

# Preface

Landscape ecology continues to grow as an exciting discipline with much to offer for solving pressing and emerging problems in environmental science. Much of the strength of landscape ecology lies in its ability to address challenges over large areas, over spatial and temporal scales at which decision-making often occurs. As the world tackles issues related to sustainability and global change, the need for this broad perspective has only increased. Furthermore, spatial data and spatial analysis (core methods in landscape ecology) are critical for analyzing land-cover changes worldwide. While spatial dynamics have long been fundamental to terrestrial conservation strategies, land management, and reserve design, mapping and spatial themes are increasingly recognized as important for ecosystem management in aquatic, coastal, and marine systems. For these reasons, there is great demand for training in spatial analysis tools accessible to a wide audience.

The first edition of this book, *Learning Landscape Ecology: A Practical Guide to Concepts and Techniques*, was the first “hands-on” teaching guide for landscape ecology. The book introduced a diversity of tools and software in the field. The text sold over 5000 copies worldwide, was used at more than 55 universities, and had its second printing in 2006. However, landscape ecology has grown and quantitative methods have advanced substantially in the ensuing 15 years. In addition, this revised second edition of *Learning Landscape Ecology* complements the release of the second edition of *Landscape Ecology in Theory and Practice* (Turner and Gardner 2015), which pairs nicely with this updated “hands-on” teaching guide.

This second edition of *Learning Landscape Ecology* is purposefully more applied and international in its examples, approaches, perspectives, and contributors. It includes new advances in quantifying landscape structure and connectivity (such as graph theory), as well as labs that incorporate the latest scientific understanding of ecosystem services, resilience, social-ecological landscapes, and even seascapes. Of course, as before, the exercises emphasize easy-to-use, widely available software. We have also included introductory exposure to spatial analyses using R programming language in several labs.

What remains similar to the first edition is our dedication to making seemingly complex ideas easy to understand and use for scientists from diverse intellectual backgrounds and particularly for those early in their careers.

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