

## BOOK REVIEW

### *Restoring Natural Capital: Science, Business, and Practice*

James Aronson, Susanne J. Milton & James N. Blignaut, editors. 2007. *Society for Ecological Restoration International*. Inland Press, Washington – Covelo – London, 384 pages, \$45.00, ISBN: 978-1-59726-077-0 (paperback).

The list of books published by the Society of Ecological Restoration International and its regional branches becomes longer every year. Simultaneously, the scope of ecological restoration becomes wider and the insight deeper, and there is a clear shift from local restoration issues and their aspects to regional and even global solutions and considerations: from a disciplinary to an interdisciplinary approach and to integrated evaluations, including ecological, economic, and social aspects of the matter. It is a logical path of development for this young science—its ripening process.

The book reflects well this situation and contributes substantially to its progress. Even the term “natural capital” as a summary of natural resources gives a new and broader dimension to ecological restoration of the earth’s natural resources and sets a new trend in practical restoration efforts. As P. Raven presents it in his foreword: “... the earth’s resources—the natural capital—are finite. And ... we are running out of it at an unprecedented scale and speed.” Ecological restoration is the way we have to follow to stop the depletion and overuse of the earth’s resources. This is the main message of the book.

The book addresses many important issues of ecological restoration throughout the world. Geographically, the main themes and examples

come from South America, South Africa and Madagascar, India, Australia, and New Zealand. The choice of these parts of the world probably was intentional: herewith, the book complements earlier publications, which covered Europe and North America (e.g., Wong & Bradshaw 2002; Van Andel & Aronson 2006; and others). An orientation towards the future stretches as a red line through the structure of the book. Part I outlines the conceptual considerations: the definition and rationale of the natural capital, reflection on ethics, economic aspects, millennium ecosystem assessment, and biodiversity. Part II is devoted to experiences and lessons. A large number of case studies from different parts of the world demonstrates the rational targets and approaches. Cost-benefit analyses illustrate the feasibility of restoration programs in very different ecosystems and landscapes and under very different societal, natural, and economic circumstances. Tactics and strategies of the ecological restoration programs are the matter of Part III. Here, examples of, and considerations about, valuation, scales, and policies are presented. Part IV summarizes and works out the conceptual and operational framework of ecological restoration and formulates an outlook towards the future.

In my opinion, the main value of the book is the conceptualization of the matter and suggesting ways to integrate science, business, and operational practice. In their basic definition, the editors promote natural capital at the same level as financial, manufactured, human, and social ones. This statement is essential. It is the clue to the mental change: natural capital is here not only to be used, exploited and, eventually, depleted; the term automatically introduces the obligation of the society to renew it, to replenish and protect it, and to cultivate it in the same way as other capital forms and values.

Personally, I most appreciate Part I of the book. It brings well-documented philosophical arguments whereupon the relation of people to nature should be constituted: the responsibility of humans for nature and the environment in sake of humanity and well-being of peoples. This is the basic statement for sustainability as the precondition of future development. Building up on this philosophical background, ecological restoration develops broad connotations and becomes part of an integrated socioeconomic vision of the future, wherein maintaining of natural capital is accepted at the same level as tradeoffs to growth. Restoring, replenishing, and sustaining nature becomes one of the preconditions for sustaining culture in the broadest sense of the word.

Incorporating this way of thinking and, ultimately, practical restoration into socioeconomic relations is not an easy matter. The process can take many forms and implications: the lower the level of action, the more details and complicating factors. The well-chosen case studies in Part II illustrate this complexity at various levels. The examples reach from restoration of changed ecosystems in semiarid South Africa, overgrazed landscapes in Australia, degraded private forests in Hawaii and protection of New York City watersheds in the USA to issues dealing with reconnecting local people to their natural environment in New Zealand, landscape restoration after open-cast mining or restoring natural forests for medicinal bark harvesting in South Africa, and finally to restoring agrosystems in India.

This wide array of examples makes it possible to define general strategies of ecological restoration and develop tactical instruments to implement restoration programs. Examples of failure or limited success of particular restoration projects are numerous throughout the

world, and most of them can be attributed to a wrong, not well-considered management plan or action. A rational, comprehensive, and integrated systems management is built up in the following steps:

- Political decision and clear political targets
- Definition of strategies to be followed, strategic goals
- Effective operational management, and
- Tactical instruments and measures.

The last item is very essential. Tactical instruments and measures make a functional link between strategic goals and operational management. They involve a number of norms and concepts, methods, research, planning, modeling, coordination, cooperation, etc., all of them playing their specific roles in the decision-making process. Their application makes it possible to streamline operational management with strategic goals to develop the systems approach. Teamwork and consensus, and a clear definition of financial flows, such as cost-benefit analyses, are necessary to give the decision-making an integrated character. Fortunately, decision-making theory does not stay quiet. Similarly to restoration ecol-

ogy, it develops new approaches to evaluation, models, alternatives, and methods of risk analyses, which can be broadly applied and implemented into restoration programs. Contributions in Part III give good examples how to manage the decision-making process to overcome physical, biological, and socioeconomic obstacles, and how to govern both the financial and nonmonetary mechanisms of restoration. Political decisions at higher levels have to pave the road to solutions at operational levels.

Part IV of the book comes back to the concepts and goals set in the introduction, that is, to the conceptual and operational framework for restoration of natural capital as a condition for a sustainable future. Ecological restoration becomes a challenge: to politics in order to open up avenues for appropriate strategies and future operations; to economic science to reformulate its traditional principles and adapt them to the new situation; to professionals of various branches to broaden their understanding of the problem and deepen their insight into its manifold aspects; and to managers to learn how to develop and run an integrated systems approach to renew, replenish, and

maintain the natural capital for the well-being of both ours and that of the future generations.

Seen from this point of view, ecological restoration and wise management of the natural capital become intellectual and cultural criteria of political bodies, governments and institutions, and land users as well as individual people: all of them become responsible for the wise use, restoration, replenishment, and sustaining of our natural capital.

The list of references covers some 35 pages. It brings a lot of scientific and practical information for everybody involved in the matter and for anybody with an open mind.

In my opinion, this book comes at a proper time and brings a lot of good ideas to reflect upon. I recommend that it be read with full concentration.

**Josef Fanta**, *Spoorbaanweg 65, 3911 CB Rhenen, The Netherlands. Email jfanta@xs4all.nl*

#### LITERATURE CITED

- Van Andel, J. & J. Aronson, editors. 2006. *Restoration ecology: the new frontier*. Blackwell Publishing, Malden.
- Wong, M. H. & A. D. Bradshaw, editors. 2002. *The restoration and management of derelict land: modern approaches*. World Scientific, New Jersey.