

## Part II

# Fundamentals of Quantifying Landscape Pattern

This module builds on the previous module in that it assumes a basic understanding of how maps are created and used to represent landscapes. First, Chapter 4 introduces you to pattern analysis using FRAGSTATS software, the long-standing workhorse of pattern analysis. This hugely popular lab from the first edition still combines hand calculations with computer analyses but has been adapted to incorporate the latest version of the software. Another fundamental challenge in landscape ecology is understanding patterns at multiple scales. Chapter 5 introduces the use of semi-variograms for scale detection and for relating known patterns to measures of spatial autocorrelation. These first two labs are helpful prerequisites to several other chapters. Chapter 6 presents the concepts and tools for creating and using neutral landscape models. Exposure to QRule software helps underscore the impact of different patch-definition rules on landscape metrics and the appropriate use of landscape expectations that are spatially neutral. Chapter 7 is an important new addition to the book, providing guidance for the eternally vexing question of “What constitutes a significant difference in landscape pattern?” Here, students will learn how to assign statistical significance when comparing pattern metrics among landscapes.