Preface

What is the value of a book of classics? In his often anthologized essay, "Why Read the Classics?" the Italian novelist Italo Calvino suggests that we always return to the roots of modern literature to refresh our senses and perfect our vision. We continue to learn from the classics every time we reread them. What is it we learn each time we reread the classic works in any field of science? Both of us have been struck by the diversity of approaches and contributions that have shaped our field, ranging from the elegance of Connell's barnacle experiments and Simberloff and Wilson's island biogeography experiments to the encyclopedic natural history of Watt and Gleason. Beyond the beauty of individual accounts and studies, we have learned to recognize how seminal contributions critically reshape our thinking about natural order and the processes that account for natural pattern. Often a seminal paper alters irretrievably our perception of the world; for example, Hutchinson's essay on diversity or Lindeman's concept of trophic organization. Sometimes the importance of a contribution is only apparent in retrospect, as is true for Grinnell's concept of niche and Skellam's analysis of spatial structure in populations.

Surveying the historical development of critical concepts informed our own perspective on the development of successful research programs. Why are some ideas or approaches more successful than others? Where do new ideas come from? How are they expressed in ways that have immediate intellectual appeal? What is the relationship between the intellectual fate of an idea and its empirical validation? How are ideas refined and extended to new systems and broader sets of interactions? By rereading the classics, students and researchers will be in a superior position to map out research strategies that confer higher probabilities of success. Finally, rereading the classics is fun!

For the purposes of this volume, a classic is a paper that has made a substantial contribution to our thinking about ecological processes. Every paper reprinted here has had a lasting impact on our field either by posing new problems, demonstrating important effects, or stimulating new dimensions to research. Often the impact of a classic is not immediate but delayed through the major contribution of its progeny. In every case, the papers are exciting to read for their insights and hints, oversights and errors.

Even before the conception of this project, we shared a love of the history of ecology and a study of the development of critical concepts in the field. During 1987, Real taught a course on the classics in ecology in which Brown gave a lecture on the role of the classics in our current understanding of ecological process. Recognizing that much of the organization and structure for a book on this subject could be borrowed from that course, we decided to collaborate on the production of this collection.

Development of this book was given impetus by the seventy-fifth anniversary of The Ecological Society of America, which led us to think carefully about the conceptual history of ecology as a science. During our earliest discussions on the book's scope, we realized that our interests and expertise could not reflect those

of the broader ecological community. As a consequence, we asked The Ecological Society of America (ESA) to establish an ad-hoc committee to serve as a board of editors for this volume. The board consisted of representatives from a variety of subdisciplines: James Brown, University of New Mexico (Terrestrial Community Ecology); Linda Brubaker, University of Washington (Paleoecology); Sharon Kingsland, Johns Hopkins University (History of Ecology); Joel Kingsolver, University of Washington (Physiological Ecology); Jane Lubchenco, Oregon State University (Aquatic Community Ecology); Robert Peet, University of North Carolina (Plant Ecology); Leslie Real, University of North Carolina (Theoretical Ecology); and Peter Vitousek, Stanford University (Ecosystem Studies).

Following extensive discussion among the committee members, a tentative outline for this volume was presented to the executive committee of the ESA, which agreed to sponsor the project. That original outline included over 65 papers and book chapters, a total of over 1,700 printed pages! In order to produce a single volume of reasonable size, we eliminated over half of the original suggestions. We decided to exclude all papers published after 1975 and all book excerpts. After reviewing the remaining articles, we soon realized that no two ecologists have identical opinions about what is or is not a classic. The current list obviously represents a compromise. No one will be completely satisfied with our selection; nonetheless, a large proportion of these papers will appear on every ecologist's list. We have tried to reprint those papers that are essential to understanding the origins of contemporary ecology.

Having established the classics list, members of the editorial board assumed responsibility for introducing designated sections. Some elected to invite a collaborator. The individuals in charge of writing introductions were given some license in the final composition of their section, and they made the final decisions on the papers that were included. As the principal editors, we were impressed by the dynamic interaction among the members of the editorial board and by the ever-changing nature of the classics list. The fact that a final list was only determined just prior to publication indicates a vigorous and healthy debate over what constitutes an important idea in our field.

We have consciously broken from the traditional partitioning of subject matter by level of organization, for example, populations, communities, and ecosystems. Instead, we focus on the common intellectual structures that emerge across levels and across taxonomic groups. The book is divided into six sections: foundational papers, theoretical advances, synthetic statements, methodological developments, field studies, and experiments in ecology.

The introductions to each section attempt to place the papers in their broader conceptual and historical context. These introductions are not restricted to discussing the targeted classic papers. They also explore the intellectual antecedents of these seminal contributions and consider the impact of these ideas on subsequent research. These introductions, along with the literature cited, provide an overview of the historical foundations and the current status of ecological science. They also attempt to identify promising directions for future research.

The completion of this kind of project depended upon the efforts of many individuals. Most importantly, we wish to thank the other members of the editorial board. They have shown great patience, insight, and an ability to resolve differences in opinion. On behalf of the board, we would like to thank all of our students and colleagues for their suggestions and advice. We hope this volume represents the combined interests of the larger ecological community. We thank The Ecological Society of America for its encouragement and for including this project in its seventy-fifth anniversary celebration.

Our greatest hope is that this book helps the students who will write the classics of tomorrow. To promote the training of young ecologists, all royalties from the sale of this book will go to a special Ecological Society of America fund supporting graduate and posdoctoral research fellowships.

Leslie A. Real
James H. Brown