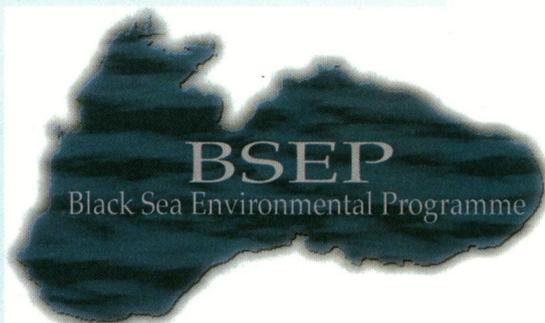


Black Sea Change

Perhaps it is appropriate that International Black Sea Day is recognized on October 31, the same day that many people observe Halloween. After all, not only is this the sea into which the rivers of the legendary Transylvania flow, it is also the scene of an environmental nightmare. Untreated wastes from countries such as Turkey, Ukraine, and the Russian Federation have accumulated and devastated fish populations in the Black Sea. Here, an exotic jellyfish population, accidentally released along with a ship's ballast water, has thrived, killing native fauna and reaching a total biomass of over 900 million tons, or ten times the weight of the world's annual fish catch. In short, the Black Sea is one of the most polluted bodies of water in the world.



However, because of International Black Sea Day and the organization behind it, conditions in this important European body of water may finally be improving. The Black Sea Environment Programme (BSEP) was formed in 1993 by the nations that border the sea with funding from the Global Environment Facility, a consortium of the United Nations Environment and Development programs and the World Bank. Inspired by the international cooperation displayed at the 1992 Rio Earth Summit, lawmakers from the governments of the six countries that border the Black Sea reached the conclusion that only a concerted effort could stop the sea's death.

As many of these nations were in the midst of profound social changes and lacked modern means of communication at the time the BSEP was formed, bringing them together to tackle the problems of the Black Sea presented a particular problem. To overcome these obstacles, the BSEP established an activity center in each of the six nations, each dedicated to researching one aspect of the Black Sea's environment, and linked the centers via an electronic mail network. To communicate the needs and achievements of the BSEP to the rest of the world, the program created the Save the Black Sea Internet site at <http://www.domi.invenis.com.tr/blacksea/index.htm>.

For scientists, governments, and nongovernmental organizations (NGOs) who want to help this heavily polluted region recover, the site provides information for contacting scientists in each nation and in the supporting organizations. Thus far, the program has drawn additional support from the governments of the Netherlands, France, Austria, Canada, and Japan, and recently 39 new NGOs also joined the effort.

The site provides extensive details to these donors about the activities of the BSEP and, in doing so, provides a model to the rest of the world of how environmental protection can be achieved, even in the midst of social upheaval. Recent successes of the program, including establishing an infrastructure for pollution monitoring, fishery management, and emergency response, are described through links on the home page. One of the biggest successes of the program, described under the news link at the top of the home page, was the 1996 signing of the Black Sea Strategic Action Plan, in which the Black Sea nations pledged themselves to a comprehensive plan to reverse the environmental damage that has been done. The 31 October 1997 anniversary of this historical agreement was declared International Black Sea Day, and if the program is successful, that day should become anything but scary for the people who live in the nations that share this deteriorated body of water.

data that were available for chemical pollutants such as pesticides, metals, and volatile organic compounds indicated that contamination with these agents is rare, with only 1–2% of wells tested reporting concentrations above federal maximum contaminant levels (MCLs).

According to the GAO report, approximately 15 million households in the United States get their drinking water from private wells. Unlike community water supplies, which are regulated under the Safe Drinking Water Act (SDWA), there is no legislative mandate to monitor private wells on a regular basis. A number of states do require testing when new wells are installed, and testing of well water is a standard practice during property transactions. However, aside from these initial evaluations, routine testing is up to the homeowner's discretion. Robert J. Blanco, director of the implementation and assistance division in the Office of Groundwater and Drinking Water at the EPA and a principle reviewer of the report, says he wasn't surprised at the GAO's finding that up to 42% of private wells were contaminated with coliform bacteria at levels in excess of the MCL (as opposed to 3–6% of community systems), and that up to 18% exceeded the MCL for nitrate. "Contamination of private wells is common," he says. "As a former user of private well water, I would [recommend] testing well water periodically to make sure it's free of chemical and microbial pollutants."

Atkins emphasizes that the presence of coliform bacteria in and of itself does not necessarily mean that the water is unsafe to drink. However, he cautions, excessive concentrations of coliform bacteria—a general category of water quality indicators—may indicate the presence of more virulent microbes such as *E. coli*, and homeowners who detect elevated levels of coliforms in their water should test for these agents as well. Exposure to elevated levels of nitrate can have potentially serious consequences, particularly among infants who may respond by developing methemoglobinemia, or "blue baby syndrome," a potentially fatal condition that results from restricted transport of oxygen in the blood. The report didn't evaluate whether specific findings of elevated contaminant levels in well water were linked with increased incidence of health effects. Atkins says that such a link would have been difficult to assess because the kinds of health effects most often associated with contaminated water—such as acute gastrointestinal distress following exposure to bacterial agents—are typically not reported to public health agencies unless there is a community-wide outbreak, caused perhaps by contamination of a municipal system.