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Ethics and the Wildlife Population Biologist Summary; Further Reading; CHAPTER 3: Genetic concepts and tools to support wildlife population biology; Introduction; What Is Genetic Variation?; Genetic Markers Used in Wildlife Population Biology; Fragment analysis; Microsatellite DNA; Single nucleotide polymorphisms (SNPs); Genes that affect fitness: functional genomics, adaptive variation, and transcriptomics; Insights into Wildlife Population Biology Using Genetic Tools; Taxonomy and hybridization; Determining species identity and distribution; Determining gender and individual identity Summary Further Reading; CHAPTER 4: Estimating population vital rates; Introduction; Estimating Abundance and Density; Background: censusing, estimating, and indexing abundance; Transect methods for estimating abundance; Sightability or observation probability models; Capture-mark-recapture (CMR) methods for estimating abundance; Robust design; Density estimation in capture-mark-recapture studies; Survival Estimation; Known-fate models; CMR using the Cormack-Jolly-Seber method; Band-return approaches; Other approaches; Estimation of Reproduction; Sex Ratio; Sex ratios in the wild; Summary Further Reading PART II: Population processes: the basis for management; CHAPTER 5: The simplest way to describe and project population growth: exponential or geometric change; Introduction; Fundamentals of Geometric or Exponential Growth; Discrete (geometric) growth; Continuous (exponential) growth; Overview of r and λ ; Doubling time; Causes and Consequences of Variation in Population Growth; Factors that cause population growth to fluctuate; Implications of variation in population growth; Quantifying Exponential Population Growth in a Stochastic Environment Exponential growth with observation error only (EGOE)

Sommario/riassunto

Population ecology has matured to a sophisticated science with astonishing potential for contributing solutions to wildlife conservation and management challenges. And yet, much of the applied power of wildlife population ecology remains untapped because its broad sweep across disparate subfields has been isolated in specialized texts. In this book, L. Scott Mills covers the full spectrum of applied wildlife population ecology, including genomic tools for non-invasive genetic sampling, predation, population projections, climate change and invasive species, harvest modeling, viability anal
