BOOK REVIEW

Biodiversity: Exploring values and priorities in conservation, by Dan L. Perlman and Glen Adelson. Blackwell Science (1997), ISBN 0-86542-439-X.

Conservation of biological resources, by E.J. Milner-Gulland and Ruth Mace. Blackwell Science, ISBN 0-86542-738-0

Biotechnological breakthroughs aside, informed scientific accounts have it that we are currently living through a period of unprecedented degradation to our global biological patrimony. More than ten years on from the initial discussions that gave rise to the Convention on Biological Diversity in 1992, it seems reasonable to reflect on what has been achieved to address this crisis. In policy terms at least, and relative to climate change, the other high profile global environmental problem of our time, the answer has to be not very much. While business interest and column inches can be generated with abatement strategies, clean air technologies and emissions trading regimes, the same lucrative gadgets remain notably absent for global biodiversity. Extinction rates we assume continue unabated while parties to the Convention fiddle. Ever so often a scare story generates a flurry of activity that leaves us all psychologically diminished by the spectre of an impoverished environmental future. But the fact remains that the science of biodiversity is complex and conservation simply does not seem to pay either politically or economically. Not the best circumstances for an urgent debate about efficient conservation strategies.

While confirming the complexity inherent in conservation biology, the contribution by Perlman and Adelson nevertheless represents one of the most accessible and intelligent presentations of what the scientific issues are. The chances of science being translated into efficient policy are much less remote if information on what the choices are can be translated into plain language. It is particularly heartening to see the issue of priority setting addressed so explicitly, an area that much of conservation science appears to have assumed away as someone else's problem. Priority setting is a second best fudge, but as has been said, the best can be the enemy of the good. Better to assess priorities with the information presented here than do nothing at all.

Unlike many other contributions in this field, the authors attempt to convey biological information in terms that are meaningful for policy. After explaining the basic biological hierarchy of life on earth, the fashionable shorthand of genes, species and ecosystems is subjected to a basic practical policy test of whether the categories can be used to assess the biodiversity of a region. The overwhelming requirements of genetic data inevitably lead to the need to consider units of diversity at a higher resolution. Taxonomy and systematics may provide theoretically efficient frameworks for constructing indices of diversity. But time requirements for collecting sufficient information do not make this a practical approach for immediate policy prescription. For priority setting, a combination of urgency and pragmatism more often lead to a much more *ad hoc* or opportunistic approach to conservation policy that we typically witness today. And this is where the question of value(s) fits into

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the picture. While any first best conservation biology value metric remains data demanding, alternative socioeconomic, political and ethical considerations have all filled the gap in a less than consistent manner. Conservation it turns out, is always a totally value-laden exercise. It is hard to consider the notion of efficient conservation from a baseline that consists of so many competing value premises and consequent conservation agendas. Only a common appreciation of factors such as the level of endangerment, threat, system integrity and the very need to set priorities at all, offer some unifying themes.

Although there are no unwarranted claims made in this book, its content could have been improved by an extension of thinking to suggest (albeit speculatively) what policy makers might actually do. As an introduction for the bio-illiterate, the coverage of the latest thinking is extensive. Yet, many of the highlighted shortcomings in knowledge will be disconcerting for any policy maker asking the simple question of 'what policy tools are out there?'. In this regard some attention to the more macro land use issues underlying extinction and habitat loss would have been useful; as would some additional cross reference to the implications for the Convention on Biodiversity. This is equally true if, as the number of interesting anecdotes suggests, the authors have a more modest ambition for the book as a teaching device for both scientific and interdisciplinary courses at university. But even without this discussion, the book is highly recommended for anyone who wants to know what is (or is not) happening at the applied end of conservation biology.

The next step for students or any other interested party is to find a complementary text that takes the step from what should be to what is. That is a step from considering the biodiversity – emphasis on diversity – to a review of what can be done to manage many of the world's biological resources. The contribution made by Milner-Gulland and Mace makes one such step. As the book states very early on, conservation is about people. The authors thereby establish an anthropocentric theme for the rest of the subject matter. Biological resources compete for space and we have a lot to say over whether they are used in a sustainable or non-sustainable manner. This is far removed from the minutiae of taxonomic exactitude and ethical soul-searching. Yet there is much sense in the view that in managing the vital interface between humans and their exploitation of the wilds, unknown treasures lower down the hierarchy can be safeguarded. Regulating human self-interest is the name of the game. Not much room for discussion of value structures here.

Much of the subject matter and case studies draw on economic theories of optimal resource extraction or harvest. How does the configuration of variables including price (thus supply and demand), time discount rates and risk, dictate the fate of an economically valuable species? These are bioeconomic realities that can be applied to fish, mammals such as elephants, or trees. Optimal harvest can be considered in the presence or absence of market prices reflecting significant wider welfare impacts of harvesting. To use economists jargon, harvest decisions give rise to externalities that may bring about changes in the so-called optimal use decision. Thus it may be optimal to cull elephants, but the optimal cull for a particular park in Africa may change if the welfare of tree huggers in Europe is to be taken into account. Optimal or sustainable off-take can also be regulated with appropriate property rights and economic instruments such as quotas or tradable permits. However, getting all things right depends on conservation being allocated sufficient management resources and

data availability. While the resolution of the data is less problematic than for the taxonomic evaluation, the example of declining fisheries suggests that the sums can still go horribly wrong.

The powerful contribution of this book lies in the way case studies bring rather dry theories to life. Few texts do this so well and with such extensive geographical evidence. Thus, resource theory stories are complemented by case studies on game tourism and coral reef carrying capacity. The text will be a very useful addition for students of applied science, environmental economics and anthropology. Equally for consultants who actually have go out and 'do' conservation projects. Combined with the contribution from Perlman and Adelson, the two books offer a concise collection of the most up to date conservation thinking. Both pairs of authors should be commended for deliberately setting out to translate the complexities of biodiversity for the benefit of the widest audience of conservation stakeholders. Both books are worthy of a wide audience.

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