

Analyzing Animal Societies presents a conceptual framework for analyzing social behavior and demonstrates how to put this framework into practice by collecting suitable data on the interactions and associations of individuals so that relationships can be described, and, from these, models can be derived. In addition to presenting the tools, Hal Whitehead illustrates their applicability using a wide range of real data on a variety of animal species—from bats and chimps to dolphins and birds. The techniques that Whitehead describes will be profitably adopted by scientists working with primates, cetaceans, birds, and ungulates, but the tools can be used to study societies of invertebrates, amphibians, and even humans. *Analyzing Animal Societies* will become a standard reference for those studying vertebrate social behavior and will give to these studies the kind of quality standard already in use in other areas of the life sciences.

"This comprehensive guide to methodology by a long-time leader in the field will be of great value to ethologists, behavioral ecologists, and other students of social behavior."

JOHN W. PEPPER, UNIVERSITY OF ARIZONA

"Throughout his long and productive research career, Hal Whitehead has consistently tackled some of the most difficult and fascinating questions about animal societies—such as cultural evolution and the evolution of social strategies in cetaceans. And he has made astonishing empirical contributions toward answering these questions in some of the world's most interesting and elusive research subjects. It is rare to find a researcher who asks such broad theoretical questions, collects hard-earned field data spanning decades, and then possesses the mathematical sophistication to appropriately analyze large and messy data sets. In this valuable book, he clearly spells out the latest

analytical techniques for describing and modeling constantly shifting relationships and social structures, and for answering questions about cultural transmission, bond-testing, social complexity, and the nuances of social dynamics in animal societies. His use of sample data sets from a variety of species to illustrate his points should help maintain interest even in readers who love the animals and the questions but fear the math." **SUSAN PERRY, UNIVERSITY OF CALIFORNIA, LOS ANGELES**

"Hal Whitehead has done it again. From his earlier superb work on social strategies of sperm whales and other deep divers to his seminal analyses of culture in marine mammals, he now expands on the technical quantitative social analysis tools he has both borrowed from others and developed himself. He guides the reader gently yet firmly through an amazingly detailed and up-to-date description of how to analyze societies in a fair and meaningful manner; all one needs is an inquisitive mind and a willingness to learn. Hal Whitehead appears somewhat of a magician to us mere mortals who study vertebrate societies: he combines superb capabilities in the disciplines of mathematics, statistics, network theory, programming, and behavioral ecology. Oh yes—he is also a fluid and entertaining writer, and is at home as well at the helm of his research sailing vessel, where (I suspect) many of his ideas for this book may have originated or been refined." **BERND WÜRSIG, TEXAS A&M UNIVERSITY**

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