The Ecology And Behavior Of Amphibians

This is the first modern textbook of sensory ecology in two decades, one of the most popular and rapidly growing subjects in biology. The topic deals with how animals capture (and send) information from their environment, and the sensory systems involved. It investigates the type of information that is gathered by animals, how it is used in a range of behaviours, and the evolution of such traits. Sensory ecology deals with both mechanistic questions (e.g. howsensory receptors capture information from the environment, and how the physical attributes of the environment affect information transmission) and functional questions (e.g. the adaptive significance ofthe information used by the animal to make a decision). Sensory ecology covers the full range of sensory systems and types of sensory information (sound, visual, chemical, magnetic, electric etc.). The latest research has dealt more explicitly with how sensory systems may actually drive evolutionary change, including the formation of new species. This book provides an introduction to the key ideas, theories, and examples, describes how sensory systems work, and explores the links between thesenses, animal signals, behaviour, and evolution.

This highly readable account of the ecological psychology movement makes its general ideas accessible to the beginning student and non-specialist. It describes the work of Roger Barker in the 'behaviour settings' of small American and English towns and the formulation of 'manning theory,' which concerns the number of people needed to 'operate and maintain' a particular setting. The author concludes by suggesting implications for everyday life and proposing different directions for ecological psychology.

The Ecology and Behavior of AmphibiansUniversity of Chicago Press

This readable text represents a much needed synthesis of ecological insight into animal behavior. The field of behavioral ecology is relatively new, having evolved from a combination of classical ethology, as developed by Lorenz and Tinbergen, and population ecology. Now for the first time, a single author integrates the vast literature on animal ecology and behavior into a conceptual whole. Exploring the theme of resource acquisitions, Morse combines the comparative approach to biology with models based on evolutionary theory. Secondary consequences of sexual selection and other selective pressures are considered in detail. Discussion of interspecific interactions and constraints is especially rich, as is the treatment of foraging theory, kinship theory, habitat selection and predator avoidance. Perhaps the book's greatest achievement, however, is its unparalleled ecological and evolutionary analysis of individual differences. Behavioral Mechanisms in Ecology will meet the teaching and reference needs of an extremely broad audience of professional biologists.

"For the newcomer to the literature and logic of human behavioral ecology, this book is a flat-out bonanza—entirely accessible, self-critical, largely free of polemic, and, above all, stimulating beyond measure. It's an extraordinary contribution. Our understanding of the foraging-farming dynamic may just have changed forever."—David Hurst Thomas, American Museum of Natural History

Consisting of more than six thousand species, amphibians are more diverse than mammals and are found on every continent save Antarctica. Despite the abundance and diversity of these animals, many aspects of the biology of amphibians remain unstudied or misunderstood. The Ecology and Behavior of Amphibians aims to fill this gap in the literature on this remarkable taxon. It is a celebration of the diversity of amphibian life and the ecological and behavioral adaptations that have made it a successful component of terrestrial and aquatic ecosystems. Synthesizing seventy years of research on amphibian biology, Kentwood D. Wells addresses all major areas of inquiry, including phylogeny, classification, and morphology; aspects of physiological ecology such as water and temperature relations, respiration, metabolism, and energetics; movements and orientation; communication and social behavior; reproduction and parental care; ecology and behavior of amphibian larvae and ecological aspects of metamorphosis; ecological impact of predation on amphibian populations and antipredator defenses; and aspects of amphibian community ecology. With an eye towards modern concerns, The Ecology and Behavior of Amphibians concludes with a chapter devoted to amphibian conservation. An unprecedented scholarly contribution to amphibian biology, this book is eagerly anticipated among specialists.

The first book-length exploration of behavioral mechanisms in evolutionary ecology, this ambitious volume illuminates long-standing questions about cause-and-effect relations between an animal's behavior and its environment. By focusing on biological mechanisms—the sum of an animal's cognitive, neural, developmental, and hormonal processes—leading researchers demonstrate how the integrated study of animal physiology, cognitive processes, and social interaction can yield an enriched understanding of behavior. With studies of species ranging from insects to primates, the contributors examine how various animals identify and use environmental resources and deal with ecological constraints, as well as the roles of learning, communication, and cognitive aspects of social interaction in behavioral evolution. Taken together, the chapters demonstrate how the study of internal mechanistic foundations of behavior in relation to their ecological and evolutionary contexts and outcomes provides valuable insight into such behaviors as predation, mating, and dispersal. Behavioral Mechanisms in Evolutionary Ecology shows how a mechanistic approach unites various levels of biological organization to provide a broader understanding of the biological bases of behavioral evolution.

Primate Ecology: Studies of Feeding and Ranging Behavior in Femurs, Monkeys and Apes describes the behavioral aspects of ecology, including activity patterning, food selection, and ranging behavior. The book is composed of 19 chapters; 17 of which are concerned with the ecology or behavior of particular social groups of primates, arranged in the taxonomic order of the species concerned. The final two chapters review some of the generalizations emerging from comparison of inter- and intraspecific differences in feeding and ranging behavior. The book aims to suggest areas of particular interest where research can be usefully developed.

Publisher description

The Ecology of Social Behavior explores the relationships between ecology and the origins and maintenance of social behavior. The chapters in this book suggest that a consideration of ecological factors is necessary to any paradigm that tries to explain the origins and maintenance of social behavior. Most also suggest that there are some trade-offs between ecology, genetics, and phylogeny in the development and persistence of specific social systems. The book is organized into five parts. Part I provides an overview of the main themes covered in the present volume. Part II contains papers on ecological interactions, including variation in group sizes of forest primates, group foraging, and the origin of monogamy in mammals and fishes. Part III examines the ecology of social mammals. These include the ecological conditions for philopatry and the relationship of habitat variability to sociality in yellow-bellied marmots. Part IV focuses on the ecology of social birds while Part V deals with the ecology of social arthropods.

""à required reading for anyone interested in the economy, ecology, and demography of human societies."" --American Journal of Human Biology ""This excellent book can serve both as a text¼book and as a scholarly reference."" --American Scientist
The third edition of this successful textbook looks again at theinfluence of natural selection on behavior - an animal's struggleto survive by exploiting resources, avoiding predators, andmaximizing reproductive success. In this edition, new examples areintroduced throughout, many illustrated with full colorphotographs. In addition, important new topics are added includingthe latest techniques of comparative analysis, the theory andapplication of DNA fingerprinting techniques, extensive newdiscussion on brood parasite/host coevolution, the latest ideas onsexual selection in relation to disease resistance, and a newsection on the intentionality of communication. Written in thelucid style for which these two authors are renowned, the text isenhanced by boxed sections illustrating important concepts and newmarginal notes that guide the reader through the text. This bookwill be essential reading for students taking courses in behavioralecology. The leading introductory text from the two most prominentworkers in the field. Second colour in the text. New section of four colour plates. Boxed sections to ilustrate difficult and importantpoints. New larger format with marginal notes to guide the readerthrough the text. Selected further reading at the end of each chapter.
Human interaction with the natural environment has a dual character. By turning increasing quantities of natural substances into physical resources, human beings might be said to have freed themselves from the constraints of low-technology survival pressures. However, the process has generated a new dependence on nature in the form of complex "socionatural systems," as Bennett calls them, in which human society and behavior are so interlocked with the management of the environment that small changes in the systems can lead to disaster. Bennett's essays cover a wide range: from the philosophy of environmentalism to the ecology of economic development; from the human impact on semi-arid lands to the ecology of Japanese forest management. This expanded paperback edition includes a new chapter on the role of anthropology in economic development.Bennett's essays exhibit an underlying pessimism: if human behavior toward the physical environment is the distinctive cause of environmental abuse, then reform of current management practices offers only temporary relief; that is, conservationism, like democracy, must be continually reaffirmed. Clearly presented and free of jargon, Human Ecology as Human Behavior will be of interest to anthropologists, economists, and environmentalists.
The study of coelenterates is now one of the most active fields of invertebrate zoology. There are many reasons for this, and not everyone would agree on them, but certain facts stand out fairly clearly. One of them is that many of the people who study coelenterates do so simply because they are interested in the animals for their own sake. This, however, would be true for other invertebrate groups and cannot by itself explain the current boom in coelenterate work. The main reasons for all this activity seem to lie in the considerable concentration of research effort and funding into three broad, general areas of biology: marine ecology, cellular-developmental biology and neurobiology, in all of which coelenterates have a key role to play. They are the dominant organisms, or are involved in an important way, in a variety of marine habitats, of which coral reefs are only one, and this automatically ensures their claims on the attention of ecologists and marine scientists. Secondly, the convenience of hydra and some other hydroids as experimental animals has long made them a natural choice for a variety of studies on growth, nutrition, symbiosis, morphogenesis and sundry aspects of cell biology. Finally, the phylogenetic position of the coelenterates as the lowest metazoans having a nervous system makes them uniquely interesting to those neurobiologists and behaviorists who hope to gain insights into the functioning of higher nervous systems by working up from the lowest level.
Sea otters and polar bears are carnivorous marine mammals that still resemble their terrestrial ancestors. Compared with Cetacea (whales and dolphins), Sirenia (dugongs and manatees), and Pinnipedia (seals, sea lions, and walrus), they are less adapted for an aquatic life and the most recently evolved among marine mammals. Sea otters are amphibious but seldom come ashore, and polar bears primarily occur on sea ice or along the shore. When at sea, both species spend most of their time swimming at the surface or making short, shallow dives when foraging or pursuing prey. Indeed, polar bears rarely pursue seals in water. Nevertheless, polar bears are powerful swimmers and will stalk seals from the water. As with many other large carnivores, they are solitary hunters. Although sea otters are gregarious and form aggregations at sea called rafts, they are primarily asocial. Except during mating, the principal interaction among sea otters occurs between a female and offspring during the six-month dependency period. In large carnivores (e.g., wolves and lions) that feed on ungulates, sociality and cooperation are favored because of the need to capture large prey and defend carcasses. Polar bears, which are the largest terrestrial carnivore, are solitary hunters of seals and are neither gregarious nor social. Males and females briefly associate during courtship and mating. During this time, males aggressively compete for females. At other times, males generally avoid each other except for aggregations of males that form while summering on land, and females with cubs avoid males, which are known for infanticide. As with sea otters, the interaction of polar bears outside of mating occurs between a female and her offspring during the 2-3 year dependency period. This interaction is critically important when altricial cubs are born in the winter den. This book provides new insight into the ethology and behavioral ecology of sea otters and polar bears. Each chapter reviews the discoveries of previous studies and integrates recent research using new techniques and technology. The authors also address historic and current anthropogenic challenges for their survival as climate change alters entire marine ecosystems.
Members of the Paridae family represent popular organisms for ornithological research. This is due to the flexibility to study this group of birds in both the lab and the natural environment. In contrast to previously published literature, this volume concentrates on research themes. The editor has invited a team of leading specialists to provide a synopsis of ecological and behavioural research, and to compare and contrast this with what is known from Old World members of this family (e.g. blue tit and great tit) as well as other avian groups.
This book concentrates on the marine mammalian group of Odontocetes, the toothed whales, dolphins, and porpoises. In 23 chapters, a total of 40 authors describe general patterns of ethological concepts of odontocetes in their natural environments, with a strong bent towards behavioral ecology. Examples are given of particularly well-studied species and species groups for which enough data exist, especially from the past 15 years. The aim is to give a modern flavor of present knowledge of ethology and behavior of generally large-brained behaviorally flexible mammals that have evolved quite separately from social mammals on land. As well, the plight of populations and species due to humans is described in multiple chapters, with the goal that an understanding of behavior can help to solve or alleviate at least some human-made problems.
This comprehensive introductory text integrates evolutionary, ecological, and demographic perspectives with new results from field studies and contemporary noninvasive molecular and hormonal techniques to understand how different primates behave and the significance of these insights for primate conservation. Each chapter is organized around the major research themes in the field,

with Strier emphasizing the interplay between theory, observations, and conservation issues. Examples are drawn from the "classic" primate field studies as well as more recent studies, including many previously neglected species, to illustrate the vast behavioral variation that exists across the primate order. Primate Behavioral Ecology 6th Edition integrates the impacts of anthropogenic activities on primate populations, including zoonotic disease and climate change, and considers the importance of behavioral flexibility for primate conservation. This fully updated new edition brings exciting new methods, theoretical perspectives, and discoveries together to provide an incomparable overview of the field of primate behavioral ecology and its applications to primate conservation. It is considered to be a "must read" for all students interested in primates.

Advances in the Study of Behavior was initiated over 40 years ago to serve the increasing number of scientists engaged in the study of animal behavior. That number is still expanding. This thematic volume makes another important "contribution to the development of the field" by bringing together material that aggregates studies conducted on the behavior of tropical animals. Advances in the Study of Behavior is now available online at ScienceDirect--full-text online from volume 30 onward.

Mountain goats have been among the least studied of North American ungulates, leaving wildlife managers with little information on which to base harvest strategies or conservation plans. This book offers the first comprehensive assessment of the ecology and behavior of mountain goats, setting forth the results of a remarkable 16-year longitudinal study of more than 300 marked individuals in a population in Alberta, Canada. The authors' thorough, long-term study allowed them to draw important conclusions about mountain goat ecology—including individual reproductive strategies, population dynamics, and sensitivity to human disturbance—and to use those conclusions in offering guidance for developing effective conservation strategies. Chapters examine: -habitat use, vegetation quality, and seasonal movements -sexual segregation and social organization -individual variability in yearly and lifetime reproductive success of females -age- and sex-specific survival and dispersal -reproductive strategies and population dynamics -management and conservation of mountain goats The book also draws on the rich literature on long-term monitoring of marked ungulates to explore similarities and differences between mountain goats and other species, particularly bighorn sheep and ibex. By monitoring a marked population over a long period of time, researchers were able to document changes in sex-age structure and identify factors driving population dynamics. Because it explores the links between individual life-history strategy and population dynamics in a natural setting, Mountain Goats will be an invaluable resource for wildlife managers, researchers in ecology and animal behavior, conservationists, population biologists, and anyone concerned with the ecology and management of natural populations, especially in alpine environments.

The Behavior and Ecology of Pacific Salmon and Trout explains the patterns of mate choice, the competition for nest sites, and the fate of the salmon after their death. It describes the lives of offspring during the months they spend incubating in gravel, growing in fresh water, and migrating out to sea to mature. This thorough, up-to-date survey should be on the shelf of everyone with a professional or personal interest in Pacific salmon and trout. Written in a technically accurate but engaging style, it will appeal to a wide range of readers, including students, anglers, biologists, conservationists, legislators, and armchair naturalists.

Comprehensive study of the wolf's habits, behavior, and relationship with other animals and the environment

Foraging is fundamental to animal survival and reproduction, yet it is much more than a simple matter of finding food; it is a biological imperative. Animals must find and consume resources to succeed, and they make extraordinary efforts to do so. For instance, pythons rarely eat, but when they do, their meals are large—as much as 60 percent larger than their own bodies. The snake's digestive system is normally dormant, but during digestion metabolic rates can increase fortyfold. A python digesting quietly on the forest floor has the metabolic rate of thoroughbred in a dead heat. This and related foraging processes have broad applications in ecology, cognitive science, anthropology, and conservation biology—and they can be further extrapolated in economics, neurobiology, and computer science. Foraging is the first comprehensive review of the topic in more than twenty years. A monumental undertaking, this volume brings together twenty-two experts from throughout the field to offer the latest on the mechanics of foraging, modern foraging theory, and foraging ecology. The fourteen essays cover all the relevant issues, including cognition, individual behavior, caching behavior, parental behavior, antipredator behavior, social behavior, population and community ecology, herbivory, and conservation. Considering a wide range of taxa, from birds to mammals to amphibians, Foraging will be the definitive guide to the field.

Combining breadth of coverage with detail, this logical and cohesive introduction to insect ecology couples concepts with a broad range of examples and practical applications. It explores cutting-edge topics in the field, drawing on and highlighting the links between theory and the latest empirical studies. The sections are structured around a series of key topics, including behavioral ecology; species interactions; population ecology; food webs, communities and ecosystems; and broad patterns in nature. Chapters progress logically from the small scale to the large; from individual species through to species interactions, populations and communities. Application sections at the end of each chapter outline the practicality of ecological concepts and show how ecological information and concepts can be useful in agriculture, horticulture and forestry. Each chapter ends with a summary, providing a brief recap, followed by a set of questions and discussion topics designed to encourage independent and creative thinking.

Understanding of the basic biology of owls is poor compared to that of other bird species. The Little Owl, Athene noctua, has become one of the best models for biological and conservation research, due to its commonness and the fact that it occupies nest-boxes very easily. In this unique book the authors synthesise the substantial literature, and detail current information regarding the Little Owl. They discuss its wide-ranging ecology, genetics and subspecies and population status by country. In addition, they outline a strategy and monitoring program for its conservation. The book features an outstanding bibliography of literature on the Little Owl, listing publications dated from 1769 to the present day, in many languages, including Russian, English, French, Dutch, German, Spanish and Italian. Whilst being an invaluable resource for academic researchers, its straightforward style holds undoubted appeal for amateurs and enthusiasts.

"The merits of this work are many. A rigorous integration of phylogenetic hypotheses into studies of adaptation, adaptive radiation, and coevolution is absolutely necessary and can change dramatically our collective 'gestalt' about much in evolutionary biology. The authors advance and illustrate this thesis beautifully. The writing is often lucid, the examples are plentiful and diverse, and the juxtaposition of examples from different biological systems argues forcefully for the validity of the thesis. Many new insights are offered here, and the work is usually accessible to both the practiced phylogeneticist and the naive ecologist."—Joseph Travis, Florida State University "[Phylogeny, Ecology, and Behavior] presents its arguments forcefully and cogently, with ample . . .support. Brooks and McLennan conclude as they began, with the comment that evolution is a result, not a process, and that it is the result of an interaction of a variety of processes, environmental and historical. Evolutionary explanations must consider all these components, else they are incomplete. As Darwin's explanations of descent with modification integrated genealogical and ecological information, so must workers now incorporate historical and nonhistorical, and biological and nonbiological, processes in their evolutionary perspective."—Marvalee H. Wake, Bioscience "This book is well-written and thought-provoking, and should be read by those of us who do not routinely turn to phylogenetic analysis when investigating adaptation, evolutionary ecology and co-evolution."—Mark R. MacNair, Journal of Natural History

Winner, 2011 Editorship Award, The Wildlife Society First published in 1988, Ecological and Behavioral Methods for the Study of Bats is

widely acknowledged as the primary reference for both amateur and professional bat researchers. Bats are the second most diverse group of mammals on the earth. They live on every continent except Antarctica, ranging from deserts to tropical forests to mountains, and their activities have a profound effect on the ecosystems in which they live. Despite their ubiquity and importance, bats are challenging to study. This volume provides researchers, conservationists, and consultants with the ecological background and specific information essential for studying bats in the wild and in captivity. Chapters detail many of the newest and most commonly used field and laboratory techniques needed to advance the study of bats, describe how these methods are applied to the study of the ecology and behavior of bats, and offer advice on how to interpret the results of research. The book includes forty-three chapters, fourteen of which are new to the second edition, with information on molecular ecology and evolution, bioacoustics, chemical communication, flight dynamics, population models, and methods for assessing postnatal growth and development. Fully illustrated and featuring contributions from the world's leading experts in bat biology, this reference contains everything bat researchers and natural resource managers need to know for the study and conservation of this wide-ranging, ecologically vital, and diverse taxon.

This book attempts a true synthesis of animal physiology, behaviour, and ecology by developing an empirical argument that describes the intimate connections between animal phenotype and environment, using the results of a long-term research programme on migrant shorebirds and their invertebrate prey.

'A fine, comprehensive survey of the ecology and habits of the wolf - his food, habitat, hunting, mating, social behavior and much more. Written in non-technical language, the book sets down just about everything that we know about this beautiful and - propaganda aside - shy animal, who, authorities agree, has never in this country attacked a man.' - The New York Times Book Review

Evolutionary Behavioral Ecology presents a comprehensive treatment of theevolutionary and ecological processes shaping behavior across a wide array of organisms and a diverse set of behaviors and is suitable as a graduate-level text and as a sourcebook for professional scientists.

In just the last few years, behavioral ecologists have begun to address issues in conservation biology. This volume is the first attempt to link these disciplines formally. Here leading researchers explore current topics in conservation biology and discuss how behavioral ecology can contribute to a greater understanding of conservation problems and conservation intervention programs. In each chapter, the authors identify a conservation issue, review the ways it has been addressed, review behavioral ecological data related to it, including their own, evaluate the strengths and weaknesses of the behavioral ecological approach, and put forward specific conservation recommendations. The chapters juxtapose different studies on a wide variety of taxonomic groups. A number of common themes emerge, including the ways in which animal mating systems affect population persistence, the roles of dispersal and inbreeding avoidance for topics such as reserve design and effective population size, the key role of humans in conservation issues, and the importance of baseline data for conservation monitoring and modeling attempts. Each chapter sheds new light on conservation problems, generates innovative avenues of interdisciplinary research, and shows how conservation-minded behavioral ecologists can apply their expertise to some of the most important questions we face today.