

## Principles Of Conservation Biology

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.

From its inception, the U.S. Department of the Interior has been charged with a conflicting mission. One set of statutes demands that the department must develop America's lands, that it get our trees, water, oil, and minerals out into the marketplace. Yet an opposing set of laws orders us to conserve these same resources, to preserve them for the long term and to consider the noncommodity values of our public landscape. That dichotomy, between rapid exploitation and long-term protection, demands what I see as the most significant policy departure of my tenure in office: the use of science-interdisciplinary science-as the primary basis for land management decisions. For more than a century, that has not been the case. Instead, we have managed this dichotomy by compartmentalizing the American landscape. Congress and my predecessors handled resource conflicts by drawing enclosures: "We'll create a national park here," they said, "and we'll put a wildlife refuge over there." Simple enough, as far as protection goes. And outside those protected areas, the message was equally simplistic: "Y'all come and get it. Have at it." The nature and the pace of the resource extraction was not at issue; if you could find it, it was yours.

Timothy P. Duane documents the impact of rapid population growth on the culture, economy, and ecology of the Sierra Nevada since the late 1960s. He also recommends innovative policies for mitigating the negative effects of future population growth in this spectacular but threatened region, as well as throughout the rural West.

An examination of nature's extraordinary biological diversity and the human activities that threaten it. \* 200+ A-Z detailed entries on Earth's ecosystems, major groups of organisms, threats to biodiversity, and academic disciplines

related to the study of biodiversity \* Contributions from 50 recognized authorities from the fields of anthropology, biology, botany, earth science, ecology, evolution, and more \* 150 photographs of key people, animals, and organisms; line drawings; tables, charts, and graphs including the major families of birds, the effects of agricultural intensity on biodiversity, and the number of years needed to add each billion to the world's population \* Four major overview essays explaining what biodiversity is, why it is important, how it is threatened, and the Sixth Global Extinction

Anyone working in biodiversity conservation or field ecology should understand and utilize the common-sense process of scientific inquiry: observing surroundings, framing questions, answering those questions through well-designed studies, and, in many cases, applying results to decision making. Yet the interdisciplinary nature of conservation means that many workers are not well versed in the methods of science and may misunderstand or mistrust this indispensable tool. *Designing Field Studies for Biodiversity Conservation* addresses that problem by offering a comprehensible, practical guide to using scientific inquiry in conservation work. In an engaging and accessible style, award-winning tropical ecologist and teacher Peter Feinsinger melds concepts, methods, and intellectual tools into a unique approach to answering environmental questions through field studies. Focusing on the fundamentals of common sense, independent thinking, and natural history, he considers: framing the question and designing the study interpreting and applying results through judicious use of statistical inference taking into account the natural history of plants, animals, and landscapes monitoring and assessing progress through approaches such as "bioindicator species" or "species diversity measures" helping other interested parties (park guards, local communities, school teachers) use scientific inquiry in addressing their own concerns Detailed appendixes explain technical issues, while numerous sidebars and illustrations provide important background and thought-provoking exercises. Throughout, the author challenges the reader to integrate conceptual thinking with on-the-ground practice in order to make conservation truly effective. Feinsinger concentrates on examples from Latin America but stresses that the approach applies to local conservation concerns or field biology questions in any landscape. *Designing Field Studies for Biodiversity Conservation* is an essential handbook for staff and researchers working with conservation institutions or projects worldwide, as well as for students and professionals in field ecology, wildlife biology, and related areas.

In the new edition of this highly successful book, Malcolm Hunter and new co-author James Gibbs offer a thorough introduction to the fascinating and important field of conservation biology, focusing on what can be done to maintain biodiversity through management of ecosystems and populations. Starting with a succinct look at conservation and biodiversity, this book progresses to contend with some of the subject's most complex topics, such as mass extinctions,

ecosystem degradation, and over exploitation. Discusses social, political, and economic aspects of conservation biology. Thoroughly revised with over six hundred new references and web links to many of the organizations involved in conservation biology, striking photographs and maps. Artwork from the book is available to instructors online at [www.blackwellpublishing.com/hunter](http://www.blackwellpublishing.com/hunter) and by request on CD-ROM.

Reflecting what a new generation of conservation biologists is doing and thinking, this vital and far ranging second edition explores where conservation biology is heading. It challenges many conventions of conservation biology by exposing certain weaknesses of widely accepted principles. Combining contributions from both the school and the new breed of conservation biologists, this insightful text focuses primarily on topics that are integral to the daily activities of conservation biologists. Several chapters address ecosystem restoration and biotic invasions as well as the mechanics of population viability analyses, which are now a routine facet of conservation efforts. A case history approach is implemented throughout the book, with the use of practical real-world examples. Furthermore, an in-depth look at quantitative analyses is presented, allowing for models and mathematical analyses to pinpoint limitations in existing data and guide research toward those aspects of biology that are most likely to be critical to the dynamics of a species or an ecosystem.

The signs of economic change loom large in the mountain West as shuttered mines and lumber mills are overshadowed by luxurious homes sprouting on valley bottoms and ridge lines. This perceptive book explains these changes, assesses their effects on the natural environment, and gauges the reactions of local communities. Drawing on concepts from economics, environmental ethics, and conservation biology, Booth suggests that the ultimate solution lies in re-directing population growth away from rural areas to reinvigorated and environmentally attractive ecological cities and to increase the density of development within rural areas themselves. Policymakers, activists, and local citizens concerned with rural sprawl will find this book an invaluable resource. Visit our website for sample chapters!

This volume is a comprehensive treatment of how the principles of ecology and conservation biology can be used to maximize biological control. Conservation Biological Control presents various means to modify or manipulate the environment to enhance the activities of natural enemies of pests. It establishes a conceptual link between ecology and the agricultural use of agents for biological control, and discusses both theoretical issues as well as practical management concerns. Certain to be interesting to ecologists and entomologists, this volume will also appeal to scientists, faculty, researchers and students interested in pest management, horticulture, plant sciences, and agriculture. Contains chapters by an international team of leading authorities Establishes a conceptual link between ecology and the agricultural use of agents for biological control Discusses both theoretical issues as well as practical management concerns Provides specific

examples of how conservation principles are used to maximize the biological control of pests

This impressive author team brings the wealth of advances in conservation genetics into the new edition of this introductory text, including new chapters on population genomics and genetic issues in introduced and invasive species. They continue the strong learning features for students - main points in the margin, chapter summaries, vital support with the mathematics, and further reading - and now guide the reader to software and databases. Many new references reflect the expansion of this field. With examples from mammals, birds,...

Die Hälfte der Erdoberfläche der Natur zu überlassen – das ist die Forderung des weltberühmten Biologen Edward O. Wilson. Sein Buch ist das Testament eines großen Forschers und Schriftstellers, der wie kein anderer erkannt hat, dass der Mensch trotz aller unübersehbaren Fortschritte eine biologische Spezies bleibt, die den früheren Lebensbedingungen auf unserem Planeten besser angepasst ist als der Umwelt, die wir gerade erschaffen. Geschichte zu haben ist kein Privileg des Menschen. Und dennoch ignorieren wir die Geschichten von Millionen anderen Arten, die durch unser Verhalten vom Aussterben bedroht sind. Wilson ist davon überzeugt, dass wir nur dann den lebendigen Anteil unserer Umwelt retten und die für unser eigenes Überleben nötige Stabilität herstellen können, wenn wir den halben Planeten zum Naturschutzgebiet erklären. Wenn die Menschheit sich nicht sehr viel mehr Wissen über die globale Lebensvielfalt aneignet und sich nicht schnell dazu entschließt, sie zu schützen, dann werden wir schon bald die meisten Arten, in denen sich das Leben auf der Erde manifestiert, unwiederbringlich verlieren.

For over 350 million years, thousands of species of amphibians have lived on earth, but since the 1990s they have been disappearing at an alarming rate, in many cases quite suddenly and mysteriously. What is causing these extinctions? What role do human actions play in them? What do they tell us about the overall state of biodiversity on the planet? In *Extinction in Our Times*, James Collins and Martha Crump explore these pressing questions and many others as they document the first modern extinction event across an entire vertebrate class, using global examples that range from the Sierra Nevada of California to the rainforests of Costa Rica and the Mediterranean coast of North Africa. Joining scientific rigor and vivid storytelling, this book is the first to use amphibian decline as a lens through which to see more clearly the larger story of climate change, conservation of biodiversity, and a host of profoundly important ecological, evolutionary, ethical, philosophical, and sociological issues.

Completely revised, the 4th edition of this textbook has been expanded to emphasise both terrestrial and marine conservation issues as well as efforts in the US and across the globe.

This edited volume will provide a treatment of evolutionary conservation biology that introduces and explains major concepts and also unifies recent theoretical and empirical advances.

This important new book addresses key topics in contemporary conservation biology. Written by an internationally renowned team of authors, *Key Topics in Conservation Biology* explores cutting-edge issues in modern biodiversity conservation, including controversial subjects such as rarity and prioritization, conflict between people and wildlife, the human aspect of conservation, the relevance of animal welfare, and the role of nongovernment organizations. *Key Topics* also tackles the management of wildlife diseases, and examines the impact of bushmeat extraction and the role of hunting in the conservationist's toolbox. Other essays explore basic tools of conservation biology, such as computer modeling, conservation genetics, metapopulation processes, and the ingenious use of hi-tech equipment. Each topic is explored by three top international experts, assembled to bring their cross-cutting knowledge to a penetrating synthesis of the issues from both theoretical and practical perspectives. The interdisciplinary nature of biodiversity conservation is reflected throughout the book. Each essay examines the fundamental principles of the topic, the methodologies involved and, crucially, the human dimension. In this way, *Key Topics in Conservation Biology* embraces the issues from cutting-edge ecological science to policy, environmental economics, governance, ethics, and the practical issues of implementation. *Key Topics in Conservation Biology* will be a valuable resource in universities and colleges, government departments, and conservation agencies. It is aimed particularly at senior undergraduate and graduate students in conservation biology and wildlife management, and those taking Masters degrees in any field relevant to conservation. Conservation practitioners, policy-makers, and the wider general public eager to understand more about important environmental issues will also find this book invaluable.

Fred Van Dyke's new textbook, *Conservation Biology: Foundations, Concepts, Applications*, 2nd Edition, represents a major new text for anyone interested in conservation. Drawing on his vast experience, Van Dyke's organizational clarity and readable style make this book an invaluable resource for students in conservation around the globe. Presenting key information and well-selected examples, this student-friendly volume carefully integrates the science of conservation biology with its implications for ethics, law, policy and economics.

This volume incorporates case studies that explore past and current land use decisions on both public and private lands, and includes practical approaches and tools for land use decision-making. The most important feature of the book is the linking of ecological theory and principle with applied land use decision-making. The theoretical and empirical are joined through concrete case studies of actual land use decision-making processes.

"The book is, first, a study of how people decide to conserve or convert resources. Without worrying about the characteristics of particular resources, we ask when and for how long it may be optimal to conserve resources. In other words, we consider the general principles involved in making conservation decisions. The book is, second, a study of the conservation of resources of the natural environment. This includes both directly exploited resources such as agricultural soils, minerals, forests, fish stocks and the like, and the species and ecosystems put at risk when people choose to convert natural habitat, or to discharge waste products to water, land, or air. Conservation is as much about the problem of how much or how little to extract from the environment as it is about how much to leave intact. The book is, third, a study of the context in which

people make conservation decisions. Just as the decisions people make about investment in financial assets are influenced by the tax rules established in different countries so, too, decisions about the conservation of natural resources are influenced by property rights, laws, and customs. This includes environmental regulations within countries, and environmental agreements between countries. We consider how conservation relates to environmental governance, and how governance structures have evolved over time. We have aimed the book at three audiences. The first is graduate students in any of the disciplines bearing on conservation. While the arguments may be most familiar to those studying environmental, resource, or ecological economics, it is intended to be accessible to geographers, ecologists, conservation biologists, political scientists, those studying environmental law, and to those in the comparatively new field of sustainability science. The second audience we have in mind is conservation practitioners, and professionals whose remit includes the management of the natural environment and the use of natural resources. We hope that the book will help those charged with the conservation of the natural environment to think about the trade-offs involved, the better to balance the protection of endangered species and other societal goals, like economic development or poverty alleviation. The third audience we have in mind is the substantial environmentally informed and aware general public who are interested in digging beneath the superficial treatment of conservation often encountered in the media. For people who want to understand the balance that should be struck between preservation and exploitation, between the protection of beneficial species and the control of harmful species, the book offers a set of principles that can be applied in most circumstances"--

From the snub-nosed monkeys of China to the mountain gorillas of central Africa, our closest nonhuman relatives are in critical danger worldwide. A recent report, for example, warns that nearly 20 percent of the world's primates may go extinct within the next ten or twenty years. In this book Guy Cowlshaw and Robin Dunbar integrate cutting-edge theoretical advances with practical management priorities to give scientists and policymakers the tools they need to help keep these species from disappearing forever. *Primate Conservation Biology* begins with detailed overviews of the diversity, life history, ecology, and behavior of primates and the ways these factors influence primate abundance and distribution. Cowlshaw and Dunbar then discuss the factors that put primates at the greatest risk of extinction, especially habitat disturbance and hunting. The remaining chapters present a comprehensive review of conservation strategies and management practices, highlighting the key issues that must be addressed to protect primates for the future.

Broad-scale conservation of habitats is increasingly being recognized as a more effective means of protecting species and landscapes than single-species preservation efforts. While interest in the approach has grown tremendously in recent years, it remains controversial and the science behind it has yet to be fully developed. In *The Science of Conservation Planning*, three of the nation's leading conservation biologists explore the role of the scientist in the planning process and present a framework and guidelines for applying science to regional habitat-based conservation planning. Chapters consider: history and background of conservation planning efforts criticisms of science in conservation planning principles of conservation biology that apply to conservation planning detailed examination of conservation plans specific

recommendations for all parties involved. The recommendations, interpretations, and questions provided are thoroughly based in the science of conservation biology, and the framework presented is adaptable to allow for revision and improvement as knowledge is gained and theories refined. The Science of Conservation Planning will serve as a model for the application of conservation biology to real-life problems, and can lead to the development of scientifically and politically sound plans that are likely to achieve their conservation goals, even in cases where biological and ecological information is limited. The book is essential for scientists at all levels, including agency biologists, academic scientists, environmental consultants, and scientists employed by industry and conservation groups. It is also a valuable resource for elected officials and their staffs, environmentalists, developers, students, and citizen activists involved with the complex and contentious arena of conservation planning.

This 2004 collection of essays deals with the foundation and historical development of population biology and its relationship to population genetics and population ecology on the one hand and to the rapidly growing fields of molecular quantitative genetics, genomics and bioinformatics on the other. Such an interdisciplinary treatment of population biology has never been attempted before. The volume is set in a historical context, but it has an up-to-date coverage of material in various related fields. The areas covered are the foundation of population biology, life history evolution and demography, density and frequency dependent selection, recent advances in quantitative genetics and bioinformatics, evolutionary case history of model organisms focusing on polymorphisms and selection, mating system evolution and evolution in the hybrid zones, and applied population biology including conservation, infectious diseases and human diversity. This is the third of three volumes published in honour of Richard Lewontin.

This set of exercises has been created expressly for students and teachers of conservation biology and wildlife management who want to have an impact beyond the classroom. The book presents a set of 32 exercises that are primarily new and greatly revised versions from the book's successful first edition. These exercises span a wide range of conservation issues: genetic analysis, population biology and management, taxonomy, ecosystem management, land use planning, the public policy process and more. All exercises discuss how to take what has been learned and apply it to practical, real-world issues. Accompanied by a detailed instructor's manual and a student website with software and support materials, the book is ideal for use in the field, lab, or classroom. Also available: *Fundamentals of Conservation Biology*, 3rd edition (2007) by Malcolm L Hunter Jr and James Gibbs, ISBN 9781405135450 *Saving the Earth as a Career: Advice on Becoming a Conservation Professional* (2007) by Malcolm L Hunter Jr, David B Lindenmayer and Aram JK Calhoun, ISBN 9781405167611

*Principles of Conservation Biology*, Third Edition is a complete revision of the most comprehensive textbook on conservation biology. Written by leading experts in the field, it is intended for use in conservation biology courses at the advanced undergraduate and graduate levels, as well as by researchers and practitioners. It assumes a basic background in biology and ecology. The text introduces the major themes and concepts of the diverse and dynamic field of conservation biology. The biological and social underpinnings of conservation problems and potential solutions are interwoven throughout the text, which is divided into 4 sections: foundations of the

field, threats to biodiversity, contexts for conservation, and practical applications of conservation biology in a real and complex world. Guest essays and case studies provide a diversity of perspectives and real-world examples that add insight and provoke discussion. The Third Edition features a wholly revised organization, emphasising both analyses of different categories of threat and approaches to conservation. Coverage has been expanded to emphasise both terrestrial and marine conservation issues, and efforts in the US and across the globe. The book is richly illustrated, and concludes with an extensive glossary of useful terms and a large bibliography that has proved a valuable reference for students and researchers. The earth's biodiversity currently faces an extinction crisis that is unprecedented. Conservationists attempt to intervene in the extinction process either locally by protecting or restoring important species and habitats, or at national and international levels by influencing key policies and promoting debate. Reliable information is the foundation upon which these efforts are based, which places research at the heart of biodiversity conservation. The role of research in such conservation is diverse. It includes understanding why biodiversity is important, defining 'units' of biodiversity, priority-setting for species and sites, managing endangered and declining populations, understanding large-scale processes, making predictions about the future and interfacing with training, education, public awareness and policy initiatives. Using examples from a wide range of bird conservation work worldwide, researchers consider the principles underlying these issues, and illustrate how these principles have been applied to address actual conservation problems for students, practitioners and researchers in conservation biology. /ñ¿F.

Das erste Lehrbuch zur Ökologie der Wirbeltiere Der Wolf frisst einen Elch, der Luchs ein Reh und der Habicht einen jungen Waldkauz. Was bedeutet das für die Bestände der Beutetiere? Vögel und Säugetiere zeigen als endotherme Wirbeltiere viele Gemeinsamkeiten in ihrer Biologie. Ausgehend von den theoretischen Grundlagen der Ökologie und mit einem konsequent evolutionsbiologischen Ansatz behandelt «Ökologie der Wirbeltiere» die Ernährung unter ökophysiologischen und verhaltensökologischen Aspekten, die Fortpflanzung, die räumliche Ökologie auf allen Skalenebenen, Wanderungen, die Populationsbiologie sowie die Interaktionen zwischen Arten, nämlich Konkurrenz, Prädation und Parasiten, und schließt mit einem Kapitel zur Naturschutzbiologie. Die theoretischen Grundlagen sind stets mit den aktuellen empirischen Befunden verknüpft; diesen wird ein großes Gewicht beigemessen. Dieser Titel ist auf verschiedenen e-Book-Plattformen (Amazon, Apple, Libri, Thalia) auch als e-Pub-Version für mobile Lesegeräte verfügbar.

This book is intended to provide information to those who wish to interact with the landbase in an ecologically sustainable manner. Practitioners charged with the administration of land-based programs in industry and government will find the information presented useful. It should also be a resource for many community groups involved in land-use decision-making. Humans continue to use forests and make decisions about land use without perfect information. Conservation Biology Principles for Forested Landscapes is intended to enable the improvement of planning and decision-making processes by providing ecological information on issues of forest use. Current approaches are not working. Where information exists on new, ecologically sustainable approaches, practitioners should switch. Where the information on a better

approach is not yet available, practitioners should replace the current, inappropriate approach with a variety of flexible ones that offer the opportunity to change with new knowledge.

In the new edition of this highly successful book, Malcolm Hunter and new co-author James Gibbs offer a thorough introduction to the fascinating and important field of conservation biology, focusing on what can be done to maintain biodiversity through management of ecosystems and populations. Starting with a succinct look at conservation and biodiversity, this book progresses to contend with some of the subject's most complex topics, such as mass extinctions, ecosystem degradation, and over exploitation. Discusses social, political, and economic aspects of conservation biology. Thoroughly revised with over six hundred new references and web links to many of the organizations involved in conservation biology, striking photographs and maps. Artwork from the book is available to instructors online at [www.blackwellpublishing.com/hunter](http://www.blackwellpublishing.com/hunter) and by request on CD-ROM.

**Principles of Conservation Biology** Sinauer Associates Incorporated

An in-depth analysis of the impact conservation behaviour can have to develop practical tools to safeguard against biodiversity extinction.

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Populations, ecosystems, species interactions, community.

Conservation Biology in Sub-Saharan Africa comprehensively explores the challenges and potential solutions to key conservation issues in Sub-Saharan Africa. Easy to read, this lucid and accessible textbook includes fifteen chapters that cover a full range of conservation topics, including threats to biodiversity, environmental laws, and protected areas management, as well as related topics such as sustainability, poverty, and human-wildlife conflict. This rich resource also includes a background discussion of what conservation biology is, a wide range of theoretical approaches to the subject, and concrete examples of conservation practice in specific African contexts. Strategies are outlined to protect biodiversity whilst promoting economic development in the region. Boxes covering specific themes written by scientists who live and work throughout the region are included in each chapter, together with recommended readings and suggested discussion topics. Each chapter also includes an extensive bibliography. Conservation Biology in Sub-Saharan Africa provides the most up-to-date study in the field. It is an essential resource, available on-line without charge, for undergraduate and graduate students, as well as a handy guide for professionals working to stop the rapid loss of biodiversity in Sub-Saharan Africa and elsewhere.

Provides essays, exercises, summaries, learning tools, and definitions focusing on the issues surrounding ecosystem management.

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