The world is undergoing unprecedented changes in many of the factors that determine its fundamental properties and their influence on society. These changes include climate; the chemical composition of the atmosphere; the demands of a growing human population for food and fiber; and the mobility of organisms, industrial products, cultural perspectives, and information flows. The magnitude and widespread nature of these changes pose serious challenges in managing the ecosystem services on which society depends. Moreover, many of these changes are strongly influenced by human activities, so future patterns of change will continue to be influenced by society’s choices and governance.

The purpose of this book is to provide a new framework for natural resource management—a framework based on stewardship of ecosystems for human well-being in a world dominated by uncertainty and change. The goal of ecosystem stewardship is to respond to and shape change in social-ecological systems in order to sustain the supply and opportunities for use of ecosystem services by society. The book links recent advances in the theory of resilience, sustainability, and vulnerability with practical issues of ecosystem management and governance. The book is aimed at advanced undergraduates and beginning graduate students of natural resource management as well as professional managers, community leaders, and policy makers with backgrounds in a wide array of disciplines, including ecology, policy studies, economics, sociology, and anthropology.

The first part of the book presents a conceptual framework for understanding the fundamental interactions and processes in social-ecological systems—systems in which people interact with their physical and biological environment. We explain how these systems respond to variability and change and discuss many of the ecological, economic, cultural, and institutional processes that contribute to these dynamics, enabling society to respond to and shape change. In the second section we apply this theory to specific types of social-ecological systems, showing how people adaptively
manage resources and ecosystem services throughout the world. Finally we synthesize the lessons learned about resilience-based ecosystem stewardship as a strategy for responding to and shaping change in a rapidly changing world. Change brings both challenges and opportunities for managers, resource users, and policy makers to make informed decisions that enhance sustainability of our planet.

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