

Foundations Of Ecology Leslie A Real 9780226705941

"Physics and chemistry are distinguished from biology by the way generalizations are codified into theories tested by observation and experimentation. This work enumerates generalizations in ecology. It describes how the practice of science, in general, and ecology specifically, yields theories and laws." -- BOOK PUBLISHER WEBSITE.

"The Oxford Handbook of American Literary Realism offers 35 original essays of fresh interpretations of the artistic and political challenges of representing life accurately. Organized by topic and theme, essays draw upon recent scholarship in literary and cultural studies to offer an authoritative and in-depth reassessment of major and minor figures and the contexts that shaped their work. One set of essays explores realism's genesis and its connection to previous and subsequent movements. Others examine the inclusiveness of representation, the circulation of texts, and the aesthetic representation of science, time, space, and the subjects of medicine, the New Woman, and the middle class. Still others trace the connection to other arts--poetry, drama, illustration, photography, painting, and film--and to pedagogic issues in the teaching of realism"--

This is the first introductory anthology on the philosophy of ecology edited by an ecologist and a philosopher. It illustrates the range of philosophical approaches available to ecologists and provides a basis for understanding the thinking on which many of today's environmental ideas are founded. Collectively, these seminal readings make a powerful statement on the value of ecological knowledge and thinking in alleviating the many problems of modern industrial civilization. Issues covered include: the challenges of defining scientific ecology, tracing its genealogy, and distinguishing the science from various forms of "ecological-like" thinking the ontology of ecological entities and processes selected concepts of community, stability, diversity, and niche the methodology of ecology (rationalism and empiricism, reductionism and holism) the significance of evolutionary law for ecological science The application and interpretation of statistics are central to ecological study and practice. Ecologists are now asking more sophisticated questions than in the past. These new questions, together with the continued growth of computing power and the availability of new software, have created a new generation of statistical techniques. These have resulted in major recent developments in both our understanding and practice of ecological statistics. This novel book synthesizes a number of

these changes, addressing key approaches and issues that tend to be overlooked in other books such as missing/censored data, correlation structure of data, heterogeneous data, and complex causal relationships. These issues characterize a large proportion of ecological data, but most ecologists' training in traditional statistics simply does not provide them with adequate preparation to handle the associated challenges. Uniquely, *Ecological Statistics* highlights the underlying links among many statistical approaches that attempt to tackle these issues. In particular, it gives readers an introduction to approaches to inference, likelihoods, generalized linear (mixed) models, spatially or phylogenetically-structured data, and data synthesis, with a strong emphasis on conceptual understanding and subsequent application to data analysis. Written by a team of practicing ecologists, mathematical explanations have been kept to the minimum necessary. This user-friendly textbook will be suitable for graduate students, researchers, and practitioners in the fields of ecology, evolution, environmental studies, and computational biology who are interested in updating their statistical tool kits. A companion web site provides example data sets and commented code in the R language.

An Introduction

Classic Papers with Commentaries

Ecological Niches

Observation and Ecology

Perplexing Problems in Probability

Foundations of Ecology II

*Assembled here for the first time in one volume are forty classic papers that have laid the foundations of modern ecology. Whether by posing new problems, demonstrating important effects, or stimulating new research, these papers have made substantial contributions to an understanding of ecological processes, and they continue to influence the field today. The papers span nearly nine decades of ecological research, from 1887 on, and are organized in six sections: foundational papers, theoretical advances, synthetic statements, methodological developments, field studies, and ecological experiments. Selections range from Connell's elegant account of experiments with barnacles to Watt's encyclopedic natural history, from a visionary exposition by Grinnell of the concept of niche to a seminal essay by Hutchinson on diversity. Six original essays by contemporary ecologists and a historian of ecology place the selections in context and discuss their continued relevance to current research. This combination of classic papers and fresh commentaries makes *Foundations of Ecology* both a convenient reference to papers often cited today and an essential guide to*

the intellectual and conceptual roots of the field. Published with the Ecological Society of America.

*Students of nature around the world revere Eugene Odum as a founder and pioneer of ecosystem ecology. In this biography of Odum, Betty Jean Craige depicts the intellectual growth, creativity, and vision of the scientist who made the ecosystem concept central to his discipline and translated the principles of ecosystem ecology into lessons in preserving the natural environment. Placing Odum's achievements in historical context, Craige traces his life from his childhood through his education, his collaboration with his brother Howard T. Odum in developing methods to study ecosystems, his contributions to the field of radiation ecology, his emergence as an internationally distinguished educator of ecosystem ecology, and his environmental activism. Craige also describes Odum's role in the creation of the Savannah River Ecology Laboratory, the Marine Institute on Sapelo Island, and the Institute of Ecology at the University of Georgia, where he became identified with the statement "The ecosystem is greater than the sum of its parts." Odum's textbook *Fundamentals of Ecology* is a classic, published in numerous editions and translations worldwide. Odum achieved membership in the National Academy of Sciences, shared with his brother the prestigious Crafoord Prize for Ecology, accepted six honorary doctorates, and received numerous awards for environmental activities.*

Foundations of Biogeography provides facsimile reprints of seventy-two works that have proven fundamental to the development of the field. From classics by Georges-Louis LeClerc Compte de Buffon, Alexander von Humboldt, and Charles Darwin to equally seminal contributions by Ernst Mayr, Robert MacArthur, and E. O. Wilson, these papers and book excerpts not only reveal biogeography's historical roots but also trace its theoretical and empirical development. Selected and introduced by leading biogeographers, the articles cover a wide variety of taxonomic groups, habitat types, and geographic regions. Foundations of Biogeography will be an ideal introduction to the field for beginning students and an essential reference for established scholars of biogeography, ecology, and evolution. List of Contributors John C. Briggs, James H. Brown, Vicki A. Funk, Paul S. Giller, Nicholas J. Gotelli, Lawrence R. Heaney, Robert Hengeveld, Christopher J. Humphries, Mark V. Lomolino, Alan A. Myers, Brett R. Riddle, Dov F. Sax, Geerat J. Vermeij, Robert J. Whittaker

When we want advice from others, we often casually speak of "getting some feedback." But how many of us give a thought to what this phrase means? The idea of feedback actually dates to

World War II, when the term was developed to describe the dynamics of self-regulating systems, which correct their actions by feeding their effects back into themselves. By the early 1970s, feedback had become the governing trope for a counterculture that was reoriented and reinvigorated by ecological thinking. The Culture of Feedback digs deep into a dazzling variety of left-of-center experiences and attitudes from this misunderstood period, bringing us a new look at the wild side of the 1970s. Belgrad shows us how ideas from systems theory were taken up by the counterculture and the environmental movement, eventually influencing a wide range of beliefs and behaviors, particularly related to the question of what is and is not intelligence. He tells the story of a generation of Americans who were struck by a newfound interest in--and respect for--plants, animals, indigenous populations, and the very sounds around them, threading his tapestry with cogent insights on environmentalism, feminism, systems theory, and psychedelics. The Culture of Feedback repaints the familiar image of the '70s as a time of Me Generation malaise to reveal an era of revolutionary and hopeful social currents, driven by desires to radically improve--and feed back into--the systems that had come before.

Overshoot

Environmental Thought

Nature and the Environment in American History and Culture

Ecosystem Ecologist and Environmentalist

Chance and Change

Lobbying Communities in the American States

In 1970 Earth Day was first celebrated marking the dawn of worldwide environmental consciousness and the passing of many environmental laws. In part, these events were the result of the maturing of the science of ecology which recognized the interdependence of the web and cycles of nature. This volume explores the relationship between ecology and environmental law, beginning with a description of the two very different disciplines. This description is followed by a history of their episodic interactions: the early period of origin, the mid-century formative period from 1950 to 1970, the initial serious period of interaction after Earth Day in 1970 and the testing of the relationship during the next two decades. Utilizing a number of case studies, examinations of the key 'linkage persons', legal instruments and the migration of ecological concepts and frameworks, this book analyzes the final flowering of an ecosystem regime which embraces the connections between the two disciplines of ecology and environmental law. Concluding with an inventory of the problems posed by the relationship between the two disciplines and an agenda for future research, this clearly structured, comprehensive and stringent book is an essential resource for all serious scholars and students of ecology and environmental law.

Foundations of Tropical Forest Biology presents a timely collection of pioneering

work in the study of these diverse and fascinating ecosystems. Modeled on the highly successful Foundations of Ecology, this book consists of facsimiles of papers chosen by world experts in tropical biology as the "classics" in the field. The papers are organized into sections on related topics, each introduced with a discussion of their role in triggering subsequent research. Topics covered include ecological and evolutionary perspectives on the origins of tropical diversity; plant-animal interactions; patterns of species diversity and distribution of arthropods, vertebrates, and plants; forest dynamics and ecosystem ecology; conservation biology; and tropical forest management. Foundations of Tropical Forest Biology makes essential works in the development of tropical biology available in a convenient form to both senior scholars interested in the roots of their discipline and to students encountering the field for the first time, as well as to everyone concerned with tropical conservation.

Foundations of Ecology Classic Papers with Commentaries University of Chicago Press

This is the story of a profound revolution in the way biologists explore life's history, understand its evolutionary processes, and reveal its diversity. It is about life's smallest entities, deepest diversity, and greatest cellular biomass: the microbiosphere. Jan Sapp introduces us to a new field of evolutionary biology and a new brand of molecular evolutionists who descend to the foundations of evolution on Earth to explore the origins of the genetic system and the primary life forms from which all others have emerged. In so doing, he examines—from Lamarck to the present—the means of pursuing the evolution of complexity, and of depicting the greatest differences among organisms. The New Foundations of Evolution takes us into a world that classical evolutionists could never have imagined: a deep phylogeny based on three domains of life and multiple kingdoms, and created by mechanisms very unlike those considered by Darwin and his followers. Evolution by leaps seems to occur regularly in the microbial world where molecular evolutionists have shown the inheritance of acquired genes and genomes are major modes of evolutionary innovation. Revisiting the history of microbiology for the first time from the perspective of evolutionary biology, Sapp shows why classical Darwinian conceptions centering on questions of the origin of species were forged without a microbial foundation, why classical microbiologists considered it impossible to know the course of evolution, and classical molecular biologists considered the evolution of the molecular genetic system to be beyond understanding. In telling this stirring story of scientific iconoclasm, this book elucidates how the new evolutionary biology arose, what methods and assumptions underpin it, and the fiery controversies that continue to shape biologists' understanding of the foundations of evolution today.

Modeling Nature

Life Atomic

The Population Ecology of Interest Representation

Ecological Statistics

On the Tree of Life

Picturing Ecology

Why do species live where they live? What determines the abundance and diversity of species in a given area? What role do species play in the functioning of entire ecosystems? All of these questions share a single core concept—the ecological niche. Although the niche concept has fallen into disfavor among ecologists in recent years, Jonathan M. Chase and Mathew A. Leibold argue that the niche is an ideal tool with which to unify disparate research and theoretical approaches in contemporary ecology. Chase and Leibold define the niche as including both what an organism needs from its environment and how that organism's activities shape its environment. Drawing on the theory of consumer-resource interactions, as well as its graphical analysis, they develop a framework for understanding niches that is flexible enough to include a variety of small- and large-scale processes, from resource competition, predation, and stress to community structure, biodiversity, and ecosystem function. Chase and Leibold's synthetic approach will interest ecologists from a wide range of subdisciplines.

A prominent scientist and scholar documents and explains the thoughts, actions, and legacies of spiritual ecology's pioneers from ancient times to the present, demonstrating how the movement may offer the last chance to restore a healthy relationship between humankind and nature. • Clear, concise, and captivating essays on well-known, as well as little-known, pioneers in spiritual ecology • Chapter-long treatment of each individual's contributions, allowing for in-depth coverage • An extensive resource guide, including films and websites • An appendix listing approximately 100 pioneers in spiritual ecology

Indigenous knowledge has become a catchphrase in global struggles for environmental justice. Yet indigenous knowledges are often viewed, incorrectly, as pure and primordial cultural artifacts. This collection draws from African and North American cases to argue that the forms of knowledge identified as “indigenous” resulted from strategies to control environmental resources during and after colonial encounters. At times indigenous knowledges represented a “middle ground” of intellectual exchanges between colonizers and colonized; elsewhere, indigenous knowledges were defined through conflict and struggle. The authors demonstrate how people claimed that their hybrid

forms of knowledge were communal, religious, and traditional, as opposed to individualist, secular, and scientific, which they associated with European colonialism. *Indigenous Knowledge and the Environment* offers comparative and transnational insights that disturb romantic views of unchanging indigenous knowledges in harmony with the environment. The result is a book that informs and complicates how indigenous knowledges can and should relate to environmental policy-making. Contributors: David Bernstein, Derick Fay, Andrew H. Fisher, Karen Flint, David M. Gordon, Paul Kelton, Shepard Krech III, Joshua Reid, Parker Shipton, Lance van Sittert, Jacob Tropp, James L. A. Webb, Jr., Marsha Weisiger

The result of a lifetime in the field and in the classroom, *Chance and Change* challenges many of the tenets of establishment ecology. Charging that most of the environmental movement has ignored or rejected the changes in thinking that have infiltrated ecological theory since the mid 70s, William Drury presents a convincing case that disorder is what makes the natural world work, and that clinging to romantic notions of nature's grand design only saps the strength of the conservation movement. Drury's training in botany, geology, and zoology as well as his life-long devotion to work in the field gave him a depth and range of knowledge that few ecologists possess. This book opens our eyes to a new way of looking at the environment and forces us to think more deeply about nature and our role in it. *Chance and Change* is intended for the serious amateur naturalist or professional conservationist. Drury argues that chance and change are the rule, that the future is as unpredictable to other organisms as it is to us, and that natural disturbance is too frequent for equilibrium models to be useful. He stresses the centrality of natural selection in explaining the meaning of biology and insists the book and the laboratory must be checked at all times against the real world. Written in an easy, personal style, Drury's narrative comes alive with the landscape—the salt marshes, dunes, seashores, and forests—that he believed served as the best classroom. His novel approach of correlating landscape evolution with ecological principles offers a welcome corrective to discordance between what we observe in nature and what theory tells us we should see. *Behavioral Mechanisms in Evolutionary Ecology*

The New Foundations of Evolution

Ecological Thinking in Seventies America

Community Ecology

Spiritual Ecology: A Quiet Revolution

Broadening the Scope of Science to Understand a Complex World

In the Templeton Science and Religion Series, scientists from a wide range of fields distill their experience and knowledge into brief tours of their respective specialties. The series was launched in 2008 with the publication of Harold G. Koenig's book, *Medicine, Religion, and Health*. Since that time, the series editors J. Wentzel van Huyssteen and Khalil Chamcham have expanded it to nine titles covering everything from paleontology, to neuroscience, to technology. Also found in the bundle is the TSR Reader and a companion study guide. The books found in the bundle are: •*Medicine, Religion, and Health* by Harold G. Koenig, •*Neuroscience, Psychology and Religion* by Malcolm Jeeves and Warren Brown •*Technology and Religion* by Noreen Herzfeld •*Horizons of Cosmology* by Joseph Silk •*Paleontology* by Ian Tattersall •*Cognitive Science, Religion, and Theology* by Justin L. Barrett •*Ecology and the Environment* by R. J. Berry •*The Language of Genetics* by Denis Alexander •*Mathematics and Religion* by Javier Leach •*The Templeton Science and Religion Reader* •*The Templeton Science and Religion Study Guide* This bundle is only sold in e-book format!

The first history of population ecology traces two generations of science and scientists from the opening of the twentieth century through 1970. Kingsland chronicles the careers of key figures and the field's theoretical, empirical, and institutional development, with special attention to tensions between the descriptive studies of field biologists and later mathematical models. This second edition includes a new afterword that brings the book up to date, with special attention to the rise of "the new natural history" and debates about ecology's future as a large-scale scientific enterprise.

The classic papers that laid the foundations of modern ecology alongside commentaries by noted ecologists. The period of 1970 to 1995 was a time of tremendous change in all areas of ecology—from an increased rigor for experimental design and analysis to the reevaluation of paradigms, new models for understanding, and theoretical advances. Edited by ecologists Thomas E. Miller and Joseph Travis, *Foundations of Ecology II* includes facsimiles of forty-six papers from this period alongside expert commentaries that discuss a total of fifty-three key studies, addressing topics of diversity, predation, complexity, competition, coexistence, extinction, productivity, resources, distribution, abundance, and conservation. The result is more than a catalog of historic firsts; this book offers diverse perspectives on the foundational papers that led to today's ecological work. Like this book's 1991 predecessor, *Foundations of Ecology* edited by Leslie A. Real and James H. Brown, *Foundations of Ecology II* promises to be the essential primer for graduate students and practicing ecologists for decades to come. This book examines the role of photography and visual culture in the emergence of ecological science between 1895 and 1939.

The Philosophy of Ecology

The Environment and Science

A Short History

Ecology for Conservationists

Ecology

The Oxford Handbook of American Literary Realism

Introduction and background; Exploratory data analysis and graphics; Deterministic functions for ecological modeling; Probability and stochastic distributions for ecological modeling; Stochastic simulation and power analysis; Likelihood and all that; Optimization and all that; Likelihood examples;

Standar statistics revisited; Modeling variance; Dynamic models.

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.

After World War II, the US Atomic Energy Commission (AEC) began mass-producing radioisotopes, sending out nearly 64,000 shipments of radioactive materials to scientists and physicians by 1955. Even as the atomic bomb became the focus of Cold War anxiety, radioisotopes represented the government's efforts to harness the power of the atom for peace—advancing medicine, domestic energy, and foreign relations. In *Life Atomic*, Angela N. H. Creager tells the story of how these radioisotopes, which were simultaneously scientific tools and political icons, transformed biomedicine and ecology. Government-produced radioisotopes provided physicians with new tools for diagnosis and therapy, specifically cancer therapy, and enabled biologists to trace molecular transformations. Yet the government's attempt to present radioisotopes as marvelous dividends of the atomic age was undercut in the 1950s by the fallout debates, as scientists and citizens recognized the hazards of low-level radiation. Creager reveals that growing consciousness of the danger of radioactivity did not reduce the demand for radioisotopes at hospitals and laboratories, but it did change their popular representation from a therapeutic agent to an environmental poison. She then demonstrates how, by the late twentieth century, public fear of radioactivity overshadowed any appreciation of the positive consequences of the AEC's provision of radioisotopes for research and medicine.

Environmental thought has a rich and extensive history. Philosopher Robin Attfield guides readers through the key developments and debates that have defined the field from ancient times to the present. Attfield investigates ancient, medieval and early modern environmental contributions; Darwin and his successors; the debate in America involving Thoreau, Marsh, Muir and Pinchot; the foundation of the science of ecology in the Western world; and twentieth century trailblazers like Aldo Leopold and Rachel Carson. Central themes of key environmentalist works of the 1970s and 1980s are discussed, along with the major debates in environmental philosophy, including Lovelock's Gaia hypothesis. Attfield then turns to the current environmental emergency, encompassing the crises of climate change, air pollution and biodiversity loss, exploring contemporary intellectual responses to it. Each chapter concludes with a list of recommended readings, selected to invite readers to explore the book's topics in greater depth.

Environmental Thought: A Short History will become a pivotal text in its field, of interest to students and scholars of history, philosophy, ethics, geography, religion, biology and environmental studies.

Law and Ecology

The Culture of Feedback

Indigenous Knowledge and the Environment in Africa and North America

Foundations of Biogeography

Foundations of Tropical Forest Biology

Science and Solutions

"For three decades, *Foundations of Ecology*, edited by Leslie A. Real and James H. Brown, has served as an essential primer for graduate students and practicing ecologists, giving them access to the classic papers that laid the foundations of modern ecology alongside

commentaries by noted ecologists. Ecology has continued to evolve, and ecologists Thomas E. Miller and Joseph Travis offer here a freshly edited guide for a new generation of researchers. The period of 1970 to 1995 was a time of tremendous change in all areas of this discipline—from an increased rigor for experimental design and analysis and the reevaluation of paradigms to new models for understanding, to theoretical advances. Foundations of Ecology II includes facsimiles of forty-six papers from this period alongside expert commentaries that discuss a total of fifty-three key studies, addressing topics of diversity, predation, complexity, competition, coexistence, extinction, productivity, resources, distribution, and abundance. The result is more than a catalog of historic firsts; this book offers diverse perspectives on the foundational papers that led to today's ecological work"--

By including ecological concerns in the design process from the outset, architecture can enhance life. Author Brook Muller understands how a designer's predispositions and poetic judgement in dealing with complex and dynamic ecological systems impact the "greenness" of built outcomes. Ecology and the Architectural Imagination offers a series of speculations on architectural possibility when ecology is embedded from conceptual phases onward, how notions of function and structure of ecosystems can inspire ideas of architectural space making and order, and how the architect's role and contribution can shift through this engagement. As an ecological architect working in increasingly dense urban environments, you can create diverse spaces of inhabitation and connect project scale living systems with those at the neighborhood and region scales. Equipped with ecological literacy, critical thinking and collaboration skills, you are empowered to play important roles in the remaking of our cities.

'The editors of this handbook have brought together 58 of the world's greatest environmental systems experts. These professionals have, in 46 specific topic headings, divided into six major sections, provided very insightful information and guidance as to what industrial ecology entails, how it can be implemented, and its benefits . . . a very valuable tool . . . This book provides essential information to mid- and top-level management that can enable industry to make more prudent business decisions regarding the manufacturing of its products.' - Robert John Klancko, Environmental Practice Industrial ecology is coming of age and this superb book brings together leading scholars to present a state-of-the-art overviews of the subject.

This examination of lobbying communities explores how interest group populations are constructed and how they influence politics and public policy. By examining how populations of interest groups are comprised, this work fills an important gap between existing theories of the origins of individual interest groups and studies of interest group influence. The population ecology model of interest communities developed here builds on insights first developed in population biology and later employed by organizational ecologists. The model's central premise is that it is the environmental forces confronting interest organizations that most directly shape the contours of interest populations. After examining the demography of interest organizations in the fifty American states, the population ecology model is used to account for variations in the density and diversity of their interest communities, the nature of competition among similar interest organizations to establish viable niches, and the impact of alternative configurations of interest communities on the legislative process and the policies it produces. These empirical findings suggest that the environment of interest communities is highly constraining, limiting their size, composition, and potential impact on politics. Virginia Gray is Professor of Political Science, University of Minnesota. David Lowery is Burton Craige Professor of Political Science, University of North Carolina at Chapel Hill.

Species Diversity in Space and Time

Social Impact and Interaction

A History of Radioisotopes in Science and Medicine

A Handbook of Industrial Ecology

So Glorious a Landscape

Festschrift in Honor of Harry Kesten
Biodiversity.

Describes the relationship between the environmental sciences and society. By studying the many ways diverse peoples have changed, shaped, and conserved the natural world over time, environmental historians provide insight into humanity's unique relationship with nature and, more importantly, are better able to understand the origins of our current environmental crisis. Beginning with the precolonial land-use practice of Native Americans and concluding with our twenty-first century concerns over our global ecological crisis, *American Environmental History* addresses contentious issues such as the preservation of the wilderness, the expulsion of native peoples from national parks, and population growth, and considers the formative forces of gender, race, and class. Entries address a range of topics, from the impact of rice cultivation, slavery, and the growth of the automobile suburb to the effects of the Russian sea otter trade, Columbia River salmon fisheries, the environmental justice movement, and globalization. This illustrated reference is an essential companion for students interested in the ongoing transformation of the American landscape and the conflicts over its resources and conservation. It makes rich use of the tools and resources (climatic and geological data, court records, archaeological digs, and the writings of naturalists) that environmental historians rely on to conduct their research. The volume also includes a compendium of significant people, concepts, events, agencies, and legislation, and an extensive bibliography of critical films, books, and Web sites.

Community ecology has undergone a transformation in recent years, from a discipline largely focused on processes occurring within a local area to a discipline encompassing a much richer domain of study, including the linkages between communities separated in space (metacommunity dynamics), niche and neutral theory, the interplay between ecology and evolution (eco-evolutionary dynamics), and the influence of historical and regional processes in shaping patterns of biodiversity. To fully understand these new developments, however, students continue to need a strong foundation in the study of species interactions and how these interactions are assembled into food webs and other ecological networks. This new edition fulfills the book's original aims, both as a much-needed up-to-date and accessible introduction to modern community ecology, and in identifying the important questions that are yet to be answered. This research-driven textbook introduces state-of-the-art community ecology to a new generation of students, adopting reasoned and balanced perspectives on as-yet-unresolved issues. *Community Ecology* is suitable for advanced undergraduates, graduate students, and researchers seeking a broad, up-to-date coverage of ecological concepts at the community level.

From Science to Synthesis
Contemporary Theory and Application
The Ecological Basis of Revolutionary Change

Eugene Odum

The Philosophical Foundations of Ecological Civilization

American Environmental History

Harry Kesten has had a profound influence on probability theory for over 30 years. To honour his achievements a number of prominent probabilists have written survey articles on a wide variety of active areas of contemporary probability, many of which are closely related to Kesten's work.

The global ecological crisis is the greatest challenge humanity has ever had to confront, and humanity is failing. The triumph of the neo-liberal agenda, together with a debauched 'scientism', has reduced nature and people to nothing but raw materials, instruments and consumers to be efficiently managed in a global market dominated by corporate managers, media moguls and technocrats. The arts and the humanities have been devalued, genuine science has been crippled, and the quest for autonomy and democracy undermined. The resultant trajectory towards global ecological destruction appears inexorable, and neither governments nor environmental movements have significantly altered this, or indeed, seem able to. The Philosophical Foundations of Ecological Civilization is a wide-ranging and scholarly analysis of this failure. This book reframes the dynamics of the debate beyond the discourses of economics, politics and techno-science. Reviving natural philosophy to align science with the humanities, it offers the categories required to reform our modes of existence and our institutions so that we augment, rather than undermine, the life of the ecosystems of which we are part. From this philosophical foundation, the author puts forth a manifesto for transforming our culture into one which could provide an effective global environmental movement and provide the foundations for a global ecological civilization.

So Glorious a Landscape: Nature and the Environment in American History and Culture surveys the vast and interdisciplinary subject of American natural and environmental studies. It examines the literary landscape that has inspired a local, regional, and national sense of place; explores the dynamic meaning and significance of nature across time, place, culture, and gender; and looks at the essence and history of environmental change. The first all-encompassing introductory survey of environmental history and cultural studies, this volume provides students and scholars with carefully chosen selections from major essayists, naturalists, preachers, geographers, novelists, scientists, and historians whose works have shaped the fields of literary ecology and environmental history. The essays trace the changing American landscape and ideas about nature from the seventeenth century to the present. By analyzing a range of material, So Glorious a Landscape provides a fresh perspective on what nature is in American life, what forces have shaped its profound place and changing definition, and what the work of environmental historians tells about the relationship of nature, culture, and power in America. So Glorious a

Landscape is an excellent resource for courses in American studies, environmental history, and American culture.

Road Ecology links ecological theories and concepts with transportation planning, engineering, and travel behavior. With more than 100 illustrations and examples from around the world, it is an indispensable and pioneering work for anyone involved with transportation.

Foundations of Ecology

Photography and the birth of a new science

Linking Classical and Contemporary Approaches

Road Ecology

A Quiet Revolution

Templeton Science and Religion Book Series Bundle

Our day-to-day experiences over the past decade have taught us that there must be limits to our tremendous appetite for energy, natural resources, and consumer goods. Even utility and oil companies now promote conservation in the face of demands for dwindling energy reserves. And for years some biologists have warned us of the direct correlation between scarcity and population growth. These scientists see an appalling future riding the tidal wave of a worldwide growth of population and technology. A calm but unflinching realist, Catton suggests that we cannot stop this wave - for we have already overshot the Earth's capacity to support so huge a load. He contradicts those scientists, engineers, and technocrats who continue to write optimistically about energy alternatives. Catton asserts that the technological panaceas proposed by those who would harvest from the seas, harness the winds, and farm the deserts are ignoring the fundamental premise that "the principals of ecology apply to all living things." These principles tell us that, within a finite system, economic expansion is not irreversible and population growth cannot continue indefinitely. If we disregard these facts, our sagging American Dream will soon shatter completely.

The need to understand and address large-scale environmental problems that are difficult to study in controlled environments—issues ranging from climate change to overfishing to invasive species—is driving the field of ecology in new and important directions. *Observation and Ecology* documents that transformation, exploring how scientists and researchers are expanding their methodological toolbox to incorporate an array of new and reexamined observational approaches—from traditional ecological knowledge to animal-borne sensors to genomic and remote-sensing technologies—to track, study, and understand current environmental problems and their implications. The authors paint a clear picture of what observational approaches

to ecology are and where they fit in the context of ecological science. They consider the full range of observational abilities we have available to us and explore the challenges and practical difficulties of using a primarily observational approach to achieve scientific understanding. They also show how observations can be a bridge from ecological science to education, environmental policy, and resource management. Observations in ecology can play a key role in understanding our changing planet and the consequences of human activities on ecological processes. This book will serve as an important resource for future scientists and conservation leaders who are seeking a more holistic and applicable approach to ecological science.

Ecological Models and Data in R

Ecology and the Architectural Imagination

Laws, Theories, and Patterns in Ecology

The Rise of the Ecosystem Regime

A manifesto for the future