

need for an institutional environment that grants freedom to fail and to learn from those failures, and the crucial issue of sufficient time not just to understand context and build relationships but also for implementation, monitoring and review of planned activities.

Further chapters explore a wide range of case studies. These include: adapting the Farmers Field School approach initially developed with rice farmers in South Asia to the upland landscapes of Ecuador, community networks for floodplain management in Bangladesh, adaptive collaborative approaches in the contested forest landscapes of Zimbabwe, and forest governance in Nepal. Chapter 8 is a personal reflection of the use of action research in natural resource management by Robert Fisher, ex Deputy Director of the Regional Community Forestry Training Center in Bangkok. Fisher is an anthropologist and brings his experience as both an academic and a development practitioner to bear in highlighting challenges and lesson learnt. He also helpfully provides what he calls 'pragmatic' definitions of terms such as applied research, participatory action research and adaptive management, which are liberally used in the rest of the book but often with much less clarity.

The final two chapters, authored by the editors, attempt to summarize the challenges highlighted in the other contributions and to present what they refer to as a bold new future direction. Perhaps the best way for me to conclude is with one further quote, this time from the final chapter: 'Paradigmatic rethinking is needed to move beyond biophysical reductionism, a linear conception of change, a thin view of participation, technical views of innovation and learning framed within existing assumptions and underlying institutional boundaries and regimes.' With that, I'll leave it to you to decide if this is the kind of book for you.

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**Historical Environmental Variation in Conservation and Natural Resource Management** edited by John A. Wiens, Gregory D. Hayward, Hugh D. Safford and Catherine Giffen (2012), xiv + 337 pp., Wiley-Blackwell, Oxford, UK. ISBN 9781444337938 (pbk), GBP 40.00.

'What's past is prologue' is a phrase well known to most of us. Like so many pithy phrases it comes originally from William Shakespeare, this time in his play *The Tempest*. But many of us (including me, until I looked it up) let slip from our memory what comes next: 'What to come, in yours and my discharge.'

This book includes both elements. It reminds us how important the historical perspective is for natural resource managers but also makes the even stronger point that what happens next is in the hands of today's resource managers. After all, the world has never before had over seven billion people, subjecting many natural resources to unprecedented pressures in the form of anthropogenic climate change, habitat modification, pollution and novel technologies that may have unexpected consequences. Against this background the book starts with a review of the theoretical and conceptual background of the historical range of variation (defined as 'the variation of ecological characteristics and processes over scales of time and space that are appropriate for a given management application'), which sets appropriate limits on 'history' to include only that on which research can provide good information. It then develops concepts of historical ecology and how they can be applied to resource management and conservation. It clearly identifies the key issues and challenges for those who would like to build an historical dimension into their thinking about modern resource management. Forget about climax vegetation. Critically consider how 'new' ecosystems draw from historical elements. Find a place for humans in the natural world (perhaps using 'social range of variation', a term also introduced here). Remember Darwin's edict that the fittest are those best able to adapt to changing conditions, not necessarily the smartest or strongest. Recognize that while historical evidence on forests (such as pack-rat middens in the American West, old fire-scarred trees, ancient dead wood and so forth) can be informative, little historical evidence is available on the understory, soil microbial communities, and invertebrate communities.

Two chapters focus on modelling historical variation and its application for understanding future variation, followed by a series of case studies from various parts of North America (e.g. the Colorado Front Range, coastal temperate rainforests of British Columbia, Minnesota's national forests) and several on ecosystem types (river floodplains, streams). I was especially interested in the five chapters that provided perspectives from other parts of the globe, including Africa, Australia, and the Fennoscandian taiga. These helped to broaden the perspective of the book and suggest how it can be applied to virtually any part of the world where time series data can be supportive. The book concludes with reflections of history in a non-stationary world and the growing importance of the past in managing ecosystems of the future.

It may be useful to recall that it is seldom ecosystems that are managed but rather people and the demands they place on

ecosystems and the services their functions provide. These demands are growing, thereby increasing the challenges for resource managers in a time when 'regulation' often seems like a dirty word, especially to those whose actions affecting natural resources most need to be regulated. The book's call for using the historical record to assess how forests (the book is mostly about forest management) responded to environmental variations in the past as a way to inform current and future management is therefore timely.

The chapter by A.R.E. Sinclair, drawing on 50 years of ecological research in the greater Serengeti ecosystem of Tanzania, was especially useful in challenging the implicit premise, even promise, of protected areas: that once a legal boundary has been established and the site is well managed 'it should remain ecologically stationary forever and management should act to keep it thus.' He suggests that history poses two major challenges to the current conservation paradigm. Firstly, all ecosystems change, sometimes quite suddenly and even to a quite different state. Secondly, those who value current ecosystems must provide ways for them to move to new locations. One implication of these challenges is that in many parts of the world, further conflict between people and the rest of nature is inevitable.

This book also brings a bonus with it: a companion website ([www.wiley.com/go/wiens/historicalenvironmentalvariation](http://www.wiley.com/go/wiens/historicalenvironmentalvariation)) that contains figures and tables from the book, and much else besides. This may well become the norm for many such data-rich books, as publishers seek to reduce the cost of hard copies and make more information available to a wider audience.

Incorporating historical environmental variation into modern thinking about conservation and the management of living natural resources deserves greater attention from the readers of this journal. This book provides an excellent overview of the lessons that can be drawn. For example, human use of certain ecosystem services has closed off other services, so one type of success can discourage other potentials. As Haila suggests in his chapter on the Fennoscandian taiga, 'It is worth trying tools of thinking such as ecohistorical periods and phase space representations of environmental change. Our main challenge is to assess the viability of alternative types of success and draw conclusions.'

The book concludes with 10 history-based recommendations to resource managers, of which I will cite only the last: 'Plan for the future, not for the past, but do not forget that the past provides our only empirical glimpse into the likely course of the future.'

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