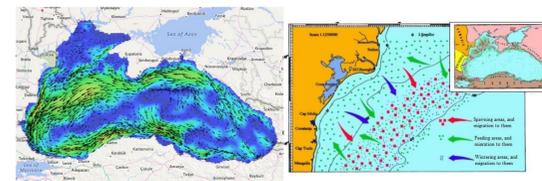# Activities of the COSMOMAR Competence Center for Earth Observation Data used for decision support aiming at sustainable fisheries in the Romanian coastal area
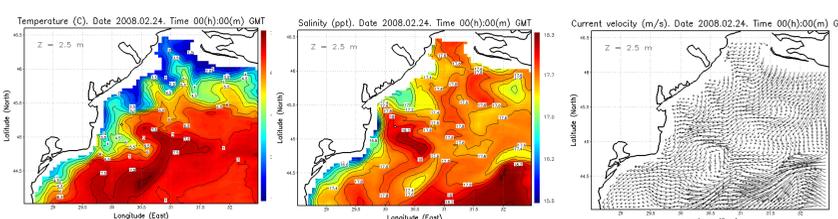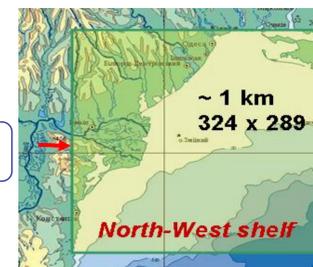
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Introduction

NIMRD- National Institute for Marine Research and Development "Grigore Antipa" is the leading marine research institution in Romania, as well as national coordinator and focal point with respect to international research tasks and responsibilities in the field of marine science.

The Institute operates under co-ordination of the Ministry of Environment and Water Management and its research activities are mainly oriented towards supporting adequate marine and coastal environmental management and protection.

NIMRD undertakes fundamental, applied and technological development research in oceanography, marine and coastal engineering, e *Physical, Chemical* n *and Biological Monitoring* and other ocean areas. *Being the technical operator of the marine monitoring network (physical, chemical and biological) and for coastal erosion survey*

Sea-level & ADCP Near-real time data
&
Tsunami Early Warning System

For sea current and waves monitoring, use of three Acoustic Doppler Current Profilers ADCP Workhorse Sentinel 600 Hz used in fixed, underwater measurements locations or in oceanographic cruises.

GIS&RS – components/Maps

Web GIS – RS data/information for support of ICZM / MSP process implementation
>Special monitoring data/information/forecast for vulnerable areas under human impact, within the Romanian coastal zone

NIMRD DATA BASE is in developing stage under PostgreSQL system together with extension of a QC dynamic process for historical/all available data
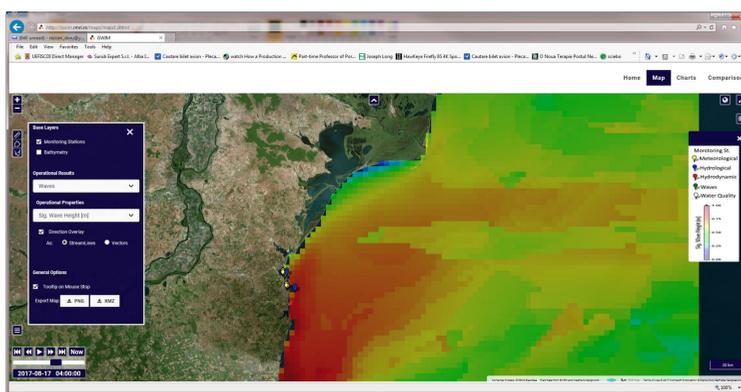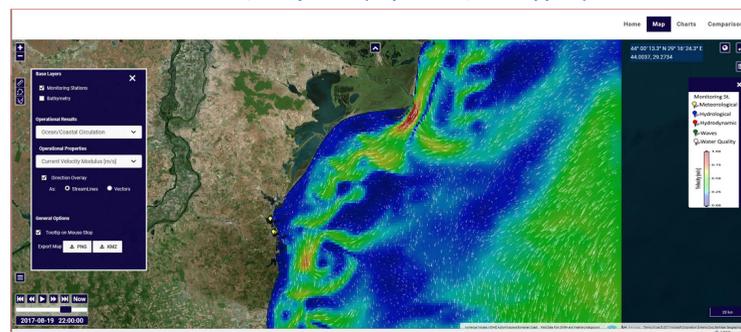
The Black Sea Regional Forecasting System (*Black Sea RNFS*) was developed within BS consortium. It consists of a set of high resolution regional models and is represented as the subsystem of Black Sea NFS. The *Black Sea RNFS* permits to monitor and to forecast continuously the state of the 5 coastal zones of the Black Sea.
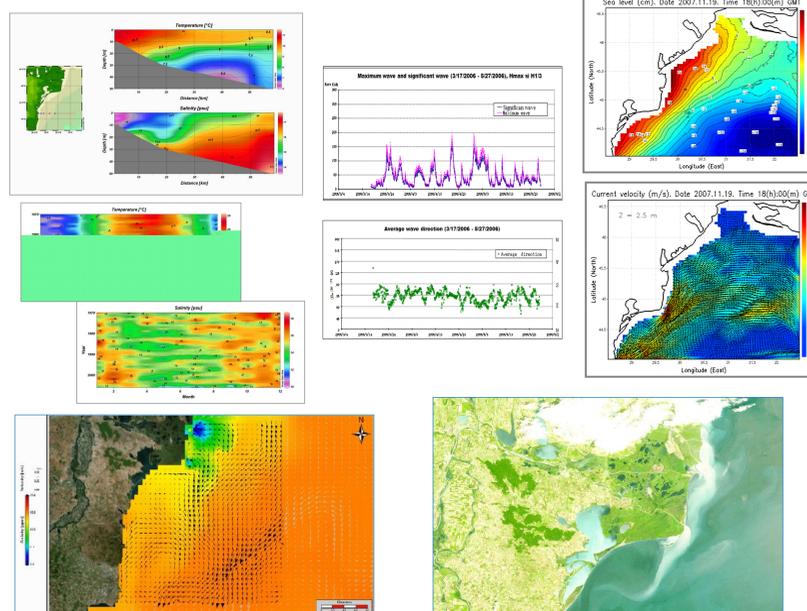

Marine/Coastal Circulation/Waves Modeling and Forecast Applications with Data/EO Systems (Copernicus/ESA support)

(NoWesReM)
Numerical Model validation

Analysis of model-data misfits reveals differences between the water mass properties/3D, permitting/resolving general circulation models against marine hydrological observations
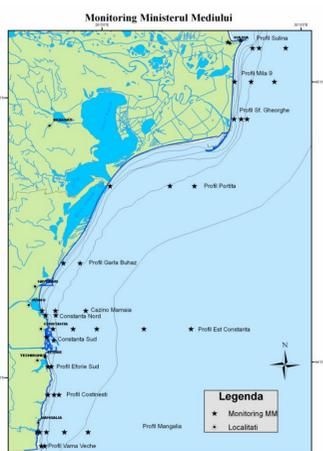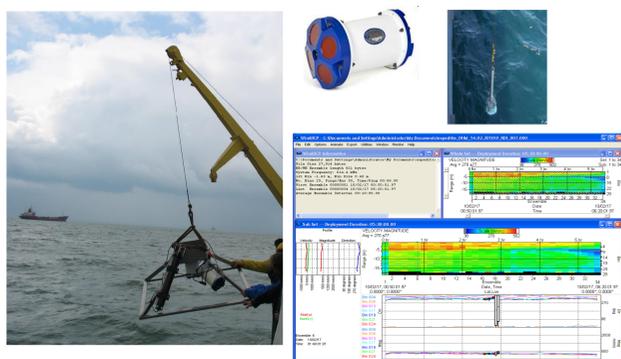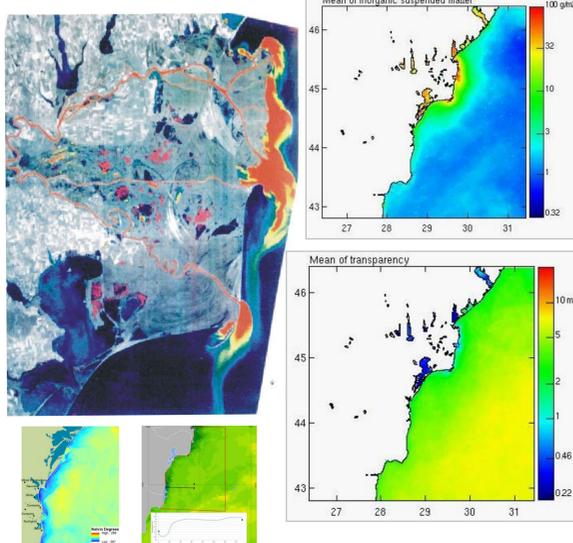

Black Sea PP/circulation vs migration routes

~ 1 km
324 x 289

North-West shelf

Linkage with on-going CMEMS founded project

1. iSWIM – project supported by COPERNICUS MARINE ENVIRONMENTAL SERVICE - 31-UU-DO-CMEMS-DEM1 - PROMOTION OF DEMONSTRATIONS OF CMEMS DOWNSTREAM SERVICES

Lots: 11 - Promoting the demonstration of coastal, operational and existing CMEMS downstream services on the Black Sea
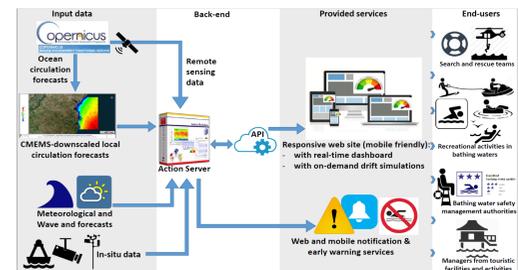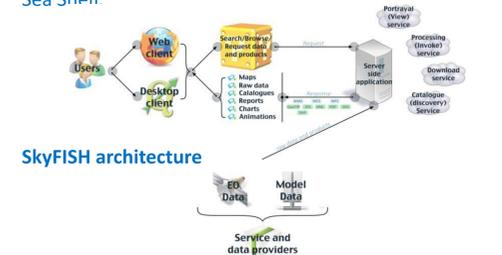

The services are in relation with the maintenance and evolution of an operational system which is operated by the National Institute for Marine Research and Development (NIMRD), Romania for the Romanian Coast and Mamaia Bay (City of Constanta). The services are focused on the main objective of the call: promoting demonstrations of existing operational, coastal CMEMS downstream services: i*ntegrated Service for Water Quality Monitoring in Mamaia* bay (iSWIM).

The system also supports the identification of the oceanographic characteristics as a base of documentation of potential highly productive fishing zones.

In this specific application, Earth Observation data provide the important hydro-biological parameters of the marine ecosystem in assembly with primary productivity and marine living resources distributions on the western Black Sea coastal areas.

The forecast system will be developed for fisheries purposes in an ongoing project - SkyFISH, financed by ROSA (Romanian Space Agency), which will deliver the information through a prototype service providing the favourable fishing areas on the Romanian Black Sea Shelf

SkyFISH architecture

Web sites:
http://www.rmri.ro/Home/Products.MamaiaStation.html
http://iswim.rmri.ro
www.cosmomar.ro
www.ro-ceo.ro

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