Book review


This book is an excellent and refreshingly different opening to a new series of books entitled ‘Fish Biology and Aquatic Resources’ edited by Tony Pitcher. As there are currently over 1200 books available that deal with fisheries and related subjects, the scope for originality is somewhat limited. This book is the first that really examines the consequences of fishing activities from a marine ecosystem perspective. Hall’s timing is impeccable. The need to take a more ‘ecosystem based approach’ to fisheries management is fast becoming enshrined in legislative documentation. This was recently highlighted in the United States by amendments to the Magnuson-Stevens Fishery and Conservation Act that require fisheries managers to define ‘essential’ fish habitat and address the impact of fishing gear in their management plans. This book was published in time to appear at the joint International Council for the Exploration of the Sea (ICES) and Scientific Committee on Oceanic Research (SCOR) conference entitled ‘Ecosystem Effects of Fishing’. Over 350 delegates registered at this conference which was way above the organisers’ expectations and gives some indication of the increasing importance that is attached to this area of research and hence the relevance of this book.

The literature covering the ecosystem effects of fishing is widely scattered across a broad range of disciplines. Hall has assembled the crucial examples that provide the cornerstone of his book in an organised and coherent manner. Hall has broken the text into four major sections: Direct effects on populations; Species interactions; System level perspectives; Fisheries management. Part 1 provides the factual basis for the rest of the book and covers trends in world fisheries, by-catches and discards, effects of trawling and dredging on the seabed and fishing at the coastal margin. Armed with this comprehensive array of facts the reader can then progress to the next stage of the book that considers species interactions. Here, Hall deals with mechanisms of top down control, the effects of harvesting lower down the foodweb (e.g. the Shetland sandeel debate), and species replacements. Hall then explores these effects of fishing by considering three case-studies (Georges Bank and the Gulf of Maine, North Sea, and the Gulf of Thailand). In each case flatfishes seem to be the group of fish that increase their dominance in the community which may result as a combination of species interactions, 0022-0981/99/$ – see front matter © 1999 Elsevier Science B.V. All rights reserved.
enhanced food supply or habitat alteration. Part 3 of the book starts with an informative section on different methods of quantifying ecosystem changes and how it is important to use the right tool for the job. The different analytical methods described also give a new perspective and highlight the limitations of using traditional diversity indices as compared with multivariate techniques. In addition, Hall covers some of the analytical techniques, such as the use of measures of taxonomic diversity, with which many fisheries biologists may not be familiar or have hitherto not considered. Having discussed ways to measure community change, Hall then considers the concepts of ecosystem health, function and stress and the potential for recovery. Finally, Hall returns to the issue of fisheries management and discusses the various roles of marine protected areas, harvesting across trophic levels and Bayesian perspectives on adaptive management but concludes that there is only one sure cure for any current fisheries related problem; reduce effort, reduce effort and reduce effort.

Hall writes with the authority of personal experience and the text is enriched by first hand knowledge of North Atlantic management systems and working groups. Latterly, Hall’s move to Australia and collaboration with colleagues in CSIRO has ensured a good geographic balance to the book overall. The book is reasonably priced and I would strongly recommend it to non-governmental organisations, conservationists, fisheries biologists and teachers of marine biological courses. There is no doubt that this text will be referenced for many years to come.

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