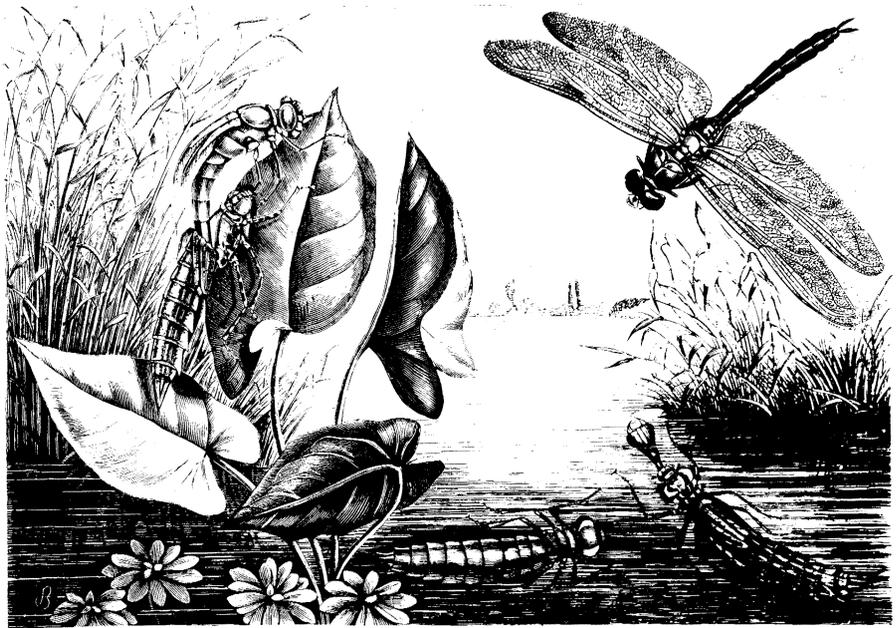


## Wetlands around the globe

**Wetlands of the World: Inventory, Ecology and Management. vol. 1. Africa, Australia, Canada and Greenland, Mediterranean, Mexico, Papua New Guinea, South Asia, Tropical South America, United States.** D. Whigham, D. Dykyjová, and S. Hejný, eds. Kluwer Academic Publ., Dordrecht, The Netherlands, 1993. 788 pp., illus. \$286.00 (ISBN 0-7923-1685-1 cloth).

In the last two decades, wetlands have been transformed conceptually from mosquito-infested swamps fit for ditching, draining, diking, and reclamation into worthwhile ecosystems with high intrinsic and aesthetic value that provide beneficial services to humans and wildlife. Concomitant with this change in public perception has come an explosion of scientific and technical information on wetland ecology, biota, classification, and management. The establishment of national and international wetland societies whose membership includes scientists, policy makers, and interested members of the public attests to the broad base of interest in and support for sound studies and management of wetlands.

Unlike authors and editors of other treatises on wetlands, who have focused on particular geographical regions or specific kinds of wetlands, the editors of *Wetlands of the World* are attempting to bring together in one series the majority of basic information on all types of wetlands. This first volume covers wetlands in Africa, Australia, Canada and Greenland, the United States, the Mediterranean, Mexico, Papua New Guinea, South Asia, and tropical South America. Volume 2, which should be completed in 2–3 years, should include Central America, Western, Northern, and



Central Europe, Northern and Western Asia, the Middle East, and Indonesia. The Far East, New Zealand, and remaining areas of the Indo-Pacific will, it is hoped, be covered in a third volume.

This project grew out of a consensus among participants at the Second International Wetlands Conference (held in June 1984 in Trebon, Czechoslovakia) that a published overview of the world's wetlands would provide a much-needed introduction to the burgeoning literature on all aspects of wetland biology and management. If there is one serious complaint I have about this book, it is that ten years after that conference, the project is only one-third complete. The chapters reflect this temporal distance: only 18% of all the cited literature was published after 1985, and the effects of possible sea-level rise on coastal wetlands are mentioned only in the chapter on wetlands in the United States. Nevertheless, the book's authors and editors have

made a strong start towards achieving their intended goal.

Each chapter of *Wetlands of the World* follows a common format. First, the geographical region to be covered is circumscribed, and important climatic features are discussed. This delineation is followed by descriptions and discussion of geological, geomorphological, and hydrological controls on wetland formation and persistence; distribution of wetlands within the region under review; their flora, fauna, and ecological characteristics; human impacts; and recommendations for conservation and management of these wetlands.

There is little commonality among chapters, though, in how this format is actually applied. When describing prevailing climatic conditions, some authors use climate diagrams (Walter et al. 1975), others use maps of isotherms and isohyets, others use tabular summaries of rainfall, temperature, and humidity, and still others use prose sum-

maries virtually bereft of any quantitative information.

The remaining sections show similar variability across chapters. The most detailed descriptions of physical features include detailed maps showing cordilleras and other major land forms, and drainage basins and estuaries (chapters on Africa, Papua New Guinea, Mexico, and tropical South America). The chapters on South Asia, Australia, and the Mediterranean cover geology, geomorphology, and hydrology only in sketchy detail. The reviews of wetlands in Canada/Greenland and the United States focus almost entirely on hydrological factors affecting wetland development, ignoring the geological and geomorphological conditions that determine local and regional hydrology.

These regional differences in emphasis on specific climatic and physical features reflect in large measure how each region's governmental authorities and the authors of each chapter chose to define wetlands. Such definitions are necessary to delineate wetland distribution and bound discussions of wetland flora, fauna, ecology, conservation, and management. The internationally recognized (the 1971 Ramsar conference on wetlands) definition of wetlands—"areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish, or salt, including areas of marine water the depth of which at low tide does not exceed 6 metres" (Lyster 1985)—has resulted in innumerable, often incommensurate classification schemes for wetlands. Rather than attempt a single, unified classification, the authors of each chapter used the most common arrangements employed in each region. All these schemes distinguish among marine estuarine, riverine, lacustrine, and palustrine wetlands, but the similarities end there. For example, W. A. Glooschenko et al. provide a dichotomous key to the wetland types of Canada and Greenland that distinguishes 13 hydrological regimes, within which occur 18 types of bogs, 14 kinds of marsh, and 17 varieties of fens. At the other extreme, R. H.

Britton and A. J. Crivelli aggregate Mediterranean wetlands into 15 types. These regional differences reflect relative availability of large-scale inventories, aerial photographs, and satellite data, but the absence of a common vocabulary makes interregional comparisons difficult (e.g., sedge meadows occur in the United States but not in Canada, despite the abundance of sedges in Canadian nontidal marshes).

The detailed descriptions in each chapter of regional wetland vegetation, on the other hand, could enable the determined reader to begin to organize global wetlands according to their dominant plant species or associations and corresponding hydrological conditions. Such a comprehensive classification also could pave the way toward a better integration of the fauna into our theoretical understanding of and rational policies intended to maintain wetland structure and function. In most of this book's chapters, as in other publications, wetland fauna are treated more as an afterthought than as an integral part of the wetland ecosystem (fauna are completely absent from the chapter on Canada and Greenland). With the exception of birds, fish, prawns, and a handful of charismatic megafauna (e.g., Bengal tigers and caimans), fauna rarely are included in wetland conservation and management plans.

Given the wide variance in topical coverage across chapters, the authors provide a remarkably consistent set of recommendations for future study and management of wetlands. These include universal adoption of the Ramsar convention for international conservation and wise use of wetlands; more complete national wetland inventories, with emphasis on remote sensing, detailed assessments of human impacts as well as introduced species (e.g., *Eichhornia crassipes*, or water hyacinth, and the water fern, *Salvinia molesta*), and development of rational management and conservation plans that allow for sustained use of wetlands without their destruction. These plans need to be based firmly in ecological principles and an appreciation of the aesthetic

value of wetlands, but they also must be sociologically, economically, technically, and politically viable. This volume, and the two additional volumes planned for publication before the end of the decade, should cover most of the world's wetlands. *Wetlands of the World* will be a valuable compendium for researchers planning basic studies of wetland ecology, and policy makers charged with managing and protecting these fragile ecosystems. Its exorbitant price (\$0.36/page!), however, virtually ensures that those who most need this information—scientists, planners, and decision makers in the developing countries—will be least likely to afford it.

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#### References cited

- Lyster, S. 1985. *International Wildlife Law*. Grotius Ltd., Llandysul, UK.  
Walter, H., E. Harnickell, and D. Mueller-Dombois. 1975. *Climate-Diagram Maps of the Individual Continents and the Ecological Climatic Regions of the Earth*. Springer-Verlag, Berlin.

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#### BROUGHT BACK FROM THE BRINK

**The Black Robin: Saving the World's Most Endangered Bird.** David Butler and Don Merton. Oxford University Press, New York, 1993. 294 pp., illus. \$45.00 (ISBN 0-19558-260-8 cloth).

This extraordinary book gives a detailed account of 20 years of intimate association with New Zealand's Chatham Island black robin (*Petroica traversi*). Though this bird's identity as a rare endemic species was recognized in the late 1940s, it was given little attention until the early 1970s when census attempts were started on Little Mangere Island. By the mid-1970s, black robins numbered about a dozen, the quality of habitat was dismal, hazards to survival and productivity abounded, and extinction seemed imminent. In the late 1970s, five birds including one effective pair remained. The decision was made