

But this complaint should not detract from the fact that Michael Williams has done a tremendous job of relaying a complex story. *Deforesting the Earth* is well illustrated with both plates and maps, although I found the lack of insets showing the geographical context of the maps to be frustrating, and it is well written and eminently readable. The sheer breadth of information in this book makes it a valuable addition to any bookshelf belonging to people that want to understand why the world's forests look the way they do.

## References

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## Conservation and the Genetics of Populations

BY FRED W. ALLENDORF AND GORDON LUIKART

xix + 642 pp., 34.5 × 17 × 3 cm, ISBN 1 4051 2145 9 paperback, GB£ 34.99/US\$ 69.95, Oxford, UK: Blackwell Publishing, 2006

This textbook provides a comprehensive overview of conservation genetics, designed for advanced undergraduates and graduate students of conservation genetics, natural resources management and conservation biology, as well as professional conservation biologists.

The book contains 20 chapters in three sections. Part I introduces the field of conservation genetics and then goes on to describe variation in natural populations for phenotypes, chromosomes, proteins and DNA. Part II is on mechanisms of evolutionary change and covers basic population genetics, while Part III is on genetics and conservation and addresses the more applied topics. Coverage of topics is careful and considered, as would be expected from the distinguished scientific reputations of the authors. Chapters contain examples, discussion problems and problems to aid understanding, quotes from prominent scientists at the beginning of each chapter, as well as guest boxes from distinguished scientists in the field. The book has an appendix on probability and statistics, a glossary and an index. Problem answers are on the book web site. The textbook is carefully compiled and referenced and contains very few typographical errors.

There are two other textbooks on conservation genetics, namely *Introduction to Conservation Genetics* and *A Primer of Conservation Genetics*, and I am senior author of both. The present book covers similar material to the former (apart from guest boxes, an addition chapter on invasive species, an appendix on probability and statistics

and a list of symbols), is of a similar length and is intended for a similar audience. The messages from the two textbooks are similar. However, the two textbooks differ substantially in style and presentation. Allendorf and Luikart's textbook has a more historical approach to presentation and referencing, has fewer aids for students in terms of summaries, main point boxes, lists of new terms, further reading at the end of chapters, take home messages, problem answers in the book and many fewer pen-and-ink drawings of organisms to help motivate students. The present book has a stronger emphasis on phylogenetics, but less emphasis on studies with laboratory species and much less use of meta-analyses to resolve contentious issues where statistical power is a critical issue. Both textbooks use examples from a broad taxonomic and geographical range, but this book has a higher proportion of fish and North American examples, as is expected from the interests of the senior author and his primary abode. In the earlier chapters, I found this book often went very quickly from very simple to complex material within a chapter, rather than building across chapters from simple to complex, a form of presentation that is likely to worry the beginning student. Therefore the presentation of this textbook is more likely to appeal to professional scientists and advanced graduate students than to undergraduates.

Overall, this is an excellent, authoritative and scholarly book.

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## Sustainability: A Philosophy of Adaptive Ecosystem Management

BY BRYAN G. NORTON

xviii + 607 pp., 22.5 × 15 × 3.5 cm, ISBN 0 226 59521 8 paperback, US\$ 37.50/GB £ 24.00, Chicago, USA: The University of Chicago Press, 2005

As a sub-discipline of philosophy, environmental ethics is roughly three decades old. Bryan Norton is one of the most influential first-generation environmental philosophers. Norton is especially well known for his work to fuse environmental philosophy with environmental policy and for his admirable attempt to take anthropocentrism (sometimes now referred to as 'environmental pragmatism') seriously, and make others take it seriously as well. Norton is, and has always been, at his best when he is forcing us to enrich and expand the values that we assign to the work, even if those values are ultimately human-centred. Measured in terms of direct impact on environmental thinking and policy, Norton is arguably one of the top two or three environmental philosophers in the world. His reputation and import are demonstrated perfectly in this book.

In *Sustainability* Norton covers miles of ground. The title alone indicates that the book sets out to say something definitive on three of the biggest concepts currently bandied about in environmental circles: sustainability, adaptive management and ecosystem management (though Norton combines these last two into 'adaptive ecosystem management'). Norton kindly provides a helpful 'note to the busy reader' that allows for various courses of navigation through his massive effort. Overall, the book is written in a lucid

fashion and should be accessible to non-specialists; though the non-philosopher (and even some philosophers) might quickly grow weary of some of the nuanced discussion from within environmental ethics ('infighting' they might think). Norton adeptly employs a narrative style at certain times, traditional philosophical prose at others, and policy-speak when needed. The ultimate effect is a book that keeps you both entertained and on your toes.

Readers not familiar with the detailed ins and outs of environmental ethics should note, however, that Norton has a particular and, I believe, uncommon (I even believe somewhat unsettling) taxonomy of some of the major figures in environmental ethics. The most unusual of these is found in his handling of the philosophy of Aldo Leopold. Norton classifies (or re-classifies) Leopold as a fellow anthropocentrist, and not as someone who forwarded a non-anthropocentric environmental ethic, as most other environmental philosophers and thinkers do. Given Leopold's popularity and persuasiveness, it is understandable why someone would desire to have a Leopoldian imprimatur. And undoubtedly, Leopold forwards many anthropocentric arguments along the way to his non-anthropocentric land ethic. However, while defending a position that directly morally enfranchises non-human nature would most certainly make you a non-anthropocentrist, forwarding and defending the direct moral standing of humans and human interests does not make you an anthropocentrist, even if those are the arguments that you often lead with or if those are the arguments that you believe to ultimately believe those with the greatest likelihood of successfully swaying minds and policies. You are not an anthropocentrist unless you believe that all and *only* humans are worthy of direct moral standing and Leopold's work is riddled with references to a desire for the direct moral inclusion of the more-than-human world. It is simply a mistake to ignore or reclassify those references. In all fairness, however, I would note that it is not at all uncommon to understand or categorize basic environmental ethics categories in a number of ways; Norton's is one, and mine is different.

All in all, however, Bryan Norton has produced yet another piece of important environmental scholarship. Natural resource management, and students thereof, would be greatly served by carefully considering the view of regimes such as adaptive management through the critical lens of philosophical analysis. I can think of few better prompts for critical thought than Norton's treatise.

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### **Culture of Ecology. Reconciling Economics and Environment**

BY ROBERT BABE

xiv + 230 pp., 23.5 × 16 × 1.5 cm, ISBN 0 8020 3595 7 hardback,  
 US\$ 65.00/GB£ 42.00, Toronto, Canada: University of Toronto  
 Press, 2006

Robert E. Babe addresses the most important issue of our times, the conception of and transition to an economy compatible with ecology.

It is both broadly philosophical and intensely practical about human survival and how the course of nature's evolution depends on a new conception and rapid transition. Robert Babe provides an analysis of the philosophical aspects of this issue in a manner accessible to undergraduates and lay readers.

Professor Babe (University of Western Ontario, Canada) argues for a culture of ecology, for seeing ourselves in an indivisible system of relations. The problem is that we now live within a market system and see ourselves through a neoclassical economic paradigm. This structure and its neoclassical rationale are systemically flawed and leading us to an inevitable destruction unless we change philosophies and restructure. Scholars in the field of ecological economics are bound together by the same general argument, and to a large extent Babe's *Culture of Ecology* provides a review of this heterogeneous field. Like western science, neoclassical economics not only shapes every aspect of our lives, but has also transformed how we picture ourselves in the world. The philosophy of economics has become a secular religion that rationalizes many aspects of our social structure and guides our lives. Transcending this philosophical invasion will require counterattacks from many positions. Many economists will be among its last defenders. Robert Babe's book is a very welcome contribution to the growing realization that moving toward a healthy relation with the natural world requires a new economic paradigm.

Robert Babe portrays economics and ecology as discourses and compares and contrasts neoclassical and ecological economics in historical context. As discourse analysis (Chapter 2), he makes an original contribution, certainly original for those who have not thought of what are conventionally portrayed as scientific disciplines as conversations in the context of the interaction of philosophy and politics over time. Historically, Babe explores the roots of economic and ecological thinking from Aristotle, through the Bible, and into the Middle Ages (Chapter 3), disputing in the process the infamous thesis of Lynn White Jr that our ecological destructiveness is rooted in Judeo-Christian beliefs. Babe argues that the real problems arose in the Enlightenment in the form of individualism and materialism that become incorporated in economics to the exclusion of relational understandings of society and nature (Chapter 4). These are the strong chapters.

In my estimation, the quality of the argument deteriorates hereafter. The arguments presented in his comparison of environmental and ecological economics (Chapter 5) are on target. The bulk of this long chapter, however, is a loose composite of summaries of specific authors' contributions to the two fields. From here, Babe works with concepts of information and entropy in a finite earth (Chapter 6) that also comes across as disjointed, although the concluding chapter is short and strong.

Robert Babe's strongest contributions are suitable for students of communication and of history, but he has not written a whole book for students in either of these disciplines. The historical chapters should be incorporated in courses designed to provide an ecological alternative to conventional economics, but these students will have better access to environmental and ecological economics than Babe provides. And so much of the problem is that it is difficult to write a book of broad significance from a communications theory or historical perspective when our universities see educating students about the modern human dilemma as primarily the responsibility of environmental studies programmes. Clearly, the future of humanity and nature needs to be addressed throughout universities. Of course the larger problem is that we have multiversities instead of universities. I can recommend *Culture of Ecology: Reconciling*