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Nota di contenuto	Front Cover; Aquatic Functional Biodiversity; Copyright; Contents; Contributors; Perspective: FunctionalBiodiversity during theAnthropocene; TERMINOLOGY AND CONCEPTUAL ISSUES IN ECOLOGICAL AND EVOLUTIONARY PERSPECTIVES; CONCEPTUAL FRAMEWORKS IN ECOLOGICALAND EVOLUTIONARY SCIENCES; BIODIVERSITY AND ECOSYSTEM SERVICE CONSERVATION; REFERENCES; Section I - Theoretical Background; Chapter 1 - From Metabolic Constraints on Individuals to the Dynamics of Ecosystems; INTRODUCTION; INDIVIDUAL METABOLIC RATE, BIOMECHANICS, AND FITNESS; The Size-and-Temperature Dependence of Metabolic Rate From Metabolic Rate to FitnessEvolution of Metabolic Rates and Thermal Physiology; FROM INDIVIDUAL METABOLISM AND BIOMECHANICS TO INTERACTIONS; A Metabolic Theory for Species Interactions; Empirical Support; FROM INTERACTIONS TO CONSUMER-RESOURCE DYNAMICS; Ecological Consumer-Resource Dynamics; Eco-Evolutionary Consumer-Resource Dynamics; FROM CONSUMER-RESOURCE PAIRS TO COMMUNITY AND ECOSYSTEM DYNAMICS; CONCLUSIONS; ABBREVIATIONS AND MATHEMATICAL SYMBOLS; ACKNOWLEDGMENTS; REFERENCES; Chapter 2 - Ecological Effects of Intraspecific Consumer Biodiversity for Aquatic Communities and

Ecosystems

INTRODUCTIONCASE STUDIES; Migration and Foraging Trait Divergence in Alewife; Life History Divergence in the Trinidadian Guppy; Divergence Due to Predators and Toxic Prey in Daphnia; Foraging Habitat Divergence in Threespine Stickleback; Within-Population Variation in Feeding Behavior in Pale Chub; META-ANALYSIS; CONCLUSIONS; ACKNOWLEDGMENTS; REFERENCES; Chapter 3 - How Does Evolutionary History Alter the Relationship between Biodiversity and Ecosystem Function?; INTRODUCTION; METHODS; Resource Competition Models; Model 1: Partially Substitutable Resources; Case 2: Essential Resources Model AnalysisReanalysis of Empirical Data; RESULTS; DISCUSSION; ABBREVIATION; ACKNOWLEDGMENTS; REFERENCES; Chapter 4 - Effects of Metacommunity Networks on Local Community Structures: From Theoretical Predictions to Empirical Eval ...; INTRODUCTION; FOUR PARADIGMS; Patch Dynamics and Mass Effect; Patch Dynamics; Mass Effect; Species Sorting; Neutral Mechanisms; Theory Data; Metacommunity Networks; Community-Level Properties; Metacommunity-Level Properties; Weighted Metacommunity Networks; Methodologies for Estimating Metacommunity Networks; Maximum Entropy; ACKNOWLEDGMENTS; REFERENCES
Section II - Across Aquatic EcosystemsChapter 5 - Limited Functional Redundancy and Lack of Resilience in Coral Reefs to Human Stressors; INTRODUCTION; DATA QUALITY; PATTERN OF CHANGE; DRIVERS OF CHANGE; ARE CORAL REEFS FUNCTIONALLY REDUNDANT?; SOLUTIONS TO ENSURE RESILIENCE; Are there other Solutions Available?; CONCLUDING REMARKS; REFERENCES; Chapter 6 - Biodiversity, Ecosystem Functioning, and Services in Fresh Waters: Ecological and Evolutionary Implications of ...; INTRODUCTION; Climate Change: An Environmental Stressor That Is More Than Just the Sum of Its Parts? Temperature and Metabolism: The Master Variables in Biological Responses to Global Warming

Sommario/riassunto

Aquatic Functional Biodiversity: An Ecological and Evolutionary Perspective provides a general conceptual framework by some of the most prominent investigators in the field for how to link eco-evolutionary approaches with functional diversity to understand and conserve the provisioning of ecosystem services in aquatic systems. Rather than producing another methodological book, the editors and authors primarily concentrate on defining common grounds, connecting conceptual frameworks and providing examples by a more detailed discussion of a few empirical studies and projects, which illustrate k
