

"In his classic 1930 monograph *The Genetical Theory of Natural Selection*, Ronald A. Fisher wrote, 'I can imagine no more beneficial change in scientific education than that which would allow [biology and mathematics] to appreciate something of the imaginative grandeur of the realms of thought explored by the other.' Alan Hastings has provided a book that will allow students to pursue Fisher's goal. In it, the biology and mathematics of ecology are completely integrated. The book is well written and the material should be a part of every student's early training in ecology."

—R.F. Costantino, University of Rhode Island

Population biology has been investigated quantitatively for many decades, resulting in a rich body of scientific literature. Ecologists often avoid this literature, put off by its apparently formidable mathematics. This textbook provides an introduction to the biology and ecology of populations by emphasizing the roles of simple mathematical models in explaining the growth and behavior of populations. The author only assumes acquaintance with elementary calculus, and provides tutorial explanations where needed to develop mathematical concepts. Examples, problems, extensive marginal notes, and numerous graphs enhance the book's value to students in classes ranging from population biology and population ecology to math-

ematical biology and mathematical ecology. The book will also be useful as a supplement to introductory courses in ecology.

Contents

- Introduction
- Single Species
- Density Independence
- Population Genetics
- Density Dependence
- Life Histories
- Interacting Species
- Interactions Between Species
- Competition
- Predator-Prey Interactions
- Host-Parasitoid Interactions
- Diseases and Parasites

Alan Hastings is professor and chair of the Division of Environmental Studies at the University of California, Davis.