on aquatic plants were quite relevant to the study presented on the effects of phenol on water hyacinth. Most of the very few references in the entire book were one to three decades old, a situation that points to a widely recognized void in the availability of modern information to Chinese scientists. A great number of typographical errors occur unevenly throughout the book. Although most are simply distracting, erroneous spelling of species names, absence of reference to taxonomic authorities, or lack of citation of source reference works indicate a need for greater scholarship that should have been demanded by the editors. Although many of the data presented show responses to experimental manipulations, simple statistical analyses of confidence intervals were often absent. Where used, as in the thorough and instructive analyses of the accumulation and elimination of hexachlorobenzene in different stages of fish development (Huang et al.), credibility of the conclusions improved greatly.

This compilation is a small step toward enhancing exchange of examples of problems and research on the surface waters of China. Discourses of this type can accelerate reduction of the information gaps that are so evident in works of this ilk.

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THE IMPACT OF SPECIES CHANGES IN AFRICAN LAKES. Chapman and Hall Fish and Fisheries Series, Volume 18.


This excellent series is devoted to the biology of fishes, from pure to applied aspects. This book is based on a conference that took place in 1992 at Imperial College in London, and was sponsored by the Overseas Development Administration of the British Government. Since much of Eastern Africa, where the African Great Lakes are located, used to be in the British Empire, this seems fitting. In 24 chapters (four authored or coauthored by Tony Pitcher himself), 37 contributors document and discuss the biggest mass extinction of vertebrate species in modern times—the extinction of hundreds of endemic species of haplochroine cichlids from Lake Victoria in East Africa, largely owing to the introduction of the exotic Nile perch. What lessons for the preservation of biodiversity and prevention or promotion of future species introductions can be learned from this devastating ecological disaster?

The tragic event was caused by the willful (“deliberate”) introduction of the Nile perch (Lates niloti-
impossibility by some accounts, discussed in several chapters) of being able to predict the biological effects of natural invasions or deliberate introductions is highlighted by the contrasting results of the biological disaster (albeit some probably short-term economic advantages) in Lake Victoria with the overall seemingly positive outcome of the sardine introductions to the man-made Lake Kariba.

From the perspective of a biologist interested in conservation, the answer seems obvious: If you cannot predict the outcome, don’t introduce exotic species. However, limnology of African lakes is by its nature an interdisciplinary effort that involves more than purely biological issues and needs to concern itself with the sociological, humanitarian and ecological impacts of the necessary human exploitation of the resources in these lakes. The actions and recommendations of fisheries officers to introduce or not to introduce are of profound consequence, not only for the preservation of biodiversity but also for the sustainability of large human populations that live around the great East African lakes. It has been estimated that the livelihood of about 30 million people depend on the fisheries for mostly two species of freshwater sardines that are endemic (except for human introductions) to Lake Tanganyika. Therefore, these determinations demand cooperation among different groups of scientists that do not typically interact or speak each other’s language and can only be achieved by multidisciplinary conferences (such as the one from which this book resulted) and by the active cooperation between “applied-thinking” and “pure-thinking” scientists.

This book contains many outstanding, exemplary chapters of very high quality by African researchers and other, mostly European, workers who spend many years in Africa. Pitcher and Hart once again edited a volume of excellent quality. The contribution of the researchers from the University of Leiden in the Netherlands stands out. In Chapter 6 Frans Witte, Tjits Goldschmidt and Jan Waniack summarize twenty years of ecological baseline and also quantitative fisheries work. This chapter sadly, but accurately documents the temporal dynamics of the decline and eventual lamentable demise of about 200 endemic species of Lake Victoria cichlids from different ecological guilds and the concomitant increase in the Nile perch population. The differential effects on and spatial and temporal dynamics of the cichlid flock extinction highlights the different effects of the disappearance of different trophic groups of cichlid fishes. The decimation of detritivores is likely to have caused more microbial decomposition and algal blooms, resulting in decreased oxygen concentrations—the final outcome is a lake with a much less complicated and shorter food web, which makes the Lake Victoria ecosystem less stable and more eutrophic. The newly developed fisheries for the Nile perch in Lake Victoria will likely not sustain in the long term, even if fishing effort is reduced and size limits on the catch implemented.

This book documents important lessons about the prevention of future introductions of exotic species, which can be learned from the ecological disasters that resulted from past mistakes. This book is of much value not only for anyone interested in African fishes and limnology; it is a “must read” for all interested in conservation of biodiversity, introductions of exotic species, and the sustainability of natural resources in a continent that crucially depends on the exploitation of the fishes that live in its lakes.

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ENVIRONMENTAL SCIENCES

The Enchanted Amazon Rain Forest: Stories from a Vanishing World.


The Amazon Basin is the largest wilderness area left in the world. Its biodiversity is stunning; so is the rate at which it is disappearing. As I was beginning to collect my thoughts to write this review, my eye was caught by a headline from a page-one article in the New York Times (Sun., July 21, 1996): In Brasil, Indians Call on Spirits to Save Land—Haunted Treasure, A Special Report. The article describes a confrontation between an indigenous Indian tribe in Amazonia and the forces attempting to develop the Indians’ lands in the modern mode—dams, mines, lumbering—just the sorts of things that hover in one’s mind while reading Nigel Smith’s The Enchanted Amazon Rain Forest. For those reasons alone this book is important; it might well serve as an informal repository for the cosmologies, beliefs and folklore of the indigenous tribes and peasants of the Amazon Basin—informal because it is written for the layperson; a repository because it is well documented as to dates and places of the various interviews Smith held with the Indians and peasants of the area. One thing I feel the book needs, however, is a good map showing the relation of the study areas to the Basin as a whole, and to Brasil and its neighboring countries. The map provided in the book is entirely too small and difficult to read. Very helpful would have been a one-page map of Brasil, showing its borders with its neighbors and delineat-