

moléculaire des populations. Dans ce dernier cas, la niche reste encore à combler.

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Conservation biology was conceived as a crisis-oriented discipline focused on conserving species from contemporary threats. However, it is becoming clear that for the ultimate success of many conservation plans, we must adopt a broader view and become concerned with maintaining evolutionary processes. Evolutionary processes are threatened as habitats become fragmented and resulting species extinctions change the historical, evolutionary, and ecological contexts, as well as by anthropogenic changes in historical selection regimes. In this edited volume, conceived at two workshops held at the International Institute of Applied Systems Analysis in Austria, 30 contributors outline the theoretical basis for the new science of evolutionary conservation. I believe the book is destined to become a classic.

The book is organized into five sections: the theory of extinction; the pace of adaptive responses to environmental change; genetic and ecological bases of adaptive responses; spatial structure; and community structure. The editors do a commendable job of outlining their thesis and surveying the book in the introductory chapter. They develop a research agenda for evolutionary conservation biology that includes five topics: the importance of environmental threats affecting population processes; identifying the key demographic, genetic and ecological determinates of a species' evolutionary potential to environmental change; identifying those characteristics of change that facilitate or prevent adaptation; integrating knowledge of past ecological communities into contemporary management decisions; and prioritizing conservation measures to address immediate as well as longer-term responses of ecosystems. This is quite an agenda and the book does a remarkable job of reviewing key literature as well as identifying unanswered questions. The editors worked hard to integrate the chapters, to highlight key points in lists, and to provide background information or case studies through the use of information boxes. Their hard work paid off.

The first section reviews the importance of density-dependent models in population biology, adds the complexities of age structure and mating system variation, and reviews metapopulation models on predicting population persistence. Surprisingly, the analysis of life table response experiments (LTRE, e.g., Caswell, 1989; 1996) is not discussed. This omission is perplexing because LTRE allow us to identify the key demographic factors responsible for decline, and importantly, these factors may be different from those responsible for recovery.

I really enjoyed the second section, broadly focusing on rapid evolutionary change. Historically, we have viewed evolutionary processes as taking long periods of time. Recent evidence, however, has convincingly demonstrated that rapid evolutionary change is possible, and may in fact

be common, given sufficient selective pressures. Populations can respond to environmental change by either adapting or going extinct. Key factors influencing this outcome include the relative spatial scale of the change and the relative speed with which a species can respond to change. Life-history traits are expected to respond to stressful situations more than other sorts of traits. However, endangered species may have problems responding to change specifically because they may have limited genetic variation.

The third section discusses the genetic and ecological basis of adaptive responses. One chapter justifies why and how "adaptive dynamics theory" is essential to the theory of evolutionary conservation. In a nutshell: frequency-dependent and density-dependent selection are given short-shrift in traditional adaptive models of population dynamics; we are cautioned to ignore these at our peril. As a behavioural ecologist, I resonate to this because it encourages us to focus on the ways in which individuals interact with their environment to maximize fitness. A depressing take home message is that an evolutionary view of small populations provides additional reasons why small populations may be doomed.

The fourth section focuses on the importance of spatial distribution in evolutionary dynamics. Clearly there is evidence that spatial distribution matters in evolutionary responses, but the time scale of this may be too long to be of much use for contemporary conservation problems.

The final section previews how evolutionary considerations may be useful for understanding community dynamics by focusing on mutualisms and co-evolutionary dynamics, community structure, and how hybridization may threaten rare species but interbreeding with related populations may help save the genes in threatened species. Some of these issues are, admittedly, speculative, but equally fascinating.

The hardbound book costs \$95, and while the publication quality is high, a less expensive paperback version would facilitate it being read by the broad community that I believe should read it. It would be a wonderful text for an interdisciplinary graduate seminar in extinction or evolutionary conservation biology. I recommend this book to forward-thinking conservation biologists as well as to evolutionary ecologists interested in applying their research.

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Resource and environmental management activities touch the lives of Canadians, directly or indirectly, on a daily basis. Developmental activity associated with mining, energy, forestry, agriculture, and fisheries, for example, underpins our economy and standard of living, while also