

Official Statements and Documents

Below are excerpts from recent official statements and public documents in which environmental issues are cited in the context of security institutions and national interests. The Wilson Center encourages readers to inform the Report of other related public statements; please send a note to the address listed on the inside cover, or E-mail us at ecsp@erols.com.

STATEMENTS BY WILLIAM J. CLINTON President of the United States

Excerpts from President Clinton's Remarks at the International Coral Reef Initiative Event, Port Douglas Park, Port Douglas, Australia 22 November 1996

We are citizens not only of individual nations, but of this small and fragile planet. We know that pollution has contempt for borders—that what comes out of a smokestack in one nation can wind up on the shores of another an ocean away. We know, too, that recovery and preservation also benefits people beyond the borders of the nation in which it occurs. We know that protecting the environment can affect not only our health and our quality of life, it can even affect the peace. In too many places, including those about which we read too often now on the troubled continent of Africa, abuses like deforestation breed scarcity, and scarcity aggravates the turmoil which exists all over the world.

. . . Finally, we must work to reduce harmful greenhouse gas emissions. . . . If they continue unabated, the consequences will be nothing short of devastating for the children here in this audience and their children.

New weather patterns, lost species, the spread of infectious diseases, damaged economies, rising sea levels—if the present trends continue, there is a real risk that sometime in the next century, parts of this very park we are here in today could disappear, submerged by a rising ocean. That is why today, from this remarkable place, I call upon the community of nations to agree to legally binding commitments to fight climate change. . . .

STATEMENTS BY ALBERT GORE, JR. Vice President of the United States

Excerpts from Vice President Gore's Letter in the U.S. Department of State's first annual report on the environment and foreign policy, *Environmental Diplomacy: The Environment and U.S. Foreign Policy*, April 1997

The U.S. State Department's first annual report on the environment and foreign policy represents a new way of looking at the world. We have moved beyond Cold War definitions of the United States' strategic interests. Our foreign policy must now address a broad range of threats—including damage to the world's environment—that transcend countries and continents and require international cooperation to solve.

Environmental problems such as global climate change, ozone depletion, ocean and air pollution, and resource degradation—compounded by an expanding world population—respect no border and threaten the health, prosperity, and jobs of all Americans. All the missiles and artillery in our arsenal will not be able to protect our people from rising sea levels, poisoned air, or foods laced with pesticides. Our efforts to promote democracy, free trade, and stability in the world will fall short unless people have a livable environment.

We have an enormous stake in the management of the world's resources. Demand for timber in Japan means trees fall in the United States. Greenhouse gas emissions anywhere in the world threaten coastal communities in Florida. A nuclear accident in Ukraine kills for generations. Our children's future is inextricably linked to our ability to manage the earth's air, water, and wildlife today.

The first State Department report details the Clinton Administration's priorities for working globally, regionally, and bilaterally to combat serious and growing international environmental threats. It documents an important turning point in U.S. foreign policy—a change the President and I strongly support.

STATEMENTS BY MADELEINE K. ALBRIGHT
SECRETARY OF STATES

Excerpts from Secretary of State Albright's Letter in the U.S. Department of State's first annual report on the environment and foreign policy, *Environmental Diplomacy: The Environment and U.S. Foreign Policy*, April 1997

Just over one year ago, then-Secretary of State Christopher announced that the State Department would spearhead a government-wide effort to meet the world's environmental challenges. He said, "The United States is providing the leadership to promote global peace and prosperity. We must also lead in safeguarding the global environment upon which that prosperity and peace ultimately depend."

This report is an outgrowth of that initiative. It will be released every year on Earth Day. Its purpose is to update global environmental challenges and policy developments and to set our priorities for the coming year.

Not so long ago, many believed that the pursuit of clean air, clean water, and healthy forests was a worthy goal, but not part of our national security. Today environmental issues are part of the mainstream of American foreign policy.

We are building on three basic premises.

First, we know that damage to the global environment, whether it is overfishing of the oceans, the build-up of greenhouse gases in the atmosphere, the release of chemical pollutants, or the destruction of tropical forests, threatens the health of the American people and the future of our economy. We know that rapid population growth exacerbates these problems and has consequences that transcend national borders. And we know that the global environment can be protected most effectively if nations act together. For these reasons, this effort must be a central concern of American foreign policy.

Second, environmental problems are often at the heart of the political and economic challenges we face around the world. In Russia and central Europe, environmental disasters left over from the Soviet era shorten lives and impede reform. In central Africa, rapid population growth combined with the competition for scarce resources fuels conflict and misery. We would not be doing our jobs as peacemakers and as democracy-builders, if we were not also good stewards of the global environment.

Third, we believe, as did President Kennedy, that "prob-

lems created by man can be solved by man." The environmental problems we face are not the result of natural forces or the hidden hand of chaos; they are caused by human beings. These problems can be solved if America works in partnership with governments, NGOs, and businesses that share our commitment to a cleaner and healthier world.

To meet this challenge, the State Department is changing the way we do business. Four years ago, we appointed an Under Secretary for Global Affairs. Our embassies and bureaus are developing regional environmental policies that advance our larger national interests. To help coordinate these policies, we are opening regional environmental hubs at our embassies in Costa Rica, Uzbekistan, Ethiopia, Nepal, Jordan, and Thailand. We have made environmental cooperation an important part of our relationships with countries like Japan, India, Brazil, and China.

Globally, we are pursuing five environmental priorities: the problems of climate change, toxic chemicals, species extinction, deforestation, and marine degradation. We have made many important advances, including agreements to phase out the remaining substances that damage the stratospheric ozone layer and to ban ocean dumping of low-level radioactive waste.

We have many opportunities this year to make further progress. At the conference on the UN Framework Convention on Climate Change, which will be held in Kyoto, Japan this December, we will be pressing for a substantive agreement to reduce greenhouse gas emissions. The United Nations will hold a special session this year to commemorate the fifth anniversary of the Rio Earth Summit. There will also be an important meeting of the Convention on the International Trade in Endangered Species.

Environmental diplomacy is a work in progress. The depletion of our fisheries, the increase in the level of greenhouse gases, and the destruction of habitats and species did not occur overnight and cannot be reversed overnight. We must work with the Congress and the American people to obtain the resources we need to support our diplomacy in this area, as in all others.

We have made a good beginning. Our nation and our friends and partners around the world have the tools, the commitment, and the know-how to get the job done. As Secretary of State, I am committed to this effort and optimistic that we will succeed.

STATEMENTS BY WARREN CHRISTOPHER
Secretary of State

Secretary Christopher's Remarks to the Woodrow Wilson International Center for Scholars, 14 January 1997
"The Environment in U.S. Foreign Policy"
see page 186 of this *Report*

Secretary Christopher's Remarks to Council of the Americas, Washington, D.C.
Excerpts from "Council of the Americas: Supporting Economic Growth and Democracy"
6 May 1996

... We will advance our hemispheric efforts to help preserve the environment when the Summit's Conference on Sustainable Development meets in Bolivia later this year. At Stanford University three weeks ago, I stressed the importance of integrating environmental issues into the mainstream of foreign policy. Whether in confronting the costs of climate change or the impact of deforestation on the consolidation of democracy in Haiti, addressing these issues is squarely in America's interest. That includes helping American companies expand their commanding share of a \$400-billion market for environmental technologies. We all need to recognize that pitting economic growth against environmental protection is what President Clinton calls "a false choice."

STATEMENTS BY WILLIAM J. PERRY
Secretary of Defense

Excerpts from Secretary Perry's Remarks to The Society of American Engineers, Washington, D.C. 20 November 1996

Last month, I visited the Little Star Shipyard in Archangel, Russia. . . I went there to observe the dismantlement of a nuclear submarine. A few years ago, that submarine was out on patrol, carrying enough nuclear missiles to destroy dozens of American cities. Now it is being dismantled by some of the same Russian workers who built it, using equipment provided by the United States Department of Defense.

The waters around the Little Star Shipyard are packed with old Russian nuclear submarines. These submarines no longer threaten the world with a nuclear holocaust; however, they are still a major environmental hazard to the Arctic region. By helping Russia dismantle these subs, we are creating a win-win-win situation.

It's a win for America—the submarine we saw being dismantled will never again threaten American cities.

It's a win for the Russians—the workers doing the dismantlement were previously unemployed because of the decrease in orders for nuclear submarines. And it's a win for the environment—the submarine's nuclear fuel will be disposed of safely; and the sub's components are being recycled into materials that can be used to produce commercial products. To use defense resources to destroy weapons that once threatened us makes good sense on its face. Indeed, that's why we call it "defense by other means." But to use defense resources to protect and preserve the environment may seem counter-intuitive.

Each year, Congress gives the DoD environmental budget a special working-over. The critics wonder why we are spending scarce defense resources on what seems to be a non-defense activity. They say, "Focus on a strong defense and leave the environment to others." They are wrong. I say that a strong environmental program is an integral component of a strong defense—and a strong Department of Defense. The Defense Department must have an environmental program that protects our troops and families; that manages our training and living areas carefully; that fulfills our obligation to be good citizens to the community in which we live; and that sets a good example to other militaries around the world. Let me take these one at a time.

First, let's be clear that defense environmental protection is critical to military readiness and to military quality of life. Our military personnel live, train, and work in the same location—in the same environment. We must not expose our forces, their families and military communities to environmental health and safety hazards. So we take care to limit their exposure to hazardous materials in the workplace. And we take great care to keep our base communities informed of what we are doing on base, and involve local citizens in making environmental clean-up decisions. These are people who work on our bases; who support our troops; and who are key members of our effort to maintain a quality force.

A second point is that defense environmental protection is good management, because as any good business manager knows, if you pollute today you pay tomorrow. We are paying the price right now, because years ago the Defense Department, like many industrial organizations, did not invest enough attention or resources in environmental protection. As a result, today our military installations contain about 10,000 contaminated sites. That's land we cannot use for training and operation. And on bases we're closing, that's land we must restore at great cost, before we can turn it over to local communities for reuse. Cleaning up these sites is costing us more than \$2 billion a year, which is nearly

half of our overall defense environmental budget. We don't want to make these mistakes again.

A third reason for an emphasis on environment is that taking care of the environment is good citizenship. The Defense Department is the steward for over 25 million acres of public land. These lands include some of America's most pristine landscapes and precious resources; including rare and endangered species, national historic places and Native American burial sites. Many of our bases are part of civilian communities in close proximity to residential neighborhoods and schools. Military activities can have a significant impact on the quality of the land, air, and water that we all use. We protect a beautiful nation, and we must do our part to keep it beautiful. For all these reasons, environmental protection is a key task for every military manager. But it is also a fact that defense environmental protection is not an option. We in the defense department face the same local, state, and federal environmental laws and regulations that apply to every organization and institution in this country.

We take these laws and regulations seriously. . . . That is why, three years ago, we created the Office of Environmental Security at the Pentagon, and appointed Sherri Goodman to coordinate and lead our efforts at the highest levels. That is why the Services have each appointed a flag officer to lead environmental, safety and occupational health activities in the ranks. That is why, over the past several years, we have worked hard to reduce our damage to the environment. And it is paying off. From 1986 to 1992, we cut our hazardous waste in half. Our goal is to cut it in half again by 1999. Cutting waste not only improves environmental quality, it also quite obviously reduces disposal costs. Pollution prevention is a good classic investment. And it saves money that can be used for other defense programs.

All of this sounds like a good idea whose time has come. But over the longer term, we must deal with the problem of environmental pollution at its source. So we are designing environmental responsibility into our new weapons systems; by reducing hazardous emissions in the building of new systems; and by reducing the need for hazardous materials in the operation and maintenance of these systems.

. . . The U.S. military has a wealth of experience and expertise that it can share with the militaries of other nations. Our defense environmental programs are becoming another important tool in which to engage the militaries of new democracies. In doing so, we can make a small contribution to a better global environment; and have a positive influence on their approach to defense and the way they manage resources.

We are doing this, for example, with the Russians in the Arctic. Just two months ago, I signed a unique agreement with Russia and Norway in which our forces will work together to ensure that their military activities do not harm the Arctic environment. . . . Geographically, the Arctic is the closest route between the United States and Russia. So it is fitting that in preserving this route, we bring our nations closer together. We are also working with the Russians to use our intelligence capabilities to map out environmental contamination. Earlier this year, Vice President Gore and Russian Prime Minister Chernomyrdin exchanged maps that vividly depicted environmental conditions over Eglin Air Force Base in Florida and Yeysk Air Base in Russia. This exchange was unique because the United States produced the map of the Russian base, and the Russians produced the map of the American base. These bilateral exchanges not only provide us with important environmental science data; they are also another way of overcoming a half century of mistrust by working closely together on common pursuits.

All over the world, the U.S. military is helping to spread the word on how armed forces can protect the environment. . . .

. . . There is a great benefit when militaries of the world do their part to protect and preserve their environments. There is a greater benefit when they do this by working together. Not only are we making the world a cleaner and safer place; we are also bridging old chasms and building new security relationships based on trust, cooperation and warmth. That makes the world a more peaceful place. Thomas Jefferson once said, "The Earth is given as a common stock for man to labor and live on." All nations own shares of that common stock. And all nations share a common obligation to preserve it so that our common stock provides the capital for the labor and lives of future generations. I am proud that the U.S. military is playing a positive role; and you all should be proud too of the role that you're playing to make the U.S. military a leader in environmental security in the world.

STATEMENTS BY JOHN DEUTCH
 Director of Central Intelligence

Director Deutch's Remarks to the World Affairs Council, Los Angeles, California
Excerpts from "The Environment on the Intelligence Agenda"
25 July 1996

. . . Environmental trends, both natural and man-made, are among the underlying forces that affect a nation's economy, its social stability, its behavior in world markets, and its attitude toward neighbors.

I emphasize that environment is one factor. It would be foolish, for example, to attribute conflicts in Somalia, Ethiopia, or Haiti to environmental causes alone. It would be foolhardy, however, not to take into consideration that the land in each of these states is exploited in a manner that can no longer support growing populations.

Environmental degradation, encroaching deserts, erosion, and over-farming destroy vast tracts of arable land. This forces people from their homes and creates tensions between ethnic and political groups as competition for scarce resources increases. There is an essential connection between environmental degradation, population growth, and poverty that regional analysts must take into account.

National reconnaissance systems that track the movement of tanks through the desert, can, at the same time, track the movement of the desert itself, see the sand closing in on formerly productive fields or hillsides laid bare by deforestation and erosion. Satellite systems allow us to quickly assess the magnitude and severity of damage. Adding this environmental dimension to traditional political, economic, and military analysis enhances our ability to alert policymakers to potential instability, conflict, or human disaster and to identify situations which may draw in American involvement.

Some events have already dictated that environmental issues be included in our intelligence agenda. When Moscow initially issued misleading information about the accident at the Chernobyl Nuclear Power Plant, U.S. leaders turned to the Intelligence Community to assess the damage and its impact on the former Soviet Union and neighboring countries.

During the Gulf War, when Saddam Hussein used ecological destruction as a weapon, policymakers and the military called on the Intelligence Community to track the movement of smoke from burning oil fields and the flow of oil released into the gulf. They asked whether damage to Iraq's Tuwaitha nuclear complex posed a danger to troops and local population.

In each of these cases, our answer to these questions was not and could not be, "the environment is not an intelligence issue." Our answers were classic intelligence analysis based on our data from collection systems and open sources. We were able to assess the magnitude of the Chernobyl accident; we were able to tell U.S. troops how to avoid lethal hydrogen sulfide from oil fires; and we were able to tell military planners that damage to the reactor was not a threat.

I would like to emphasize that the environment is not a new issue for the Intelligence Community. For years

we have devoted resources to understanding environmental issues. Much of the work that now falls under the environmental label used to be done under other names—geography, resource issues, or research. For example, we have long used satellite imagery to estimate crop size in North Korea and elsewhere. This allowed us to forecast shortages that might lead to instability and to determine the amount of agricultural products a nation would need to import—information valuable to the U.S. Department of Agriculture and to America's farmers. We have also tracked world availability of natural resources, such as oil, gas, and minerals.

We have for many years provided the military with information on terrain and local resources. As our forces embark on military, peacekeeping, and humanitarian operations in remote and unfamiliar territory, they will need even better information on environmental factors that could affect their health and safety and their ability to conduct operations.

... Environmental intelligence will also be a part of our support to economic policymakers. They need to know, for example, whether or not foreign competitors are gaining a competitive advantage over American business by ignoring environmental regulations. Intelligence can provide valuable information.

In short, the demand on the Intelligence Community for information on environmental issues will grow. As the world population expands and resources such as clean water and arable land become more scarce, it will become increasingly likely that activities of one country will have an environmental impact that goes beyond its borders. U.S. policymakers will need warning on issues that are likely to affect U.S. interests and regional stability.

Maintaining a capability for environmental intelligence will allow us to answer important questions that are likely to come from our consumers in the future. For example, China's rapidly growing population and booming economy will translate into a tremendous increase in demand for the world's natural resources, including oil and food. What impact will this have on world markets? As in the past, we must be prepared to answer such questions.

We should also be willing to provide data from our collection systems to help experts answer less traditional questions, for example: what impact will increased burning of fossil fuel have on the global environment?

... In 1991, then-Senator Gore urged the Intelligence Community to create a task force to explore ways that

intelligence assets could be tapped to support environmental research. That initiative led to a partnership between the Intelligence and scientific communities that has proven to be extraordinarily productive for both parties.

The Environmental Task Force found that data collected by the Intelligence Community from satellites and other means can fill critical information gaps for the environmental science community. Furthermore, this data can be handed over for study without revealing information about sources and methods.

For example, imagery from the earliest intelligence satellites—which were launched long before commercial systems—can show scientists how desert boundaries, vegetation, and polar ice have changed over time. These historical images, which have now been declassified, provide valuable indicators of regional and global climate change.

Some of the scientists who participated in the Environmental Task force now make up a group called MEDEA. MEDEA works with the Intelligence Community to establish what we call the “Global Fiducials Program.” Under this initiative, during the next decade we will periodically image selected sites of environmental significance. This will give scientists an ongoing record of changes in the earth that will improve their understanding of environmental processes. More impor-

tantly, it will greatly enhance their ability to provide strategic warning of potentially catastrophic threats to the health and welfare of our citizens.

. . . I would like to make one more key point about our work on environmental issues—the costs are small and the potential benefits enormous. The resources allocated to environmental intelligence are modest, perhaps one tenth of a percent of the intelligence budget for collection and analysis. We are using intelligence capabilities that are already in place. This important work requires no new capital investments.

. . . I think it would be short-sighted for us to ignore environmental issues as we seek to understand and forecast developments in the post-Cold War world and identify threats to our national welfare. Just as Secretary Christopher promised “to put environmental issues in the mainstream of American foreign policy,” I intend to make sure that Environmental Intelligence remains in the mainstream of U.S. intelligence activities. Even in times of declining budgets we will support policymakers and the military as they address these important environmental issues.

STATEMENTS BY STROBE TALBOTT
Deputy Secretary of State

Excerpts from Deputy Secretary Talbott’s Remarks
at the Environmental Issues in American Foreign

STATEMENTS BY SECRETARY OF STATE MADELEINE K. ALBRIGHT
as United States Permanent Representative to the United Nations

Excerpts from Ambassador Albright’s Keynote Address to the 1994 Symposium for the Environmental Defense Fund on the Global Environment: International Issues and Institutions
April 21, 1994

. . . It’s no secret that the Clinton Administration has a fundamentally different philosophy than its predecessors. We believe that America should be the world’s environmental leader, not foot-dragger. We believe environmental awareness is a prerequisite to, not an obstacle to, economic growth. We believe that environmental degradation is not simply an irritation, but a real threat to our national security.

During the Cold War, we mobilized against the risk of nuclear Armageddon. The environmental risk is not as spectacular or as sudden. It does not focus the public’s mind in quite the same way. But left unaddressed, it could become a kind of creeping Armageddon. It is both a product of, and a cause of, social disintegration. It is making uninhabitable increasing chunks of our planet. And it could, in time, threaten our very survival. . .

International cooperation on the environment is no longer an option; it is an imperative. The lines we draw on maps matter less and less. The forces that now shape our lives are global and interlocking. That is why sustainable development is not an economic policy or an environmental policy or an education policy or a health policy—it is all of those things and more.

**Policy Seminar, National Foreign Affairs
Training Center, Arlington, Virginia
10 September 1996**

... This past February, on a tour of Latin America, Secretary Christopher visited Manaus and personally inspected the Brazilian rainforest....[The outing] underscored a strong, consistent, personal commitment to making environmental activism part of the day-in, day-out work of the Department of State. The rationale for doing so is simple: it's because the health and welfare of Americans are bound up with the quality of the land, air, and water everywhere in the world; the extinction of species in the tropics, the spread of pollutants through acid rain, the decline of stocks of fish in our oceans. All these are apparent in tangible, troublesome ways here at home. But struggles over land, water, and other natural resources affect our national interests overseas as well, since they can lead to instability in regions of critical importance to the United States.

Because threats to the environment are so often international in scope, no nation can, on its own, achieve lasting solutions. In the past 25 years, the United States has made important progress toward putting its own environmental house in order, but even our best efforts will be insufficient if our neighbors do not or cannot do the same. The State Department, as the agency of the U.S. government responsible for relations with other countries, obviously has a crucial role to play.

... Let me now refer to some specific areas of the world and how environmental concerns obtrude on our political, economic and security interests—and should obtrude more on both our analysis of what is happening there and on our diplomatic efforts to shape events in a way that will serve our interests.

I'll start, predictably perhaps, with the former Soviet Union. When Reactor Number Four at the Chernobyl nuclear power plant blew its top 10 years ago, it was more than an isolated accident; it marked the beginning of the meltdown of the USSR. That one disaster helped catalyze the policy of glasnost in Moscow and the independence movement in Ukraine. The death—more accurately, the murder—of the Aral Sea and the befouling of Lake Baikal fanned grass-roots outrage against the obtuseness of Kremlin rule. In short, Soviet ecocide was, to an extent few of us realized at the time, the beginning of the end of the Soviet regime, the Soviet system and the entire Soviet empire.

Today, in addition to all the other challenges they face, the people in that vast part of the world have to clean up the mess they inherited from the Communists. Half of Russia's water is undrinkable even after treatment. The health crisis in that country stems in large mea-

sure from atmospheric pollution. The economic and human toll of these conditions hinders Russia's attempts to move forward with reform.

The challenge for us is to help the Russians—and the other peoples in the post-Communist world—build systems and societies that treat natural resources and public health as core elements of their national interests. That's why the Gore-Chernomyrdin Commission includes an Environmental Committee that uses classified data from both sides to help scientists and government planners address ecological problems. Meanwhile, the Environmental Protection Agency is helping Russia clean up its drinking water, and the Department of Energy is helping Ukraine safeguard its nuclear reactors.

Environmental issues are equally important in the Middle East and the Gulf, a region of the world that has been especially on our minds of late. We focus on surface-to-air missiles, tanks and artillery, which are a dangerous mix with ancient hatreds and aggressive ambitions. But we mustn't overlook the more mundane ingredient of water, which has immense potential both for good and, in its scarcity, for ill. In no other region of the world are waterways and international politics so intertwined. Iraq, Syria and Turkey share the Euphrates River Basin; Israelis, Jordanians, Palestinians, Lebanese and Syrians all rely on the resources of the Jordan River Basin. That's why the Middle East peace process includes a multilateral working group on water resources.

In this connection, last month Secretary Christopher announced that our embassy in Amman, Jordan, will be among the first of 10 "Environmental Hubs" that will, by the year 2000, be located in all regions of the world. These hubs are an innovative departure for our Department, because they are designed as an additional inducement to our diplomats in a particular post, as they act locally, to think regionally.

In Central America, we have designated our embassy in San Jose, Costa Rica, as another environmental hub. In that neighborhood—which is, of course, our own—I've spent some time working with two countries that I'd like to mention. One is Panama. We will, as you know, return the Panama Canal to the Panamanian government and people at the end of 1999. But the path between the seas itself faces a potentially lethal ecological—and economic—threat. Various forms of environmental degradation could close the locks. We are committed to working in partnership with the Government of Panama to ensure that the Canal's protective buffer zones are managed in a way that guards against deforestation, erosion and the buildup of silt. Another country, even closer to the U.S., where I've

spent a lot of time, including in recent weeks, is Haiti. We all know about the legacy of the Duvaliers and the Ton-Ton Macoutes. Political violence is part of the gruesome background to the troubles besetting that country as it tries to consolidate a fledgling democracy. But there's another legacy that is just as hard to overcome and eventually expunge. Deforestation, soil erosion, and water shortages have combined to leave thousands without a livelihood and without much hope for the future.

... It was in this spirit that Secretary Christopher, in his Stanford speech, called for a New Partnership for Environment and Foreign Policy designed to forge new relationships between experts who might not otherwise see the common interests they share. Let me stress what the Secretary's Initiative is not. It's not about creating a new, separate, self-contained, and therefore by definition self-marginalized bureaucracy that will be off in a corner somewhere worrying about the fate of the earth while the rest of the foreign-policy machinery grinds on doing its traditional thing. Rather, it's an attempt to integrate a concern for and a can-do attitude toward environmental issues into the way we approach virtually every major task.

... The well-recognized problems and solutions that arise in the interaction of nation-states are still very much with us, and they will be so for a very long time. History, the last time any of us checked, has not ended. But we are beginning to understand, perhaps for the first time, the sometimes devastating, sometimes promising, always complicating interaction between human history and natural history.

... Understanding—and acting on—the importance and interaction of global issues is an imperative for diplomats as well. The institution hosting this conference—the Foreign Service Institute—is to be congratulated, as it (like some of the rest of us baby-boomers) celebrates its 50th birthday, for integrating environmental issues into its core curriculum, from the junior officer orientation course to the Senior Seminar. A nine-month economics course now includes segments on climate change, trade and environment, biodiversity, and sustainable development.

But we as an institution and as a profession need to do more; we need to do it across a broader front and reach more deeply into the system, so that we continue to advance our national security while doing a better job on issues that know no boundaries, from environmental damage to international crime.

As a follow-up on his Stanford speech and his environmental initiative, the Secretary has asked me to use this occasion to affirm and amplify on an important

principle: the foreign service officer of the 21st century must have significant experience in global issues. This can be accomplished in many ways, from working in Mexico City on border pollution, or in Beijing on population or energy matters, or here in Washington in a bureau that deals with international crime, terrorism, environment, refugee affairs, or the promotion of democracy and human rights.

... To everyone here, whether you're part of the government or the NGO sector, I'd make a final appeal. It has to do with money. We don't have enough. ... As I say, the Congress has tried to put American foreign policy on a starvation diet. And precisely because global issues in general and environmental issues in particular represent a new agenda, a non-traditional enterprise, they are among the most vulnerable targets for financial squeezing and cutting.

Just a few examples: We haven't been able to come up with the seed funding for a project that would help reduce CFCs worldwide; The United States is the biggest debtor in the Global Environmental Facility, the principal international funding mechanism for the activities called for by the Climate Change Convention. We're currently in arrears to the tune of \$100 million; Our environmental assistance to the New Independent States of the former Soviet Union has fallen from nearly \$75 million in FY95 to less than \$10 million in FY97, a dramatic retreat on a crucial front.

... We also need to persuade Congress that the international-affairs budget is a modest and prudent investment in our long-term safety and prosperity. And that means we need to persuade the American people on that score.

Part of Secretary Christopher's environmental initiative is a determination to raise public awareness of the importance of environmental issues to our national interest. We will do a better job of educating the public on this subject if we better educate ourselves. That's exactly what you are doing in this seminar today. For that I thank you—and I wish you well.

STATEMENTS BY TIMOTHY E. WIRTH
Under Secretary of State for Global Affairs

**Under Secretary Wirth's Remarks at the Center for National Policy
Excerpts from "Population Pressure and the Crisis in the Great Lakes Region of Africa"
18 December 1996**

... I'm pleased to lead off this discussion of the long term causes of conflict in the Great Lakes region of Africa—a subject I began focusing my attention on in July

1994, when two million refugees poured out of Rwanda into neighboring countries. Secretary of State Warren Christopher had asked me to travel to the region, to take stock of what was shaping up to be one of the greatest humanitarian disasters of our time. One of the first things I noticed, as my flight entered Rwanda, were the terraced farms in the hills surrounding Kigali. It struck me as unusual that in the midst of Africa's vastness, farmers in Rwanda had managed to till every available meter of land, right up to the peaks of the hills in the countryside. Farmer's homes normally sit on the peaks of those hills—the only bit of land that is not used for farming. I didn't know then, that prior to the tragic events of spring and summer 1994, Rwanda's 7.6 million people were living on 25,338 square kilometers of land, a population density of about 290 people per square kilometer, among the highest in Africa. By comparison, at that time, the overall average for sub-Saharan Africa was 23, and most neighboring countries were all well below 100 people per square kilometer.

Why was Rwanda's population density so high? Because Rwanda was producing a lot of new citizens. In 1983, the total fertility rate for Rwanda stood at 8.5 children per woman. As John May, a demographer at The Futures Group will point out in a forthcoming article, even with a high mortality rate for children under five, Rwanda's population continued to expand at alarming rates because the population had become accustomed to rapid growth, because Rwandan ethnic groups had come to think of population growth as an asset, and because of an aversion to modern methods of contraception. In the 43 years from 1950 through 1993, the world's population grew from 2.2 billion to more than five billion—slightly more than doubling—while during that same period, Rwanda's population quadrupled. It seemed to me that in Rwanda, as in other parts of the world I have seen, there were simply too many people competing for too few resources. This is particularly true in Rwanda, where patterns of land use have increasingly become problematic, especially since independence in 1962. Rwandan society had, for at least several generations, relied upon subdivision of land among male heirs. In a country with a rapidly expanding population, this created many small plots, some too small to sustain even a small family.

It would be helpful here to review a bit of history. In 1963, the new Rwandan government developed a resettlement policy to deal with land scarcity, which involved transporting people to areas where arable land was available for cultivation. However, the plan was dropped shortly afterward because the number of people ready to relocate quickly outpaced the available plots. There were also strict controls in place on rural-urban migration. The government tried a sec-

ond effort to find additional arable land for Rwanda's rapidly growing population in 1965, but this effort also failed because the available land was quickly exhausted. In fact, by the late 1980s, Rwanda's agricultural output was beginning to sag. From its position as one of sub-Saharan Africa's top three performers in the early 1980s, Rwanda's per capita output fell by nearly 20 percent in the early 1990s. Much otherwise arable land fell into disuse because of civil conflict and mine laying. Profound food shortages began emerging, particularly in the southern and western parts of the country. As more and more land came under cultivation in Rwanda, the agricultural frontier continued to close. Few people chose to remain in the rural areas where they were raised; but because they were not permitted to move to a town without having a job in hand, many moved into ecologically fragile upland and arid areas that yielded little new production.

Meanwhile, other events were taking shape in Rwanda that would change the course of the country's history, and would intensify into an enormous humanitarian tragedy...However, the genocide of 1994 is only one example of large-scale interethnic killing that has wracked not only Rwanda, but also neighboring Burundi, since the late 1950s. . . .

. . . In trying to explain these cycles of killing, exile, and revenge killing that have characterized much of the recent history of these lands, I frequently return to the reality of competition for scarce resources that underlies the tension. At the same time, there is a danger of assuming that scarce resources alone, such as land in Rwanda, *cause* conflict. As demographer Nicholas Eberstadt has pointed out, the problems of sub-Saharan Africa might occur (given underlying societal tensions) even if the population levels of these nations were stationary. But is it possible to rule out the enormous population change in Rwanda during the past 40 years as a critical factor in its recent ethnic turmoil? I believe not.

Population growth and extreme population movements certainly have a negative affect on political stability. When they happen in concert with environmental degradation, stalled economic development, weak governmental structures and ethnic rivalries, they serve as a powder keg into which a match can easily be tossed. Demographics alone do not cause or predict conflict, but the fierce competition for resources that population density creates compounds any effort to reconcile pre-existing historical and cultural differences. Had the security of resources and demographic disruption not been present in Rwanda, I am convinced that its society would have been more resilient, and less susceptible to the depravity of genocide.

... Thomas Homer-Dixon, a researcher at the University of Toronto, has written that "environmental scarcity often encourages powerful groups to capture valuable environmental resources and encourages marginal groups to migrate to ecologically sensitive areas. These two processes in turn reinforce environmental scarcity and raise the potential for social instability." In cases from around the globe, Homer-Dixon has illustrated how competition over scarce resources, such as land, contributes to conflict. For example, in Haiti, following the overthrow of the Duvalier regime in 1986, many farmers who were no longer able to raise crops on land that had become degraded, migrated to urban areas such as the capital, Port-au-Prince. There, they found relatively poor conditions with little infrastructure to absorb the quantity of new arrivals. During the military government that followed Duvalier, discontent over the disparity in land, competition for scarce resources and dissatisfaction with inequitable income distributions between the elites that ran the country and dispossessed farmers boiled over, and resulted in the civil strife that led to the intervention of U.S. forces in 1994.

Are the cases of Rwanda and Haiti unusual? Again, I suggest not. Each year, the U.S. intelligence community puts out a list of those nations where there is potential for humanitarian crisis. This year, the list included some 27 countries that were undergoing intense conflict, simmering conflict, severe government repression, cease-fires, political settlements, post-crisis mop-up or where there were potentials for new humanitarian emergencies. Of those 27, fully two-thirds have population densities higher than the global average. What this points out, above all, is that the work that we have done and continue to do around the world on population is vitally important. It is critically important that women in Rwanda, including those returning now to their homes, have access to information and services that empower them to determine the number, spacing and timing of their children. We know from experience that social investments in women—in their health, education and economic access—yield the highest returns to society. An educated woman is more likely to have fewer children, and her children in turn are more likely to be healthy and educated.

Naturally, there are other things that the international community must do to help Rwandans rebuild their lives. We must help returning refugees reintegrate into Rwandan society. Part of the \$145 million that the United States recently pledged toward relief operations will help with just that. . . .

... I would like to leave you with a thought: even if it can never be proven that Rwanda and other troubled nations slid into chaos precisely because of the pres-

sure of acute population increases, it is inarguable that a country doubling in population every 20 years, where women bear eight children each, where density is already staggeringly high—these countries are much, much more likely to run full speed into economic, environmental, social and political walls, frequently with disastrous results. I ask that all of us, and not only those who care about the Rwandan people, carefully think through this challenge as we move into the 21st century.

**STATEMENTS BY SHERRI WASSERMAN GOODMAN
Deputy Under Secretary of Defense
for Environmental Security**

**Under Secretary Goodman's Remarks at the
National Defense University, Washington, D.C.
Excerpts from "The Environment and
National Security"
8 August 1996**

... For "preventive defense" to succeed we must address the increasingly diverse threats to our security in the post-Cold War world. President Clinton in his 1996 State of the Union Address described these threats in his call to maintain America's leadership in the world: "The threats we face today as Americans respect no nation's borders. Think of them: terrorism, the spread of weapons of mass destruction, organized crime, drug trafficking, ethnic and religious hatred, aggression by rogue states, environmental degradation."

As the President recognized, the underlying causes of conflict and instability, such as ethnic cleavages and environmental degradation, may threaten our national interests in regions of strategic importance. Understanding the causes of conflict and instability, providing adequate warning of potential crises, and acting well before a crisis to avoid costly military interventions are at the heart of "preventive defense." Operationalizing "preventive defense" will pose what I believe is a primary challenge to policymakers in the years ahead. Policymakers are beginning to delve more deeply into the causes and consequences of conflict and instability in the post-Cold War world. It is increasingly clear that environmental degradation and scarcity play a key role in this complex question. In 1996, for the first time, the National Security Strategy recognizes that "a number of transnational problems which once seemed quite distant, like environmental degradation, natural resource depletion, rapid population growth and refugee flows, now pose threats to our prosperity and have security implications for both present and long-term American policy. . . ."

... Environmental scarcities can interact with political, economic, social, and cultural factors to cause instabil-

ity and conflict. Particularly in poorer countries, scarcities can limit economic options and therefore force those already impoverished to seek their livelihood in ecologically endangered areas such as cities. The “megacities” of the South are especially vulnerable. The developing world’s urban population is expected to increase 1 billion in 1985 to 4 billion—or almost half of the world’s population—by 2025. Such areas can become teeming areas for disease, crime, and social decay. The multiple effects of environmental scarcity, including large population movements, economic decline, and capture of environmental resources by elites, can weaken the government’s capacity to address the demands of its citizens. If the state’s legitimacy and capacity for coercive force are undermined, the conditions are ripe for instability and violent conflict. If the state’s legitimacy and coercive force capacity remain intact or are bolstered, the regime may turn more authoritarian and challenge the trend of democracy and free markets around the world. Either way, our security is affected, and U.S. military forces may become involved, when environmentally linked instability spills over to other states in a key region, or when a complex humanitarian emergency results from environmentally rooted population movements.

...Even where environmental degradation or scarcity is not likely to be a cause of instability or conflict, military environmental cooperation can help promote democracy trust, and capability to address environmental problems. In this context, defense environmental cooperation supports one of Secretary Perry’s three premises of preventive defense: that “defense establishments have an important role to play in building democracy, trust and understanding.”

I believe our environmental security challenge now under “preventive defense” is two-fold. One challenge is to understand where and under what circumstances environmental degradation and scarcity may contribute to instability and conflict, and to address those conditions early enough to make a difference. The second challenge is to determine where military environmental cooperation can contribute significantly to building democracy, trust and understanding. These two elements together constitute the environmental security pillar of “preventive defense.”

...In a speech on the Senate floor on 28 June 1990, Senator Sam Nunn spoke of the need to “harness some of the resources of the defense establishment...to confront the massive environmental problems facing our nation and the world today.” That led to the establishment of the multiagency Strategic Environmental Research and Development Program (SERDP), which plays an important role in developing and analyzing the data needed for alerting us to possible security threats.

Through SERDP, which was established in 1990, Senator Nunn and then-Senator Gore had the foresight to recognize that the U.S. defense posture had to be adjusted to meet the challenges of the post-Cold War world, challenges that include environmental degradation. SERDP has made significant contributions to our understanding of global environmental trends, with key projects including the Joint DoD/Energy Department Atmospheric Remote Sensing and Assessment Program, which monitors ozone levels; and the Acoustic Monitoring of the Global Ocean Climate, which measures global ocean temperature and incorporates these data into climate change models. This analysis is important to developing the types of warning systems I believe we need.

Military operators are also paying more attention to how we can be alert to potential crises. We were certainly surprised that Canada and Spain—two NATO allies—would nearly come to blows over fishing rights. This dispute, which happened just off the U.S. coast, proved that even among developed countries, there is the potential for fierce resource competition. This incident was a real wake up call to our military operators, who reviewed the origins of the dispute carefully and are now seeking to work with other organizations in improving international fisheries management. We have also begun looking at assessment and warning mechanisms with our NATO partners. “Environment and Security in an International Context,” a new pilot study launched by NATO’s Committee on the Challenges of Modern Society this past March, calls for the NATO representatives to work closely with representatives of the North Atlantic Cooperation Council and the Partnership for Peace countries. During the course of the study we will identify and assess security risks posed by environmental problems, prioritize those risks for action, and devise an action plan to address them—with a strong emphasis on preventive actions.

Promoting military environmental cooperation that contributes significantly to democracy, trust and understanding is the second element of the environmental security pillar of “preventive defense.” Secretary Perry himself has acknowledged the unprecedented opportunity the Defense Department has today to establish and reinforce key relationships: “Our environmental efforts are also having a global impact. All over the world, American forces are sharing the wealth of their environmental experience with foreign militaries, showing them by example and instruction how to protect and preserve the air, lands, and waters in their own countries. This is one of many forms of military-to-military engagements our forces are conducting to help America build cooperative relations with new friends and former foes.”

...At the end of the Cold War our European Command (EUCOM) initiated a military-to-military program in Central and Eastern Europe to encourage and facilitate the democratization process. Early in that program the environment emerged as an important area for cooperation as the militaries of these countries became aware of and sought to address their environmental responsibilities. Since the beginning of this "mil-to-mil" program we have engaged multiple federal agencies, state and local governments, non-governmental organizations, the public, and the military in programs geared toward meeting environmental challenges. We have shown our Central and Eastern European partners, through working with representatives of a wide array of organizations, that the military can and should participate easily and effectively in open and cooperative processes within a democratic framework.

...Cooperation with other key U.S. Government agencies is important to designing the most effective forms of environmental cooperation. Recognizing that the whole is often greater than the sum of its parts, on 3 July 1996, Secretary Perry, Secretary O'Leary, and Administrator Browner signed a Memorandum of Understanding calling for cooperation among the DoD, the Energy Department, and the EPA, to jointly address critical environmental concerns. Cooperative activities under the MOU will focus on enhancing other nations' abilities to identify and manage environmental threats, as well as on addressing the environmental consequences of both the military and civilian Cold War defense activities, and on strengthening ties with developing and democratizing nations. Methods of cooperation will include information exchange, research and development, monitoring, risk assessment, technology demonstration and transfer, emergency response training, regulatory reform, and environmental management. We plan to engage the other key U.S. Government departments and agencies in our MOU activities. In fact, we already are: last week, at DoD's invitation, we hosted a Polish delegation from the Ministries of Defense and Environment to develop bilateral, multiagency environmental cooperation involving the Environmental Protection Agency and Departments of State, Energy, and Commerce. By the end of the week, the Polish delegation had proposed five areas for defense environmental cooperation, the heart of which is making American environmental technology and services available to assist Polish environmental problems, both in the military and the commercial sector. . . .

STATEMENTS BY EILEEN B. CLAUSSEN
**Assistant Secretary of State for Oceans and
 International and Environmental Affairs**

**Excerpts from Assistant Secretary Claussen's Remarks
 at the Chatham House Workshop on Multinational**

**Corporations and Global Environmental Change,
 London, England
 27 June 1996**

...Let me assure you that governments now acknowledge the importance of global environmental concerns at the highest levels. They are raised in meetings of heads of state...to the highest levels of government. It means that we will make environmental issues an increasingly significant component of our bilateral relationships. It means that we will improve the capacity of our embassies around the world to address environmental concerns. It means that we will confront the problem of weak compliance with international environmental agreements. In a broader sense, it means that we will continue to make strong links between protection of the environment and continued economic strength, public health, and national security. . . .

STATEMENTS BY JOHN GIBBONS
Advisor to the President on Science and Technology

Excerpts from John Gibbons' Remarks at the Conference on "Climate Change, Evolving Technologies, U.S. Business and the World Economy in the 21st Century," U.S. Department of State, Washington, D.C. 18 June 1996

...Through the past nine Presidents and 22 Congresses, our primary emphasis has been the battle for global security, based on the uneasy politics of disarmament, nuclear deterrence and containment. During that time, the second front has grown continually in both size and complexity, shaped by the forces of globalization, technological advance, population growth, environmental degradation, and social change.

As the image of the Cold War recedes, it is the "second front" which advances. It is the plethora of human and environmental stresses which now commands our collective attention. It is the human wants—for jobs, education, health, a sound environment—and threats—infected disease, illiteracy, mass migration, terrorism, and global change—which now define the second front of security policy. In a recent speech at Stanford University, Secretary of State Warren Christopher again drew our attention to that broader concept of security—the "second front." He described how a lasting peace depends upon our ability to deal effectively and equitably with the social, economic, and environmental needs of a growing global population while continuing to deter military threats.

Secretary Christopher articulated what many of us intuitively grasp. We face a set of regional and global challenges which transcend agency missions, disciplinary divides, and political boundaries. Our traditional

notions of national security and the role of science and technology need to change. We must craft new policies and priorities which can both sustain our military deterrence capability and sustain environmentally-sound economic development. Last year, President Clinton took the first step in this direction by issuing the nation's first-ever National Security Science and Technology Strategy.

... Over the past two years, we have worked with many of you to define and implement a National Environmental Technology Strategy to support the development, domestic use, and export of environmental technologies by U.S. business. We met and brainstormed with over 10,000 people—from industry, academia, NGOs, and state and local governments—at more than 25 workshops across the country. We believe this strategy is unique; it was created with all the key stakeholders, and it capitalizes on the resources of more than a half-dozen federal agencies including EPA, DoE, Commerce, and Defense, and it includes public-private partnerships and an integrated set of policies which operate from the initial stages of R&D through commercialization and export promotion. The strategy leverages important trends that are taking place in industry, where more and more companies pursue environmental excellence as a competitive strategy. The strategy also looks beyond our borders and supports U.S. businesses seeking to capture rapidly expanding global markets for environmental technologies. We have:

- developed an Environmental Technology Export Strategy to provide strategic market analyses of large emerging environmental technology markets and support U.S. businesses interested in moving into these markets;
- developed an Initiative for Environmental Technologies (through USAID) to focus development assistance on critical environmental challenges in developing countries;
- established a new Environmental Directorate at the Export-Import Bank to assist U.S. businesses with loans for environmental projects overseas. Funding for environmental projects at Ex-Im now exceeds \$1 billion;
- established the America's Desk (a State Department initiative) to help to solve problems for U.S. businesses overseas and bring business concerns to the forefront of the foreign policy process.

STATEMENTS BY AMBASSADOR MARK HAMBLEY
**U.S. Special Representative to the
 Commission on Sustainable Development and
 Special Negotiator on Climate**

Ambassador Hambley's Remarks to the Workshop on International Environment and Security Issues at the

National Defense University

Excerpts from "The Environment and Diplomacy: New Challenges for American Foreign Policy"

8 August 1996

... Nowadays, the importance of the environment to the health and well-being of each and every one of us has come to be recognized as a key priority for governments, both domestically and internationally. . . .

... Environmental issues are now in the mainstream of American foreign policy. No longer side-lined or placed in a second tier of interest, the environment is of importance to American diplomacy because of our general awareness about the potential for conflict engendered by resource scarcities and the concomitant, related problem of access to limited resources. Moreover, as the Secretary mentioned in his Stanford address, there are now global environmental issues which our diplomacy must address in order to preserve a world which is both healthy and sustainable for future generations.

Both of these considerations—the problem of resource scarcities and the specific environmental issues challenging us today—are worth exploring this morning in the context of our discussion of the environment and diplomacy. But before doing so, it would probably be worthwhile to underscore that, in many ways, a discussion of "environment and diplomacy" cannot be separated from the topic of "environment and security."

... Let's take a moment to look into the question of resource scarcities and see how diplomacy is working to reduce some of the conflicts which have developed over time because of them. First of all, it should be clarified that such scarcities are not usually the direct cause of violent conflicts around the globe, but they are often indirect causes. This said, the four resources most likely to contribute to conflict are *land, water, fish, and forests*.

Land scarcity is a recurrent theme in several low-level but persistent conflicts around the world. Scarcity can result from land degradation, unequal distribution of land, over-population, or some combination of these factors. The dynamic behind civil insurgencies over the past decade in both the Philippines and Peru looks remarkably similar. Lack of access to productive agricultural land combines with population growth to encourage migration to steep hillsides. These hillsides are easily eroded, and after a few years fail to produce enough to support the migrants. The result is deepened poverty which helps to fuel violence. In the Philippines, the New People's Army found upland peasants to be most receptive to its revolutionary ideology. In Peru, as well, areas of land scarcity and poverty have

often been Sendero Luminoso strongholds. Here, while diplomatic efforts have met with some success in the Philippines, peaceful reconciliation in Peru has not been possible.

Another resource that may cause conflict is water. This is in part because water shortages play a large role in constraining agricultural productivity. And, to state the obvious, water often moves from one country to another. Almost 50 countries have more than three-quarters of their land in international river basins; 214 river basins around the world are international in character. While resource constraints tend to threaten internal stability, water shortages in some regions threaten international conflict.

... Whether this will continue to be the case in the future remains very much problematical. Suffice it to say, that foreign policy experts are increasingly on the record as stressing that armed clashes over water and water rights are likely to be a major point of conflict in the future. To be sure, there are few issues where active diplomacy will have to be brought to bear to reduce the prospect for conflict over environmental issues of such potential sensitivity as those which are related to water.

This said, a third area of resource scarcity—one related to fish—is also much involved as a matter of environment and diplomacy. In the first instance, fish remain the most important source of animal protein in many developing countries. Yet, all of the world's major fishing areas—all 17 of them—are close to reaching, or have exceeded, what we perceive to be their natural limits.

... Finally, a fourth area of resource scarcity is in the area of forests. Forests are linked with the other resources in a variety of ways. Deforestation accelerates erosion, changes local hydrological cycles and precipitation patterns, and decreases the land's ability to retain water during rainy periods. Resulting flash floods destroy irrigation systems and plug rivers and reservoirs with silt. And when silted coastlines decimate fisheries, fishermen turn to agriculture and then join starved farmers in cutting down more forest—completing a vicious cycle.

... The questions of fish and forests as environmental issues provide us with a good lead into the second aspect of today's discussion, namely, those areas where our current diplomatic strategy is concentrated. In addition to these two areas, there are four others which are also worthy of mention in this context: marine pollution, chemicals, biosafety, and climate change.

... The use of certain toxic chemicals and pesticides (like DDT and PCBs) in developing countries and East-

ern Europe and the newly independent states (NIS) is an increasing health threat to U.S. citizens. Most of these toxic chemicals were banned long ago in the United States, because they do not biodegrade and have serious negative impact on human health and the environment. These chemicals are transported long distances through the air and water, thus affecting populations far from their region of origin (they tend to travel from warmer to colder climates and are found with telling effects even in remote, non-industrialized parts of the Arctic). Because this poses a long-term health and environmental threat to the United States, we have placed a high priority on developing international agreements to regulate the trade, production and use of the most hazardous of these chemicals and pesticides, also known as persistent organic pollutants (POPs). We are in the process of urging all countries to work together toward an effective regime to address this issue. We are also working to provide improved mechanisms for addressing risks associated with other hazardous chemicals, including through participation in the development of a legally binding instrument for prior informed consent for the export of certain of these hazardous chemicals. This is one diplomatic effort which, with continued patience and initiative, should result in a meaningful result sometime during the next year.

The Parties to the Biodiversity Convention have decided to negotiate a "biosafety" protocol to regulate the transfer and handling of organisms that have been genetically modified through modern biotechnology. . . .

... Perhaps the leading environmental issue confronting the world today is the question of global warming or "climate change" as the problem is more accurately described. . . . The Administration has pushed for a sensible but progressive domestic and international approach to this problem, including the negotiation of stronger steps under the 1992 Climate Convention.

... In this regard, I think it is both important and appropriate to applaud the recent MOU signed by Secretary Perry, Secretary O'Leary, and EPA Administrator Browner to strengthen coordination of efforts to enhance the environmental security of the United States, recognizing the linkage of environmental and national security matters. This agreement is particularly timely given Secretary Christopher's initiative to better integrate environmental concerns into all aspects of our foreign policy. . . .

Memorandum of Understanding among the Department of Energy, Department of Defense, Environmental Protection Agency

3 July 1996 (excerpts)

The Environmental Protection Agency, the Department of Energy, and the Department of Defense (the Parties),

Recognizing that America's national interests are inextricably linked with the quality of the earth's environment, and that threats to environmental quality affect broad national economic and security interests, as well as the health and well-being of individual citizens;

Recognizing that environmental security, including considerations of energy production, supply and use, is an integral component of United States national security policy and that strong environmental security contributes to sustainable development;

Recognizing that environmental degradation can have global consequences that threaten the environment, health and safety in the United States;

Recognizing the central role of science and technology in promoting sustainable development and in responding to global threats to environmental security;

Recognizing the need to overcome the environmental legacy of the Cold War in order to promote prosperity and stability;

Recognizing that the Secretary of State has primary responsibility for the conduct of United States foreign policy;

Recognizing that each of the Parties has a different experience, expertise, and perspective and that their collaboration can uniquely assist in addressing international problems of importance for environmental security and can serve as a model for other countries;

Recognizing that each of the Parties has an important role to play in demonstrating and promoting approaches and technologies that achieve safe and effective environmental management in defense-related activities in the United States and abroad;

Recognizing that the Parties have established cooperation with the private and public sectors as a basis for jointly addressing sustainable development and environmental security; and

Believing that enhanced cooperation on international environmental protection issues that is consistent with United States foreign policy and national security objectives is of mutual benefit,

Have agreed as follows:

I. Purpose

1. The purpose of this Memorandum is to establish a framework for cooperation among the Parties to strengthen coordination of efforts to enhance the environmental security of the United States, recognizing the linkage of environmental and national security matters.

The Parties do not intend this Memorandum to create binding legal obligations.

II. Scope

1. The Parties shall develop and conduct cooperative activities relating to the international aspects of environmental security, consistent with U.S. foreign policy and their individual mission responsibilities, utilizing their legal authorities and facilities appropriate to specific tasks directed at achieving mutually agreed upon goals.

2. Cooperative activities under this Memorandum may be conducted in areas contributing to improved environmental security, where such cooperation contributes to the efficiency, productivity, and overall success of the activity. Such activities include: information exchange, research and development, monitoring, risk assessment, technology demonstration and transfer, training, emergency response, pollution prevention and remediation, technical cooperation, and other activities concerned with radioactive and non-radioactive contamination and other adverse environmental impacts on terrestrial areas, the atmosphere, hydrosphere, cryosphere, the biosphere (including human health) and the global climate system; defense or defense (strategic) industrial activities, energy production, supply and use, and related waste management; or other such matters as the Parties may agree upon, according to criteria to be mutually developed by the Parties.

Official Statements

3. The forms of cooperation under this Memorandum may consist of the following: participation in joint projects addressing the activities cited in paragraph 2 above, including sharing of technical expertise; cooperative work to institute and enhance environmental management systems related to defense activities; information management and exchange; participation in relevant symposia, conferences and seminars; development of joint scientific and policy publications; provision of equipment and associated materials to foreign entities through the appropriate instrument, consistent with United States law; temporary assignments of personnel from one Party to another; and such other forms of cooperation as the Parties may agree upon.

4. Each Party may use the services of and enter into agreements with appropriate institutions, such as universities and governmental and non-governmental organizations, to develop and conduct activities under this Memorandum, consistent with applicable law. Where required by law, applicable regulations or procedures, such agreements shall be subject to consultation with and the concurrence of the Department of State. [. . .]

Related Official Correspondence

[To Secretary of State Warren Christopher]

July 1996

Dear Mr. Secretary:

We are writing to apprise you of the collaborative action taken by the Department of Defense, Department of Energy, and the Environmental Protection Agency in the area of environment and security. Our action complements your initiative to incorporate environmental issues in the Department of State's core foreign policy goals.

As you stated in your Stanford speech: "The environment has a profound impact on our national interests in two ways: First, environmental forces transcend borders and oceans to threaten directly health, prosperity and jobs of American citizens. Second, addressing natural resource issues is frequently critical to achieving political and economic stability, and to pursuing our strategic goals around the world." In order to address critical issues related to environment and security most effectively, our agencies must work together to maximize our collective statutory and mission responsibilities, capabilities and resources.

The enclosed Memorandum of Understanding on Cooperation in Environmental Security is responsive to these concerns and establishes a framework within which our agencies can work more productively together, and with our foreign partners. Projects under this Memorandum will include work in both military and civilian fields and cooperation on a wide range of issues including scientific research and development, technology transfer, regulatory reform and environmental management. A goal of our projects is to enhance the capacities of foreign states to protect the environment.

Our first activities under the Memorandum include plans to characterize and address radioactive contamination and environmental degradation in the Former Soviet Union, to support the creation of an effective regional environmental framework in the Baltic Republics, and to enhance the work of the U.S. Energy Technology Centers in the Former Soviet Union, Eastern Europe and China. We expect that activities in all these areas will benefit the environment, further U.S. foreign policy goals and national security interests, and expand opportunities for private U.S. investment abroad.

As we pursue these and other activities under the Memorandum, we will continue to coordinate closely with the State Department in order to support the important issues of environment and security.

Sincerely,

William Perry
Department of Defense

Hazel R. O'Leary
Department of Energy

Carol Browner
Environmental Protection Agency

[To EPA Administrator Carol Browner]

August 8, 1996

Dear Ms Browner:

It was gratifying to receive your letter regarding the Memorandum of Understanding Concerning Cooperation in Environmental Security which you recently signed with Energy Secretary O'Leary and Defense Secretary Perry. The roles of your three agencies in promoting environmental security are a significant contribution not only to protecting the environment but to pursuing our national interests in key regions.

This agreement is timely, given our initiative at the Department of State to better integrate environmental concerns into all aspects of our foreign policy. We are taking a number of steps towards this goal—from incorporating environmental planning into each of our bureaus to designating key embassies as environmental hubs to address region-wide natural resource issues. These regional hubs will help to coordinate with national governments, regional organizations, and the business community to identify environmental priorities. Your combined effort in the Baltics provides a good example for other agencies on the importance of coordinating transboundary environmental concerns.

We welcome the opportunity to collaborate with you as you begin activities under this agreement. The Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs, Eileen Claussen, has designated her senior advisor, Sarah Horsey-Barr, to work with the program coordinators.

Sincerely, Warren Christopher

New Publications

Book Reviews

Fighting for Survival: Environmental Decline, Social Conflict, and the New Age of Insecurity

by Michael Renner

W.W. Norton and Company, 1996. 240 pp.

Reviewed by Peter Stoett

This book is part of the Worldwatch Environmental Alert Series edited by Linda Starke. Michael Renner is a Senior Researcher at the renowned Worldwatch Institute, and he has put together a text that is highly readable and informative. Though it might be criticized in academic circles as heavy on description but rather light on analysis, Renner's accessible style and conscious avoidance of jargon is best viewed as beneficial to the environmental security literature as a whole.

Renner describes the effects of environmental scarcity with reference to conflict, global warming, demographics, population movements, inequality, and—ultimately—the insecurity that characterizes the post-Cold War era. He links the global and local aspects of these developments, and argues that environmental crises of both orders can induce conflict. Yet he tempers his analysis with the realistic caution that “Typically there is no such thing as an exclusively ‘environmental conflict’” (page 75). Many other factors will always be involved, and to Renner's immense credit he manages to discuss many of them within the space of this short, yet very ambitious, book.

In the second half of the book he moves beyond describing the problems we face and into what he considers more positive suggestions for change, including a new North-South compact of sorts, decreased militarism, funding for conflict prevention, and the redistribution of land in many southern states. While Renner certainly succeeds in convincing us that these things need doing, we get more about why than how in the end.

Nonetheless, *Fighting for Survival* offers the reader a broad overview of the burning security questions of our time. The author has made good use of his access to statistical resources (for which Worldwatch is so famous), and the writing flows from one page to the next. The book would make an excellent introductory text in environmental security studies, and should be considered for any course in global issues. One might argue that the book tries to do too much, but this is overcome by the fact that, given its intended general audience, it largely succeeds.

As such, complaints about the book are few. Renner includes two short case studies of Rwanda and Chiapas. These promising studies both reinforce the need to look at land tenure as a fundamental variable affecting conflicts over resource utilization. However, Renner does not provide enough detail in either case to make them a substantial contribution; nor does he make much of an attempt to identify the similarities and differences between the two.

Some statements are made without adequate treatment. The author argues on page 101 that “official definitions of what constitutes a refugee and who therefore is eligible for assistance and protection are outdated and overly narrow,” without offering a better definition that would have any chance of political acceptance. He also tells us that, with the rise of NGOs in world politics, “No longer can governments engage in secret diplomacy against their own people, and no longer can corporations easily hide behind a smokescreen of proprietary information and private property rights” (page 152). This is of course an optimistic overgeneralization. Indeed, Renner might have expanded considerably on his implicit faith in NGOs, especially in the latter sections of the book.

When discussing his plans for a “Human Security Budget,” Renner brings up the quickly shelved yet still promising idea of obtaining funding for conflict prevention and southern development by fees levied on “air travel, maritime shipping, telecommunications, and trade (including arms sales).” Though there are problems inherent in all these possible revenue sources, it is the “arms trade” notion that really needs explication. Do we want to finance environmental security with money from militarism? Do we want to legitimate arms sales in this fashion?

But these are small points. This book succeeds because it clearly outlines the problems we collectively face, even if it does not provide all the answers we need. It is aimed at a broad audience that needs to understand better key global trends. After all, esoteric theoretical discussions of environmental security paradigms have a limited (if devoted!) following. Renner's book not only serves as an excellent background, but may inspire others to question the meaning of security, and its policy implications, in our time.

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BUILDING BRIDGES: Diplomacy and Regime Formation in the Jordan River Valley

by Randy Deshazo and John W. Sutherlin
United Press of America, 1996. 190 pp.

Reviewed by Jeffrey K. Sosland

For the past half-century power politics have been the organizing principle for Middle East diplomats and scholars. Political realists have used the Arab-Israeli conflict as a proving ground for their pessimistic approach to international relations. Given that the region has been wracked by years of war and protracted conflict, the approach of these political theorists is understandable. However, with the advent of the peace process and with initial indications of a regional paradigm shift from conflict to cooperation, developing new models to understand the Arab-Israeli arena seems more germane. Water scarcity is a pivotal issue that offers a good testing ground for different theories of international relations for this region.

In *Building Bridges*, Deshazo and Sutherlin apply a multilateral institutional approach to explain the impact of water scarcity in the Jordan River Valley. Their study can be divided into three parts: (1) a historical overview of the Arab-Israeli conflict and the recent Madrid peace process; (2) an outline of various approaches to cooperation and of many different methods for testing these theories; and (3) a proposed model for a "Near Eastern water regime."

The authors conclude that for a regime to be effective, the institutions associated with it should have a legal structure, financing institutions, dispute resolution mechanisms and an epistemic community which is a professional group, such as water technocrats, whose members share common values; as well as a common understanding of a problem and its solution. The authors' multilateral institutional approach leads to their policy recommendation for a "peace pipeline" — a water conveyance system from Turkey to some of the water-poor states in the Middle East.

The authors are on the mark that cooperation will be more probable and lasting if there is a regime that has clear rules, available financing, an international community of experts that supports the regime and the means to punish states that cheat. Nonetheless, the book fails to address adequately the political and economic challenges of water scarcity in the Arab-Israeli arena. First, while the authors highlight the Arab-Israeli conflict, they do not adequately examine the political history of the conflict over water. While there may be a paradigm shift from conflict to cooperation, one lesson learned from the past is that Middle East states are suspicious of plans that would unnecessarily increase their dependence on imported water and, thus, diminish their autonomy. Second, the "peace pipeline" is a supply-side, mega-project which will

probably never go beyond the planning stages because of the heavy costs and complicated politics. Currently, there are far cheaper and easier ways to address the region's water scarcity problems.

Improving water demand management offers a more realistic and effective approach to resolving the region's water scarcity problems than the "peace pipeline." The World Bank's emphasis is on reducing the amount of water allocated to agriculture, which Deshazo and Sutherlin argue against (p.100), while increasing the use of treated waste water in the farming sector. This incremental approach, which is similar to the method actually being pursued in the Middle East multilateral peace talks on water resources, involves an epistemic community, international funding and interstate cooperation. In contrast to Deshazo and Sutherlin's approach, the World Bank's and multilateral peace talks' institutional approach call for building many small bridges rather than a single onerous and enormously expensive water pipeline.

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THE ENVIRONMENTAL TRAP: The Ganges River Diversion, Bangladeshi Migration and Conflicts in India

by Ashok Swain

Department of Peace and Conflict Research
Uppsala University, Sweden
Report No. 41, 1996. 135 pp.

Reviewed by Deepa Khosla

Population movements both within and across states are a major concern for individual states and the international community in the post-Cold War era. Worldwide there are estimated to be some 20 million refugees with an additional 10 million people displaced within their own countries. The inter-relationships between such flows, environmental stresses, security, and conflict have received much attention in recent years. Swain's study is a valuable contribution to our growing body of knowledge in these areas as it helps further both theoretical clarity and empirical research on South Asia.

What constitutes a refugee and how to incorporate environmental stresses in such definitions are widely disputed topics among both scholars and policymakers. While the term "environmental refugees" is currently popular among some academics, Swain argues that clearer distinctions are required between forced (push) migration and movements based upon both push and pull factors. He focuses on the notion of migration, defining environmental migrants as those who are "forced to move away from their homes as a result of

the loss of their livelihood and/or living space due to environmental changes (natural as well as anthropogenic) and migrate (temporarily or permanently) to [the] nearest possible place (within or outside the state boundary) in search of their sustenance" (page 17). For him, economic migration is largely a voluntary process, although he concedes that push factors might be as relevant.

However, making such distinctions in practice can be problematic. Extreme poverty coupled with very poor economic conditions can push peoples to migrate both within and across states. For example, it can be argued that international economic sanctions and a deepening economic crisis pushed the Haitians to abandon their homes and seek refuge in the United States in 1994. Were the Haitians economic migrants or did the economic crisis just act as a trigger to the underlying environmental stresses leading to the exodus?

Efforts to refine a definition of environmental refugees are important for both conceptual and policy-relevant reasons. Currently, the United Nations definition of a refugee does not encompass internal migrants or those who migrate due to environmental degradation in their areas of residence. While new categorizations would be a valuable addition, the role of economic factors and their interaction with environmental stresses require further clarification.

In the study, Swain develops a sequential model to explain how environmental degradation can promote migration and potentially foster three forms of conflict. Conflict can arise between the state and its population due to migration from rural to urban areas. Secondly, cross-border migration can lead to disputes between migrants and indigenous groups in the receiving state. The third conceivable type of conflict is between the two neighboring states. This framework allows for multi-level analyses, drawing attention to how internal environmental stresses can become internationalized.

An expanded framework for future research could include another potential form of conflict: disputes between migrants and indigenous populations within an affected state. Violent intergroup conflict continues today in the Chittagong Hill Tracts of Bangladesh largely due to a significant influx of Bangladeshis into the tribal region. In addition, the role of international actors such as international and non-governmental organizations along with multinationals could be explicitly considered.

The water dispute between India and Bangladesh dates back to 1961 when India unilaterally decided to construct the Farakka Barrage on the Ganges River in order to increase its dry season flow of water. Although India and the lower riparian state, Bangladesh, negotiated several interim agreements to share the dry season flow, India has for the last two decades continued its unilateral withdrawals. Swain's study reveals that

in southwestern Bangladesh, where some 35 million people rely on the Ganges River for their source of livelihood, the reduced water supply has led to environmental stresses such as decreased agricultural productivity and fish stocks, increased salinization, the destruction of forests, and an increased number of floods.

During the 1970s and early 1980s, he argues that high population density and limited economic prospects in the rest of Bangladesh stimulated many of these environmental migrants to cross into India. This large-scale migration into tribal states such as Assam, Mizoram, and Tripura promoted conflicts between the migrants and the indigenous groups who feared being overwhelmed by "outsiders." In Assam, for instance, violent attacks against the Bangladeshis and the state apparatus continue to be utilized to press for their deportation. A 30-year agreement reached between India and Bangladesh in December 1996 holds out the promise of a peaceful resolution of a potentially violent inter-state situation.

This case study expands our empirical base on the impacts of resource scarcity and raises some important conceptual questions. It can be particularly useful for policymakers as it clearly reveals how a powerful state can become embroiled in a violent regional conflict as a result of its development policies.

Future studies, including those that analyze the tentative resolution of the Ganges water dispute, could benefit by focusing more explicitly on the policy choices of both receiver and sender states. India, for instance, has often used the Bangladeshi refugees to counteract the separatist demands of its tribal groups. Migrants sometimes utilize their host societies or are used by the host government to advance conflicts within the sender state. Such actions can further complicate the relationship between the two affected states and potentially draw in other external actors. Research in areas such as these will supplement our knowledge about the complex relationships between the environment, conflict, and refugee flows along with aiding growing research on early warning systems.

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**THE BETRAYAL OF SCIENCE AND REASON—
How Anti-Environmental Rhetoric
Threatens Our Future**

*by Paul H. Ehrlich and Anne H. Ehrlich
Island Press, 1996. 335 pp.*

Reviewed by Stephanie Wolters

Paul and Anne Ehrlich's latest book, the *Betrayal of Science and Reason—How Anti-Environmental Rhetoric Threatens Our Future*, is not only a comprehensive and

well-argued refutation of the recent backlash against the environmental movement, but also a valuable insight into the difficult arena of policymaking, public information and the role of science in the environmental movement. The Ehrlichs' analysis of the many underlying reasons for the recent successes of the anti-environmental movement provides a useful tool for those working to protect the environment, as well as for anyone active in the public sector today.

The Ehrlichs describe the anti-environmental "wise-use" movement as motivated by loose political agendas designed to protect narrowly defined economic interests. They contend that the main objectives of the wise-use movement are to block further environmental regulation and to free business from the pressures of enforcing strict environmental standards. In their attempts to achieve these goals, the wise-use adherents have solicited the help of an increasingly large store of marginal science: science which, as the Ehrlichs argue, attempts, often on the basis of narrow scientific evidence, to refute the existing scientific consensus on such matters as global climate change, the impacts of pollution, and the importance of biodiversity.

It is within the context of this discussion that the Ehrlichs address the underlying issues of scientific integrity and the perception of science by the public: "while scientific research is not properly carried out by consensus,...., science policy should be. That is, in

most cases, society's best bet is to rely on the scientific consensus—even though once in a while, the contrarians will prove to be correct and will eventually change that consensus. Society normally cannot afford to act solely on far-out views on scientific issues—most of which eventually prove to be wrong." The Ehrlichs assert that criticism is an integral part of the evolution of science policy, but strongly urge that this criticism be based on sound scientific work and not the need to bend realities to suit a political agenda.

As is frequently the case in the public setting, the environmental movement must struggle to gain the attention of the public and decision makers. The Ehrlichs point out that this has been hampered by factors which are at once endemic to the environmental movement as well as to public education in general. First the frequently intangible impacts of global climate change or toxic pollution make it difficult for individuals to identify with these issues. Second, many of the processes of environmental degradation are gradual and take place over the long-term; this too makes it difficult for people to perceive the need for immediate action. In addition, the basic lack of scientific knowledge on the vast part of the public have severely hindered the successes of public education and lobbying campaigns. Finally, the Ehrlichs argue that recent improvements in the quality of the environment have led to a complacency amongst the general public, which wonders why continued or even increased regulation is necessary. The movement against environmentalists has capitalized on these factors and has helped to "create public confusion about the character and magnitude of environmental problems, taking advantage of the lack of consensus among individuals and social groups on the urgency of enhancing environmental protection."

It is to counter this trend that the Ehrlichs have written this eloquent defense of the environmental movement, and the need for scientific integrity. *The Betrayal of Science and Reason* refutes erroneous information provided by the anti-environmental movement, and provides accurate information to the public. In chapter five for instance, the authors tackle one of the biggest anti-environmental statements, that there is no overpopulation. The Ehrlichs write: "there is overpopulation when organisms (people in this case) become so numerous that they degrade the ability of the environment to support their kind of animal in the future." They point out that resources such as soils and water are already being depleted faster than they are being recharged. While technology may help to alleviate some of the pressure on such resources, widespread behavioral changes, especially on the part of those living in the industrialized world, would be necessary to support 6 billion people indefinitely. Other chapters address such anti-environmental myths as the anti-economic growth nature of the Endangered Species Act,

NEW ATLAS EDITIONS ASSIST ENVIRONMENT AND SECURITY ANALYSTS

Two recently published atlases may assist many environment and security researchers: *The State of War and Peace Atlas* (1997) and *The State of the World Atlas* (1995). *The State of War and Peace Atlas*, edited by Dan Smith of the International Peace Research Institute of Oslo, features a table of wars from 1990-1995 and 34 sets of illustrated color maps, graphs and charts with accompanying text under the following categories: (1) Dynamics of War; (2) Wars of Identity and Belief; (3) Wars of Poverty and Power; (4) The Military World; (5) Dynamics of Peace. The volume's unique format gives shape and meaning to statistics about volatile countries and regions and to key issues such as terrorism and military spending. *The State of the World Atlas*, edited by Michael Kidron and Ronald Segal, similarly translates key political, economic and social indicators—from international debt levels to population trends to health statistics—into color maps and graphics. While both atlases contain only basic information about environmental and population trends, they are notable for their breadth of coverage and ability to graphically link a range of associated variables. Both volumes are published by Penguin Reference.

the unnecessary regulation of toxic pollutants such as DDT and the charge that environmental protection will cost jobs.

One of the underlying triumphs of this book is its insistence upon seeking solutions for the current dilemmas facing the environmental movement. In the final chapters, the Ehrlichs look beyond the rivalry between environmentalists and anti-environmentalists, and focus on some of the actors who have the ability to frame the debate in the minds of the public and policymakers: journalists and scientists. The Ehrlichs challenge the journalistic community to acknowledge the integral role they play, and to report accurately and critically on all environmental issues, not just those which are most sensational. In support of this effort, they also make the extremely important call to the scientific community to become more actively involved in popularizing the results of science, and to move out of the ivory tower and engage in public debate and education.

The Betrayal of Science and Reason practices what it preaches; its well organized and reader friendly format make it a useful resource for anyone interested in the subject matter and a prototype of the public education for which the Ehrlichs are calling. It can be read as a whole as a comprehensive analysis of the anti-environmental movement, or serve as a valuable reference guide to the current debates between anti-environmentalists and environmentalists. What emerges is not only a catalogue of sound arguments against the recent backlash, but perhaps more significantly: the truism that good science policy in support of the environmental movement can only be the result of interactions between scientists, journalists, policymakers, environmental groups and the general public.

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NATIONAL DEFENSE AND THE ENVIRONMENT

by Stephen Dycus

University Press of New England, 1996. 194 pp.

Reviewed by Adam N. Bram

The American people have long supported the development and maintenance of a strong national defense. For the last half-century, the United States has operated under a traditional security equation. With the Cold War over, the U.S. government and the American people have begun to reexamine the definition of national security. Assuming that quality of life is a primary component in the post-Cold War security equa-

tion, and good health and a clean environment are key elements of that calculus, *National Defense and the Environment* posits that environmental protection must become a fundamental directive for all U.S. agencies involved in the nation's defense.

With case scenarios and figures, Stephen Dycus illustrates the costly toll that the United States has incurred over the last half-century by building military might at the expense of the environment. For example, the remediation of the highly contaminated Jefferson proving ground—where the Army has fired about 23 million rounds of ammunition since 1941—is expected to cost \$5 billion.

The Department of Defense and the Department of Energy have been the primary agencies for ensuring that the United States created and sustained a formidable military presence to preserve America's security. Environmental protection was not, however, a priority for those two agencies. Dycus notes that it is only within the last decade that both DoD and DoE have begun seriously to address this dark legacy of the Cold War and to change their environmental policies. In 1993, the Department of Defense formed the Office of Environmental Security to oversee the remediation of polluted military areas. For its part, the Department of Energy is no longer producing nuclear weapons and has promised to operate "all facilities in full compliance with applicable laws and regulations to [clean up] inactive sites and facilities so that no unacceptable risk to the public or the environment remains."

What needs to occur now, maintains Dycus, is that the policies of national defense must be reconciled with the popular will for clean air, land and water. *National Defense* poses the question, can the United States have both a strong national defense and a clean environment? Dycus answers in the affirmative, echoing the words of Former Defense Secretary Dick Cheney that "Defense and the environment is not an either/or proposition. To choose between them is impossible in this real world of serious defense threats and genuine environmental concerns."

The focus of *National Defense* is on the applicability and non-applicability of U.S. environmental laws and regulations to national defense activities. The author details the purpose of most domestic environmental laws, their limitations, and how Congress can amend the existing laws or pass new legislation; how the executive branch, namely the agencies, should enforce the laws; how the courts might better interpret the laws; and how the public should demand this necessary reconciliation of environmental protection and national defense.

Currently, a wide array of U.S. environmental laws mandate planning or require protection or restoration of the environment. However, until the late 1980s, DoD and DoE operated under informal policies of regulatory noncompliance. Insufficient pressure by Congress

and officials and a lack of public information helped foster this disregard for the environment. *National Defense* acknowledges that DoD and DoE have made rapid progress to correct their harmful policies. In 1995, DoE was spending over \$6 billion a year on environmental programs. It spent \$17 million on waste reduction alone. DoD had budgeted more than \$2 billion in the same year for environmental remediation at active and formerly used military installations and \$500 million for base closures. DoD has also begun implementing policies of source reduction and pollution prevention. While both agencies are presently providing good faith efforts to address their past injurious activities, decades of inactivity and flagrant abuse have scarred the land, air and water.

The current problem is not one of disregard, but one of scale, commitment, and dwindling resources. According to an annual report released in 1993 by the Department of Defense, a complete investigation and remediation at all DoD sites will cost between \$25 and \$42 billion dollars. Such a clean-up would take more than 30 years. Radioactive waste, hazardous waste, or mixed waste contaminate 137 DoE installations in 34 states and territories. The General Accounting Office estimates that the cost to restore the Department of Energy's nuclear weapon's complex ranges from \$200 to \$300 billion. "The environmental bill for nearly a half-century of Cold War has come due," proclaims Dycus. In these times of deficit reduction and budget cutting, a public debate must ensue that intelligently culminates with a price that Americans are willing to pay to defense-related environmental degradation.

National Defense compiles several dozen cases that loudly sound the public alarm. Probably the most convincing cases deal with nuclear processing and waste disposal. In 1993, DoE estimated that radioactive waste from its nuclear weapons complex totaled 600,000 cubic meters. This figure does not include the some 2,700 metric tons of spent nuclear fuel being held in DoE storage pools, dangerously waiting for permanent storage. Of separate concern is the fact that experts believe that DoE cannot account for as much as 1.5 metric tons of plutonium, enough to make three hundred nuclear weapons.

Much controversy exists over the selection of a manner or place to safely and permanently dispose of DoE's nuclear waste. The Clinton Administration recently announced a two-track strategy to dispose of the 50 tons of surplus plutonium from America's nuclear weapons stockpile. Under this plan, the United States will burn some of the plutonium, as a mix called MOX, in commercial nuclear power plants. The DoE will vitrify the remaining surplus in glass or ceramic logs and intern them in an approved underground storage site. Congress has proposed two permanent nuclear waste storage sites at the Yucca Mountain, Nevada and at the Waste Isolation Pilot Project (WIPP) near Carlsbad,

New Mexico. The EPA is currently reviewing an application by DoE to use the WIPP site, making it a likely candidate to receive the logs and spent MOX fuel. Arms control advocates oppose the two-track plan because of fears of nuclear theft. Environmentalists fear that U.S. use of MOX for commercial reactors will encourage expanded plutonium production overseas. In *National Defense*, Dycus throws his voice to the opposition, raising concerns over DoE's ability to guarantee the safe consignment of high-level radioactive waste in underground sites for thousands of years.

One of the largest radioactive waste clean-ups is at the Hanford Reservation. Built in the 1940s as part of the Manhattan Project, this nuclear production facility in southeastern Washington produced plutonium for the nuclear weapons. Production ended in 1989, leaving around 1,700 sites contaminated with hazardous and radioactive wastes. Recent estimates to remediate Hanford were running at \$1.4 billion a year and rising. DoE spent ten percent of its entire 1994 environmental budget (\$200 million) just trying to remediate 177 underground tanks at Hanford; 68 of those tanks are probably leaking their contents of liquid or high-level transuranic wastes. Such wastes will remain dangerously radioactive for thousands, if not millions of years. Dycus suggests that it is uncertain what deleterious health effects have already been inflicted on Hanford employees, local residents and the ecosystems.

In contrast, scientists and health experts have calculated the precise public exposure of radioactivity from the Los Alamos National Laboratory near Albuquerque, New Mexico. In the last decade alone, this nuclear weapons research and development facility has released more than 3.2 million curies of radioactivity into the atmosphere—an amount equal to 250,000 times that of the release at the Three Mile Island accident.

Nonradioactive and mixed hazardous waste have also been major by-products of military activities. Two environmental laws are the primary regulations for hazardous waste: the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Other laws frequently overlap, such as the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA). RCRA is the law that primarily applies to the treatment, storage and disposal of hazardous waste. Dycus reports that until 1992, when Congress passed the Federal Facility Compliance Act, EPA had not enforced RCRA in the same manner against federal facilities as it did against private ones. CERCLA overlaps with RCRA and is primarily responsible for clean-ups. The applicability and enforcement of RCRA and CERCLA and other laws to federal facilities are still being developed. *National Defense* provides several examples that demonstrate the need for Congressional intervention to address military site contamination.

Despite the bleak portrayal of the environmental blight left by the Cold War, Dycus finds reason for optimism. The author points to the American public's growing intolerance for needless threats to health or the environment. Dycus suggests that, despite some recent movements away from environmental protection, Congress will probably remain responsive to public demands. The Departments of Defense and Energy have been adopting programs and policies that show a genuine change in attitude among staff towards environmental compliance. While Dycus admits that administrative, financial, diplomatic, and political challenges remain, he states that America has no choice but to reconcile its policies of national defense and environmental protection.

The Cold War can teach U.S. policymakers some important lessons. *National Defense* clearly conveys that because there will always be "war and rumors of war," there will always be national sacrifices that affect the environment. Having demonstrated the enormous cost of military preparedness without regard to environmental protection, Dycus urges us "not to destroy the very thing we would fight to protect." Defense and the environment need not be an either/or proposition. Yet, when a choice must be made, the author argues that, as a nation, we must have settled procedures for determining when and how to choose.

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WHAT'S NEW IN PERIODICALS

"The Insecure State: Reflections on *the State and Security in a Changing World*"

by Stephen Del Rosso, Jr.

DAEDALUS: Journal of the American Academy of Arts and Sciences, vol. 124, no. 2
1995, pp. 175-207.

In his article, *The Insecure State: Reflections on "the State" and "Security" in a Changing World*, Stephen Del Rosso, Jr. discusses the pressing need to reexamine the state as the central focus of security. He also reviews various efforts to expand the concept of security to include non-military threats. The first half of this article focuses on the concept of "the state," and the way in which it has changed or been perceived to have changed since the end of the Cold War. Del Rosso acknowledges the "strict constructionist" school's fear that such a redefinition of security threatens to destroy the field's "intellectual coherence and make it more difficult to devise solutions..."; however, he argues that:

"the inability of scholars and policymakers to fully comprehend the transformations taking place in the contemporary state is . . . a major factor contributing to the clouded perception of security in the final decade . . . of this century. . . . This persistent inability to understand the true nature of statehood, to mistakenly apply the outmoded notions of the past to contemporary affairs, is at the heart of the conceptual muddle surrounding the meaning of security in the post-Cold War world."

While there have been many efforts to reconceptualize the state, Del Rosso asserts that the state's "traditional" capabilities and authority have been undermined by recent advances in the world economy, advances in communication and transport, secessionist pressures,

and environmental-health-demographic trends. The end result has thus been that territorial boundaries are becoming increasingly meaningless, and the state is increasingly being seen as unable to provide for the general welfare and protection of its citizens. In the second part of the article Del Rosso describes the growing desire for a new paradigm to replace the outmoded Cold War standard and the calls for a fundamental shift in focus from weapons, arms control and geopolitics to a new focus on geoeconomics. He argues that the most notable efforts throughout the 1960s, '70s, and '80s to expand the traditional concept of security failed to resonate widely in the Cold War climate. Only towards the end of the Cold War did appeals to redefine security win widespread attention. While Del Rosso concludes that the state will continue to provide a crucial frame of reference for the problems on the emerging security agenda, he argues that the world is in dire need of a new definition of the state that not only fully reflects its dynamic qualities, but that is capable of taking into account the unprecedented, and often poorly understood, changes taking place in the world.

by Janelle Kellman

"Broadening the Agenda of Security Studies: Politics and Methods"

by Keith Krause and Michael Williams

Mershon International Studies Review, vol. 40
1996, pp. 229-254.

This piece is divided into three well-crafted sections which together provide an overview of the contemporary discussion of redefining security. The first section argues that traditional security ideas and conceptions—based on the belief that the state is the primary object of security concerns—are incapable of incorporating

important non-military dimensions of security. The second section shows that traditional neorealist studies may be fundamentally flawed and unable to meet many of the standards that they impose on other disciplines. This section highlights several tensions and contradictions within the neorealist literature that render rather problematic its foundational claim to scientific objectivity. The third section parallels the first by evaluating alternative approaches to the concept of "security." Krause and Williams do a thorough job of raising significant challenges to both the traditional and alternative approaches. The authors do not conclude that one line of thinking is better than the other; rather, their efforts aim to further the debate by presenting an overview of both sides. Krause and Williams conclude that both views are needed. The authors conclude that it may be necessary to broaden the agenda of security studies to narrow the agenda of security; a more profound understanding of the forces that create political loyalties and give rise to threats can lead to the progressive removal of issues from the security agenda.

by Janelle Kellman

"Security Studies and the End of the Cold War"

by David A. Baldwin

World Politics 48

October 1995, pp. 117-41.

This piece argues that security studies might be more appropriate as a subfield of international relations, than as a separate discipline. Baldwin asserts that while today's world is very different than the period from 1945-55, some of the modes of thought, policy concerns, concepts of security, and discussions of statecraft from that time period appear more relevant to the post-Cold War period than those which emerged directly from the Cold War. The article is divided into three sections, the first of which reviews security conceptions from the interwar period to the present. Baldwin examines the tendency which emerged during the Cold War to overemphasize the military aspects of national security at the expense of historical, psychological, cultural, organizational, and political contexts. He asserts that the Cold War militarized American security policy, and security studies, making military instruments of statecraft the central if not the exclusive, concern of security specialists. In the second section, Baldwin assesses the relevance of security studies to the new world order, suggesting that the field's treatment of national security raises questions about its relevance to the post-Cold War world. Those writing before the Cold War not only defined national security in broader terms, but also had a more comprehensive view of the policy instruments with which security could be pursued. Such a broad view is likely to be more useful in the post-Cold War world than one confined to military state-

craft. The third section offers proposals for the future study of security.

by Janelle Kellman

"The Greening of U.S. Foreign Policy"

by Richard A. Matthew

Issues in Science and Technology, vol. XIII, no. 1

Fall 1996, pp. 39-47.

This article discusses the possibilities for incorporating environmental issues into American foreign policy. Despite optimism that the Clinton Administration would bring environmental issues to the forefront of policymaking, Matthew argues that the first Clinton Administration was not nearly as aggressive on environmental issues as expected. He highlights Secretary of State Warren Christopher's promise made in April 1996 to "green" foreign policy, but he asks the reader to question the potential for any real change in the next four years. After outlining some of the current political obstacles to implementing Christopher's agenda and significant opposition in the Congress and in the security, intelligence and diplomatic communities, Matthew believes that there is indeed reason for optimism.

To understand fully environmental problems, policymakers must have both scientific knowledge and an understanding of the interactions between ecological and social systems. While Matthew agrees that Christopher's proposals are promising, he feels that they are unfocused and he recommends various moderate courses of action, to enhance the role of environmental issues into American foreign policy. According to Professor Matthew, there is much potential for progress in environmental diplomacy, and the United States must take the lead in improving its own activities. To achieve this objective, clearer goals are needed. Matthew outlines such goals and offers suggestions for making this agenda more manageable. He concludes that the United States must advance steadily on urgent issues while laying the foundations for more fundamental change through education and modifications to core values.

by Janelle Kellman

The Environment as Geopolitical Threat: Reading Robert Kaplan's 'Coming Anarchy'

by Simon Dalby

Forthcoming in *Ecumene* 1996 3(4): 472-496.

Dalby comments both on the content and style of Kaplan's article, concluding that Kaplan's argument is "notable for its pessimism, forceful prose, and the absence of any suggested substantive political remedies for the immanent dystopia." Dalby asserts that Kaplan's ideas are reminiscent of earlier motifs, arguing that "fear of over-population and social hardship

has been a recurring political theme through the Cold War, albeit one that was less prominent than concerns with superpower rivalry." The 'Coming Anarchy' is an update of Malthusian themes that brings policy discussion of environmental security to the attention of a wider public." Despite bringing such attentions to the fore, however, Dalby maintains that Kaplan's article is riddled with inadequacies. It fails, for example, to examine many of the driving forces behind environmental degradation, is overly reliant on Thomas Homer-Dixon's highly debated work, and "ignores the larger transboundary flows and the related social and economic causes of resource depletion." Nonetheless, Dalby returns to Kaplan's focus on Malthusian themes and contends that a resurgence of such ideas may be instructive for future policy decisions.

by Janelle Kellman

Mideast Oil Forever?

by Joseph J. Romm and Charles B. Curtis
The Atlantic Monthly, vol. 277 no. 4
 April 1996, pp.57-74.

Romm and Curtis argue that "Congressional budget-cutters threaten to end America's leadership in new energy technologies that could generate hundreds of thousands of high-wage jobs, reduce damage to the environment, and limit our costly, dangerous dependency on oil from the unstable Persian Gulf region." The authors foresee a world in which the Persian Gulf controls two-thirds of the world's oil for export and America imports nearly sixty percent of its oil. Romm and Curtis believe that the current political climate of fiscal retrenchment in the U.S. Congress is unknowingly undermining the Department of Energy's (DoE) long-standing programs to develop renewable energy sources. They predict a global energy revolution in the development of alternative fuels and renewable energy sources stimulated by growing energy needs and environmental concerns. In the highly competitive context of the global economy, the United States must act aggressively to maintain its leadership position. A well-funded DoE is a vital contributor to America's long-term leadership.

To defend these claims, the article lists some of the many technological innovations that DoE investments in R&D have made possible. For example, a genetically engineered organism discovered in 1994 enhances the fermentation of cellulose, increasing the rate of conversion and the yield of ethanol. This and other federally supported research has brought the cost of making ethanol from \$3.60 a gallon fifteen years ago to about \$1.00 a gallon today. Research is underway by the DoE's national laboratories and the auto industry to design and construct by 2004 a prototype clean car that has three times the fuel efficiency of existing cars.

Romm and Curtis believe that continued DoE in-

vestment in some of these key technologies will not only be good for the environment, but will be highly profitable for the U.S. economy. They warn that if Congress continues the thirty percent cuts in DoE energy program funding, the United States will miss what may well be the single largest new source of jobs in the next century: annual sales in renewable-energy technologies may hit \$400 billion in 2040 and would support several million jobs.

by Michael Vaden

Pivotal States and U.S. Strategy

by Robert S. Chase, Emily B. Hill, and Paul Kennedy
Foreign Affairs, vol. 75, no. 1
 January / February 1996, pp. 33-51.

"The United States needs a policy toward the developing world that does not spread American energies, attention, and resources too thinly across the globe, but rejects isolationist calls to write it off." The authors argue that the United States must "focus its efforts on a small number of countries whose fate is uncertain and whose future will profoundly affect their surrounding regions. These are the pivotal states."

The idea of a pivotal state derives from 19th century geo-political thinkers, such as Halford MacKinder, and was central to the foreign policies of American statesmen such as Dean Acheson and Henry Kissinger. The authors argue that recovering this approach offers three concrete benefits to the United States:

- promoting global stability by focusing on countries which have the greatest regional influence;
- addressing concerns of the public regarding our currently unfocused foreign policy;
- integrating traditional military security issues with new concerns, such as those related to environmental change.

The authors define a pivotal state as one with the "capacity to affect regional and international stability," and they identify the following as currently fulfilling this criterion: Algeria, Brazil, Egypt, India, Indonesia, Mexico, Pakistan, South Africa and Turkey. All of these states "face a precarious future, and their success or failure will powerfully influence the future of the surrounding areas and affect American interests."

As the United States faces new security threats, it must develop strategies which would encourage integration of the "...the new security issues into a traditional, state-centered framework and lend greater clarity to the making of foreign policy." The threats to the pivotal states include "...overpopulation, migration, environmental degradation, ethnic conflict...all phenomena that traditional security forces find hard to address." These issues should be of major concern to Americans "...because their spillover effects can hurt U.S. interests."

by Christa Matthew

NEW SCHOLARLY JOURNAL: *Environment and Security*

The Environment and Security (E&S) journal is a new social scientific journal devoted to the study of environmental forms of insecurity and to the national and international efforts to address these insecurities. The bilingual (French/English) journal primarily addresses the following topics: the evolution and meaning of the concept of environmental security and the relationship between domestic and international environmental security issues; the ways in which environmental security is perceived in different countries; the impact of environmental changes on the probability of conflict and cooperation at the national and international levels; the contribution of environmental security to the definition of new foreign and security policies; policies for the management of shared resources and the consequences of these policies; the links between armed conflicts and the integrity of natural ecosystems; organizational and legal mechanisms that enhance environmental security; and philosophical issues involving environmental security and other human values such as equity and social and economic development. This new journal tries to build on a new approach to environmental questions and to deal with their social, political and economic implications by linking the approaches of the natural and social sciences.

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by Geoffrey D. Dabelko and David D. Dabelko

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by Michael J. Edwards

"The Tumen River Economic Development Area: Environmental Challenge for Northeast Asia"
by Victor Loksha

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by Jim MacNeill

"Water Scarcity: A Threat to Global Security"
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