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## Book reviews

*Grass Roots and Green Tape: Principles and Practices of Environmental Stewardship*, by Anna Carr. Published by Federation Press, Annandale, 2001, pp. xiii + 257, ISBN 1 86287 338 0, \$A33.

Anna Carr has a country background and her book leaves you with no doubt that the subject of environmental degradation in rural Australia, and how it is being addressed at the ‘grass roots’ level, is important to her on a personal level. The book, she says, ‘is about bottom-up environmental management. It is written for those at the grass-roots ... who were my “guides” in this quest ... It is also written for those government employees who want to facilitate local community action on environmental initiatives’ (p. 2). In a sense, the author has openly stated her purpose in writing the book, and I tried to read it keeping this in mind.

The introduction gives some background to the changing policy environment that has encouraged the development of community groups charged with addressing local environmental issues, both in Australia and worldwide. The main focus of the book is identified as stemming from the author’s interest in exploring both the group process itself and the relation of community groups with government. The reasons for this interest she outlines on page 8, in a paragraph that asks some of the hard questions about the validity of grass roots action as a policy direction. These questions, she says, ‘cannot be answered until the merits of community involvement are considered more critically by policy makers’. To do so, she argues, requires a better understanding of how community groups work and what they achieve. The book focuses mainly on investigating these two questions using a case study approach.

Before beginning her description of three community groups, Carr devotes Chapter 2 to building ‘a common language’, because ‘language changes from discipline to discipline’ (p. 12). She addresses four key ideas: ‘sustainable development’ and the notion of stewardship; the notion of ‘community’; the concept of ‘environment’, including environment as metaphor, place and bioregion; and finally the context for and principles of ‘integration’. This final key idea emphasises the holistic nature of the environmental problem, with ‘interdependency in the social, financial and cultural spheres [where] “unravelling” tangled webs of interdependencies and causal linkages is neither possible nor desirable’ (p. 31), and the concept of multiple problems that need multiple solutions.

In Chapters 3 and 4, the author uses a case study approach to describe stewardship groups ‘in profile’ and ‘in practice’. She describes three very

different groups: a landcare group in New South Wales, a water watchers group in south-west Western Australia, and a large regional catchment management group in northern Queensland. The groups operate at different scales, using different practices, with varying degrees of success. In Chapter 5, she examines government involvement in environmental stewardship. She does this first by discussing the policy context underlying government involvement, and finds evidence to support the claim that stewardship activity is taking place in a 'general climate of inadequate support dominated by representative rather than participative processes' (p. 104). Next, she 'profiles' the involvement using the case studies. The final 30 pages of this chapter consider the various roles for government involvement identified in the case studies – resourcing, facilitating, advising, consulting, and regulating/evaluating. Only three and a half pages of these are spent on regulating/evaluating. Given the author's acknowledgement that 'behind the current push for more information about community groups lies a serious concern over how to implement environmental management policies in regional areas' (p. 151), this might be surprising. However, she is more interested in the moral suasion end of government policy, and in fact this is the type of government involvement that is more evident in her case studies. In assessing how government is involved with the case study groups, only in one, the regional catchment management group, is regulation rated of 'major importance'. In the others it is rated of 'minor importance', and the involvement of government in evaluation is rated of 'minor importance' in all three groups (p. 152). Given the overall level of investment by government in community groups addressing environmental issues, it's interesting that evaluation of these projects during the life of the project is not more in evidence. It may of course be possible that someone other than government is responsible for evaluation, but I would think it more likely that evaluation per se has not been given a high priority.

Having described the operation of the groups and their involvement with government, Carr uses Chapter 6 for a more theoretically based discussion of the principles of community involvement from the community perspective. This is the precursor to her final chapter where she argues that government policy needs to work towards building the 'middle ground' – the area where 'grass roots' meets 'green tape'. Community-based perspectives of environmental stewardship, she argues, revolve around four principles: a sense of place, a sense of community, a local knowledge system and empowerment (self-determination). Collective action by communities arises from these principles and Carr uses her case studies to illustrate this point.

Despite her detailed analysis of the grass roots perspective, Carr is definite that it would be naïve 'to suggest that local action is the cure for all manner of biophysical, social, political and economic woes' (p. 196). Her

final chapter develops the idea of 'working towards middle-ground environmental stewardship' as a more effective way of meeting environmental goals. After outlining problems with both 'top down' and 'bottom up' approaches, Carr moves on to discuss the continuum of approaches that exist in reality. Carr writes that within the environmental movement there are some emerging themes, the most apparent of which 'is the cry for collaboration, partnership arrangements and consensus processes, in line with the Brundtland report's pleas for sustainable development' (p. 219). This, she argues, supports the need to develop the middle ground approach. On pages 220–234 she sets out the ideas and principles involved in doing so. I found this final section of the book thoughtful and interesting, but with many questions, as she admits, unanswered.

The personal nature of the book makes it very readable on one level and frustrating on another. Carr has written it for people at the 'grass roots', and indeed the book tells their story, acknowledges their effort, praises their successes, and tries to understand their failings. It describes people doing things. 'Doing things' empowers just by the nature of doing and learning, and as such should not be undervalued. I've argued the same point myself. Additionally, the author emphasises that it is at the grass roots level that much under-utilised knowledge exists, a point with which I also concur. What she doesn't address is that much of what has been 'done' in the grass roots effort (largely funded with public monies) to combat land degradation has been both expensive (in money and time) and ineffectual. Of what value is 'understanding' the processes and practices when this is the case? It basically becomes useless information in a world of information overload, unless the insights can be used where it does make a difference.

Does this book give us any insight on how to solve any of the big questions raised by the author on page 8? After finishing the book, I was tempted to answer 'not really'. As I reached this conclusion in my mind, I recalled a paper I had given at the 2001 WA State Landcare Conference, after which an exasperated landcare worker came up to me and said 'That's all very well, but what are we supposed to do?' Carr's book does at least provide insights and a degree of analysis that will be useful for people in both communities and government working in landcare and other environmental management groups. Whether this approach is the most effective way to achieve desired standards of environmental management is another question.

Economists with research interests in the environmental area are often exhorted to read in other discipline areas and at times I've taken this advice seriously. One of the most interesting aspects of doing so is coming to grips with the ideas expounded in writing such as the book's Chapter 2. However, a possible consequence is that one sometimes wonders whether the language and understanding of resource economics, and the language and

understanding of sociology could be integrated such that both disciplines are recognised by each other as offering insights into ideas of 'sustainable development' and 'stewardship'. For example, in discussing the philosophy that underlies the analytical approach for this study, Carr suggests that it is 'neither possible or desirable' to look for interdependencies and causal relationships (p. 31). Such a view is a long way from the philosophical approach often employed by economists. However, while a constructive interaction between sociologists and economists may sometimes seem difficult, I think it is essential that this happens.

This is a book about the practice of environmental stewardship at the grass roots level, and it investigates this practice mainly at the personal level of those who participate. It seems certain to me that the notion of 'stewardship' is something that will ultimately be too important to leave to personal interpretation, and that society will influence it through legislation such as 'duty of care', or as Carr puts it 'a state-sanctioned vision of sustainability' (p. 233). For me, the challenge still remains to integrate the 'richness' and diversity of the personal and social information documented and analysed by rural sociologists, with the 'rationalism' of the resource policy economist concerned with the efficient allocation of scarce resources. Insights from data collected by rural sociologists ultimately influence the ability of the latter to be achieved, and as such I would recommend this book to economists. However, I might make a plea to rural sociologists that perhaps their work would also benefit from some consideration of the economic aspects of environmental stewardship.

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*The Economics of Water Demands*, by Steven Renzetti. Published by Kluwer Academic Publishers, Boston, Dordrecht and London, 2002, pp. vii + 194, ISBN 0 79237 549 1 (hdbk), \$A209.

The stated purpose of this book is to examine in detail what is known about the economic characteristics of the demand for water. This purpose is pursued by critically surveying the recent international literature published on the topic.

The book has 5 sections. Section A consists of an introductory chapter and a chapter on the state of water use in the world. Section B is the most comprehensive, and has chapters on residential water demand, commercial and industrial water demand, agricultural water demand, the demand for sewage disposal, and assimilation and water demand in low income countries. Section C is on the value of water and contains chapters on the value of

water in extractive and non-extractive uses. Section D is about demand management and has chapters on demand management and forecasting. Section E has one chapter on conclusions and directions for further research.

Each chapter has an introduction that overviews the contents of the chapter. The remainder of each chapter is divided into sections, each of which covers a topic. Each topic contains a review of the selected literature. The reviews present a critical summary of each reference.

The summaries of the references are very good. Generally, an overview of the problem addressed in the reference is provided and this is followed by details of the methodology used in the article. The summaries of papers in which econometric methods were used contain a description of the econometric techniques and the type and source of the data used. In summaries of papers that employed some valuation methodology (examples are contingent valuation, travel cost, hedonic pricing and revealed preference), the valuation methodology and data employed are described, together with relevant comments. Summaries of papers that used mathematical programming techniques (examples are linear programming, dynamic programming and input-output analysis), note the programming method and the type and source of the data that were used. The quantitative results of each surveyed article are presented and discussed in detail.

Some of the findings that I found interesting are as follows. We read in Chapter 1 that the world population grew by a factor of 3.5 in the 20th century, while the use of fresh water grew 10-fold. In Chapter 2, we read that aggregate global freshwater use is dominated by agriculture that uses approximately 65 per cent of all freshwater withdrawals.

In Chapter 3, we read that water prices may be endogenous for consumers who face block water tariff structures. This complicates the econometric estimation of water demand equations. Also, it seems that water utility managers may take community characteristics (such as population density and average income) into account in setting water tariffs. Some empirical evidence is provided, suggesting that price discrimination based on community characteristics is undertaken by private water utilities in France.

We read in Chapter 4 that for industrial water users who can recycle water, small increases in price can produce a large reduction in water use if production costs at the higher water price are lower with recycling. In Chapter 5, a study is reviewed that demonstrates evidence for the diminishing marginal productivity of water in irrigated agriculture. In Chapter 6, we read that setting industrial effluent charges can lead to the introduction of production processes that reduce the cost of production. The section in Chapter 7 on the demand for water in low-income countries indicates that investment in improving the quantity, quality and accessibility of water supplies in some low-income countries can produce a large increase in the standard of living.

Chapter 8 contains a representative selection of references on the problems of valuing water in extractive uses. Here we read that the value of output is the most important determinant of the value of water in irrigation. A thorough coverage of the problems of valuing water in non-extractive uses is presented in Chapter 9. These uses include hydropower generation, transportation, recreation and ecological functions. The non-use component of the value of water has been found to be very high in some studies.

A comprehensive review of the demand management options available to water supply managers who face maturing water systems is presented in Chapter 10. In Chapter 11, we read that forecasts of water use obtained from fixed demand coefficient models have grossly overestimated actual water use (by a factor of 2). This failure is attributed to forecasters not anticipating the extent to which scarcity induces technological and institutional change and the fact that population growth has been lower than that assumed in these models. The implications of possible climate change, as a result of the greenhouse effect, for forecasting water demand are also covered in this chapter.

The main weakness of this book concerns its index. The number of entries in the index is parsimonious. For example, authors, places, econometric and valuation techniques are not listed in the index. In addition, the index is sometimes unreliable. For instance, pages 32 and 108 are listed under 'meta-analysis' in the index, but no studies using meta-analysis are covered in these pages. Studies using meta-analysis may be found in pages 123 and 130, but these page numbers do not appear under 'meta-analysis' in the index.

The book is generally well written and has only a few unimportant typing errors. Economists who are interested in resource economics, environmental economics, agricultural economics, development economics and public sector economics should find this book useful. In particular, the book should prove very useful to postgraduate students who are writing a thesis or report in the area of the economics of water demand.

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*The New Economy of Nature: The Quest to Make Conservation Profitable*, by Gretchen C. Daily and Katherine Ellison. Published as a Shearwater Book by Island Press, Washington DC, 2002, pp. 260, ISBN 1 55963 945 8 (hdbk), US\$25.

'The New Economy of Nature' is neither an economics text nor an academic piece. Rather, Daily and Ellison have crafted a lively and entertaining

presentation of a series of case studies loosely centred on specific ecosystem services, often incorporating anecdotes and other material seeking to give the reader a feeling for the participants' driving motivations in the production of ecosystem services. The authors seek to describe a 'new economy', that in the words on the dustcover, 'recognises the full value of natural systems and the potential profits in protecting them'. Daily and Ellison describe themselves as 'advocates and critics' of private enterprise. They live up to this description, providing well-balanced arguments and evidence throughout. The authors do not shy away from failed experiments in selecting their case studies or from discussing the difficulties in achieving their stated aims in the book.

Describing the subject of the book as a 'quest to make nature conservation profitable' is apt, given the structure of the book, but perhaps less so given the subject matter of the case studies. Institutional mechanisms that directly generate profits through private enterprise are the subjects in only half of the case studies. In the remainder, the focus is on the values generated by natural systems and their inclusion into public decision-making processes. This approach is no accident as the authors make clear their view that private enterprise cannot substitute for government, and that a stronger regulatory underpinning is required to 'kick-start and supervise' this process (p. 16). Although the authors' mistrust of private enterprise may direct this conclusion, it mirrors that of institutional economists working towards similar goals (see, for example, Heal 2000).

The flavour of the book is conveyed through the eclectic mix of case studies sourced from a number of nations and covering a number of ecosystem services. The private and public aspects of nature conservation are linked via a review of the ongoing development of the Katoomba Group – a project seeking to 'transform the world's economy to support the increasingly urgent needs of the besieged environment' (p. 20). The book follows the first three meetings of the Katoomba Group from its ambitious emergence in 2000, to a more mature and perhaps realistic group at their third meeting in Teresopolis, Brazil (the group continues to meet biannually). The issues tackled by the Katoomba Group reveal many of the important issues that are at the core of the case studies presented. They include the importance of information about ecosystem management and individual values, the potential efficiency gains from private enterprise, and the importance of effective decision-making institutions. Other case study chapters are centred on carbon sequestration (Chapter 2), water quality (Chapter 3), flood mitigation (Chapter 4), aesthetic and recreation services (Chapter 6), species conservation (Chapter 7), pollination and pest control (Chapter 9), and combinations of these services (Chapter 8).



Daily and Ellison trace carbon markets from post-Kyoto hope to the withdrawal of the USA from the protocol, using a series of local and international trading examples from Australia, Guatemala, Costa Rica, Brazil, Canada and the USA. The authors follow the path of their examples from commencement to a final outcome in most cases, revealing in the process many difficulties and failures along with some successes.

The efforts to protect the water quality of the New York City water supply using natural ecosystems provide the focus in Chapter 3. Daily and Ellison have assembled a complete and incisive examination of a complex public sector decision-making problem that reveals many of the difficulties in identifying and managing ecosystem services. The lack of information about ecosystem services and their management, and the resultant impact on public sector decisions between engineered compared with managed systems, is a feature in this chapter. Positive externalities generated by recreation, biodiversity and other services, are an important subissue in Chapter 3, but they are the central focus in Chapters 4 and 6. How a community sought positive externalities from restoring natural flood mitigation in the Napa Valley in central California is the focus in Chapter 4. Management of development to retain these benefits is the focus in Chapter 6. In none of these cases is it clear how nature conservation turns a profit for the private sector – except perhaps through strategic rent seeking – but it is clear how the community as whole can benefit.

More attuned to private interest is the discussion in Chapters 7 and 9. The rise and current difficulties of John Walmsley's Earth Sanctuaries experiment, that attempted to generate profits from the conservation of native fauna in Australia, is the focus in Chapter 7. The authors provide an insightful discussion of the financial considerations faced by Earth Sanctuaries but do not discuss the native fauna property right difficulties the company faced and the potential impacts on management and profitability. Pollination and pest control services are the focus in Chapter 9. Daily and Ellison indicate that the main impediment to recognising and managing pollination and pest control services is a lack of information about the contributors to these services and their appropriate management.

The Area de Conservacion Guanacaste biodiversity reserve in Costa Rica is the focus in Chapter 8. This chapter provides a useful link between the publicly funded and managed projects in Chapters 3, 4 and 6 and the private enterprise drivers in Chapters 2, 7 and 9. The examples in this chapter indicate the difficulty of private and public sectors working together, and the potential importance of the philanthropic sector in capturing public values.

Overall, *The New Economy of Nature* is a balanced, insightful and well-written book. Daily and Ellison have alluded to many of the important

issues in using markets to manage environmental issues including information, efficiency and institutions. However, from an economist's perspective it is difficult to see the book as much more than a useful compilation of descriptive case studies from which examples may be drawn, and a reminder of the importance of the interaction between ecosystems, institutions and community values.

### Reference

Heal, G. 2000, *Nature and the Marketplace: Capturing the Value of Ecosystem Services*, Island Press, Washington DC.

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*The Choice Modelling Approach to Environmental Valuation*, edited by Jeff Bennett and Russell Blamey. Published by Edward Elgar Publishing, Cheltenham, UK, 2001, pp. xiii + 269, ISBN 1 84064 304 8 (hdbk), US\$85, £55.

Choice Modelling (CM) has rapidly gained in popularity as a tool for environmental valuation since its first use in this context by Vic Adamowicz and colleagues in the *Journal of Environmental Economics and Management* in 1994. One piece of evidence in support of this statement is the growing number of CM papers in the journals. Another is the space devoted to CM in the new stated preference cookbook produced by Ian Bateman and co-authors (Bateman *et al.* 2002). Choice modelling has become popular not so much as a replacement for contingent valuation, but as a tool that possesses some important complementary strengths. The most important of these is its focus on the values of the attributes, or characteristics, of environmental resources or of management programs for these resources. This means that the economic benefits and costs of changes in these characteristics (e.g. changes in species composition of a woodland, or changes in the types of habitat prioritised under a national biodiversity plan) can be easily assessed.

This book goes a long way to introduce people to the basics of CM (a 'how to do it' guide), as well as bringing out some of the on-going methodological debates. An excellent introduction is provided first by Jordan Louviere, who first developed the idea of choice experiments in a market research context, and then by Vic Adamowicz and Jeff Bennett, who take us through the procedures for designing and then analysing the results of a CM exercise.

Both of these chapters are extremely well-written, and will be of interest both to CM novices and experienced practitioners.

Part Two of the book sets out some case studies that illustrate the potential of CM, using Australian examples of decisions over the development of alternative sources of public water supplies, wetlands conservation and green product choice. Part Three turns to methodological issues, including the labelling of alternatives, the choice of opt-out alternatives, the impact of substitute goods and the extent of yea-saying. These papers are largely drawn from the same set of authors as are found in Parts One and Two. Perhaps a larger set of methodological issues could have been considered, such as incentive-compatibility and the effects of choice complexity. Finally, Chapter 11 reflects on the strengths and weaknesses of CM, and on unexplored future research needs.

As someone who has used CM in environmental valuation on several occasions, I found this book both useful and interesting. It would also make a good introduction to CM methods for a beginner who has a reasonable background in microeconomics and econometrics, especially if coupled with the recently published book by Louviere *et al.* (2000). I think the book would have been strengthened by including a wider selection of authors working in the CM area, as the practice of using certain 'team members' for a large number of chapters somewhat restricts the breadth of perspective and experience that is provided. I also feel that the editors should have commissioned something more critical of CM (e.g. by someone from the contingent valuation camp), because what we get at the moment is a little one-sided. However, I certainly recommend this book to my graduate students, and suggest that you read it too if you are interested in using CM.

### References

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