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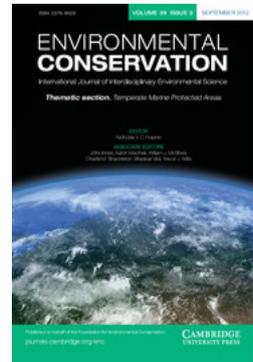
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The Global Environment in the Twenty-first Century: Prospects for International Cooperation EDITED BY PAMELA S. CHASEK xi + 465 pp., 15 tables, 14 figs., 23.5 × 15.5 × 2.5 cm, ISBN 92 808 1029 4 paperback, US \$ 34.95, Tokyo, Japan; New York, US; Paris, France: The United Nations University Press, 2000

Barbara M.G.S. Ruis

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BOOK REVIEWS

Vanishing Borders: Protecting the Planet in the Age of Globalization

BY HILARY FRENCH

xi + 258 pp., 21.4 × 13.4 × 2.0 cm, ISBN 1 85383 693 1
paperback, GB£12.95, London, UK: Earthscan Publications; also
ISBN 0 393 32004 9 paperback, US\$ 13.95, New York, USA:
W.W. Norton, 2000

The world is witnessing remarkable expansions in world trade, in interstate monetary transfers, in interstate capital investments, in multinational (transnational) corporations, and in organized transnational (metanational) crime. It is also witnessing remarkable expansions both in one-way interstate contacts (via radio, television, and printed materials) and in two-way interstate contacts (via telephone, telefax, e-mail, and touristic or other person-to-person liaisons), all such contacts facilitated by the remarkable spread of English as the *lingua franca*.

To continue, the world is additionally witnessing remarkable expansions in the interstate exchange of scholars and experts, in the worldwide availability of scholarly and technical journals and reports, and in the global spread of culinary, musical, clothing, and other local customs. Still further, it is witnessing remarkable expansions in interstate governance (via multinational humanitarian, arms control, human rights, and environmental treaties), in transnational collaboration (via environmental, human rights and other non-governmental organizations), and even in combined intergovernmental/non-governmental actions.

Challenges to the global environment resulting from various of the diverse, though often interlocking, manifestations of globalization outlined above are the central focus of this monograph. Following an introductory chapter, the next five chapters (comprising Part One) are grouped under the heading of 'The Ecology of Globalization', and the remaining four chapters (comprising Part Two) are headed 'Reforming Global Governance'. In Part One, much of the blame for the sad state of the global biosphere is placed on the growing world commerce (trade), associated burgeoning international financial apparatus, relative unaccountability of the increasing numbers of transnational corporations, and environmental insensitivity of the World Trade Organization (although somewhat less so of the World Bank). In Part Two, the author in essence suggests that the answer to the deteriorating global biosphere is strengthened multinational environmental treaties, a substantially strengthened United Nations Environment Programme, and greater involvement by the parliamentarians of the world acting separately from their respective governments. But by far the greatest hope for a reversal of the downward environmental spiral is ascribed by the author to the rapidly increasing numbers of non-governmental environmental organizations, empowered by the incredible recent advance in global communications.

As might be expected from the steady stream of more or less repetitive pamphlets, magazine issues, year books, and monographs that emanate from the Worldwatch Institute, this book represents another competent and highly sobering, partially recycled presentation of the rapidly deteriorating state of the global environment

(see, for example, French 2000a, b). And scholars of the subject may find it interesting to see how prescient Lester R. Brown (subsequent founder of the Worldwatch Institute) was almost three decades ago in his then ground-breaking monograph on the same theme (Brown 1972).

The approach of this book, in common with other Worldwatch Institute publications, falls somewhere between excellent journalism and mundane scholarship. A considerable amount of relevant statistics and other facts is amassed and engagingly presented, but the analysis and suggestions for action are quite predictable and unencumbered by any shades of grey. For example, the clearly important ameliorative role of non-governmental organizations is presented without reservation, thereby overlooking their often undemocratic (unaccountable) character and scientifically-ungrounded actions. I also would liked to have seen greater emphasis on the incongruence of ecological and political boundaries on a less than global scale, this leading to an exploration of the implications for countering the downside of globalization on a regional or sub-regional scale. I discovered no real appreciation of the seemingly insurmountable institutional failings of the United Nations system. And I additionally missed seeing at least some recognition of the difficulties in making improvements that must be attributed to widespread governmental incompetence, indifference, and corruption.

There is no doubt that globalization, especially in its multifarious economic and communication dimensions, has been accelerating with a vengeance, and that the global biosphere has been deteriorating at an increasingly alarming rate. It is also reasonably certain that the adverse impacts of globalization on the environment outweigh its beneficial impacts. But it also seems clear to me that a substantial fraction of the biospheric ills are unrelated to globalization, something that does not come across in this work. Nonetheless, I very much hope that *Vanishing Borders* will reach not only a wide audience throughout the world of the literate general public, but also of government officials, leaders of industry, and undergraduate college students.

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Untangling Ecological Complexity. The Macroscopic Perspective

BY BRIAN A. MAURER

251 + viii pp., 22.8 × 15.1 × 1.5 cm, ISBN 0 226 51133 2
paperback, US\$ 18.00, GB£ 13.00, Chicago, IL, USA: The
University of Chicago Press, 1999

Ecology is a relatively young science that has the daunting task of understanding a bewildering array of multi-scaled phenomena. Given this, it is perhaps not surprising that it has fragmented into many specialist fields whose foci include species' range distributions, population abundances and dynamics, speciation and evolution, extinction, dispersal, competition, predation, physiological responses, community organization, and ecosystem fluxes. Consequently there is a need for theories and analytical frameworks that can help unite what is currently a splintered and unfocused research agenda. As the disciplines mature with time, the quest for unifying theories and general laws is quickening but remains an elusive goal.

Brian Maurer's book *Untangling Ecological Complexity the Macroscopic Perspective* is a welcome addition to the growing body of literature that attempts to promote a more unified approach to ecology. Maurer argues that the results of fine-scaled (i.e. relatively short time frames and small spatial extent) controlled field experiments are of limited value, and must be complemented by statistically-based empirical studies that incorporate larger-scaled ecological phenomena.

Numerous authors have in recent times pointed to the limitations of experimental field studies that examine community structure based on the attributes of individuals within populations. It is certainly widely recognized that ecological investigations must somehow be expanded to include the constraints imposed upon a community from processes operating at larger spatial and temporal scales. Maurer's contribution is in presenting a quantitative framework for investigating the constraints imposed by such macroscale phenomena as the characteristic spatial distribution of population abundances across a species' total range.

Specifically, he argues that a quantitative, macroscaled analysis of geographic range structures can provide insight into various long-standing ecological research issues including the species-area relationship, the relationship between distribution and abundance, patterns of nestedness in species distributions, and geographic assembly rules. Furthermore, Maurer examines how statistical analysis at the macroscale supports Darwin's proposition that the effects of natural selection on widespread and dominant clades differs from that of narrowly-distributed clades. Maurer's efforts are particularly noteworthy for the quantitative rigour of his analyses. This enables him to link his empiricism to prevailing theoretical models, and in addition present creative re-interpretations of conventional modelling frameworks. This is well illustrated by his re-working of A.J. Lotka's now classic models of population dynamics.

Of course, much remains to be done before the existence of fundamental laws of ecology can be declared. Indeed, by way of example, as admirable as Maurer's book is, it only serves to highlight the degree to which traditional community ecology is divorced from ecosystem studies that examine the role biota play in buffering the physical fluxes of energy, carbon and water. Nonetheless, *Untangling Ecological Complexity* is a significant step in the right direction. I hope it will be widely read and not only catalyse further studies in the field of macroscaled geographic range structures, but

also help take the entire discipline a step further towards the integration it so desperately needs.

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The Global Environment in the Twenty-first Century: Prospects for International Cooperation

EDITED BY PAMELA S. CHASEK

xi + 465 pp., 15 tables, 14 figs., 23.5 × 15.5 × 2.5 cm, ISBN 92
808 1029 4 paperback, US\$ 34.95, Tokyo, Japan; New York, US;
Paris, France: The United Nations University Press, 2000

This book describes the roles of various actors in the formulation and implementation of environmental policy at the international, regional and national levels. It focuses on the necessity of cooperation among state and non-state actors to combat current and future environmental degradation, and on their roles in safeguarding the environment in the 21st century. In examining the roles of these different actors during the last 25 years, the book aims to find answers to questions regarding the adequacy of the existing range of actors to find the proper solutions to current and future environmental problems. For this purpose, the book has been divided into five sections, each written by a research group consisting of scholars from a wide variety of universities and institutions. These sections mainly examine the role of distinct actors; the first section focuses on states and their policies, the second on activities of civil society, the third on the relationship between market forces and the environment, the fourth on the role of regional arrangements and the fifth on international organizations as actors in the environmental arena. The book emphasizes that through studying functions and capabilities of relevant actors in the global environment, their relationship with other actors and their effectiveness, essential to tackling future environmental problems, can be established. It underlines that coordinated action at all levels by all is a necessary requirement to come to truly effective global environmental cooperation.

The book does not introduce many original ideas, and the examples cited in the elaboration of the five sections in substantive chapters occasionally make a rather random impression. Furthermore, the contributors use quite varying levels of theoretical abstraction. Nevertheless, the book provides a good overview of the main issues currently at stake in the global environment. Throughout the work, the increasingly important role of the United Nations is underscored as the focal point for addressing global environmental issues at the international level, especially in view of the absence of a world government and the limited capacity of international laws and courts to impose binding decisions on sovereign nations. Some of the chapters excel and provide many valuable insights, such as Chapter 18 on the UN Environment Programme by David Downie and Marc Levy. They give not only a thorough overview of the role of the United Nations Environment Programme (UNEP) in the environment debate, but also present noteworthy options for changing UNEP's functions and structure.

In her conclusion, Chasek adopts a forward-looking approach and points out, among other things, the dilemma that, while it is

timely and necessary to find a suitable arrangement that will allow formal participation in international fora for civil society, this will be difficult to achieve without threatening state sovereignty. Her cautious recommendations to improve the role of the UN are insightful and we can hope that decision makers will take them into account in shaping, actualizing and putting into action the global environmental agenda.

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A Case for Wetland Restoration

BY DONALD L. HEY AND NANCY S. PHILIPPI

x + 215 pp., 24.2 × 16.2 × 1.7 cm, ISBN 0471 17642 7 hardback, GB£41.95, Chichester, UK: John Wiley & Sons, 1999

'During the period between 1780 and 1980, wetland losses in the United States are estimated to have been approximately 47.4 million square kilometres' and 'by 1985, 44.5 million square kilometres of rural land had been drained for agricultural purposes' are only two of the impressive figures the authors stress in this book. *A Case for Wetland Restoration* deals with the state of the art in wetland loss in the USA and with the possibilities for restoration.

The information is presented in a clear and concise style, and divided into 10 chapters. Chapter 1 introduces the main objectives, which are to identify the causes and process of wetland loss in the USA and ask why wetlands are important and why wetland restoration is necessary. Finally, the authors contrast four examples of wetland restoration from the 1960s, 1970s and 1980s. Chapter 2 gives a brief review of the importance of wetlands at the level of natural landscapes. This chapter evaluates the different factors defining wetlands, including geology, ambient hydrology and 'plant factors'. The authors here deal with wetland functions, linking the information derived from the point of view of landscape structure and complementing it with abundant examples taken from the USA wetlands. In general, this chapter gives some preliminary ideas for the design of wetland restoration projects in a wide sense.

An added value of this book is given in chapter 3, where the process of wetland drainage in the USA is described. A valuable overview of drainage techniques, the legal tools of wetland drainage and the final outcome is presented. The consequences of this drainage are the exponential increase of drained rural land and substantial alteration of river systems, with the aim of enhancing navigation and flood control. Chapter 4 starts with the sentence 'The only good wetland, in nineteenth century America, was a drained wetland' assesses the appreciation of wetland values and describes the origins and substance of the federal legislation that protects and preserves wetlands in the USA. It describes these items from the earliest initiatives of federal protection to the Clinton administration's wetland plan, through a detailed review of the various official definitions of wetlands up to the definitive definition of 1995. Chapter 5 shows how the governmental actions have evolved into wetland restoration since the 1970s. Restoration

concepts arose from the concept of 'wetland mitigation', namely 'the restoration, creation or enhancement of wetlands to compensate for wetlands losses'. Finally, and after evaluating advantages and disadvantages, a brief review of the basis for wetland mitigation in the context of the present USA wetland policy is given.

Chapters 6, 7 8 and 9 examine particular restoration projects, describing in detail their environmental and social settings, wetland impacts, the mitigation implementations and the results achieved. Chapter 10 relates observations and recommendations according to the analysis of four case studies in the context discussed in the previous chapters. It gives some ideas about planning, design and implementation of mitigation projects and the role of the institutional and public organizations.

In summary, this book is a remarkable complete reference work on American managers in wetland restoration. In addition, the information presented in this book may be of valuable help to managers in a wider geographic context, as they also will find here a guide for the establishment and evaluation of the social and technical basis for wetland restoration in a wider sense.

This book is well produced with a clear typeface and well reproduced figures, which illustrate and help in the understanding of the problems and techniques related in the text. However, it is a pity that despite being a book considered appropriate for an international readership, it does not use SI units of measurement.

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Environmental Valuation. A Worldwide Compendium of Case Studies

EDITED BY JENNIFER RIETBERGEN-MCCRACKEN AND HUSSEIN ABAZA

vii + 232 pp., 24 tables, 23 × 15.2 × 1.7 cm, ISBN 1 85383 695 8 paperback, GB£19.95, London, UK, Earthscan Publications Limited, 2000

This compendium is the result of a three-year collaboration between the United Nations Environment Programme and research institutes in developing countries in four regions of the world, namely Africa, Asia, Eastern and Central Europe, and Latin America and the Caribbean. The compendium contains summaries and critiques of 13 valuation exercises undertaken from 1981 to the present day, and several of the available environmental valuation methods are described within the book.

The studies described in the sections on the African, Latin America and the Caribbean regions are mostly reviews of previously published work undertaken in the early 1990s. Summaries and critiques are provided of Pearce *et al.* (1993) on the total economic value of Mexican forests, Whittington *et al.* (1990a, b) on the value of time spent collecting water in Kenya, and willingness to pay for water services in Haiti, Fallon Scura and van't Hof (1993) on costs and benefits of coral reef conservation in Bonaire, Ruitenbeek (1991) on rain forest conservation in Cameroon, and Navrud and Mungatana (1994) on recreational value of wildlife viewing in Kenya. Practitioners interested in repeating these studies, or

students of environmental economics interested in critiques of these studies, may find these sections of most interest.

To those interested in new research, studies are presented by the researchers from Eastern and Central Europe. Mixed methodological approaches are used to estimate the true economic cost of extraction of oil shale in Estonia, and the value of the natural resources in the Moscow Region. The problems of the treatment of time in valuation studies in economies which are in transition are noted by Kjabbi in chapter eight, as is the issue of how to discount non-renewable resource values where the resource value is expected to increase over time.

The book provides a summary and interpretation of some older valuation studies and revisits well-discussed issues on how to improve the quality of environmental valuation studies. Unfortunately, the book is not broad enough in scope to be a useful source of references and information, nor is it in-depth enough to act as a 'how to' guide to undertake environmental valuation. Whilst the editors suggest that the book is intended for non-economists, some of the terms and econometrics used exclude those not versed in multiple regression analysis and environmental economics. Readers familiar with statistical techniques may find it difficult to follow some of the econometric analysis summarized from original papers as key equations have been omitted and textual narratives explaining equations are missing. This compendium may be of use as a supplementary reference to the papers reviewed herein, although for most chapters the original papers offer greater depth and breadth of analysis.

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Biodiversity Studies. A Bibliographic Review

BY CHARLES H. SMITH

xiii + 461 pp., 22 × 14.5 × 3 cm, ISBN 0 8108 3754 4 hardback, GB£52.15, Lanham, USA: Scarecrow Press Inc., 2000

Hotspots. Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions

EDITED BY RUSSELL A. MITTERMEIER,
NORMAN MYERS AND CRISTINA GOETTSCHE
MITTERMEIER

430 pp., 36 × 29.5 × 3.5 cm, ISBN 9 686 39758 2 hardback, US\$ 65.00/GB£45.50, Mexico and Washington DC, USA: CEMEX and Conservation International, distributed by the University of Chicago Press, 2000

These two books represent two faces of biodiversity research, namely the academic and practical. Biodiversity entered popular usage in the 1986 conference organized by the National Academy of Sciences and Smithsonian Institution, the relevant proceedings of which were included in a book edited by E.O. Wilson entitled *Biodiversity*. By 1992, we had an internationally-agreed Convention on Biological Diversity, and academic literature in the subject mushroomed. Charles Smith's *Biodiversity Studies. A Bibliographic Review* is a very academic book. It lists 5880 publications that have a biodiversity theme with a rating according to their citation index. It does not cover local or regional floras or faunas or other aspects of biology, only includes papers published in the English language, and does not include individual papers in edited collections. It does include, and this is probably the most useful aspect of the book, publications across a wide range of fields, including both social and natural sciences. The literature list is arranged alphabetically by author, and the index is arranged by subject. Most of this information is available in the various electronic citation indexes, but it is certainly a lot easier, less time-consuming and more convenient to use a traditional book format for tracking down useful publications. In complete contrast, and moreover a celebration of books as a way of conveying information, is the spectacular work by Russ and Cristina Mittermeier and Norman Myers. In 1988 and 1990, Norman Myers published two papers in *The Environmentalist*. These papers are the widely-cited source of the original 'biodiversity hotspots' idea (to emphasize the usefulness of Smith's book, I could only find one of them on the new MIMAS electronic information service but both were in his literature list). The extraordinary conclusion reached by Myers was that the vast majority of the World's terrestrial plant species are concentrated in a tiny proportion of the land surface, *ergo*, if we want to save the maximum number of species at minimum cost, then we should focus on these 'hotspots'. The new biodiversity *Hotspots* book provides much greater detail on Myers' theme. The original analysis has been done again, with a hardening of the criteria for inclusion in the list of top global hotspots, and a huge amount of additional information has been provided. The areas covered in the book account for 1.44% of the land surface of the planet, but contain 43.8% of the world's plant species. Each hotspot area is described in detail and accompanied by beautiful large format photographs. The introductory chapter is a fascinating summary of data on the hotspots, and graphically details their unique nature. The book's production and publication have resulted from collaboration between Conservation International and the Mexican cement company Cemex. This has given us a lavishly illustrated and author-

itative book that can only be highly recommended, and which shows us a practical way of protecting a very large proportion of the World's biological diversity.

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Endangered Species, Threatened Convention. The Past, Present and Future of CITES

EDITED BY JON HUTTON AND BARNABUS DICKSON

xx + 202 pp., 21.5 × 13.5 × 1.7 cm, ISBN 1 85383 636 2 paperback, GB£14.95, London, UK: Earthscan Publications Ltd, 2000

Judging by the average attendance at a Convention on International Trade in Endangered Species (CITES) Conference of the Parties this book has an extensive audience already. However, beyond this group it is well worth a read for all those involved or interested in wildlife trade or cross-border and international conservation issues. This larger group of people should capture many biologists, ecologists and conservationists of all shapes and sizes, government and other regulatory officials, lawyers interested in both conservation issues and the regulation of international trade, a host of academics from a varied range of disciplines, in addition to representatives of the many non-governmental organizations (NGOs) involved with species conservation and wildlife trade.

The book is a well-presented and carefully-edited paperback with a surreal cover dominated by a rather bloody suggestion of Rhino horns, a symbol of the contemporary CITES issues which are the subject of the book's clear message.

Most readers will find the book informative, interesting and controversial. Indeed, most of the contemporary challenges facing CITES are raised in the book, and the operation of the Convention is firmly placed, not only in the wider international regulatory framework as it concerns biodiversity conservation, but also as it concerns the regulation of trade generally. At the outset, it is made clear that it is written largely from the perspective of those who believe that international wildlife trade regulation should be brought more into line with the principle of sustainable use. Whereas, other 'principles', such as the precautionary principle are critically analysed in the text, the concept of sustainable use is left intact without serious, critical examination. From the outset I would say that this is my main criticism of the text. This criticism must be placed in context. I will not hesitate to recommend the book to my students and to others, but I am one of those who fall into the camp of believing that the doctrines of sustainable use need some further adjustment and balancing (perhaps by a more sophisticated regime of precaution) to be reliable in the international context. In simplistic terms I feel that, although the principle works in theory, in practice its good intentions are nullified through erosion at the edges. The fault may be in its failure to take account of human greed and corruption. Thus my view of the perceived dangers of the blunt concept may be best summed up by the English adage: '... if you give someone an inch they'll take a yard'.

To dispose of all of my meagre criticisms I will also make one other point. As with many edited books that attempt to steer towards

the same goal, there is unfortunate repetition in many chapters. Although it is clear that the editors have done their utmost to create a well-orchestrated sequence of topics and developed argument, there is the inevitable, occasional repeat of the history of CITES and regular repetition of the central themes of the book. This is good for revision, but not for those who are happy to hear the point once. This is, of course, a criticism of the format of the 'edited book' rather than the quality of the various offerings themselves.

Beyond this, all of the texts are well and authoritatively written and in most cases are effectively and accurately corroborated by references. Just occasionally, contentions and assumptions could be strengthened by reference to outside evidence to justify them. However, it must be borne in mind that the authors are advocating a point of view. Thus there may be occasions where emphases which support an author's contentions constitute the approach rather than a carefully balanced analysis of the arguments.

The book aims to challenge fundamentally many of the assumptions about CITES and this aim is very well fulfilled with vigorous argument and copious case-history illustrations. The approach is necessarily eclectic and takes into account biological, ecological, economic, philosophical, legal, political and other perspectives. Most of the CITES-related controversies are dealt with in depth although the size of the book precludes deeper examination of some topics. I would have liked, for instance, to have seen a greater depth of analysis regarding the relationship between CITES, and the World Trade Organization (WTO) portfolio, especially in the light of the recent depth of feeling expressed at the perimeter of the Seattle Conference of the Parties of the WTO.

Finally, in order to present a flavour of the text (and thereby encourage potential readers), some of the central, inter-linked contentions and themes of the authors may be summarized as follows:

- CITES would operate more effectively if 'some economically dominant parties abandoned the philosophically driven presumption that commercial wildlife trade is inherently contrary to conservation' (p.66). (There is a clear challenge to the *a priori* assumptions of some NGO's and others interested in the affairs of the Convention.
- CITES should have a mechanism whereby it leans more to encourage 'sustainable use and legal trade, while discouraging unsustainable and illegal exploitation' (p. 87). The whole issue of 'ecolabelling', split listing and the concomitant difficulties, which derive from these areas, is necessarily raised.
- CITES operates inequitably because of the concentration of the wildlife trade consumers in the 'north' and the producers in the 'south' and its concomitant failure to operate to provide incentives for community conservation in developing countries.
- There is a need to create a holistic approach to the international conservation of species, which deals comprehensively with *in situ* conservation issues and the other matters, which affect the status of species such as trade. Therefore, rather than operate in a somewhat isolated position, CITES should be integrated perhaps as a protocol to the Convention on Biological Diversity (CBD) and operated clearly within the paradigm of sustainable use, which is expressly embodied as a principle within the CBD.

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Monitoring Ambient Air Quality for Health Impact Assessment. WHO Regional Publications, European Series: No 85

xvii + 196 pp., 24.0 × 16.0 × 1.2 cm, ISBN 92 890 1351 6
paperback, GB£30.00, Copenhagen, Denmark: WHO 1999

This book is the outcome of a Working Group of the WHO European Centre for Environment and Health. The remit of the group was to define the features of monitoring networks that allow their use in assessing the potential exposure of the population to air pollution from ambient air, so that progressive modification of such networks could be promoted. The slim A5-size volume is well presented, with clear text and diagrams and a generally high standard of production. There are more scattered typographical errors than there should be, however, although these are not generally serious enough to detract from readability, there are some that might, for example the substitution of mm for µm in specifying a particle size range. The running header for Chapter 3 is used throughout Chapter 4 as well; this really should have been spotted before going to print. There is an eye-catching cover showing air pollution concentrations in the Czech Republic. Frustratingly, it does not state which air pollutant is being described, and perhaps that reflects the nature of the book.

The book is targeted 'at network managers, to those who design new networks or modify existing ones, to policy-makers and to those who influence policy'. After a short introduction, there are four main chapters that go through a logical sequence to meet the aim of the book. Chapter 2 covers the information on air quality that is needed if health impacts are to be assessed. There is discussion of how personal exposure relates to airborne concentrations, the influence of lifestyle and time spent indoors, the significance of source-receptor relationships and the role of modelling. Chapter 3 moves on to the design and management of a monitoring system. General guidelines are given on operation and quality assurance/quality control requirements. Chapter 4 summarizes the methods currently used for measuring the nine atmospheric pollutants covered by European air quality guidelines, namely CO, O₃, SO₂, NO₂, particulate matter, benzene, PAH, lead and cadmium. Finally, Chapter 5 gives suggestions of alternative methods, such as mapping, used for reporting the results and assessing their significance.

There are five substantial annexes on other relevant aspects such as air-quality modelling and current European monitoring networks.

Although I think I understand where this book is coming from and what it is trying to do, I am not entirely convinced that the effort has been successful. The jacket description claims that the first target audience is network managers and designers. However, much of the content will be trivial to most professionals involved with networks, and this puts at risk those parts of the book that are in fact useful. For example, was there really a need to spell out that reports on paper are one way of disseminating results, or to list unused methods of gas sampling and analysis? No one who has the responsibility for designing or managing a network would find that level of information helpful. Looked at another way, could we take this book and design or run a network? It would certainly highlight the areas such as monitoring and data processing for which a specialist would be needed. However, if the operator succeeded in setting up and running the network and in processing the data, they would then consult Chapter 5 to find out how to assess the data in the context of health guidelines and limits. There is really very little

substantive guidance given in this chapter on how this could be done in practice.

Hence the real target readership is likely to be politicians, administrators or other professionals not concerned with air-quality matters, who are involved in some capacity with a network and need to bring themselves up to speed so that they can participate in discussions on the network and understand the perspectives of their managers or contractors. A further relevant group could be students at undergraduate or MSc. level on an environmental science or similar course. This book is a good primer to flag up the issues faced by network operators, but it is simply too basic to be used by the operators themselves.

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The Economics of International Environmental Agreements

EDITED BY AMITRAJEET A. BATASYAL

xvii + 261pp., 18 figs., 25 × 17.3 × 2.8 cm, ISBN 1 84014 894 2
hardback, Aldershot, UK: Ashgate Publishing Limited and
Brookfield, Vermont, USA: Ashgate Publishing Company, 2000

This volume brings together 13 articles drawn from a wide range of leading academic journals plus an introduction and essay written by the editor. The material is organized into theory and application sections but some of the application section papers present highly stylized work and an understandably speculatively parameterized simulation exercise results. Clearly the intention of this volume is to draw together in a single volume some of the most important and influential papers on international environmental agreements (IEAs) published principally in high-level economics journals. Accordingly the readership would need to be researchers well equipped in terms of advanced economic theory. There are only a couple of papers in the book that are likely to be accessible to a wider readership. One of these is the opening paper by Scott Barrett, previously published in *Oxford Review of Economic Policy*, which certainly merits a wider readership beyond economics academe. In terms of the selection of papers, I believe there would certainly be a broad consensus amongst environmental economists working in this area relating to the majority of the articles chosen. Inevitably you might suggest omissions or question how compelling the case is for some of the papers.

In terms of the themes of the papers, it is possible to find theoretical analyses of strategic behaviour, the effects of unilateral actions, collusion and enforcement issues. Regarding the applications papers, there are analyses of political institutions, greenhouse gas negotiations, acid rain, CFC and sulphur agreements. It is just a shame, however, that even the introductory section does not present some genuine means of appreciation for the general reader to enable him or her to pick up on the salient issues and features of the selected papers. That aside, it will provide a useful source of reference for researchers in the field and other economists at least at graduate-school level needing to swiftly engage with the literature on IEAs. The book is generally

well presented but simply reproduces the selected articles in their original typefaces.

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Toward Sustainable Communities: Transition and Transformations in Environmental Policy

EDITED BY DANIEL A. MAZMANIAN AND
 MICHAEL E. KRAFT

xiv + 323 pp., 25 tables, figs. and boxes, 2.0 × 22.7 × 15.5 cm,
 ISBN 0 2621 3358 X paperback, US\$ 25.00, Cambridge, MA,
 USA: MIT Press, 1999

A millennial spirit seems to have infused environmental policy discourse in the USA, evidenced by a flurry of books in the last several years heralding signal transitions in the way environmental protection is conceived and implemented. Picking up on the reformist and sometimes protestant impulses among both observers and practitioners dating back to the late 1980s, these works, which include John (1994), Dowie (1995), and Chertow and Esty (1997), to name but a few, document pivotal changes in environmentalism and environmental law and policy. The changes include those from an elite, white upper middle-class movement to a more diverse, pluralistic one; from a centralized, command-and-control regulatory system to a more decentralized, incentives-based, bottom-up approach; and from a myopic focus on individual pollutants and single media to a concern for ecosystems as a whole.

Daniel Mazmanian and Michael Kraft's recent collection, *Toward Sustainable Communities: Transition and Transformations in Environmental Policy*, is of a piece with this *fin de siècle* literature. The editors have compiled a set of eight essays from contributors representing a handful of academic institutions and environmental groups as well as a private foundation. With this portfolio of contributors, each offering analysis grounded in real-world case studies, the book appeals to more than just an academic readership. Blending experience and theory-building, its intellectual thrust is refreshingly practical though rigorous, and only occasionally does the book retreat to a pure scholarly cant, at times more dense than illuminating.

The basic argument of the book, spelled out by the editors in their introduction and repeated as if a mantra throughout each of the essays, is that modern environmentalism in the USA has moved through 'three distinctly different but internally coherent epochs,' from environmental regulation, to flexibility and regulatory reform, to sustainable development. This last phase, which the authors claim began in the early 1990s (overlapping with the second phase) and continues today, represents what might be called an 'ecological' epoch, in that environmentalism has started to integrate traditional concerns about environmental degradation and industrial pollution into a more comprehensive 'systems' approach that accounts for a community's overall physical, economic and social welfare, embodied in strategies such as urban redevelopment, intermodal

transportation policy, and regional environmental management. By documenting and scrutinizing three examples each of 'epoch two' environmental policy (Los Angeles's experiment with market-based clean air policies; clean water strategies in Wisconsin's Fox-Wolf basin; open-space preservation in California) and 'epoch three' sustainability strategies (brownfields redevelopment and ecosystem restoration in Pittsburgh, Pennsylvania; the federal Intermodal Surface Transportation Efficiency Act of 1991 and Transportation Equity Act for the 21st Century; and water quality protection in the Great Lakes Basin), the authors seek to balance the rhetoric of sustainable development with the reality, and provide a glimpse of the future of not only environmentalism, but American society as a whole.

The book largely succeeds in tracing the trajectory of environmental policy over the last three decades, and provides a useful set of analytical tools for identifying and understanding environmental protection strategies, especially when it comes to sustainability efforts. The editors do a good job of structuring the essays so as to move the reader through the very transition in ideas and experience they are describing. The case studies are lucid and concise, blending what is often an advocate's optimism and can-do attitude with a more sober, critical eye. While some of the case studies are stronger than others (the Pittsburgh chapter reads too much like a puff piece for Pittsburgh and the city fathers), as a whole they provide a nice sample of the kinds of sustainability initiatives that will be key to achieving twenty-first century environmental goals.

Where the book falls short is in its consideration of some of the non-environmental, social or civic factors that affect the achievement of sustainable development outcomes. Focused mainly on environmental policy on its own terms, the book fails to discuss issues such as the decline in political participation, rise in economic disparities and corporate power, and excessive privatization in the culture at-large, each of which play an important part in determining the capacity and willingness of citizens, communities, and regions to plan and implement sustainability efforts. In the absence of an engaged, informed citizenry, who feel they have a stake in the future of their communities, as well as accountable political leadership responsive to a diverse constituency and not just powerful corporations, a social and political vacuum is created. This is easily filled by short-sighted decisions and sweetheart deals, or the status quo, manifested in languishing brown field sites, sprawling subdivisions, and polluting factories, among other corrosive effects.

It is clear as we enter the 21st century that environmental protection is more than about law and policy alone. It also entails taking on the deleterious social and cultural conditions that foster a parochial political mind-set, inhibit collaborative decision-making, induce wasteful consumption practices, and breed disaffection and cynicism. Unless and until environmentalists find a way to help revitalize American's civic sensibilities and redefine the rules of success and progress, sustainable development will remain as elusive as clean air and clean water have proven to be.

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Physiological Diversity and its Ecological Implications

BY JOHN I. SPICER AND KEVIN J. GASTON

x + 241 pp., 24.4 × 17.3 × 14.0 cm, ISBN 0 632 0545 2
paperback, GB£29.50, Oxford, UK: Blackwell Science, 1999

This is a valuable book, since it explores the relationships between physiology and ecology, in an attempt to build the necessary bridges between two disciplines that are intertwined, but that are usually treated separately, marring the quality of results. The book is not an exhaustive account of physiological adaptations and their ecological implications in the animal kingdom. On the contrary, it provides a general overview of the main ecological questions that deal with physiological adaptation. Although it is not configured as a textbook, it is within the scope of biologists, animal physiologists, ecologists, conservation biologists, and ecotoxicologists. It also offers helpful insights for those interested in the effect of climate change on animal physiology and distribution.

The book starts with an overview of patterns in physiological diversity and the mechanisms that strengthen these patterns. Later, the ecological implications of physiological diversity are also explored, with emphasis on the clinal variation associated with latitude, altitude and depth. This is organized hierarchically, from the within-individual variation to that occurring within and between populations and, last, between species. All the chapters are widely illustrated with examples of animal physiology, ranging from freshwater and marine to terrestrial organisms, and analyse the implications for conservation biology, ecotoxicology, and climate change, without neglecting the purely physiological-ecological issues. The book encompasses the use of classical and more recent papers, and therefore produces a refreshing contribution with all types of examples.

Spicer and Gaston assemble a framework that links physiology and ecology, based on experimental designs and statistical tools, in order to separate non-genetic from genetic differences, and to explain the why, how and when of the occurrence and distribution of organisms. This thoroughness is required, they claim, when the use of physiological variation is used to draw conclusions that extend to other fields, such as ecotoxicology and conservation biology. A further constraint arises, as the authors also point out, from the paucity of experimental studies on which conclusions are based. Both considerations may invalidate the ecological conclusions that can be drawn from physiological variations, especially when the causes of the distribution between populations and between species (for example following a climatic pattern) are researched. The distribution of organisms (i.e. their ecological outcome) and their physiological diversity have an obvious link that is not easy to demonstrate. The book hints at the importance of the development of a huge field for ecological research, which might consider the physiological analysis of individuals, populations and species, and that could be derived from a multidisciplinary effort.

The book is beautifully produced and well edited, and the picture that illustrates the front cover is, needless to say, outstanding. The illustrations are clear and adjusted to the text, but too scarce in certain parts of the book. The references are abundant and up-dated, covering remarkably well the different aspects detailed in the book.

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Islands of Rain Forest, Agroforestry, Logging and Ecotourism in Solomon Islands. SOAS Studies in Development Geography

BY EDVARD HVIDING AND TIM BAYLISS-SMITH

xvii + 371pp., 21.9 × 15.3 × 3.0 cm, 21 plates, ISBN 0 7546 1233 3 hardback, GB£47.50, Aldershot, UK: Ashgate Publishing Ltd, 2000

This is a book about the Marovo lagoon, a remote and beautiful part of the Solomon Islands, its 10 000 people and the impact of the wider world of the Solomons and beyond. The authors describe themselves as field ethnographers, and have prolonged and profound knowledge of their subject. The history of Marovo is reconstructed from the first 18th century encounters with European whaling ships up to the late 1990s. Three separate Christian missions arrived early in the 20th century. Copra was a major crop from then until the price collapsed in the 1980s. There was a period during 1893–1978 as a British Protectorate, when it was more stable and tranquil than it has been before or has been since. Bush people moved to the coast towards the end of the nineteenth century. Their abandoned taro pondfields have developed a tall *Campnosperma*-dominated rain forest which clothes the landscape today. Modern large-scale rain forest logging began with a European transnational company in the 1960s, which pulled out after serious land disputes in 1986, to be replaced by Asian companies when a logging 'frenzy' developed in the early 1990s. This was the time when the Solomon Islands and Papua New Guinea became the main source of unprocessed logs for the mills in Japan and Korea.

Besides its lengthy analysis of the changing relationship of Marovo people with their environment and the outside, the book analyses several topics concerning tropical rain forests of great interest to readers of this journal. Large-scale logging by big companies sits uneasily with Melanesian land ownership, quite apart from the immediate environmental damage that it can do. One alternative is small-scale village logging using mobile (walkabout) saw mills. The case of SWIFT, a church-based organization which produces Forest Stewardship Council certified 'ecolabelled' timber, is critically analysed, its bureaucratic burden and inability to work without external financial subsidy is exposed, along with the big commitment to hard work for low returns, in contrast to the tempting bonanza that can be received by selling out to a big logger. Ecotourism has been promoted as another alternative to massive logging. Tourist lodges have been built on lagoon islands, but these

have failed to attract more than a tiny proportion of the visitors needed to make them financially viable. Ecotourism exploits the beauty of the still mostly forest-clad islands behind the lagoon, but fails to make use of the forest as a financial resource. It is ironical that the apparently pristine forested slopes which contribute to the visual attraction are largely regrowth on old farmland! At the time that the book went to press a 10 000ha Malaysian-funded oil palm plantation scheme had been approved by central government, just the latest potential external impact.

This is an important book for all who are concerned about the intricate realities of the impact of global events on rural communities in rain forest landscapes. Every instance is special, but reading this case study brings home to the reader the importance of local concerns and reactions, their evolution over time, and the fatuity of simplistic nostrums from outside to achieve rain forest conservation, yet meeting local aspirations.

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Mkomazi: the Ecology, Biodiversity and Observation of a Tanzanian Savanna

EDITED BY MALCOLM COE, NICHOLAS MCWILLIAM, GRAHAM STONE AND MICHAEL PARKER

608 pp., 23.5 × 15.5 × 3.5cm, ISBN 0 907649 75 0 paperback, GB£40.00, London, UK: Royal Geographical Society (with the Institute of British Geographers), 1999

This book documents the Mkomazi Ecological Research Project, a multi-annual project largely sponsored by the Royal Geographic Society, and the Tanzanian Department of Wildlife, and editorially centred upon the University of Oxford. Essentially this is a report to the sponsors, relating to the ecology and management of Mkomazi Game Reserve. It follows a traditional format, starting with climate, moving to soils and vegetation, followed by a suite of papers on a range of arthropod groups, through to vertebrates, with humans and nature conservation at the end. The individual papers for the most part follow a traditional format of introduction, methods, results and discussion.

The text is divided into three sections. Eccentrically, the first section, entitled Ecology and Biodiversity, covers 496 pages, 82% of the text. In this section there are mixed together a series of papers

which cover straightforward survey of the physical environment and various taxonomic groups, serendipitously interspersed with papers dealing with a range of ecological processes. In the body of the text are lengthy species check lists, some listed as discrete chapters, which should have been presented as appendices. The other two sections, entitled 'Human Aspects' and 'Management' are truncated into 5 papers on 75 pages. The lack of an index is particularly lamentable as it is difficult to navigate this text. The papers which provide overview variously of the project and Mkomazi are diffuse, and left me with an unclear idea of the main conclusions of the project as a whole, although I did learn that the Savanna Hotel is recommended for samosas and chapatis.

Even in Britain we have an urgent need to draw together information about the biodiversity of protected areas, and this is a noble effort to perform this task for one of the important protected areas of Africa. Virtually all the authors lament the need to continue the work described here and implicitly or explicitly much of the work is reported as in progress, which I hope is the case. Even for birds and mammals, comparable study sites are found to be few, so this text puts down a valuable point of reference in Africa for biodiversity documentation and interpretation.

There is so much to do in the tropics and this text moves a little way beyond the urgently needed cataloguing to explore some aspects of the ecological processes essential to sustainable use and nature conservation. The various process papers relate to effects such as that of fire on shrub survival, ant-acacia interactions, pollination, and vegetation phenology. Two of the papers of greatest interest to me were the studies of the degree to which quelea, *Quelea quelea*, infestation of crops can be blamed upon the birds breeding and feeding on the reserve, which seemingly it cannot; a paper on pastoralism on adjoining land gives an interesting human context.

This text is very largely a work of traditional scholarship and I find it difficult to believe that anyone would read it from cover to cover (extremely few would have the breadth of taxonomic knowledge required). The text will most immediately have relevance to specialists in sub-Saharan environments and the various African taxa covered. The readership who will find the book most useful will undoubtedly be those managing savannas for wildlife and I do not doubt this report will form the cornerstone for the management of Mkomazi itself, which was the main objective of the project.

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