

1. Record Nr.	UNINA9910462599303321
Autore	Murdoch William W
Titolo	Consumer-resource dynamics [[electronic resource] /] / William W. Murdoch, Cheryl J. Briggs, and Roger M. Nisbet
Pubbl/distr/stampa	Princeton, : Princeton University Press, c2003
ISBN	1-299-05146-4 1-4008-4725-7
Edizione	[Course Book]
Descrizione fisica	1 online resource (479 p.)
Collana	Monographs in Population Biology ; ; 36
Altri autori (Persone)	BriggsCheryl J. <1963-> NisbetR. M
Disciplina	577.8/8
Soggetti	Population biology - Mathematical models Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. [425]-449) and index.
Nota di contenuto	Front matter -- Contents -- Preface -- CHAPTER ONE. Introduction -- CHAPTER TWO. Population Dynamics: Observations and Basic Concepts -- CHAPTER THREE. Simple Models in Continuous Time -- CHAPTER FOUR. Simple Models in Discrete Time -- CHAPTER FIVE. An Introduction to Models with Stage Structure -- CHAPTER SIX. Dynamical Effects of Parasitoid Lifestyles -- CHAPTER EIGHT. Competition between Consumer Species -- CHAPTER NINE. Implications for Biological Control -- CHAPTER TEN. Dynamical Effects of Spatial Processes -- CHAPTER ELEVEN. Synthesis and Integration across Systems -- CHAPTER TWELVE. Concluding Remarks -- Literature Cited -- Index -- Back matter
Sommario/riassunto	Despite often violent fluctuations in nature, species extinction is rare. California red scale, a potentially devastating pest of citrus, has been suppressed for fifty years in California to extremely low yet stable densities by its controlling parasitoid. Some larch budmoth populations undergo extreme cycles; others never cycle. In Consumer-Resource Dynamics, William Murdoch, Cherie Briggs, and Roger Nisbet use these and numerous other biological examples to lay the groundwork for a unifying theory applicable to predator-prey, parasitoid-host, and other consumer-resource interactions. Throughout, the focus is on how the properties of real organisms affect population dynamics. The core of

the book synthesizes and extends the authors' own models involving insect parasitoids and their hosts, and explores in depth how consumer species compete for a dynamic resource. The emerging general consumer-resource theory accounts for how consumers respond to differences among individuals in the resource population. From here the authors move to other models of consumer-resource dynamics and population dynamics in general. Consideration of empirical examples, key concepts, and a necessary review of simple models is followed by examination of spatial processes affecting dynamics, and of implications for biological control of pest organisms. The book establishes the coherence and broad applicability of consumer-resource theory and connects it to single-species dynamics. It closes by stressing the theory's value as a hierarchy of models that allows both generality and testability in the field.

---