Commission on the Protection of the Black Sea Against Pollution

Black Sea Commission experience in planning of emergencies

13-14 December 2011, Chisinau

Black Sea Commission/Permanent Secretariat
www.blacksea-commission.org

Oil Pollution Sources in the Black Sea

Commission on the Protection of the Black Sea Against Pollution

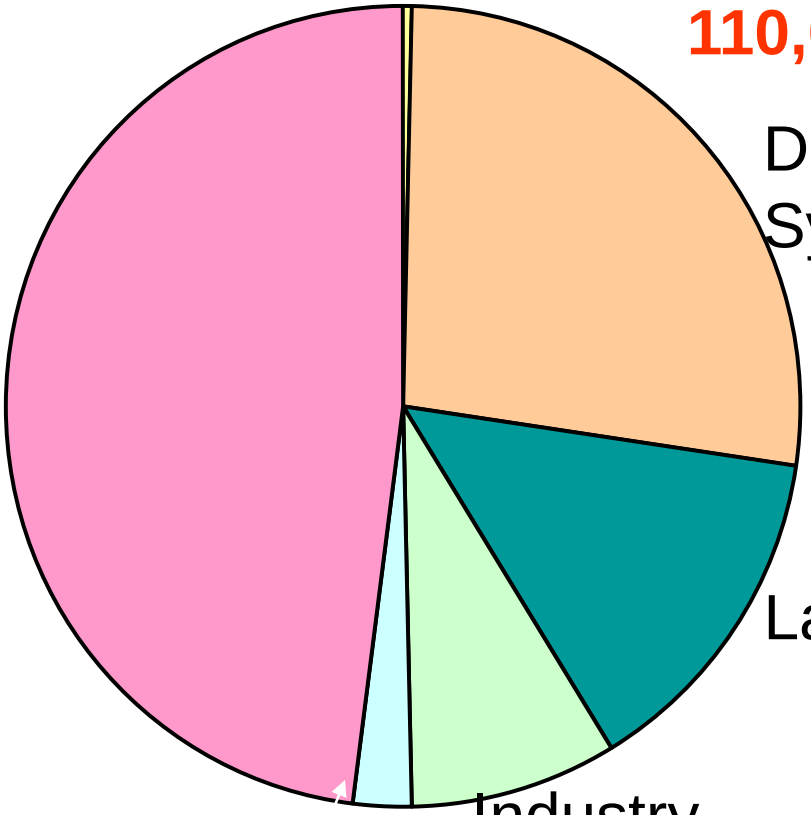
- ***Rivers discharge***
- **Municipal Sector**
- **Shipping**
- **Offshore installations**
- **Natural seepage**

Black Sea: Estimated Oil Inputs

(according to initial TDA analysis)

Total

110,000 ton / year



Source: BSEP Transboundary Diagnostic Analysis

LEGAL BASIS

Commission on the Protection of the Black Sea Against Pollution

- **The Convention on the Protection of the Black Sea Against pollution (Bucharest Convention), 1992;**

  The Bucharest Convention 1992 and its “Emergency Protocol” provide the legal framework for actions concerning regional co-operation in combating marine pollution incidents;

- **Odessa Declaration, 1993;**

- **The Strategic Action Plan for the Rehabilitation and Protection of the Black Sea (BS SAP), 1996, as amended and updated in 2009.**

  The Strategic Action Plan established principles, policies and actions for contingency planning and emergency response and set up clear objectives and deadlines for the Regional Contingency

Black Sea Commission

Commission on the Protection of the Black Sea Against Pollution

Bucharest Convention

In April 1992 six Black Sea countries (Bulgaria, Georgia, Romania, Russian Federation, Turkey and Ukraine) signed and shortly thereafter ratified the **Convention on the Protection of the Black Sea Against Pollution** (Bucharest Convention) with its (three) integrated protocols.

Pollution related

- Land based sources
- **Cooperation in emergency situations**
- Dumping

and

- Black Sea Biodiversity and Landscape Conservation Protocol (not ratified yet)

- Intergovernmental body for promoting the implementation of the provisions of Bucharest Convention, its protocols and Strategic Action Plan
- The regional focal point for any environmental aspects of the coastal and marine environment of the Black Sea
- Made up of 6 Commissioners (one for each coastal country) and a chairman
- The Permanent Secretariat is located in Istanbul, Turkey

Bulgaria

Georgia

Romania

Russian Federation

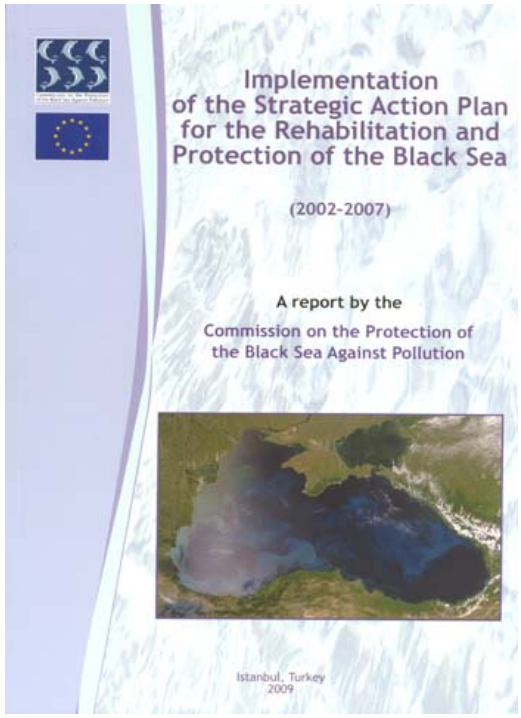
Turkey

Ukraine

Commission on the Protection of the Black Sea Against Pollution

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

- **Signed** on October 31, 1996 (commemorated as the **Black Sea Day**)
- Adopted by all Black Sea countries
- **Updated** in 2009



Revised BS Strategic Action Plan (2009)

.

1. **Establish an inter-state ministerial mechanism to enable a quick response to major pollution events.**
2. **Adopt and enforce relevant international legal instruments for safety navigation, pollution prevention, limitation of liability and compensation.**
3. **Provide adequate port reception facilities for ship-generated wastes according to MARPOL 73/78, Annex I, IV, V.**
4. **Establish a harmonised fee/cost recovery system on ship-generated waste.**
5. **Develop systems for the identification of illegal pollution sources from vessels and off-shore installations.**
6. **Develop/establish a harmonised enforcement system in cases of illegal discharges from vessels and off-shore installations, including technical means and fines.**

Black Sea Commission

Commission on the Protection of the Black Sea Against Pollution

The Commission for the Protection of the Black Sea Against Pollution

Permanent Secretariat

Advisory Groups						
AG ESAS	**AG PMA**	**AG LBS**	**AG ICZM**	**AG CBD**	**AG FOMLR**	**AG IDE**
Environmental Safety Aspects of Shipping (AG ESAS)	Pollution Monitoring and Assessment	Control of Pollution from Land Based Sources	Development of the Common Methodologies for Integrated Coastal Zone Management	Conservation of Biological Diversity	Environmental Aspects of Fisheries and Other Marine Living Resources Management	Information and Data Exchange
Regional Activity Centers						
Environmental Safety Aspects of Shipping (AC ESAS), Varna, Bulgaria	Pollution Monitoring and Assessment (AC PMA), Odessa, Ukraine	Control of Pollution from Land Based Sources (AC LBS), Istanbul, Turkey	Development of Common Methodologies for Integrated Coastal Zone Management (AG ICZM), Krasnodar, Russian Federation	Conservation of Biological Diversity (AC CBD), Batumi, Georgia	Environmental Aspects of Fisheries and Other Marine Living Resources Management (AG FOMLR), Constanta, Romania	Information and Data Exchange (AC IDE), Permanent Secretariat, Istanbul, Turkey
National Focal Points						
Bg, Ge, Ro, Ru, Tr, Ua	Ua, Bg, Ge, Ro, Ru, Tr	Tr, Bg, Ge, Ro, Ru, Ua	Ru, Bg, Ge, Ro, Tr, Ua	Ge, Bg, Ro, Ru, Tr, Ua	Ro, Bg, Ge, Ru, Tr, Ua	Bg, Ge, Ro, Ru, Tr, Ua

Regional Legal Framework

Commission on the Protection of the Black Sea Against Pollution

- **The Bucharest Convention** (1992)

- Article IX: **Cooperation in combating pollution in emergency situations**

- The Contracting Parties shall cooperate in order to prevent, reduce and combat pollution of the marine environment of the Black Sea resulting from emergency situations in accordance with the *Protocol on Cooperation in Combating Pollution of the Black Sea by Oil and Other Harmful Substances in Emergency Situations…*

Observers, projects, partners

Observers

EU (Represented by the EC, DG Environment) - The Environment Directorate General is one of the 36 Directorates General and specialized services which make up the European Commission , serving to initiate and define new environmental legislation and ensure that measures are implemented by member states. *(observer status granted at 7th Regular Meeting, 29-31 May 2001)*

GEF/UNDP - Global Environmental Facility/United Nations Development Programme. *(observer status granted at 7th Regular Meeting, 29-31 May 2001)*

UNEP - United Nations Environmental Programme *(granted observer status at 8th Regular BSC Meeting, 18-19 February 2002)*

ICPDR - International Commission for the Protection of the Danube River. *(observer status granted at 7th Regular Meeting, 29-31 May 2001)*

BSEC - Organization of the Black Sea Economic Cooperation. *(observer status granted at 7th Regular Meeting, 29-31 May 2001)* [speech by Prof. Ahmet Kideys, Executive Director, at BSEC Ministerial Conference, Sofia, 28 May 2010]

ACCOBAMS - Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area *(granted observer status at 8th Regular BSC Meeting, 18-19 February 2002)*

BSC-PSC Memorandum of Understanding - signed and enforced by all Black Sea countries, the PSC MOU and the BSC have granted each other observerstatus.*(observer status granted at 7th Regular Meeting, 29-31 May 2001)*

BS NGO Network - The Black Sea NGO Network *(observer status granted at 7th Regular Meeting, 29-31 May 2001)*

Projects & Partners

MONINFO - "Environmental Monitoring of the Black Sea Basin: Monitoring and Information Systems for Reducing Oil Pollution" Project. [online documents]

ECBSEA Project - Environmental Collaboration for the Black Sea Project (archived web page)

EnviroGRIDS - "Building Capacity for a Black Sea Catchment Observation and Assessment System supporting Sustainable Development" Project (2009-2013). [Project Article]

Pegaso Project - Coastal & Maritime Research. [Project Factsheet]

UP-GRADE BS-SCENE - "UP-GRADE Black Sea Scientific Network" Project (2009-2012).

CASPINFO - "Caspian environmental and industrial data and information service (2008-2011). [CASPINFO - Poster] [CASPINFO - Poster, Russian]

SESAME - "Southern European Seas : Assessing and Modelling Ecosystem changes" Project.

GEF BSERP - The Black Sea Ecosystems Recovery Project (Completed in April 2008)

TACIS - The TACIS Programme

EEA - European Environment Agency

DABLAS - the **DA**nube / **BLA**ck **S**ea Task Force, official site/ activities of the BSC

EC Supported "Environmental Collaboration for the Black Sea" Project

KnowSeas - Knowledge-based Sustainable Management for Europe's Seas [FP7 site][Project Site] [BSC contribution]

EU-project HYPOX: oxygen monitoring in aquatic ecosystems[more info] [HYPOX factsheet] [Project Brochure] [Contact: fjanssen@mpi-bremen.de]

Black Sea Scientific Network - Development of a Mnemiopsis Leydyi database

MEECE - Marine Ecosystem Evolution in a Changing Environment

AG Environmental Safety Aspects of Shipping (AG ESAS)
Provides operational assistance for combating pollution from oil or chemical spills

Commission on the Protection of the Black Sea Against Pollution

- **Capacity building :**

  -training, exercises

- **Data collection as:**

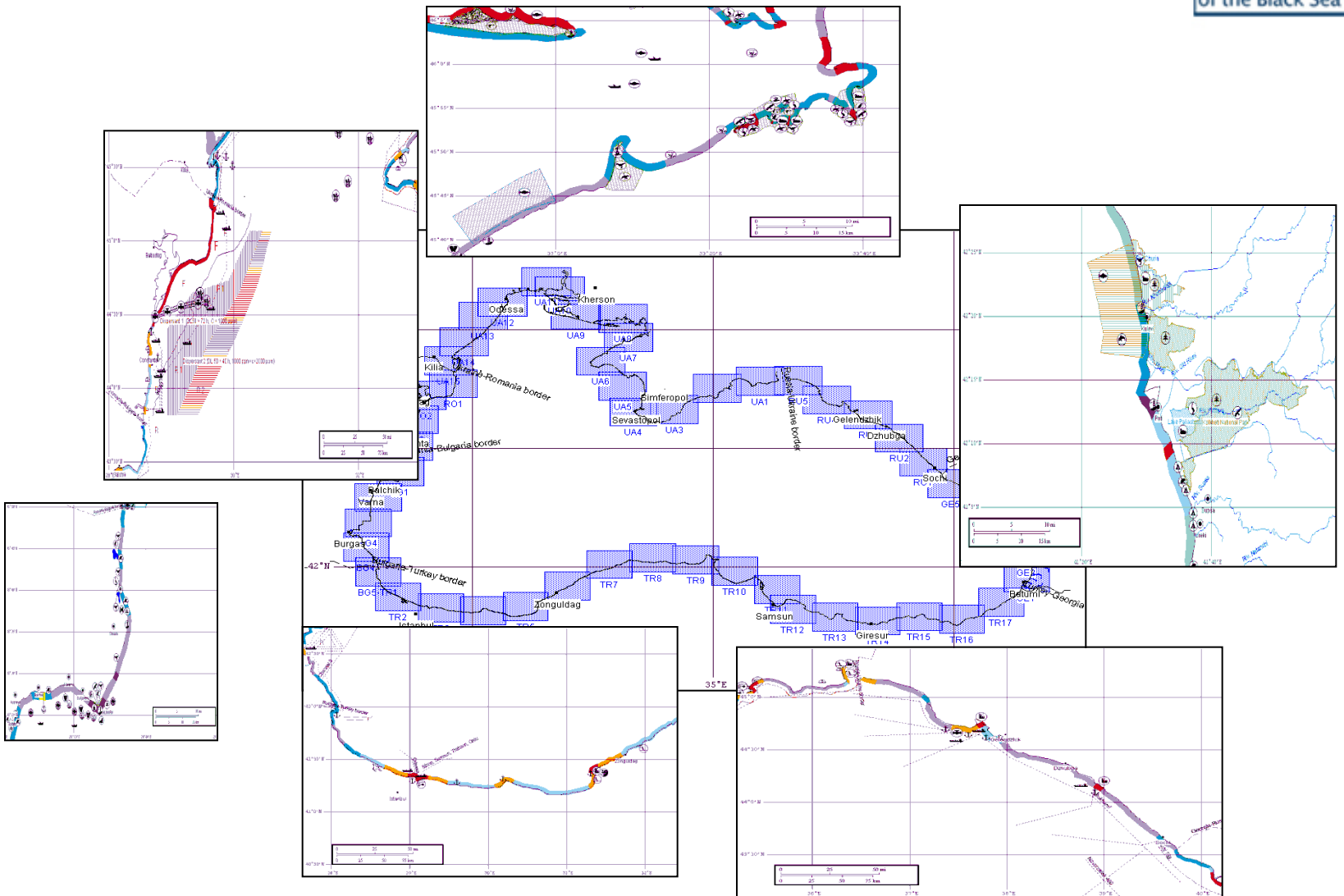
  Number of ships calling at ports, passing the Istanbul Strait, PRF, Oil Spills, Dumping (volume of dredged material, cub m), Ballast Waters.

- **Legal documents.** Regular maintenance and update of the operational information (Annexes 1-4) for the implementation of the RCP

  1. Directory of competent national authorities, contact points, emergency response centres, national on-scene commanders and other relevant addresses;
  2. Maps showing possible sources of pollution, environmental sensitive areas, environmental sensitive indices, priorities for protection;
  3. Operational procedures: Alarming, notification, communication System;
  4. Directory of response personnel and inventory of response equipment, products and other means which each party might offer as assistance in case of the activation of the Plan.

Sensitive maps (Annex 2 RCP)

Commission on the Protection of the Black Sea Against Pollution



AG ESAS
International, regional and/or national at-sea response exercises

<u>Exercises are a major milestone and investment</u>

in the region's preparedness for oil spill accidents:

- Black SEA **ALPHA**: *Synthetic or Table-top Exercise*;
- Quarterly BLACK SEA **BRAVO**: *Alarm or Communication* Exercise;
- BLACK SEA **DELTA** *(at-sea exercises) :*
    - SULH 2007, hosted by Turkey.
    - RO-DELTA August 2009, hosted by Romania
    - GEODELTA Sept. 2011, hosted by Georgia

Long-term program for Oil Spill Exercises proposed

Annex 9 RCP

States Exercise	BG	GE	RO	RU	TU	UA
ALPHA	2011	2009	2012	2014	2010	2013
BRAVO				Jan-April 2009	May-August 2009	Sept-Dec 2009
	Jan-April 2010	May-August 2010	Sept-Dec 2010	Jan-April 2011	May-August 2011	Sept-Dec 2011
	Jan-April 2012	May-August 2012	Sept-Dec 2012	Jan-April 2013	May-August 2013	Sept-Dec 2013
	Jan-April 2014	May-August 2014	Sept-Dec 2014	Jan-April 2015	May-August 2015	Sept-Dec 2015
DELTA	2013	2011	2009	2017	2019	2015

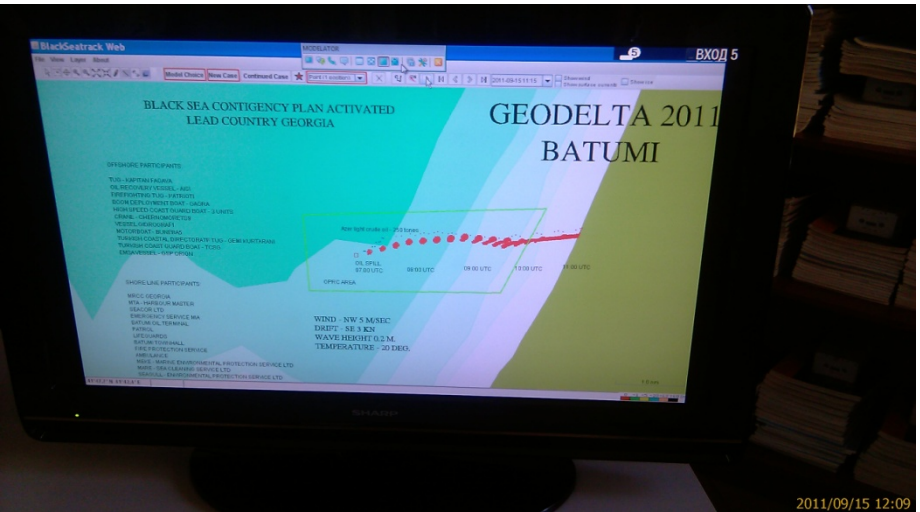
DELTA Exercise, September 2007, hosted by TURKEY – SULH 2007

http://www4.ibackup.com/qmanager/servlet/share?key=jdowx61003
http://www.cam-story.com/download/SULH.zip)

RO-DELTA– Midia- Constanta
August 2009

GEODELTA– Batumi, 15 September 2011

Commission on the Protection of the Black Sea Against Pollution



MONINFO PROJECT
Phase I and II

Phase 1- START: 01 January 2009;
END: 31 August 2011
Phase 2- START: 01 January 2010;
END: 31 December 2011

EU Co-funded, Total Budget: 2.36 Million Euro

3 Work Packages in MONINFO I:

- **WP1. Information System development**
- **WP2. Monitoring System development**
- **WP3. Capacity Building**

5 Work Packages in MONINFO II: Complementary to MONINFO 1

Oriented to the establishment of real operational tools to support institutions responsible for monitoring, counteraction and mitigation activities in case of oil spills

- **WP 1. RDIP Database and Info platform and Expert System/MONINFO System on oil pollution mitigation and counteraction activities**
- **WP 2. Application of a Web based model for oil pollution forecasting for the BS**
- **WP 3. Regional Black Sea AIS data server**
- **WP 4. Remote sensing monitoring of oil pollution**
- **WP 5. Capacity building and sustainability**

MONINFO Project
General objectives

Commission on the Protection of the Black Sea Against Pollution

MONINFO project finally should enable the coastal states to better prevent and respond to operational/accidental/illegal oil pollution, aiming to achieve the following **main objectives**:

- **Development/Improvement of information and monitoring systems for operational, illegal and accidental oil pollution**, by collecting, storing, processing and distributing different type of data related to oil pollution prevention and response activities within the area;
- Setting up a **Black Sea Regional AIS server;**
- Setting up a **regional monitoring service** on oil pollution detection;
- Setting up an oil **modeling** to understand distribution/forecast following a spill

- **Enhancement of response capabilities,** including a common risk management proposal and emergency planning update.

MONINFO Project Scope

Commission on the Protection of the Black Sea Against Pollution

Long term:

- **Contribue to improve the quality of the environment at regional level by using common tools and methodologies focusing on an expert system for oil pollution mitigation and counteraction activities.**
- **Stronger institutional partnership at national level, sustaining and further building of capacity in the region.**
- **Improved regional cooperation and partnership with regional and international bodies.**

Short term:

- **Implementing a satellite monitoring pilot study in detecting oil pollution (illegal, operational, accidental) that will include Automatic Identification System (AIS) and backtracking.**
- **Trained experts and users in all MONINFO layers (from reporting data to assessments and decisional support, based on an Internet oil spill transport model and effective response).**
- **Clear baseline of existing situation as basis for improved national and regional monitoring information and communication**

Main deliverable of 1st phase is Concept Paper

Commission on the Protection of the Black Sea Against Pollution

- **Dedicated to support the Regional Contingency Plan through:**

- **Building a single access point system for Black Sea related data**
- **Supporting decision makers (national authorities, MRCCs) using:**

  >Several Components

  -Oilspill Modeling

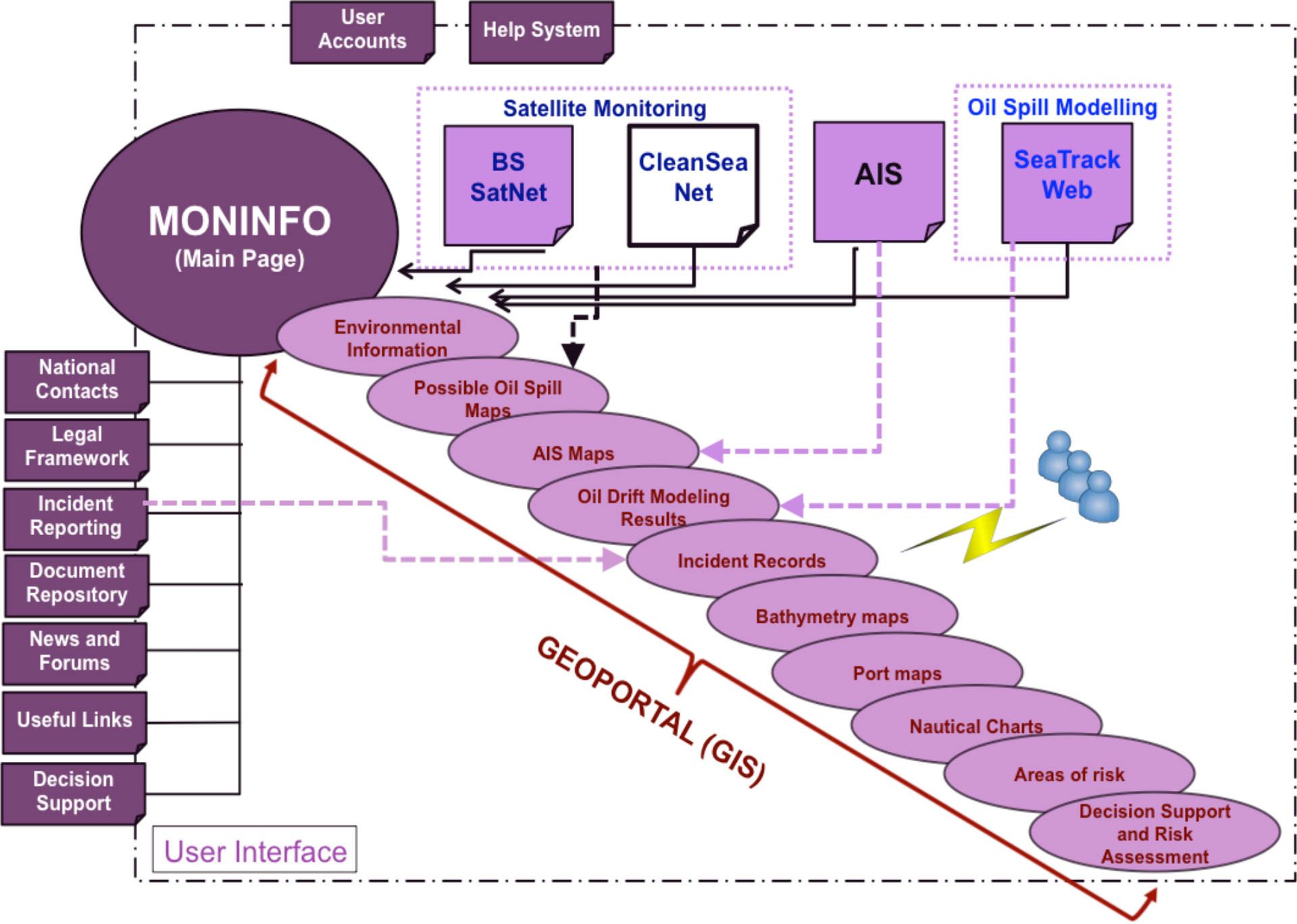
  -Satellite Image Monitoring

  -Document Repository

  -GIS data, Geoportal

  -AIS Regional server

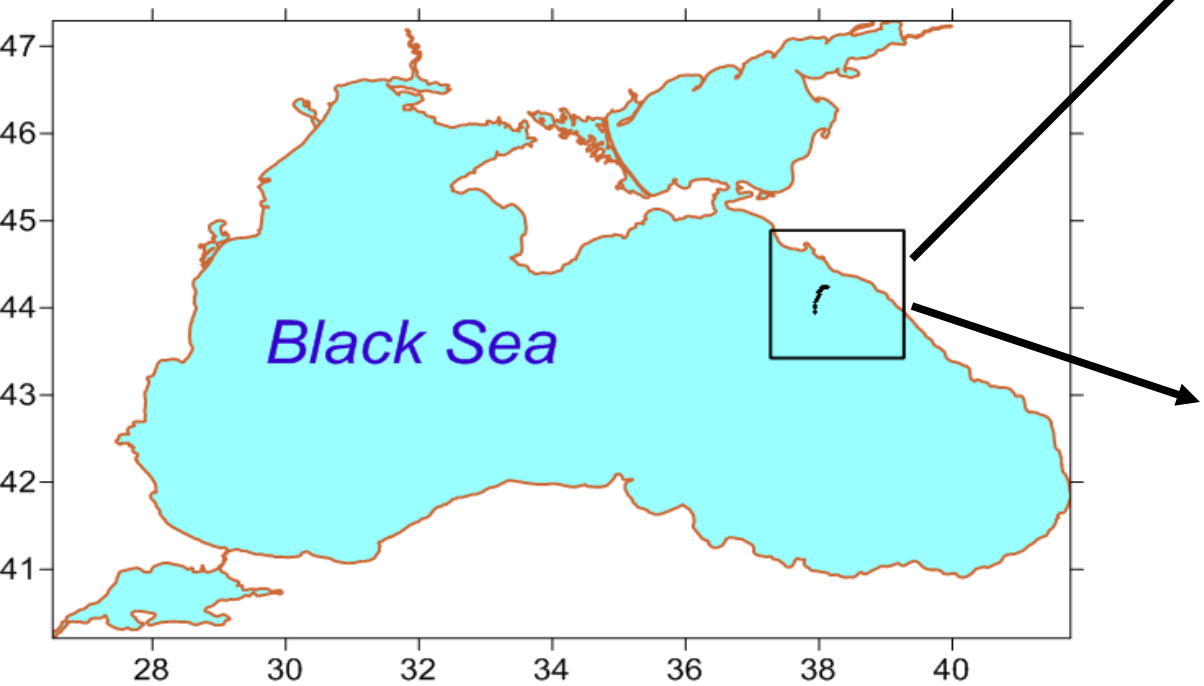
  -Risk Management Capabilities

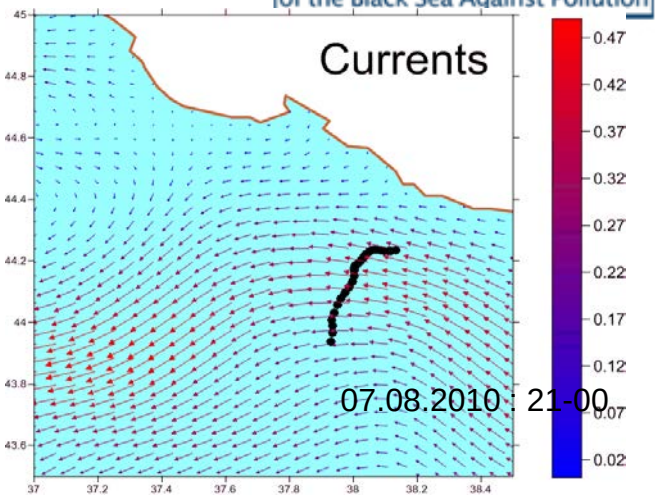

User Accounts
Help System
Satellite Monitoring
BS SatNet
CleanSea Net
AIS
Oil Spill Modelling
SeaTrack Web
MONINFO
(Main Page)
Environmental Information
Possible Oil Spill Maps
AIS Maps
Oil Drift Modeling Results
Incident Records
Bathymetry maps
Port maps
Nautical Charts
Areas of risk
Decision Support and Risk Assessment
GEOPORTAL (GIS)
National Contacts
Legal Framework
Incident Reporting
Document Repository
News and Forums
Useful Links
Decision Support
User Interface

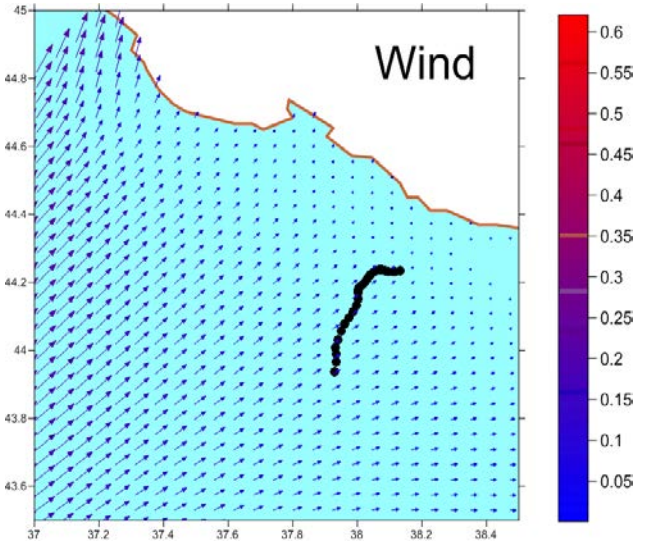
Monitoring System

Spills modeling -Black SeaTrackWeb

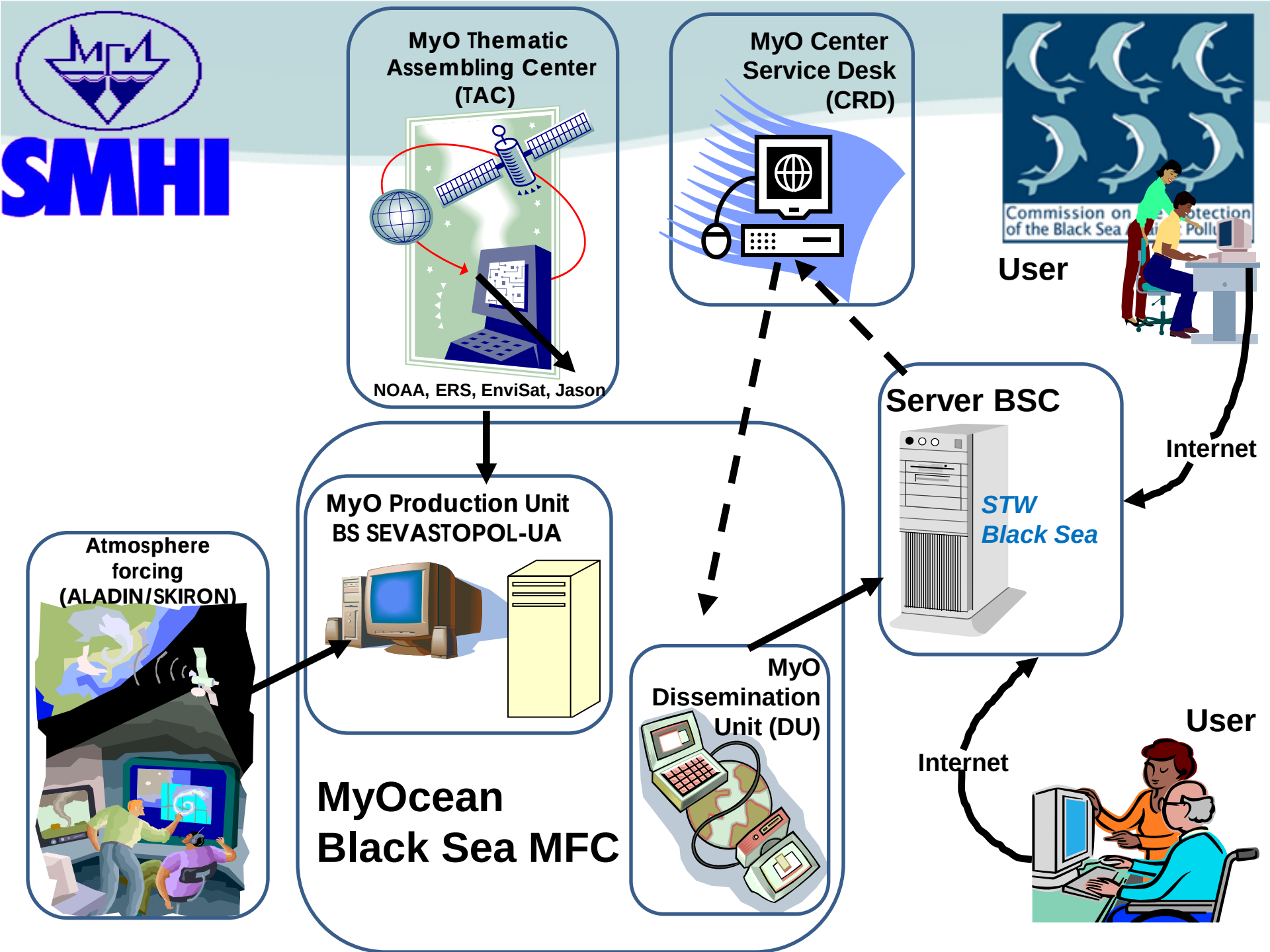
Oil drift model of the STW from Baltic has been adapted to the Black Sea (BSTW) and users have been trained



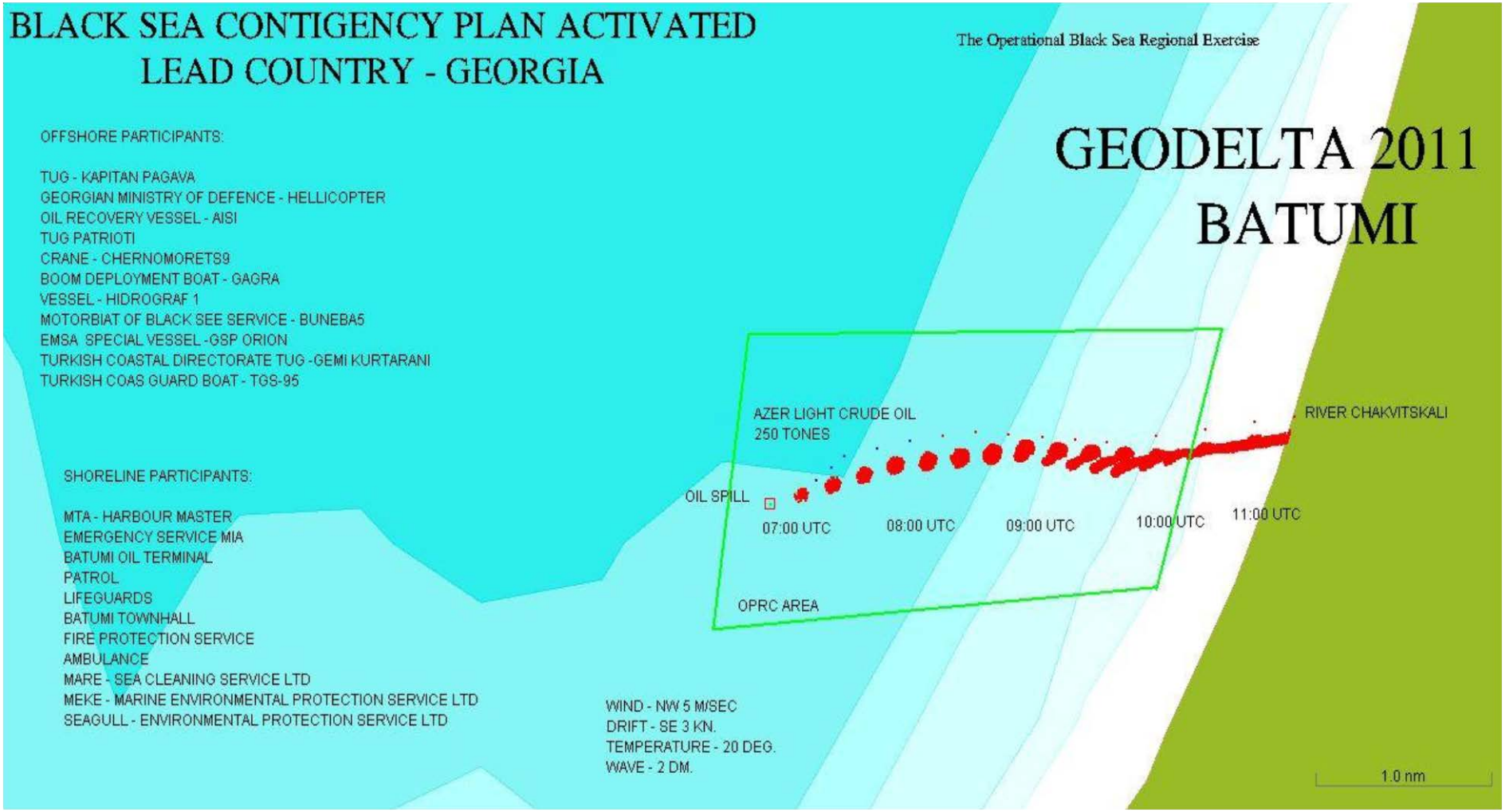




Trajectory of the spot center


SMHI
MyO Thematic Assembling Center (TAC)
NOAA, ERS, EnviSat, Jason
MyO Center Service Desk (CRD)
Commission on the Protection of the Black Sea Marine Pollution
User
Server BSC
STW Black Sea
Internet
Atmosphere forcing (ALADIN/SKIRON)
MyO Production Unit BS SEVASTOPOL-UA
MyO Dissemination Unit (DU)
MyOcean Black Sea MFC
Internet
User

BlackSeaTrackWeb



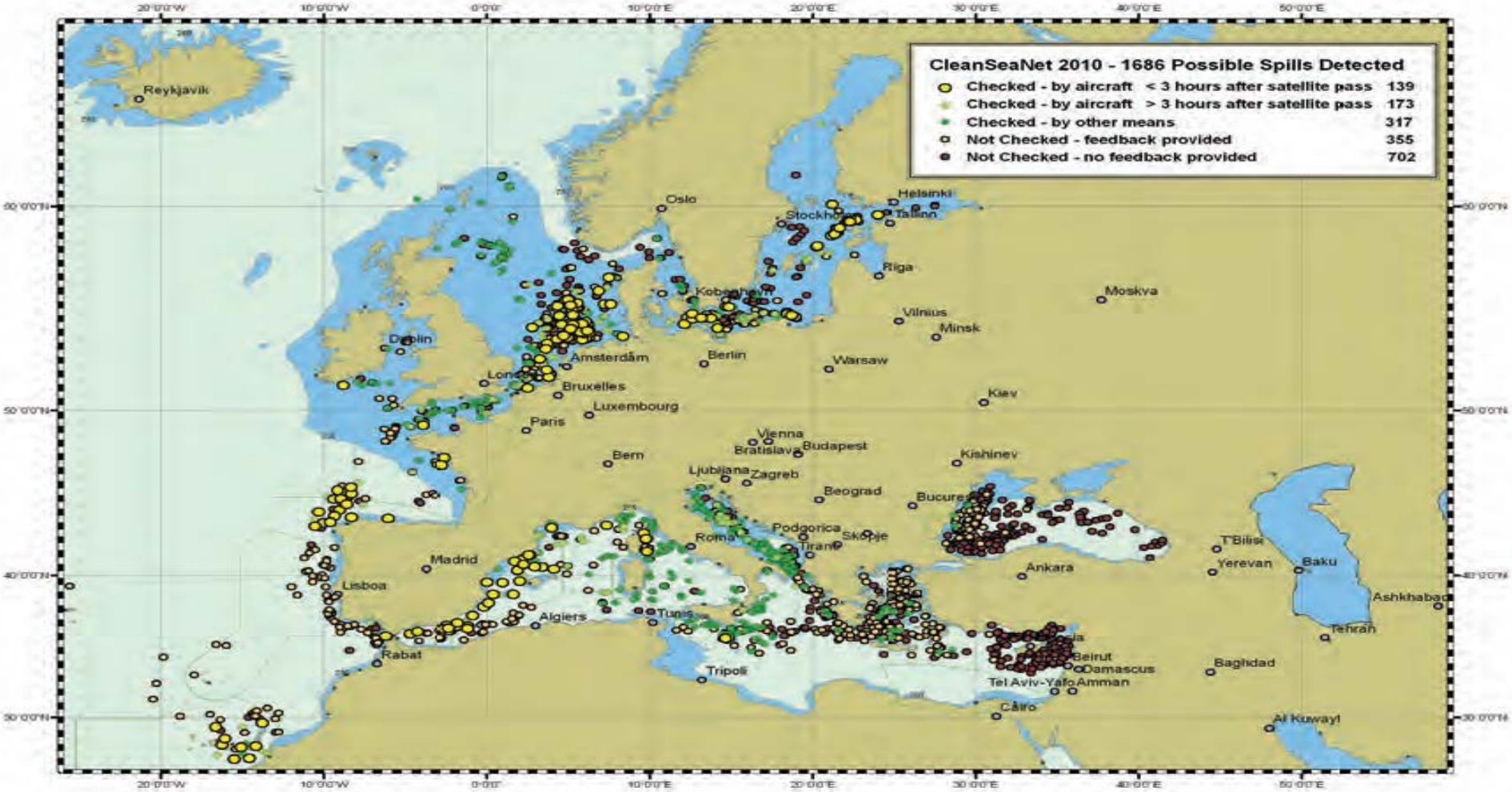
Oilspill Monitoring (Satellite based)

- **CleanSeaNet (CSN) from EMSA**
  - CSN was successfully launched in the Black Sea area since August 2010, providing service to Bulgaria-Georgia-Romania-Turkey;
  - The service is open to Russia and Ukraine as well;

- **BlackSeaSatNet (ITU+ScanEX)**
  - Tested February-March 2011

CLEAN SEA NET 2010

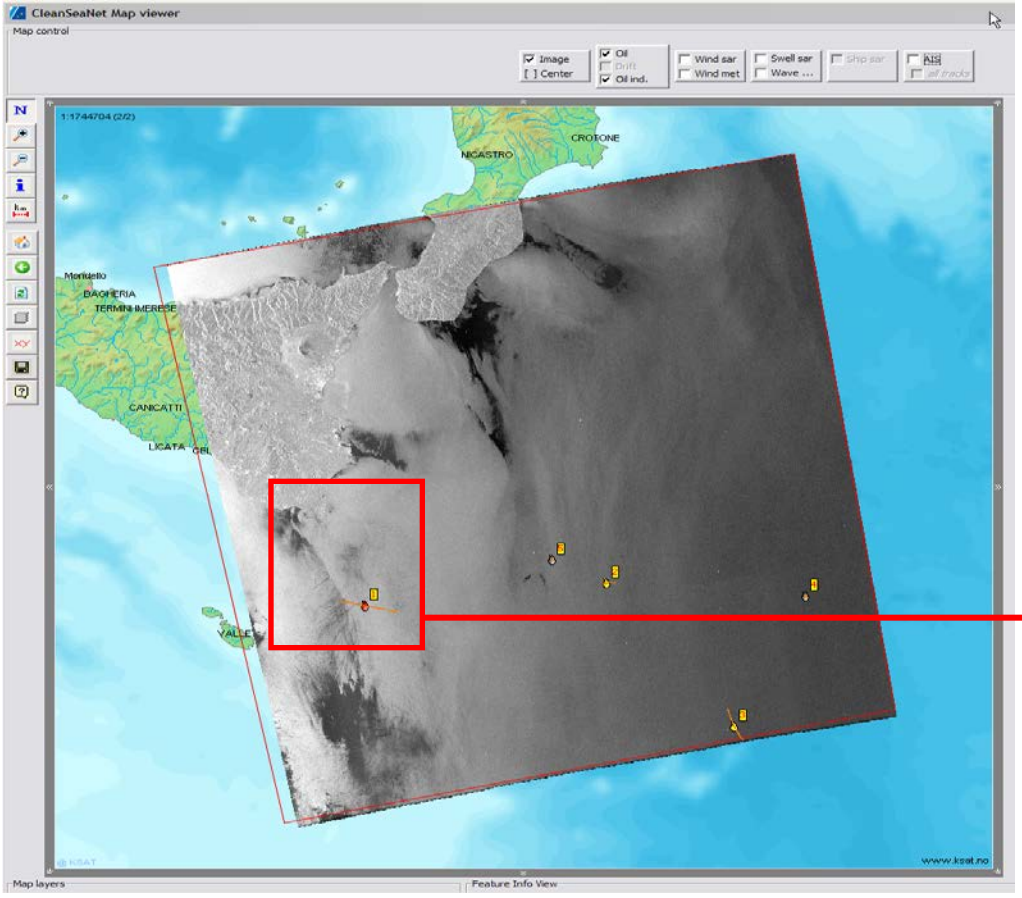
Commission on the Protection of the Black Sea Against Pollution



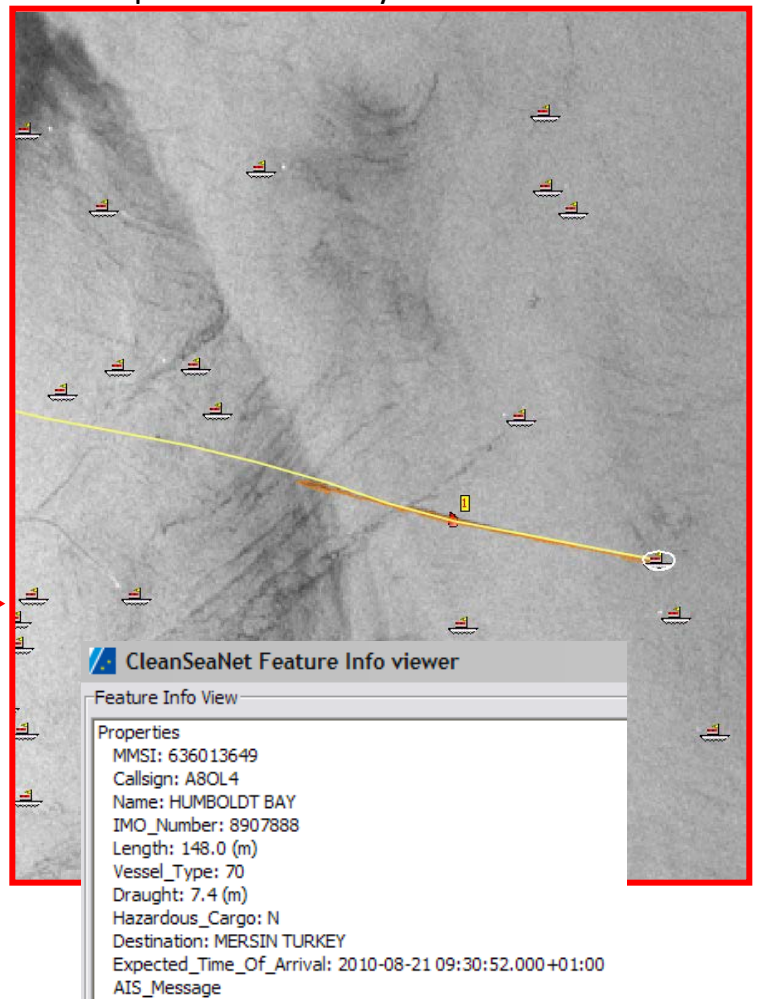
Example of Identification of potential polluters by combining CSN and AIS Information

Case Humboldt: Image from 18/08/2010 at 20:45:00 UTC

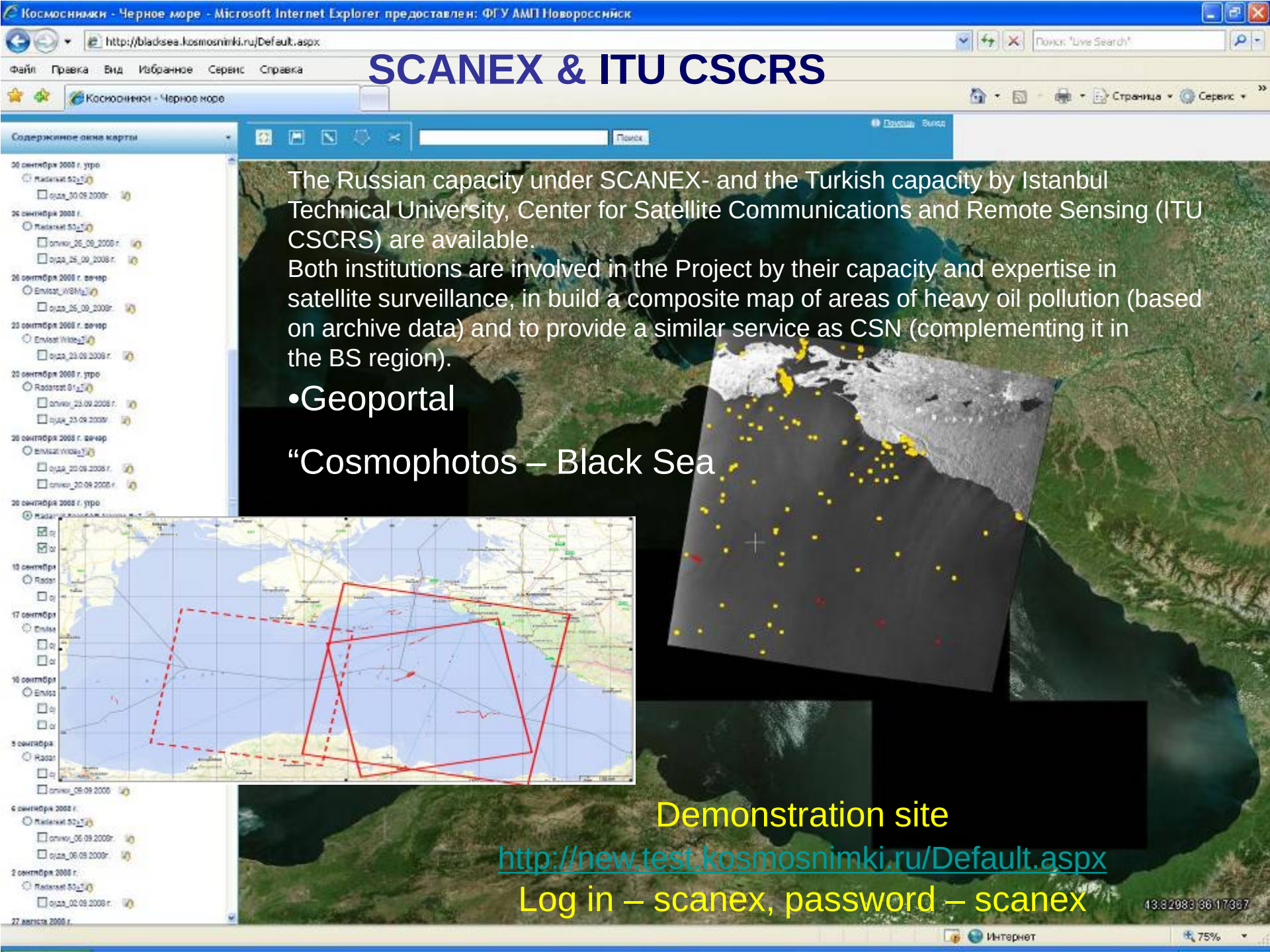
Evidence of pollution found, after inspection in Turkey



Correlation with AIS data for a detection in Italy



SCANEX & ITU CSCRS



The Russian capacity under SCANEX- and the Turkish capacity by Istanbul Technical University, Center for Satellite Communications and Remote Sensing (ITU CSCRS) are available.

Both institutions are involved in the Project by their capacity and expertise in satellite surveillance, in build a composite map of areas of heavy oil pollution (based on archive data) and to provide a similar service as CSN (complementing it in the BS region).

- Geoportal

"Cosmophotos – Black Sea

Demonstration site

http://new.test.kosmosnimki.ru/Default.aspx

Log in – scanex, password – scanex

ITU CSCRS

ScanEx RESEARCH AND DEVELOPMENT CENTER

Commission on the Protection of the Black Sea Against Pollution

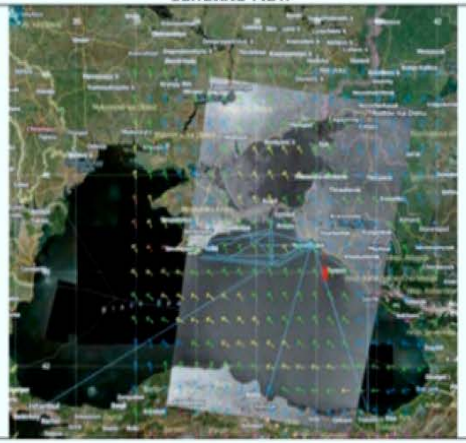
Commission on the Protection of the Black Sea Against Pollution

MONINFO SYSTEM SATELLITE BASED OIL SPILL REPORT

REPORT NO:

PREVIEW IMAGES OF POSSIBLE OIL SLICK(S)

GENERAL VIEW

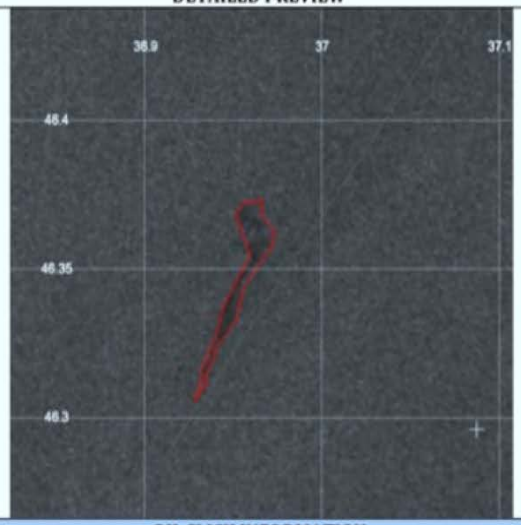


INFORMATION ABOUT SATELLITE IMAGE	
SATELLITE	RADARSAT-1
DATA ACQUISITION TIME (UTC)	2011-03-14 03:30
IMAGE COORDINATES	
LATITUDE	LONGITUDE
LOWER LEFT:	LOWER LEFT:
LOWER RIGHT:	LOWER RIGHT:
UPPER LEFT:	UPPER LEFT:
UPPER RIGHT:	UPPER RIGHT:

SUMMARY OF POSSIBLE OIL SLICKS					
NUMBER	CONFIDENCE	LOCATION	LINK	KMZ	SEATRACK
1	HIGH	TURKEY			
2	MEDIUM	RUSSIA			
3	LOW	UKRAINE			
4	LOW	TURKEY			

NUMBER OF THE POSSIBLE OIL SLICK	1
CONFIDENCE LEVEL	HIGH

DETAILED PREVIEW



OIL SLICK INFORMATION

POSITION			
OIL SPILL ID:			
LATITUDE OF THE CENTER :	43° 38' 56,8'' N		
LONGITUDE OF THE CENTER :	36° 35' 20,7''E		
AFFECTED COUNTRY(S) :	TURKEY		
ASSOCIATED COUNTRY(S):	TURKEY		
THE NEAREST LAND (km):			
GEOMETRY OF THE SLICK			
SIZE (km2)	LENGTH (km)	WIDTH (km)	DIRECTION
2,71 km^2	9.28 km		N-S
METEOROLOGICAL DATA			
SEA SURFACE TEMPERATURE			
SEA CURRENT			
SAR WIND DIRECTION (Degrees)			
SAR WIND MAGNITUDE (m/s)			
MODEL WIND DIRECTION (Degrees)			
MODEL WIND MAGNITUDE (m/s)			

COMMENTS ON CONFIDENCE LEVEL AND OTHER ISSUES

Medium contrast, sharp and diffuse edges, irregular angular shaped slick, fragmented, source: N/A, homogenous surrounding.

MONINFO SYSTEM SATELLITE OIL SPILL REPORT

REPORT No: 6

GENERAL VIEW

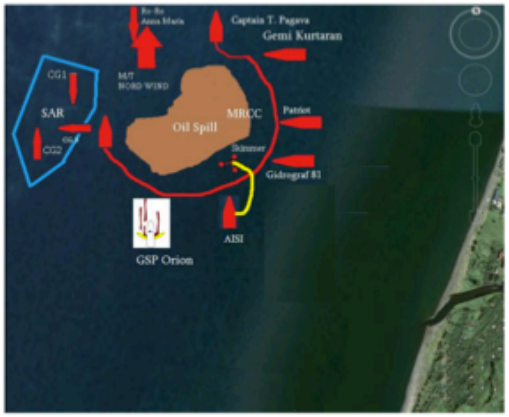
INFORMATION ABOUT SATELLITE IMAGE		
SATELLITE	Radarsat-1	
ACQUISITION TIME (UTC)	2011-09-15 11:09:00.0	
IMAGE COORDINATES		
	LATITUDE	LONGITUDE
LOWER LEFT	41.0	41.0
LOWER RIGHT	41.0	42.0
UPPER LEFT	42.0	41.0
UPPER RIGHT	42.0	42.0

SUMMARY OF POSSIBLE OIL SLICKS					
NUMBER	CONFIDENCE	LOCATION	LINK	KMZ	SHAPEFILE
1	HIGH	Georgia	Details	Download	Download

COMMENTS
Geodelta 2011 Simulated Report

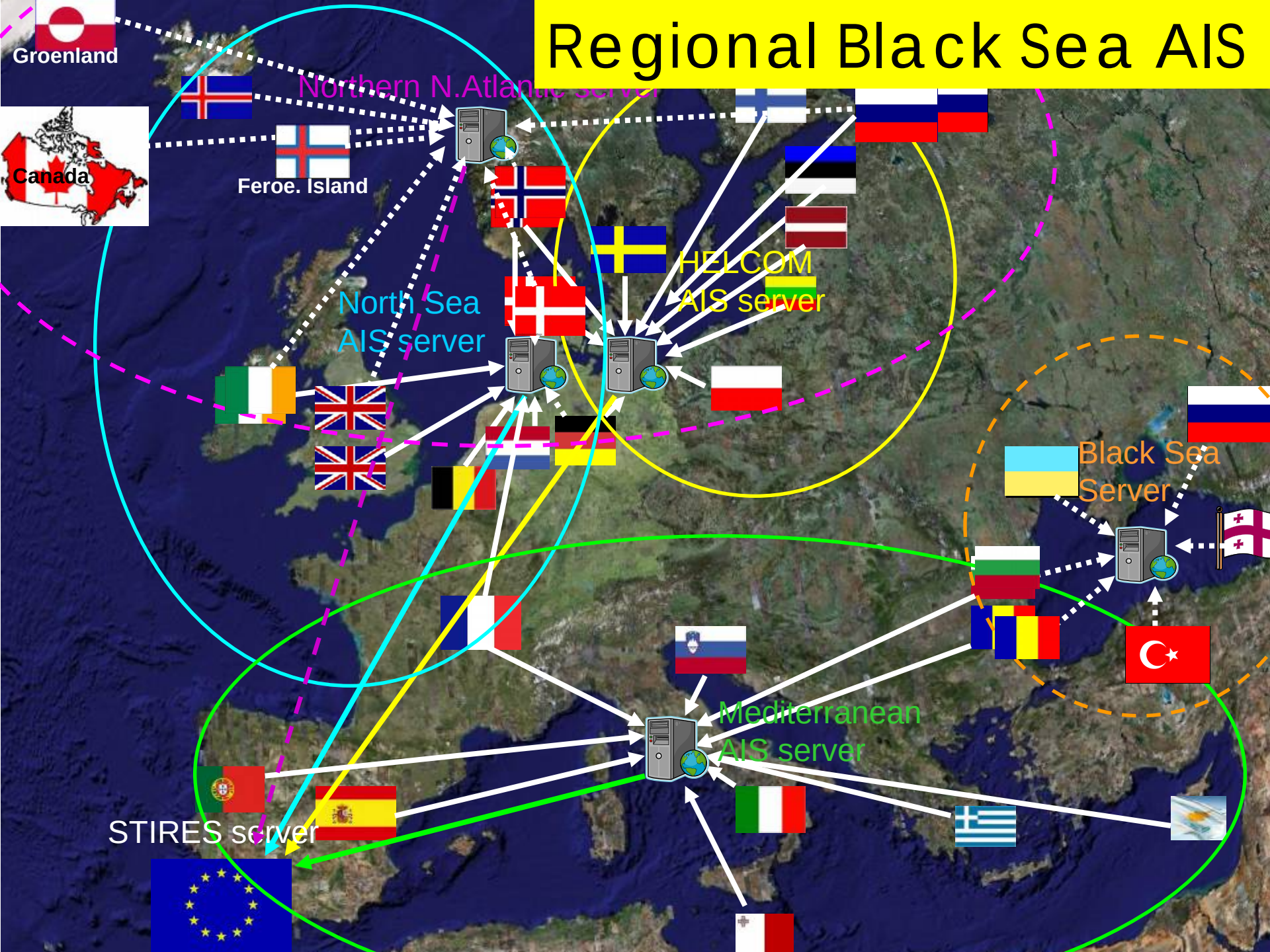
OIL SLICK ID: 1

DETAILED PREVIEW



OIL SLICK INFORMATION			
POSITION			
CONFIDENCE LEVEL		HIGH	
CENTER		LATITUDE: 41.795 LONGITUDE: 41.695	
AFFECTED COUNTRY		Georgia	
DISTANCE TO NEAREST LAND (km)		5	
GEOMETRY			
SIZE	LENGTH	WIDTH	ORIENTATION
0.0072 km^2	120.0 km	60.0 km	SE-NW
METEOROLOGICAL DATA			
SEA SURFACE TEMPERATURE (°C)		20.0	
SEA CURRENT (m/s)		3.0	
SAR WIND DIRECTION (degrees)			
SAR WIND MAGNITUDE (m/s)			
MODEL WIND DIRECTION (degrees)		315.0	
MODEL WIND MAGNITUDE (m/s)		5.0	
COMMENTS			
Simulated spill according to exercise simulated data			

Regional Black Sea AIS



REGIONAL BLACK SEA AIS

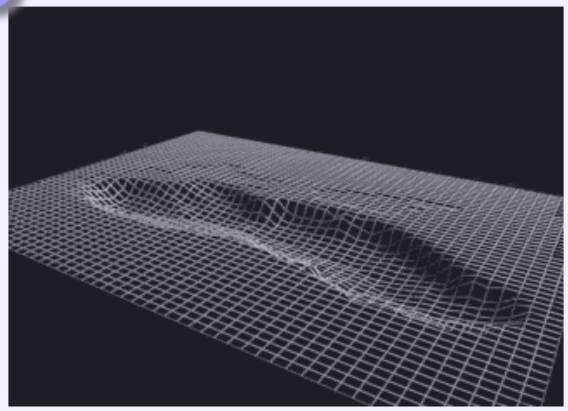
Commission on the Protection of the Black Sea Against Pollution

- ***Ad-hoc AG on AIS data exchange (or Expert Working Group on AIS) established by BSC. Three AIS EWG meetings were held***

- ***Technical specifications has been finalized***

- ***Draft MoU on Regional Black Sea AIS has been prepared and finalized***

Welcome to the MONINFO System



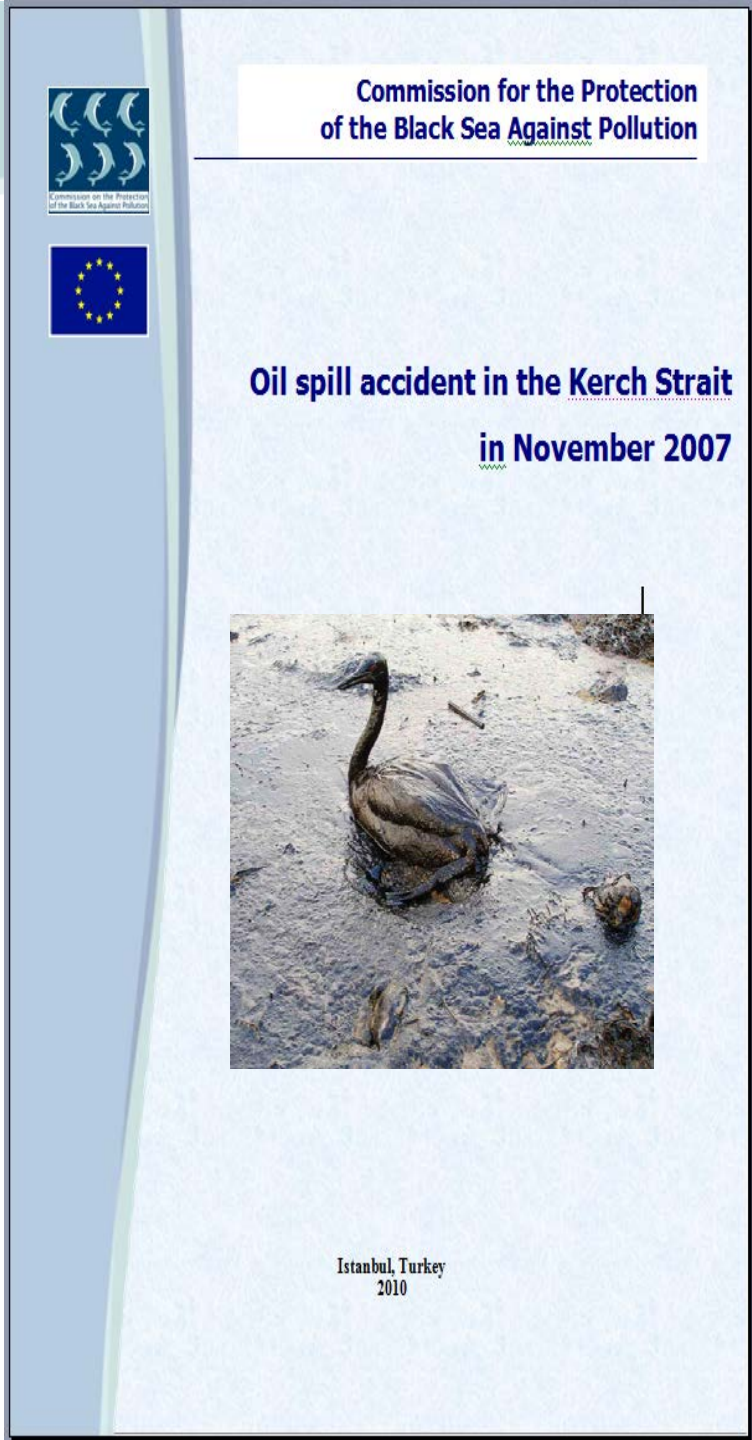
A EU funded project led by the Black Sea Commission Permanent Secretariat

The oil spills pollution is recognized as one of the major threats to the marine environment of the Black Sea in the Strategic Action Plan (SAP) adopted in 1996 as well as in the revised draft SAP. These two documents state that the risk associated with heavy shipping traffic /platforms/offshore installations/refineries/oil terminals/ports/pipelines calls for: (a) development of national emergency preparedness and response systems and their coordination at the regional level, (b) improvement of the communication between the private sector and the policy makers and scientists, (c) improvement/development of the Black Sea Information System (BSIS), (Black Sea Information System - ESAS - Environmental Safety Aspects of Shipping- component) including support data sets within the oil industries, private companies dealing with EIA in this particular field (d) archiving the assessments, and contributions in data, evaluations and measures of the marine environmental institutes, e) advancement of surveillance at sea and inspections in ports, g) enlargement of port reception facilities capacity, and the last but not least h) further development of legal and policy documents, strengthening enforcement and development of common systems of penalties and claims management for pollution damages compensation (the common framework for oil tanker spills compensation, through general shipping related oil spill claims).

OIL SPILL RECORDS

- **Historical records of oil spills in the Black Sea has been prepared and are stored in the MONINFO system**

- **A comprehensive report on the Kerch accident (11th November 2007) is prepared by a team of experts from Russia and Ukraine and is in course of being published.**
- **It contains scientific, unpublished data, many photos taken during and after the accident, figures and tables which provide valuable information in different aspects including conclusions and lessons learned.**

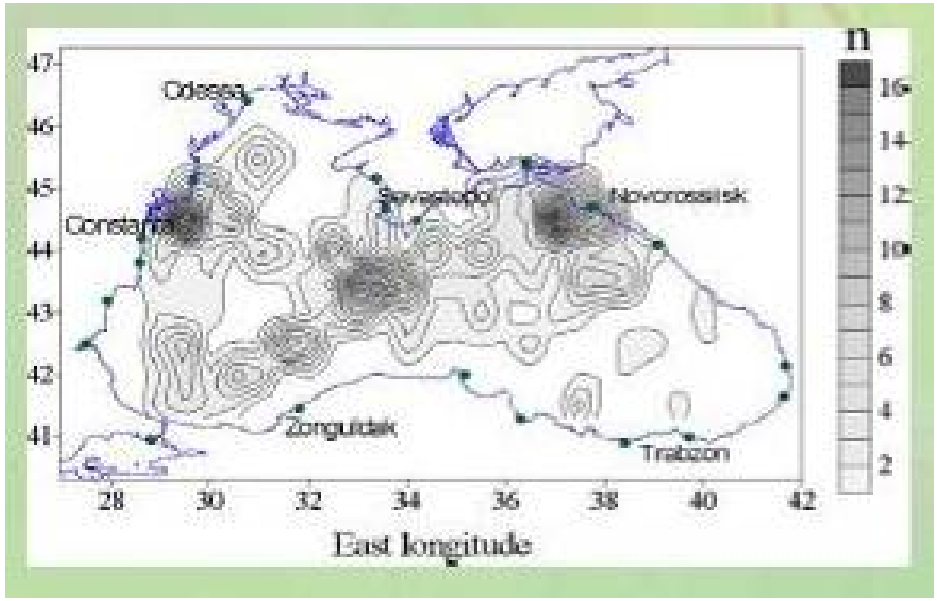


The catastrophic disaster 11 November 2007 from the «Volgoneft-139» tanker accident in the Kerch Strait which was estimated to disperse to 117.6 km^2.

Commission on the Protection of the Black Sea Against Pollution

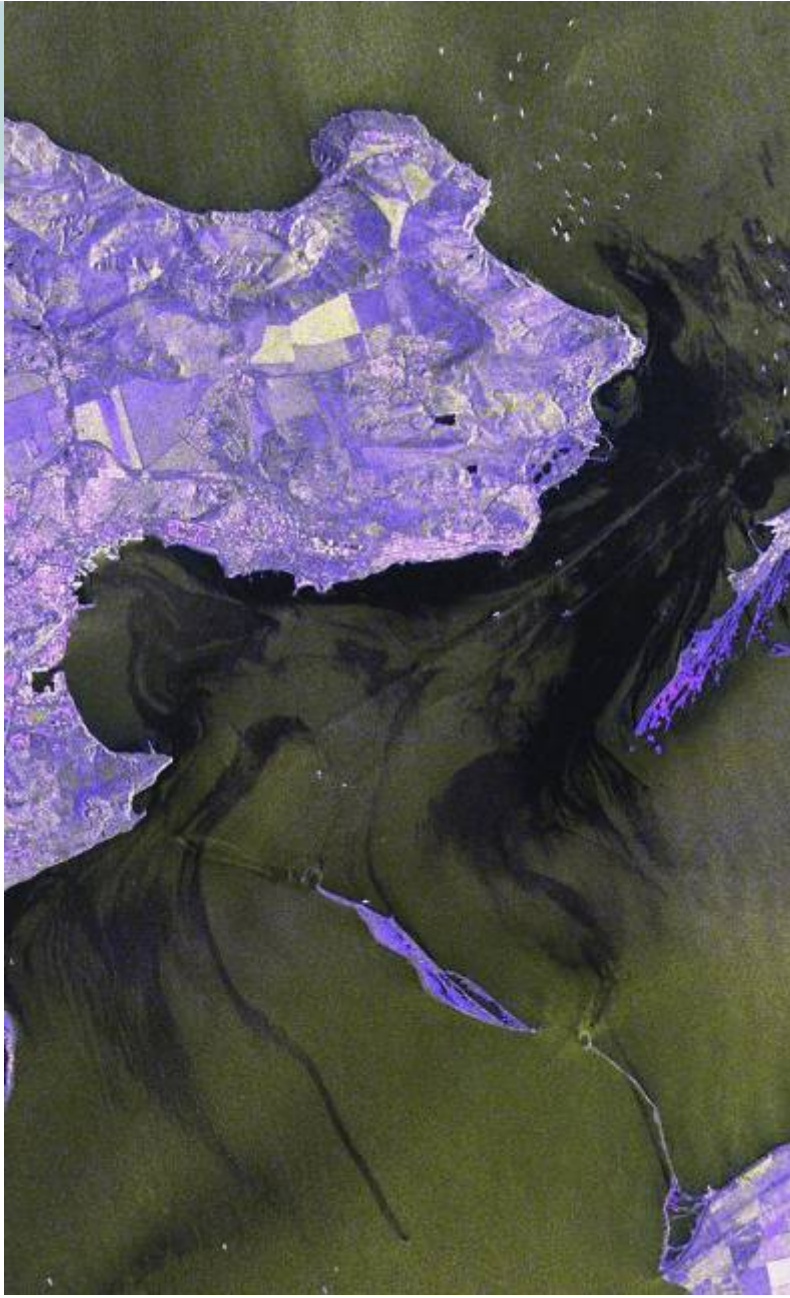
The tanker "Volgoneft-139" had 4.77 thousands tons of fuel oil on board. It literally split in two. Then, within the span of two hours, one after the other, three ships loaded with sulfur sank: "Volnogorsk", which had more than 2.6 tons of sulfur on board; "Nakhichevan", with two thousands tons of sulfur; and "Kovel", with 2.1 thousands tons of sulfur.

Satellite Surveillance Monitoring (CleanSeaNET , SCANEX and ITU)



Statistics on detection of oil pollution in Black sea 2001-2004

Data of scientific searching of oil pollution across the Black Sea averaging of 2001-2004:
(68 photos - 428 oily shots)



Monitoring of emergency situation in Kerch strait in November 2007

Document repository

Commission on the Protection of the Black Sea Against Pollution

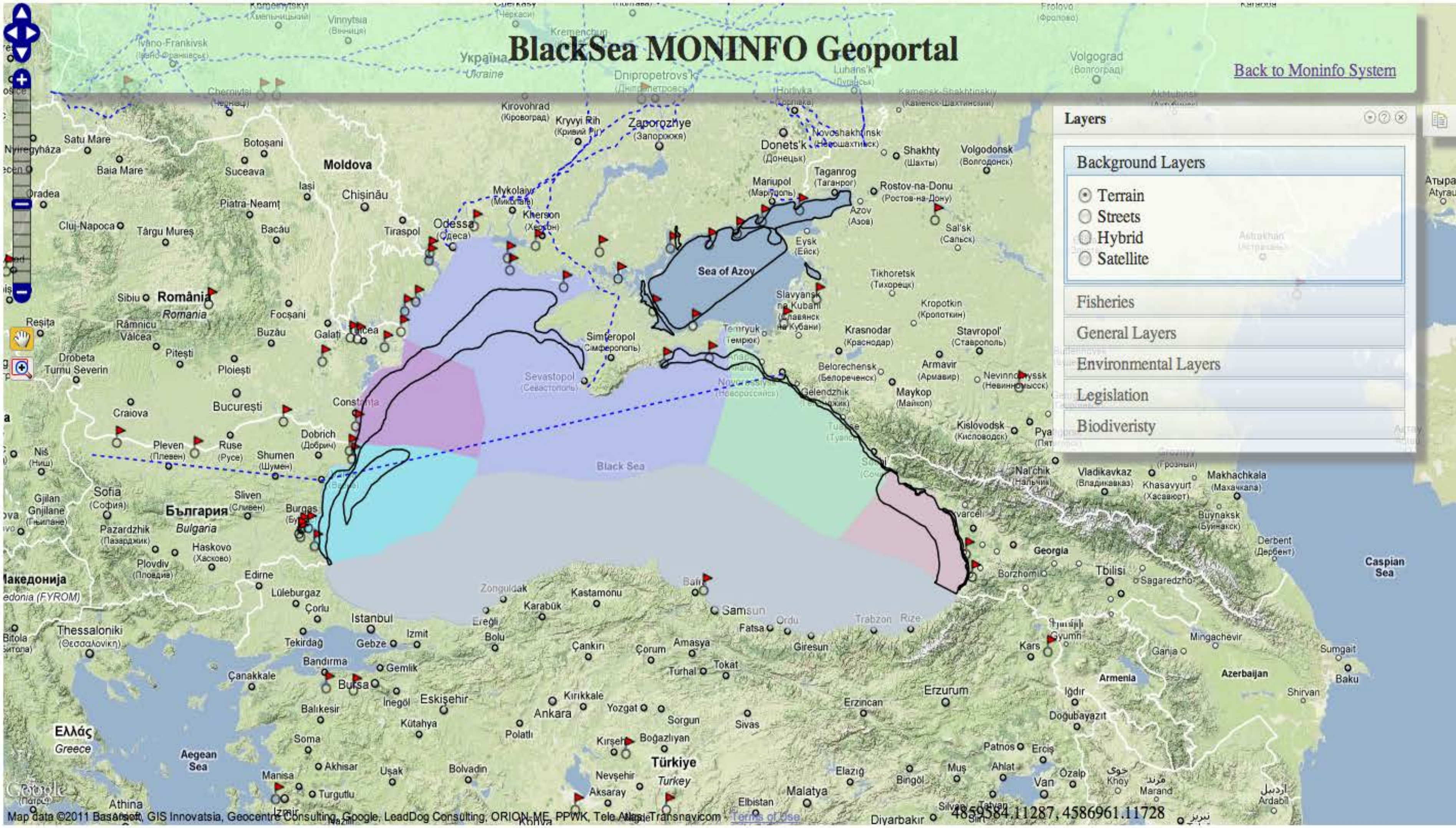
MONINFO System

Read-only access. For write access capabilities go directly to the Document Repository

- Country profiles
  - Country profiles based on Updated Questionnaires July 2011
    - BULGARIA - Country Profile
    - GEORGIA - Country Profile
    - ROMANIA - Country Profile
      - Annexes RO country profile
      - RO Country Profile updated questionnaire 7 June 2011.doc [Download]
      - RO NCP legislation HG 893-2006 rom..doc [Download]
    - RUSSIAN FEDERATION - Country Profile
    - TURKEY - Country profile
    - UKRAINE - Country Profile
- General
- Guidelines
- Incidents
- Initial Questionnaires
- Kerch Report
- Meetings
- MONINFOPhase1
- MONINFOPhase2

Geoportal

Commission on the Protection of the Black Sea Against Pollution



Links to relevant information

International Organisations | Projects | NGOs | Private Sector

ESA Miravi [edit]

Image Rapid Visualisation. You can quickly browse the Image Archive, select, and visualise any kind of Satellite Images

SASEPOL Project [edit]

"Development of Common Security Management System and Cooperation in the Area of Maritime Safety and Ship Pollution Prevention for the Black Sea and the Caspian Sea"

EROCIPS [edit]

EROCIPS Project draw up a framework for a future project to further strenghten the shoreline response to pollution from shipping in the Atlantic Area.

Capacity Building

Commission on the Protection of the Black Sea Against Pollution

Support on regional level:

1. **Emergency preparedness/contingency planning**
   (update of the operational information RCP (Annexes 1-4) , guidelines on exercise and dispersants have been developed)

2. **Exercises and training in oil spill response** (such as support of RODELTA-2009 and GEODELTA -Sept 2011)

MONINFO System web page

Commission on the Protection of the Black Sea Against Pollution

MONINFO System

- Home
- Cases
- News
- Contacts
- AIS Map
- SeaTrackWeb
- CleanSeaNet
- Roles
- Users
- Logout

Ships Map

Go To Port...
Go To Vessel...

Notation & Display options:

- Show Ship Names
- Ports
- Stations
- Passenger Vessels
- Cargo Vessels
- Tankers
- High Speed Craft
- Tug, Pilot, etc
- Yachts & Others
- Navigation Aids
- Unspecified Ships
- Ships Underway
- Anchored/Moored

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Thank you

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