

What can we learn about the precision, explanatory power, and empirical adequacy of the methods of community ecology by examining instances in which it is used to solve practical environmental problems? On the whole, general ecological theory has been unable, so far, to provide the precise predictions often required to direct sound preservation and conservation.

In this volume, K. S. Shrader-Frechette and E. D. McCoy discuss what practical contributions ecology can and cannot make in applied science and environmental problem-solving. In the first section, they discuss the ambiguities and inconsistencies surrounding the concepts of “balance” and “stability” that have often muddied theorizing in community ecology. Using island biogeography as an example, they also examine the ways that science (especially community ecology) is laden with ethical and methodological value judgments that impede theory building.

In the second section, however, they show that ecology can give us specific answers to practical environmental questions. Emphasizing natural history and ethical analysis, they reject several traditional norms governing statistical error and scientific decisions under uncertainty. Instead, they argue that successful conservation and preservation require both a new scientific method – that of case studies – and a new understanding of scientific rationality, one that makes an explicit appeal to ethical principles. They illustrate their new approach with a detailed case study of the endangered Florida panther. Shrader-Frechette and McCoy end by outlining a dominant role for the important, but relatively undeveloped, task of applying ecology to practical environmental problem-solving.

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METHOD IN ECOLOGY:  
STRATEGIES FOR  
CONSERVATION

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