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CLIMATE CHANGE IN THE **B**LACK **S**EA –
HYPOTHESIS, **O**BSERVATIONS, **T**RENDS
SCENARIOS AND MITIGATION STRATEGY
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Paper Abstracts



It is up-dated once per year, information is received from water users. For easier use, the database is integrated into GIS, it allows to show data on a map.

In addition, the database has information on pollution inputs with key Ukrainian rivers: Danube, Dnepr, Dniester, S.Bug – they are considered as point sources. This section contains information on average annual river flow (mouth part), concentration of key pollutants and annual input of pollutants. This section is based on data, received from Central Geo-physical Laboratory, Kiev. It has data for the period 1995 – 2006.

Applying a special procedure (developed in USRIEP), assessment of pollution point sources impact on marine water can be performed on 3 comparative criteria. The first criterion is local impact in pollution area (takes into account fresh water multiplication factor for waste water). The second criterion is mean scale impact (takes into account synergism of various pollutants impact on marine environment in the adjacent waters). The third comparative criterion is large scale impact (takes into account conservatism coefficient of pollutants).

Complex criterion for assessment of point pollution source impact on marine environment is developed. For calculation the three listed-above criteria are used together with volume of waste water. Complex assessment is based on calculation of distances for point sources in 4-dimensional space; coordinates are normalized values of three comparative criteria and waste water volumes.

Ranking procedure on comparative criteria and complex assessment of impact are realized in sub-system on data analysis. The sub-system of data presentation allows to graph pollutant inputs for point sources and rivers. In addition, the sub-system allows to diagram data for comparison of pollutant inputs for various sources.

Using the developed procedure, a ranking list of point sources is compiled for the Ukrainian part of the Black Sea. According to last data the following sources are hot-spots: treatment plant, Sevastopol vodokanal, treatment plants North and South, Odessa, and treatment plant, Yalta vodokanal. The database was used for study of pollutant input dynamics and implementation of local projects with the Ministry of Environmental Protection of Ukraine on system analysis of implementation progress for State program on Black and Azov Seas protection.

EXPERIENCE AND INPUTS OF ODESSA NATIONAL MECHNIKOV UNIVERSITY TEAM IN DEVELOPMENT AND IN FUTURE USING OF ENVIRONMENT DATA BASES IN FRAMEWORK OF THE BLACK SEA SCENE PROJECT

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It is known, that one of the main result of international cooperation is the information and data collection, processing and exchange. For the Black Sea area the EU project “BLACK SEA SCENE” is unique possibility to collect and joint data from all Black Sea countries into one infrastructure which contains information about scientific projects, scientists, publications, surveys, socio-economic data etc.

During time of project (2005-2008) the Odessa National Mechnikov University’s team take part in fulfillment of BLACK SEA SCENE project as partner. The main goal of this report is detailed presentation of all parts of prepared information for University’s databases, formats and contents of

which were agreed for development and implementation in framework of project. The authors acknowledged to Mr. Peter Davis - coordinator of project, created the methodology of information infrastructure, which used by all participants – partners of project.

Are presented the lists of Odessa National Mechnikov University historical and current research projects for 1995-2008 and data sets and information about fulfilled cruises, which are included in EDMERP, EDMED and CSR directories of project website. The information about scientists and bibliography which were putted in database hosting by RIHMI (Russia) at web-site <http://bss.oceaninfo.ru>.

In report very shortly presented current situation and the main results of scientific research which conducted by Odessa National Mechnikov University during last years in Black Sea basin, especially international projects in framework of FP6 and FP7, TACIS, ESA and other programs.

Are discussed future activity and proposals of Odessa National Mechnikov University team in framework of implementation of results of BLACK SEA SCENE project after finishing of this project and for improvement of existing information infrastructure.

The main of proposals are to extend area on Black Sea Scientific Network to whole Black Sea basin area and to included in areas of collecting of metadata all information about Black sea basin rivers, atmospheric emissions and river discharge of pollutants and nutrients into Black Sea waters. More active it is necessary to involve Black Sea countries regional and central authorities in collecting and exchange of socio-economic information. Finally discussed proposal to develop on basis created information infrastructure the tools for decision making system to help of local, regional and central authorities and communities in conservation, protection, management and in planning of sustainable using of marine natural resources.

AVAILABILITY OF DATA FOR THE BLACK SEA CLIMATE CHANGE RESEARCH

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Black Sea is a rather well investigated region of the World Ocean although there are not too many data available for researchers willing to investigate long term trends and climate change in the region. The data available can be found in two main sources: (1) Internet, (2) Data sets and data bases on the CDs/DVDs. This paper presents a review on the available data including addresses and the ways to get these data.

There is a number (about 20) of interesting sources of in situ data for the Black Sea available at the Internet now. First of them appeared in 1999. It was so called Black Sea Environment Internet Node (BSEIN) organized by the Black Sea Environment Programme Coordination Unit on the basis of the Internet server of the Marine Hydrophysical Institute (Sevastopol, Ukraine). Among other data and information the BSEIN contained as well some historical physical & chemical Black Sea data sets obtained from the World Data Center and integrated and intercalibrated data sets of the Black Sea basin wide expeditions organized in 1991-1993. Part of this web site is still available at the BSEIN mirror web site (<http://www.grid.unep.ch/bsein/>).

One of the most interesting Black Sea data sets available via Internet is a multidisciplinary database of the NATO Sfp Black Sea ODBMS project (<http://sfpl.ims.metu.edu.tr/ODBMSDB/>) supported by Institute of Marine Sciences, Middle East Technical University (Erdemli, Turkey). This database includes physical, chemical and bio-optical data accompanied with the quality flags.