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2.4.2 Metapopulations2.4.3 Gradient Populations; 2.5 Putting It Together: Combinations of Landscape and Population Models; 2.6 Frameworks for Delineating Landscapes and Populations for Landscape Genetics; 2.6.1 Step 1: Establish Analysis Objectives; 2.6.2 Step 2: Define the Landscape; Define the Extent of the Landscape; Establish a Model of the Landscape Structure; Establish a Relevant Grain of Analysis; 2.6.3 Step 3: Define the Population and Design the Sampling Scheme; 2.6.4 Step 4: Characterize the Landscape Relative to Analysis Objectives; 2.6.5 Step 5: Conduct Analysis
2.7 Current Challenges and Future OpportunitiesReferences; Chapter 3: Basics of Population Genetics: Quantifying Neutral and Adaptive Genetic Variation for Landscape Genetic Studies; 3.1 Introduction; 3.2 Overview of Landscape Influences on Genetic Variation; 3.3 Overview of Dna Types and Molecular Methods; 3.3.1 Types of DNA; 3.3.2 Adaptive versus Neutral Loci; 3.3.3 Molecular Methods; 3.3.4 Unit of Analysis; 3.4 Important Population Genetic Models; 3.4.1 Hardy-Weinberg Equilibrium; 3.4.2 Linkage Equilibrium; 3.4.3 Effective Population Size and Genetic Drift; 3.4.4 Mutation
3.4.5 Migration (Gene Flow)3.4.6 Isolation-by-Distance and Landscape; 3.5 Measuring Genetic Diversity; 3.5.1 Population Level; 3.5.2 Individual Level; 3.6 Evaluating Genetic Structure and Detecting Barriers; 3.6.1 Population-Based Measures; 3.6.2 Individual-Based Genetic Distance Metrics; 3.6.3 Bayesian Clustering Methods; 3.6.4 Barrier Detection Methods; 3.7 Estimating Gene Flow Using Indirect and Direct Methods; 3.7.1 Indirect Measures of Gene Flow - Coalescent Approaches; 3.7.2 Direct Measures - Assignment Tests; 3.7.3 Parentage Analysis; 3.8 Conclusion and Future Directions; References
Chapter 4: Basics of Study Design: Sampling Landscape Heterogeneity and Genetic Variation for Landscape Genetic Studies