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Xiao-Qiang Zhao

## Dynamical Systems in Population Biology

Second Edition

This research monograph provides an introduction to the theory of nonautonomous semiflows with applications to population dynamics. It develops dynamical system approaches to various evolutionary equations such as difference, ordinary, functional, and partial differential equations, and pays more attention to periodic and almost periodic phenomena. The presentation includes persistence theory, monotone dynamics, periodic and almost periodic semiflows, basic reproduction ratios, traveling waves, and global analysis of prototypical population models in ecology and epidemiology.

Research mathematicians working with nonlinear dynamics, particularly those interested in applications to biology, will find this book useful. It may also be used as a textbook or as supplementary reading for a graduate special topics course on the theory and applications of dynamical systems. Dr. Xiao-Qiang Zhao is a University Research Professor at Memorial University of Newfoundland, Canada. His main research interests involve applied dynamical systems, nonlinear differential equations, and mathematical biology. He is the author of more than 100 papers, and his research has played an important role in the development of the theory and applications of monotone dynamical systems, periodic and almost periodic semiflows, uniform persistence, and basic reproduction ratios.

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