Utilizing Information Technology – The Black Sea and Caspian Sea Environmental Information Center (http://pims.ed.ornl.gov)

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ABSTRACT

Oil tanker traffic is expected to increase significantly on the Black and Caspian Seas in the coming years, giving increased potential for more oil spills. Communication is critical among countries of the region to facilitate preparation should a spill occur. A series of regional- and country-specific workshops with area scientists and policy-makers has provided the framework for the Black Sea and Caspian Sea Environmental Information Center web site (http://pims.ed.ornl.gov).

The web site is intended to provide "one-stop shopping" for information related to oil spill prevention, response, research and development, and regional communications. Organizations are encouraged to register on the web site to promote their technologies, services or research activities. To date, nearly 100 organizations have registered and participant's results of 10 workshops are posted on the web site. Online "real-time" meetings allow participants to plan structured meetings at an optimal time across different time zones.

Information on country-specific workshops, i.e., presentations from the U.S.-Russian Energy Workshop on *Oil Spill Prevention and Response* in Moscow, December 2003, supplements the regional information and is posted on the web site. This information

continuously develops as follow-up workshops are announced (i.e., Workshop on Dispersants at *Interspill 2004*) and all workshop materials are added to the web site to increase information resources available for users.

This activity has strong support from the oil industry, whose representatives participate in all of the workshops.

The web site is intended to provide a comprehensive source for information on

- oil spill cleanup, monitoring, and related commercial technologies;

- scientists' requests for research partners;

- the laws, regulations, and standards of various countries relating to the environmental condition of the seas;

- publication of scientific papers, and on-line discussions of these issues; and

- lists of individuals and companies working on Black Sea and Caspian Sea environmental issues.

The web site is also host to a growing database of historical pollution testing data from research institutes in the region.

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Created by Oak Ridge National Laboratory (ORNL), the web site (Fig. 1) facilitates information flow and dialog between the countries of the region (Thompson and Lapsa 2001). The site, which is in a stage of rapid development, is dedicated to providing information and training on environmental issues and problems related to the Black and Caspian Seas (Thompson, Lapsa, and Shelton 2003). The content of the web site and its functionality are defined by the participants in the Black Sea and Caspian Sea Environmental Initiative and participants in the regional environmental workshops. The site contains an area where web site users can post and reply to questions related to the Black Sea and Caspian Sea environment and can register as a point of contact. A series of training links is provided to help prepare for environmental emergency response situations. Web site visitors are also able to review information provided by the countries on national laws. The site also hosts a chat feature where "live" meetings can be scheduled and conducted on-line across time zones. The web site is intended to provide "one-stop shopping" for information related to oil spill prevention, response, research and development, and regional communications. Organizations are encouraged to

register on the web site to promote their technologies, services or research activities. To date, nearly 100 organizations have registered and participant's results of 10 workshops are posted on the web site.

Figure 1: Poster graphic highlighting the web site

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http://www.energy.gov/engine/content.do?PUBLIC_ID=14546&BT_CODE=PR_PRESSRELE ASES&TT_CODE=PRESSRELEASE

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The web site is also host to a growing database of historical pollution testing data from research institutes around the Black Sea (Besiktepe, Unluata, and Bologa 1999). Recently, 31 years of pollution testing data collected by the Ukrainian Scientific Center of the Ecology of the Sea (UkrSCES) was loaded onto the web site. The information includes compiled data, maps, graphic files, and background information on UkrSCES. The data consists of a catalog of oceanographic data on the Black Sea (including chemistry and pollution), geophysical data, statistical evaluations of the data, meteorology, and aerology for a period of 31 years. Figure 2 shows an example of the kind of data provided by UkrSCES.
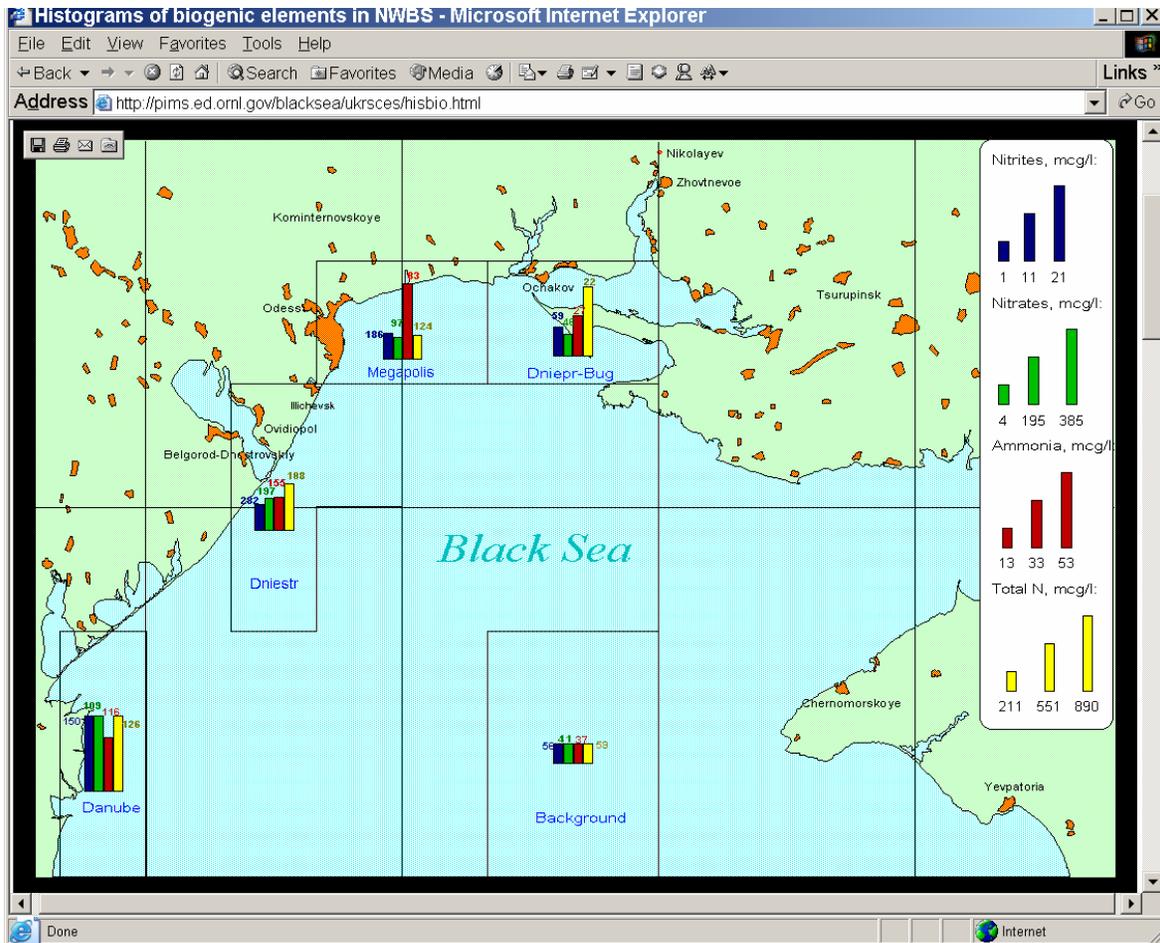
Figure 2: Histograms of biogenic elements in the Black Sea, courtesy of UkrSCES.

The goal is to facilitate cooperation among the countries of the region to develop contingency plans should a spill occur. This is being done through a series of workshops held in the Black Sea countries and Central Asia and through the establishment of a regional information and communications center. The activity has strong support from the oil industry, whose representatives participate in all of the workshops.

Other workshop sponsors have included:

- International Maritime Organization (IMO)

- International Oil Pollution Compensation Fund (IOPCF)

- International Petroleum Industry Environmental Conservation Association (IPIECA)

- International Tanker Owners Pollution Federation (ITOPF)

- National Oceanic and Atmospheric Administration (NOAA)

- ORNL Engineering Science & Technology Division

- Oil Spill Response Ltd. (OSRL)

- U.S. Agency for International Development (USAID)

- U.S. Army Corps of Engineers

- U.S. Department of Defense, Partnership for Peace Information Management Services (PIMS)

- U.S. Department of Energy (DOE), Office of Policy and International Affairs

- U.S. Navy

DOE and ORNL have partnered with the U.S. Department of Defense's (DOD) Partnership for Peace Information Management System (PIMS) to provide the infrastructure necessary to support access to this web-based information in the region. This infrastructure includes satellite uplinks and the hardware necessary to support the Black Sea and Caspian Sea Environmental Information Center web site.

Workshop participants are trained by staff from ORNL in the navigation of the DOE-sponsored web site to enhance knowledge and communication on oil spill contingency planning (http://pims.ed.ornl.gov). DOD has provided several computers for electronic communications between member countries' research institutes. The Center, its workshops, and its web site have been a huge success highlighting the value of information and communication resources. A DOE press release with more background on this activity can be found at http://www.energy.gov/HQPress/releases00/julpr/prl00010.htm

The Center is inviting other countries in the region to join in its activities, which include sharing data on the Center's web site and coordinating responses to spills. A former Secretary of Energy committed DOE to a similar workshop for Africa as part of his Africa Initiative. Furthering the commitment, DOE scheduled an African Ministerial planning meeting in conjunction with the workshop (Cameroon, November 2000).

The workshops that ORNL has organized for DOE's Office of Policy and International Affairs and the interagency committee (Fig. 3), include:

- Workshops on US-Kazakhstan Energy Partnership, June 8–10, 2004, Astana, Kazakhstan

- Funding Science Research with Central Asia and Caucasus Institutes, August 22–23, 2002, Oak Ridge National Laboratory, Oak Ridge, Tennessee

- US-Kazakhstan Workshop on Marine Science, May 30, 2001, Almaty, Kazakhstan

- Workshop on Legal and Legislative Issues with Implementing National and Regional Oil Spill Response Systems, April 18–19, 2001, Astana, Kazakhstan

- Workshop on Water Modeling for Oil Spill Response, January 22–26, 2001, Tbilisi, Republic of Georgia

- Workshop on Oil Spill Response Contingency Planning, November 1–3, 2000, Douala, Cameroon (Africa)

- Workshop on the Black Sea Environment and Oil Spill Response, July 25–27, 2000, Constanta, Romania

- Workshop on Legal and Legislative Issues Associated with Implementing National and Regional Oil Spill Response Systems, June 20–22, 2000, Tbilisi, Republic of Georgia

- Workshop on a Regional Oil Spill Emergency Response System for the Black Sea, September 14–17, 1999, Odessa, Ukraine

Figure 3: Location of workshops in Black Sea and Caspian Sea regions.

These workshops have been an important effort by DOE to bring together representatives from the region, oil companies, and other organizations to accelerate the dialog on environmental issues and to facilitate the creation of a regional capability to respond to oil spill threats on the Black and Caspian Seas. The workshops give countries of the region an opportunity to meet, discuss progress and current research initiatives presently under way. The progress made by these countries is very impressive. Almost all have completed a draft or published national oil spill emergency response contingency plans.

DOE plans future workshops in each of the countries to facilitate progress on national laws and regulations to protect the Black and Caspian Seas. These separate workshops for each country are in recognition that each country has a unique legislative system, group of existing laws, and laws in preparation. The workshops will focus on legal and legislative issues that are critical to effective oil spill response systems and identify legislative issues essential to regional cooperation on oil spill response. They will also cover international agreements.

In order for the Black Sea and Caspian Sea environmental initiative to have maximum impact and effect, participation, collaboration, and cooperation is essential from several groups (National Energy Policy Group 2001):

- policy makers and administrators in government agencies, including federal, state, and municipal government organizations;

- nongovernmental groups and community organizers;

- manufacturing, commercial, industrial, agricultural, transportation, and residential sectors;

- financial institutions;

- citizens likely to be affected by the policies adopted; and

- schools who educate tomorrow's decision-makers.

Therefore, the Black Sea and Caspian Sea Environmental Information Center web site is designed for many audience groups and in the future will customize information retrieval results by audience category.

Statistics on the usage of the web site confirm positive results. The web site has consistently attracted users from around the world (over 40 countries) each month, and users from the Black Sea region are finding it a useful tool for communications and information.

We have expanded the web site to include information on all existing petroleum pipelines and proposed additions to the transportation network surrounding the Black and Caspian Seas.

We hope that the scientific community will use the Black Sea and Caspian Sea Environmental Information Center web site to share information, conduct on-line meetings, and strengthen their own networks for collaboration. Discussions are already under way with research institutes in Kazakhstan, to contribute data and research papers.

Collaboration is a necessity in addressing the serious environmental challenges faced by the Black and Caspian Seas. With 200 nations in attendance at the World Summit on Sustainable Development (Johannesburg, South Africa, August 26–September 4, 2002), there is clearly a united view on the need to protect our valuable resources. We are interested in expanding use of the website tool and invite interested participants in Interspill to meet with us to discuss adding to the information database and scheduling on-line workshops and training sessions.

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