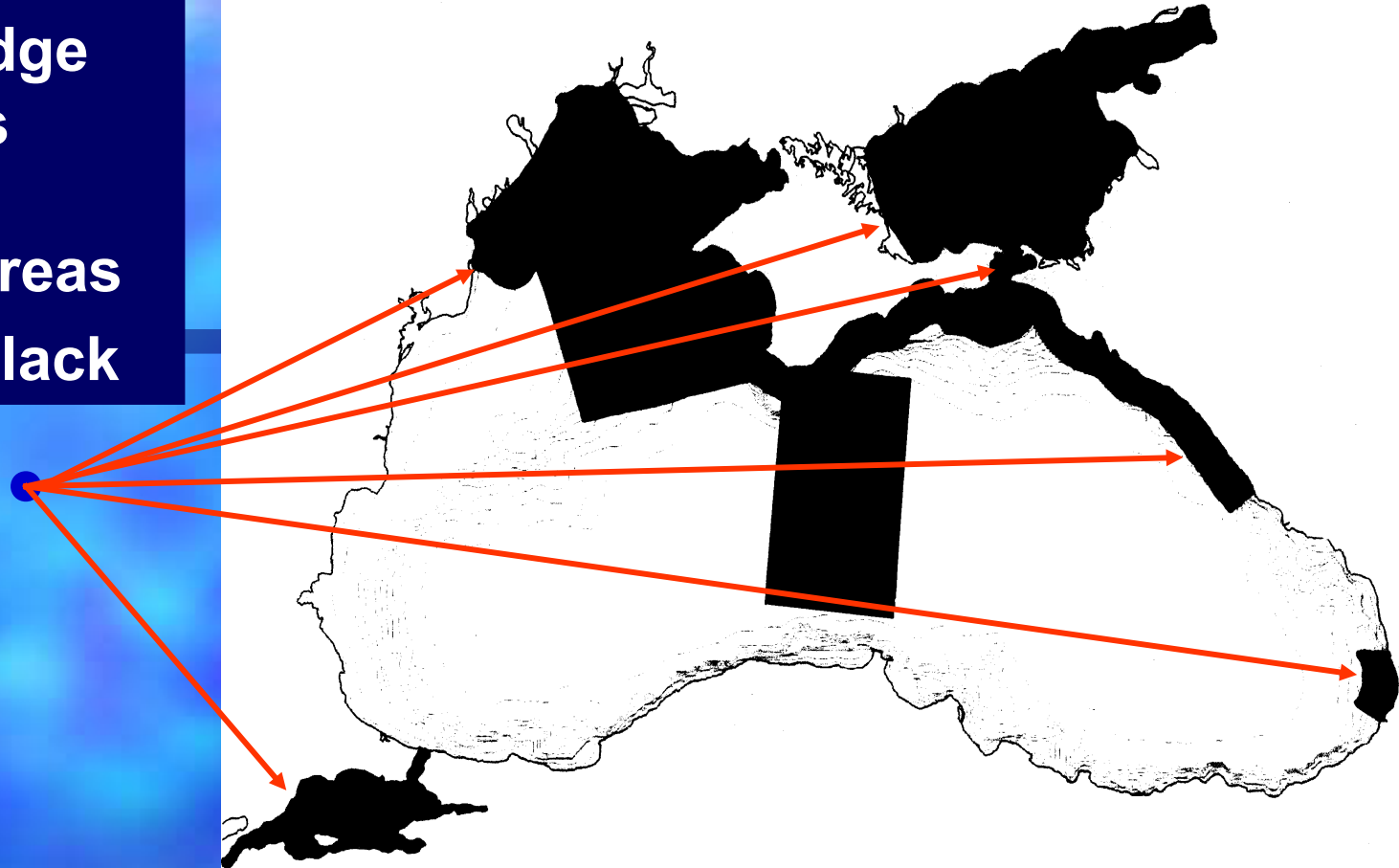
Y. Aktan, A. Tarkan, B. Öztürk, B. Topaloglu, E. Özgür (**Turkey**);

B. Aleksandrov, D. Nesterova, L. Polishchuk, G. Minicheva, L. Vorobyova, N. Revkov,
Yu. Zaitsev (**Ukraine**).



State of the Black Sea Cetaceans

Some knowledge
on cetaceans
abundance is
available for areas
marked with black



Results of those local surveys suggest that present population sizes of the three cetacean subspecies are as follows:

T. t. ponticus – not less than several 1000s

P. p. relictus – several 1000s or, rather, some 10,000s

D. d. ponticus – at least several 10,000s



Biological pollution

Biological pollution problem

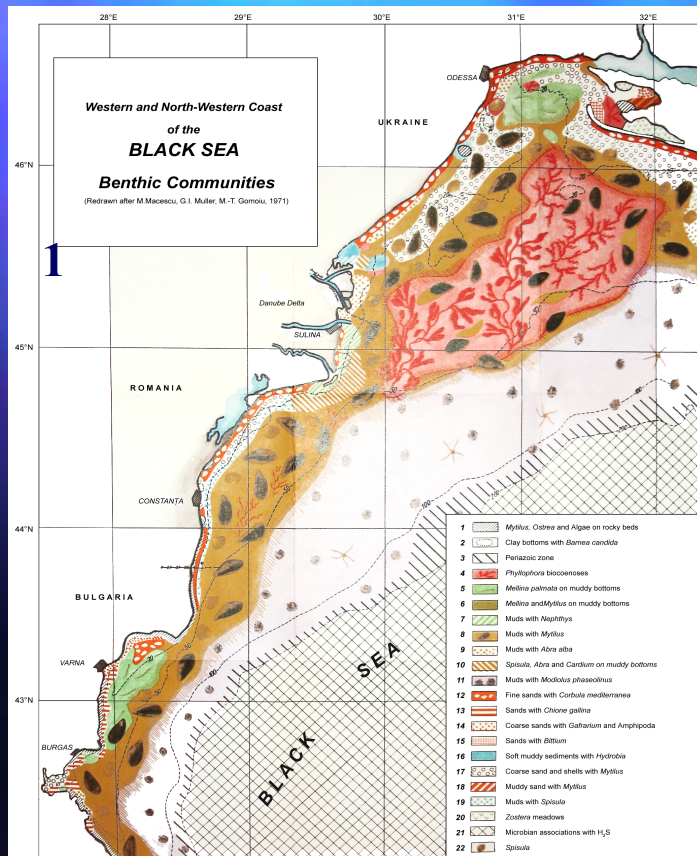
- Data base of exotic species in the Black Sea with information about their registration and potential threats in national waters (**217 species**).
- Training Course on the Invasive Species that was delivered by the experts of the Global Invasive Species Program and supported by the UNEP, Black Sea Commission and Caspian Environmental Program (**23-27 October 2005**, Istanbul).



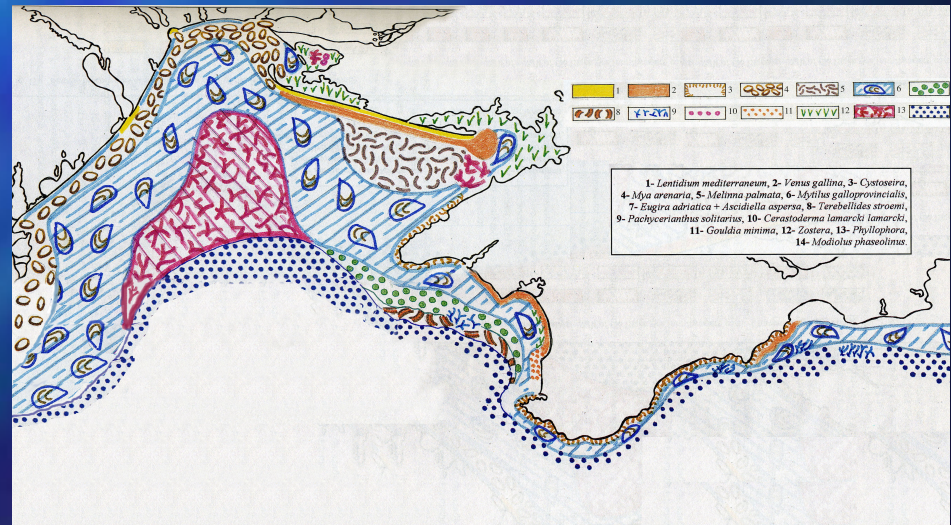
Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol

Annexes to the Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol

Annex 1. List of habitats of the Black Sea importance



May 2007, it was organized workshop on Habitat classification and mapping, lead by EEA-Topic Center for Biodiversity (48 Black Sea benthic biocenosis).



Annexes to the Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol

Annex 2. List of species of the Black Sea importance

Organisms	Annex 2		BS Red Data Book
	Existent	Proposed	
Plants	9	15	42
Invertebrates	25	31	70
Fish	24	42	41
Birds	22	29	0
Mammals	4	4	6
TOTALY	84	121	159

Annexes to the Strategic Action Plan for the Black Sea Biodiversity and Landscape Conservation Protocol

Annex 4. List of species whose exploitation should be regulated

Fish – 27 species

Moluscs – 2 species

Crustaceans – 5 species

Birds – 2 species

TOTALLY – 36 species

Last correction (11 CBD meeting)

Crustaceans (5 species)

Crawfish *Astacus astacus*

Shrimp *Palaemon adspersus*

Palaemon elegans

Amphipoda *Pontogammarus maeoticus*

Anostraca *Artemia salina*

Fish (1 species)

Mullet *Liza saliens*

Birds (2 species)

Pochard *Aythya ferina*

Scaup *Aythya marila*



Black Sea marine protected areas

Marine protected areas in the Black Sea

2007



Publication of the Marine protected areas in the Black Sea -

Todorova V., Zaharia T., Boicenco L., Alexandrov B., Antonidze K., Tskhadadze N., Tonay A., Parr B., Volovik Ye., Altiparmak A., Velikova V. in European Journal "Coast line", Vol. 16, No. 2, 2007.- P. 13-17

Number of Ramsar sites (Black Sea Wetlands of International importance)

BULGARIA – 7

GEORGIA – 2

ROMANIA – 1

RUSSIA – 3

TURKEY – 1

UKRAINE - 19

There are 33 protected areas of International importance

Marine protected areas in the Black Sea



Complete information about the Black Sea protected areas in the Black Sea is uploaded on www.blacksea-commission.org (since 2005 this information was regularly updated)



Public awareness

Black Sea species guide book (rocky coast)

Скалистое побережье



ЗООБЕНТОС

- 135 Губка, Porifera колония (50 см)
- 136 Моллюск Морское блюдечко, *Patella tarentina* (4,5 см)
- 137 Моллюск Устрица, *Ostrea edulis* (8 см)
- 138 Моллюск Мидия, *Mytilus galloprovincialis* (14 см)
- 139 Моллюск Рапана, *Rapana thomasi* (19 см)
- 140 Морские клещи, *Halacaridae* (2,1 мм)
- 141 Ракушковые раки, *Ostracoda* (1,2 мм)
- 142 Копепода Гарпактикоид, *Harpacticoida* (1,4 мм)
- 143 Усноподобный рак морской желуд, *Balanus improvisus* (20 мм)
- 144 Креветка Палеон, *Palaeon elegans* (50 мм)
- 145 Краб каменистый, *Eriphia verrucosa* (9 см)
- 146 Краб мраморный, *Pachygrapsus marmoratus* (4,3 см)
- 147 Рак-отшельник Клитанарий, *Clibanarius erythropus*, (3 см)
- 148 Равноногий рак Идотея, или морской таракан *Idotea baltica hasteri* (3 см)
- 149 Мшанка, *Brizoa* колония (50 см)
- 150 Асцидия Ботрилуз, *Botryllus schlosseri* - колония (15 см)

РЫБЫ

- 151 Скorpion, или морской ерш, *Scorpaena porcus* (31 см)
- 152 Темный горбыль, *Sciaenops ocellatus* (70 см)
- 153 Ласточка, *Chromis chromis* (14,6 см)
- 154 Троепер, *Tripterygion tripterygion* (7,2 см)
- 155 Ласкеры, *Diplodus annularis* (33 см)
- 156 Бычок Кругляк, *Neogobius melanostomus* (25 см)
- 157 Морские собачки, *Blennius* (25 см)
- 158 Атерина, или ферника *Atherina molchon pontica* (14,6 см)

ВОДНАЯ РАСТИТЕЛЬНОСТЬ

- 108 Урсора кисточковидная, *Urospora penicilliformis* (20 см)
- 109 Сине-зеленая водоросль, *Lyngbya* sp. (20 мкм)
- 110 Ульва жесткая, *Ulva rigida* (50 см)
- 111 Кладофора беловатая, *Cladophora albida* (50 см)
- 112 Порфира белоспелая, *Porphyra leucosticta* (15 см)
- 113 Цистозира бородавчатая, *Cystoseira barbata* (120 см)
- 114 Гелидум широколистный, *Gelidium latifolium* (10 см)
- 115 Полисифония обнаженная, *Polysiphonia denudata* (15 см)
- 116 Падина павлинья, *Padina pavonia* (20 см)
- 117 Церамий красный, *Ceramium rubrum* (15 см)
- 118 Калитамнион щитовидный, *Callithamnion corymbosum* (6 см)
- 119 Брюносея перистый, *Bryopsis plumosa* (15 см)
- 120 Филлофора ребристая, *Phyllophora nervosa* (50 см)
- 121 Эктокарпус густой, *Ectocarpus confervoides* (7 см)

ЗООПЛАНКТОН

- 122 Медуза гидродного полипа, *Hydrozoa* (5 мм)
- 123 Гребневик Морской огулец, *Beroe ovata* (10 см)
- 124 Гребневик Мисиниопсис, *Mnemiopsis leidyi* (12 см)
- 125 Копепода Акартия, *Acartia* sp. (1,5 мм)
- 126 Кладофора Палеон *Pleopis polyphemoides* (0,45 мм)
- 127 Кладофора Пенсия птичеклоуша *Penilia avirostris* (1,0 мм)
- 128 Личинка, или науплиус усногих раков, *Cirripedia* (0,9 мм)
- 129 Личинка, или веллер двустворчатого моллюска, *Bivalvia* (0,5 мм)
- 130 Личинка, или веллер брюхоногого моллюска, *Gastropoda* (0,8 мм)
- 131 Личинка, или нектома многощетинкового червя, *Polychaeta* (1,6 мм)
- 132 Личинка, или зоо краба, *Brachyura* (2 мм)
- 133 Личинка, или ципноутус мшанки, *Brachyzoa* (2 мм)
- 134 Аппендикулярия, или пелагический оболочник Ойколеяра, *Oikopleura dioica* (4,5 мм)

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An Introduction to the Black Sea Ecology

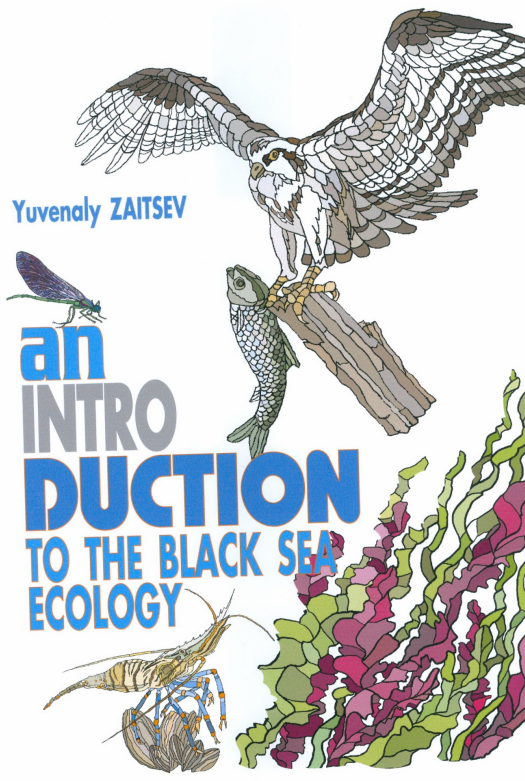
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4. Ecology of Populations and Communities of Aquatic Organisms
5. Ecological Reasons of Migrations of Marine Organisms.
6. Human Impact on the State of the Black Sea Ecosystem
7. Possibilities and Ways of the Rehabilitation of the Black Sea Ecosystem
8. How to Assess the Ecological state of a Marine Coastal Zone by Accessible means?

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Conclusion
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**ВВЕДЕНИЕ
В ЭКОЛОГИЮ
ЧЕРНОГО МОРЯ**

ЮВЕНАЛИЙ ЗАЙЦЕВ



Thank you for attention

