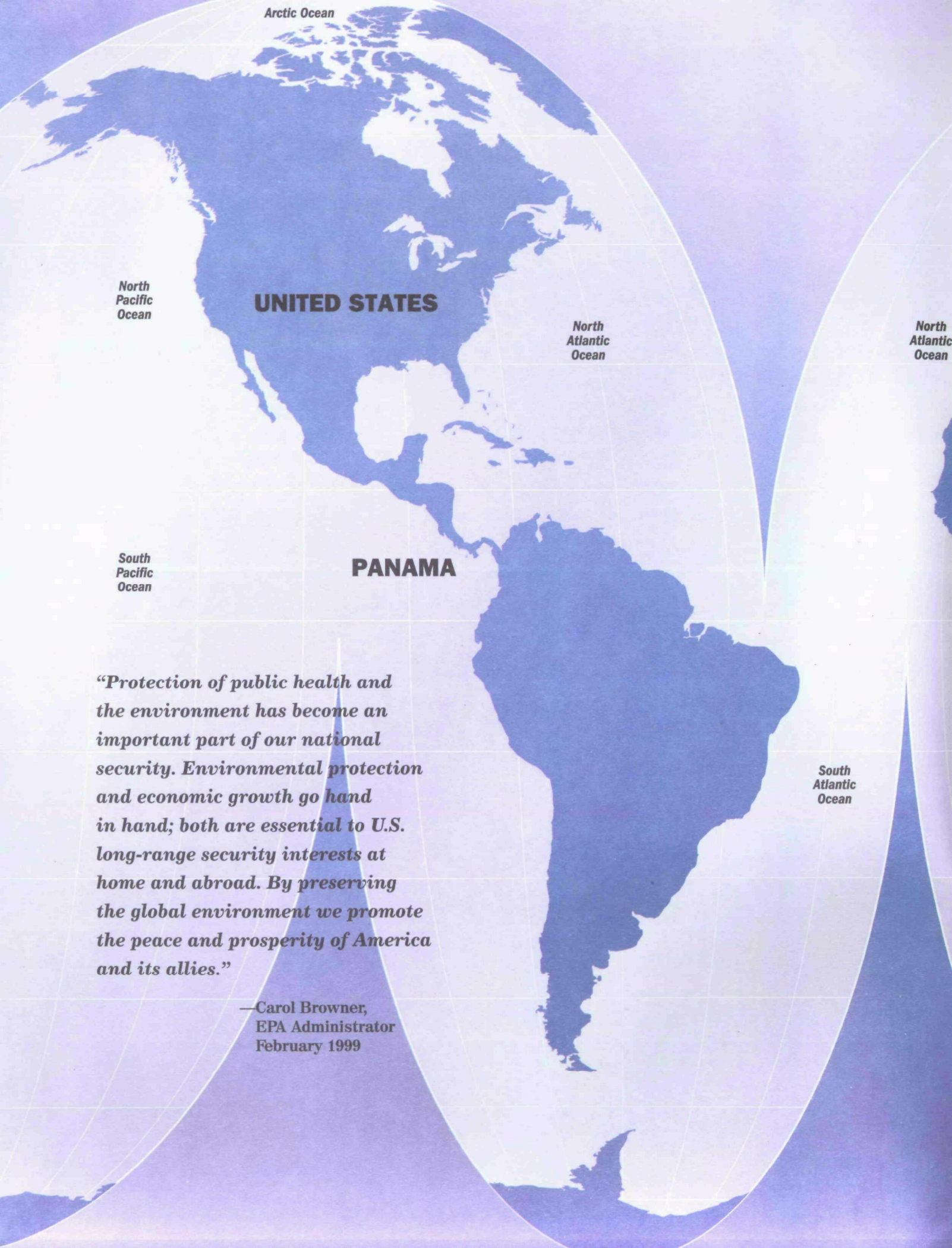




Environmental Security

Strengthening National Security Through Environmental Protection





UNITED STATES

PANAMA

“Protection of public health and the environment has become an important part of our national security. Environmental protection and economic growth go hand in hand; both are essential to U.S. long-range security interests at home and abroad. By preserving the global environment we promote the peace and prosperity of America and its allies.”

—Carol Browner,
EPA Administrator
February 1999



Environmental Security

Strengthening National Security Through Environmental Protection

Since the end of the Cold War, a new definition of national security for the United States has emerged: U.S. national security concerns now include diverse military and non-military threats to our national interests. Key among these concerns are environmental mismanagement, natural resource depletion, overpopulation, and the environmental consequences of the Cold War.

Two well-known environmental disasters underscore the link between environmental degradation and threats to U.S. national interests:

- ▶ *The Chernobyl nuclear power plant explosion* and the tragic health effects that followed.
- ▶ *The destruction of the forests of Haiti and erosion of agricultural topsoil*, contributing to untenable economic and living conditions and a flood of refugees fleeing to the United States.

Examples in other parts of the world show how environmental mismanagement can compromise political and economic stability:

- ▶ In the arid Central Asian region, the source waters of the Aral Sea have been diverted to irrigate water-intensive agricultural (cotton) crops. This has led to the *destruction of much of the Aral Sea and its ecosystem*, the collapse of its fisheries, and the degrading of 7.9 million hectares of arable land. Local populations suffer from typhoid fever at rates up to 29 times regional baselines, from viral hepatitis at rates up to seven-times greater than baselines, and

70 percent of women with children in Karakalpakstan are anemic.

- ▶ The 1997-98 *forest fires in Indonesia* resulted in the loss of at least 8,000 square miles of tropical forest, over 20 million cases of smoke-related respiratory troubles, and more than 1,000 deaths from transportation and other accidents. Gaseous and particulate emissions from the 1997 fires in Indonesia significantly exceeded the emissions from the Kuwaiti oil fires of 1991, according to a recent UNEP study.

Environmental problems can also heighten tensions resulting from religious, ethnic, and socioeconomic differences. For example, disputes have erupted in recent years over water supplies in the Jordan River Basin (shared by Israelis, Jordanians, Lebanese, Syrians and Palestinians) and in China's Yangtze and Yellow River basins. These disputes show how competition for scarce environmental resources can ignite hostilities.

Environmental security is a process whereby solutions to environmental problems contribute to national security objectives. It encompasses the idea that cooperation among nations and regions to solve environmental problems can help advance the goals of political stability, economic development, and peace. In addition, by addressing the environmental components of potential security "hot spots," threats to international security can be prevented before they become a threat to political or economic stability or peace.

"The Department of State has been integrating environmental issues into the mainstream of U.S. foreign policy. This objective reflects our recognition that the environment has a profound impact on our national and foreign policy interests. Not only do environmental forces transcend borders and oceans to affect the health, prosperity and jobs of American citizens, addressing environmental degradation is critical, in many parts of the world, to achieving political and economic stability. The State Department supports the work of the Environmental Protection Agency, the Department of Defense and the Department of Energy under the Memorandum of Understanding on Environmental Security. This partnership allows these agencies to combine their resources, authorities and expertise to help safeguard the global environment and to make the world a more secure and prosperous place."

—Strobe Talbott, Deputy Secretary of State, February 1999

The U.S. Environmental Protection Agency (EPA) is committed to protecting the U.S. environment from transboundary and global threats. To this end, EPA has embraced the concept of environmental security. The Agency contributes to environmental security through a broad range of activities:

- ▶ Anticipating future national security concerns of an environmental nature and determining how to prevent or mitigate them;
- ▶ Addressing regional environmental threats and promoting regional environmental security;
- ▶ Abating global environmental problems such as climate change, loss of biodiversity, and destruction of the ozone layer;
- ▶ Managing hazardous conditions resulting from the legacy of the Cold War, such as radioactive contamination of former military facilities;
- ▶ Enforcing international environmental treaties and combating environmental crimes.

To meet its environmental security responsibilities, EPA works in partnership with other agencies that have more traditional national security responsibilities. In 1996, EPA signed a Memorandum of Understanding (MOU) with the Department of Defense (DOD) and the Department of Energy (DOE) to work together on environment and security issues. Since then, the three agencies have joined with the Department of State (DOS) and other agencies to address regional and global environmental problems that affect national security. In the following pages, some of the projects jointly supported by the EPA, DOD and DOE are highlighted.

Steps to a Safer Environment

The Murmansk Initiative: Eliminating Radioactive Waste Dumping in the Arctic Ocean

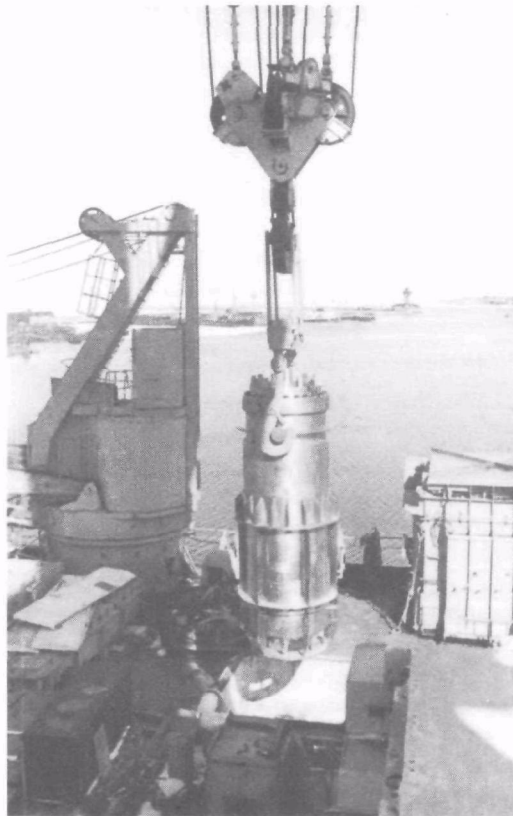
THE PROBLEM

Under the START II Treaty of 1992, Russia is required to dismantle a portion of its nuclear submarine fleet. However, Russian nuclear waste storage facilities are unable to contain the nuclear materials removed from decommissioned submarines. Until 1993, Russia disposed of low-level radioactive waste (LLRW) in the Arctic seas and the Sea of Japan. The lack of adequate facilities prevented Russia from signing a 1993 amendment to the 1972 London Dumping Convention (LDC) prohibiting the dumping of radioactive and other waste in marine environments. Russia was faced with a dilemma: either contaminate the marine environment or renege on its commitment under START II.

SOLUTIONS

In 1994, the United States proposed a plan to expand Russian LLRW fuel processing capacity to ensure proper treatment and disposal of LLRW generated in Northwest Russia. Russia and Norway agreed to act in partnership with the United States to implement the plan. The plan called for the expansion and upgrading of the only operational LLRW processing facility in Russia, located in Murmansk. The plant's processing capacity is being expanded from 1,200 to 5,000 cubic meters per year and its capabilities are being upgraded specifically to accommodate the LLRW produced in submarine decommissioning. Renovation of the facility began in 1996 and, as of 1999, was more than 90 percent complete.

Japan has provided a solution to the corresponding problem in the Russian Far East, by funding construction of a barge-mounted facility



The unloading of a stainless steel shipping container with spent nuclear fuel from a service vessel that removed the fuel from a nuclear submarine.

to process LLRW. The facility will operate at a processing capacity of 7,000 cubic meters of LLRW per year.

Russia has voluntarily refrained from ocean dumping since 1993, and has indicated its intent to accept the amended LDC once both expanded LLRW processing facilities are fully operational.

"Decisions today regarding the environment and natural resources can affect our security for generations; consequently, our national security planning is incorporating environmental analysis as never before.

In addition, we have a full diplomatic agenda, working unilaterally, regionally and multilaterally to forge agreements to protect the global environment."

—A National Security Strategy for a New Century, The White House, 1997

Interim Storage of Spent and Damaged Nuclear Fuel: Civilian and Military Cooperation—A Dual Track for Environmental Protection

THE PROBLEM

In Northwest Russia, one of the world's largest and most dangerous accumulations of spent and damaged nuclear fuel assemblies is being stored under environmentally unsafe conditions. As Russia decommissions its nuclear submarine fleet, a backlog of damaged nuclear fuel has built up. Because Russia's storage and reprocessing capacity is limited, no permanent solution exists to safely dispose of the nuclear fuel. The problem of spent nuclear fuel from decommissioned submarines poses a bottleneck to the continued decommissioning of those vessels.

Currently, the fuel is being stored on barges and in the fuel reactor compartments of submarines awaiting dismantlement, as well as in leaking wet storage facilities on the Arctic coast of Russia. Fuel is stored on two vessels of particular concern to the international community, the *Lepse* and the *Lotta*. These vessels are anchored at Murmansk, the biggest population center north of the Arctic Circle. They contain icebreaker fuel and special nuclear fuel that has been transferred from military to civilian control. Because the *Lepse* and *Lotta* are not designed for long-term storage of nuclear fuel and have already stored nuclear fuel for some years, fears of an accident are growing in Russia and in other Arctic nations.

SOLUTIONS

The United States, along with Nordic and European partners, has developed a dual-track approach to help the Russian Federation manage this problem:

Military waste - Spent nuclear fuel under Russian military control is being addressed through the Arctic Military Environmental Co-operation (AMEC) agreement. AMEC was signed in September 1996 by the U.S. Secretary of Defense and the Defense Ministers of Norway and Russia. It aims to foster sustainable military use of the Arctic region through sound environmental practices throughout the life cycle of military and industrial activities.

AMEC's most ambitious initial project, led by EPA, is the construction of a prototype transportable interim storage cask and concrete storage pad for



Spent icebreaker and submarine nuclear fuel are stored in the vessel *Lotta* anchored in Murmansk Harbor.

spent and damaged fuel assemblies from nuclear-powered vessels. The cask will be able to safely store the fuel for 20 to 25 years while arrangements for final disposition are made. Once the prototype project is successfully completed, to help Russia meet its START II obligations, DOD's Defense Threat Reduction Agency is considering supporting the construction of 50 or more of the casks.

Civilian waste - The parallel problem of spent nuclear fuel under Russian civilian control is also being addressed through the Department of State's Northern European Initiative (NEI), in cooperation with Barents Council member countries (Norway, Sweden, and Finland). The goals of NEI are to better integrate Russia into the western international community, expand cooperation between the United States and the Nordic countries, and strengthen U.S. relationships in the Baltic region.

In January 1998, Deputy Secretary of State Strobe Talbott proposed under NEI that the Barents Council help Russia develop a cask to hold spent nuclear fuel, originating from both Russian nuclear icebreakers and submarines, that is now under Russian civilian control. A key element of the proposal was cooperation between the U.S. Nuclear Regulatory Commission (NRC) and the Russian civilian nuclear inspection agency to develop the necessary guidance and licensing regulations for installation of the casks and pad.

Russia and the governments of Norway, Sweden, Finland, and the European Union launched this project in May 1998. Construction is slated for 1999. The initial focus of this project is on special zirconium-clad uranium fuel on board the *Lotta*. Once the concept is proven, it will be applied to special and damaged fuel stored on the *Lepse*. Given harsh Arctic conditions, the casks would have an initial licensing period of around 10 years, and a total period of use of 20 to 25 years.

The dual-track civilian and military projects under AMEC and NEI are important elements of U.S. foreign policy and international efforts to

Northern European Initiative (NEI)

In the Fall of 1997, the U.S. Department of State launched a new foreign policy initiative called the **Northern European Initiative** (NEI). The goals of NEI are to promote greater integration of Russia into the western international community, expand cooperation between the United States and the Nordic countries, and strengthen U.S. relationships in the Baltic region.

"Anchored in the harbors of Russia's Northern Fleet are at least 70 idle nuclear-powered submarines, with reactors on board, fuel intact. In the event of fire, seismic calamity or technical error, they are a new kind of clear and present danger."

—Fred Barbash,
Washington Post, 1996

protect the Arctic environment. These projects are designed to accomplish several important objectives:

- To help Russia meet its START II commitment;
- To further the development of a radioactive waste management infrastructure in Northwest Russia;
- To help create a more favorable environment for foreign investment in the region; and
- To reduce the risk to Russian population centers, Arctic ecosystems, and food sources for native populations along the Arctic Rim, including Alaska.

In the long run, the military and civilian approaches are likely to converge as part of an integrated Russian plan for nuclear waste management.

Building Environmental Security and Economic Stability in the Baltic Sea Region

THE PROBLEM

In 1991, when Estonia, Latvia, and Lithuania became independent from the Soviet Union, they inherited serious environmental problems from the numerous former Soviet military facilities located within their borders. This legacy has contributed to an environmental situation in the Baltic region that constrains economic development and poses serious threats to human health.

SOLUTIONS

EPA has launched several new environmental security initiatives under the State Department's Northern European Initiative (NEI), which recognizes the strategic importance of the Baltic region. These initiatives build on longstanding U.S.-Baltic cooperation, including agreements with Sweden, Estonia, Latvia, and Lithuania to address the environmental management of defense installations and to encourage military-civilian cooperation on environmental management. Key EPA partnerships and cooperative activities in the region include:

- *Launching of the Great Lakes-Baltic Sea Partnership in November 1998 to address environmental problems common to both bodies of water.* The Partnership includes a fellowship program and a watershed management program. Under the fellowship program, scientists and public officials in the Baltic Sea

region will work with their counterparts in the Great Lakes to protect water systems from pollution by heavy metals, persistent organic pollutants, and exotic species. The watershed management program will work with three international watersheds to develop management plans as models for methods to protect the Baltic Sea from pollution. The Partnership will improve water quality and watershed management of both regions and will strengthen the cooperation among the Baltic countries and their neighbors.

- *Establishment of a Regional Defense Environmental Training Center at Nemencine, Lithuania.* The Center will train both military and civil defense personnel with environmental responsibilities, serve as a regional facility for the Baltic countries, and train military environmental personnel from other countries in the region. EPA is working in collaboration with the Department of Defense (DOD) and Sweden to establish the Center.
- *Development of a model environmental management plan for the Adazi training base in Latvia.* This will include a plan for integrating environmental management practices and priorities into overall base management and ongoing training. This planning is especially important because the surrounding civilian community depends on the base for its water supply and waste management facilities. The base is the home of the Baltic Battalion, the equivalent of the U.S. National Guard for the Baltic countries. By working at the Adazi Air Field in cooperation with the Michigan Army National Guard, the United States is reinforcing the benefits of civilian-military cooperation.
- *Drafting of a site management plan for reuse of the Zokniai military air field in Lithuania.* EPA, the Department of Energy, and Lithuanian officials will work together to characterize the site, remediate contamination, and identify how the site can be reused.

This environmental cooperation in the Baltic region serves as a bridge to a future healthy economy and strengthens Baltic governments and their integration into Western Europe—a priority under NEI.

"How we meet the security and economic challenges in the Baltic Sea region — working together with Russia and our Nordic and Baltic partners — will profoundly influence the future of Europe; whether Europe grows together or remains marked by the old economic and political divisions. Indeed, this region will be a litmus test for the new European security architecture, which involves NATO, the EU, the OSCE, the Council of Europe and other regional institutions."

**—Thomas L. Siebert,
former U.S. Ambassador to
Sweden, September 1997**

Combating International Environmental Crimes: Compliance with International Treaties

THE PROBLEM

Transboundary environmental crimes and noncompliance with international environmental agreements are attracting increased global attention, especially among industrial countries. For example, it has been reported that 10,000 to 20,000 tons of ozone-depleting chlorofluorocarbon (CFC) contraband is smuggled into the United States per year.

In a recent report on organized crime, the Canadian government noted that the amount of trade in ozone-depleting substances, hazardous waste materials, and endangered species is second only to the trafficking of illegal drugs. The report asserts that these activities put Canada's health and safety at serious risk. Other countries have reached similar conclusions: In April 1998, the environmental leaders of the G-8 nations and representatives of the European Union expressed grave concern over "the ever growing evidence of violations of international environmental agreements and particularly the involvement of international organized crime. This harms not only the global environment, but also the health and livelihoods of people in developed and developing countries alike."

SOLUTIONS

In October 1998, the United States articulated its goal of increasing international cooperation to fight transboundary environmental crime, including trafficking in protected flora and fauna, hazardous waste, and ozone-depleting chemicals.

Combating environmental crime has become a key element of EPA's environmental security efforts. EPA's Office of Criminal Enforcement, Forensics, and Training (OCEFT) has investigated more than 50 international environmental crimes in the last two years. It has been working with INTERPOL and other nations' law enforcement agencies to improve information exchange between nations and to conduct an international training to facilitate safe and effective transboundary investigations. OCEFT has also developed a capability to respond to acts of environmental terrorism and environmental crimes involving the subversion of computer systems that operate environmental compliance mechanisms.

In 1997, OCEFT opened its Center for Strategic Environmental Enforcement. The Center is designed

to be a national and international resource for intelligence gathering, data analysis, and targeting of priority environmental investigations. It helps focus data analyses to promote international crime interdiction and environmental security.

The Middle East: Environmental Diplomacy at Work

The environment has been an important component of the Middle East peace process. In early 1992, the United States and Russia, as co-sponsors of the peace process, established the Environmental and Water Resources Multilateral Working Groups. Through these Working Groups, the United States has encouraged the regional parties to work together on a range of common environmental issues. The Working Groups have developed regional projects dealing with a wide range of issues, including:

- Regional water supply and demand;
- Desalination;
- Water data availability and electronic water data networking;
- Public awareness and water conservation;
- Wastewater treatment and reuse;
- Desertification;
- Environmental and health effects of pesticides; and
- Oil spill contingency planning.

The process allows scientists, governmental officials, community leaders, and business people to develop the trust and familiarity necessary for long-term, sustainable peace in the region. Notable successes of the process to date include the following:

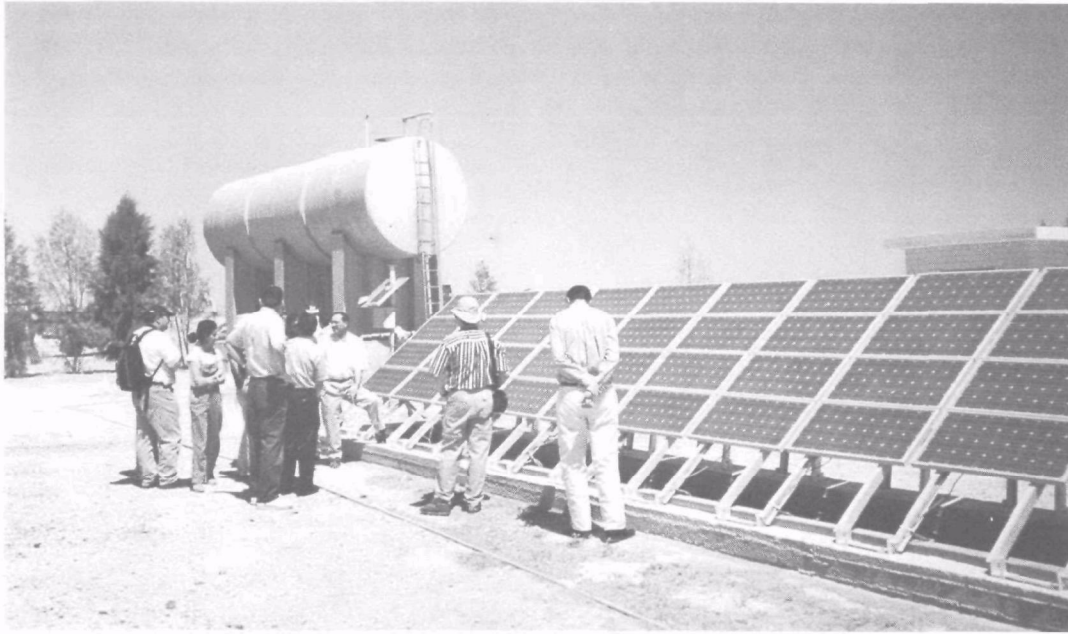
- EPA and the U.S. Department of Agriculture (USDA) have worked with Israel and the Palestinians to address water-related sanitary problems of the West Bank.
- The Middle East Desalination Research Center, a project resolution from the Middle East Multilateral Working Group on Water Resources, was formally established in December 1996. The Center, headquartered in Muscat, Oman, is supported by the international donor community.
- Plans are under way for a Regional Environmental Center in Amman, Jordan.
- DOE and EPA have initiated a cooperative effort in environment and energy with Jordanian, Israeli, and Palestinian environmental representatives to address solid

NATO'S Committee on the Challenges of Modern Society (CCMS)

The NATO Committee on the Challenges of Modern Society (CCMS) was established in 1969 to give the Alliance a new "social dimension." The aim of CCMS is to address practical problems already under study at the national level and, by combining expertise and technology available in member countries, arrive at valid conclusions and make recommendations to benefit all countries.

EPA's Office of International Activities serves as the national coordinating office for CCMS, bringing together government agencies, the private sector, and academic institutions to contribute to ongoing CCMS pilot studies.

In 1992, NATO expanded the work of CCMS to include participation by the Euro-Atlantic Partnership Council (EAPC), the countries of Eastern and Central Europe, Russia, and the Newly Independent States. Since then, CCMS has undertaken work related to environment and security, including conducting pilot studies on a range of defense-related issues, such as the reuse of former military lands, environmental management systems in the military sector, and cross-border environmental problems from defense-related installations and activities.



EPA and DOE Team join Israeli, Palestinian and Jordanian experts in visiting solar powered pump station that provides water to inhabitants of Jordan's northern desert. Solutions to the area's water problem can contribute to a lessening of tensions in the region.

and hazardous wastes, environmental economics, enforcement of environmental laws and regulations, agro-ecology, land use, and emergency response. The partners in this effort have formed plans to develop solar technology for desalination, demonstrate agricultural use of treated wastewater, and use sophisticated technology to model groundwater pollution.

Over the next three years, a number of additional initiatives are planned. EPA, with funding from the U.S. Agency for International Development, will assist the Egyptian government in the areas of environmental health, lead abatement, solid waste, pollution prevention, air pollution, and environmental enforcement. In addition, EPA and USDA will conduct a series of environmental management training programs for Israeli, Palestinian, and Jordanian experts to address solid waste, hazardous waste, and other issues. EPA and DOE will also host exchanges of government officials and scientists and conduct training programs to strengthen professional contacts among the Middle Eastern countries.

Looking Ahead

Cooperation among EPA, DOD, and DOE is proving to be a valuable mechanism for addressing many environmental problems that will affect national security. These and other agencies are working

closely with the Department of State and non-governmental organizations to identify environmental security problems that might arise in the future.

EPA anticipates activities in the following areas:

The Arctic - The Arctic ecosystem is highly vulnerable to the remaining burden of radioactive and other contaminants in the region. The effects of environmental contamination are intensified by several characteristics of the Arctic ecosystem. The region's permanently frozen land (permafrost) is highly sensitive to temperature changes, and dispersed pollutants from vast areas drain into the Arctic seas. In addition, indigenous people and animals high on the food chain consume a diet that promotes accumulation of toxins in their body tissues. The Arctic ecosystem may be further stressed by expected economic and political changes. These include the revival of the Russian economy from its post-Cold War slump and the rebirth of trans-Arctic coastal commerce, which is likely to involve trans-polar air transportation routes and greatly expanded use of icebreaker vessels.

China - The U.S. Department of Defense and the Ministry of National Defense of the People's Republic of China signed a Joint Statement on the Exchange of Information in September 1998. The joint statement marks the willingness (preparedness) of the two nations to cooperate on military environmental protection. Because of the

Although CCMS is an effective place to deal with defense and environment issues, its mandate also covers other environmental matters, including air pollution, hazardous waste disposal, disaster preparedness for chemical accidents, and estuarine management.

"The government of Lithuania has long recognized the importance of solving environmental problems and has sought assistance from a wide variety of actors, among them the United States and other NATO members, to accomplish this goal. We are very pleased that NATO itself recognizes that the military can, with proper planning and management, minimize and even prevent environmental pollution. By devoting management resources and scientific expertise, NATO is helping countries like Lithuania to deal with their inherited problems as well as to build modern and responsive infrastructures and institute public policies to minimize environmental hazards in the future."

*—Valdas Adamkus,
President of Lithuania, 1998*

size of China's population and economy, the country's environmental problems will have an increasing impact on its neighbors and the global environment. China's environmental problems include intense population pressure, water scarcity in the northeast, urban and industrial air pollution, and poor land use practices. These problems heighten tensions among provinces and between rural and urban populations. They also affect relations with other countries, as in the case of acid rain and transboundary atmospheric transport of pollutants which have been measured as far away as the west coast of the United States.

Panama - The government of Panama assumes authority over operation of the Canal and the protection of its watershed on December 31, 1999. EPA is working with the Departments of Defense, State, and Energy to develop environmental protection as part of a new bilateral relationship. To protect watersheds and commercial traffic through the Canal, the U.S. government will work with the government of Panama on training in the areas of emergency response, watershed protection, climate change, and environmental impact assessment.

Caspian Sea - Competition for access to the huge oil and natural gas deposits under the Caspian Sea is aggravating territorial disputes and political, ethnic, and religious tensions in this area. Disputes

over resource ownership, the routing of pipelines, and the readjustment of political and military power in the region are having a destabilizing effect in the region.

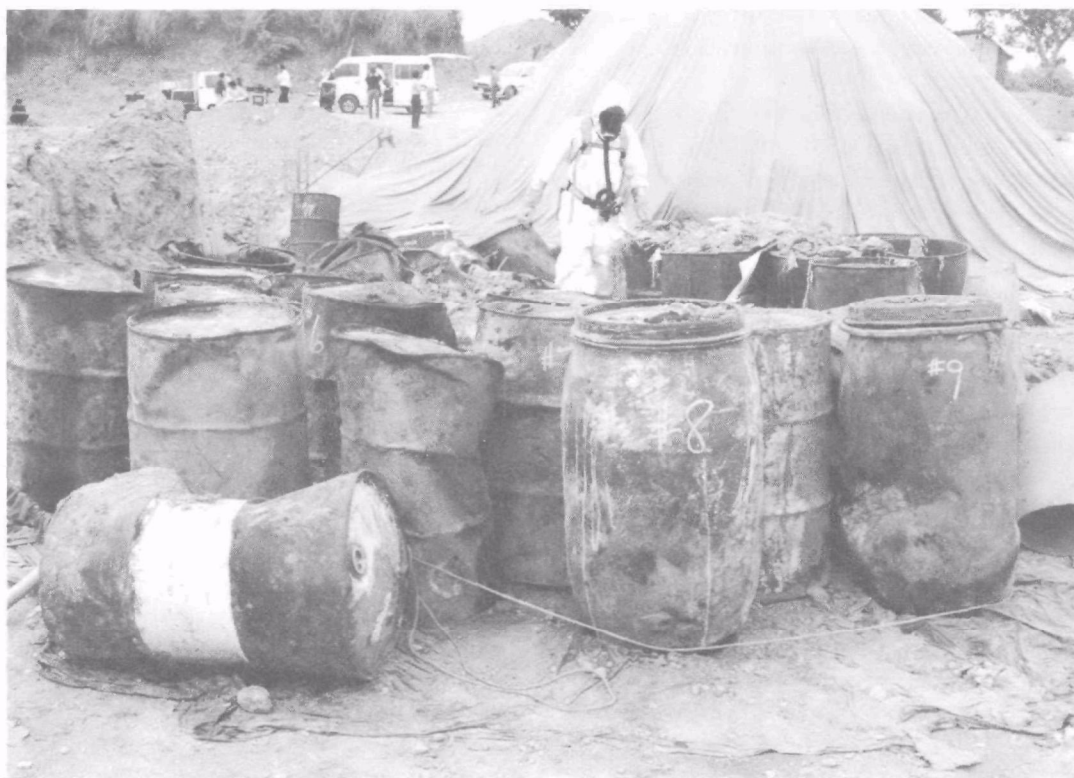
Africa - Africa's environmental problems may best exemplify the direct link between environmental degradation and human insecurity. Water scarcity, desertification, the spread of communicable diseases, a booming population, and overcrowded urban centers constitute a dangerous combination of factors that are undermining political stability and economic development.

Although there is still work to be done, there have been a number of positive developments in combating environmental security problems:

- *The growing use of environmental diplomacy to establish cooperation among nations.* Water issues have helped spur cooperation on non-environmental issues in the Middle East. Bosnia, Ireland, and other areas may benefit from this approach.
- *A growing number of non-military regional cooperative efforts,* such as the Barents Council, the Arctic Council, and NATO's CCMS, which have recognized and taken steps to address regional environmental problems.

"The threats we face from environmental harm are not as spectacular as those of a terrorist's bomb or missile. But we know that the health of our families will be affected by the health of the global environment. The prosperity of our families will be affected by whether other nations develop in sustainable ways. The safety of our families will be affected by whether we cut back on the use of toxic chemicals. And the security of our nation will be affected by whether we are able to prevent conflicts from arising over scarce resources."

—Madeleine Albright,
Secretary of State,
April, 1998



Clean up of illegal hazardous waste disposal site in China. The economic growth projected for China may produce pollution in amounts large enough to undermine its economic sustainability.



COURTESY OF THE PANAMA CANAL COMMISSION

The Panama Canal is a vital shipping link in the world's economy. Contingency planning and emergency response training can reduce the probability that chemical accidents will affect the operation of the canal.

- *Leveraging of resources among many countries and regional associations.* Combining resources is essential because no government alone can support all the environmental work that is needed.
- *Expansion of military-to-military cooperation, as exemplified by AMEC, and military-civilian cooperation within military agreements.* This cooperation on environmental management of military facilities and operations can contribute greatly to environmental security.

EPA recognizes that a healthy global environment contributes to the security of nations. The Agency will continue to work to determine how to prevent or significantly defuse threats to international security before they become a threat to political, economic, or military instability. EPA is committed to working in close cooperation with others to secure a cleaner, safer, and more prosperous future for all.

Identifying Future Priority Needs

The Environmental Change and Security Project

In 1994, the Woodrow Wilson International Center for Scholars launched the Environmental Change and Security Project (ECSP) to explore the various definitions of "environmental security" advanced by scholars, experts and government agencies; whether (and which) environmental issues should be considered security concerns; and how this dialogue fits into the larger debate on redefining traditional conceptions of national security. In partnership with the Center's Asia Program, ECSP also coordinates the Working Group on Environment in U.S.-China Relations. The Working Group's goals include developing creative ideas and opportunities for cooperation on environmental projects between the two countries and discussing how environmental issues can be a building block in improving U.S.-China relations.

U.S. Army War College

The U.S. Army War College, a center for training in complex problems of national security, recognizes the potential role that environmental diplomacy can play in reducing regional conflict. The War College, with support from DOD, has organized "environmental security" games, seminars, and conferences to facilitate dialogue among government officials and policy makers, academicians, and the military sector. These activities help identify future environmental security issues and possible areas of interagency cooperation.

Glossary of Selected Terms

AMEC: Arctic Military Environmental Cooperation

Arctic and Barents Councils:

Intergovernmental bodies consisting of the Nordic countries, the U.S., Canada, and Russia to promote cooperation, coordination, and interaction among the Arctic States

CCMS: NATO Committee for Challenges to a Modern Society

CTR: Office of Cooperative Threat Reduction, Department of Defense

INTERPOL: International Criminal Police Organization

LLRW: Low-level Liquid Radioactive Waste

NEI: Northeast Europe Initiative. Umbrella term for U.S. policy for Northern Europe

OCEFT: Office of Criminal Enforcement, Forensics and Training, EPA

START II: Strategic Arms Reduction Treaty

Environmental Security Web Sites

The Bellona Foundation

<http://www.bellona.no/e/index.htm>

Canadian Global Change Program

<http://www.cgcp.rsc.ca/>

Enter "Environmental Security" as search term for links to sites on environment and human security.

Carnegie Corporation of New York

<http://www.carnegie.org>

Click on "Carnegie Commission on Preventing Deadly Conflict" and see Publications under Reports.

Center for Environmental Security (CES)

Pacific Northwest National Lab

<http://pnl.gov/ces/>

DOD, Office of the Deputy Under Secretary of Defense (Environmental Security)

<http://www.acq.osd.mil/ens/>

Environment & Conflicts Project (ENCOP)

<http://www.fsk.ethz.ch/encop/>

Environmental Change and Security Project (ECSP)

Woodrow Wilson International Center for Scholars

<http://ecsp.si.edu/default.htm>

The ECSP Project Report contains an excellent list of web resources.

Environmental Law Institute

<http://www.eli.org/ecw/frame.htm>

Search site for First International Conference on Addressing Environmental Consequences of War.

Green Cross International

<http://www.gci.ch/>

See Overview of Programs for a menu of topics.

Institute for African Alternatives (IFAA)

<http://www.ifaa.org/>

See IFAA UK for research in ecology, politics, and conflict in the Horn of Africa.

Institute for National Security Studies (INSS)

<http://www.usafa.af.mil/inss/inss.htm>

See Environmental Security under Research Topics and relevant Occasional Papers under Publications.

International Human Dimensions Programme on Global Environmental Change (IHDP)

<http://www.uni-bonn.de/IHDP/>

See Project on Global Environmental Change & Human Security (GECHS).

The Millennium Project survey

[http://geocities.com/~acunu/millennium/](http://geocities.com/~acunu/millennium/Millennium_Project.html)

[Millennium_Project.html](http://geocities.com/~acunu/millennium/Millennium_Project.html)

Click on Environmental Security Study.

NATO Committee on the Challenges of Modern Society

<http://www.nato.int/ccms/>

Nautilus Institute for Security and Sustainable Development

<http://nautilus.org/>

This site focuses on the Asia-Pacific region.

Project on World Security

Rockefeller Brothers Fund

<http://www.rbf.org/pws>

United Nations Food and Agriculture Organization

Special Programme for Food Security

<http://www.fao.org/spfs/>

University of Toronto, Center for Peace and Conflict Studies

<http://www.library.utoronto.ca/www/pcs/>

[pcs.htm](http://www.library.utoronto.ca/www/pcs/pcs.htm)

Selected Reports

Pace, Scott, Kevin M.

O'Connell, Beth E. Lachman.

"Using Intelligence Data for Environmental Needs: Balancing National Interests,"

RAND Corporation,
National Security Research
Division 1997.

[http://www.rand.org/
publications/MR/MR799/](http://www.rand.org/publications/MR/MR799/)

Russian Academy
of Sciences.

"East-West Cooperation and International Ecological Security."

[http://www.geocities.com/
Athens/Academy/4372/
ecol-sec.html](http://www.geocities.com/Athens/Academy/4372/ecol-sec.html)

Partners in Environment and Security

EPA's environmental security activities are undertaken through cooperation with a diverse group of partners. They are:

UNITED STATES

Brookhaven National Laboratory
Federal Bureau of Investigation
Great Lakes National Program Office (GLNPO),
EPA
Great Lakes Commission
Michigan Air National Guard
Oak Ridge National Laboratory
State and local law enforcement agencies
U. S. Agency for International Development
U.S. Customs Service
U.S. Department of Agriculture
U.S. Department of Defense
U.S. Department of Energy
U.S. Department of Interior
U.S. Department of Justice
U.S. Department of State
U.S. Nuclear Regulatory Commission

INTERNATIONAL

Association for Advanced Technologies, Moscow
European Union
GAN, Russia
Government of the Russian Federation
Government of the United Kingdom and
Northern Ireland
Government of Estonia
Government of Finland
Government of the German Federation
Government of Latvia
Government of Lithuania
Government of Poland
Government of the Russian Federation
Governments of G-8 countries
Norway, Ministry of Foreign Affairs
Norwegian Radiation Protection Authority
Norwegian Defense Research Establishment
Minatom, Russia
Repair Technical Plant Atomflot, Murmansk, Russia
Sweden, Ministry of Foreign Affairs
Sweden, Ministry of Defense

MULTILATERAL

Arctic Council
Barents Council
Nordic Council
Helsinki Commission (HELCOM)
International Institute for Applied Systems Analysis
(IIASA)
INTERPOL
NATO countries: Belgium, Canada, The Czech
Republic, Denmark, France, Germany,
Greece, Hungary, Iceland, Italy, Luxembourg,
Netherlands, Norway, Poland, Portugal,
Spain, Turkey, United Kingdom, United States.

Credit

The Panama Canal Commission hereby grants the U.S. Environmental Protection Agency permission to reproduce the image of vessels transiting the Panama Canal in its publication on Environmental Security.



Arctic
Ocean

Baltic
Sea

**BALTIC
STATES**

RUSSIA

Caspian
Sea

Aral
Sea

Mediterranean Sea

MIDDLE EAST

CHINA

AFRICA

South
Pacific
Ocean

South
Pacific
Ocean