Biogeography Lomolino 4th Edition

Publisher Description

Though biogeography may be simply defined--the study of the geographic distributions of organisms--the subject itself is extraordinarily complex, involving a range of scientific disciplines and a bewildering diversity of approaches. For convenience, biogeographers have recognized two research traditions: ecological biogeography and historical biogeography. This book makes sense of the profound revolution that historical biogeography has undergone in the last two decades, and of the resulting confusion over its foundations, basic concepts, methods, and relationships to other disciplines of comparative biology. Using case studies, the authors explain and illustrate the fundamentals and the most frequently used methods of this discipline. They show the reader how to tell when a historical biogeographic approach is called for, how to decide what kind of data to collect, how to choose the best method for the problem at hand, how to perform the necessary calculations, how to choose and apply a computer program, and how to interpret results.

Climate and Conservation presents case studies from around the world of leading-edge projects focused on climate change adaptation-regional-scale endeavors where scientists, managers, and practitioners are working to protect biodiversity by protecting landscapes and seascapes in response to threats posed by climate change. The book begins with an introductory section that frames the issues and takes a systematic look at planning for climate change adaptation. The nineteen chapters that follow examine particular case studies in every part of the world, including landscapes and seascapes from equatorial, temperate, montane, polar, and marine and freshwater regions. Projects profiled range from North American grasslands to boreal forests to coral reefs to Alpine freshwater environments. Chapter authors have extensive experience in their respective regions and are actively engaged in working on climate-related issues. The result is a collection of geographical case studies that allows for effective cross-comparison while at the same time recognizing the uniqueness of each situation and locale. Climate and Conservation offers readers tangible, place-based examples of projects designed to protect large landscapes as a means of conserving biodiversity in the face of the looming threat of global climate change. It informs readers of how a diverse set of conservation actors have been responding to climate change at a scale that matches the problem, and is an essential contribution for anyone involved with large-scale biodiversity conservation.

This Handbook addresses the key questions surrounding US–China relations: what are the historical and contemporary contexts that underpin this complex relationship? How has the strategic rivalry between the two evolved? What are the key flashpoints in their relationship? What are the key security issues between the two powers? The international contributors explore the historical, political, economic, military, and international and regional spheres of the US–China relationship. The topics they discuss include human rights, Chinese public perception of the United States, US–China strategic rivalry, China’s defence build-up and cyber war.

The incredible global diversity of ants, and their important ecological roles, mean that we cannot ignore the significance of ants in ecological systems. Ant Ecology takes the reader on a journey of discovery from the beginnings of ants many hundreds of thousands of years ago, through to the makings of present day distributions.

Urbanization is a global phenomenon and the book emphasizes that this is not just a social-technological process. It is also a social-ecological process where cities are places for nature, and where cities also are dependent on, and have impacts on, the biosphere at different scales from local to global. The book is a global assessment and delivers four main conclusions: Urban areas are expanding faster than urban populations. Half the increase in urban land across the world over the next 20 years will occur in Asia, with the most extensive change expected to take place in India and China Urban areas modify their local and regional climate through the urban heat island effect and by altering precipitation patterns, which together will have significant impacts on net primary production, ecosystem health, and biodiversity Urban expansion will heavily draw on natural resources, including water, on a global scale, and will often consume prime agricultural land, with knock-on effects on biodiversity and ecosystem services elsewhere Future urban expansion will often occur in areas where the capacity for formal governance is restricted, which will constrain the protection of biodiversity and management of ecosystem services

Very little is known about the issue of wildlife conservation within China. Even China specialists get a meager ration of stories about pandas giving birth in zoos, or poachers in some remote setting being apprehended. But what does the future hold for China's wildlife? In this thoughtful work the leading U.S. expert on wildlife projects in Western China presents a multi-faceted assessment of the topic. Richard B. Harris draws on twenty years of experience working in China, and incorporates perspectives ranging from biology through Chinese history and tradition, to interpret wildlife conservation issues in a cultural context. In non-technical language, Harris shows that, particularly in its vast western sections where most species of wildlife still have a chance to survive, China has adopted a strongly preservationist, "hands-off" approach to wildlife without confronting the larger and more difficult problem of habitat loss. This policy treats wildlife conservation as a strictly technical problem - and thus prioritizes captive breeding to meet the demand for animal products - while ignoring the manifold cultural, social, and economic dimensions that truly dictate how wild animals will fare in their interaction with the physical and human environments. The author concludes that any successes this policy achieves will be temporary.

This book brings together for the first time philosophers of biology to write about some of the most central concepts and issues in their field from the perspective of biology education. The chapters of the book cover a variety of topics ranging from traditional ones, such as biological explanation, biology and religion or biology and ethics, to contemporary ones, such as genomics, systems biology or evolutionary developmental biology. Each of the 30 chapters covers the respective philosophical literature in detail and makes specific suggestions for biology education. The aim of this book is to inform biology educators, undergraduate and graduate students in biology and related fields, students in teacher training programs, and curriculum developers about the current state of discussion on the major topics in the philosophy of biology and its implications for teaching biology. In addition, the book can be valuable to philosophers of biology as an introductory text in undergraduate and graduate courses.

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

In this innovative, wide-ranging synthesis of anthropology and biogeography, Alexander Harcourt tells how and why our species came to be distributed around the world. He explains our current understanding of human origins, tells how climate determined our spread, and describes the barriers that delayed and directed migrating peoples. He explores the rich and complex ways in which our anatomy, physiology, cultural diversity, and population density vary from region to region in the areas we inhabit. The book closes with chapters on how human cultures have affected each other's geographic distributions, how non-human species have influenced human distribution, and how humans have reduced the ranges of many other species while increasing the ranges of others. Throughout, Harcourt compares what we understand of human biogeography to non-human primate biogeography.

P. 14.

This is the first attempt to synthesize current understanding of biodiversity in the great European hot spot. A diverse group of international researchers offers perspective on biodiversity at the level of the gene, species and ecosystem, including contributions on temporal change. Biological groups include plants, mammals, spiders and humans, cave-dwelling organisms, fish, aquatic invertebrates and algae.

This plant book aims to help identify flowering plants to genus and family level anywhere in the world. In 2014 there were very few available works which were both comprehensive and up-to-date for all the flowering plants families and genera of the world. The Flowering Plants Handbook is an easy to use identification guide to the worlds flowering plants designed for both specialists and non-specialists and from beginner to expert. The book contains descriptions of all currently recognised flowering plant families, morphological notes for 6656 genera (all current genera for 398/413 families) and over 3000 images and illustrations. Flowering plants can be identified using the book to family and much of the world's generic diversity in four 'easy' steps. Some plants will be identified correctly quickly, whilst others may require some retracing of steps and take a little more time. The advantage of this book is that it helps the user learn about the classification system and plant diversity during the identification process. This work was compiled and developed using the living, library and herbarium collections at the University of Aberdeen, Royal Botanic Gardens, Edinburgh and Royal Botanic Gardens, Kew.

A definitive guide to the depth and breadth of the ecological sciences, revised and updated The revised and updated fifth edition of Ecology: From Individuals to Ecosystems – now in full colour – offers students and practitioners a review of the ecological sciences. The previous editions of this book earned the authors the prestigious 'Exceptional Life-time Achievement Award' of the British Ecological Society – the aim for the fifth edition is not only to maintain standards but indeed to enhance its coverage of Ecology. In the first edition, 34 years ago, it seemed acceptable for ecologists to hold a comfortable, objective, not to say aloof position, from which the ecological communities around us were simply material for which we sought a scientific understanding. Now, we must accept the immediacy of the many environmental problems that threaten us and the responsibility of ecologists to play their full part in addressing these problems. This fifth edition addresses this challenge, with several chapters devoted entirely to applied topics, and examples of how ecological principles have been applied to problems facing us highlighted throughout the remaining nineteen chapters. Nonetheless, the authors remain wedded to the belief that environmental action can only ever be as sound as the ecological principles on which it is based. Hence, while trying harder than ever to help improve preparedness for addressing the environmental problems of the years ahead, the book remains, in its essence, an exposition of the science of ecology. This new edition incorporates the results from more than a thousand recent studies into a fully up-to-date text. Written for students of ecology, researchers and practitioners, the fifth edition of Ecology: From Individuals to Ecosystems is anessential reference to all aspects of ecology and addresses environmental problems of the future.

Mankind has evolved both genetically and culturally to become a most successful and dominant species. But we are now so numerous and our technology is so p- erful that we are having major effects on the planet, its environment, and the b-sphere. For some years prophets have warned of the possible detrimental consequences of our activities, such as pollution, deforestation, and overfishing, and recently it has become clear that we are even changing the atmosphere (e. g. ozone, carbon dioxide). This is worrying since the planet's life systems are involved and dependent on its functioning. Current climate change – global w arming – is one recognised consequence of this larger problem. To face this major challenge, we will need the research and advice of many disciplines – Physics, Chemistry, Earth Sciences, Biology, and Sociology – and particularly the commitment of wise politicians such as US Senator Al Gore. An important aspect of this global problem that has been researched for several decades is the loss of species and the impoverishment of our ecosystems, and hence their ability to sustain themselves, and more particularly us! Through evolutionary time new species have been generated and some have gone extinct. Such extinction and regeneration are moulded by changes in the earth's crust, atmosphere, and resultant climate. Some extinctions have been massive, particularly those asso- ated with catastrophic meteoric impacts like the end of the Cretaceous Period 65Mya.

Hampered by a confusing plethora of approaches and methods, biogeography is often treated as an adjunct to other areas of study. The first book to fully define this rapidly emerging subdiscipline, Biogeography in a Changing World elucidates the principles of biogeography and paves the way for its evolution into a stand-alone field. Drawing on contributions from leading proponents of differing methods within biogeography, the book clearly defines the differing, sometimes conflicting, perspectives in the field and their correspondingly different methodological approaches. This gives

readers the opportunity to refocus on a range of issues including the role of biological processes such as vicariance, dispersal and extinction in biogeographical explanation, the possibility of biogeographical pattern, and the role of geological reconstructions in biogeographic explanation. The book also explores the discipline’s current relationship with other disciplines and discusses potential developments.

Illustrative examples from recent research publications and "classic" studies are prominently featured throughout the book. Research techniques are highlighted in "special interest" boxes. Illustrations and descriptions of research techniques are provided with examples such as fire-scars from trees used to reconstruct disturbance, fossil pollen used to reconstruct vegetation change and plant migration, transect and quadrate sampling. Includes key biogeographical theories that link space and time to the distribution of life. Some of these theories include: 1. Ranges, Reflicts, Refuges, Corridors, Barriers, 2. Centers of Origins, 3. Cladistics, 4. Variance, 5. Island BioGeography, 6. Diversity Theory, 7. Gap Analysis for Conservation.

This book offers a timely overview and synthesis of biogeographic patterns of plants and fungi and their mycorrhizal associations across geographic scales. Written by leading experts in the field, it provides an updated definition of mycorrhizal types and establishes the best practices of modern biogeographic analyses. Individual chapters address the basic processes and mechanisms driving community ecology, population biology and dispersal in mycorrhizal fungi, which differ greatly from these of prokaryotes, plants and animals. Other chapters review the state-of-the-art knowledge about the distribution, ecology and biogeography of all mycorrhizal types and the most important fungal groups involved in mycorrhizal symbiosis. The book argues that molecular methods have revolutionized our understanding of the ecology and biogeography of mycorrhizal symbiosis and that rapidly evolving high-throughput identification and genomics tools will provide unprecedented information about the structure and functioning of mycorrhizal symbiosis on a global scale. This volume appeals to scientists in the fields of plant and fungal ecology and biogeography.

Volume 2. Wildlife and fish.

This book provides a foundation for modern applied ecology. Much of current ecology research and conservation addresses problems across landscapes and regions, focusing on spatial patterns and processes. This book is aimed at teaching fundamental concepts and focuses on learning-by-doing through the use of examples with the software R. It is intended to provide an entry-level, easily accessible foundation for students and practitioners interested in spatial ecology and conservation.

BiogeographySinauer Associates Incorporated

Biogeography, first published in 1983, is one of the most comprehensive text and general reference books in the field. The Fourth Edition builds on the strengths of previous editions, combining evolutionary and ecological perspectives to show how Earth history, contemporary environments, adn evolutionary and ecological processes have shaped species distributions and nearly all patterns of biodiversity. It is an empirically and conceptually rich text that illustrates general patterns and processes using examples from a diversity of plants and animals across the Earths aquatic and terrestrial ecosystems. biogeography, Fourth Edition is written as a primary text for undergraduate and graduate courses, and is also an invaluable reference for biogeographers, ecologists, evolutionary biologists, and conservation biologists. Starting from simple facts and principles and assuming only a rudimentary knowledge of biology, geography, and Earth history, the text explains the relationships between geographic variation in biodiversity and the geological, ecological, and evolutionary processes that have produced them. Written in an engaging style, Biogeography emphasizes that interplay between unifying concepts and presents evidence that supports or challenges these concepts. The use of color illustrations (new to this edition), evaluated and optimized for colorblind readers as well, has transformed our abilities to illustrate key concepts and empirical patterns in the geography of nature. The addition of the distinguished plant ecologist and biogeographer Robert J. Whittaker to our team of authors has substantially enhanced the balance and depth of coverage of classical foundations, empirical case studies, and frontiers of biogeography.

This is a theoretical and practical guide on how to undertake and navigate advanced research in the arts, humanities and social sciences.

This new book shows the work done by researchers dedicated to the study of different mycorrhizas types, the fungal species associated and their distribution influenced by geographical and environmental factors among the different South American biogeographic regions. The exclusive biotic and abiotic characteristics delimit natural ecosystems with uniques biological communities, where mycorrhizologists have investigated plant symbioses in those ecosystems for decades, providing data from Venezuelan Great Savannah, Andes, Puna, Chaco, Caatinga, Monte, Atlantic Forest, Marginal Forest, Cerrado, Patagonia, Yungas, Rainforest, Andean-Patagonian Forests, and Antarctic section. In these environments, different mycorrhizal associations (arbuscular / ericoid / orchidoid / ectomycorrhizal / mycoheterotrophic) are present in herbaceous plants, shrubs, and trees. Mycorrhizal associations were studied from different researching points of view (biodiversity, biological invasions, biotic / abiotic disturbances, altitudinal variations, seasonal changes, land uses). The aim of this Book is to compile research on mycorrhizal fungi and their associations in environments of South America, throughout the synthesis of information from natural and anthropogenic related environments. The book focuses in different bioregions of South America from tropical areas to the southern cone, and it will be useful to those who work on plant-fungal interactions in different vegetation types and in agricultural lands from South America and worldwide.

Fundamentals of Biogeography presents an accessible, engaging and comprehensive introduction to biogeography, explaining the ecology, geography, history and conservation of animals and plants. Starting with an outline of how species arise, disperse, diversify and become extinct, the book examines: how environmental factors (climate, substrate, topography, and disturbance) influence animals and plants; investigates how populations grow, interact and survive; how communities form and change; and explores the connections between biogeography and conservation. The second edition has been extensively revised and expanded throughout to cover new topics and revisit themes from the first edition in more depth. Illustrated throughout with informative diagrams and attractive photos and including guides to further reading, chapter summaries and an extensive glossary of key terms, Fundamentals of Biogeography clearly explains key concepts in the history, geography and ecology of life systems. In doing so, it tackles some of the most topical and controversial environmental and ethical concerns including species over-exploitation, the impacts of global warming, habitat fragmentation, biodiversity loss and ecosystem restoration.

To unravel the complex shared history of the Earth and its life forms, biogeographers analyze patterns of biodiversity, species distribution, and geological history. So far, the field of biogeography has been fragmented into divergent systematic and evolutionary approaches, with no overarching or unifying research theme or method. In this text, Lynne Parenti and Malte Ebach address this discord and outline comparative

tools to unify biogeography. Rooted in phylogenetic systematics, this comparative biogeographic approach offers a comprehensive empirical framework for discovering and deciphering the patterns and processes of the distribution of life on Earth. The authors cover biogeography from its fundamental ideas to the most effective ways to implement them. Real-life examples illustrate concepts and problems, including the first comparative biogeographical analysis of the Indo-West Pacific, an introduction to biogeographical concepts rooted in the earth sciences, and the integration of phylogeny, evolution and earth history.

The third edition of this comprehensive encyclopedic dictionary covers the whole field of physical geography and provides an essential reference for all students and lecturers in this field.

This is a comprehensive textbook for upper level undergraduates which discusses the nature of heterogeneous systems in the natural environment. The links between and within the various environmental compartments - air, water, soil - are emphasized. The book describes the chemistry of natural systems, their composition and the processes and reactions that operate within and between the various compartments. Without focusing specifically on pollution, it also discusses ways in which these systems respond to perturbations, either those that are natural or those that are caused by humans. Background material from subjects such as atmospheric science, limnology, and soil science is provided in order to establish a setting for a description of the relevant chemistry. Emphasis is on general principles that can be applied in a variety of circumstances. At the same time, these principles are illustrated with examples taken from around the world. Because of issues of the environment related to every society, care has been taken to relate the subject material to situations in urban and rural areas in both highly industrialized and low-income countries.

How it is that the United States—the country that cherishes the ideal of private property more than any other in the world—has chosen to set aside nearly one-third of its land area as public lands? Now in a fully revised and updated edition covering the first years of the Trump administration, Randall Wilson considers this intriguing question, tracing the often-forgotten ideas of nature that have shaped the evolution of America’s public land system. The result is a fresh and probing account of the most pressing policy and management challenges facing national parks, forests, rangelands, and wildlife refuges today. The author explores the dramatic story of the origins of the public domain, including the century-long effort to sell off land and the subsequent emergence of a national conservation ideal. Arguing that we cannot fully understand one type of public land without understanding its relation to the rest of the system, he provides in-depth accounts of the different types of public lands. With chapters on national parks, national forests, wildlife refuges, Bureau of Land Management lands, and wilderness areas, Wilson examines key turning points and major policy debates for each land type, including recent Trump Administration efforts to roll back environmental protections. He considers debates ranging from national monument designations and bison management to gas and oil drilling, wildfire policy, the bark beetle epidemic, and the future of roadless and wilderness conservation areas. His comprehensive overview offers a chance to rethink our relationship with America’s public lands, including what it says about the way we relate to, and value, nature in the United States.

Issues of scale have become increasingly important to ecologists. This book addresses the structure of regional (large-scale) ecological assemblages or communities, and the influence this has at a local (small-scale) level. This macroecological perspective is essential for the broader study of ecology because the structure and function of local communities cannot be properly understood without reference to the region in which they are situated. The book reviews and synthesizes the issues of current importance in macroecology, providing a balanced summary of the field that will be useful for biologists at advanced undergraduate level and above. These general issues are illustrated by frequent reference to specific well-studied local and regional assemblages -- an approach that serves to relate the macroecological perspective (which is perhaps often difficult to comprehend) to the everyday experience of local sites. Macroecology is an expanding and dynamic discipline. The broad aim of the book is to promote an understanding of why it is such an important part of the wider program of research into ecology. Summarises the current macroecological literature. Provides numerous examples of key patterns. Explicitly links local and regional scale processes. Exploits detailed knowledge of one species assemblage to explore broad issues in the structuring of biodiversity.

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.

The third edition of Ecology and Classification of North American Freshwater Invertebrates continues the tradition of in-depth coverage of the biology, ecology, phylogeny, and identification of freshwater invertebrates from the USA and Canada. This text serves as an authoritative single source for a broad coverage of the anatomy, physiology, ecology, and phylogeny of all major groups of invertebrates in inland waters of North America, north of Mexico.

The average person can name more bird species than they think, but do we really know what a bird “species” is? This open access book takes up several fascinating aspects of bird life to elucidate this basic concept in biology. From genetic and physiological basics to the phenomena of bird song and bird migration, it analyzes various interactions of birds – with their environment and other birds. Lastly, it shows imminent threats to birds in the Anthropocene, the era of global human impact. Although it seemed to be easy to define bird species, the advent of modern methods has challenged species definition and led to a multidisciplinary approach to classifying birds. One outstanding new toolbox comes with the more and more reasonably priced acquisition of whole-genome sequences that allow causative analyses of how bird species diversify. Speciation has reached a final stage when daughter species are reproductively isolated, but this stage is not easily detectable from the phenotype we observe. Culturally transmitted traits such as bird song seem to speed up speciation processes, while another behavioral trait, migration, helps birds to find food resources, and also coincides with higher chances of reaching new, inhabitable areas. In general, distribution is a major key to understanding speciation in birds. Examples of ecological speciation can be found in birds, and the constant interaction of birds with their biotic environment also contributes to evolutionary changes. In the Anthropocene, birds are confronted with rapid changes that are highly threatening for some species. Climate change forces birds to move their ranges, but may also disrupt well-established interactions between climate, vegetation, and food sources. This book brings together various disciplines involved in observing bird species come into existence, modify, and vanish. It is a rich resource for bird enthusiasts who want to understand various processes at the cutting edge of current research in more detail. At the same time it offers students the opportunity to see primarily

unconnected, but booming big-data approaches such as genomics and biogeography meet in a topic of broad interest. Lastly, the book enables conservationists to better understand the uncertainties surrounding “species” as entities of protection.

Freshwater Biodiversity is a much underestimated component of global biodiversity, both in its diversity and in its potential to act as models for fundamental research in evolutionary biology and ecosystem studies. Freshwater organisms also reflect quality of water bodies and can thus be used to monitor changes in ecosystem health. The present book comprises a unique collection of primary research papers spanning a wide range of topics in aquatic biodiversity studies, and including a first global assessment of specific diversity of freshwater animals. The book also presents a section on the interaction between scientists and science policy managers. A target opinion paper lists priorities in aquatic biodiversity research for the next decade and several reactions from distinguished scientists discuss the relevance of these items from different points of view: fundamental ecology, taxonomy and systematics, needs of developing countries, present-day biodiversity policy at European and at global scales. It is believed that such a platform for the interaction between science and science policy is an absolute necessity for the efficient use of research budgets in the future.

Animals, plants and soils interact with one another, with the terrestrial spheres, and with the rest of the Cosmos. On land, this rich interaction creates landscape systems or geoecosystems. Geoecology investigates the structure and function of geoecosystems, their components and their environment. The author develops a simple dynamic systems model, the `brash' equation, to form the conceptual framework for the book suggesting an `ecological' and `evolutionary' approach. Exploring internal of `ecological' interactions between geoecosystems and their near-surface environments - the atmosphere, hydrosphere, toposhere, and lithosphere - and external influences, both geological and cosmic, Geoecology presents geoecosystems as dynamic entities constantly responding to changes within themselves and their surroundings. An `evolutionary' view emerges of geoecological systems, and the animals, plants, and soils comprising them, providing a new way of thinking for the whole environmental complex and the rich web of interdependencies contained therein.

The Earth’s ecosystems are in the midst of an unprecedentedperiod of change as a result of human action. Many habitats havebeen completely destroyed or divided into tiny fragments, othershave been transformed through the introduction of new species, orthe extinction of native plants and animals, while anthropogenicclimate change now threatens to completely redraw the geographicmap of life on this planet. The urgent need to understand andprescribe solutions to this complicated and interlinked set ofpressing conservation issues has lead to the transformation of thevenerable academic discipline of biogeography – the study ofthe geographic distribution of animals and plants. The newlyemerged sub-discipline of conservation biogeography uses theconceptual tools and methods of biogeography to address real worldconservation problems and to provide predictions about the fate ofkey species and ecosystems over the next century. This bookprovides the first comprehensive review of the field in a series ofclosely interlinked chapters addressing the central issues withinthis exciting and important subject. View ahref="http://www.wiley.com/go/ladle/biogeography"www.wiley.com/go/ladle/biogeography/a yoaccess the figures from the book.

The first and so far only Plant Geography of Chile was written about 100 years ago, since when many things have changed: plants have been renamed and reclassified; taxonomy and systematics have experienced deep changes as have biology, geography, and biogeography. The time is therefore ripe for a new look at Chile’s plants and their distribution. Focusing on three key issues – botany/systematics, geography and biogeographical analysis – this book presents a thoroughly updated synthesis both of Chilean plant geography and of the different approaches to studying it. Because of its range – from the neotropics to the temperate sub-Antarctic – Chile’s flora provides a critical insight into evolutionary patterns, particularly in relation to the distribution along the latitudinal profiles and the global geographical relationships of the country’s genera. The consequences of these relations for the evolution of the Chilean Flora are discussed. This book will provide a valuable resource for both graduate students and researchers in botany, plant taxonomy and systematics, biogeography, evolutionary biology and plant conservation.

Biogeography is the study of geographic variation in all characteristics of life - ranging from genetic, morphological and behavioural variation among regional populations of a species, to geographic trends in diversity of entire communities across our planet's sufrace. From the ancient hunters and gatherers to the earliest naturalists, Charles Darwin, Alfred Russel Wallace, and scientists today, the search for patterns in life has provided insights that proved invaluable for understanding the natural world. And many, if not most, of the compelling kaleidoscope of patterns in biological diversity make little sense unless placed in an explicit geographic context. The Very Short Introduction explains the historical development of the field of biogeography, its fundamental tenets, principles and tools, and the invaluable insights it provides for understanding the diversity of life in the natural world. As Mark Lomolino shows, key questions such as where species occur, how they vary from place to place, where their ancestors occurred, and how they spread across the globe, are essential for us to develop effective strategies for conserving the great menagerie of life across our planet. 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 legacy of Alexander von Humboldt (1769–1859) looms large over the natural sciences. His 1799–1804 research expedition to Central and South America with botanist Aimé Bonpland set the course for the great scientific surveys of the nineteenth century, and inspired such essayists and artists as Emerson, Goethe, Thoreau, Poe, and Church. The chronicles of the expedition were published in Paris after Humboldt’s return, and first among them was the 1807 “Essay on the Geography of Plants.” Among the most cited writings in natural history, after the works of Darwin and Wallace, this work appears here for the first time in a complete English-language translation. Covering far more than its title implies, it represents the first articulation of an integrative “science of the earth, ” encompassing most of today’s environmental sciences. Ecologist Stephen T. Jackson introduces the treatise and explains its enduring significance two centuries after its publication.