

## Naval War College Review

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Volume 33

Number 6 *November-December*

Article 19

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1980

# Warfare in a Fragile World—Military Impact on the Human Environment

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### Recommended Citation

Meyer, Stephen M. and Westing, Arthur H. (1980) "Warfare in a Fragile World—Military Impact on the Human Environment," *Naval War College Review*: Vol. 33 : No. 6 , Article 19.

Available at: <https://digital-commons.usnwc.edu/nwc-review/vol33/iss6/19>

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the long war assumption and *NATO's own policy* of escalation. One cannot help but be disturbed that despite the ambiguities of NATO doctrine and the contradictory assumptions that shape various aspects of NATO policy, procurement proceeds apace. This leads to a troubling question that is provoked by several of the essays in this volume: Can we really be buying a sensible defense posture in the absence of clear-cut criteria to guide our spending?

Another of the large issues raised is the question of escalation control. If we are to refight World War II, as the recent denuclearization of American strategy suggests we will, both sides must exercise extreme restraint with regard to nuclear weapons. But we learn here, again primarily in Laurence Martin's richly thoughtful essay, of the ambiguities of escalation in a maritime environment in which nuclear and conventional assets are mixed together, surveillance and strategic antisubmarine warfare activities occur as a matter of course, even in peacetime, and in which defensive instincts might lead to attacks on an opponent's strategic submarines. Again, one is left with a disturbing but vitally important question: Could the operational requirements of the Soviet and Western navies undermine the possibility of escalation control?

Another controversial issue addressed here is that of Soviet mission priorities. The Soviets seem to allocate most of their naval capability to defending their own strategic submarines and attacking ours, with little left with which to attack NATO SLOCs. If this is true, then how much need NATO invest to defend the SLOCs?

That question is especially germane to European navies for, as Holst, Kelleher, and Moore point out, those navies have had to face block obsolescence, declining resources, and additional missions (in particular, coastal patrol of offshore resources).

How much money should be devoted to what missions is not an abstract question for Europe's navies. Moore and Kelleher argue that changing naval technology may ease the problems faced by European navies, but hard choices nevertheless remain for European policymakers.

Enough has been said to demonstrate the type of significant and provocative issues that are found in this book. Unfortunately, there is no coherent gathering together of themes and ideas; related insights are scattered throughout; while themes, arguments, and conclusions often remain half-formed or implicit. This makes the reader's job more difficult. This book, unattractively printed by a small European publisher, seems destined for obscurity. But for those who are able to get their hands on it, it will reward a careful reading.

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Westing, Arthur H. *Warfare in a Fragile World—Military Impact on the Human Environment*. London: Stockholm International Peace Research Institute, 1980. 249pp.

*Warfare in a Fragile World* is the third in a series by the Stockholm International Peace Research Institute (SIPRI—best known for its annual Armaments and Disarmament Yearbook) concerning the effects of military activities and warfare on the environment. As noted in its introduction, the book places special emphasis on "... the disruption by war on agricultural and wild lands, and thus on the ecosystems these regions support."

The substance of *Warfare in a Fragile World* is divided among six key chapters, each focusing on a specific area: the temperate regions, the tropical regions, the desert regions, the arctic regions, islands, and the oceans. Within each chapter, the discussion is further

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broken down into a general introduction to the particular region's environment, habitat, and ecology, the most conspicuous civil and military uses of the region and, most importantly, the apparent civil and military abuses of the region.

Each chapter presents a cursory (i.e., anecdotal), though interesting, review of historical and contemporary episodes of military activity by region and the apparent effects on agriculture, health (i.e., disease, sanitation, nutrition, pollution, poison, etc.), wild life (i.e., significant changes in species distributions, food chains, ecological systems, etc.) and the region's ability to sustain "life" (human and nonhuman) in a manner consistent with that prior to the onset of the military activities.

The study is largely empirical, rather than theoretical, and consequently is forced to generalize from what researchers would label a "biased" sample—those cases in which substantial documentation on environmental and ecological effects exists, but which may or may not be representative of the whole. The chapter on tropical regions, for instance, is drawn almost entirely from the annals of the Second Indo-China War—an example of modern combat. The chapter on temperate zones, however, is based mainly on analysis of the repercussions of the First and Second World Wars.

One of the more laudable characteristics of the book is its attempt to employ a framework that contrasts military effects against civil effects. Unfortunately, this approach was not carried to its logical conclusion for if it had been, the study would have discovered that the military effect on the human environment has been (and will probably continue to be) a drop in the bucket when compared to the civil effect on the human environment. Soviet trawler fleets have done far more damage to fish populations than American nuclear weapons tests have.

Brazil's recent effort to "tame" the Amazon Basin is producing far more devastation to tropical ecology than the dozen or more years of U.S. participation in the Second Indo-China War.

Finally, I should mention that (apparently) because of the problem of documentation, *Warfare in a Fragile World* has a subtle anti-American flavor. Perhaps because of unjudicious editing, almost all of the key examples involve U.S. military forces committing some abominable act against nature. While the environmental "hazards" of the Navy's proposed ELF SSBN communications system are discussed, there is no mention of Soviet high-powered over-the-horizon radar beaming. U.S. nuclear testing in the Pacific (more than two decades ago) is closely scrutinized, but nothing is said of French testing during the last decade. American "nuclear" accidents that released radioactive residue were described, but the Soviet fission-powered satellite that fell on Canadian soil and contaminated the Arctic environment was not mentioned. The non-American reader most certainly gets a distorted view of the problem.

Owing to its novel perspective, *Warfare in a Fragile World* is both interesting and informative. Its emphasis on the long-term environmental and ecological effects of military activities and combat may prove useful to those concerned with the problems of postwar economic recovery. While warfare may often settle political problems, the social and economic aftermath is often ignored. Because the book's value is more impressionistic than analytic, it should be casually read. And priced at \$27.50, I strongly suggest prospective readers walk to a library.

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