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## KEY=DATA - AGUIRRE FOLEY

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**Data Analysis in Community and Landscape Ecology** Cambridge University Press Ecological data has several special properties: the presence or absence of species on a semi-quantitative abundance scale; non-linear relationships between species and environmental factors; and high inter-correlations among species and among environmental variables. The analysis of such data is important to the interpretation of relationships within plant and animal communities and with their environments. In this corrected version of *Data Analysis in Community and Landscape Ecology*, without using complex mathematics, the contributors demonstrate the methods that have proven most useful, with examples, exercises and case-studies. Chapters explain in an elementary way powerful data analysis techniques such as logic regression, canonical correspondence analysis, and kriging. **Data Analysis in Community and Landscape Ecology** **Data Analysis in Community and Landscape Ecology** **Landscape Ecology for Sustainable Environment and Culture** Springer Science & Business Media Climate change and the pressures of escalating human demands on the environment have had increasing impacts on landscapes across the world. In this book, world-class scholars discuss current and pressing issues regarding the landscape, landscape ecology, social and economic development, and adaptive management. Topics include the interaction between landscapes and ecological processes, landscape modeling, the application of landscape ecology in understanding cultural landscapes, biodiversity, climate change, landscape services, landscape planning, and adaptive management to provide a comprehensive view that allows readers to form their own opinions. Professor Bojie Fu is an Academician of Chinese Academy of Sciences and Chair of scientific committee at the Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, China. Professor K. Bruce Jones is the Executive Director for Earth and Ecosystem Sciences Division at Desert Research Institute, University of Nevada, Las Vegas, USA. **Data Analysis in Vegetation Ecology, 3rd Edition** CABI The 3rd edition of this popular textbook introduces the reader to the investigation of vegetation systems with an emphasis on data analysis. The book succinctly illustrates the various paths leading to high quality data suitable for pattern recognition, pattern testing, static and dynamic modelling and model testing including spatial and temporal aspects of ecosystems. Step-by-step introductions using small examples lead to more demanding approaches illustrated by real world examples aimed at explaining interpretations. All data sets and examples described in the book are available online and are written using the freely available statistical package R. This book will be of particular value to beginning graduate students and postdoctoral researchers of vegetation ecology, ecological data analysis, and ecological modelling, and experienced researchers needing a guide to new methods. A completely revised and updated edition of this popular introduction to data analysis in vegetation ecology. Includes practical step-by-step examples using the freely available statistical package R. Complex concepts and operations are explained using clear illustrations and case studies relating to real world phenomena. Emphasizes method selection rather than just giving a set of recipes. **Essentials of Landscape Ecology** Oxford University Press, USA Human activity during the Anthropocene has transformed landscapes worldwide on a scale that rivals or exceeds even the largest of natural forces. Landscape ecology has emerged as a science to investigate the interactions between natural and anthropogenic landscapes and ecological processes across a wide range of scales and systems: from the effects of habitat or resource distributions on the individual movements, gene flow, and population dynamics of plants and animals; to the human alteration of landscapes affecting the structure of biological communities and the functioning of entire ecosystems; to the sustainable management of natural resources and the ecosystem goods and services upon which society depends. This novel and comprehensive text presents the principles, theory, methods, and applications of landscape ecology in an engaging and accessible format that is supplemented by numerous examples and case studies from a variety of systems, including freshwater and marine "scapes." **Landscape Ecological Analysis Issues and Applications** Springer Science & Business Media Growth in the field of landscape ecology has included the development of methods and results that can be applied to an impressive range of environmental issues. This book addresses a broad spectrum of political, theoretical and applied aspects that often arise in the design and execution of landscape studies. The concepts of geographical scale and hierarchy arising within the confines of landscape ecology are examined, and a series of techniques are presented to address problems in spatial and temporal analysis. This book will provide the reader with a current perspective on this rapidly evolving science. **Landscape Ecology in Theory and Practice Pattern and Process** Springer Science & Business Media An ideal text for students taking a course in landscape ecology. The book has been written by very well-known practitioners and pioneers in the new field of ecological analysis. Landscape ecology has emerged during the past two decades as a new and exciting level of ecological study. Environmental problems such as global climate change, land use change, habitat fragmentation and loss of biodiversity have required ecologists to expand their traditional spatial and temporal scales and the widespread availability of remote imagery, geographic information systems, and desk top computing has permitted the development of spatially explicit analyses. In this new text book this new field of landscape ecology is given the first fully integrated treatment suitable for the student. Throughout, the theoretical developments, modeling approaches and results, and empirical data are merged together, so as not to introduce barriers to the synthesis of the various approaches that constitute an effective ecological synthesis.

The book also emphasizes selected topic areas in which landscape ecology has made the most contributions to our understanding of ecological processes, as well as identifying areas where its contributions have been limited. Each chapter features questions for discussion as well as recommended reading. **Key Topics in Landscape Ecology** Cambridge University Press Landscape ecology is a relatively new area of study, which aims to understand the pattern of interaction of biological and cultural communities within a landscape. This book brings together leading figures from the field to provide an up-to-date survey of recent advances, identify key research problems and suggest a future direction for development and expansion of knowledge. Providing in-depth reviews of the principles and methods for understanding landscape patterns and changes, the book illustrates concepts with examples of innovative applications from different parts of the world. Forming a current 'state-of-the-science' for the science of landscape ecology, this book forms an essential reference for graduate students, academics, professionals and practitioners in ecology, environmental science, natural resource management, and landscape planning and design. **Predictive Species and Habitat Modeling in Landscape Ecology Concepts and Applications** Springer Science & Business Media Most projects in Landscape Ecology, at some point, define a species-habitat association. These models are inherently spatial, dealing with landscapes and their configurations. Whether coding behavioral rules for dispersal of simulated organisms through simulated landscapes, or designing the sampling extent of field surveys and experiments in real landscapes, landscape ecologists must make assumptions about how organisms experience and utilize the landscape. These convenient working postulates allow modelers to project the model in time and space, yet rarely are they explicitly considered. The early years of landscape ecology necessarily focused on the evolution of effective data sources, metrics, and statistical approaches that could truly capture the spatial and temporal patterns and processes of interest. Now that these tools are well established, we reflect on the ecological theories that underpin the assumptions commonly made during species distribution modeling and mapping. This is crucial for applying models to questions of global sustainability. Due to the inherent use of GIS for much of this kind of research, and as several authors' research involves the production of multicolored map figures, there would be an 8-page color insert. Additional color figures could be made available through a digital archive, or by cost contributions of the chapter authors. Where applicable, would be relevant chapters' GIS data and model code available through a digital archive. The practice of data and code sharing is becoming standard in GIS studies, is an inherent method of this book, and will serve to add additional research value to the book for both academic and practitioner audiences. **Numerical Ecology** Elsevier The book describes and discusses the numerical methods which are successfully being used for analysing ecological data, using a clear and comprehensive approach. These methods are derived from the fields of mathematical physics, parametric and nonparametric statistics, information theory, numerical taxonomy, archaeology, psychometry, sociometry, econometry and others. Compared to the first edition of Numerical Ecology, this second edition includes three new chapters, dealing with the analysis of semiquantitative data, canonical analysis and spatial analysis. New sections have been added to almost all other chapters. There are sections listing available computer programs and packages at the end of several chapters. As in the previous English and French editions, there are numerous examples from the ecological literature, and the choice of methods is facilitated by several synoptic tables. **Applied Landscape Ecology** John Wiley & Sons An insightful guide to the concepts and practices of modern landscape ecology Elements of geography, conservation biology, soil science and other disciplines factor into landscape ecology's rich analyses of the ecological and environmental forces at play across different terrains. With its unique, organism-oriented approach to the subject, Applied Landscape Ecology considers the effects of ecological processes upon particular species and places its findings within the context of larger-scale concerns. Students, researchers, and practitioners alike will find this a rewarding and instructive read that offers practical and detailed information on the latest methods and technologies used in the field today. This essential resource: Takes an interdisciplinary approach to landscape ecology Examines the subject within the contexts of specific organisms Covers cutting-edge technologies and methods Represents a collaboration between an international team of landscape ecology experts Whether new to the practice or an established ecologist, anyone with an interest in this exciting and developing field should have a copy of Applied Landscape Ecology at their disposal. **Landscape Ecological Applications in Man-Influenced Areas Linking Man and Nature Systems** Springer Science & Business Media Landscape Ecological Applications in Man-Influenced Areas not only expands the concept of landscape ecology, but also applies its principles to man-influenced ecosystems. New dimensions of landscape ecological research in a global change such as urbanization, biodiversity, and land transformation are explored in this book. The book also includes case studies concerning landscape analysis and evaluation using spatial analysis and landscape modelling for establishing sustainable management strategy in urban and agricultural landscapes. **Assessment of the Value of Woodland Landscape Function to Local Communities in Gorongosa and Muanza Districts, Sofala Province, Mozambique** CIFOR Site selection and description, Community landscape valuations, Vegetation inventory and assessments, Overlay of community valuations and conservation valuations, Implications for land use planning. **Landscape Ecology in Asian Cultures** Springer Science & Business Media Cultural landscapes are a product of the interactions between humans and natural settings. They are landscapes and seascapes that are shaped by human history and land use. Socioeconomic processes especially, but also environmental changes and natural disturbances, are some of the forces that make up landscape dynamics. To understand and manage such complex landscapes, interdisciplinary and transdisciplinary approaches are necessary, emphasizing the integration of natural and social sciences and considering multiple landscape functions. The spatial patterns of Asian landscapes are strongly related to human activities and their impacts. Anthropogenic patterns and processes have created numerous traditional cultural landscapes throughout the region, and understanding them requires indigenous knowledge. Cultural landscape ecology from a uniquely Asian perspective is explored in this book, as are the management of landscapes and land-use policies. Human-dominated landscapes with long traditions, such as those described herein, provide useful information for all ecologists, not only in Asia, to better understand the human-environmental relationship and landscape sustainability. **Methods and Approaches in Forest History** CAB! A companion to Forest History: International Studies on Socioeconomic and Forest Ecosystem Change which includes over 20 papers from the same conference. This book focuses on the different approaches and methods adopted in the study of forest history. The interdisciplinary nature of these studies is emphasized, bringing in the different perspectives of anthropologists, botanists, ecologists, foresters, historians, geneticists and geographers. This volume demonstrates the rich diversity of approaches and methods to forest history and the need to integrate them to give a more meaningful understanding of human-nature interactions, making forest history a more effective tool for the management of forest ecosystems. **People and the Environment Approaches for Linking Household and Community Surveys**

**to Remote Sensing and GIS** Springer Science & Business Media People and the Environment: Approaches for Linking Household and Community Surveys to Remote Sensing and GIS appeals to a wide range of natural, social, and spatial scientists with interests in conducting population and environment research and thereby characterizing (a) land use and land cover dynamics through remote sensing, (b) demographic and socio-economic variables through household and community surveys, and (c) local site and situation through resource endowments, geographical accessibility, and connections of people to place through GIS. Case studies are used to examine theories and practices useful in linking people and the environment. We also describe land use and land cover dynamics and the associated social, biophysical, and geographical drivers of change articulated through human-environment interactions.

**Vegetation Monitoring** DIANE Publishing This annotated bibliography documents literature addressing the design and implementation of vegetation monitoring. It provides resources managers, ecologists, and scientists access to the great volume of literature addressing many aspects of vegetation monitoring: planning and objective setting, choosing vegetation attributes to measure, sampling design, sampling methods, statistical and graphical analysis, and communication of results. Over half of the 1400 references have been annotated. Keywords pertaining to the type of monitoring or method are included with each bibliographic entry.

**Keyword index. Experimental Landscape Ecology** Springer Nature **The Use of Fire in Forest Restoration A General Session at the Annual Meeting of the Society for Ecological Restoration, Seattle, WA, September 14-16, 1995 Twelfth International Diatom Symposium Proceedings of the Twelfth International Diatom Symposium, Renesse, The Netherlands, 30 August - 5 September 1992** Springer Science & Business Media The Twelfth International Diatom Symposium stressed how diatoms can be used to assess the human impact on natural waters, without neglecting other important fields of research. As the frustules of many diatom species are relatively resistant to dissolution they are preserved in freshwater and marine sediments and provide a record of past environments on earth. In past decades they have been successfully used to reconstruct changes in water bodies evoked by changes in salinity, acidification and eutrophication. In the last few years diatom-inferred predictions of environmental variables have become much more quantitative. In the most recent research reports the strong separation between palaeolimnological and neolimnological diatom research is fading, as palaeolimnologists are increasingly using modern calibration sets to infer past states of the environment. This quantitative approach is also very suitable for prediction of future changes in the biota of surface waters. Also ecological changes due to climatic modification have been investigated more thoroughly recently. A very important new research topic is the occurrence of toxic diatoms, particularly along the coasts of North America. These proceedings are intended to be a balanced view of such modern developments in diatom research. They should also be of interest to non-specialists in diatoms, who can use the results of diatom research as a tool in a more general taxonomic, ecological and geological context.

**General Technical Report INT. Spatial Analytical** Routledge The ability to manipulate spatial data in different forms and to extract additional meaning from them is at the heart of GIS, yet genuine spatial analysis tools are rarely incorporated into commercial software, thus seriously limiting their usefulness. The future of GIS technology will depend largely on the incorporation of more powerful analytical and modelling functions - and there is agreement within the GIS community of the urgent need to address these issues. This text attempts this task. It presents the latest information on incorporating spatial analysis tools into GIS, and includes concepts and applications from both the environmental and socio-economic sciences.

**Ecological Networks and Greenways Concept, Design, Implementation** Cambridge University Press The establishment of ecological networks in Europe and greenways in America has required some of the most advanced applications of the principles of landscape ecology to land use planning. This book provides a thorough overview of recent developments in this emerging field, combining theoretical concepts of landscape ecology with the actual practice of landscape planning and management. In addition to biological and physical considerations important to biodiversity protection and restoration, equal weight is given to cultural and aesthetic issues to illustrate how sympathetic, sustainable land use policies can be implemented. Examples are given for large scale areas (Estonia and Florida) as well as regional areas such as Milano, Chicago and the Argentinian Yungas. This invaluable book will provide a wealth of information for all those concerned with biodiversity conservation through networks and greenways and their relevance to the planning process, whether researcher, land manager or policy maker.

**Tracking Environmental Change Using Lake Sediments Data Handling and Numerical Techniques** Springer Science & Business Media Numerical and statistical methods have rapidly become part of a palaeolimnologist's tool-kit. They are used to explore and summarise complex data, reconstruct past environmental variables from fossil assemblages, and test competing hypotheses about the causes of observed changes in lake biota through history. This book brings together a wide array of numerical and statistical techniques currently available for use in palaeolimnology and other branches of palaeoecology. Visit <http://extras.springer.com> the Springer's Extras website to view data-sets, figures, software, and R scripts used or mentioned in this book.

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**Tropical Forest Community Ecology** John Wiley & Sons Historically, tropical ecology has been a science often content with descriptive and demographic approaches, which is understandable given the difficulty of studying these ecosystems and the need for basic demographic information. Nonetheless, over the last several years, tropical ecologists have begun to test more sophisticated ecological theory and are now beginning to address a broad array of questions that are of particular importance to tropical systems, and ecology in general. Why are there are so many species in tropical forests and what mechanisms are responsible for the maintenance of that vast species diversity? What factors control species coexistence? Are there common patterns of species abundance and distribution across broad geographic scales? What is the role of trophic interactions in these complex ecosystems? How can these fragile ecosystems be conserved? Containing contributions from some of the world's leading tropical ecologists,

**Tropical Forest Community Ecology** provides a summary of the key issues in the discipline of tropical ecology: Includes contributions from some of the world's leading tropical ecologists Covers patterns of species distribution, the maintenance of species diversity, the community ecology of tropical animals, forest regeneration and conservation of tropical ecosystems

**Analysing Benthic Communities in the Weddell Sea (Antarctica) A Landscape Approach** Earth and Environmental Sciences BoD - Books on

Demand We are increasingly faced with environmental problems and required to make important decisions. In many cases an understanding of one or more geologic processes is essential to finding the appropriate solution. Earth and Environmental Sciences are by their very nature a dynamic field in which new issues continue to arise and old ones often evolve. The principal aim of this book is to present the reader with a broad overview of Earth and Environmental Sciences. Hopefully, this recent research will provide the reader with a useful foundation for discussing and evaluating specific environmental issues, as well as for developing ideas for problem solving. The book has been divided into nine sections; Geology, Geochemistry, Seismology, Hydrology, Hydrogeology, Mineralogy, Soil, Remote Sensing and Environmental Sciences. **Space Partition within Aquatic Ecosystems Proceedings of the Second International Congress of Limnology and Oceanography held in Evian, May 25-28, 1993** Springer Science & Business Media Proceedings of the Second International Congress of Limnology and Oceanography held in Evian, May 25--28, 1993 **Advances in Ecological Research** Academic Press Advances in Ecological Research **Scenario Studies for the Rural Environment Selected and edited Proceedings of the Symposium Scenario Studies for the Rural Environment, Wageningen, The Netherlands, 12-15 September 1994** Springer Science & Business Media Rural areas need to fulfil a large variety of functions and to accommodate many activities. The complexity of the problems, limited funds, and the almost irreversible character of some interventions result in a compelling need to evaluate ex ante the effects of alternative solutions for designation of land, for measures to develop infrastructure, and for soil and water management. Scenario studies are undertaken to help manage the complexity, to place bounds on uncertainties, and to create new visions. After an overview of the nature, variety and scope of scenario studies, the book illuminates various European examples and reviews, under the following headings: regional soil and water management; nature development and landscape quality; rural planning and the future of regions. **Biocultural Landscapes Diversity, Functions and Values** Springer This book is devoted to the cultural and biological dimensions and values of landscapes, linking the concepts of biodiversity, landscape and culture and presenting an essential approach for landscape analysis, interpretation and sustainable dynamics. Early chapters explore the concepts and values of biocultural landscapes, before addressing the methodology to identify the relationship between biological and cultural diversity. The volume continues with a series of case studies and with an exploration of the key role of biocultural diversity in contemporary landscape ecology. Readers will learn the importance of landscapes for different fields of natural and human sciences and are confronted to the trans-disciplinary nature of the landscape concept itself. A hierarchical approach to landscapes, in which they are composed of interacting (eco)systems, is shown to be essential in recognizing their emergent properties. In this work, the biocultural values of landscapes are explored through their diversity in geographical scopes, methodological approaches and conceptual assumptions. Authors from Asia, Europe and North-America present diverse research experiences and views on biocultural landscapes, their pattern, conservation and management. Landscape ecologists will find this work particularly appealing, as well as anyone with an interest in sustainable landscape development, nature conservation or cultural heritage management. This volume is the outcome of a symposium on "Biodiversity in Cultural Landscapes", organized in the framework of the 8th IALE World Congress, held in Beijing in 2011. **Ecosystem Classification for Environmental Management** Springer Science & Business Media When Lovelock published his 'Gaia', it was for many people quite a relief. We would not be able to destroy life on earth. Lovelock illustrated this argument with a wealth of mechanistic feedback processes, as we know them to occur in ecosystems. These feedback processes would, somehow, lead the earth as a whole into a new equilibrium. An equilibrium with life within, be it in an entirely changed environment. This is, indeed, let us be earnest: a functioning ecosystem. But what kind of ecosystem? The Gaia-hypothesis triggered a great deal of thought and discussion about what we actually require as an environment. Bio diversity as an abbreviation of biotic diversity has since become the focal point of societal concern. But again, when we think about it, we are not only interested in the sheer number of species on earth. We also have 'other interests: nearby, in our backyards, in the surrounding countryside, and on the various locations where we would like to spend our holidays. We also want to preserve rare or characteristic species just for their own sake. In fact, we want species in viable populations to be part of communities that are self-maintaining in environments where they belong. We know we cannot ask for this without protecting their environment, which is also our environment. This is where the next fashionable term emerges: sustainability. **Representing, Modeling, and Visualizing the Natural Environment** CRC Press The explosion of public interest in the natural environment can, to a large extent, be attributed to greater public awareness of the impacts of global warming and climate change. This has led to increased research interest and funding directed at studies of issues affecting sensitive, natural environments. Not surprisingly, much of this work has required the innovative application of GIS and has led to a crucial research question: How should the environment be represented, modeled, analyzed, and visualized within a GIS? With contributions from recognized international experts, Representing, Modeling, and Visualizing the Natural Environment explores the interplay between data representation, modeling, and visualization in environmental studies. It reviews state-of-the-art GIS applications for the natural environment and presents them in the context of a range of recent studies. This focus identifies analytical challenges and illustrates broader opportunities for applying GIS within other areas of the sciences and social sciences. The integrated approach reflects the need for a single volume covering all aspects While many texts cover aspects of GIS application within an environmental context, few of these books focus specifically on the natural environment nor do they integrate the questions that encompass the full process of enquiry associated with GIS application in studies of the environment. The thirteenth volume in the widely recognized Innovations of GIS series, this book investigates each of these questions in turn, explicitly addressing all aspects of GIS application in the natural environment. **Radio Tracking and Animal Populations** Academic Press Radio Tracking and Animal Populations is a succinct synthesis of emerging technologies and their applications to the empirical and theoretical problems of population assessment. The book is divided into sections designed to encompass the various aspects of animal ecology that may be evaluated using radiotelemetry technology - experimental design, equipment and technology, animal movement, resource selection, and demographics. Wildlife biologists at the leading edge of new developments in the technology and its application have joined forces. **Spatial Analysis A Guide For Ecologists** Cambridge University Press An essential guide for graduates, researchers and professionals to spatial analysis and the fast-growing range of methods available. **Vegetation Description and Data Analysis A Practical Approach** John Wiley & Sons Vegetation Description and Data Analysis: A Practical Approach, Second Edition is a fully revised and up-dated edition of this key text. The book takes account of recent advances in the field whilst retaining the original reader-friendly approach to the coverage of vegetation description and multivariate analysis in the context of vegetation data and plant ecology. Since the publication of the hugely popular first edition there

have been significant developments in computer hardware and software, new key journals have been established in the field and scope and application of vegetation description and analysis has become a truly global field. This new edition includes full coverage of new developments and technologies. This contemporary and comprehensive edition of this well-known and respected textbook will prove invaluable to undergraduate and graduate students in biological sciences, environmental science, geography, botany, agriculture, forestry and biological conservation. Fully international approach Includes illustrative case studies throughout Now with new material on: the nature of plant communities; transitional areas between plant communities; induction and deduction of plant ecology; diversity indices and dominance diversity curves; multivariate analysis in ecology. Accessible, reader-friendly style Now with new and improved illustrations **Spatial Complexity, Informatics, and Wildlife Conservation** Springer Science & Business Media As Earth faces the greatest mass extinction in 65 million years, the present is a moment of tremendous foment and emergence in ecological science. With leaps in advances in ecological research and the technical tools available, scientists face the critical task of challenging policymakers and the public to recognize the urgency of our global crisis. This book focuses directly on the interplay between theory, data, and analytical methodology in the rapidly evolving fields of animal ecology, conservation, and management. The mixture of topics of particular current relevance includes landscape ecology, remote sensing, spatial modeling, geostatistics, genomics, and ecological informatics. The greatest interest to the practicing scientist and graduate student will be the synthesis and integration of these topics to provide a composite view of the emerging field of spatial ecological informatics and its applications in research and management. **Handbook of Ecological Indicators for Assessment of Ecosystem Health** CRC Press The field of ecosystem health explores the interactions between natural systems, human health, and social organization. As decision makers require a sound, modular approach to environmental management and sustainable development, ecosystem health assessment indicators are increasingly used across any number of applications. The Handbook of Ecologic