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Green Wars

Making Environmental Degradation a National Security Issue Puts Peace and Security at Risk

by Paul Benjamin

Executive Summary

Since the end of the Cold War, a fundamental shift in national security policy has taken place in the United States. No longer restricting itself to such issues as military alliances, the strategic behavior of other great powers, and nuclear strike capabilities, security policy now tackles environmental degradation, poverty, infectious diseases, drug use, and other problems. Moreover, it increasingly posits them as threats to the national security of the United States.

This shift in thinking has taken place subtly and largely out of the realm of public debate. Although environmental issues are rapidly moving up on the public agenda, the public is not generally aware that they are treated specifically as security threats. Environmental degradation is the most popular of the new causes embraced by policymakers and government agencies, and its treatment as a security threat dates back to the immediate post–Cold War period when a debate began about what to do with U.S. military resources that were no longer needed after the demise of the Soviet Union.

Instead of being relegated to the recycling bin of fad concepts as many observers expected, "environmental security" has become an important component of current national security policy. Various agencies—ranging from the Department of Defense, the Central Intelligence Agency, and the Department of State to newcomers on the security scene such as the Environmental Protection Agency—are involved. Eager to justify their budgets in a more peaceful, prosperous world, they have embarked on various projects, both at home and abroad, aimed at countering the perceived threat from environmental degradation.

Unfortunately, little thought has been given to the consequences of those developments. Although the practical activities carried out in the name of environmental security are still fairly limited, various dangers are already apparent. Among them is the potential for militarizing environmental issues and infringing on civil liberties. Equally worrisome, a security policy that attempts to tackle all the world's environmental problems risks pushing the United States in the direction of further conflict and greater intervention in the affairs of other nations.

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Introduction

In 2015 the United States invades Brazil to put an end to logging in the rainforests. In 2020 war breaks out in Western Africa as people vie for arable land in the face of a rapidly encroaching desert, and the United States and its NATO allies intervene to prevent a wider war. By 2022 the U.S. military is running domestic and overseas poverty reduction and population control schemes and dominates a global environmental surveillance network. Implausible? Not necessarily, if current trends in U.S. security policy continue unabated.

Since the collapse of the Soviet Union in 1991, policymakers have struggled to redefine the security interests of the United States. With the overriding threat of the previous half century no longer in existence, America has had to take a new look at where threats to its security may occur, and how best to deal with them. While debate rages over what to do about the proliferation of weapons of mass destruction, how to redefine America's strategic relationships, and whether we need a national missile defense system, more subtle changes in security policy thinking are taking place in the background.

The concept of security has been expanding gradually. In the past, "security," although never rigorously defined, in practice usually meant what Stephen Walt, in his classic definition, refers to as decisions involving "the threat, use, and control of military force."[1] During the Cold War, that understanding of security led to a policy of containing the Soviet Union through nuclear and conventional deterrence strategies. In recent years, however, there has been a conscious shift from a limited, largely military, sense of "security" to one that encompasses all manner of "threats," ranging from environmental degradation to poverty and from overpopulation to ethnic tensions. New issues are continually being classified as security issues or threats to national security in what one commentator has referred to as "an additive 'laundry list' approach."[2] The consequence is that a diverse set of new problems and goals is entering security discourse, and a whole range of social issues that were previously limited to the civilian sphere is increasingly falling under the purview of the U.S. military. That development is troubling for numerous reasons.

Since the policies resulting from this shift in thinking have lain, by and large, on the periphery of grand strategy, they have been subject to little public oversight and have been formulated very gradually. Although the shift started in the academic community in the 1970s, it was only in the 1990s that it took hold in the policy world. In 1990 then-senator Al Gore put environmental degradation on the national security agenda when he wrote that environmental neglect "threatens not only the quality of life, but life itself. The global environment has thus become an issue of national security."[3] In the same year, the Strategic Environmental Research and Development Program was initiated by Gore and Sen. Sam Nunn (D-Ga.) with the aim of redirecting military resources toward "developing and analyzing the data needed for alerting us to possible security threats."[4] As Nunn put it in his speech before approval of the initiative:

> I am persuaded that there is also a new and different threat to our national security emerging—the destruction of our environment. The defense establishment has a clear stake in countering this growing threat. I believe that one of our key national security objectives must be to reverse the accelerating pace of environmental destruction around the globe.[5]

Since that time, it has become standard for security policy documents to cite social issues as threats to American national security. Environmental degradation is mentioned in almost all *National Security Strategy* documents put out by the White House since 1991. In 1996 President Clinton introduced

organized crime and ethnic and religious hatred to the list.[6] By 1998 the *National Security Strategy* was citing rapid population growth, new infectious diseases, and uncontrolled refugee migration as issues having important implications for American security.[7] Even education is now officially a "critical national security issue."[8]

Although the invocation of national security is sometimes simply a rhetorical device designed to attract attention and funding to a cause, there are nonetheless more profound reasons behind the process of "securitization"—and there are equally important objections. The move toward an expansion of the concept of U.S. national security started out with the goal of reallocating (rather than eliminating) unneeded military resources left over from the Cold War. While that seemed sensible to some people at the time, the outcome has been somewhat different from the original expectation. The so-called peace dividend, announced with euphoria during the Bush administration, has given way to increased military spending during the Clinton administration. Instead of seeing tax cuts, we now see a proliferation of government programs, often within the Department of Defense, designed to counter alleged new security threats. Various other federal agencies and departments, all eager to get involved with the new issues or to push their own causes using the rhetoric of national security, have jumped onto the bandwagon. As a result, the reasoning behind "securitizing" social issues has subtly changed from its reallocation roots. Broadly speaking, the justification now rests on three arguments: first, that social issues are becoming as important as military defense in an increasingly integrated world; second, that the health and well-being of other countries' citizens are important to the United States because they contribute to a stable, secure world and healthy overseas markets; and, third, that factors such as resource depletion, global warming, and infectious diseases threaten human survival more than military action ever could.

Taken at face value, those claims look plausible. Yet behind the rhetoric lie serious implications for peace and security. Environmental degradation is a case in point, and the analysis here will extend to what actually happens when the environment is linked with national security, and the potential consequences for U.S. security and the democratic process. The main conclusions are that harnessing the rhetoric of national security to social issues risks rendering the term "security" meaningless, to the extent that any policy action may be easily justified by invoking "national security," with serious consequences for democracy, openness, and civil liberties. In addition, efforts in furtherance of the new security goals may actually end up decreasing America's security by antagonizing other countries and promoting unbounded overseas intervention. Some of the existing programs to enhance "environmental security," such as those addressing Russian nuclear waste, are also misguided and ineffective, and it is clear that a threshold needs urgently to be defined to differentiate between a genuine environmental threat to U.S. security and an environmental problem that should remain in the civilian sphere or the responsibility of another country or organizational entity. Without such policy discrimination, the United States may end up as the self-appointed armed protector of the global environment.

Harnessing the rhetoric of national security to social issues risks rendering the term "security" meaningless.

Why Environmental Degradation and National Security Don't Mix

The linking of the environment with national security is a fashionable ploy in today's policymaking. DoD is one of the agencies most heavily involved, with defense planners preparing for environmentally induced conflict, a new emphasis on the cleanup of contaminated military bases, and implementation of overseas environmental programs, especially in Russia and the countries of Eastern Europe. In 1993 DoD established the post of deputy under secretary of defense for environmental security, held to

date by Sherri W. Goodman, and it participates in NATO's Committee on Challenges to Modern Society, which is designed to address issues such as environmental degradation and the role of the military. Other agencies such as the Environmental Protection Agency and the Department of Energy have environmental security programs and work closely with DoD under the terms of the Memorandum of Understanding on environmental security, signed by the three agencies in 1996, to combat environmental threats to U.S. national security around the globe.[9] Pilot initiatives include a project on nuclear waste in the Arctic seas as a result of Soviet, and later Russian, naval activity. Even the Central Intelligence Agency is involved in environmental security: it has set up a Global Fiducials Program, which uses surveillance satellites to collect data on current environmental conditions, and has declassified thousands of photos from the past few decades to allow scientists to build a picture of global environmental change.

One of the major problems with redefining security so broadly as to include environmental issues is that it risks rendering the word "security" meaningless. As Daniel Deudney, a professor of international relations at Johns Hopkins University, has argued, "If everything that causes a decline in human well-being is labeled a 'security' threat, the term loses any analytical usefulness and becomes a loose synonym of 'bad.'"[10] Clear language is essential for clear thinking, as George Orwell has persuasively argued.[11] When "security" becomes ambiguous and diluted, two dangers become apparent.

First, there is a high risk that turning environmental issues into a security concern will result in the militarization of environmental policy, with detrimental effects on society and on efforts to find solutions to environmental problems. The second danger is that environmental security policies may actually reduce security—especially if they tend to push toward conflict rather than peaceful relations among nations. Before examining those issues, however, it is worth asking what policymakers and government agencies mean when they talk about "environmental security."

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What Is Environmental Security?

Government agencies and officials rarely clarify their terms. The words "security" and "national interest" are bandied about with such frequency that it is often hard to challenge their usage and demand definitions. Nonetheless, it is possible to deduce certain linkages between environmental degradation and national security from the actions and words of the people involved. The key assumptions include the following:

- Environmental degradation and resource depletion threaten American health, prosperity, and lives and need to be countered.
- Poor environmental conditions and lack of resources will lead to regional instability and conflict, and the United States will then need to intervene.
- Environmental modification might be used as a weapon of war, and preparations should be made for such use.
- Environmental conditions affect the success of Washington's overseas military deployments and must be studied.
- Providing for America's defense should be done in an environmentally safe manner.

The latest *National Security Strategy*, released at the end of 1999, cites both environmental threats to human life and environmentally induced instability at a regional level as issues that compromise national security.[12] While President Clinton emphasizes the conflict model ("preserving the resources we share is crucial . . . to maintain *stability and peace within nations and among them*"),[13] Vice President Gore opts for the health and prosperity approach, emphasizing the effect of the environment on the "quality of life." Under Secretary Goodman sees environmental cooperation as contributing to building democracy, trust, and understanding.[14] In the 1996 Memorandum

of Understanding, threats to environmental quality are understood as affecting "broad national economic and security interests, as well as the health and well-being of individual citizens." EPA administrator Carol Browner believes that "protection of public health and the environment have become an important part of our national security."[15] Yet, as Alan Hecht of the same organization has claimed, environmental security "encompasses unsustainable economic development that has the potential to create national, regional or global instabilities that threaten U.S. interests."[16] Former secretary of state Warren Christopher extolled the virtue of both the conflict-stability and the health-prosperity approaches in a speech in April 1996.[17] Secretary of State Madeleine Albright has done the same. In a speech on Earth Day 1998 she proclaimed that "the threats we face from environmental harm are not as spectacular as those of a terrorist's bomb or missile. But we know that the health of our families will be affected by the health of the global environment. . . . And the security of our nation will be affected by whether we are able to prevent conflicts from arising over scarce resources."[18] Briefing the Senate Select Committee on Intelligence in 1996, then–director of central intelligence John Deutch declared that "a deteriorating environment can not only affect the political and economic stability of nations, it can also pose global threats to the well-being of mankind."[19] In addition, he saw environmental monitoring as essential for troop protection in wartime. The Pentagon's stated environmental security mission focuses mainly on such issues as the environmental impact of defense activities and base cleanup, which amount to what might be called environmentally friendly security provision. Nonetheless, the Pentagon's vision of environmental security also includes enhancing international security through military-to-military contact programs dealing with the environment.[20]

As the examples show, the linkages point to different goals and call for different methods. Although the last three (environmental modification, "green" military, and environmental factors in deployment) fit more easily within the current military role, the first two—the conflict-stability approach and the health-well-being approach—diverge from traditional security policy. This is especially so with the health-well-being model as it essentially redefines the role of the military and the meaning of security. The conflict model is also a departure from tradition, despite the seeming relationship between conflict and what one would usually associate with the defensive role of the military. It is new in that it examines environmental factors that could either contribute to or cause a decline in regional stability. The study of military strategy, and international relations in general, usually focuses on the political aspects of conflict and stability—the international system, regime types, and power. Although politics undoubtedly plays a part in the environmental conflict scenario—war is in itself an inherently political act—the study of, and preparation for, environmental conflict assumes that environmental factors can be singled out from all the other variables. It also assumes the importance of environmental factors in leading to conflict, something that is not always evident.

The Conflict Approach to Environmental Security

The conflict model is best expressed by Thomas Homer-Dixon at the University of Toronto, although there is a significant body of other academic research on this subject.[21]

Homer-Dixon's extensive studies on the relationship between acute environmental change and conflict have tested three hypotheses: (a) environmental scarcity causes simple-scarcity conflicts between states (so-called resource wars); (b) environmental scarcity causes large population movement, which in turn causes group-identity conflicts;[22] and (c) environmental scarcity simultaneously increases economic deprivation and disrupts key social institutions, which in turn causes "deprivation" conflicts such as civil

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strife and insurgency.[23] He concludes that evidence supporting the last two hypotheses is much stronger than that supporting the first, although the results from other academic research are more mixed.

Such clarity is sadly not to be found in the Clinton administration's rhetoric—the examples given earlier are as much as can be ascertained of the government's view of the link between the environment and instability. Instead, the administration has jumped in with two assumptions: first, that there is such a link and, second, that something can and should be done about it.

That is apparent in the "preventive defense strategy," first developed by former secretary of defense William Perry, who declared that the strategy "creates the conditions which support peace, making war less likely and deterrence unnecessary."[24] Environmental security was supposed to play a role in both pillars of this strategy: first, developing adequate indications and warnings of potential crises and, second, promoting military environmental cooperation that contributes significantly to democracy, trust, and understanding.[25]

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The latter theme was evident in Goodman's testimony to the Senate in the spring of 1999. Recalling Secretary Cohen's military maxim of "shape, respond, prepare," Goodman outlined the environmental components of this strategy:

> SHAPE the international security environment in ways favorable to U.S. interests, promoting regional stability through military-to-military cooperation.
> RESPOND by supporting critical environment and health requirements of military operations.
> PREPARE by sustaining access to land, air and sea for training through responsible management of our installations and training lands.[26]

Cooperation with foreign militaries is considered an important part of the efforts to achieve environmental security. To further this goal, the United States has established various military-to-military contact programs. As Goodman explained in a major policy speech, "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."[27] Kent Butts, a U.S. Army War College professor, argues that DoD is the government agency best placed to coordinate overseas environmental programs because of its "vast experience in solving complex environmental problems domestically and in developing and industrialized countries, [its] unique technical and operational capabilities, and [its] global network."[28] The Security Assistance Program, run by DoD and the State Department, has enlarged its focus in recent years to include environmental projects in developing countries. Instead of providing assistance in the form of military equipment only, it now stresses (among other things) the role of the military in developing countries in carrying out environmental protection and management. DoD assistance so far has included providing African coastal states with patrol boats and aircraft to be used to prevent poaching, training in anti-poaching methods, and managing a project to train African militaries to protect and maintain wildlife habitats and carry out conservation activities. Butts believes that the militaries in developing countries are the best vehicles for promoting environmental management because, in the developing world, "the military is frequently a better-organized, better-trained and more technologically sophisticated element of the government than are other comparable organizations."[29]

The Memorandum of Understanding between DoD, DoE, and the EPA also calls for activities that will "focus on enhancing other nations' abilities to identify and manage environmental threats," and U.S. involvement in the Russian Arctic provides an interesting example that will be used as a case study later. Cooperation with foreign mili-

taries is thus supposed to have the double goal of reducing environmental crises, thereby preventing conflict, and promoting democracy, trust, and understanding, again in the interest of stability.

The environmental component of preventive defense's first pillar—warnings of potential crises—is also revealing. Although Goodman placed emphasis on the role of the intelligence community in predicting conflicts that have environmental factors, it is clear that DoD, as the agency that would be expected to provide solutions, is also concerned. If intelligence does provide indications of environmentally induced conflict, what will happen? Goodman cites deforestation in Haiti as that country's "most severe environmental concern, one that world relief agencies have explicitly tied to the country's refugee crisis which brought in American troops." She goes on to say, "An environmental crisis similar to Haiti's thus may have significant regional or even international effects, which, in combination with other factors, could compel U.S. military involvement."[30] Organizations such as the National Defense University have gone so far as to identify alleged flashpoints around the globe where environmental conflict could break out and affect U.S. national security interests.[31] NATO, with U.S. participation, has conducted a series of studies on environmental conflict and its effects on national and international security.[32] It is therefore evident that DoD examines such scenarios, and the intelligence community scans for them, with a view to intervening militarily if preventive defense fails and conflicts do arise.

Clearly, other factors—social, economic, and political—come into play, too. Deutch said as much when he stated, "Adding [the] environmental dimension to traditional political, economic and military analysis enhances our ability to alert policy makers to potential instability, conflict, or human disaster and to identify situations which may draw in American involvement."[33]

Nonetheless, the prevailing attitude is that environmental problems need to be taken care of, regardless of other potential causes of conflict. This is the essence of the environmental component of preventive defense: prevent problems from causing conflict (but be ready to intervene if conflict does occur). Anything that is a potential cause of conflict, be it intrastate, regional, or international, is therefore considered a threat to security and must be tackled. President Clinton summed it up when he declared that "if we fail to address these threats today, we will suffer the consequences in all our tomorrows."[34] Such an attitude, of course, has potential consequences of its own, which are discussed below.

The Well-Being Approach to Environmental Security

The well-being approach to environmental security is even less well defined than the conflict approach. Essentially, any environmental problem that in any way reduces the quality of life in America or affects the health of American citizens can be considered a threat to national security. This approach also allows any environmental policy and any environmental program, in the United States or overseas, to be considered in the national interest. Such a dilution of the concept of security has profound effects on the way that policy is elaborated and implemented, and it takes no account of tradeoffs between values.

New Goals, Confused Goals

Environmental security takes many forms. It includes carrying out defense activities in compliance with environmental standards, preparing for environmentally induced conflict overseas, cooperating with foreign militaries to tackle environmental issues, and developing policies and signing agreements on environmental issues such as climate change, air pollution, and toxic waste disposal. Each is a different issue, but there are some similarities. All are deemed to require immediate action. Such is the imperative of invoking "security," and thus its rhetorical value, as a motivating tool. All environmental security activities include some activity overseas as well as in the domestic sphere—to prevent conflict, to mitigate conflict, and to reduce threats to American life and liv-

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ing standards. In short, anything environmental is now considered a national security issue.

Subsuming all those goals under the title "environmental security" makes a muddled "catch-all" policy inevitable. It is worrisome when any environmental policy or project can be designated "in the national interest," and any environmental problem can be branded a "threat to national security." Those terms should not be taken lightly. They are mobilizing terms designed to prioritize projects; muddling the concept of security makes it easier to avoid providing a coherent rationale for them. That is not a trivial point. Several large "environmental national security" projects have already gone forward without a proper analysis of how they really affect national security, or even what is meant by the concept. That also is not a new problem. Arnold Wolfers recognized it when he wrote in 1962 that "the term 'security' covers a range of goals so wide that highly divergent policies can be interpreted as policies of security."[35] However, instead of taking note of this caution, the new security policymakers and policy wonks continue to use the term "environmental security" with carefree abandon.

As a result, the term "security" is in serious danger of being appropriated by any cause that wishes to use it. This is not to assume that all causes that do so are bad. It is simply to say that a closer look should be given to what kinds of causes are doing so and why. Without such an examination, it will be possible to justify any policy, and any expansion of government intervention, with little democratic oversight. However, the consequences go far beyond even that considerable danger.

"Green Security or Militarized Environment?"

The first additional danger is the potential for the militarization of the environment. While many environmentalists have pushed the concept of environmental security on the basis that it will lead to a diversion of defense funding and technology and give greater priority to environmental policy, there is a likelihood that the strategy would backfire and lead instead to the military's co-opting environmental policy. Indeed, very little diversion has occurred, but much profoundly negative attention has been given to environmental issues.

The incursion of the military into environmental affairs is cause for great concern. As far back as 1991, some authors had outlined the risks of military involvement in environmental issues.[36] Those risks include an institutional tendency toward secrecy and control of information, a propensity for conflictual thinking (i.e., the perception of "them vs. us"), and calls for mass mobilization against the perceived threat.[37] Of great concern, too, is the potential for contravention of civil liberties as the military takes one more step into civilian affairs.

Conversely, there is a danger when civilian agencies make incursions into the military sphere, as the EPA for instance has done in its involvement in military activity in the Arctic, discussed below. The militarization of EPA policy is hardly a desirable objective. Unfortunately, it is already happening. As if to underscore the point, EPA recently published a brochure describing its role in environmental security; depicted on its cover were a group of fish, an eagle, a CH-53 helicopter, and a U.S. Navy destroyer all floating in harmony around a large tree.[38]

To put the problem differently, would we really want to leave important aspects of national security policymaking to the EPA? Yet if its current activities in the name of national security are anything to go by, that might well occur. According to William Nitze, assistant administrator of the agency, environmental security is the "minimization of environmental trends or conditions *involving other countries* that could, over time, have significant negative impacts on important U.S. interests."[39] It is not hard to envision, on the basis of that orientation, a time when the EPA is involved in making foreign policy too. As Nitze himself declares, "These [environmental] problems point to the need for EPA to play a large role in implementing the U.S. Government foreign policy agenda."[40]

Sound Environment versus Peace: A Tradeoff?

The second danger of this redefinition of security is that it cannot achieve what it sets out to do. Despite the assumptions of its proponents, can environmental security efforts actually achieve security? The problem here is in finding a reasonable definition of "security" itself. Unfortunately, that is not an easy task. A huge academic debate on the subject has raged for several decades and remains unresolved; one author has even described security as an essentially contested concept.[41] However, if we for the moment equate security with peace—and even the most ardent champions of redefining security recognize peace as a crucial component of the concept[42]—then proponents of efforts to achieve environmental security should ponder whether such efforts might perversely threaten security (peace) itself. There are two ways in which that perverse result could come about. First, concentration on issues such as the environment could distract the military from more orthodox security activities, with detrimental effects on the maintenance of peace. Second, and more probable, the execution of environmental security policy could lead to tensions and even conflict with other countries.

The latter scenario is not hard to imagine. While intelligence analysts busy themselves predicting the next environmentally induced conflict overseas, U.S. military planners are preparing for the deployment of troops to intervene in such an event. The propensity for conflict is further enhanced by efforts to cajole other countries to abide by environmental standards and by U.S. intervention in their domestic affairs. In both cases, the logical consequence is war, when diplomatic means fail or sufficient resentment is felt in the country subject to intervention.

New Directions: The Price of Security

Not the least of the dangers entailed by the expansion of the concept of security is militarization of environmental policy. It is true that civilian agencies such as the EPA are involved in the execution of environmental security policy. However, granting the agency the status of executor of national security policy is one step toward militarization of its activities, particularly as it works closely with DoD, and sets a dangerous precedent. The involvement of DoD in civilian affairs, on the other hand, does not bode well for openness and civil liberties.

Effects on Society

The effects of military interference in the domestic sphere were amply demonstrated on May 20, 1997, when an 18-year-old boy from Redmond, Texas, was shot dead by four Marines conducting an anti-drug surveillance mission on the U.S.-Mexican border.[43] Military officials were also involved in the fatal siege at Waco in 1993, and increasing militarization of law enforcement is evident throughout the United States.[44] Unfortunately, the lessons of those events have not been widely understood. On October 7, 1999, DoD announced the formation of a task force, under the new U.S. Joint Forces Command, dedicated to assisting civilian officials with counterterrorism efforts. DoD also assigned the task of tackling so-called cyberterrorism in America to the U.S. Space Command.[45] Although many DoD environmental programs are currently implemented overseas, the logical extension of a policy that posits all environmental degradation as a threat to national security is that the military will become involved in the domestic sphere.

Even overseas, DoD's activities have important implications for civil-military relations and civil liberties. Environmental initiatives carried out in Africa under the Security Assistance Program may be dangerous because they use the local military as the primary agent of conservation. Simon Dalby has pointed out the problems of "super park wardens" in developing countries: a tendency toward coercive practices, histories of political repression of and violence against those whom the "wardens" claim to protect, and enforcement of conservation areas such as

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game reserves where title to the land is still disputed by local peoples. There are also huge dangers in providing any kind of assistance to Third World militaries, given their record of usurping civilian governments. By overseeing such programs and funding Third World militaries, DoD may end up an agent of repression rather than of environmental protection, which would lead to further anti-American feeling around the world.

Effects on the Environment

At the moment, most domestic DoD programs involve base cleanup activity and the integration of environmental standards into all forms of military activity, including weapons production and usage. The Defense Environmental Restoration Program, one of the best-defined environmental security activities, has the noble goal of providing remediation of past toxic and radioactive contamination of DoD lands. Nonetheless, it has run into political difficulties because of the sensitive nature of one of its components, the Base Realignment and Closure program. It is also susceptible to cleanup overkill, in some cases choosing high-cost restoration over cheaper containment. In addition, the Defense Environmental Restoration Program does not cover most contamination at U.S. overseas bases, so it fails to include what could be one of the few positive environmental security activities overseas.[46] Instead, DoD has focused both on clearing up *other countries' messes*, through its programs in the nuclear waste environment of northwestern Russia, for example, and on teaching foreign militaries to factor environmental standards into their activities. There is a huge irony, which seems to escape DoD, in one of the world's worst polluters going overseas to administer other countries' pollution control efforts.

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Thus, on top of the societal effects, the militarization of the environment has implications for environmental policy, too. Hypocrisy aside, solving environmental problems requires a long-term approach, free from the secrecy, centralizing tendencies, and conflictual approaches of the traditional security establishment and state institutions, as Deudney has pointed out.[47] For example, the involvement of the intelligence community may give rise to problems.

The Intelligence Community and Environmental Security

Various U.S. agencies engaged in intelligence-related activities, especially the CIA and the National Reconnaissance Office, have jumped onto the environmental security bandwagon. Their resources are being turned increasingly to environmental ends. The process started in the early 1990s with the formation of the Environmental Task Force, a group of scientists and CIA officials who met to discuss how classified intelligence data could be used for environmental research. The process continued with the declassification by Vice President Gore in 1995 of hundreds of thousands of photos taken by spy satellites. At a ceremony marking the event, Gore declared, "Today we have turned the swords of Cold War–era intelligence gathering into plowshares of information that will help us better understand and analyze our global environment."[48] Since then, the task force (known as the MEDEA group) has engaged in a number of projects, including the Global Fiducials Program that actively monitors the environment in certain key spots using spy satellites, rather than simply relying on past data.[49] In addition to those efforts, the director of central intelligence set up the DCI Environmental Center in 1995 to consolidate intelligence-environmental cooperation. The center's three main activities are long-term assessment of the effects of environmental change on political, social, and economic dynamics; civil applications, which encompass the activities of MEDEA; and the activities of the Environmental Issues Branch, which responds to policymakers' inquiries about environmental policies and treaty compliance.[50]

For environmentalists and others, the idea of turning swords into plowshares has obvious attractions. For the intelligence community itself, turning the expensive machin-

ery of intelligence—the so-called national technical means—to more peaceful applications provides a continuing mission and the possibility that the public, after decades of ambivalence about the agencies' methods, could become a lot more sympathetic. The intelligence community claims that it has for years been collecting data that are unavailable to the civilian world and that could give a remarkably detailed picture of environmental change over the past three or four decades, especially in the days before civilian satellites started operating. The intelligence community's environmental monitoring role could be of added use in checking other countries' compliance with international treaties, such as the London Convention on Dumping or the Kyoto Protocol, the argument runs. Such monitoring could also provide early warning of natural or man-made disasters and help to prevent deliberate environmental modification in wartime.[5 1]

Nonetheless, there are obvious objections to the use of intelligence technologies to further environmental policies. First, intelligence gathering and environmental monitoring require different approaches. As Angelo Codevilla, a professor of international relations at Boston University, has argued: "The purpose of intelligence is to ferret out secrets from people who want to keep those secrets. To turn intelligence into environmental reports is not to understand environmental problems or intelligence."[52] Second, the institutionalized secrecy of the intelligence agencies might have a profoundly negative effect on the whole program of environmental intelligence. Data could be manipulated, especially where they interfered with other national security interests.[53] John Deutch claimed in 1996 that "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."[54]

How likely is it that accurate data would be available to environmentalists if those data would compromise the secrecy of information about tank movements? As Ronald Deibert, a professor of political science at the University of Toronto, has pointed out, "The history of U.S. intelligence as a whole is marked by incidents of public duplicity and subterfuge to such an extent that manipulation of environmental data would not be out of character."[55]

Current efforts may please some environmentalists, but they run the risk of seeing environmental monitoring by satellite co-opted by the intelligence community. That could happen as commercial satellites are increasingly used by military agencies, and civilian satellite systems are consolidated with military ones. If such co-option occurs, agencies such as the National Reconnaissance Office may become "a 'clearing house' for environmental data with all of the attendant problems of [a] deeply ingrained secrecy culture."[56]

Security or Insecurity? How Pursuing Environmental Goals Endangers Peace and Promotes Unwarranted Intervention

The potential for militarization of the environment is only the first objection to linking environmental degradation with national security. The second objection, as already noted, is that the linkage could actually lead to a decrease in security because some activities might cause resentment overseas or even lead to war. In addition, pursuit of environmental goals overseas without regard to their cost and potential returns is imprudent at best and encourages extortion on the part of foreign governments with domestic environmental problems.

The Distraction Scenario

If environmental security activities distract from the primary purpose of the military—defense—to the extent that the ability to accomplish the latter mission is compro-

The institutionalized secrecy of the intelligence agencies might have a profoundly negative effect on the whole program of environmental intelligence.

The implicit assumption is that any country's problems are America's problems. That was made clear in Gore's statement in which he treated the global environment as a national security issue.

mised, then they become cause for serious concern. To be fair, such a situation is not yet in sight. Funding for environmental security programs at DoD, for example, is $3.9 billion for fiscal 2000, or 1.5 percent of the total defense budget.[57] The intelligence community's expenditures on environmental activities are more difficult to calculate because of the secret nature of its budgets. Nonetheless, even if environmental activities did become a higher priority, it should still be possible to convert the resources used for environmental monitoring into resources for other, more traditional intelligence activities. However, spending is not the only issue: the amount of time spent on planning for environmental scenarios is just as important, albeit hard to measure. Although defense environmental intelligence and environmental study in military planning constitute one of the existing tasks of the Pentagon and the intelligence community, it is hard to say how much that task has grown. John Deutch declared in 1996 that "much of the work that now falls under the environmental label used to be done under other names—geography, resources issues, or research."[58] However, the intelligence community also runs the risk of duplicating the activities of other entities. The Commission on the Roles and Capabilities of the United States Intelligence Community recognized this problem in its 1996 report when it warned that "the use of technical capabilities to collect information on environmental problems is legitimate but should not duplicate what civil authorities are able to obtain. The priority given such collection should be weighed against other requirements."[59]

The Conflict Scenario: Pushing the Boundaries of Domestic Policy

The more likely consequence of environmental security policies, however, is an increased propensity for conflict. One of the key elements of this trend has been the projection of domestic issues into the international arena. The case of the EPA illustrates the problem. Once an agency that dealt with purely internal affairs, EPA now carries out a variety of programs overseas.[60] This is the inevitable consequence of a security policy that emphasizes tackling global ills. The *National Security Strategy* of 1998 epitomized the approach when it declared that "the dividing line between domestic and foreign policy is increasingly blurred."[61] The implicit assumption underlying such a statement is that any country's problems are America's problems. That was made clear in Gore's statement in which he treated the global environment as a national security issue. Exactly where America's responsibilities stop and other countries' begin is a question left unanswered, as William Nitze at the EPA has demonstrated. In outlining his view of the tasks ahead, he declared that "the potential radioactive pollution of the Arctic . . . , climate change and ozone depletion are just the first three on what may become a long list of environmental threats to the U.S. that need to be addressed internationally."[62] By the end of 1999 the *National Security Strategy* had added to that list, declaring that environmental threats to U.S. security also resulted from the introduction of nuisance plant and animal species; the overharvesting of fish, forests, and other living natural resources; and the transnational movement of hazardous chemicals and waste.[63] Where this list might end, and how long U.S. taxpayers will be prepared to foot the bill, is anyone's guess.

As America seeks to solve all the world's environmental problems, it should realize that some paths could lead to conflict. There are two ways in which this could happen, as we have already seen. The first is for the United States to prepare to get involved in other countries' disputes that are environmentally induced or include environmental factors. The second is efforts to cajole countries into abiding by certain standards, or actual intervention in the domestic affairs of other countries to sort out an environmental issue; such behavior could lead to resentment against the United States. Intervention may be welcomed initially by the country in question, particularly if intervention involves an

influx of U.S. money, but welcome may quickly turn to resentment if projects come with too many strings attached, hurt economic growth, or deal with sensitive issues of national security. That could easily happen, as the case study of the Russian nuclear waste problem demonstrates.

Conceptions of environmental security are, therefore, just as much about conflict as they are about cooperation and peace, even under the well-being model of environmental security. The implication of these policies is that the goal of a sound environment is superior to that of maintaining peace. Indeed, that is the logic of most conceptions of environmental security, even when it is not always stated explicitly, or even realized, by those obsessed with solving the world's environmental problems. For the moment, some U.S. agencies are acting as if all environmental harm, anywhere in the world, requires strong American action and are forgetting the risks and moral issues involved. Yet peace is one of the most vital of national interests, and to override it in pursuit of other goals requires some compelling justification. It is ironic that pursuing a well-being approach to environmental security could lead the United States to the type of war that the planners for the conflict model wish to prevent. It is also highly ironic that war, which is probably the greatest cause of environmental destruction, could be the outcome of policies aimed at safeguarding the global environment.

The Extortion Scenario: Environment as a Bargaining Chip

By treating environmental problems around the globe as a national security issue, the United States also leaves itself open to subtle (and not so subtle) forms of blackmail and extortion. Any country with environmental problems can declare—either directly or by citing (or exaggerating) the potential for internal or regional strife as a result of the problem—that it needs urgent assistance from the United States because the problem constitutes a threat to U.S. national security. That creates a perversion of the so-called security dilemma. In the traditional dilemma, country A feels threatened by country B and takes measures such as an arms buildup to make itself feel more secure. However, country B then feels threatened by the arms buildup in country A and takes its own countermeasures, which then make country A insecure again, and so on ad infinitum. In the new security environment, however, it is in a country's interests deliberately to posit itself (or at least its environmental problems) as a threat to the United States, because by doing so it will receive funding and assistance. This can happen because "security," the nature of security "threats," and the methods of tackling such "threats" have all been redefined and greatly expanded.

Deliberate environmental modification has often been used in wartime (the use of defoliant agents in Vietnam is a classic example). However, expansion of the definition of "security" to include anything that might decrease the well-being of Americans makes it easy for another country to use the specter of modification, deliberate or otherwise, as a peacetime bargaining chip to secure assistance. Foreign aid then will be portrayed to Congress and the American public as a matter of national security, not a humanitarian or developmental issue. Access to the American treasury then becomes far more likely.

Setting a Threshold

If the United States pursues a policy that takes it down a path toward possible conflict, it must at least justify doing so. This principle should also apply when large amounts of money are being spent. Yet, in the case of environmental security, no attempt has been made to determine at what point an overseas environmental *problem* becomes a *threat* to U.S. national security. A sensible security policy should first set a measurable threshold beyond which something constitutes a threat and warrants intervention. That is difficult to do with all issues, but especially so with the environment.

Consider three examples. In the first,

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country A is downstream of country B and relies heavily on water from the river that flows through both countries. Country B's state-owned nuclear power stations and military complexes are discharging large amounts of high-level liquid waste into the river and thereby causing a large number of deaths and serious health problems in country A. If country B refuses to stop polluting the river, one might reasonably argue that country A is justified in using military force against B to prevent further extensive loss of life. The environmental threat to A's security is direct, and its causes are easily identifiable and preventable.

In the second example, country B is producing large amounts of dangerous radioactive waste and storing it in low-quality underground tanks close to the river. Country A is worried about the integrity of the tanks, since any leakage in B will result in huge casualties in A, but B refuses to upgrade the tanks. Does the situation present a threat to the security of country A, and is financial or even military intervention justified?

In the final example, country A does not border country B; the two are separated by an ocean. Country B has dumped some radioactive waste into the ocean and also has huge volumes of radioactive waste awaiting disposal, as well as vast areas used to store waste adjacent to important rivers that flow into the ocean. This time, it is country B's citizens who are affected by their own nation's waste disposal problem. However, country A is concerned that it too might be affected by the dumped waste, or if the huge storage tanks were to leak. There is no scientific evidence that the existing dumped material will harm country A, and it is uncertain whether the stored waste will leak, or what will happen if it does. Does the situation constitute a threat to country A's security?

The last two examples demonstrate the problems in defining a threshold of threat, beyond which conflict, or at least some form of intervention, is deemed necessary. Nonetheless, on each occasion country A must make a decision about whether to intervene. For the moment, the type of intervention is unimportant. The question of whether to intervene is a judgment call: the risk and potential cost of the waste and the risk and potential cost of intervention must be compared. The examples also assume that country A has the resources to intervene, and that there are no threats to its security from other quarters that deserve more attention. Country A is thus faced with a difficult choice and must use some form of objective calculation to evaluate its options.

In the United States no such objective calculation has been made or even attempted. Projects are being embarked upon without any kind of cost/benefit analysis or assessment of risk. Incidentally, in example three, country A is the United States and country B is the Russian Federation. The Russian radioactive waste problem is an example par excellence of a lack of calculation, in which all three elements of distraction, resentment, and extortion come into play.

Radioactive Waste in Russia: Costs, Benefits, and Risks of Intervention

In the early 1990s a flurry of revelations and allegations led to pressure on the newly formed government of the Russian Federation to come clean about the ecological damage its predecessor had caused both by its military activities and by its military-industrial complex's support of those activities. Much of that damage was thought to have occurred in the Arctic seas, where naval activity was particularly intense. The commission set up by President Boris Yeltsin to investigate those allegations brought out its unexpectedly candid report in 1993. Known as the Yablokov report, after the commission's chairman, Alexei Yablokov, it detailed a vast number of incidents of radioactive and other forms of contamination of the Arctic and other seas around the Russian Federation.[64] Since then, the ecological disasters that took place—and in some cases con-

tinue to do so—have been well documented.[65]

Radioactive Contamination

The problem of radioactive contamination in northwestern Russia has been the focus of many international and U.S. efforts. The contamination stems from various incidents and practices, including the following:

- *Accidents at Sea:* Of various documented incidents, perhaps the best known was the sinking of the *Komsomolents*, a Mike-class Soviet submarine with nuclear-tipped torpedoes and a nuclear pressurized water reactor, in the Norwegian Sea in 1989.[66]
- *Dumping of Nuclear Waste:* According to the Yablokov commission, since 1965 the USSR had dumped radioactive waste equivalent to 2.5 million curies into ocean waters.[67] One of the major dumpsites was the sea around Novaya Zemlya, two islands off the coast of northern Russia, but dumping had also occurred in the Barents Sea. Most of the solid waste, including reactor parts and equipment, was in containers, ships, and barges, but the dumped material also includes 13 nuclear submarines and their reactors (7 of which still contain their highly radioactive spent fuel rods)[68] and three reactors from the icebreaker *Lenin*, which were dumped in the Kara Sea to the east of Novaya Zemlya. Between 1959 and 1991 liquid waste totaling 23,771 curies was also dumped into the Barents, Kara, and White Seas.[69]
- *Decommissioning of Vessels of the Northern Fleet:* Even before the end of the Cold War, the Soviet Union had started decommissioning older nuclear submarines, a process that was accelerated by the easing of political tensions after 1991 and the provisions of the START I treaty. However, contrary to the American practice of removing reactor fuel from decommissioned submarines within one year, Russian submarines often sit for several years in dock waiting for defueling.[70] Even after fuel removal, some submarines are kept afloat for 15–20 years before their reactors are disposed of. Naval personnel have to deal with the ever-present threat of these submarines sinking in harbor,[71] as well as problems of security.[72] Spent fuel rods are often stored onshore or on barges and other vessels. Storage facilities are full and reprocessing facilities minimal and aging. The dangers of decommissioning old or damaged reactors are high, and the age of many of the reactors has turned them into potential "floating Chernobyls."[73] By the end of this decade, nearly 180 submarine reactors will be awaiting disposal.[74]

Key U.S. Initiatives

To counter these problems, the United States has initiated various projects, including a joint U.S.-Norwegian-Russian upgrade to the Murmansk waste reprocessing facility, a scheme run by DoE to improve storage and security technologies, and the dismantling of several Russian ballistic missile submarines by DoD under the Cooperative Threat Reduction program (often referred to as the Nunn-Lugar program, after its initial sponsors, Sens. Sam Nunn and Richard Lugar). DoD also participates in the Arctic Military Environmental Cooperation forum. The Environmental Working Group of the Binational Commission, where Vice President Gore conducts regular meetings with the Russian prime minister to discuss technological issues, has dealt frequently with Arctic environmental problems. One project resulting from those meetings has been a CD-ROM atlas of the Arctic Ocean, which uses both Russian and U.S. data to paint a picture of Arctic environmental change since 1948. The CIA and the National Oceanic and Atmospheric Administration are the main U.S. participants.[75]

Some of the projects listed here are couched in two forms of rhetoric, which can lead to confusion. The nuclear waste storage

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project, run primarily by DoE, and the CTR decommissioning program are considered both strategic military projects and efforts to provide environmental security. Whichever justification is chosen, its history has not been smooth. Especially when environmental security is invoked, there are various difficulties.

Efficiency is one of them. The problems of the CTR program, for example, are well documented.[76] After a very slow start, caused by the realization that none of the necessary infrastructure was in place, a total of 12 nuclear-powered ballistic-missile submarines of a planned 31 were dismantled between 1991 and the end of 1999 at a cost of $75 million.[77] In addition, CTR focuses only on Russia's START I obligations; other submarines still awaiting decommissioning, which are often older and pose a greater environmental risk, are not covered by the scheme. Considering that the cost of decommissioning just one submarine may be as high as $4 million, and that the total cost of scrapping all submarines currently out of service has been estimated at nearly $1 *billion*, it is clear that Russia has a problem.[78] Total CTR funding in Russia—for all projects, not just submarine disposal—stood at $1.7 billion for fiscal 1999.[79] The British Foreign and Commonwealth Office estimates, however, that the cost of keeping the decommissioned submarines afloat is as high as $100 million per year.[80]

Shifting Responsibilities

However, by funding many of the nuclear cleanup projects, the United States may be freeing Russian funds for other activities. When Prime Minister Vladimir Putin requested an additional $1 billion from the Duma to continue his prosecution of the war in Chechnya, he could do so in the knowledge that other pressing domestic problems were being taken care of by the U.S. government. In addition, CTR funding may even be helping to finance modernization of Russia's strategic weapons by paying for the disposal of old equipment.[81] It is not hard to envision the Russian government using its own environmental mess as a bargaining chip to bring in additional American funding. Scandals about the use of American money keep surfacing: most recently, a report by the inspector general of DoE revealed that funds given to assist Russian institutes may have been taxed by the Russian government, and almost $1 million was allocated to projects "for which little actual reduction of risk to weapons-usable nuclear material was achieved."[82]

Russian National Pride

Bringing in money is one thing, but what about U.S. control of projects and the presence of U.S. officials on Russian soil? For the moment, as one senior DoE official has noted, the Russians are willing to go along with anything as long as the Americans are bringing in money. How long that will remain the case remains to be seen. The potential for resentment lies in the background. For many Russians, particularly military officials accustomed to thinking of America as the enemy, it may be galling to see long-time adversaries on their territory. This is compounded by the sensitive nature of many U.S. activities in Russia. For example, Murmansk was until recently a closed city, inaccessible to foreign visitors and to most of the Soviet populace. The legacy of such secrecy has been environmental mismanagement of unforeseen proportions. The Russians are therefore naturally sensitive about foreign attention in the area—so sensitive, in fact, as to charge Aleksandr Nikitin, a former naval officer, with espionage over his revelations of Russian dumping of nuclear waste at sea.[83]

Russian embarrassment about decades of environmental mismanagement combines with a desire for secrecy about current military activities to create a serious obstacle to American activities in the region. The United States has recognized this resentment, and some activities have had to be hidden behind a veil of international cooperative efforts such as the Arctic Military Environmental Cooperation agreement. There is also a sus-

picion among some Russians that U.S. motives go beyond the environmental. Various sensitive areas such as the deteriorating nuclear storage facilities at Andreyeva Bay, between Murmansk and the Norwegian border, remain closed to American and international officials to prevent espionage. Andreyeva Bay lies only one mile away, across a fjord, from Russia's Nerpichya naval base, which is home to six Typhoon-class submarines, each carrying 200 strategic nuclear warheads.[84] Norway has already discovered the problems of attempting to deal with the Andreyeva Bay site, which is one of the worst areas of environmental negligence. Oslo is currently providing funds for projects that it is not allowed to supervise; the Russian government will provide only photographs once the work is completed.[85]

In another incident, the U.S. ambassador to Russia canceled his visit to Krasnoyarsk-26 in Siberia for the opening ceremony of an American-funded business center when his top science adviser, Thomas Maertens, was refused permission to accompany him to the closed nuclear city.[86] According to Michael Gordon of the *New York Times*, access to Russian nuclear sites is a problem because of "frustration felt by the Russians over restrictions placed on their visits to the U.S. DoE's headquarters and laboratories, the sheer number of American visitors to the Russian weapons complex and a residual distrust within Russia's Ministry of Atomic Energy about U.S. intentions."[87] Pushing the Russians on their own soil, without offering much disclosure on one's own, is bound to wound pride and cause resentment. William Perry's goal of building "democracy, trust and understanding" is, not unexpectedly, not being attained in Russia.

How far is the U.S. government prepared to push its objectives if it starts to meet serious resistance? What is the likelihood that pursuing current goals will actually inflame resentment to the point where U.S.-Russian relations deteriorate dramatically? Those are unanswered questions, but they are part of the risk calculation that should be carried out in assessing the need for environmental security programs. U.S. efforts in the Arctic may be "heavily conditioned by the bilateral relationship with Russia," but they will play a significant role in conditioning that relationship, too, and most probably in a negative way.[88] This must be weighed against the touted benefit—negation of an environmental threat to the United States.

National Interests

Is there really a threat? Russian suspicions are certainly awakened by the realization that U.S. actions do not seem to fit with U.S. rhetoric. Despite being a test case for environmental security, it is unclear how environmental problems in the Arctic affect America's national interests. Applying the various linkages between environmental degradation and security described earlier does not shed any light on the matter. Northwestern Russia is not a potential market for American goods, nor does it hold resources likely to be accessible to American companies in the near future, particularly given the Russian military presence there. The potential for regional instability is low, since the area is sparsely populated, and even if civil unrest were to occur, it would likely be fairly contained. U.S. military intervention in the area would thus be foolhardy and highly improbable. The attempt to build democracy, trust, and understanding has been wholly unsuccessful, as all the evidence suggests. Beyond the strategic value of removing nuclear weapons, the only possible environmental rationale for the American presence is that radionuclide contamination may spread across the Arctic Ocean to enter the food chains in Alaska and affect human and marine health in the United States. However, the government's own studies have demonstrated that that is not a realistic prospect.

One of the earliest studies, under the Arctic Nuclear Waste Assessment Program, carried out by the Office of Naval Research at DoD, focused on the effects of Arctic contamination on the state of Alaska. The study, sponsored by Alaska's senators and funded

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U.S. efforts in Russia are probably simply misguided because of a poor conception of what environmental security means and a lack of attention to its consequences.

by Congress for approximately $30 million from 1993 to 1995, tentatively concluded that there was no imminent danger to the western Arctic or Alaska.[89] The now defunct Office of Technology Assessment found in 1995 that "preliminary assessments do not suggest a major, long-term impact on human health for the broad Arctic region from radioactive discharges that have already occurred."[90] Similarly, a three-year study by the International Atomic Energy Agency's International Arctic Seas Assessment Program said that "the future risks [from dumped wastes] to population groups most likely to be exposed are also small" and that "no justification was found on radiological grounds for instituting a program of remedial action in relation to the wastes."[91]

This is not to say that the submarines still awaiting decommissioning, and the current nuclear storage crisis in northern Russia, do not constitute a huge environmental hazard. However, the studies do show that the effects of nuclear wastes already dumped have been relatively small and localized, and the problem is more one for Russia and its neighbor, Norway, than for the United States.[92] As a result, it is difficult to see how the current situation in the Arctic *threatens* the United States, so it may be hard for Russians to understand why the United States is involved in such sensitive activities.

The cynics in Russia are not necessarily correct about U.S. motives. Most likely, U.S. efforts in Russia are simply misguided because of a poor conception of what environmental security means and a lack of attention to its consequences. But such cynicism is dangerous when it brings resentment and antagonism. That cynicism is likely to be compounded by the focus of American attentions and the fact that the northwestern nuclear problem is a distraction from what may turn out to be a huge, and genuine, environmental threat to the United States. Although most assistance is going to the nuclear waste problem in northern and northwestern Russia, it is in central Siberia that the greatest nuclear threat to the environment is to be found.

Radioactive Lakes

The expansion of the Soviet military-industrial complex and the need for secrecy during the Cold War led to the creation of several secret cities that would hold the main nuclear weapons production facilities of the Soviet Union and be hubs for weapons and space research. Those cities are closed, designated with numbers to distinguish them from the nearby towns from which they took their names. Billions of gallons of high-level radioactive waste from cities such as Chelyabinsk-40 (site of the Mayak plant), Tomsk-7, and Krasnoyarsk-26 have built up in leaking tanks, nearby lakes, and underground storage caverns. Waste from Chelyabinsk-65 was dumped into reservoirs and nearby Lake Karachay. At Tomsk-7 and Krasnoyarsk-26, high-level waste was pumped into underground caverns close to major rivers, inviting disaster.[93] Credible sources estimate that *billions* of curies of radioactive waste are held at these sites.[94] To put this in perspective, the Chernobyl reactor disaster released about 5.8 *million* curies. U.S. facilities at Oak Ridge, Hanford, and Savannah River discharged about 2.6 million curies during the Cold War, according to Donald Bradley at the Pacific Northwest National Laboratory.[95] The worst-case scenario is that the waste will start to leak out and flow down the massive Ob and Yenisey Rivers into the Kara Sea and out into the Arctic Ocean where it might have devastating effects. There is already some evidence of leakage, and some downstream areas of the Yenisey show signs of heavy contamination. Accidents are a constant threat.

While some foreign money, including CTR funding, has gone into improving the Mayak facility, little or no attention has been paid to the other sites.[96] In Krasnoyarsk, U.S. involvement has focused instead on providing alternative employment for nuclear scientists under the Nuclear Cities Initiative. The program was severely criticized by a 1999 General Accounting Office report, which claimed, among other things, that the program was producing military benefits for

Russia and might be supporting research on weapons of mass destruction.[97]

If leakage into the Arctic does happen on a large scale, as some experts fear, the effects on the human environment in the United States will certainly be felt. The extent of the risk would need to be determined by serious investigation and analysis, something that has not yet been done, despite the flurry of American activity elsewhere in Russia. For now, the head of Russia's nuclear inspectorate has warned that the radioactive waste buildup threatens "nuclear catastrophe on a global scale."[98] Henry Kendall, a Nobel laureate in physics at MIT, describes it as "the largest and most careless nuclear practice that the human race has ever suffered."[99] At the moment, however, it seems that the focus is on pet projects, with little regard for how they might affect U.S. security, while more genuine potential threats to the United States have been ignored. In a further example, Alexei Yablokov has pointed out that Russian plans to build a series of floating nuclear power plants stationed on towable barges have been wholly ignored by U.S. policymakers, despite the fact that the first plant, due to be installed at Pevek in eastern Siberia, will be almost as close to the United States as will be the planned Cuban Juragua nuclear plant, construction of which the United States is strongly contesting on the basis that the reactor type is unsafe and is a hazard to Florida and other eastern states.[100]

The Consequences of U.S. Environmental Involvement in Russia

Taken together, the lack of clarity about how the Russian environment affects U.S. interests and the misdirected efforts to ameliorate environmental conditions in Russia cannot but encourage suspicions among Russian military and political elites about U.S. motives. If those suspicions generate serious resentment in the Russian populace, Washington's goal of cooperation may degenerate into tension and allegations of espionage. But the worst problem seems to be that no threshold has been set. At the moment, many projects are carried out without considering how—or even whether—they benefit U.S. security. As environmental projects, they are beneficial to Russia. However, as enhancements to U.S. national security, their value is decidedly less. At the same time, potentially serious threats to the environment of the United States are left unevaluated. The latter threats may or may not cross a reasonable threshold. But, until they are assessed against such a threshold, the question remains open. Hard science is needed for hard decisions, and the security of the United States requires both.

Conclusion: Whither Security?

Linking environmental degradation with national security sets a dangerous precedent in national security policy. In practice, the linkage has not gained considerable ground, if one compares the funding and attention it receives with that still dedicated to advancing traditional military security goals. However, it is precisely because the concept of environment security has grown even as it has remained in the background, and therefore less subject to public scrutiny, that it is so worrying. Rhetoric may extend beyond practical reality for the moment, but that situation need not last. Pursuing the abstract goal of "environmental security" risks militarizing environmental issues and trampling on civil liberties. It also pushes the United States into more and more scenarios of overseas intervention and conflict, frequently of its own making.

Given that the concept is unlikelly to disappear in the near future, what can be done at least to contain its worst excesses? Three initial actions should be undertaken:

- *Define Environmental Security:* More attention should be paid to what elected officials and bureaucrats mean when they talk about environmental "threats" to national security. What kind of environmental issues

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Addressing environmental issues is one thing; treating them as a threat to national security is quite another.

are so serious as to affect national security? Who decides which problems constitute such threats? Most important, how do they actually threaten security and what tradeoffs do counteractions entail? Without clear and consistent answers to those questions, the term "security" itself becomes virtually meaningless.

- *Set Thresholds:* The current administration exhibits a tendency to make commitments that it can't, or shouldn't, keep. The execution of sensible national security policies requires a level-headed look at what goals are worth pursuing, as well as which ones are possible and cost-effective. Thresholds need to be set to help determine at what point an environmental problem rightfully constitutes a threat. What degree of risk are we prepared to endure before taking action? How do the benefits compare with the costs, either of intervening or of standing by? What should rightly be left to other countries to deal with? Those are the operational questions that need to be asked.
- *Reassess the Role of Federal Agencies:* At the moment, a whole host of federal entities, ranging from DoD, DoE, and the CIA to EPA, the National Oceanic and Atmospheric Administration, and the Department of State, is involved in environmental security activities. They are all involved in setting or executing both national security and environmental policy—as well as foreign policy in some cases. A certain amount of overlap is inevitable even in traditional security policy, but it is disturbing to see so many agencies involved, all with competing agendas and conflicting goals. This is especially so where civilian and military activities coincide. There is also something bizarre about DoD, one of the world's worst polluters, being involved in overseas efforts to reduce pollution. The recent, often indiscriminate, use of depleted uranium armaments by U.S. aircraft in the war over Kosovo contrasts starkly with DoD's efforts to deal with nuclear waste in Russia, demonstrating that DoD's environmental security mission is fraught with contradictions.[101] Reassessing the role of all pertinent agencies in formulating and carrying out policies to counter environmental "threats," once properly defined, is therefore a good step toward avoiding some of the pitfalls awaiting environmental security policies. Although there may still be a role for the military in environmental protection, it should be far more limited than it is currently. Environmental policy belongs in the civilian sphere unless there are clear, traditional national security implications.

The broad redefinition of security that is taking shape sets too many dangerous precedents, as the study of environmental security shows. International order will be severely destabilized if the United States becomes fixated on solving every problem that arises around the globe. The expansion of the concept of security also faces a double bind. If it results in militarization of policy previously restricted to the civilian sphere, as is happening in areas such as the environment and drug-trafficking control, the cost to society will be very high. If it instead leads to everything in the civilian sphere's being called an issue of national security, then the government will be able to bypass existing checks on its power by invoking "national security." At that point, anything is possible and abuses are probable.

It is important to proceed with greater caution and broader debate instead of blundering ahead regardless of the consequences. Addressing environmental issues is one thing; treating them as a threat to national security is quite another. By failing to differentiate reasonably between the two concepts,

we may well find ourselves with more wars, more wasted money, and less security for all.

Notes

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