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Coastal conservation

Coastal Conservation. Brooke Maslo and Julie L Lockwood (editors), 2014, Cambridge University Press, 382 pp. £65 (Hardback) / £35 (Paperback) ISBN 9781107022799 / 9781107606746; <http://www.cambridge.org>

With the growing interest in marine, and especially coastal environments, Coastal Conservation – edited by Maslo and Lockwood – is a very timely volume. Comprising thirteen chapters, split into three parts, this volume examines the biodiversity status of coastal habitats and some of the emerging threats placing coastal biodiversity at risk.

Starting with some broad definitions, the opening chapter covers coastal conservation, biodiversity, ecosystems and ecosystem services, ending with what the authors call the *Coastal Conservation Gestalt* – an holistic overview of the breadth and complexity of the subject spanning species biodiversity, loss and degradation, and management which serves to encapsulate the overall thesis.

The following chapters illustrate the theme of the book with the aid of six examples of coastal environments: mangroves, beaches and dunes, seagrass meadows, oyster reefs in estuaries, dune forests, and salt marshes. The chapters cover threats to biodiversity and ecosystem services, status and trends, ecology and health, food security, drivers, spatial patterns, landscape ecology, complexity and fragmentation, pressures and biological responses, management, challenges, legislation and policy. They also suggest the way forward in terms of solutions such as restoration, conservation, the need for a global approach, and the need for future research.

The second part of the book then extends this further to consider emerging threats, which naturally include climate change, but also invasive species, the impacts of oil spills, and the over-exploitation of coastal environments. The main message throughout is a need for more research to enhance our current knowledge and understanding of the effects that each threat will have on biodiversity, the coastal environment, and its management. This will be necessary if we are to implement and improve coastal conservation practices.

The final section of the book provides a very valuable chapter which serves to pull together the themes touched upon in each of the preceding chapters. Whilst it is clear that we already know a lot about coastal biodiversity, it is also clear that there are many questions still needing answers. Species loss and habitat degradation are identified as being a very real feature of many coastal environments around the world. We are seemingly aware of the need to act on conservation but there are still substantial challenges and gaps in our knowledge. It is also argued that to date we have paid inadequate attention to coastal biodiversity, and there is now a very real need to expand our conservation activities around the world. One of the problems facing existing approaches to coastal management is that they are all too often related to legal and administrative boundaries that treat the land and oceans as independent units. Coastal biodiversity is still not yet an integral consideration in many approaches to management. Habitats are not simple, and the connectivity of the ecosystems is important in relation to coastal management as some species only spend part of their life cycle in one system then move to another. In addition, the paucity of coastal endemics has meant relatively little attention has been paid to coastal ecosystems.

Although we have developed the capacity to collect environmental data and information for monitoring and mapping at many different scales, there is still a scarcity of high resolution spatial data at the local scale, and a lack of baseline data, which are essential for monitoring. Treaties and instruments do not always provide for legal protection and there is still a lack of strong legislation. In addition research, education, knowledge, understanding in the widest context, and appreciation are important. There is also a need for a more global approach to monitoring, inventory, research, integration, international cooperation, and awareness raising. If we are to focus on

coastal biodiversity and coastal conservation then it needs to be placed in the context of sustainable long-term exploitation of the marine environment taking account of people's needs. Responsibility must be placed on society to maintain the ecological properties of these systems and to commit the will and resources to conserve them into the future. Our lack of understanding about the effects of climate change on marine life also needs to be tackled, and whilst managing for climate change is essential we need to have more certainty about the direction and magnitude of climate change to begin with.

In the Synthesis, amongst other things, the authors also touch further upon ecosystem function and services, with a reminder about the concerns for the loss and degradation of coastal ecosystems and the social and economic importance that these ecosystems provide. There is a need to consider the complexity of conserving and managing coastal ecosystem services in light of the expansion of urban settlements at the coast, particularly in relation to the scale of and need for coastal modification through protection against the impacts of climate change. As coastal development is often not designed to conserve or promote ecological processes there is a need to treat coastal infrastructures as habitat and to recognise connectivity between the coast, land and sea.

A statement by the editors at the end of this book, one that is very fitting and serves to emphasise the importance of marine and coastal environments, is "there is something special about coasts". Coasts are indeed special environments with a unique character and existence, and environments that are under growing pressure from human activities necessitating various different management approaches. Although attention to the conservation of coastal and marine environments has grown in the last decade, there is still a need to develop a far greater knowledge and understanding of the living component, one that is crucial to our continued and sustainable use of this special environment and particularly in light of climate change.

This book is very well-written and structured. It is also nicely produced, and illustrated,

although the overall appearance of the volume is a little conservative and rather dated. The book includes some black and white illustrations which are also duplicated in colour in the centre section of the book. I am not quite sure why the illustrations are produced in both black and white and colour, as one or the other would have been adequate. Whilst placing colour illustrations in the centre section of a book is still quite common it is a pity that they could not just have been integrated into the main body of text in colour in place of the black and white ones. Each chapter also includes a comprehensive list of references, contributors and abbreviations, all useful additions which are both helpful and add value. Although not really a textbook suitable for an undergraduate course, this volume would undoubtedly provide an excellent resource for a more advanced class or an MSc programme module.

A final observation: there is an awful lot of information and ideas to take in when reading this small book for the first time, and it is clearly much bigger on the inside than it appears on the outside. Coastal Conservation most definitely warrants a place on the bookshelf and opening more than once.

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