



There are Differences between Tropical and Extra-Tropical National Parks

D. H. Janzen

Oikos, Vol. 51, No. 2. (Feb., 1988), pp. 121-123.

Stable URL:

<http://links.jstor.org/sici?sici=0030-1299%28198802%2951%3A2%3C121%3ATADBTA%3E2.0.CO%3B2-P>

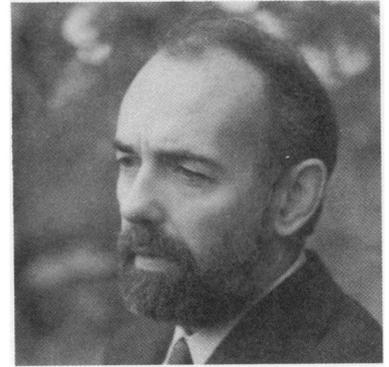
Oikos is currently published by Nordic Society Oikos.

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/about/terms.html>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/journals/oikos.html>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

JSTOR is an independent not-for-profit organization dedicated to and preserving a digital archive of scholarly journals. For more information regarding JSTOR, please contact support@jstor.org.



Dan Janzen's thoughts from the tropics 9

There *are* differences between tropical and extra-tropical national parks

A national park is an area and its biota that are managed for permanent survival and maintenance of the park's biodiversity as best as is possible given its surrounding habitats (which are normally severely altered by the agroindustry). When such management includes management for education, research, tourism, genes, etc., the management is believed to be in a non-destructive manner or the damage that occurs is registered as a survival tax. Today, theory and pragmatics are evolving around the technology of such management. In association with the homogenization of the world's cultures by everything from telephones to bicycles to the possession of national parks, this evolutionary process contains a very strong and necessary tendency to seek generalizations about wildland management, generalizations that can be then applied to many conserved wildlands in many areas, new, old or in trouble.

However, I would like to draw attention to some major heterogeneities among national parks, heterogeneities that demand specialization as well as generalization. Tropical conserved wildlands (national parks, reserves, wildlife refuges, etc.) differ from mid-latitude ones in at least four major ways, ways that affect the application, relevance or usefulness of many generalizations that are evolving in wildland management. We are confronted by a situation parallel to that in agriculture, where mid-latitude agricultural traditions have very much to offer tropical agricultural development, but cannot be successfully applied as whole without a fair amount of social and technical fine-tuning to the peculiar circumstances of the tropics.

First, the tropics still has a lot of forest that is relatively undisturbed. Disturbed about the clearing or other kinds of management of 50,000 ha of original Zaire or Brazilian rainforest? Well, there is no 50,000 ha patch of original flatland mid-latitude forest over which we can argue. Far too many of us forget that we go to the tropics not so much to study its fantastically diverse organisms, but because the habitats in which to study them are still there for us to study. A sugar-cane

field is substantially more boring than is a Wisconsin pasture. A Pennsylvania forest with its passenger pigeons, forest bison, mastodons, and chestnuts would have been as fascinating as are many modern tropical forests.

While many large tropical national parks have been, and still are, being declared over relatively undisturbed vegetation, almost no mid-latitude national park of any size can make this claim. The consequence is that virtually all management of mid-latitude national parks is an exercise in restoration ecology, be it explicit or implicit. In the tropics, however, there is very substantial variance on this point. For example, there are many Neotropical rainforest national parks that are so close to their original state that ecological restoration is a quite trivial aspect of their explicit management (assuming that there is no way to reach back 10,000 years for the megafauna extinguished by early hunters). On the other hand, there also are many that are so trashed that restoration ecology is their only hope for long-term survival of their characteristic species and habitats. The consequence is that tropical wildland conservation generalizations must be strongly tempered by a well-developed consideration of the kinds and intensities of restoration processes that need to be tailor-made for each individual conserved wildland.

Second, tropical parks are embedded in agroecosystems that have relatively low agricultural productivity per large unit area, and often offer relatively disastrous socio-economic infrastructure for the people living in the vicinity of the parks. This means that at least for the next several generations in many tropical countries, a national park will virtually never be simply *given* the shrine-like status presently allocated to many mid-latitude conserved wildlands for their intrinsic traits; tropical parks will have to earn this status. To earn it means offering, among other things, a tangible (intellectual and physical) product to the people around that park. Even churches and other hallowed shrines, the epitome of non-destructive production (unless you count wear

on the paving stones), earned that status through millennia of production of the high quality product of social unity in the face of wildland or human adversity.

Marginality of tropical agriculture has been the number one tool of the tropical conservation movement for many decades, but traditional and modern genetic engineering will render that tool obsolete. A great increase in the productivity of tropical farm and ranch lands through genetic engineering will not sufficiently raise the net worth of each farmer so much that he is no longer interested in exploiting nearby marginal lands that are occupied by wildlands, conserved or otherwise. The new varieties to be grown on today's marginal tropical croplands will not automatically bring with them a cultural desire to maintain wildlands for other reasons, a cultural desire that mid-latitude conservationists have long had as a relatively unappreciated tool. The tropical conservationist is in a crisis situation of unanticipated magnitude, confronted with the task of convincing a very large number of people that they really do want to save their living national libraries rather than convert them to newspaper pulp just as they are first learning to read.

Third, the diversity of kinds and intensity of managerial help needed by tropical parks is much greater per park or per unit area than is the case with extra-tropical parks. For example, when a wildland is thoroughly agriculturalized in the tropics, the chances that its constituent biological parts can be found in surrounding areas at the time when there is a desire to restore it is much lower than is the case in the extra-tropical zones. Almost all of the original flora, for example, of a US farming state occurs as a diffuse breeding population in woodlots, abandoned fields or right-of-ways of that state. In tropical farming areas, however, it is commonplace for at least 50% of the original plant species to disappear following modern agriculturalization and for many of the remaining species to be represented only by living dead – plants living out their physiological lives but not maintaining a breeding population. The overall consequence is that tropical national parks become populated by anthropogenic endemics, instead of being habitat clusters scattered among diffuse populations of their constituent species, as is the case with many extra-tropical parks and reserves. This also means that it is much more difficult to determine what conditions and species to encourage in a tropical park that is being restored.

The very complex challenge, then, to the modern tropical conservationist, is how to offer products from a national park without destroying it. Recreational and ecological tourism, natural history education, gene banking, free-ranging seed catalogues, intellectual stimulation, watershed protection, scientific investigation, etc. are such products. More will appear with use. Simultaneously, there is the question of just how much perturbation by the user can be compatible with a tropical natural area. This is a gray question, but it must be

faced. And the answer will not be the same for a species-rich tropical forest as for a species poor tropical or extra-tropical forest. All the world's tropical habitats have already been significantly altered by humanity, first as a major hunter and fire-generator, later as these things plus agriculturalist, and lastly as a generator of these things plus climate and chemical background modifier. What level of perturbation are we going to tolerate in the remaining tropical quasi-natural areas? It is a real question. Do we put much time and energy into developing and maintaining a sustained yield flatland wildland timber production system over 200,000 ha, do we render 150,000 ha of it into high(er) yield tree plantations and keep 50,000 ha as low overhead relative wilderness, or do we turn all of it into a sugarcane field and take 2% of the profit to buy and maintain a 75,000 ha untouchable wildland area elsewhere on steep slopes and poor soils?

Fourth, the biotic interactions within a tropical park are generally much more complicated than is the case with an extra-tropical park. We have a nightmare of complications generated in the western US by the simple question of how do we keep a single species of owl or ferret alive and breeding. You can safely multiply these complications by hundreds for a tropical park or network of conserved wildlands. Tropical parks demand a serious and well-developed local staff of biological experts, experts whose subdisciplines are tourism, education, bookkeeping, tractor mechanics, etc. In other words, a director with a flair for the tourist interaction might well be able to guide many of the biological decisions for a state park in Michigan; if the solution to the beaver and blackbear problems is not evident, then it is likely that someone who can focus on the problem is within a phone call or a short drive. The same is most decidedly not true of most tropical parks, and won't be true for centuries. Profound understanding of tropical field biology, ecology and natural history is essential for the managers and the decision-making committees for tropical parks. To do otherwise is to try to run a bank without a detailed knowledge of lending laws and the stockmarket. At present, a large number of tropical parks are developing under the guidance of people who are primarily policemen, politicians, bookkeepers or mechanics. Tropical parks must have an oversight committee made up of specialists in the subject matter, just as do hospitals, nuclear reactors, etc. This demands academic input in large doses, an input that at present is not rewarded by the academic system and by and large not forthcoming. We very much enjoy our user status, while feeling very little obligation to maintain the institution.

The harsh fact is that a major part of the subject matter of biologists' lives and research is on the auction block. Either we start bidding, or the next 1–2 generations of biologists will have very little to work with. It's going to cost us time, effort, money and inconvenience. The tropics need help, badly. Tropical peoples are busy

hauling themselves out of an increasingly large set of mud holes, and they have neither the time nor the background to provide the variety of services needed to keep natural areas afloat until they have shrine status.

D. H. Janzen, Dept of Biology, Univ. of Pennsylvania, Philadelphia, PA 19104, USA.