

# Reshaping Environments

An interdisciplinary approach to  
sustainability in a complex world

Edited by **Helena Bender**

Foreword by **Ian Lowe**



CAMBRIDGE

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## Reshaping Environments

*Reshaping Environments: An interdisciplinary approach to sustainability in a complex world* draws together a team of specialist authors from disciplines including urban planning, geography, engineering and environmental science to examine the diverse influences humans have upon the natural environment. This interdisciplinary approach presents multifaceted solutions for complex environmental problems.

The book explores current environmental science theories to provide a solid foundation of theoretical knowledge. Drawing on a range of case studies, it develops core analytical skills for application to real-world environmental issues.

*Reshaping Environments* gives environmental science students the tools and insight to comprehend the range of influences society imposes on the natural environment. It is essential reading for those interested in creating a mutually beneficial future for human society and the natural environment.

Additional resources are available at [www.cambridge.edu.au/academic/reshaping](http://www.cambridge.edu.au/academic/reshaping).

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*An interdisciplinary approach to sustainability in a complex world*

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**Helena Bender**

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*To the earthlings of the 21st century*

demonstrate the crucial need for interdisciplinary or transdisciplinary thinking. As I learned in a decade working for the UK Open University, analysis of a complex problem inevitably requires the skills and knowledge of a range of traditional disciplines, while developing workable solutions. It demands systems thinking, understanding and appreciating the many linkages between the various different elements of the problem. Whether you are working on a very specific project like a straw-bale house or something as diverse as an entire region, the same principles apply. Farming, forestry and fire management demand a similar approach to school construction or Singaporean transport, irrigated agriculture or tropical grazing. The case studies in this book illustrate the general principles developed in the theory chapters. Together they comprise a wonderful resource that will help you, the reader, to make a difference.

Emeritus Professor Ian Lowe  
Griffith University

15 November 2011

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## Contributors

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**Helena Bender** is the senior tutor for the subject 'Reshaping Environments' and a former senior environmental science teacher. She was trained within the scientific disciplines of biology and zoology with a focus on behavioural ecology. She has become increasingly interdisciplinary in her thinking, learning and teaching, researching management strategies to be used where conflict is created during human–wildlife interactions, assessing student response to educational approaches, and interdisciplinary research practice.

**Ian Bishop** is a professorial fellow in the department of Infrastructure Engineering at the University of Melbourne. He has made extensive use of spatial information technologies including geographic information systems and visualisation to develop systems for better communication of environmental change and associated decision-making. He has also used visualisation techniques in the exploration of landscape perception especially in relation to development of energy related infrastructure.

**Rebecca Ford** is a lecturer in environmental studies in the Department of Resource Management and Geography, University of Melbourne. Her research focuses on the psychological basis for public acceptance of forest management, for example in people's values and beliefs. Previously Rebecca worked in forest policy with the Victorian and federal governments which sparked broad interests in the ways people value and perceive forests, and the ways social research can inform forest management.

**Clinton Golding** is a member of the Higher Education Development Centre at the University of Otago, New Zealand, and an honorary senior fellow of the Centre for the Study of Higher Education, University of Melbourne. He is an interdisciplinary researcher, working primarily in the fields of philosophy, education, philosophy of education, ethics and interdisciplinarity, with a special focus on thinking, inquiry and problem solving across the disciplines.



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**Dominique Hes** received a science degree from the University of Melbourne and followed this with a graduate diploma in cleaner production and a doctorate in 2005 at RMIT University, Melbourne. She has carried out research on Victorian residential projects such as the Commonwealth Games Village and Aurora, commercial projects such as Melbourne City Council's Council House 2, and local government projects such as Reservoir Civic Centre.

**Kate Judith** is the senior tutor for the subject 'Natural Environments' at the University of Melbourne. She has taught in a wide range of contexts, both within the humanities and sciences. Her research and publications have involved text analysis or discourse analysis to explore ideas about landscape and identity.

**Edward Maltby** is emeritus professor of wetland science, water and ecosystem management at the University of Liverpool, where he was previously director of the Institute for Sustainable Water, Integrated Management and Ecosystem Research (SWIMMER). He is now an adviser to the Secretary of State for Environment on the UK National Ecosystem Assessment. He was a former chair on the IUCN Commission on Ecosystem Management and of the IUCN Wetlands and Water Programme.

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**Eric Smith** is an engineer with over 20 years' experience in hardware, software and technical systems design in industry. Building on his background in electronic and communication engineering, he completed a PhD in geomatics at the University of Melbourne where his research developed methods and technology to represent and assess the effects of environmental change at a landscape scale.

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