Publications

The Value of Species by Edward L. McCord (2012), xxiii + 160 pp., Yale University Press, New Haven, USA. ISBN 9780300176575 (hbk), GBP 18.99.

This slim little volume brings together ideas from biology, philosophy and ethics to approach the question that conservation biologists confront every day—what is the value of the rest of the organisms with which we share the planet. At face value (no pun intended) this is a silly question for those deeply immersed in conservation science but it is one that arises again and again in discussions of the rationale for conservation. In today's society we save what we value—so how do we value nature? TEEB (The Economics of Ecosystems and Biodiversity; http://www.teebweb.org) was set up to help articulate this question and the examples provided in the internet resource associated with the project are brilliant examples of just how important in monetary terms the ecosystems of Earth are for us as human beings. But money is not everything…

It is easy (sort of) to think of the 'value' of mangroves for coastal protection, or watersheds for clean water, but McCord takes another tack and looks at the value issue from the perspective of an individual species. We human beings are a single species, *Homo sapiens*—what is our value? What is the value of the malaria-carrying mosquito *Anopheles gambiae*? On the face of it this seems an even sillier question but McCord is asking exactly that—why are the other species of value, not the value of services or ecosystems that are emergent properties of the species they contain. What he is exploring is essentially the moral value of the diversity of life on Earth. The answer is not '42' or anything as simple as that, nor does McCord have an answer that one could quote to a politician or member of the public. What he does very effectively, however, is lay out the intellectual scaffolding with which to approach such a question.

The book follows a path from concepts of property (explained in terms of US property law, which of course is not universal but is a good example) and the free market, through ethics, to the Aristotelian concept of virtue as value. The short ecological memory of our own species means we are trapped in short-term thinking, even if we think we are thinking in the long-term. Even conservation biologists fall into this trap; standing outside ourselves and thinking about what this really means is an important part of approaching McCord's central thesis. This is definitely not a book for the unconverted but it is a book that could be read by biologists of all sorts. It is definitely the sort of book I would use in a graduate discussion seminar, and it is a volume that will help those who regularly speak with others not as convinced by the arguments of conservation biology, to expand the discussion into philosophical and ethical realms with which people are often more comfortable. I found a few things to annoy me, such as the overuse of words such as 'must', 'should' and 'honest' but overall this is a thought-provoking essay that provides new perspectives on that age old question for us humans—what does the rest of the world matter to us? McCord has a great answer, which I will not give away, but it does come back to us in the end.

Sandra Knapp The Natural History Museum, London, UK. E-mail s.knapp@nhm.ac.uk

---

Biology and Conservation of Wild Felids edited by D.W. Macdonald & A.J. Loveridge (2010), xix + 762 pp., Oxford University Press, Oxford, UK. ISBN 9780199234448 (hbk), GBP 90.00; 9780199234455 (pbk), GBP 45.00.

If you want to know all about wild cats, this is the book for you. The 128 contributors from 18 countries include virtually all the leading experts, who are working on every species from the diminutive rusty-spotted cat of India and Sri Lanka (weighing 1–2 kg) to the massive Siberian tiger (up to 325 kg). Even better, they cover all aspects of wild cat biology, from evolution to wild felid diseases, further enriched by 18 case studies addressing some of the most interesting issues involving wild cats, many of them with a focus on the conflicts between wild cats and the people who share their habitats. A 50-page concluding chapter looks towards the future and provides a detailed perspective on what will be required if all species of wild cat are to survive, and even prosper, in the future. With 87 pages of references you will know where to look for additional details. The many excellent photographs and detailed figures leave little room for disappointment.

Not so long ago the cats were fairly simple, with just six genera and 36 species included in the third edition of Walker's *Mammals of the World* (1975, Johns Hopkins University Press, Baltimore USA). All the small cats were included in a single genus *Felis* and the Asian golden cat was considered closely related to the African golden cat. Today, we still have 36 species of wild cats but the number of genera has doubled, mostly among those who were once considered *Felis*. But the genetic study of cats, covered in an excellent chapter by Melanie Culver and associates, has justified this division and thrown up a few surprises: the African golden cat is in the same genus as the caracal (also from Africa), not the Asian golden cat (which is more closely related to the marbled cat and the Bornean bay cat), and the small and sleek jaguarundi is in the same genus as the much larger puma, both of which are closely related to the cheetah (which once lived in North America). All of the small cats of Central and South America are in the same genus *Leopardus*, the small cats of Asia fall into six genera, and Africa adds only one more; this strongly indicates that cats radiated from Asia.

While briefly covering the evolutionary history of the cats, this book is much more about the present. Over the past several decades new ways of studying cats (covered in a chapter on field techniques by Ullas Karanth and colleagues) have stimulated detailed field studies of virtually all species, with particular attention given to the large cats that tend to have the most contentious relations with local people. Such conflicts are the main source of conservation concern for the wild cats, even where they are being reintroduced, such as the lynx in Switzerland. The case studies provide considerable detail about the conflicts between people and wild cats and how these are being addressed in various parts of the world (the case study on the tigers of Nepal and northern India by John Seidensticker and many colleagues is especially detailed because of the length and depth of study).

Because cats tend to be wide ranging, protected areas are not a sufficient conservation measure, although they remain essential for providing safe living conditions for most species. But wild cats that inhabit protected areas will sooner or later increase their population and expand beyond the boundaries, bringing them into the habitats of domestic animals that provide tempting prey or harvesting game animals that human hunters covet. As a result some species of wild cats are in serious trouble. The Iberian lynx is categorized as Critically Endangered, and the tiger, the snow leopard, and the Andean, Borneo bay, flat-headed and fishing cats are all categorized as Endangered. Only 11 species are considered relatively widespread and abundant. If current trends continue, unique and fascinating species of wild cats that have long been part of human cultures will surely be lost.

Looking into the future to find ways to ensure the long-term survival of all species of wild cats will require some compromises

among farmers, herders, hunters and conservationists, making the human dimension an essential part of any conservation plan for wild cats. If such plans are to be successful they will need to be based on the detailed research that is so comprehensively reported in this volume and such research will need to continue, and expand.

Biology and Conservation of Wild Felids is a companion volume to Biology and Conservation of Wild Canids, edited by David Macdonald and Claudio Sillero-Zubiri and published by Oxford University Press in 2004. Together, these two volumes have shown that the wild relatives of the domestic cats and dogs that are important parts of many human households must deal with many of the same threats—habitat destruction, human predation, diseases such as rabies and distemper, and continuing conflict with people. The conservation successes reported in both books, tempered by the many reminders of continuing threats, will provide wildlife managers with the encouragement to put into practice the growing knowledge about the ecology and behaviour of these fascinating species, and emphasize the urgency of doing so.

Jeffrey A. McNeely IUCN, Gland, Switzerland
E-mail jeffmcneely2@gmail.com

Tropical Forest Conservation and Industry Partnership: An Experience from the Congo Basin edited by Connie J. Clark & John R. Poulsen (2012), xx + 239 pp., Wiley–Blackwell, Oxford, UK. ISBN 9780470673737 (hbk), GBP 75.00.

Logging and logged forest have returned as a conservation focus after being dismissed as anathema to achieving conservation outcomes. Recent reviews of the literature such as that by Putz et al. (2012, *Conservation Letters,* 5, 296–303) tell us that logged forests can maintain high carbon and high biodiversity values. This is good news as a significant proportion of tropical forest has been or is slated for logging. But, as many have observed, tropical forests that have been logged are not often good conservation lands both because of poor logging practices and because of the collateral damage caused by roads, in-migration, hunting and other factors. So how can the conservation community work to ensure that forests that are to be logged are logged well rather than poorly?

Enter this book, with its account of what has been learned from a path-breaking partnership between a Swiss logging company, Congolaise Industrielle des Bois (CIB), with its large logging concession in the Republic of Congo, the government of Congo, and a global conservation organization, the Wildlife Conservation Society. This partnership was designed to extend the effective area of protected areas, the Nouabalé-Ndoki National Park in particular, beyond its boundaries and into the neighbouring logging concessions managed by CIB. The key to this work is that good logging practices could continue in the concession but what had to be stopped was the hunting of elephants, great apes and other threatened species that was facilitated by the logging practices.

The editors of the book lay out an important and difficult agenda: 'to facilitate the development of partnerships to mitigate the non-obligate impacts of logging on biodiversity, ecosystem services and livelihoods of local populations, with particular emphasis on wildlife management' (p. 7). To help facilitate such partnerships they detail—and I mean detail—the lessons that were learned through the almost 10 years of implementation of the work in the Congo. They report on everything ranging from how to plan in a co-management context and how to assess the impact of industrial logging on human demography and patterns of wildlife consumption, to how to involve multiple actors in land-use planning methods and the results of monitoring large animal populations in production and conservation landscapes. This is a feast of interesting and under-interpreted data.

This project was conducted under difficult physical, logistical, financial and social conditions. Credit has to be given to the programme managers who insisted on monitoring most of what they did and changing their practices based on what they learned. Would that this were a common practice in conservation! But we, the readers, are enriched by the forthright telling of the project story and its methods, the admission of mistakes, the detailing of methods for achieving considerable success, and the lessons offered by the volume.

The important story that this book tells is not helped by its format. It cannot decide if it wants to be a jointly authored book, an edited volume, a techniques manual or a set of published scientific articles—and therefore tries to be all of these. Data tables with their statistical tests mix uncomfortably with an overwhelming number of boxes written by a cast of programme associates, and recommendations on how to manage ecoguards vie for attention with lessons on how to set up a radio station for dispersed forest peoples. Additionally, the text could have used a good editorial hand to smooth out repetitiveness and uneven sections. Perhaps the best way to interact with this book is to read the introductory and concluding sessions and, after reviewing the thorough table of contents, dip into the sections that are of greatest interest. There is a great deal to learn from what you'll find and it is worth working to find it.

With 350 million ha of natural tropical forest destined for logging (p. 3) the public–private partnerships such as described in this volume are vital for ensuring that those conservation values that can be achieved in logged forests are maintained. Interestingly, IUCN is considering a category of lands that contribute to biodiversity conservation but do not meet the full criteria of protected areas. This book has much to offer to this discussion and should be widely read by conservation practitioners and those in the business world interested in contributing to biodiversity conservation through good business practices.

Kent H. Redford Archipelago Consulting, Irvington, USA. E-mail redfordkh@gmail.com

---

Carbon Credits from Peatland Rewetting: Climate—Biodiversity—Land Use edited by Franziska Tanneberger & Wendelin Wichtmann (2011), xii + 223 pp., Schweizerbart Science Publishers, Stuttgart, Germany. ISBN 9783510652716 (hbk), EUR 39.80.

After years of wading knee-deep in thick brown organic matter, peat scientists are finally enjoying their time in the sun. Global policy-makers are increasingly realizing the sizable contribution that carbon-rich peatlands make to global greenhouse gas emissions—up to 2 Gt CO_2e per annum (for comparison, global emissions were 49 Gt CO_2e in 2004). The publication of this book is therefore very timely. It summarizes the results of a 3-year project to restore and sustainably manage peatlands in Belarus, a small country in eastern Europe well-endowed with bogs and fens.

This information-rich volume fluctuates between textbook, scientific reporting of results from the project, and a how-to manual for accessing the global carbon market. This somewhat confusing mix is probably a function of the 44 contributing authors, although what it lacks in cohesion it makes up for in content. Early chapters describe the extent and characteristics of peatlands in Belarus, and the relatively recent realization of the need for re-wetting of its previously drained peatlands, an important point being that 'without rewetting, drainage related emissions will remain as high as when these lands were still used as cropland or grazing land'. The relationship between peatlands and climate is explained, although the explanation of the

chemical processes in peatlands is not for the faint-hearted.

Chapter 3 summarizes some of the methods for measurement of greenhouse gas emissions from peatlands, including 'expert-heavy' methods such as the gas flux chamber and eddy covariance technique. The failure to discuss the low-tech, low-cost approach of using subsidence poles to estimate peatland emissions is disappointing, although perhaps because this technique is more appropriate for measuring rapid peat loss following drainage, rather than the glacial-pace process of peat deposition following rewetting. An innovative method proposing the use of vegetation type as a proxy for emissions is proposed—the theory being that indicator species can be linked to peat water levels, which has a strong correlation with peatland emissions. This greenhouse gas emission site type (GEST) approach carries much appeal for anyone who has ever endured the laborious and cumbersome process of field-based peatland measurements. Unfortunately it appears that the peat emission values matched to each vegetation type appeared to be drawn from the literature, rather than from calibrated emission measurements taken from the experimental sites in Belarus. Therefore it is difficult to assess the robustness of the method. Fortunately, at the time of writing, the GEST methodology is undergoing a double-validation process under the Verified Carbon Standard (VCS), so independent auditors are working away on this very question, and the validity of the technique for application to the voluntary carbon markets is soon to be revealed. Regardless of the outcome of this validation, the authors' efforts to simplify and reduce costs of peatland emission estimation should be applauded.

The book includes a comprehensive assessment of the unique biodiversity that exists in the peatlands of Belarus. Together with the colour plates interspersed throughout the book these assessments dispel the myth of peatlands as dank inhospitable environments. Rather, they are a distinctive destination for bird-watching and recreation. Moreover, the ability to restore biodiversity to formerly drained peatlands appears promising, which is good news given the degraded status of this ecosystem globally.

Chapter 5 describes the role of peatlands in global environmental agreements, and describes how wetland projects could enter either the compliance or voluntary carbon market, including commentary on the appropriateness of various carbon accounting techniques. Of note is the fact that peatland projects are now specifically included in the world's foremost carbon standard, the VCS. Beyond generators of carbon credits, Chapter 6 provides some ideas on potential uses for peatlands following re-wetting.

The somewhat unusual sequence of chapters means that it is not until the end of the book that a detailed description of the Belarus project is provided, together with an overview of the re-wetting activities undertaken in the study sites. For those not already familiar with the concept of peatland re-wetting (which I suspect is the bulk of the population!), it is therefore recommended to read the later chapters (7 and 8) first. The lack of a step-by-step guide for how to diagnose and prescribe appropriate re-wetting activities is also somewhat disappointing, given the urgent need for transfer of lessons learned in this area to tropical developing countries.

Of course no scientific publication would be complete without a discussion of research gaps and the clarion call for more funding to address them. In this sense, the book does not disappoint and the research gaps appear to be targeted and appropriate. It appears there is scope for plenty more knee-deep wading in thick brown organic matter yet!

Zoe Ryan Fauna & Flora International, Melbourne, Australia
E-mail zoe.ryan@fauna-flora.org

Saving a Million Species: Extinction Risk from Climate Change edited by Lee Hannah (2012), xii + 417 pp., Island Press, Washington, DC, USA. ISBN 9781597265690 (hbk), USD 70.00; 9871597265706 (pbk), USD 35.00.

My research group is studying the impacts of climate change on the distribution of ungulates on the Tibetan Plateau and documenting the range drift of avian species as the climate warms. Species extinction and climate change are thus not new concepts to me but I wish I had had this book to hand earlier!

This timely edited book starts by introducing the now famous 2004 study on species extinction and climate change by Chris Thomas and colleagues (*Nature*, 427, 145–148). Their prediction that a million species are at risk of extinction from climate change grabbed the headlines and stirred public concern about the consequences of global warming. In contrast to the public attention, scientists were cautious about the projection of species extinction. Is the estimate a true trajectory for species? Or did Thomas et al. overestimate or underestimate the species extinction catastrophe? Should we take Thomas' prediction as an early warning? And, most importantly, what actions can we take? The book, in six sections (Introduction, Refining First Estimates, Current Extinctions, Evidence from the Past, Predicting Future Extinctions, and Conservation Implications), provides elegant, vivid and in-depth reviews of the issues. Firstly, theoretical problems underlying the species–area relationship and climate uncertainty are explored. Then current extinctions of species on both land and in waters, evidence from the past, and predictions of future extinctions are illustrated and discussed by various experts. Finally, strategies to mitigate the impacts of climate change on species are presented. Lee Hannah marks the starting and finishing points in the Introduction (Are a million species at risk?) and in the concluding chapter (Saving a million species).

Scientists are still arguing about the methodology and accuracy of the Thomas et al. study. We should view the issue from two sides. On the one hand, can we estimate accurately the number of species that may go extinct because of climate change? Given that we still do not know exactly how many species exist or the extent of global climate change and its impact on ecosystems and the biosphere, and that taxonomists are still arguing about splitting or lumping species in many groups, we most likely could never give a accurate answer to this question. On the other hand, extinction of species may be an outcome of multiple factors such as persecution by humans, habitat loss because of anthropogenic landscape change and, of course, climate change. Thus, it is difficult to separate the impact of climate change on species from the effects of other factors.

Despite the critics, simple phrases such as 'A million species at risk' and '2 degrees Celsius' will be remembered by most of us. On the other hand jargon such as 'Extinction of marine genera over the last 315 million years' and 'Scenarios of the Fourth Working Group Report of IPCC' may confuse people. The study by Thomas et al. is an early warning. As Thomas Lovejoy points out in the Foreword to this book: if we decide to stop at 2 °C global emissions have to peak in 2016. I am happy if a figure such as 'One million species' as a rule of thumb is sufficient to stir governments, policy makers, NGOs and people to take action to prevent further heating of our planet. Since 2004 the synergy of politicians, scientists and conservationists has brought some hope for saving species, and this book provides further support. As Thomas Lovejoy notes in the Foreword 'What the editors and authors who created this volume have achieved is to make an impregnable case for the sensitivity of the biology of our planet to the changes we are creating in the atmosphere.'

Zhigang Jiang Institute of Zoology, Chinese Academy of Sciences, Beijing, China
E-mail jiangzg@ioz.ac.cn