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Ecological Climatology. Concepts and Applications

BY GORDON BONAN

xi + 678 pp., 24.5 × 17.5 × 3 cm, ISBN 0 521 80476 0 paperback,
US\$ 150.00/GB£ 100.00, Cambridge, UK: Cambridge University
Press, 2002

This book is concerned with the relationships between the biotic and abiotic (climate, hydrology and soil) processes; as such, it might have been called 'Environmental Climatology'. In order, however, to get the same breadth of coverage on soils and hydrology (currently one chapter each), it would have to have extended well beyond its 586 pages of text. It covers a range of scales: from global climate to microclimate, from biomes to plant cells, and from the

global water balance to individual water droplets. It also deals with a range of temporal scales, stretching from carbon dioxide levels in the late Cretaceous, through atmospheric and vegetation change in the Quaternary, to focusing on the present, as well as briefly considering what future climate change could mean for biogeography. It also deals with both natural and anthropogenic influences on processes, especially in relation to land cover change. This book, therefore, should have something in it for everyone.

According to the dust cover, it is aimed at graduate students and advanced undergraduates studying environmental disciplines. It certainly would provide them with an invaluable background and, if read from cover to cover (itself no mean feat), would give them a marvellous feel for the close interdependency of so many aspects of environmental functioning. It will be particularly useful on this account for undergraduates, but I expect that in most sections graduate students will need to graduate quickly to something more challenging.

It is **extremely well-written and even the more technical parts seem accessible to a non-specialist**. Given the inter-related nature of the topics, there is plenty of cross-referencing, but, unfortunately, only retrospectively rather than pointing forward to where an issue is going to be dealt with later in more detail. There are plenty of useful figures and tables to support the text, although some of the former are a little cramped given the amount of information they contain. There are also plenty of case studies, ranging from classic ones, like Glacier Bay and Lake Michigan for succession, to the latest coupled climate-ecosystem models. **It is very well-produced and surprisingly error-free given the size and nature of the tome!**

The interdisciplinary nature of the subject, ecological climatology, inevitably means a balancing act between breadth and depth at every point and no one will agree about where this should lie; as such Gordon Bonan has walked a difficult tightrope without wobbling too far.

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