

Possibly the first textbook to present a practically applicable ecosystems theory, *Introduction to Systems Ecology* helps readers understand how ecosystems work and how they react to disturbances. It demonstrates—with many examples and illustrations—how to apply the theory to explain observations and to make quantitative calculations and predictions.

In this book, Sven Erik Jørgensen takes a first step toward integrating thermodynamics, biochemistry, hierarchical organization, and network theory into a holistic theory of systems ecology. The first part of the book covers the laws of thermodynamics and the basic biochemistry of living organisms, as well as the constraints they impose on ecosystems. To grow and develop, however, ecosystems have to evade these thermodynamic and biochemical constraints, so the second part of the book discusses the seven basic properties that enable ecosystems to grow, develop, and survive.

This timely textbook also looks at how systems ecology is applied in integrated environmental management, particularly in ecological modeling and engineering and in the assessment of ecosystem health using ecological indicators. Acknowledging that there is still much room for improvement, it will inspire ecologists to develop a stronger and more widely applicable ecosystem theory.



Sven Erik Jørgensen is a professor of environmental chemistry at Copenhagen University. He is an honorable doctor of science at Coimbra University, Portugal, and at Dar es Salaam University, Tanzania. He was editor in chief of *Ecological Modelling* from the journal's inception in 1975 to 2009. In 2004 and 2005 Dr.

Jørgensen was awarded the prestigious Stockholm Water Prize, the Prigogine Prize, and the Einstein Professorship by the Chinese Academy of Science. In 2007 he received the Pascal medal and was elected a member of the European Academy of Science. He has written close to 350 papers, has edited or written 64 books and has given lectures and courses in ecological modeling, ecosystem theory, and ecological engineering worldwide.



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