

EXPLORING ANIMAL SOCIAL NETWORKS

DARREN P. CROFT, RICHARD JAMES AND JENS KRAUSE

Social network analysis is used widely in the social sciences to study interactions among people, groups, and organizations, yet until now there has been no book that shows behavioral biologists how to apply it to their work on animal populations. *Exploring Animal Social Networks* provides a practical guide for researchers, undergraduates, and graduate students in ecology, evolutionary biology, animal behavior, and zoology.

Existing methods for studying animal social structure focus either on one animal and its interactions or on the average properties of a whole population. This book enables researchers to probe animal social structure at all levels, from the individual to the population. No prior knowledge of network theory is assumed. The authors give a step-by-step introduction to the different procedures and offer ideas for designing studies, collecting data, and interpreting results. They examine some of today's most sophisticated statistical tools for social network analysis and show how they can be used to study social interactions in animals, including cetaceans, ungulates, primates, insects, and fish. Drawing from an array of techniques, the authors explore how network structures influence individual behavior and how this in turn influences, and is influenced by, behavior at the population level. Throughout, the authors use two software packages—UCINET and NETDRAW—to illustrate how these powerful analytical tools can be applied to different animal social organizations.

Darren P. Croft is lecturer in animal behavior at the University of Wales, Bangor. **Richard James** is senior lecturer in physics at the University of Bath. **Jens Krause** is professor of behavioral ecology at the University of Leeds.

"An important and timely addition to the literature. This book should be readily accessible to researchers who are interested in animal social organization but who have little or no experience in conducting network analysis. The book is well-written in an engaging style and contains a good number of examples drawn from a range of taxonomic groups."—**Paul R. Moorcroft**, *Harvard University*

"This book introduces ecologists, behaviorists, and others studying social behavior to the methods of network analysis. It is clearly written and accessible to readers whose primary training is in biology, not physics, mathematics, or sociology—the fields in which network techniques have largely been developed. The book is method oriented, so that it can serve as a practical guide to how readers can analyze their own data."

—**Stephen C. Pratt**, *Arizona State University*

"No such book of this kind exists, and because it fills a new niche it will be important. New graphical and analytical techniques are emerging that provide insights into how networks form and function. This book is designed as a primer to introduce students, especially graduate students, to these techniques by using and interpreting examples from animal interactions. For anyone interested in networks, this book will be a useful guide."—**Daniel I. Rubenstein**, *Princeton University*

Cover design

P
pre

9780691127521



9 780691 127521

生物科学 (ZD-N-AP)

RMB:259.00

05/2009

教图公司图书进口部

ISBN: 978-0-691-12752-1



9 780691 127521