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Introduction:

Mapping Contested Grounds

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When the environmentalist Lester Brown argued for a redefinition of national security in 1977, his work elicited little response among students of world politics. Six years later, Richard Ullman gave support to this initiative with a short article entitled "Redefining Security," in which he sought to broaden the concept of national security to include nonmilitary threats to a state's range of policy options or the quality of life of its citizens.[1] Brown and Ullman inspired a few scholars to reconsider the concept of security from an environmental perspective, but, during this period, the perceived imperatives of the Cold War continued to dominate both theory and practice in the area of security affairs.

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The past several years, however, have seen a dramatic ground swell of interest in environmental change as a variable relevant to understanding security and conflict. This interest has not been confined to the academic world. In 1991, former President Bush added environmental issues to the "National Security Strategy of the United States." High level officials and academics now meet regularly to devise answers to the questions addressed in this volume.

The ground swell of interest has produced a number of important, although often controversial and inconclusive, empirical findings about environmental change as a source of insecurity and conflict. It has generated a lively exchange between those who view the redefinition of security as part of a general project to transform the international system, those who share this ambition but are skeptical of such an approach to realizing it, those who seek to incorporate environmentalism into existing institutions and practices, and those who regard the entire exercise as a passing fad related to the policy confusion and transitional unipolar moment that have followed the sudden end of the Cold War. Above all, this "second look" has contributed to the expanding field of environmental politics and broadened appreciation of the complexity of the environmental crisis.

This volume has been prepared to introduce students and practitioners to the theoretical debate and empirical evidence available today. In the following pages, I provide a general context for the subject by briefly presenting definitional moments in the history of the new environmental politics. I then sketch the early contours of the debates over environmental security and conflict. Next, I summarize the main questions explored in this volume. Finally, I review the contents of *Contested Grounds* on a chapter-by-chapter basis.

The New Environmental Politics

Although conservation movements, concerns about the deleterious impact of industrial pollution, and fears of scarcity-induced conflict and misery have received some attention throughout the industrial age, the emergence of environmental politics is a recent phenomenon.[2] It was during the turbulent decade of the 1960s that environmentalism began to assume its contemporary political form. Environmental activists, buttressed by scientific research, channeled mounting public anxiety about environmental change into a political movement that quickly began to affect political agendas at the local, national, regional, and global levels.

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The anxiety was catalyzed and disseminated by a number of popular books, the most influential of which was Rachel Carson's controversial 1962 bestseller, *Silent Spring*. Carson's account of the impact of pesticides on human health and her moral outrage at the arrogance that permitted such behavior anticipated a revolutionary change in the manner in which the relationship between nature and civilization would henceforth be perceived. No longer could nature be regarded as simply raw material to be endlessly transformed by human ingenuity and labor into commodities. The relationship was more complex and delicate than previously suspected. Starkly put, the environmental life-support system upon which all life depended was being altered and degraded by human actions—at stake was the future of humankind.

By 1970, the groundwork was in place for Earth Day, "the largest environmental demonstration in history."[3] The social context that mobilized millions of Americans to participate in this event and supported the emergence of the new environmental politics has been described by John McCormick in terms of a general malaise about the broader implications and future of industrial affluence, the psychological stress of nuclearism, growing public alarm about environmental disasters, advances in scientific knowledge, and the compatibility of environmentalism with other antiestablishment programs such as the antiwar and women's movements.[4]

These and other themes were reflected in the foreboding literature that appeared at this time and underscored the global magnitude of the "environmental crisis." A vigorous debate erupted in public fora, nourished by the widely read works of writers such as Paul Ehrlich (1968), Garret Hardin (1968), Barry Commoner (1971), Donella Meadows et al. (1972), and Lester Brown (1972). By drawing attention, respectively, to issues such as exponential population growth, the "tragedy of the commons," the negative externalities of production technologies, the potential limits to industrial growth, and the complex global interdependencies of the late twentieth century, these authors provided the new environmental politics with a rich analytical and normative discourse that immediately engaged students and practitioners of world politics.[5]

Environmental issues were placed squarely on the agenda of world politics at the United Nations Conference on the Environment (1972) held in Stockholm. As Lynton Keith Caldwell notes, during the century prior to 1972, both governmental and nongovernmental members of the international community had met sporadically, and largely ineffectually, to discuss a range of environmental issues.[6] For

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example, the conservation and equitable distribution of resources was broached at the United Nations Scientific Conference on the Conservation and Utilization of Resources (1949). A number of recommendations related to research and education issued from the Intergovernmental Conference of Experts on a Scientific Basis for a Rational Use and Conservation of the Resources of the Biosphere (1968).

But it was at Stockholm that the international importance of environmental issues was clearly and officially recognized and given an institutional setting through the creation of the United Nations Environment Programme.[7] Moreover, the centrality of North-South issues and the vital role of nongovernmental organizations (NGOs) in the new environmental politics were both clearly acknowledged at the Stockholm conference.[8]

Building on the legacy of Stockholm, the past three decades have witnessed a flurry of activity at the international level. Over two hundred multilateral agreements have been negotiated addressing issues such as climate change, sea pollution, the use of nuclear materials, the protection of flora and fauna, air pollution, the military use of environmental modification techniques, and the transboundary movement of hazardous materials. Although many states have failed to sign these agreements and monitoring and enforcement remain imperfect, a corpus of international environmental law now exists to guide and regulate state actions. Indeed, international law scholar Dorothy Jones has argued that protection of the environment is emerging as a fundamental legal norm in the international system.[9]

Regional organizations as diverse as the Organization of African Unity, the European Union, the North Atlantic Treaty Organization, the Organization for Economic Cooperation and Development, and Asia Pacific Economic Cooperation have engaged in some level of environmental activity. The United Nations system, hampered by various organizational and political constraints, has acted to incorporate environmental issues into many of its specialized agencies, including the United Nations Development Programme, the World Bank, the Food and Agricultural Organization, the International Labour Organization, the World Health Organization, the International Maritime Organization, and the United Nations Education, Scientific, and Cultural Organization.

Throughout the 1970s and 1980s, public concern about the immediate and cumulative effects of environmental change, backed by increasingly sophisticated scientific research on problems such as acid precipitation and deforestation, compelled state officials to take

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environmental issues seriously. A major step forward occurred in 1983 when the United Nations General Assembly established the World Commission on Environment and Development. Chaired by the former Prime Minister of Norway, Gro Harlem Brundtland, the Commission released its report, *Our Common Future*, in 1987. Focusing on the global and interlocking processes of population growth, food production, ecosystem protection, energy use, industrialization, and urbanization, the report contained a wide range of proposals and recommendations woven together by the concept of sustainable development: development designed to "meet the needs of the present without compromising the ability of future generations to meet their own needs."[10]

The concept of sustainable development, negotiated in an attempt to bridge the diverse interests of developed and developing states, was elaborated at the 1992 Conference on Environment and Development held in Rio de Janeiro and has been integral to discussions at other U.N. conferences on issues such as population and development (Cairo 1994). Thus, over a twenty-five-year period, world environmental politics has evolved from the Stockholm generation's recognition of the seriousness of the problem to the Rio generation's attempt to design a solution to it—*Agenda 21*.[11]

Important developments also have transpired in the nongovernmental realm. NGOs such as Friends of the Earth (established 1969) and Greenpeace (established 1972) have become vital transnational forces, raising public awareness, engaging in political activism and scientific research, monitoring compliance with regimes, and participating in the NGO fora that take place alongside U.N. and other international conferences. Covering the entire political spectrum from reactionary to radical, ranging from highly specialized to broadly focused, and—depending on how one defines them—numbering in the tens of thousands, NGOs play a key role in shaping and supporting the new environmental politics of the late twentieth century.[12]

Through these various activities, three broad and interconnected issue areas gradually have emerged that today guide research, policymaking and activism: environmental ethics, sustainable development, and environmental security. These are clearly associated with the traditional concerns of students and practitioners of world politics: human rights and world justice; international political economy; and national security, war, and peace. In a field that became highly institutionalized during the Cold War era, it is not surprising that the predominant tendency has been to place environmental issues into familiar analytical and policy categories.

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As a result, the conceptual issues of environmental politics have become increasingly integrated into the enduring and fundamental intellectual debates about realism, liberalism, and marxism; about structural and process explanations and prescriptions; about legal and market forms of regulation; about the utility of domestic and international institutions; and about the causes and consequences of conflict and cooperation, wealth and poverty, and justice and inequity.

While many are encouraged by the fact that environmental issues have moved into the political mainstream and gained legitimacy in the academic world, others fear that in doing so they have been diluted, losing their revolutionary potential and enabling scholars and policymakers to proffer compromised, short-term solutions designed to protect the status quo at a time when fundamental change is required. A common criticism leveled at the new environmental politics is that it has been coopted by the mainstream interests of Northern industrial states and now is governed by an agenda that marginalizes the concerns of the developing world while exaggerating its contribution to the environmental crisis. Proponents of this position, such as Maria Mies (1986), Vandana Shiva (1989), and Carolyn Merchant (1992), tend to endorse radical systemic change and frequently support grassroots movements and variants of deep ecology activism. Among environmental activists, similar concerns can be detected. Organizations such as Greenpeace have splintered as they have moved toward a more central and moderate position in the political arena, leaving some of their members frustrated by the perceived "sell-out."

Finally, a small minority of thinkers, such as Julian Simon and Herman Kahn (1984), Ronald Bailey (1995) and Wallace Kaufman (1994), have challenged the very utility of the new environmental politics on the grounds that its fundamental claim—that certain human activities affect the environment in adverse ways that threaten both the welfare of humankind and nature's complex evolutionary and recuperative processes—is misguided and alarmist. According to this critical perspective, environmental politics attracts resources away from productive enterprises in order to fatten already bloated bureaucracies and underwrite dubious academic ventures. This position's appeal relies heavily on the fact that scientific, demographic, economic, and political studies are often inconclusive in relating human actions to environmental change, and environmental change to threats to human welfare.

Because of the diversity of environmental concerns, the different and shifting priorities of various communities, and disagreements

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over causes, effects, and responses, it is not possible to describe in detail the many perspectives that together constitute contemporary environmental politics. The following typology, however, conveys a sense of this dynamic area.

Typology of the New Environmental Politics

Deep Ecology	Social Justice Ecology	Technological Optimism	Conservationism	Eco-Skepticism

Deep ecologists advocate a biocentric and holistic approach in which all forms of life are intrinsically valuable and interrelated. Technology, pride, and greed are among the forces that have encouraged *homo sapiens sapiens* to exploit, alter, and try to control the great web of life of which it is a part. In consequence, humans have become alienated from nature, isolated by layers of technology. Our activities have grown increasingly destructive, and we, along with many other species, are paying the price. We must try to reconnect with nature, rediscover its rhythms and patterns, and minimize our impact on it.

Social justice ecologists adopt an anthropocentric perspective. We must understand and address environmental change in terms of its relationships to forms of social injustice and violence, such as the oppression of women and indigenous peoples, the massive inequalities of wealth and power, increasingly destructive wars, and the systematic violations of human rights that characterize world politics. Day after day it is the marginalized and the poor who are in the front lines of global suffering—vulnerable to disease, compelled to move due to land degradation, and victims of scarcity. The exploitation and degradation of our environment and our fellow humans go hand in hand. Unless we adopt an approach to environmental rescue guided by principles of justice and morality, we may unwittingly implement policies that further divide humankind, and that sacrifice the many to maintain the privileged lifestyles of the few.

Technological optimists vary enormously in their assessments of environmental trends and conditions, but are united in their conviction that more efficient and environmentally sensitive technologies exist or can be developed that will resolve most, if not all, environmental problems. Their interest is in how to encourage the development, diffusion, and implementation of green technology. Sharing data, promoting technology transfer, and harnessing the tremendous power of the global market—supported by government regulation and consumer advocacy—are their preferred strategies.

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Conservationists, who often root themselves in the emotionally and symbolically fertile ground of the nineteenth-century conservation groups that emerged in America and Europe, tend to be wary of "environmental alarmism." No population bomb has been detonated, few ecosystems have crashed, no real scarcity of environmental goods exists. While humans can be thoughtless and immoderate, common sense, informed by scientific research, encouraged by market incentives, and directed by prudent government regulation should guide our behavior.

Finally, the *eco-skeptics*, as previously noted, are openly hostile to the new environmental politics. The human species, some six billion strong and growing, is better off than at any time in its 200,000 year history. If the problems are real, our species will adapt as it has done in the past. It survived the peak of the last Ice Age, some 18,000 to 20,000 years ago with little more than animal skins and stone tools. It can survive a few degrees of global warming or the extinction of spotted owls.

Proponents of these various positions are evident in each of the three issue areas noted earlier. The concepts of environmental security and conflict have elicited a particularly vibrant debate among academics and policymakers alike that displays much of the diversity described above. The following section reviews the early contours of this debate and is very brief because many parts of this debate are summarized and discussed in subsequent chapters.

Environmental Security and Conflict: The Debate Unfolds

Simon and Kahn notwithstanding, after three decades of wide-ranging research and discussion, it is reasonable to assert that the expanding patterns of production, consumption, settlement, and waste disposal developed by the human species are adversely affecting the air, water, land, and biodiversity upon which all forms of life depend. Although some activists and intellectuals have endorsed an uncompromising ecocentric position, mainstream environmental politics is principally concerned with what this means for the welfare, security, and freedom of all or part of humankind.

The environmental security debate that has emerged within the new environmental politics has been shaped by two closely related clusters of questions. First, what does and should the concept of "environmental security" mean? Should the emphasis be on protecting

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the environment or addressing environmental threats to the security of states or of humankind? Is the impact of environmental change manifest in familiar forms of violence and conflict, new forms such as a gradual deterioration of the quality of life, or both, or neither? Do disagreements on the meaning of environmental security reflect deeper disagreements between the North and the South, men and women, elites and nonelites, or Western and non-Western cultures? In a world characterized by multiple forms of violence and innumerable sources of insecurity, where does environmental change rank?

Second, what are the risks involved in using a vocabulary that, in the arena of world politics, tends to evoke images of war and invite military participation? Are values such as peace and justice receiving adequate attention in this discourse? To what extent has it been fueled by post–Cold War concerns about cuts in defense spending? Can the military, with its vast resources, play a constructive role? How persuasive are the criticisms of those who fear that environmental politics is becoming a reactionary prop for entrenched interests instead of a revolutionary tool for change? Answers to these questions have evolved somewhat independently in the policy and academic communities.

Environmental issues have a fairly recent and marginal, but not insignificant, status in the security policy community.[13] In the 1970s, the OPEC oil crisis and "limits to growth" thesis stimulated concerns about how resource scarcity might jeopardize the economies of advanced industrial states and promote conflict. The concept of economic security emerged to address these concerns. Partially in response to this, the Carter Doctrine was announced, affirming the strategic value of the oil-rich Middle East. However, discussions of energy self-sufficiency as a national priority garnered little support. Throughout most of the 1980s, economic growth remained a domestic priority and security thinking focused on the Cold War rivalry with the Soviet Union.

The end of the Cold War created an opportunity to reconsider the concept of national security—and the potential threat posed by environmental change. Arguments developed within the policy community generally (1) underscore the immediate and prevalent nature of the threat; (2) relate it to national interests; (3) contend that existing beliefs, institutions, and practices are in some way inadequate; and (4) call for resources to be applied through new institutions or strategies to achieve specific objectives. The tone of these arguments is usually urgent and dramatic, designed to attract the support of officials concerned about the implications of institutional restructuring,

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and worried about climbing on a new bandwagon that might suddenly fall on its side.

The most articulate and influential arguments have been advanced by Jessica Tuchman Mathews. In her widely cited article "Redefining Security," Mathews endorses "broadening [the] definition of national security to include resource, environmental and demographic issues."[14] Pointing to the interrelated impact of population growth and resource scarcity, she imagines a bleak future of "[h]uman suffering and turmoil," conditions ripe for "authoritarian government," and "refugees . . . spreading the environmental stress that originally forced them from their homes."[15] Turning to the planetary problems of climate change and ozone depletion she completes a "grim sketch of conditions in 2050," and concludes with a set of general policy recommendations, entailing significant institutional change and aimed at ensuring this grim sketch does not become reality: slow population growth, encourage sustainable development, and promote multilateral cooperation.[16] More immediately, she argues, the United States should seek the elimination of ozone-depleting CFCs, support the Tropical Forestry Action Plan, support family planning programs, and develop a green energy policy.

A 1994 *Atlantic Monthly* article by Robert Kaplan, entitled "The Coming Anarchy," drew an even grimmer portrait of growing human misery, population displacement, violence, and conflict, related it to environmental degradation, and asserted that this was "the national security issue of the early twenty-first century."[17] This, too, has prompted discussion within the policy community, where a principal concern is to identify threats to U.S. interests and the image of chaos in the Third World appears rich with menacing possibility.

A more subdued but equally menacing article by Matthew Connelly and Paul Kennedy highlights the demographic dimension of the threat. "Must It Be the West Against the Rest?" draws heavily upon Jean Raspail's unsettling vision, in *The Camp of the Saints* (1973), of humankind's most miserable members leaving their bleak Third World existence in a desperate final effort to experience Western opulence. Connelly and Kennedy take this scenario seriously and offer a familiar set of policy recommendations if the West wishes to avoid it: give more aid and contraceptives, develop alternative energy sources, curtail arms sales, strengthen the U.N.'s interventionary capability, and promote a culturally sensitive code of human-rights-based ethics.

These writers, aware of current research on environmental change, sensitive to the sort of language that will attract policymakers, and building on themes that acquired legitimacy in the 1970s, have

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served as vital but selective conduits between the academic and policy worlds. Mathews's commitment to an interdependent and global conception of environmental security and her strong endorsement of multilateral solutions serve to coax policymakers away from conventional realist positions based on protecting explicitly national interests with strong military capabilities. Kaplan's impact is more difficult to assess. His penchant for sensationalism may prove to be galvanizing or destructive of environmental politics. Kennedy and Connelly remind us with great clarity of the need for a new North-South package of reforms.

In the United States, at least, policymakers appear to be listening. In recent years the Department of Defense has stepped up recycling and clean-up efforts, cooperated with foreign militaries to develop environmental guidelines, worked with other agencies at home and abroad to address problems such as radioactive contamination in the Arctic, and hosted regional conferences on environmental conflict and security. The intelligence community has begun to track and analyze environmental change, opened some of its archived satellite imagery to scientists, and promised to make its extensive data collection and assessment assets available to support environmental policy. The State Department has vowed to green American foreign policy by publishing annual reports on its goals and accomplishments, spearheading international efforts to improve treaty monitoring and enforcement, and establishing regional opportunity hubs in strategic locations in order to integrate environmental concerns into its operations and serve as sites for addressing pressing environmental problems. The general attitude informing these and many other initiatives is that the interests of the United States and the world depend on a healthy environment. Clearly, the concept of environmental security has been an important catalyst to these efforts, although assessments of their impact and potential vary considerably.[18]

While the writers noted above may be having the greatest immediate impact on policy, it is in the academic world that the concept of environmental security has been explored in depth and from a wide range of perspectives that will have a long-term influence on policy.

While some scholars such as Gray and Rivkin (1991) have expressed skepticism about any relationship between environmental change and security, most of those who study this issue agree that environmental change threatens human welfare in some way. There is sharp disagreement, however, on how best to apply which resources to what ends. These disagreements reflect different levels of analysis, different interpretations of empirical evidence and causal chains, and different normative biases.

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In large measure, these disagreements can be traced to the longstanding divide in world politics between those who seek to protect and refine a liberal world order of sovereign nation-states, markets, and regimes and those who seek to transform the current international system on the grounds that its states, markets, and regimes embody fundamentally unjust or undesirable values and practices. The former relate environmental security to the preservation of the international system; the latter to its radical transformation. Thus one dimension of the debate has been shaped by the confrontation between statists and globalists, reformists and radicals, liberals and their critics. While both sides agree that existing economic and political practices have caused the current environmental crisis, they part on the question of whether these practices need to be revised or replaced.

This is a difficult question to answer. Many scholars and policymakers agree in some measure with Francis Fukuyama's bold claim that the big questions have been resolved. Humankind has determined the ideal forms of politics (representative democracy), economics (market economies), and ethics (human rights). On the ground, however, these systems are often inefficient and imperfect. Our challenge now is to use technology and other tools to solve problems within these "ideal" systems.[19]

Many others, however, contend that our problems are of a more fundamental nature. Either the core values (such as sustained economic growth) that guide our social structures are misguided and need to be changed (a reformist view), or the structures themselves are undesirable and need to be replaced (a revolutionary view).

This fundamental divide shapes much of the debate, but it is not the sole primary source of disagreement. Another fundamental—and crosscutting—divide is evident, although often cloaked in the shadows of academic discourse, in two markedly different images of what environmental security requires. Here a powerful technocratic-managerial image—inevitably biased toward the technical skills of the North—competes with an equally powerful, but less widely endorsed, democratic image. Thus, at the most general level, the debate over environmental security ranges from a position advocating the preservation of the status quo through the management of Northern elites to change inspired and governed by a global democratic politics. Between these extremes lie conceptions of the preservation of the status quo through some form of democratization and change guided and managed by transnational elites.

A third complication stems from the fact that the consequences

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of environmental degradation are experienced differently over time and space. From the perspective of someone living in a poor, sub-Saharan state, a sense of immediate threat may result from water pollution and scarcity, soil erosion, or the spread of disease. A Western European, on the other hand, may feel more threatened by the long-term effects of radioactive contamination or global warming. For the former, deforestation may be seen as essential to survival, whereas for the latter it may be seen as a source of climate change or gene pool loss that should be halted. Consequently, the policy agendas that emerge to ensure environmental security vary enormously, making multilateral agreement and cooperation difficult. Coordination problems increase dramatically when material interests, future discount rates, and the benefits of competitive extraction vary.

In light of these differences, it is only at a very high level of generality that one can speak of environmental security as a clear and distinct concept appropriate to the entire world. On these terms, environmental security might be defined as a condition having three characteristics: First, it is a condition in which environmental goods—such as water, air, energy, and fisheries—are exploited at a sustainable rate. Second, it is a condition in which fair and reliable access to environmental goods is universal. And third, it is a condition in which institutions are competent to address the inevitable crises and manage the likely conflicts associated with different forms of scarcity and degradation.

Can the systems in place today provide environmental security on these terms? And, if so, will this be achieved through representative or participatory strategies? In any case, such a concept is impossible to operationalize fully in the foreseeable future. We inhabit a world in which environmental change affects human welfare and freedom in diverse ways; in which huge inequalities of wealth and power, combined with the random distribution of environmental goods, create very different payoff structures for international actors; in which existing institutions are only beginning to take environmental factors into consideration; and in which the environmental agenda is itself subjected to the pull of other human agendas.

Thus, while it is possible to define environmental security in an idealized manner appropriate to the entire planet, particular understandings that are often at odds with each other litter and shape the contemporary landscape. At the very least, it is possible to identify four distinct conceptualizations:

1. *Deep Ecology*. As discussed earlier, this perspective stresses

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the security of our entire interactive and interdependent planetary environment.

2. *Human Security*. This position is captured in the social justice definition offered above. Its emphasis is on ensuring that all of humankind has fair and reasonable access to a healthy environment, today and tomorrow.
3. *National Environmental Security*. This is the position that is most evident in the environmental security policy that has developed in the United States in recent years.[20] Its focus is on (a) greening military training, testing, and warfighting activities, (b) using military and intelligence assets (such as data collection and analysis capabilities) to support environmental policy, (c) tracking environmental problems that might trigger, generate, or amplify violent conflict, (d) developing anticipatory policies for dealing with environmentally stressed areas, and (e) integrating environmental concerns into conflict resolution processes.
4. *Rejectionist*. The rejectionist position is not a variant of ecoskepticism; rather, its advocates contend that linking environmentalism and security is not a desirable approach because environmental change rarely causes a conventional security problem and security instruments are poorly designed to deal with environmental problems.

In short, different perspectives on fundamental structures, operational strategies, and environmental priorities thicken an idealized formulation of environmental security in at least four distinctive ways. Since the clearest examples of these various positions are presented in subsequent chapters, it is appropriate to allow the reader to examine the debates first hand and to turn to the central questions unifying the chapters of this volume.

The Main Questions

Three main questions have been raised and addressed in this volume:

1. What are the various meanings ascribed to the concept of environmental security today, how significant are the differ-

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ences, and what are the risks involved in accepting and building upon this term? Several answers to this question have been outlined above; these and others are developed more fully in subsequent chapters.

2. What is the relationship between environmental change and conflict or other forms of violence? In responding to this question, contributors to this volume have sought not only to clarify the relationship but also to gauge its significance as a security threat and to consider the possibility that environmental change might, at least in some cases, be better characterized as a motivation for cooperation.

3. Can the discourse of environmental security be harnessed to the formulation and implementation of effective research agendas and policies? Of particular significance is the current tension between defense conversion advocates and proponents of enlightened military strategy. A less explicit but perhaps more important tension exists between managerial—especially Northern and technocratic managerial—policy responses and more democratic and global initiatives. Beneath these policy preferences lie competing agendas for preserving the status quo and promoting fundamental change.

These are not the only questions addressed in this volume and the authors were not asked to respond to them directly. Rather, these are the main questions that, in retrospect, provide continuity to the various chapters and underlie many of the disagreements evident between them.

Chapter-by-Chapter Review

Following this introductory chapter, *Contested Grounds* is composed of three parts. Part I, "Historical and Conceptual Background," consists of a single chapter by Daniel Deudney entitled "Bringing Nature Back In: Geopolitical Theory from the Greeks to the Global Era." Deudney's analysis suggests that contemporary debates over environmental security can be enriched by two much older traditions of thought—one focused on nature as a cause of political outcomes, the other exploring conflict and cooperation from a geopolitical perspective. By

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describing the process through which these earlier traditions were modified and marginalized in the industrial era and have now resurfaced as innovations, Deudney hopes to recover insights that may be fruitful in understanding the rift between North and South.

Deudney carefully situates the concept of environmental security in a broader theoretical context to demonstrate its continuing historical relevance while still appreciating the particular challenges posed in the twentieth century that have given it its recent prominence. His analysis points out that (a) the security issues of our century have been generated in large measure by the various ways in which human and ecological systems have interacted over time; (b) the realist tradition, which appears least interested in grappling with environmental issues, was in fact constructed largely in response to this very problematic; and (c) weaknesses in contemporary international relations theory can in part be traced to the omission of natural variables, an omission that the debate on environmental security is correcting. Two of the case studies included in this volume (by Lowi and by Goldstone) are contemporary extensions of the more traditional problematics discussed by Deudney.

Part II, "The Contemporary Debate," includes seven chapters by scholars closely associated with recent debates over environmental security and conflict. This section of the volume covers a wide range of perspectives, and touches upon many of the key issues: the relationship of environmental change to conflict; the concern that environmental security is becoming a defense of the status quo; the realist position that much of the debate really addresses a very conventional concern; and the position of the defense establishment that, new or traditional, a military solution is feasible.

In "Thresholds of Turmoil: Environmental Scarcities and Violent Conflict," Thomas Homer-Dixon argues that violent conflicts throughout the developing world are being caused or exacerbated by resource scarcities. Reviewing the results of eight case studies conducted for the Project on Environmental Change and Acute Conflict (two of which are included in this volume), as well as evidence from other sources, Homer-Dixon suggests that this form of conflict is likely to increase as the pressures of environmental change overwhelm the capacity of institutions to adjust and respond, creating conditions for fragmentation or authoritarian government. This chapter demonstrates how the transnational phenomenon of environmental change may be related to the post–Cold War phenomenon of intrastate conflict, which is now the most common form of violence, while acknowledging the potential for this to escalate to the interstate level.

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Homer-Dixon's work has been extremely influential in both the academic and policy communities. This chapter, which draws upon earlier published work, provides an updated statement of his position that takes into consideration concerns raised by other writers.[21]

An uncompromising state-centric approach to international relations is unpopular among many environmentalists but continues to dominate much of the theory and practice of the field. In "A Realist's Conceptual Definition of Environmental Security," Michel Frédérick advances a simple and concise, realist position. He defines environmental security as the "absence of non-conventional threats against the environmental substratum essential to the well-being of [a state's] population and to the maintenance of its functional integrity." Frédérick defends this state-centric perspective by underscoring the continuing centrality of the state in world politics, and the greater capacity of state institutions to act effectively in comparison to international organizations. Moreover, he argues, while stressing the importance of the state, his definition clearly distinguishes between threats that require a military response and those that do not, and thus creates a viable basis for cooperative strategies.

In "The Case for DOD Involvement in Environmental Security," Kent Butts argues for involving military institutions in the process of maximizing environmental security. As Butts notes, environmental security is already a part of the mission of the U.S. military. The question, then, is whether this role should be expanded or reduced and in what ways. Pointing to recent efforts by the military to change its status as a major polluter, and responding to many of the concerns raised by Deudney and others, Butts argues that the military has extensive resources and skills that can be applied effectively to both domestic and international environmental security issues without compromising its war-fighting capabilities. Moreover, the U.S. military has the potential to influence military establishments in other countries in ways beneficial to U.S. interests, global security, and the environment.

In "The Case for Comprehensive Security," Eric Stern argues for a comprehensive and multifaceted concept of security that includes an environmental component. In this way Stern hopes to address the concern expressed by Deudney, who opposes using the language of security, and Frédérick, who seeks to divide the concept of environmental security into traditional security problems and nonsecurity problems. Stern concludes that the concept of comprehensive security, which incorporates military, environmental, economic, political, and social values, provides the most constructive framework for effective, forward-looking policymaking.

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Simon Dalby provides an important complement to the work of Homer-Dixon and Deudney in "Threats from the South? Geopolitics, Equity, and Environmental Security." In this chapter, Dalby examines the concept of environmental security in terms of both differences in the interests, experiences, and roles of Northern and Southern states, and tensions between managerial, status quo–oriented approaches, and more equitable, reform-oriented strategies for addressing the environmental crisis. By examining several environmental security issues from the perspectives of North and South, Dalby discloses disturbing trends in the evolution of the concept. As Dalby demonstrates, at stake is whether the concept will be employed to sustain traditional geopolitical understandings of security that favor the developed states or used to promote the protection of the global environment and all of its inhabitants.

Finally, Daniel Deudney has substantially revised earlier work calling into question both the utility of the concept of environmental security and the claim that environmental change tends to generate conflict.[22] In "Environmental Security: A Critique," he reiterates and expands upon three concerns. First, Deudney argues that environmental problems are conceptually unlike traditional security problems that focus on external aggression. While it is true that national security and environmentalism are linked insofar as military practices consume resources that could be applied to environmental rescue and often generate pollution, environmental degradation is unique in terms of the types of threat it poses, the sources of these threats, the extent to which they are intentional, and the kinds of institutions that are best suited to dealing with them. Second, it is dangerous, Deudney maintains, to try to harness the rhetorical and emotional allure of national security to environmentalism. The former is achieved through appeals to urgency, zero-sum thinking, and a "we versus they" mentality. In contrast, environmental change is a gradual and long-term threat that can best be addressed by building a sense of global solidarity based on shared interests. Finally, the language of security implies the likelihood of interstate conflict. But environmental threat is not likely to manifest itself in this way—the gradual immiseration of people is a more likely scenario. Deudney concludes that environmental change is best viewed as a global problem that challenges conceptions of national security. Instead of trying to adapt the latter, we should act to move beyond it and forge conceptions of security in international terms that better reflect the nature of the problem.

The last section of this volume, Part III, "Case Studies," contains

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three chapters that explore the issues raised above through focused case analysis. These three case studies include examples from both the developed and developing worlds, and cover resource scarcity and conflict, demographic issues, and the role of the military.

The first chapter serves to bridge traditional geopolitical issues with more recent environmental security debates by focusing on the problem of water scarcity. In "Transboundary Resource Disputes and Their Resolution," Miriam Lowi presents a detailed analysis of the complex nature of disputes over Jordan waters and their role in the Middle East peace process. Lowi argues that attempts by the United States, guided by functionalist theory, to resolve the conflict over water as a step toward a more general settlement were unsuccessful. Decoupling economic issues from political ones is not possible, she concludes, if the latter are characterized by deeply entrenched conflict. Moreover, while resolving political conflict may create conditions for developing a cooperative solution to the problem of water scarcity, the need for changes in consumption practices will not be easily addressed. Lowi's study has important implications for addressing cases in which resource scarcity is one of several sources of conflict.

The impact of population pressures on political stability in China is explored by Jack Goldstone in "Imminent Political Conflicts Arising from China's Population Crisis." Supporting many of the claims made by Homer-Dixon, Goldstone argues that the combination of population growth and over-burdened arable land has been a source of conflict in China for several hundred years. Goldstone contends that recent divisions within the ruling party and among elites, together with mounting difficulties in controlling Chinese society and appeasing discontented peasants and workers, have made the current regime extremely vulnerable. Add to this the fact that it will be very difficult to accommodate the needs of the tens of millions of Chinese who will be born in the next few decades, and the future appears bleak. Goldstone concludes that "[i]t seems unlikely that the collapse of communist China can be averted."

In the final chapter of this section, the role of the military in environmental security is examined by Ronald Deibert in "Out of Focus: U.S. Military Satellites and Environmental Rescue." Focusing on the possibility of using U.S. military satellites to support environmental protection and rescue projects, Deibert raises a number of concerns that reinforce and extend arguments made by Deudney and Dalby. By comparing military and civilian satellite systems, questioning the utility of declassifying military imagery, underscoring the military

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penchant for secrecy, and showing how during the Gulf War the military was able and willing to take over and censor civilian imagery, Deibert makes a forceful case for discouraging military involvement and encouraging the development of civilian capabilities.

Conclusion

The chapters in this volume do not resolve the various debates surrounding the concepts of environmental security and conflict. They do, however, provide a clear map of the areas of consensus, the principal disagreements, the conclusions of recent empirical studies, and the concerns that need to be addressed in the years ahead. Maintaining the environmental integrity of the planet and the welfare of humankind requires tough choices about both resources and institutions. There is no one path toward an environmentally secure future; there are many routes to conflict, violence, and misery. Avoiding the latter will demand innovation, pragmatism, and sacrifice. Students and practitioners of world politics must weigh different arguments carefully and act quickly and decisively in an era marked by skepticism and uncertainty, while remaining open to new ideas and information.

NOTES

1. Richard Ullman, "Redefining Security," *International Security*, vol. 8, p. 133.

2. For useful discussions of the nineteenth- and early twentieth-century background to contemporary environmental politics see, among others, Lynton Keith Caldwell, *International Environmental Policy: Emergence and Dimensions*, 2d ed. (Durham: Duke University Press, 1990); John McCormick, *Reclaiming Paradise: The Global Environmental Movement* (Bloomington: Indiana University Press, 1989); and Robert C. Paehlke, *Environmentalism and the Future of Progressive Politics* (New Haven, Conn.: Yale University Press, 1989).

3. John McCormick, *Reclaiming Paradise: The Global Environmental Movement* (Bloomington: Indiana University Press, 1989), p. 47.

4. John McCormick, *Reclaiming Paradise*, op. cit., pp. 49–64. Similar forces have been at work in many other countries of the world, although the

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