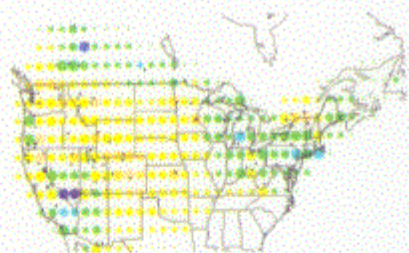


J. ANDREW ROYLE • ROBERT M. DORAZIO

HIERARCHICAL MODELING AND INFERENCE IN ECOLOGY

THE ANALYSIS OF DATA FROM POPULATIONS, METAPOPULATIONS AND COMMUNITIES



This book describes a general and flexible framework for modeling and inference in ecological systems based on hierarchical modeling in which a strict focus on probability models and parametric inference is adopted. The principles of hierarchical modeling are developed and applied to problems in population, metapopulation, community and metacommunity systems. Many novel developments in the areas of distribution modeling, capture-recapture and community models are presented, some appearing for the first time in this book. The book provides the first synthetic treatment of many recent methodological advances in these areas, and also provides unification and synthesis of disparate and diffuse methods and procedures.

- Contains novel conceptual and methodological developments in the areas of capture-recapture and sampling in populations, metapopulations and communities
- Provides a cohesive, model-based formulation of these as well as many conventional methods of analysis
- Provides the first synthetic treatment of many recent methodological developments in statistical modeling and inference in ecological systems
- Provides both Bayesian and classical likelihood-based formulations of hierarchical models applied to ecological inference problems
- Complete implementation of dozens of examples in freely available software



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