

BOOK REVIEWS

Marine Fisheries Ecology. By S. Jennings, M. J. Kaiser, and J. D. Reynolds. Blackwell Science, Oxford, UK. 2001. 417 pages. \$52.95 (paper).

There are few fisheries ecology or science texts available for use at the undergraduate level, and even fewer that include economic and conservation issues. Jennings, Kaiser, and Reynolds have published a new book aimed at undergraduate students that highlights socioeconomic issues, conservation, and impacts of fishing. Our review is based on the use of the text in a senior-level fisheries science and management class.

The first five chapters serve as an introduction to the field. Environmental factors, fished species, and fishing gear are put into context and related to each other. Chapter 2 is a review of marine ecology and production processes, and it is followed by a chapter discussing fished species (primarily fishes and crustaceans), life histories, and species distributions. Chapter 4 introduces the foundations of fishery science by describing population structure in space and time, defining recruitment, and briefly covering spawner–recruit relationships, population regulation, and density-dependent habitat use.

Chapters 5, 6, and 17 provide overviews of developments in fishing gear, social aspects of management, and management goals and strategies. After a concise description of fishing methods and historical use of gear, the authors make several important observations about the impact of technological improvements on fishery resources. This is followed by a brief discussion of gear selectivity and research to reduce bycatch. Chapter 6 begins with a thought-provoking discussion of the application of foraging theory to humans, including the complex variables that motivate fishers. Chapter 17 presents an overview of how output or input controls can reduce fishing mortality rates and stresses how important it is to consider the history and traditions of fishing communities for effective management.

The authors offer a concise yet thorough presentation of fishery stock assessment in Chapters 7 through 11, providing clear mathematical derivations and suggesting additional texts in which readers may find more complex derivations and models. Chapters 9 and 10 define fishery stocks, methods of estimating stock abundance, and the variables that describe their dynamics. We felt that these chapters

should have preceded Chapters 7 and 8, which present overviews of single and multispecies stock assessment through a variety of examples. Chapter 11 focuses on how bioeconomic models can influence management decisions.

The final section, Chapters 12 to 16, explores the widespread effects of fishing, including influences on population and community structure, habitat, bycatches and discards, interactions with birds and mammals, and a discussion of the role of aquaculture in fisheries. Inclusion of this material in a fisheries ecology text is novel and timely and is strengthened by the authors' expertise in the subject. However, we found these chapters to be somewhat disorganized and repetitive and lacking a clear management perspective or solutions to highlighted problems.

The text is written in a clear style appropriate for undergraduate use and is well illustrated. A helpful feature for instructors is that all the figures are available for downloading from a permanent web site. Students will appreciate the use of boxes to highlight important material as well as chapter summaries and suggestions for further reading. References are extensive and up-to-date. The authors also provide appendices listing fisheries-related websites, a term index, and a separate geographic index. The map accompanying this index demonstrates a broad geographic area (with the expected bias towards the Northern Hemisphere).

This text will be welcome by instructors who plan on a broad coverage of the material. More importantly, students will find that *Marine Fisheries Ecology* not only enhances learning and understanding of what can be a difficult subject but also serves as an excellent reference source for topics that require further study.

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