A Primer of Ecology

By Nicholas J. Gotelli. 1994. Sinauer Associates, Inc., Sunderland, Massachusetts. xiv + 206 pp., illus. U.S. $18.95.

Ecology is a tremendously varied and complex subject. If it weren't, life on earth would not be what it is. Most of us are interested in a relatively small area of ecology. Nevertheless we complain that too little is understood and there is too much to do within our field. A wide range of methods or techniques are available to help us understand the relationships between organisms which, after all, is what ecology is all about. The techniques range from a hand lens to DNA sequencing.

This book is an introduction to the mathematical models taught in university ecology courses. Models are necessary tools to the understanding of plant and animal communities, to describe past events, to predict the effects of natural events, and to the application of management techniques on existing populations. It is the author's contention that ecology textbooks do not give enough explanation to the simpler mathematical models, in particular the exponential model of population growth. As a result the students lack the detailed understanding necessary to use and manipulate the more complex models. The goal of the author was "to present a concise but detailed exposition of the most common mathematical models in population and community ecology." An understanding of continuous differential equations and calculus is assumed.

The seven chapters are titled: exponential population growth, age-structured population growth, metapopulation dynamics, competition, predation, and island biogeography. Each chapter is divided into sections on model presentation and predictions, model assumptions, model variations, empirical examples, problems, and solutions.

The empirical examples section of each chapter focusses on a few field studies and how mathematical models either explain trends or could have been applied to predict trends. In one example the Song Sparrow population of Mandatre Island, British Columbia, is used to illustrate the concepts of density-dependent and density-independent. Island populations are a favored situation for population studies because the isolation reduces the factors affecting fluctuations; i.e., emigration and immigration are often nil. The Song Sparrow population has varied greatly but its variation did not conform to a simple logistic growth model. Analyses indicated that space and food limitations determined breeding success, because only a limited number of breeding males could establish territories. The excess male population or "floater males" would move in if a resident male was lost. Food, when artificially supplied, resulted in a fourfold increase in chicks. Some other examples are Grizzly Bear populations, Red Grouse and its parasites, hare-lynx cycles, and competition between intertidal sandflat worms.

A well-written book treating a specialized aspect of ecology, this is certainly not everyone's piece of cake because the mathematics is too detailed. However, the basic premises are parts of ecology that we should, at least, be aware of.

J. GINNS

Cantley, Quebec J8V 3G5

The Wilderness Condition: Essays on Environment and Civilization

Edited by Max Oelschlaeger. 1992. Sierra Club Books, San Francisco, California. 345 pp.

One of the most positive results of society's heightened environmental awareness is our increased knowledge and appreciation of wilderness. For many of us, wilderness can be a tonic for everything that creates stress in us and that separates us from the earth. The media have also discovered the environment, providing extensive coverage of certain high-profile issues. While it is vital to be aware of current environmental topics, it is most refreshing to occasionally read a well-written book that avoids discussing any of these more transitory and newsworthy environmental topics in favour of more fundamental issues.

The Wilderness Condition is such a book, an impressive anthology of essays that reflect on the subject of wilderness philosophy. That subject may not seem to be the most natural combination, but, in this book, the tripartite marriage of wilderness, philosophy, and history seems to work quite well. The essays comprising this volume were orginally presented at a 1989 conference in Colorado, then published in both hard cover and softcover versions.

The Wilderness Condition concerns some of the more underlying and often-neglected environmental issues of our society. The simple subject of the essays in this book is the tortured relationship between civilization and the environment. So, instead of just covering the more current environmental issues, this book provides readers with some necessary background reading on this subject.

Max Oelschlaeger, the editor of this volume and the author of both the introduction and the last chapter, states that this book finds its role primarily in the "re-greening of the American consciousness." What