

Preface

It's easy to think that as a result of the extinction of the dodo we are now sadder and wiser, but there's a lot of evidence to suggest that we are merely sadder and better informed.

(Douglas Adams and Mark Carwardine, *Last Chance To See*, 1990.)

Why bother?

It seems only fair to the reader, at the start of any book, to explain why the trouble was taken to write it. In the case of *Key Topics in Conservation Biology*, the question has answers at two different levels – the first explains why the topic itself is rivetingly relevant for everyone who gives even a jot, not just about Nature, but about the future of the human enterprise worldwide (and surely that makes it relevant to just about everybody), whereas the second explains why we tackled it in this particular way – an answer which reveals, unusually, that in this case the process is almost as interesting as the product.

At the first level, the reason why the key topics of wildlife conservation are relevant are not only because we are in the midst of an extinction crisis, but also because countless species not yet facing extinction, and their

habitats, are nonetheless facing grave change (almost always for the worse), invariably due ultimately to the hand of Man and often with consequences that also affect people. The extinction crisis itself is the topic of the first essay, by Pimm, Dickman and Cardillo, so there is no need to repeat the detail here. Similarly, issues such as bushmeat, hunting, pest control, agriculture and other forms of conflict are each the topic of other essays, as are such issues as infectious disease, invasive species and climate change. Again, other than drawing attention to the breadth of these topics, our purpose here is not to summarize these essays, but rather to direct the reader to them.

Like medicine, conservation biology is a mission-driven science. Physicians take it for granted that we all care about saving and extending human lives. Thus motivated, they study the pathology of ill health and practice methods to prevent or minimize it. Although

death is an inevitable part of life, we deem a high number of premature deaths – from disease or accident – to be a particular concern. Likewise, conservation biology is about biodiversity loss and the methods to minimize it. Essays in this collection introduce some of the tools of this trade – spanning the ingenious gadgetry reviewed by Ellwood, Wilson & Addison, through the computer models explained by Boyce, Rushton & Lynam, to the institutional structures described by Cobb, Ginsberg & Thompson. Others introduce the biological framework within which the natural environment can be understood, for example through the genetics (Geffen, Luikart & Waples) and the spatial organization (Akçakaya, Mills & Doncaster) of populations.

Why should we care about the loss of biodiversity? It is conventional to couch the answer in terms of economics, ethics and aesthetics (which, with the neologism of American spelling, can catchily be labelled the 'three e's'). These three resonate with the elements of triple bottom-line accounting (economics, environment and social responsibility) that has rightly become fashionable in reporting the impacts of corporations, and are also the basis of accounting in any conservation debate. Both trios emphasize that costs and benefits are measured in many different, and often awkwardly incommensurate currencies. You might value a species on the basis of its direct market worth, or its indirect value (e.g. in persuading people to go on holiday to watch it – calculated by so-called hedonic valuation), or in more abstract terms by the value you put on its existence (fuzzily quantified by so-called contingent valuation). The revelation of 50 years of conservation biology is that every issue is complicated, and every solution must be interdisciplinary – biology is a necessary component, but not a sufficient one, for understanding and thus solving conservation problems. This reality, which makes clear that there is a 'human dimension' to every conservation issue, and that this dimension is generally unavoidably central to the solution, reverberates through every essay in this book – it is the

entire topic of the essay on environmental economics by Pearce, Hecht & Vorheis, and a central message of the concluding overview in Macdonald, Collins & Wrangham's postscript. In short, whether or not an individual happens to realize it, or to be interested in biodiversity, everybody's life is affected by, and affects its conservation.

Turning to the more nuts-and-bolts question of how, and why, we produced this book the way we have, the answer lies in the invitation, in 2000, to create a module in Conservation Biology within the University of Oxford's Master of Science course entitled *Integrative Biology*, which is organized by the University's Department of Zoology. Believing that there was little merit in cajoling lecturers to prepare, and then compelling students to listen to, lectures that rehearsed conventional material that could more efficiently be gleaned from textbooks, we decided instead to organize the course as a series of workshops at which front-line specialists of international standing led discussions on their experiences at the cutting-edge of conservation. These sessions took the form of day-long Think Tanks, in which not only the Masters students and our invited guests, but also researchers from the Wildlife Conservation Research Unit pitched in together. Rather than wearisome essays, the course assignments involved snappy thought-pieces on emergent issues – the key topics in wildlife conservation. The formula was so energizing – flatteringly, the students repeatedly voted it their favorite module – that we thought to develop the approach as a book. Close to the front of our minds, and it was a thought that found favor with many of our visiting speakers, was a growing disquiet that the very welcome rise to prominence of conservation biology was tainted by an occasional and unwelcome tendency towards bluster! Specifically, our Think Tank sessions became vigilant to such refrains as 'it is really important that we study ... such and such', to which the probing chorus of 'why?' sometimes revealed that although the topic might indeed be interesting, it was less

obvious why it was operationally important. The notion grew, therefore, of assembling teams to write the essays that now comprise this book, and of selecting for each team a trio of renowned authors, each with a different perspective, and urging them to work together on the difficult task of stripping down to the essentials the issues that really are important in their topic. It is for that reason that the working title of this book has been 'Conservation Without Crap' – although the proposal that this should be the cover title was one from which the publisher politely demurred.

Because discussion had been such a prominent strength of the workshops that had catalysed this book, we sought to emulate this by subjecting each essay to the equivalent of a roomful of discussants. Not only did all the authors review each other's essays, but all members of the Wildlife Conservation Research Unit reviewed them too. The result was that most essays received over a dozen reviews, and went through many drafts in response. In conversation amongst the authors it emerged that a surprising number of our sons and daughters were biology students, and who more critical than an offspring to savage that which flows from the parental pen! Therefore, with something of a family feel, we assembled the Student Panel (listed on preliminary p.ii of this book) to cast a critical consumer's eye over each essay (although we hope these essays will fascinate, inform and entertain a wide readership from the loftiest authority to the aspirant Sixth Former, from interested layman to policy-maker to naturalist, our imagined modal reader might well be a Masters student). Each essay represents a hill – a vantage point from which a particular trio of specialists views the conservation landscape. Having been assaulted by the assembled army of over 70 reviewers, almost all the authors commented that the toughest comments to deal with came from the Student Panel – tellingly, perhaps their views of the hills were unencumbered by the baggage that older reviewers had accumulated while climbing them – who as yet know nothing of things

like the Research Assessment Exercise (RAE) and why it matters, or does not (for any readers also fortunate enough to be in this position, the RAE is a performance indicator that encourages scientists in the pursuit of a high score rather than of wisdom or usefulness). One of the most inescapable realizations drawn from the process of producing these essays, and something perhaps felt most keenly by the five of us reading the comments of our offspring, is just how radically the conservation landscape has changed in just one professional generation. As a practical aside, a lesson that might assist editors and authors as they recruit reviewers: as we five fathers watched our offspring toil over early drafts of these essays during the 2004 Christmas vacation, we also learnt how fiercely one cares about the quality of a script that presents to one's children the subject to which we have devoted our lives! Anyway, the quality of the final essays owes much to the diligent reviews not only of the authorial team and the Student Panel but equally to the following members of the Wildlife Conservation Research Unit: Christina Buesching, Ruthi Brandt, Zeke Davidson, Harriet Davies-Mostert, Carlos Driscoll, Hannah Dugdale, Adam Dutton, Paul Johnson, Jan Kamler, Kerry Kilshaw, Steven Gregory, Lauren Harrington, Donna Harris, Jorgelina Marino, Fiona Mathews, Tom Moorhouse, Inigo Montes, Jed Murdoch, Deborah Randall, Greg Rasmussen, Lucy Tallents, Hernan Vargas, Nobby Yamaguchi and Zinta Zommers.

Finally, each essay in this collection is intended to stand alone, but the collection as a whole is more than the sum of its parts, together introducing the nature of the problem, the framework in which it can be understood, some tools that can be used in the quest for solutions, and various of the issues that are topical. As such, it has no pretensions to compendiousness – there are many more than 18 key topics in wildlife conservation – nor even balance (although they drift variously over every type of organism, most of the authors have greater expertise in animals than in plants, and most specialize in vertebrates).

Nonetheless, this collection of essays does give a representative insight across the landscape of conservation. Just as it was spawned by days of debate between a diverse assemblage of people in our discussion groups, we hope that *Key*

Topics in Conservation Biology will be the catalyst for countless fruitful discussions amongst those to whom it will fall to deliver the solutions that are required if Nature is to survive as more than a poor shadow of its former glory.

Truths would you teach, and save a sinking land?

All fear, none aid you, and few understand.

(Alexander Pope, in *Essay on Man*, 1994.)

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