

# Publications

**Biodiversity conservation and poverty alleviation: exploring the evidence for a link** edited by Dilys Roe, Joanna Elliott, Chris Sandbrook and Matt Walpole (2012), xiv+336 pp., Wiley-Blackwell, Oxford, UK. ISBN 978-0470674789 (pbk) GBP 45.00/USD 79.95.

Much has been made in recent years of the importance of biodiversity, and associated ecosystem services, for human well-being. The Millennium Ecosystem Assessment, for example, lays out a conceptual framework that identifies biodiversity as underpinning the delivery of a range of ecosystem services—provisioning, regulating, cultural and supporting—that in turn contribute to well-being and poverty reduction. At the same time, the 2002 Conference of Parties to the Convention on Biological Diversity developed a strategic plan to ‘achieve by 2010 a significant reduction of the current rate of biodiversity loss’ as a contribution to poverty alleviation’. This target was subsequently included in the UN Millennium Development Goals in 2006. More recently, the 2010 Conference of Parties adopted a decision on the ‘integration of biodiversity into poverty eradication and development’ and the current Convention on Biological Diversity Strategic Plan for Biodiversity has as its mission the halting of the loss of biodiversity ‘thereby contributing to human well-being and poverty eradication’.

But what is the evidence for these links? This edited volume seeks to answer this question with contributions based on the presentations made at a symposium hosted by the Zoological Society of London in April 2010. The introduction follows the philosophy of Socrates: ‘The beginning of wisdom is the definition of terms’, stressing the importance of being clear about what we mean by ‘biodiversity’ and the difference between biodiversity per se and the interventions involved in biodiversity conservation. The book is then divided into sections, each with several chapters exploring a range of related issues: the potential for synergies between biodiversity, ecosystem services and poverty; the links in different ecosystems—forest, coasts, drylands and agricultural landscapes; the impacts on poverty of different conservation interventions—protected area management, species conservation, community-based natural resource management and conservation-friendly enterprise development; and benefit distribution and the role of local organizations. The final section looks at the global picture, asking whether addressing global poverty can help save biodiversity, whether investing more in conservation can solve poverty, or whether there are much

larger questions to be answered about how we choose to live, to develop economically, and to govern the sharing of the world’s resources.

In the concluding chapter the editors address the ultimate question of what contribution biodiversity and its conservation can really make in tackling global poverty. As elucidated in several of the preceding chapters, they acknowledge that the evidence base is limited, with a tendency for those promoting the links to talk in generalizations. Much of what is said and written about these relationships seems to be largely based on myth and assumption. This resonates with my own experience working at the interface between conservation, livelihoods and environmental governance. This helpful book goes some way towards dispelling some of those myths and challenging those assumptions. For example, the editors conclude there is evidence that people living in poverty are often disproportionately dependent on biodiversity for subsistence, income and as a safety net or insurance against risk. Although in some circumstances biodiversity conservation can help people move out of poverty, in other cases it can be a poverty trap. There is also, crucially, acknowledgement that the contribution that biodiversity and its conservation makes to poverty differs greatly between individuals and between households. So biodiversity conservation—and the maintenance of ecosystem services—may contribute to poverty alleviation for some people in some places but it cannot be taken as read that conservation will inevitably be beneficial for the poor. The authors finally stress the importance of recognizing that biodiversity conservation and poverty alleviation are both inherently political processes. Good governance will be needed at all levels if conservation is truly to have a positive impact on the lives of the women and men, girls and boys who live closest to the biodiversity that conservationists are seeking to maintain and enhance.

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**The Kingdom of Rarities** by Eric Dinerstein (2013), xiii+295 pp., Island Press, Washington, DC, USA. ISBN 9781610911955 (hbk), GBP 18.99/USD 29.99.

In *The Kingdom of Rarities*, Eric Dinerstein takes his readers on a tour of some of nature’s

most amazing places. Aimed at an educated popular audience with an interest in plants and animals, the book provides a superb balance between description, science and conservation. It’s an easy, pleasant, and even exciting read, with the science gently fed to the reader as part of the book’s adventure narrative.

An introductory chapter asks ‘Why, wherever you land, do you always find a few superabundant species and a multitude of rare ones?’ It suggests that as many as 75% of all species on the planet may be considered rare, occupying a limited geographical space and having a low population density. It promises that better understanding of rarity can ‘help shape our response to saving wild nature.’ The use of the second person plural is no accident, as throughout the book the author encourages the reader to be at least a vicarious participant in the search for rarities and the ways to ensure their continued survival.

The book has eight longish chapters (20 pages or so) that each focus on a particular way station on our quest to seek places particularly relevant to rarities. We start in New Guinea, an island continent that has been isolated from Australia and Asia long enough to evolve an amazing variety of species found nowhere else. The description of searching for rarities such as birds of paradise is woven with science and conservation to present an intriguing tapestry. A key thread here is that customs controlled overhunting among the great diversity of native peoples on the island, where over 800 languages are spoken (although many are being lost). But these traditions are now losing their conservation effectiveness as missionaries discourage taboos and other pagan beliefs. Another thread is the remarkable Kikori River valley, where a major oil company, Chevron, has established a substantial strict nature reserve that is being repopulated by rarities. While the ethics of exclusion are questioned, the results have been positive for many rare species.

Our next stop is the Madre de Dios region of Peru, with healthy populations of jaguars, pumas and c. 1,000 species of birds. The big cats are being monitored by radio tracking technology that provides important conservation insights. This setting helps explain why the tropical rainforests are so rich in plant species, and why ecosystems fundamentally change through trophic cascades when apex predators are removed (for example, by poachers). Other concepts introduced include dispersal corridors and payments to forest-dwelling people for serving as stewards of the forest and its large cats.

From a forest with as many as 250 species of trees per hectare we fly to northern Michigan to search the species-poor jackpine woods for Kirtland's warbler, one of the rarest birds in North America. We learn that extreme dependence on a particular habitat can be either a cause of rarity or a condition of it. And suitable winter habitat of this migratory bird, on the Bahaman island of Eleuthera, is counter-intuitively maintained by the grazing of introduced goats—a conservation villain in many other parts of the world. Concepts such as conservation-dependent species, dispersal ability, and the ecological role of warblers in controlling insects bring science to the chapter, and the value of a Canadian Forces base in Ontario for the conservation of Kirtland's warbler adds an intriguing new potential partner to the mix.

We then trek to Nepal's Chitwan National Park, where the author has spent many years studying species such as tigers and the greater one-horned rhinoceros. Chitwan reveals the importance of long-term studies of population dynamics, genetic variability, and the role of large herbivores in 'designing' their own habitat (called the megafaunal fruit syndrome). From the flood plains of Nepal we hop to the Cerrado, the savannah habitat of giant anteaters and maned wolves in southern Brazil as well as attractive land for the expansion of industrialized agriculture. Countryside biogeography, matrix conservation, convergence, ecological equivalents, sources and sinks, and the role of fire in ecosystem management are parts of its story, along with the many wounds inflicted on rarities by agriculture expanding to help feed the growing human population.

The volcanic Hawaiian archipelago is our next stop, credited by the author as once having 'perhaps the highest concentration of rarities on Earth'. But then humans arrived, with the first Polynesians bringing rats, pigs, and chickens with them, and hundreds more non-native species following Captain Cook and other aliens to the islands, bringing devastation to the native species. Adaptive radiation, island biogeography, and more climate change are all introduced here, before we move on to Indochina, where scientists found an amazing diversity of large mammals, several new to science, after the end of the Indochina War. It is no surprise that the war had adverse impacts on species but a disheartening surprise is that peace may be even worse for some species, judging from the disappearance of Javan rhinos and kouprey after the war.

We end our pilgrimage on a more positive note in the Himalayan Kingdom of Bhutan, where the King prefers the use of gross national happiness to gross national product as a measure of human well-being. Finally,

an answer to conserving the world's rarities: 'Developing our gift for compassion is a critical contribution to the persistence of rarities.' But what works in isolated Bhutan may not be easily applied to the whole world, so we learn that our ethical support needs to be accompanied by science, control of invasive species, economic incentives, and improved governance at all levels from the village to the globe (for example, through the climate change and biodiversity conventions).

This short review hardly does justice to the rich diversity of species and issues presented in a highly entertaining way. The conservation discussion would have been enriched by more thorough consideration of the economics of conservation (who wins, who loses, who pays, who suffers). Madagascar, southern Africa, marine rarities, and polar regions were missing, and zoos and botanic gardens certainly deserve more attention. But these are just quibbles about a thoroughly engrossing book that the readers of this journal will surely enjoy.

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**Churning the Earth: The Making of Global India** by Aseem Shrivastava and Ashish Kothari (2012), xxi+394 pp., Penguin Books India, New Delhi, India. ISBN 978-0670086252 (hbk), INR 699.

India strides the earth like a future economic colossus. One of the BRIC countries (Brazil, Russia, India and China), its sustained economic growth through the economic crisis of the first decade of this century has sucked in restless capital in search of high returns impossible in established industrial economies. Indian corporations have become global players, buying mines, manufacturing plants and land, selling everything from motorcars to film. What is the source of all this razzmatazz? What are its effects, on Indian society and on nature? These are among the questions *Churning the Earth* sets out to answer.

Aseem Shrivastava is an environmental economist, and Ashish Kothari is an environmentalist, founder of the environmental NGO Kalpavikrishi. Together they have written a wordy but worthy book, and tell a sobering tale. Their starting point is the neoliberalization of the Indian economy in the 1990s, when 'structural adjustment' became the price of massive loans from the International Monetary Fund and World Bank to deal with a balance of payments crisis. The result was a deregulated economy in which corporate

commerce has overreached bureaucratic and democratic governance to refashion lives and landscapes over vast tracts of India. The economy that developed was one that involved massive inequality, a delirious stock market and a brittle vulnerability. *Churning the Earth* does not pussyfoot about: liberalization has created a wealthy elite and satisfied the demands of international capital, but left the vast majority of Indians exposed to the same old problems of hunger, entrenched poverty and unemployment, caste and gender inequalities, limited access for the poor to land and livelihoods, and political tension. Far from resembling a tiger, India's economy has grown like 'a drunken stunted dog' (as Shrivastava & Kothari entitle their second chapter).

*Churning the Earth* is long, and a curious mix of outraged journalistic and didactic styles. It is full of facts and figures and footnoted references. It demands a familiarity with the geography and governance of India, and the peculiarities of weights and measures (lakh, crore and quintal). But the story is clear enough. The deregulated economy drew a vast number of people (some 250 million) into the global consumer economy, important participants in globally networked patterns of production, advertisement and consumption. But it left the vast majority of Indians behind.

These people, the rural and urban poor, form the moral heart of the book. The book has two parts, of unequal length. The first eight chapters review the experience of economic liberalization, setting out in detail the failure of economic growth to trickle down to the poor, and the way policies have undermined India's ecological security. The country is described as 'a house on fire' (chapter 4), with pollution and resource depletion everywhere, unplanned and more or less unchecked. Successive chapters analyse the failure of governance to provide a secure frame for decision-making about development (chapter 5), the abandonment of agriculture (and of the vast number of smallholder farmers whose land is offered up for business investment through a series of schemes and scams such as Special Economic Zones). Shrivastava & Kothari argue that these have driven processes of population displacement and socio-economic exclusion. They draw a direct link between the rapacity of industry, variously inept, weak and corrupt governance, and the rise of radicalism, such as the Maoist Naxalite movement in north-east India.

The second part of *Churning the Earth* attempts to match this fierce critique with an alternative. Inevitably perhaps, this section is shorter. It is also more speculative, with three chapters that seek to explain how to achieve 'an imaginative cooperation perhaps unprecedented in history' (p. 246). A short prologue