

action provided in the document covers three broad areas: management of environmental problems; management of vital natural resources; and, the human resources and institutional requirements for sustainable development. Within each section, an introductory preamble is followed by a list of policy and project actions required, disaggregated according to national, regional and international priorities. As a result, *Small Islands, Big Issues* provides an informative summary of the issues and a corresponding set of required implementation-oriented activities, as well as the section summarizing socio-economic data for the different islands. While the benefits of this latter section are not evident, nor linked in a meaningful way to the rest of the document, the summary of issues and associated description of needed actions is addressed in adequate detail.

The comprehensive list of activities set forth is useful for policy makers and planners charged with responsibilities for sustainable environmental and economic development in small islands states. As well, they will inform those managing bilateral and multilateral programmes and projects which influence the development of these unique nations. Additionally, *Small Islands, Big Issues* could also be useful to researchers looking to set their specific activities within a valuable framework of action. However, many of the activities identified are dependent upon traditional financing through cash-strapped government departments and agencies.

Less emphasis appears to have been placed on establishing alternative funding sources and financing arrangements than on developing a comprehensive set of activities. The implications of this on action plan implementation will likely be significant.

While *Small Islands, Big Issues* does place proposed activities within the context of other international agreements and framework accords relating to environmental and economic issues, several of the action items are all-encompassing and unwieldy. This makes monitoring of progress more difficult. However, follow-up to proposed activities and actions is essential to monitoring and, therefore, to determining progress towards sustainable development. As well, it provides important political material for ensuring things get done where activities have failed, and promoting positive local, regional and international actions that have contributed to sustainable development.

Despite the fact that it was published three years after the Bridgetown meeting, *Small Islands, Big Issues: Sustainable Development of Islands* is an important contribution. And while many of the proposed actions may be difficult to monitor, even unattainable in some cases, it provides a useful framework to promote and chart the progress of island states towards sustainable development.

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The Food Web of a Tropical Rain Forest

Edited by Douglas P. Reagan and Robert B. Waide. 1996. The University of Chicago Press, Chicago. 616 pages, illustrated. Cloth U.S.\$110; paper U.S.\$39.95.

The patterns of connections among species based on what they consume and what they are consumed by forms the food web. Even simple ecosystems can have complex webs, and consequently most studies have been in relatively simple environments. *The Food Web of a Tropical Rain Forest* takes a first step toward exploring the architecture supporting one of the most complex ecosystems in the world.

By tropical standards, this Puerto Rican rain forest is a simple ecosystem; there are, for instance, fewer species of moths and butterflies in the study area than there are in New York State. Yet this simplicity allows a study of this rigour to be conducted. With contributions by 16 authors, the book summarizes 35 years of research in a 40 ha section of a tabunoco rain forest. Of the 14 chapters, 11 are devoted to different taxonomic groups, 2 are overviews, and one, I was pleased to see, is devoted to stream communities. Each chapter begins with a description of the

taxa, the number of species, and estimates of abundance (population densities, biomass) before moving onto feeding behaviour, energetics, trophic relationships (as predators and prey for other species), and the energy and nutrient cycles. Large tables listing the species are provided, and the start of each chapter has a schematic diagram of the same simplified food web of the whole ecosystem with the taxa in question highlighted.

This book reveals some interesting results central to food web theory. For instance, it has long been assumed that feeding loops, where one species feeds on itself, or is fed on by a species that it consumes (often at different life stages), are supposed to be rare, yet in this ecosystem they are surprisingly common. Points such as these make this a very interesting book for ecologists studying tropical rain forest ecosystems or food web dynamics in general.

This is definitely not a book for the lay-audience, however, and it would likely prove disappointing to many ecologists. Because taxa are treated separately, the book gives a false sense of segregation of the

food web, and leads to a great deal of repetition, as any link in the web is discussed from the perspective of the different taxa. It was frustratingly not possible to visualize the different organisms, as there are very few photographs (all of poor quality), and no descriptive illustrations to help the reader unfamiliar with this ecosystem. Surprisingly disappointing are the food web diagrams. Each chapter is preceded by the same, simplified drawing with the compartments for the taxa being discussed highlighted. It would have been better to "zoom in" on the feeding relationship being discussed to detail the nature of the interactions. Other, non-dietary interactions, such as commensalism, parasitism, shelter, and competition would also be worthy of treatment of their own, as

would more discussion of conservation issues. But given that the book already has 488 pages of text, there is little room for more information.

This is an excellent, rigorous summary of studies in one tropical rain forest, and is therefore an excellent resource for someone already studying food webs or rain forests. However, it is not recommended for readers with anything less than academic interests in these areas. Ironically, *The Food Web of a Tropical Rain Forest* makes for a very dry read.

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The Marshes of Southwestern Lake Erie

By L. W. Campbell. 1995. Ohio University Press, Athens, Ohio. 233 pages, illustrated.

The public's perception of wetlands in the southern Great Lakes region has changed since the arrival of the first settlers from Europe. The early settlers regarded wetlands as obstacles to development and economic prosperity, a view that largely persisted to the 1960s. Consequently, wetlands were drained and converted to other land uses. From the 1960s and into the early 1980s, the importance of wetlands shifted with the realization that wetlands have positive attributes. Major conservation campaigns were initiated to protect wetlands from continued destruction. In the past decade or so, a much more informed and educated society has improved knowledge and scientific understanding of wetlands and their value to society in both a natural and managed state.

The Marshes of Southwestern Lake Erie is an eyewitness historical account by Mr. Campbell, who writes this book at 95 years of age, of wetland change. He has experienced first-hand how the public's perception of wetlands has changed since his youth in the 1920s. He focuses on the coastal marshes on Lake Erie in Ohio. The book consists of two parts. The first part is an almanac of one year in the life of a Lake Erie coastal marsh. It is an account of personal observations on the mysteries, beauty, puzzles, and biological intricacies of a marsh through four seasons. His essays are most lucid and easy to read, and are a fine testament to the powers of observation. It is not hard to imagine oneself in the marsh. Readers will realize there is life in a marsh the year round. I found his account of the marsh during the winter and late autumn particularly fun to read.

The second part of the book is a more scientific

account written for the lay person on the history of Lake Erie coastal marshes from the time of glaciation to the present. It is a more detailed account of how the marshes originated and formed in response to changing water levels, and why and how humans in recent centuries have altered and destroyed them. This is accompanied by a series of geological and archival maps. This section ends with summaries of the efforts to seek protection for several key marshes in the Ohio area. His intentions are to encourage others to continue these efforts.

I am sure readers will find the historical data on wildlife most interesting. He reports, for example, information on the number of birds shot in the 1890s in one marsh and notes the scarcity of Canada geese at that time compared to their abundance in the marshes today. Further, he lists several mammal species and the years they are thought to have disappeared and those species which disappeared but reappeared in the region some decades later.

This is an interesting book of one naturalist's experiences in the Lake Erie marshes. It illustrates how sensitive to change and how resilient to change these wetlands are. One message to come through loud and clear is the realization of the degree to which some of the most intact marshes today have been changed by humans and how different they are compared to their condition prior to the time of early land settlers. This book is fun to read and I have no hesitation in recommending it for your bedside table.

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