

## Book Reviews

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### Even holism is not enough

Belgrano, Andrea, and Charles W. Fowler, editors. 2011. **Ecosystem-based management for marine fisheries: an evolving perspective**. Cambridge University Press, New York. xvii + 384 p. \$115.00, ISBN: 978-0-521-51981-6.

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In this book, presumably targeting younger marine biologists and fisheries scientists, the editors define ecosystem-based (fisheries) management as the first step in a required march toward holism, holism itself being defined as management that would account for...well everything. This quixotic claim is not a slip of the pen: we find it repeatedly—in the Preface, in otherwise useful introductions that the editors wrote to tie groups of chapters together, and in their own terminal chapter. Indeed, the editors also want to account for evolution in ecosystems, for which they reintroduce the term “ecosystem” There is even talk of “biosphere-based management,” and, if only in symbolic form (“∞”), an allusion to infinity.

How, in an age where we have problems managing comparatively simple systems with enormous stakes (e.g., our international monetary system, or the balance of greenhouse gases in atmosphere), are we ever going to manage marine ecosystems “holistically”? In reality we can only track a dozen species at most, and this imprecisely, for the short periods that they can be turned into exploited resources.

All of this is a real pity because the individual contributions in this book are quite nice reviews, including Alec MacCall's “Foreword,” which reminds us that the widely used rule of thumb “Fmsy = M” is “equivalent to saying that at nominally optimal fishing intensities, human predation is equal to all the other predators combined.” Indeed, with regards to the theme of large human impacts, the editors could not have better chosen the first chapter, on the Baltic, which makes very clear that ecosystem considerations are useful in understanding what happens to fisheries, and/or what they can do to the ecosystems in which they are embedded. This is because the Baltic is a very simplified ecosystem shaped from the top down by a few species, notably cod, whose biomass influences the abundance of zooplanktivorous fish and thus that of phytoplankton.

Although several authors complain that many managers view Ecosystem Approaches (EA) as feel-good, annoying

complications to the practical business of fishing, this book demonstrates that EA can be tools for greater understanding and better management of fisheries and the ecosystems that nurture them. The various chapters in this book do an excellent job of pointing out, for the ecosystems they document, which component, judiciously chosen, would lead to improved fisheries management and ecosystem resilience. This approach makes the book reviewed here an excellent compendium of case studies.

However, the book does not become a whole, in spite of the editors' efforts, mainly because it is “holism” that they intend to sell, the whole enchilada, with ∞ and everything, rather than what can be achieved by real scientists and managers, working under time and resource constraints.

Moreover, the fixation on holism has led the editors to overlook howlers, e.g., the notion of a “minimum realistic model,” whose very name is a preposterous claim, and which in this case, would invalidate the whole book if true (if we had “minimum realistic models,” why would be bother with any others?).

Moreover, the editors fail to even begin to address the cost (vs. the benefit) of holism, though this should be possible, since it is feasible to set aside chunks of ecosystems, and watch them recover from the impact of fisheries. But this would involve dealing with the issue of marine reserves, a topic which receives only casual mention in this book—which is a pity, because study after study have shown that mother nature can re-establish some “health,” however defined, in the chunk of ecosystems left in her care, and she does this... “holistically.”

Overall, I find this book baffling. The holism which the editors seek and to which they insist we must strive is completely unrealistic and not even seriously examined as a philosophical concept, while the individual papers therein are interesting and focused. This is a clear case where the whole is less than the sum of its parts, unholistic.

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