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As the practical application of ecological restoration continues to grow, there is an increasing need to connect restoration practice to areas of underlying ecological theory. Foundations of Restoration Ecology is an important milestone in the field, bringing together leading ecologists to bridge the gap between theory and practice by translating elements of ecological theory and current research themes into a scientific framework for the field of restoration ecology.

Each chapter addresses a particular area of ecological theory, covering traditional levels of biological hierarchy (such as population genetics, demography, community ecology) as well as topics of central relevance to the challenges of restoration ecology (such as species interactions, fine-scale heterogeneity, successional trajectories, invasive species ecology, ecophysiology). Several chapters focus on research tools (research design, statistical analysis, modeling), or place restoration ecology research in a larger context (large-scale ecological phenomena, macroecology, climate change and paleoecology, evolutionary ecology).

The book makes a compelling case that a stronger connection between ecological theory and the science of restoration ecology will be mutually beneficial for both fields: restoration ecology benefits from a stronger grounding in basic theory, while ecological theory benefits from the unique opportunities for experimentation in a restoration context. Foundations of Restoration Ecology advances the science behind the practice of restoring ecosystems while exploring ways in which restoration ecology can inform basic ecological questions. It provides the first comprehensive overview of the theoretical foundations of restoration ecology, and is a must-have volume for anyone involved in restoration research, teaching, or practice.

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Table Of Contents Foreword Acknowledgments 1. Ecological Theory and Restoration Ecology

PART I. Ecological Theory and the Restoration of Populations and Communities

- 2. Population and Ecological Genetics in Restoration Ecology
- 3. Ecophysiological Constraints on Plant Responses in a Restoration Setting
- 4. Implications of Population Dynamic and Metapopulation Theory for Restoration
- 5. Restoring Ecological Communities: From Theory to Practice
- 6. Evolutionary Restoration Ecology

PART II. Restoring Ecological Function

- 7. Topographic Heterogeneity Theory and Ecological Restoration
- 8. Food-Web Approaches in Restoration Ecology
- 9. The Dynamic Nature of Ecological Systems: Multiple States and Restoration Trajectories

10. Biodiversity and Ecosystem Functioning in Restored Ecosystems: Extracting Principles for a Synthetic Perspective

11. A Modeling Framework for Restoration Ecology

PART III. Restoration Ecology in Context

12. Using Ecological Theory to Manage or Restore Ecosystems Affected by Invasive Plant Species

13. Statistical Issues and Study Design in Ecological Restorations: Lessons Learned from Marine Reserves

14. Ecological Restoration from a Macroscopic Perspective

15. Climate Change and Paleoecology: New Contexts for Restoration Ecology

16. Integrating Restoration Ecology and Ecological Theory: A Synthesis

About the Editors About the Contributors Index