

and lost the ensuing legal engagement (I appeared as an expert witness for their opponents), and paclitaxel will soon be available at a significantly cheaper price. Additional cases surrounding who owns the patent rights to the semi-synthetic process are still on the court docket.

In any event, *The Story of Taxol* presents an informative account of a complex history. Taxol remains the single most prescribed anti-tumor agent and has generated billions of dollars for Bristol-Myers Squibb. I agree with the authors' conclusions that the development of taxol was marked by bureaucratic ineptitude, private industry avarice, and a modicum of benefit for many cancer patients. The economic success of paclitaxel has led many pharmaceutical companies to enter the drug-discovery arena at a time when the NCI has begun to exit. It is my firm hope that their participation will improve the quality, quantity, and developmental speed of drugs made available to the patient with cancer. Whether this approach is financially feasible for the patient remains to be seen.

BOOKS: CONSERVATION

Ingredients for Tropical Renewal

Valerie Kapos

In these days of increasing pressure on researchers to justify what they do in practical terms, most ecologists and field biologists would cite the importance of their work for conservation. However, too few such scientists recognize that biology is just one small piece of the conservation puzzle, which is made up mostly of political, social, and economic elements. *Green Phoenix*, a narrative account of the evolution of Costa Rica's small, under-resourced Santa Rosa National Park into the impressively expanded and managed Guanacaste Conservation Area, brings this reality home. Science writer William Allen spotlights a key example of where researchers have become involved in these other aspects of conservation with great effectiveness.

The book is a difficult one to describe or place in one's mental library catalog. It certainly does not fit in a science section, nor even in popular science. Although it could be shelved under conservation or environmental

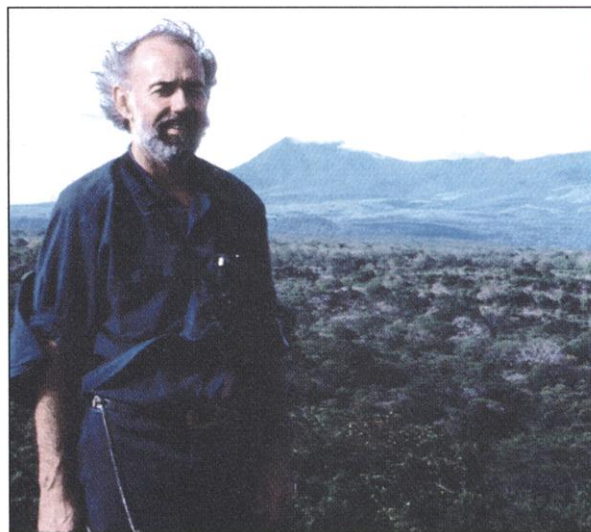
activism, parts of it might qualify as biography, some is about politics and economics, and other parts fall under natural history. This classification difficulty, which stems from both the complex nature of the subject and the rather discursive way in which the book is written and organized, makes it difficult to define the author's target audience.

As a scientist and field biologist, I found much of the science and natural history rather irritating in their wide-eyed superficiality. Nonetheless, I found the lessons about the principal needs and activities for establishing a functioning practical conservation and restoration program very useful. For many of us in the conservation sector, these lessons have already been learned, at least in theory, but the specific examples are valuable, as is the concise synthesis of the lessons in the much better structured epilogue.

Allen provides readers a regional background covering basic research and the environmental pressures that together demonstrated the need to expand the original reserve and to restore forest cover. The issues and challenges covered include: the necessity of controlling fires, while still somehow limiting the standing biomass of exotic grass; problems caused by the limitation of dispersal of tree seeds through lack of appropriate fauna; and principles of landscape ecology and the need to connect habitat fragments. The author also discusses some of the solutions scientists and volunteers employed in the field.

For me, the real value of the book kicks in where science and its application ends and Allen addresses the vital roles of politics, sociology, economics, and (incidentally) personalities in achieving conservation goals. The influences of politics—from local (harnessing the influence of powerful landowners and vested interests) to national and international (U.S. involvement and interests in Nicaragua)—emerge clearly, if in rather fragmented form. The author emphasizes both the importance of education in generating local support for the conservation area and, interestingly, the importance of basic research in adding to the perceived value of the site. His detailed accounts of the acquisition of addi-

tional blocks of land for the park and of the fund-raising and politics involved illustrate very effectively the magnitude of effort and the kinds of focus required for such work. Guanacaste's most interesting economic lesson is the importance of generating an endowment to provide both sustainability and room for making short-term errors in the management of a conservation project.



Returning trees. Beyond Dan Janzen, the Guanacaste lowlands stretch from Santa Rosa National Park to the slopes of Volcán Orosí and Volcán Cacao.

The influence of personalities and the importance of leadership are highlighted through the book's focus on the key role Dan Janzen played in the development of the Guanacaste Conservation Area. While noting that Janzen doesn't want to be lionized, the author proceeds to do just that. In doing so, he appears to place less weight on the roles of other individuals and, especially, on the course of events from a Costa Rican perspective. I can't help wondering what Janzen himself thinks of the book.

In his conclusion, Allen recognizes that some of the lessons from the Guanacaste project depend on its unique local situation, but he ventures little comment on their applicability in other contexts. This is one of several respects in which I found myself frustrated and wanting to know more. Another is the extent of information Allen provides about the restoration program and its impact. Maps and illustrations of the progress of the reforestation would have helped a great deal in this respect and would have been a very useful addition to the book's photographs of personalities and landscapes. Despite these frustrations, I found *Green Phoenix* informative and inspiring. It offers a fresh perspective on scientists' involvement in practical conservation.

**Green Phoenix
Restoring the
Tropical Forests of
Guanacaste,
Costa Rica
by William Allen**

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510893-0.

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