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Descrizione fisica	1 online resource (xvi, 385 pages) : illustrations
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Soggetti	Mathematical physics Geography - Mathematics Biotic communities Population biology Mathematical models Mathematical Physics Mathematics of Planet Earth Community and Population Ecology Mathematical Modeling and Industrial Mathematics
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Nota di contenuto	Models for Spatial Population Dynamics -- Modeling with Integrodifference Equations -- Critical Patch-Size -- Positive Steady States -- The Speed of Spatial Spread -- Spatial Spread with Allee Effect -- Modeling the Dispersal Process -- Computational Aspects -- Dispersal Success -- Approximations for Spread -- The Shape of Spatial Spread -- Applications -- Structured Populations -- Two Interacting Populations -- Spatial Variation -- Temporal Variation -- Further Topics and Related Models. .
Sommario/riassunto	This book is the first thorough introduction to and comprehensive treatment of the theory and applications of integrodifference equations in spatial ecology. Integrodifference equations are discrete-time continuous-space dynamical systems describing the spatio-temporal dynamics of one or more populations. The book contains step-by-step model construction, explicitly solvable models, abstract theory and

numerical recipes for integrodifference equations. The theory in the book is motivated and illustrated by many examples from conservation biology, biological invasions, pattern formation and other areas. In this way, the book conveys the more general message that bringing mathematical approaches and ecological questions together can generate novel insights into applications and fruitful challenges that spur future theoretical developments. The book is suitable for graduate students and experienced researchers in mathematical ecology alike.