

## OCEAN CRISIS?

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**Waters in Peril.** Leah Bendell-Young and Patricia Gallagher, eds. Kluwer Academic Press, Norwell, MA, 2001. 248 pp., illus., \$99.50 (ISBN 0792375041 cloth).

**W***aters in Peril* is a collection of 14 essays about human-induced challenges to the biodiversity and functioning of marine ecosystems and potential solutions. The collection represents selected presentations to the Oceans Limited conference held at Simon Fraser University, in recognition of the International Year of the Ocean. This conference, in Burnaby, British Columbia, Canada, was held a few years back, and although it seems as if some of the articles are a bit dated, it does appear that the authors were able to update references prior to publication.

The result is a mixed bag of articles of variable length, formality, and documentation that nonetheless provide interesting insights to most of the important issues of ocean resource conservation at the turn of the 20th century. Many of the articles are by leading and notably outspoken scientists in their fields. For example, Daniel Pauly and colleagues provide an update on the fishing down marine webs controversy;

JoAnn Burkholder directs attention to the chronic impacts of nutrient pollution; Robie Macdonald tracks persistent organic pollutants (POPs) to the Arctic and to humans; and Bill Ballantine argues for networks of “no-take” marine reserves. Although most articles develop a global perspective, two are oddly focused on local issues in British Columbia. Despite the broad title of the book, all but one article—a perspective on the effects of climate warming on Canadian freshwater environments by David Schindler—address the marine environment primarily or exclusively.

The editing, scope, and referencing of the 14 articles are uneven. Only eight of the articles have abstracts, and citations range from 2 in one article to over 100 in another. Length of articles is also variable, from Kenneth Denman’s 8-page article, which brushes by the complex issue of the responses of pelagic ecosystems to climate change, to 30 pages for Louis Codispoti’s casual but effective tutorial on the oceanic nitrogen cycle. Some articles present succinct but comprehensive overviews of a topic, for example Gregory Ruiz and Jeffery Crooks’s review of human-assisted biological invasions of marine ecosystems. Others focus more specifically on the author’s specialty; for example, Marjorie Reaka-Kudla mainly addresses crypto fauna of coral reefs in her essay on biodiversity in the sea.

Consequently, the book is not really a comprehensive text or reference book that provides a consistent jumping off spot to the broader literature. It is much more useful as supplementary reading for advanced undergraduates or graduate students who want to sample the range of contemporary ocean conservation issues. Most of these issues, except perhaps for widespread deterioration of coastal marine habitats, are directly touched on in one or more articles.

During the span of my own career as a marine scientist, our view of the oceans has changed from one of vastness and underexploitation to one of susceptibility and overexploitation. This is in part due to the fact that human uses of and effects on the ocean and its resources grew exponentially during the last half of the 20th century, but also because scientists

uncovered previously unanticipated vulnerabilities (e.g., top-down cascades resulting from exploiting higher trophic levels) and large-scale connections (transport of POPs to the poles, ozone and greenhouse gas effects, and global thermohaline circulation). Still, there are those who might find *Waters in Peril* alarmist and tilting toward “doom and gloom” appraisal. I do not think this is the case. Instead, the book allows a group of accomplished scientists the opportunity to “tell it like it is” with rare latitude for personal perspectives.

The book includes a consensus statement by the authors and others who participated in the conference that “the world’s waters are warmer, stormier, more polluted and less supportive of life than at any time since records have been kept.” While some may quibble with the evidentiary basis or universality of the statement, few would argue with the points of agreement that follow from that observation: The health of freshwater and marine ecosystems is essential to sustaining life and is in serious trouble; human activity and population growth are causing these problems; and we are all responsible for taking care of these waters and must act to protect our children’s future.

What is missing in *Waters in Peril* is a clear articulation of how we should act to solve the now well-characterized problems. Although the last four chapters are grouped under the heading “Toward Solutions,” only one chapter—Ballantine’s aforementioned argument for marine reserves—addresses specific solutions. This is not a knock on the authors or editors but is more a reflection of a generic shortcoming. As environmental scientists, we have become ever more proficient in identifying environmental problems. We need, however, to devote more of our analytic and creative skills to helping society find and apply solutions to these problems.

In sum, I found this collection of personal perspectives sobering and thought provoking. Although it is not a comprehensive treatise, reference trove, or indispensable addition to one’s personal library, it would be a useful addition to institutional libraries, particularly those

used by undergraduates and graduate students. In toto, it provides a good overview of the range of issues, and I could easily see including a number of the chapters on required reading lists as cogent summaries of specific issues.

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