Levin, Philip S. and Melissa R. Poe. 2017. *Conservation for the Anthropocene ocean: interdisciplinary science in support of nature and people*. London, San Diego, Cambridge, MA, and Oxford: Academic Press, 530 pages. ISBN-13: 978-0128053751. US $64.95 (paperback).

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In his article 'After Nature' Escobar (1999) noted that the schism that often exists between the constructivist (or discursive) view of nature and the realist (or environmentalist) view of nature, needs to be reconciled. Twenty years have passed, and there have been increasing number of studies that adopt a biological *and* a social approach to understand the issue of environmental degradation and its protection in the era of the Anthropocene. Despite such rise in interdisciplinarity, political ecological studies often include a passing reference to ecological data, mostly used to either validate or challenge community-level impacts of access to environmental resources. Biodiversity conservation practices, to some extent, have increasingly highlighting the need to work with local communities, and even to acknowledge the importance of ethnoecological knowledge to encourage local support for conservation efforts. Conservation science, however, while shying away from the 'fortress model of conservation', still continues to be practiced in academic silos. While the environmental crises of our times necessitate a greater number of scholarly collaborations that highlight empirical environmental data and complex socio-political realities, such collaborations rarely lead to work that seamlessly incorporates these very different disciplinary perspectives and makes them accessible to multidisciplinary groups of readers. *Conservation for the Anthropocene ocean*, edited by Levin and Poe accomplishes that feat and presents a coherent narrative pertaining to marine conservation in the age of the Anthropocene.

The volume presents a rich trove of articles written by biologists, marine conservationists, and anthropologists, who tackle the question of building bridges between different academic disciplines in their attempt to analyze the nature of marine biodiversity conservation in the context of contemporary geopolitics and the market-based global economic system. As one of the contributors rightly notes, the need of the hour is to invest in a research approach that transcends contemporary interdisciplinary to formulate radically new ways of thinking. It is interesting to see the ways in which the contributors have grappled with this challenge of 'multidisciplinarity' by adopting nuanced approaches to analyzing environmental politics and management strategies in a globalizing world. It is even more interesting to see how the goals of environmental justice and traditional cultural rights have co-shaped some of the research questions, even among some of the contributors with strictly natural science backgrounds. Thus, the chapters not only analyze the human impact on the marine environment, but go further to integrate questions of equitable development and social justice in research agendas.

The book is divided into four main sections, I) Setting the scene, II) Principles for conservation in the Anthropocene, III) Conservation in the Anthropocene in practice, and IV) Looking forward. Each section comprises scientific and sociological papers, written in a manner that makes them accessible to an interdisciplinary crowd.

Articles in Section I – Setting the scene – explore the nature of changing marine environments in the age of the Anthropocene, and inform us of its potential impact on species conservation *and* human societies. Chapters 2 (Climate variability, climate change, and conservation in a dynamic ocean) and 3 (The future species of Anthropocene seas) lays out the complexity and unpredictability of the future of marine resources in the context of Anthropocene. Marine environments are hard to manage and are not conducive to easy analyses in the context of rapid ecological changes. Conservation efforts are complicated further by international political boundaries that make it hard to implement uniform conservation policies. Chapter 4 (How can the oceans feed 9 billion people?) reminds us of the need for conservation and nutrition solutions. Marine conservation has to engage with several governance domains, including human rights, food safety, environmental management,

and trade and commerce, requiring a 'governance revolution' in the fisheries sector. The rest of the book brings together articles that inform readers how our commonly shared unpredictable future necessitates radically altered research and policy agendas, and shares some telling examples of ongoing experiments in collaborative marine conservation.

Chapters in Section II – Principles for conservation in the Anthropocene – analyze some of the assumptions that shape the nature of environmental conservation policies in the first place. Chapter 12 (Beyond privatization) questions the prioritization of economic rationales in environmental conservation. The authors, anthropologists by training, critique catch share in conservation strategies by pointing out that commercialization often does not lead to social equity. Thus, in lieu of privatization of resources, the authors draw upon rich anthropological research on communal maintenance of the commons in emphasizing place-based traditions of managing marine resources. This theme of social equity and justice in fundamentally shaping research agendas is also highlighted by Chapter 13 (Addressing sociological tipping points). The author argues for acknowledging the role of livelihood and sustenance needs of community members, along with species viability, in determining viability of fishing stocks.

Chapters in Section III present case studies highlighting the 'messiness' of implementing environmental policies on the ground in an inclusive and just way. Chapter 14 (Stakeholder participation in marine management) notes that marine management and conservation are 'inherently political' in nature. While this is nothing new for political ecologists, details about the complexities of knowledge sharing between very different social groups with stakes in marine resources is still valuable. Chapter 16 on 'Transdisciplinary research for conservation and sustainable development planning in the Caribbean' urges us to rethink our cognitive categories in a manner that goes beyond negotiating practical differences amongst stakeholders on the ground. Grounded on empirical evidence from Belize, the chapter illustrates the processes through which environmental scientists, policy makers, and various stakeholders come to work for a solution-oriented plan based on quantitative analysis of ecosystem services for achieving sustainable development. The next two chapters (17 and 18), 'Socio-ecological trade-offs in Baltic Sea fisheries management' and 'Human rights and the sustainability of fisheries', further illustrate the ways in which questions about rights to sustainable livelihoods and access to food can become integral to thinking about marine management policies. It is not only necessary to acknowledge the heterogeneity of human societies, but also to be aware of the relative desirability of different species of fish for biodiversity conservation *and* human needs while planning conservation efforts.

Chapters in Section IV – Looking forward – take forward these lessons for shaping and implementing equitable conservation policies to meet complex human and non-human species needs in a changing climate. I particularly like the chapter on 'Implications of a changing climate for food sovereignty in British Columbia' (Chapter 19) that urges us to go beyond planning for food security for the First Nation peoples in Canada. The authors note that the Canadian government has a long history of restricting First Nation food sovereignty, something that compounds the crisis of erosion of traditional diets in the context of environmental changes. Thus, planning for marine conservation in the Anthropocene should acknowledge the potential loss of tangible and *intangible* dimensions of 'clam-hunger' for the indigenous peoples of British Columbia.

In the concluding article, the editors Levin and Poe remind us of the urgent need to understand the ecological and the human costs of anthropogenic changes in the marine environment, and their consequent impacts on social justice and food security for poorer communities around the world dependent on the ocean. They also remind us to acknowledge the interconnectedness of people and environment, as well as between peoples themselves, as we strive to find equitable and just paths to sustainability.

The impressive array of articles that the editors bring together provides a transdisciplinary picture of the principles and praxis guiding environmental science and governance today, and views problems ranging from collapsing fish stocks to exploitative labor practices in contemporary commercial fisheries as interconnected problems that need to be addressed together. This book is an essential read for anyone

attempting to work in a multi-disciplinary way and/or in designing environmental policies in a holistic manner. Perhaps the next book in this series of transdisciplinary scholarship will have the subtitle 'Interdisciplinary *scholarship* in support of Nature and People.'

References

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