

Neotropical Savannas And Seasonally Dry Forests Plant Diversity Biogeography And Conservation Systematics Association Special Volumes

This book provides a comprehensive overview of the patterns of biodiversity in various neotropical ecosystems, as well as a discussion on their historical biogeographies and underlying diversification processes. All chapters were written by prominent researchers in the fields of tropical biology, molecular ecology, climatology, paleoecology, and geography, producing an outstanding collection of essays, synthetic analyses, and novel investigations that describe and improve our understanding of the biodiversity of this unique region. With chapters on the Amazon and Caribbean forests, the Atlantic rainforests, the Andes, the Cerrado savannas, the Caatinga drylands, the Chaco, and Mesoamerica – along with broad taxonomic coverage – this book summarizes a wide range of hypotheses, views, and methods concerning the processes and mechanisms of neotropical diversification. The range of perspectives presented makes the book a truly comprehensive, state-of-the-art publication on the topic, which will fascinate both scientists and general readers alike.

Finalist for 2009 The Council on Botanical & Horticultural Libraries Literature Award! A Fresh Look at Taxonomy The most fundamental of all biological sciences, taxonomy underpins any long term strategies for reconstructing the great tree of life or salvaging as much biodiversity as possible. Yet we are still unable to say with any certainty how many species are living on the earth. The New Taxonomy describes how a confluence of theory, cyberinfrastructure, and international teamwork can meet this unprecedented research challenge and marks an emerging field, cybertaxonomy. Taxonomy Meets the Challenges of the Biodiversity Crisis An in-depth discussion of the future of descriptive taxonomy, the book examines the efforts of several international groups to catalog the world's biodiversity and make it accessible. An answer to Julien Huxley's The New Systematics, the book marks the beginning of an upward trajectory of taxonomy to meet the unprecedented challenges of the biodiversity crisis. Contemporary taxonomists reclaim the unique mission, goals, and importance of taxonomy as an independent science. They cover technologies such as DNA evidence and its applications, computer-assisted species identification, digital morphology, and E-typification. The book also provides insight into effective ways of organizing taxonomic information and discusses what benefits can be leveraged from a rapid growth of taxonomic knowledge. A Vision and A Strategy for the Future Not much has changed since E.O. Wilson pointed out how little we know of Earth's species in 1985. This book offers a vision and a strategy for changing all that. The first current, unapologetic look at morphology and descriptive taxonomy that points out their incredible importance to science and society, this book frames one of the most constructive responses to biodiversity crises. It is a call to action for the taxonomy and museum communities to come together and to organize, plan, innovate, and initiate the most ambitious period of exploration in the long history of taxonomy.

The long-awaited second edition of this classic textbook expands on the first edition to include advances made in the last four

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decades, bringing the topic completely up to date. The book addresses critical issues such as whether humanity can feed itself, and whether it can do so in environmentally sound and sustainable ways. Written from agronomic, environmental, and ecological standpoints, the textbook employs a multidisciplinary approach, including policymaking and plant genetic improvements, as well as ecosystem services, climate change, biodiversity, sustainability and resilience. New chapters in this second edition focus on organic carbon in soil, soil biology, soils in relation to livestock production and forestry, and agroforestry. The new edition will again be the go-to textbook for courses on tropical soils, and a reference textbook for soil and agricultural scientists and development professionals working in the tropics.

Climate change has shaped life in the past and will continue to do so in the future. Understanding the interactions between climate and biodiversity is a complex challenge to science. With contributions from 60 key researchers, this book examines the ongoing impact of climate change on the ecology and diversity of life on earth. It discusses the latest research within the fields of ecology and systematics, highlighting the increasing integration of their approaches and methods. Topics covered include the influence of climate change on evolutionary and ecological processes such as adaptation, migration, speciation and extinction, and the role of these processes in determining the diversity and biogeographic distribution of species and their populations. This book ultimately illustrates the necessity for global conservation actions to mitigate the effects of climate change in a world that is already undergoing a biodiversity crisis of unprecedented scale.

This book integrates the latest global developments in forestry science and practice and their relevance for the sustainable management of tropical forests. The influence of social dimensions on the development of silvicultural concepts is another spotlight. Ecology and silvicultural options form all tropical continents, and forest formations from dry to moist forests and from lowland to mountain forests are covered. Review chapters which guide readers through this complex subject integrate numerous illustrative and quantitative case studies by experts from all over the world. On the basis of a cross-sectional evaluation of the case studies presented, the authors put forward possible silvicultural contributions towards sustainability in a changing world. The book is addressed to a broad readership from forestry and environmental disciplines.

This volume in the Greenwood Guides to Biomes of the World covers grasslands, those biomes that cover vast areas of the landmass of earth. It covers the two major types of grassland biomes: the temperate grasslands (such as the North American prairie), and the tropical grassland (e.g. the African savanna), examining all aspects that define these biomes: Vegetation, Geographical Distribution, Soil, Challenges posed by the environment, Adaptation of the plants and animals to the environment, Conservation efforts. Maps, photos, diagrams, drawings, and tables accompany the text, as do sidebars that highlight habitats, species, and ecological relationships.

This volume in the Greenwood Guides to Biomes of the World series covers the lush, beautiful - and rapidly shrinking - tropical forest biomes. The volume covers the two major tropic forest biomes, tropical rainforests and tropical seasonal forests. Leading scientists in the field trace the evolution of the one of the most ancient major branches of flowering plants.

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"Department of Life Sciences, Natural History Museum, London, UK. We are living in an age where biodiversity is being lost at an unprecedented rate, with the well-documented problems of habitat destruction being compounded by the largely unknown future effects of Climate Change. High quality, accurate and reliable biodiversity data are needed by biologists, conservationists and environmental modellers to understand and assess the ecosystems in which they work, to produce effective conservation strategies, and to feed computer-generated models which predict what environments and habitats we might face"--

To document the world's diversity of species and reconstruct the tree of life we need to undertake some simple but mountainous tasks. Most importantly, we need to tackle species rich groups. We need to collect, name, and classify them, and then position them on the tree of life. We need to do this systematically across all groups of organisms and because of the biodiversity crisis we need to do it quickly. With contributions from key systematic and taxonomic researchers, *Reconstructing the Tree of Life: Taxonomy and Systematics of Species Rich Taxa* outlines the core of the problem and explores strategies that bring us closer to its solution. The editors split the book into three parts: introduction and general concepts, reconstructing and using the tree of life, and taxonomy and systematics of species rich groups (case studies). They introduce, with examples, the concept of species rich groups and discuss their importance in reconstructing the tree of life as well as their conservation and sustainable utilization in general. The book highlights how phylogenetic trees are becoming "supersized" to handle species rich groups and the methods that are being developed to deal with the computational complexity of such trees. It discusses factors that have lead some groups to speciate to a staggering degree and also provides case studies that highlight the problems and prospects of dealing with species rich groups in taxonomy. To understand species rich taxa, evolution has set scientists a difficult, but not unattainable, challenge that requires the meshing together of phylogenetics and taxonomy, considerable advances in informatics, improved and increased collecting, training of taxonomists, and significant financial support. This book provides the tools and methods needed to meet that challenge.

This book is number two in a series for *Primates in Fragments*. In this volume, ten years after the first <http://www.springer.com/social+sciences/anthropology+%26+archaeology/book/978-0-306-47696-9>, we continue to address issues regarding primates within a fractured landscape. There are seven sections based on specific categories of primates in fragments. In the Introductory section, authors discuss the issues surrounding primates in remnant habitats as well as encourage discussion about what we mean by fragmentation on a landscape scale. In the Long-Term and Regional Studies section, authors present information on changes that have occurred during longer studies as well as changes that have occurred over regions. In the Landscape, Metapopulations and the Matrix section, authors cover topics from dry to moist forests, and from metapopulations to single species use of multiple fragments locations. In Feeding and Behavioral Ecology, authors take a closer look at the flexibility and responsiveness of primates in fragments in terms of their food choices, resource use, and behavioral changes. In Endemic, Endangered, and Nocturnal Primates authors uncover details involving critical primates living in major city centers to the heights of the Himalayas. In Genetics, Disease and Parasites authors cover topics including population viability, disease and parasite transmission between primates in fragments and humans. Finally, in the Conservation and Ecology: Threats and Management section, we synthesize information in this volume and make recommendations for the future of work in this field and the survivability of primates in fragments.

Tropical dry forests are the most exploited and endangered ecosystems in the world. A combination of climatic and human factors often reduce these forests to patches of dry scrubs or savannas. Because these ecosystems experience a more arduous and less anticipated

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environment, they are more prone to environmental stress as plant communities are developed. Therefore, urgent research is necessary to understand both the detrimental issues and problem-solving approaches to conserving these important forests. The Handbook of Research on the Conservation and Restoration of Tropical Dry Forests is a pivotal reference source that combines theory and practice on the current trends and issues in this important ecological subject and discusses future challenges towards conservation strategies of these tropical dry forests. While highlighting topics such as forest management, natural regeneration, and silviculture, this publication examines the anthropogenic impacts on tropical dry forests and the necessity to rebuild their ecosystems. This book is ideally designed for state forest agency professionals, resource managers, non-governmental organization agents, ecologists, botanists, environmentalists, students, and researchers seeking current research on the threats to these forests.

More often than not, when people think of a neotropical forest, what comes to mind is a rain forest, rather than a dry forest. Just as typically, when they imagine a savanna, they visualize the African plains, rather than those dry woodlands and grasslands found in the Neotropics.

These same preconceptions can be found among scientists, as these ne

The astounding richness and biodiversity of tropical forests is rapidly dwindling. This has severely altered the vital biogeochemical cycles of carbon, phosphorus, nitrogen etc. and has led to the change in global climate and pristine natural ecosystems. In this elegant book, we have defined "Tropical Forests" broadly, into five different themes: (1) tropical forest structure, synergy, synthesis, (2) tropical forest fragmentation, (3) impact of anthropogenic pressure, (4) Geographic Information System and remote sensing, and (5) tropical forest protection and process. The cutting-edge synthesis, detailed current reviews, several original data-rich case studies, recent experiments/experiences from leading scientists across the world are presented as unique chapters. Though, the chapters differ noticeably in the geographic focus, diverse ecosystems, time and approach, they share these five important themes and help in understanding, educating, and creating awareness on the role of "Tropical Forests" for the very survival of mankind, climate change, and the diversity of biota across the globe. This book will be of great use to the students, scientists, ecologists, population and conservation biologists, and forest managers across the globe. The publication of this book was supported by the Secretariat of the Convention on Biological Diversity, United Nations

This book provides in-depth information on Caatinga's geographical boundaries and ecological systems, including plants, insects, fishes, amphibians, reptiles, birds, and mammals. It also discusses the major threats to the region's socio-ecological systems and includes chapters on climate change and fast and large-scale land-use changes, as well as slow and small-scale changes, also known as chronic human disturbances. Subsequent chapters address sustainable agriculture, conservation systems, and sustainable development. Lastly, the book proposes 10 major actions that could enable the transformation of Caatinga into a place where people and nature can thrive together. "I consider this book an excellent example of how scientists worldwide can mobilize their efforts to propose sound solutions for one of the biggest challenges of modern times, i.e., how to protect the world's natural ecosystems while improving human well-being. I am sure this book will inspire more research and conservation action in the region and perhaps encourage other groups of scientists to produce similar syntheses about their regions." Russell Mittermeier, Ph.D. Executive Vice-Chair, Conservation International

This Encyclopedia of Tropical Biology and Conservation Management is a component of the global Encyclopedia of Life Support Systems (EOLSS), which is an integrated compendium of twenty one Encyclopedias. Tropical environments cover the most part of still preserved natural areas of the Earth. The greatest biodiversity, as in terms of animals and plants, as microorganisms, is placed in these hot and rainy ecosystems spread up and below the Equator line. Additionally, the most part of food products, with vegetal or animal origin, that sustain

nowadays human beings is direct or undirected dependent of tropical productivity. Biodiversity should be looked at and evaluated not only in terms of numbers of species, but also in terms of the diversity of interactions among distinct organisms that it maintains. In this sense, the complexity of web structure in tropical systems is a promise of future to nature preservation on Earth. In the chemicals of tropical plant and animals, could be the cure to infinite number of diseases, new food sources, and who knows what more. Despite these facts tropical areas have been exploited in an irresponsible way for more than 500 years due the lack of an ecological conscience of men. Exactly in the same way we did with temperate areas and also tropical areas in the north of Equator line. Nowadays, is estimated that due human exploitation, nation conflicts and social problems, less than 8% of tropical nature inside continental areas is still now untouchable. The extension of damage in the tropical areas of oceans is unknown. Thus so, all knowledge we could accumulate about tropical systems will help us, as in the preservations of these important and threatened ecosystems as in a future recuperation, when it was possible. Only knowing the past and developing culture, mainly that directed to peace, to a better relationship among nations and responsible use and preservation of natural resources, human beings will have a long future on Earth. These volumes, Tropical Biology and Natural Resources was divided in sessions to provide the reader the better comprehension possible of issue and also to enable future complementation and improvements in the encyclopedia. Like we work with life, we intended to transform this encyclopedia also in a "life" volume, in what new information could be added in any time. As president of the encyclopedia and main editor I opened the theme with an article titled: "Tropical Biology and Natural resources: Historical Pathways and Perspectives", providing the reader an initial view of the origins of human knowledge about the tropical life, and what we hope to the future. In the sequence we have more than 100 chapters distributed in tem sessions: Tropical Ecology (TE); Tropical Botany (TB); Tropical Zoology (TZ); Savannah Ecosystems (SE); Desert Ecosystems (DE); Tropical Agriculture (TA); Natural History of Tropical Plants (NH); Human Impact on Tropical Ecosystems (HI); Tropical Phytopathology and Entomology (TPE); Case Studies (CS). This 11-volume set contains several chapters, each of size 5000-30000 words, with perspectives, applications and extensive illustrations. It is the only publication of its kind carrying state-of-the-art knowledge in the fields of Tropical Biology and Conservation Management and is aimed, by virtue of the several applications, at the following five major target audiences: University and College Students, Educators, Professional Practitioners, Research Personnel and Policy Analysts, Managers, and Decision Makers and NGOs.

Computing and database management has shifted from cottage industry-style methods — the small independent researcher keeping records for a particular project — to state-of-the-art file storage systems, presentation, and distribution over the Internet. New and emerging techniques for recognition, compilation, and data management have made managing data a discipline in its own right. Covering all aspects of this data management, Biodiversity Databases: Techniques, Politics, and Applications brings together input from social scientists, programmers, database designers, and information specialists to delineate the political setting and give institutions platforms for the dissemination of taxonomic information. A practical and logical guide to complex issues, the book explores the changes and challenges of the information age. It discusses projects developed to provide better access to all available biodiversity information. The chapters make the case for the need for representation of concepts in taxonomic databases. They explore issues involved in connecting databases with different user interfaces, the technical demands of linking databases that are not entirely uniform in structure, and the problems of user access and the control of data quality. The book highlights different approaches to addressing concerns associated with the taxonomic impediment and the low reproducibility of

taxonomic data. It provides an in-depth examination of the challenge of making taxonomic information more widely available to users in the wider scientific community, in government, and the general population.

Though seasonally dry tropical forests are equally as important to global biodiversity as tropical rainforests, and are one of the most representative and highly endangered ecosystems in Latin America, knowledge about them remains limited because of the relative paucity of attention paid to them by scientists and researchers and a lack of published information on the subject. *Seasonally Dry Tropical Forests* seeks to address this shortcoming by bringing together a range of experts in diverse fields including biology, ecology, biogeography, and biogeochemistry, to review, synthesize, and explain the current state of our collective knowledge on the ecology and conservation of seasonally dry tropical forests. The book offers a synthetic and cross-disciplinary review of recent work with an expansive scope, including sections on distribution, diversity, ecosystem function, and human impacts. Throughout, contributors emphasize conservation issues, particularly emerging threats and promising solutions, with key chapters on climate change, fragmentation, restoration, ecosystem services, and sustainable use. Seasonally dry tropical forests are extremely rich in biodiversity, and are seriously threatened. They represent scientific terrain that is poorly explored, and there is an urgent need for increased understanding of the system's basic ecology. *Seasonally Dry Tropical Forests* represents an important step in bringing together the most current scientific information about this vital ecosystem and disseminating it to the scientific and conservation communities.

The Physical Geography of South America, the eighth volume in the Oxford Regional Environments series, presents an enduring statement on the physical and biogeographic conditions of this remarkable continent and their relationships to human activity. It fills a void in recent environmental literature by assembling a team of specialists from within and beyond South America in order to provide an integrated, cross-disciplinary body of knowledge about this mostly tropical continent, together with its high mountains and temperate southern cone. The authors systematically cover the main components of the South American environment - tectonism, climate, glaciation, natural landscape changes, rivers, vegetation, animals, and soils. The book then presents more specific treatments of regions with special attributes from the tropical forests of the Amazon basin to the Atacama Desert and Patagonian steppe, and from the Atlantic, Caribbean, and Pacific coasts to the high Andes. Additionally, the continent's environments are given a human face by evaluating the roles played by people over time, from pre-European and European colonial impacts to the effects of modern agriculture and urbanization, and from interactions with El Niño events to prognoses for the future environments of the continent.

Fascinating and diverse, savanna ecosystems support a combination of pastoral and agropastoral communities alongside wild and domestic herbivores that can be found nowhere else. This diversity has made the study of these areas problematic. *Ecosystem Function in Savannas: Measurement and Modeling at Landscape to Global Scales* addresses some of the discontinuities in the treatment of savannas by the scientific community and documents a range of measurements, methods, technologies, applications, and modeling approaches. Based on contributions from leading authorities and experts on savanna systems worldwide, the book

describes the global savanna biome in terms of its broad ecological properties, temporal dynamics, disturbance levels, and human dimensions. The text examines carbon, water, energy, and trace gas fluxes for major global savanna regions. It looks at quantitative surface properties of savannas that can be retrieved using remote sensing and numerical approaches used to explore savanna dynamics. The authors also discuss how savanna modeling and measurement approaches might be unified. By presenting this confluence of information in a single resource, the book provides a platform for examining synergies, connections, integrative opportunities, and complementarities among approaches and data sources. This information can then be used to harmonize measurement and modeling methods among scales and across disciplinary boundaries. The book builds a bridge across the markedly different perspectives on savannas by which ecologists, biogeochemists, remote sensors, geographers, anthropologists, and modelers approach their science.

This comprehensive collection of up-to-the-minute research in the field of poisonous plants investigates the effects of toxins on animals and humans. It covers the effects of poisonous plants on the liver, the reproductive system, and the nervous system, as well as exploring the field of herbal medicine. In a specialized section devoted to control measures, the book highlights techniques such as vaccination and taste aversion, providing the reader with important information on safeguarding against disaster. This volume is an essential reference for veterinarians, researchers, toxicologists and.

A comprehensive account of how abiotic and biotic interactions shape patterns of coastal marine biodiversity and ecosystem processes globally.

With more than 500 species distributed all around the Northern Hemisphere, the genus *Quercus* L. is a dominant element of a wide variety of habitats including temperate, tropical, subtropical and mediterranean forests and woodlands. As the fossil record reflects, oaks were usual from the Oligocene onwards, showing the high ability of the genus to colonize new and different habitats. Such diversity and ecological amplitude makes genus *Quercus* an excellent framework for comparative ecophysiological studies, allowing the analysis of many mechanisms that are found in different oaks at different level (leaf or stem). The combination of several morphological and physiological attributes defines the existence of different functional types within the genus, which are characteristic of specific phytoclimates. From a landscape perspective, oak forests and woodlands are threatened by many factors that can compromise their future: a limited regeneration, massive decline processes, mostly triggered by adverse climatic events or the competence with other broad-leaved trees and conifer species. The knowledge of all these facts can allow for a better management of the oak forests in the future.

Review of tropical dry forest biogeography, palaeontology, ecology and ecosystem functions.

3D image reconstruction is used in many fields, such as medicine, entertainment, and computer science. This highly demanded process comes with many challenges, such as images becoming blurry by atmospheric turbulence, getting snowed with noise, or becoming damaged within foreign regions. It is imperative to remain well-informed with the latest research in this field. Recent Advances in 3D Imaging, Modeling, and Reconstruction is a collection of innovative research on the methods and common

techniques of image reconstruction as well as the accuracy of these methods. Featuring coverage on a wide range of topics such as ray casting, holographic techniques, and machine learning, this publication is ideally designed for graphic designers, computer engineers, medical professionals, robotics engineers, city planners, game developers, researchers, academicians, and students. The book focuses on geological history as the critical factor in determining the present biodiversity and landscapes of Amazonia. The different driving mechanisms for landscape evolution are explored by reviewing the history of the Amazonian Craton, the associated sedimentary basins, and the role of mountain uplift and climate change. This book provides an insight into the Mesozoic and Cenozoic record of Amazonia that was characterized by fluvial and long-lived lake systems and a highly diverse flora and fauna. This fauna includes giants such as the ca. 12 m long caiman *Purussaurus*, but also a varied fish fauna and fragile molluscs, whilst fossil pollen and spores form relics of ancestral swamps and rainforests. Finally, a review of the molecular datasets of the modern Amazonian rainforest and aquatic ecosystem, discussing the possible relations between the origin of Amazonian species diversity and the palaeogeographic, palaeoclimatic and palaeoenvironmental evolution of northern South America. The multidisciplinary approach in evaluating the history of Amazonia has resulted in a comprehensive volume that provides novel insights into the evolution of this region.

Advances in Ecological Research, Volume 62, the latest release in this ongoing series, covers a long list of topics, including Monitoring tropical insects in the 21st Century, The distribution and structure of long-term and large-scale fire manipulation experiments, The Agua Salud Project: Basic and applied research informing management of tropical landscapes for the 21st century, Conservation strategies and principles for tropical forests, Assessing forest quality using satellite remote sensing data: A test case using the Sabah Biodiversity Experiment, eDNA approaches to understand the current state and future of biodiversity of the Amazonian biome: pitfalls, improvements and challenges, and much more.

Alluvium and Empire examines the archaeology of Indigenous communities and landscapes that were subject to Spanish colonial forced resettlement during the sixteenth century. Written at the intersections of history and archaeology, the book critiques previous approaches to the study of empire and models a genealogical approach that attends to the open-ended--and often unpredictable--ways in which empires take shape.

Accessibly written by a team of international authors, the *Encyclopedia of Environmental Change* provides a gateway to the complex facts, concepts, techniques, methodology and philosophy of environmental change. This three-volume set illustrates and examines topics within this dynamic and rapidly changing interdisciplinary field. The encyclopedia includes all of the following aspects of environmental change: Diverse evidence of environmental change, including climate change and changes on land and in the oceans Underlying natural and anthropogenic causes and mechanisms Wide-ranging local, regional and global impacts from the polar regions to the tropics Responses of geo-ecosystems and human-environmental systems in the face of past, present and future environmental change Approaches, methodologies and techniques used for reconstructing, dating, monitoring, modelling, projecting and predicting change Social, economic and political dimensions of environmental issues, environmental conservation

and management and environmental policy Over 4,000 entries explore the following key themes and more: Conservation Demographic change Environmental management Environmental policy Environmental security Food security Glaciation Green Revolution Human impact on environment Industrialization Landuse change Military impacts on environment Mining and mining impacts Nuclear energy Pollution Renewable resources Solar energy Sustainability Tourism Trade Water resources Water security Wildlife conservation The comprehensive coverage of terminology includes layers of entries ranging from one-line definitions to short essays, making this an invaluable companion for any student of physical geography, environmental geography or environmental sciences.

Forests hold a significant proportion of global biodiversity and terrestrial carbon stocks and are at the forefront of human-induced global change. The dynamics and distribution of forest vegetation determines the habitat for other organisms, and regulates the delivery of ecosystem services, including carbon storage. Presenting recent research across temperate and tropical ecosystems, this volume synthesises the numerous ways that forests are responding to global change and includes perspectives on: the role of forests in the global carbon and energy budgets; historical patterns of forest change and diversification; contemporary mechanisms of community assembly and implications of underlying drivers of global change; and the ways in which forests supply ecosystem services that support human lives. The chapters represent case studies drawn from the authors' expertise, highlighting exciting new research and providing information that will be valuable to academics, students, researchers and practitioners with an interest in this field.

Savannas form one of the largest and most important of the world's ecological zones. Covering one fifth of the Earth's land surface, they are home to some of the world's most iconic animals and form an extremely important global resource for plants and wildlife. However, increasing recognition of their land potential means that they are extremely vulnerable to accelerating pressures on usable land. This Very Short Introduction considers savannas as landscapes. Discussing their origin, topography, and global distribution, Peter A. Furley explores the dynamic nature of savannas and illustrates how they have shaped human evolution and movements. He goes on to discuss the unrelenting pressures that confront conservation and management and considers the future for savannas. ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

The Amazon rain forest covers more than five million square kilometers, amid the territories of nine different nations. It represents over half of the planet's remaining rain forest. Is it truly in peril? What steps are necessary to save it? To understand the future of Amazonia, one must know how its history was forged: in the eras of large pre-Columbian populations, in the gold rush of conquistadors, in centuries of slavery, in the schemes of Brazil's military dictators in the 1960s and 1970s, and in new globalized economies where Brazilian soy and beef now dominate, while the market in carbon credits raises the value of standing forest.

Susanna Hecht and Alexander Cockburn show in compelling detail the panorama of destruction as it unfolded, and also reveal the extraordinary turnaround that is now taking place, thanks to both the social movements, and the emergence of new environmental markets. Exploring the role of human hands in destroying—and saving—this vast forested region, *The Fate of the Forest* pivots on the murder of Chico Mendes, the legendary labor and environmental organizer assassinated after successful confrontations with big ranchers. A multifaceted portrait of Eden under siege, complete with a new preface and afterword by the authors, this book demonstrates that those who would hold a mirror up to nature must first learn the lessons offered by some of their own people. The book brings to light the most recent findings on the biogeography, biodiversity, host plant induction and natural history of gall inducing insects in the Neotropical region. We attempt to summarize the work done so far in the region, promote several syntheses on many aspects such as host induction, host specialization, distribution among the several vegetation types and zones, the origin of super hosts and the mechanisms leading to geographical patterns in their distribution. Furthermore, the book constructs new perspectives for deeper understanding of galling insect evolutionary ecology and biogeography in the region. Sustainable management of soils is an important global issue of the 21st century. Feeding roughly 8 billion people with an environmentally sustainable production system is a major challenge, especially considering the fact that 10% of the world's population at risk of hunger and 25% at risk of malnutrition. Accordingly, the 68th United Nations (UN) general assembly declared 2016 the “International Year of Pulses” to raise awareness and to celebrate the role of pulses in human nutrition and welfare. Likewise, the assembly declared the year 2015 as the “International Year of Soils” to promote awareness of the role of “healthy soils for a healthy life” and the International Union of Soil Science (IUSS) has declared 2015-2024 as the International Decade of Soils. Including legumes in cropping systems is an important toward advancing soil sustainability, food and nutritional security without compromising soil quality or its production potential. Several textbooks and edited volumes are currently available on general soil fertility or on legumes but, to date, none have been dedicated to the study of “Legumes for Soil Health and Sustainable Management”. This is important aspect, as the soil, the epidermis of the Earth (geoderma), is the major component of the terrestrial biosphere. This book explores the impacts of legumes on soil health and sustainability, structure and functioning of agro-ecosystems, agronomic productivity and food security, BNF, microbial transformation of soil N and P, plant-growth-promoting rhizobacteria, biofertilizers, etc. With the advent of fertilizers, legumes have been sidelined since World War II, which has produced serious consequences for soils and the environment alike. Therefore, legume-based rational cropping/soil management practices must support environmentally and economically sustainable agroecosystems based on (sequential) rotation and intercropping considerations to restore soil health and sustainability. All chapters are amply illustrated with appropriately placed data, tables, figures, and photographs, and supported with extensive and cutting-edge references. The editors have provided a roadmap for the sustainable development of legumes for food and nutritional security and soil sustainability in agricultural systems, offering a unique resource for teachers, researchers, and policymakers, as well as undergraduate and graduate students of soil science, agronomy, ecology, and the environmental sciences.

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This unusual encyclopedia brings together in-depth information on more than 450 natural geographic features from around the world and offers an array of creative tools to promote critical thinking and classroom discussion. • Provides a one-stop reference for students of geography and environmental and earth sciences • Offers global coverage of diverse features, whether terrestrial, aquatic, geological, ecological, or physiographic • Includes an overview of the various kinds of landforms of the world, how they are formed, and how they continue to change over time • Explains each feature's origins and significance, as well as major environmental issues in which it's involved • Indicates the importance of features to the development of Western science and contemporary scientific thought in fields such as evolutionary biology, paleontology, plate tectonics, and climate change • Features a "Top 10s Appendix" to provoke student interest through statistics such as the tallest mountains, largest lakes, and longest rivers

In this volume we aimed to assess progress in determining the processes by which current patterns of tropical biodiversity were established and are maintained. Tropical regions are highly species-rich and we present studies that have improved our understanding of the generation of that diversity at local, regional and global scales. We demonstrate how diverse fields from molecular phylogenetics, phylogeography, palaeontology and palaeoecology continue to improve our understanding of the natural history of the tropics.

Under threat from natural and human disturbance, tropical dry forests are the most endangered ecosystem in the tropics, yet they rarely receive the scientific or conservation attention they deserve. In a comprehensive overview, *Tropical Dry Forests in the Americas: Ecology, Conservation, and Management* examines new approaches for data sampling and analysis using remote sensing technology, discusses new ecological and econometric methods, and critically evaluates the socio-economic pressures that these forest are facing at the continental and national levels. The book includes studies from Mexico, Costa Rica, Colombia, Venezuela, and Brazil that provide in-depth knowledge about the function, status, and conservation efforts of these endangered forests. It presents key elements of synthesis from standardized work conducted across all sites. This unique contribution provides new light in terms of these forests compared to each other not only from an ecological perspective but also in terms of the pressures that they are facing, and their respective responses. Written by experts from a diversity of fields, this reference brings together the many facets of function, use, heritage, and future potential of these forests. It presents an important and exciting synthesis of many years of work across countries, disciplines, and cultures. By standardizing approaches for data sampling and analysis, the book gives readers comparison information that cannot be found anywhere else given the high level of disparity that exists in the current literature.

A Natural History of the New World traces the evolution of plant ecosystems, beginning in the Late Cretaceous period and ending in the present, charting their responses to changes in geology and climate.

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