

Preface

Andrew Marvell began his famous poem with the wistful line, "Had we but world enough, and time." Ecologists might express the same sentiment, but about their data rather than their love. The works in this volume would not exist, at least not in their present form, without an abundant expanse of time or a generous sample of the world.

Time is of central importance in mark-recapture analyses, which begin with a sequence of observations, over time, of known individuals. Lebreton and his coauthors survey recent developments of methods for *multistate* mark-recapture, in which individuals are not only known but also assigned to locations, life history stages, behavioral categories, or other states. These methods make it possible to go beyond the estimation of survival (one of the original foci of mark-recapture methods) to estimate the transition probabilities among all the states. These transition probabilities form the basis for demographic, dispersal, or behavioral models. When these methods are applied to data collected over long time periods, they provide a powerful basis for detecting and studying the actions of environmental variables.

Among environmental variables, population density has long been of special interest. The effects of density have been the subject of ecological research since before there *was* ecological research. In this volume, Bonenfant and his collaborators review what is known about these effects in populations of large herbivores. The best of that knowledge comes from long-term studies of intensively monitored populations. These long-term studies become more valuable, at an accelerating rate, the longer they are continued. Yet long-term population studies are too often at risk of elimination in a world dominated by the 3-year research grant. As ecologists should defend them any time we get the chance.

The value of time is not limited to studies of populations, as Hildrew's account of nearly 30 years of study of a small British stream makes clear. In summarizing this work, Hildrew relates the studies of Broadstone Stream to theories of community structure, and compares the patterns with those in other streams that differ, more or less, in various ways.

This comparative approach becomes more powerful the larger the number of instances (the bigger the slice of the world) available. The two papers by Reumann and coworkers exemplify the power of this approach. One examines patterns of body size and abundance in a collection of 166 food

webs, containing from 11 to 175 taxa. The other explores patterns of structure in a collection of soil community data from 146 agroecosystems in the Netherlands.

Advances, as this volume shows, in ecological research can come at many levels (only a few exemplified here) and in many ways. As society comes to grips with increasingly complex environmental issues, long-term and large-scale studies—studies with world enough, and time—will become more and more valuable.

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