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KEY=RESTORATION - LUCIANO GUNNER

Wetlands: Ecosystem Services, Restoration and Wise Use

Springer This volume explores major wetland ecosystem services, such as climate cooling and water quality improvement, and discusses the recent wetland conservation and restoration activities in China and neighboring countries. The role of wetlands in either cooling or warming the climate is analyzed as the net balance between carbon sequestration and emissions of methane and nitrous oxide. Wetlands start off having a net warming effect on the climate but in time switch to net cooling. Further, they remove 40% of the N and P from run-off and groundwater flow in agricultural areas, but wetlands need to amount to 10% of the total catchment area to make a difference. Reflecting on the recent large investment in wetland ecological studies in China and neighboring countries, the book addresses invasive species in coastal wetlands as well as the protection and wise use of tidal flats around the Yellow Sea. It also presents promising regional case studies on wetland restoration. The book is intended for academics, students and practitioners in the field of wetland ecology, management and restoration, as well as consultants and professionals working in conservation, wise use and environmental policy.

Restoration of Lakes, Streams, Floodplains, and Bogs in Europe Principles and Case Studies

Springer Science & Business Media Despite our growing awareness of the vital role they play in the global environment, wetlands remain among the most endangered ecosystems on Earth and are still being destroyed and degraded at an alarming rate. This much-needed publication, which includes contributions from leading researchers and practitioners, presents a holistic perspective on the restoration of wetland ecosystems such as shallow lakes, streams, floodplains and bogs. Through the use of carefully chosen case studies, the authors examine European wetland restoration projects from Scandinavia to Bulgaria and from Ireland to Belarus, focusing on the lessons they can teach to a new generation of conservationists. As well as reviewing the sum of current knowledge on the subject, the text is a store of practical know-how, covering a wide range of conservation approaches and techniques. It analyzes the major problems in the field and identifies key principles for achieving sustainability in wetland restoration. The topics covered include: • the role of wetlands in landscape functioning • human interference with natural processes such as water and matter cycles and energy dissipation • the impact of land use on global problems such as climate change, floods and droughts • the role played by diversity in wetland functioning The work shows that without sustainable land use over the totality of their catchment areas, and without cohesive inter-agency cooperation, individual restoration projects will have a short life span. The balance between scientific background and practical restoration makes this book a valuable resource for scientists as well as wetland managers, decision makers and land use planners, as well as students of ecology, nature conservation and environmental protection.

Wetlands: Functioning, Biodiversity Conservation, and Restoration

Springer Science & Business Media This book gives a broad and well-integrated overview of recent major scientific results in wetland science and their applications in natural resource management. After an introduction into the field, 12 chapters contributed by internationally known experts summarize the state of the art on a multitude of topics. The coverage is divided into three sections: Functioning of Plants and Animals in Wetlands; Conservation and Management of Wetlands; and Wetland Restoration and Creation.

Restoration of Lakes, Streams, Floodplains, and Bogs in Europe

Principles and Case Studies

Springer Despite our growing awareness of the vital role they play in the global environment, wetlands remain among the most endangered ecosystems on Earth and are still being destroyed and degraded at an alarming rate. This much-needed publication, which includes contributions from leading researchers and practitioners, presents a holistic perspective on the restoration of wetland ecosystems such as shallow lakes, streams, floodplains and bogs. Through the use of carefully chosen case studies, the authors examine European wetland restoration projects from Scandinavia to Bulgaria and from Ireland to Belarus, focusing on the lessons they can teach to a new generation of conservationists. As well as reviewing the sum of current knowledge on the subject, the text is a store of practical know-how, covering a wide range of conservation approaches and techniques. It analyzes the major problems in the field and identifies key principles for achieving sustainability in wetland restoration. The topics covered include: • the role of wetlands in landscape functioning • human interference with natural processes such as water and matter cycles and energy dissipation • the impact of land use on global problems such as climate change, floods and droughts • the role played by diversity in wetland functioning The work shows that without sustainable land use over the totality of their catchment areas, and without cohesive inter-agency cooperation, individual restoration projects will have a short life span. The balance between scientific background and practical restoration makes this book a valuable resource for scientists as well as wetland managers, decision makers and land use planners, as well as students of ecology, nature conservation and environmental protection.

Wetland Ecology and Management: Case Studies

Springer Science & Business Media This book contains papers on the topics of brought together wetland Scientists from all wetland ecology and management, most of continents and provided an opportunity to exchange valuable information on a variety of which were presented at the 2nd International Wetlands Conference in Trebon, Czechoslovakia aspects on the ecology and management of wetlands. (13-22 June 1984). The conference, hosted by the Hydrobotany Department of the Institute of Botany, was organized by the Czechoslovak This volume contains papers that represent aspects of wetland management. Like most Academy of Sciences and the International ecological topics, the papers clearly Wetlands Working Group of the International Association of Ecology (INTECOL) with demonstrate that the science of wetland management is not evenly developed around the cooperation from the SCOPE (Scientific Committee on Problems of the Environment) world. In some areas, wetlands have not even Working Group on Ecosystem Dynamics in been adequately described and there is little Freshwater Wetlands and Shallow Water Bodies, information about the impacts that man is UNESCO Man and the Biosphere (MAB) having on them. In other areas, information on Program, International Society for Ecological wetland ecology and management has developed Modelling, and the International Society for to the point where regulations and laws provide Limnology (SIL). Partial sponsorship for the some protection against development. It is our conference and these proceedings was provided hope this collection of papers will demonstrate by UNESCO (Contract SCjRPj204. 079).

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Southern Forested Wetlands

Ecology and Management

Routledge Originally published in 1998, Southern Forested Wetlands is an up to date, one source compendium of current knowledge on the wetland ecology of America's southern forests. This book presents both the ecological and management aspects of these important ecosystems. The book was compiled by members of the Consortium for Research on southern forested wetlands, and was a collaboration of those working to conserve, study, and manage these economically and environmentally influential areas. The book covers geographic ranges from West Virginia to Florida, to Texas and inland north to Arkansas and Tennessee. It also addresses

specific wetland types, including deep-water swamps, major and minor alluvial flood plains, pocosins and Carolina bays, mountain fens, pond cypress swamps, flatwoods wetlands, and mangroves.

Fundamentals of Tropical Freshwater Wetlands From Ecology to Conservation Management

Elsevier *Fundamentals of Tropical Freshwater Wetlands: From Ecology to Conservation Management* is a practical guide and important tool for practitioners and educators interested in the ecology, conservation and management of wetlands in tropical/subtropical regions. The book is written in such a way that, in addition to scientists and managers, it is accessible to non-specialist readers. Organized into three themed sections and twenty-three chapters, this volume covers a variety of topics, exposing the reader to a full range of scientific, conservation and management issues. Each chapter has been written by specialists in the topic being presented. The book recognizes that wetland conservation, science and management are interlinked disciplines, and so it attempts to combine several perspectives to highlight the interdependence between the various professions that deal with issues in these environments. Within each chapter extensive cross-referencing is included, so as to help the reader link related aspects of the issues being discussed. Contributed to by global experts in the field of tropical wetlands Includes case studies and worked examples, enabling the reader to recreate the work already done Focuses on tropical systems not available in any other book

Wetland Biodiversity, Ecosystem Services, and the Impact of Climate Change

Engineering Science Reference "This book investigates global changes impacts on ecosystem services and biodiversity in wetlands and offers concepts, methodologies, tools, and applications for ecosystem services valuation, wetlands biodiversity conservation, fresh water supply and its impact on biodiversity, agricultural production, food security and wetland management"--

Wetland Environments A Global Perspective

John Wiley & Sons Wetlands - swamp, marsh, bayou, tundra and bog - are places that are rarely visited and often misunderstood but they have, in fact, conspicuous roles in the physical, biological and cultural geography of the world. They are intrinsically beautiful environments where one may see the natural and essential values in the interaction of water, soil, vegetation, wildlife, and humans. Wetlands occur at the confluence of unique terrestrial, hydrological and climatic conditions that give rise to some of the most biodiverse regions of the world. They also play vital roles in the cycling and storage of key nutrients, materials and energy through the Earth's system. A complete study of wetland environments requires the assessment of their physical and biological attributes, properties and functions of these ecosystems, and the economic, political and social aspects that mediate their use globally. A systems approach is taken throughout this book which emphasizes the interactions between these elements of wetland ecosystems. Moreover, selected case studies from across the world are used to illustrate wetland characteristics and circumstances. This book is intended to foster a greater awareness and appreciation of wetlands, promote a culture of conservation and wise management, and spread the knowledge that wetlands are important, indeed crucial, elements of the global environment. Our attempts to understand, manage and enhance wetlands in the twenty-first century are part of the larger effort to maintain a sustainable Earth. Readership: Introductory or intermediate level undergraduates taking courses on wetland environments Additional resources for this book can be found at: <http://www.wiley.com/go/aber/wetland>

Wetlands and Natural Resource Management

Springer Science & Business Media This book provides a broad and well-integrated overview of recent major scientific results in wetland science and their applications in natural resource management issues. The contributors, internationally known experts, summarize the state of the art on an array of topics, divided into four broad areas: The Role of Wetlands for Integrated Water Resources Management: Putting Theory into Practice; Wetland Science for Environmental Management; Wetland Biogeochemistry; Wetlands and Climate Change Worldwide.

Wetlands

John Wiley & Sons The single most important book on wetlands, newly expanded and updated *Wetlands* is the definitive guide to this fragile ecosystem, providing the most comprehensive coverage and in-depth information available in print. Recently updated and expanded, this latest edition contains brand new information on Wetland Ecosystem Services and an updated discussion on Wetland, Carbon, and Climate Change and Wetland Creation and Restoration. Due to popular demand, the authors have brought back five streamlined chapters on wetland ecosystems that had been removed from previous editions, and provided more robust ancillary materials including an online color photo gallery, PowerPoint slides, and several video case studies. As nature's kidneys, wetland ecosystems help the environment process toxins and excess fertilizers and maintain the relative health of our aquatic ecosystems. As the understanding of their importance grows, their management and ecology have gained increased attention and have become an area of professional specialization over the past two decades. This book gives readers a solid understanding of wetlands, how they

work, what they do, and why the Earth can't live without them. Understand wetlands' role in the ecosystem, from local to global scales Appreciate the fact that wetlands may be the most logical and economical way to sequester carbon from the atmosphere Discover the unique characteristics that make wetlands critically important for improving water quality, reducing storm and flood damage, and providing habitat to support biodiversity Learn how wetlands are being managed or destroyed around the globe but also how we can create and restore them Examine the ways in which climate change is affecting wetland ecosystems and wetland ecosystems affect climate change Wetlands are crucial to the health of the planet, and we've only begun to realize the magnitude of the damage that has already been done as we scramble to save them. A generation of ecologists, ecological engineers, land use planners, and water resource managers worldwide owe their knowledge of the wetlands to this book – for the next generation to follow in their footsteps. Wetlands 5th edition is the quintessential guide to these critical systems.

The Wetlands Handbook, 2 Volume Set

John Wiley & Sons Forty-two chapters by international experts from a wide range of disciplines make The Wetlands Handbook the essential tool for those seeking comprehensive understanding of the subject. A departure from more traditional treatises, this text examines freshwater wetland ecosystem science from the fundamentals to issues of management and policy. Introductory chapters address the scope and significance of wetlands globally for communities, culture and biodiversity. Subsequent sections deal with processes underpinning wetland functioning, how wetlands work, their uses and values for humans and nature, their sensitivity to external impacts, and how they may be restored. The text is illustrated by numerous examples, emphasizing functional and holistic approaches to wetland management, including case studies on the wise use and rehabilitation of wetlands in farmed, urban, industrial and other damaged environments, highlighting the long-term benefits of multiple use. The Wetlands Handbook will provide an invaluable reference for researchers, managers, policy-makers and students of wetland sciences.

Wetland and Riparian Areas of the Intermountain West Ecology and Management

University of Texas Press Wetlands and riparian areas between the Rocky Mountains and the Sierra Nevada are incredibly diverse and valuable habitats. More than 80 percent of the wildlife species in this intermountain region depend on these wetlands—which account for less than 2 percent of the land area—for their survival. At the same time, the wetlands also serve the water needs of ranchers and farmers, recreationists, vacation communities, and cities. It is no exaggeration to call water the “liquid gold” of the West, and the burgeoning human demands on this scarce resource make it imperative to understand and properly manage the wetlands and riverine areas of the Intermountain West. This book offers land managers, biologists, and research scientists a state-of-the-art survey of the ecology and management practices of wetland and riparian areas in the Intermountain West. Twelve articles examine such diverse issues as laws and regulations affecting these habitats, the unique physiographic features of the region, the importance of wetlands and riparian areas to fish, wildlife, and livestock, the ecological function of these areas, their value to humans, and the methods to evaluate these habitats. The authors also address the human impacts on the land from urban and suburban development, mining, grazing, energy extraction, recreation, water diversions, and timber harvesting and suggest ways to mitigate such impacts. In addition to the editors, the contributors to this volume are: Paul Adamus, Oregon State University, Corvallis; Michael A. Bozek, University of Wisconsin, Stevens Point; Robert C. Ehrhart, Oregon State University, Bend; James H. Gammonley, Colorado Division of Wildlife, Fort Collins; Paul L. Hansen, Bitterroot Restoration, Corvallis, Montana; E. Andrew Hart, University of Wyoming, Laramie; Murray K. Laubhan, U.S. Geological Survey, Fort Collins, Colorado; Kirk Lohman, University of Idaho, Moscow; James R. Lovvorn, University of Wyoming, Laramie; Neal D. Niemuth, University of Wisconsin, Stevens Point; Richard A. Olson, University of Wyoming, Laramie; Neil F. Payne, University of Wisconsin, Stevens Point; Mark A. Rumble, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Rapid City, South Dakota; Maureen Ryan, University of Toledo (Ohio) College of Law; Brian E. Smith, U.S. Geological Survey, Northern Prairie Wildlife Research Center, Jamestown, North Dakota; Mark Squillace, University of Toledo (Ohio) College of Law; Stephen A. Tessmann, Wyoming Game and Fish Department, Cheyenne; David W. Willis, South Dakota State University, Brookings

A Case Study in Wetlands Conservation

Identifying Best Management Practices for Landowner Stewardship

This research explores wetlands conservation techniques employed by private landowners owning 1,000 or more acres who were recipients of an Environmental Law Institute National Wetlands Award. Study of private landowner stewardship is timely and important because in the United States, 75 percent of all wetlands are under private ownership. Given that wetlands provide a suite of valuable ecosystem services such as water filtration, flood abatement, and carbon storage, their conservation is critical to a healthy environment and productive economy. To accomplish this research, landowner files were processed into a digital archive and sub-categorized for research purposes. Telephone interviews were conducted with a study group of seven landowners. Interview results were studied with archival resources, and a comprehensive profile was generated for each individual. Standard case study methodology was employed to interpret and analyze the emergent results. Key findings of this research include the presence of a shared land ethic between land owners. That land ethic is an individualized sentiment, though landowners expressed similarity through a desire to share conservation success with others. Additionally, the majority of landowners reported using a suite of best management practices. These are grouped according to wildlife and wildlife habitat, wetland hydrology, technical assistance and

conservation partnerships, and conservation management techniques. Other key findings include a set of site-specific techniques employed by a smaller subset of the study group. Landowners collectively reported other best practices, including participating in community outreach. Also uncovered during analysis was the range of historical factors that influence land management approach, such as agricultural drainage policies. In its entirety, this research seeks to provide a reference guide for both landowners and policy makers, presenting the best management practices for conserving wetlands on private lands.

Satellite Remote Sensing for Conservation Action

Case Studies from Aquatic and Terrestrial Ecosystems

Cambridge University Press Explains how satellite remote sensing informs and helps deliver successful conservation management through case studies, which highlight practitioner experience.

Agricultural Conservation Practices and Related Issues

Reviews of the State of the Art and Research Needs : a Conservation Effects Assessment Bibliography

The Wetland Book

II: Distribution, Description, and Conservation

Springer In discussion with Ramsar's Max Finlayson and Nick Davidson, and several members of the Society of Wetland Scientists, Springer is proposing the development of a new Encyclopedia of Wetlands, a comprehensive resource aimed at supporting the trans- and multidisciplinary research and practice which is inherent to this field. Aware both that wetlands research is on the rise and that researchers and students are often working or learning across several disciplines, we are proposing a readily accessible online and print reference which will be the first port of call on key concepts in wetlands science and management. This easy-to-follow reference will allow multidisciplinary teams and transdisciplinary individuals to look up terms, access further details, read overviews on key issues and navigate to key articles selected by experts.

Ecology of Threatened Semi-Arid Wetlands

Long-Term Research in Las Tablas de Daimiel

Springer Science & Business Media Playing a critical role in both influencing climate change and mitigating its impacts, the world's diverse wetlands have become one of the world's most threatened ecosystems as unsustainable land-use practices coupled with irrational use of water have already resulted in large-scale wetlands loss and degradation. To develop sound management and conservation schemes to assure wetlands sustainability in the long term requires long-term understanding of wetlands ecology. Yet until now, long-term interdisciplinary research into these systems has been limited to only a few systems from tropical or temperate climates (such as the Florida Everglades, and Czech biosphere reserve). This new book adds to the existing wetlands literature, providing a unique reference in basic and applied Mediterranean wetland ecology, based on results from long-term interdisciplinary research at the RAMSAR and UNESCO Biosphere site, of Las Tablas de Daimiel, Spain. Dating back to the early 1990s the research highlights changes in the biotic and abiotic environment in response to cumulative anthropogenic stressors, and provide guidance on applying this understand to sound management and conservation. With particular relevance to researchers dealing with semi-arid wetlands in the Mediterranean and elsewhere, as well as to resource managers, the book discusses the complexity of the interacting abiotic and biotic environment across different spatial and temporal scales and across various levels of biological hierarchy is highlighted, and reveals how management based on poor knowledge causes more damage than repair. The book will be of interest to researchers interested in freshwater ecology, hydrobotany, hydrology, geology, biogeochemistry, landscape ecology and environmental management.

Sundarban Mangrove Wetland (A UNESCO World Heritage Site)

A Comprehensive Global Treatise

Elsevier Sundarban Mangrove Wetland: A Comprehensive Global Treatise provides an illustrative account of the ecology, biology, conservation and management strategies of this endangered UNESCO World Heritage Site. The book offers a comprehensive and accessible guide to a variety of wetland ecosystems, including endangered flora and fauna, the ecology and diversity of pelagic and

benthic biota, the impact of multiple stresses on the biota, inorganic and organic pollutants in biotic and abiotic matrices and their remedial measures, the impact of climate change on mangrove plants, and their conservation and management strategies. Divided into seven chapters, the book presents a realistic summary of the wetland environment and its resources, citing individual case studies considering a host of topics of particular interest. Analysis of this unique wetland provides crucial comparisons with other wetlands and their status, environmental challenges and possible remedial measures. Sundarban Mangrove Wetland is an in-depth and up-to-date account ideal for the student, teacher or researcher in marine biology & ecology, environmental science, marine geochemistry, marine pollution and ecotoxicology and wastewater treatment. Covering both fundamental and advanced aspects, the book is also useful for policy makers and those involved in coastal resource conservation and management. Presents an in-depth and illustrative accounting of an iconic tropical mangrove wetland in an intelligible and easy-to-understand manner Provides a unique look at the ecology, biodiversity and conservation and management of the Sundarban wetlands, along with the emerging ecological issues that may affect long-term sustainability Focuses on several case studies, considering microzooplankton and trace metals in the Sundarban wetlands

The Wetland Book

I: Structure and Function, Management, and Methods

Springer In discussion with Ramsar's Max Finlayson and Nick Davidson, and several members of the Society of Wetland Scientists, Springer is proposing the development of a new Encyclopedia of Wetlands, a comprehensive resource aimed at supporting the trans- and multidisciplinary research and practice which is inherent to this field. Aware both that wetlands research is on the rise and that researchers and students are often working or learning across several disciplines, we are proposing a readily accessible online and print reference which will be the first port of call on key concepts in wetlands science and management. This easy-to-follow reference will allow multidisciplinary teams and transdisciplinary individuals to look up terms, access further details, read overviews on key issues and navigate to key articles selected by experts.

Creating and Restoring Wetlands

From Theory to Practice

Elsevier Creating and Restoring Wetlands: From Theory to Practice describes the challenges and opportunities relating to the restoration of freshwater and estuarine wetlands in natural, agricultural, and urban environments in the coming century. The underpinnings of restoration, driven by ecological (disturbance, dispersal, succession) theory, are described and applied to various activities (restoring hydrology, soils, and biota) that are used to improve the short- and long-term success of wetland restoration projects. Unforeseen problems that hinder restoration efforts and solutions to these problems are discussed in this comprehensive book that contains five sections and 13 chapters that include an introduction describing the defining characteristics of wetland - hydrology, soils, biota, the role of theory in guiding wetland succession, ecosystem development following restoration, and differentiating wetland reclamation, restoration, and creation, restoration of various estuarine and freshwater wetlands, case studies of estuarine and freshwater restoration and large-scale restoration, and finally, the future of wetland restoration. Explicitly links ecological theory to restoration efforts in a variety of freshwater and estuarine, natural, agricultural, urban landscapes, and wetland ecosystems Contains case studies of small- and large-scale restoration activities ensuring relevance to individuals and organizations Illustrates successes as well as failures of freshwater and estuarine wetland restorations in order to learn from them Presents specific information on hydrology, biota, wetland succession, ecosystem development following restoration, and more

Restorative Redevelopment of Devastated Ecocultural Landscapes

CRC Press A fusion of ecological restoration and sustainable development, restorative redevelopment represents an emerging paradigm for remediating landscapes. Rather than merely fixing the broken bits and pieces of nature, restorative development advocates the reuse of devastated landscapes to improve the value and livability of a location for humans at the same time as effectively reinstating natural processes and functions. Restorative Redevelopment of Devastated Ecocultural Landscapes explores the use of this approach to address the long-term, sustainable reparation of the fabled marshlands of southern Iraq destroyed by Saddam Hussein, as well as numerous examples of other ecologically sensitive regions. Case studies presented include: Southern marshlands Iraq Hula swamp, Israel Azraq Oasis, Jordan Las Vegas Wash, USA Xochimilco, Mexico Pantanal, Brazil Clark County Wetlands Park, USA Tonle Sap, Cambodia Lake Titicaca, Peru Nature Reserves, Jordan The book reviews successfully-implemented and celebrated case studies from more than 15 countries around the world which, either in whole or in part, can offer valuable insight into the restorative development of the Iraqi marshlands as well as other devastated ecocultural landscapes. It presents practical approaches for sustaining the process of restoration efforts, both during and after the reparation work has been accomplished. The editor suggests solutions targeted for Iraq but that also have resonance in other regions devastated by conflict and natural disasters. He takes a synoptic or cross-system approach to problem solving when repairing large-scale landscapes that have been devastated by conflict or natural disasters such as tsunami-damaged Indonesia and earthquake-ravaged Haiti.

Sustainable Management of Wetlands

Biodiversity and Beyond

SAGE Publications India This work is a very comprehensive and multidisciplinary study of Indian wetlands.... This is a valuable book for scholars and students in the field of environment, ecology, development, biology, geography, economics and anthropology... it is an invaluable resource for policy makers, environmentalists, industrialists and NGO's' - International Journal of Environmental Studies This volume is a comprehensive and multidisciplinary study of wetlands, which unites the natural science perspective with strong social concerns and economic and other approaches in order to design a practical national wetlands conservation strategy and action plan. The contributors argue that an important part of any long-term strategy for protecting wetlands must involve local users and incorporate traditional knowledge. The book makes a strong case for the coordinated management of wetlands and outlines various social, economic and ecological indicators which can be used to assess the diverse management needs of different wetlands.

Ecosystem Services – Concept, Methods and Case Studies

Springer Nature provides us with many services seemingly for free: recharged groundwater, fertile soil and plant biomass created by photosynthesis. We human beings draw extensive benefits from these “ecosystem services,” or ES – food, water supply, recreation and protection from natural hazards. Major international studies, such as the Millennium Ecosystem Assessment, have addressed the enormous role of biodiversity and ecosystems to human well-being, and they draw particular attention to the consequences resulting from the reduction or loss of these services. These very topical issues are being addressed by authors/scientists in a wide variety of disciplines – and their approaches, terminologies and methodological specifics are just as diverse. What, for example, does the efficacy of nature or natural capital mean? Which values of nature are particularly important, how are they distributed in space and time and how can they be assessed and the relevant knowledge promoted? Can all ecosystem services be quantified and even monetarised? What should be done to ensure that the multiple services of nature will be available also in future? This book explains the multifaceted concept of ecosystem services, provides a methodological framework for its analysis and assessment, and discusses case examples, particularly from Germany. It is addressed to scientists and practitioners in the administrative, volunteer and professional spheres, especially those who deal with environment, landscape management and nature conservation and regional and land-use planning. The target group includes experts from the business community, politicians and decision makers, students and all those interested in fundamental ecological, economic, ethical and environmental issues.

Flood Pulsing in Wetlands

Restoring the Natural Hydrological Balance

John Wiley & Sons The latest cutting-edge research on flood pulsing and wetland restoration in North America Presenting the latest research from leaders in the field of restoration ecology, Flood Pulsing in Wetlands reflects the current movement to incorporate flood pulsing into wetland restoration efforts. Emphasizing how integral flood pulsing is to successful wetland restoration, the book's contributors provide descriptions of restoration projects across North America in which flood pulsing has been primarily used to restore beneficial hydrodynamic conditions to floodplain areas, and improve or save vegetation, wildlife, and terrain. Detailing the importance and applicability of recreating flood-pulsed conditions on floodplains for successful restoration, the first chapter introduces the concept of flood pulse and its unique role in wetland restoration. The following chapters detail the strategies and results of individual projects and the impact flood pulsing had on the projects' overall goals. Case studies detail the history of each region, such as the Southwest, including the Sonoran Desert communities and the Middle Rio Grande; the Missouri River in Montana; the Illinois River Valley; and the Southeast, including Brushy Lake, Arkansas. Also documented is the most famous case of flood pulsing used in the restoration of an entire landscape, the Kissimmee River project. Approaches used to restore specific plant and animal populations, the unique ecological concerns of each region, and the future outlook for each area are fully described. Extensive bibliographies for each chapter make Flood Pulsing in Wetlands: Restoring the Natural Hydrological Balance the essential reference for restoration ecologists, consultants in wetland restoration, government and restoration agency employees, land managers, ecologists, foresters, and geologists.

Valuing Ecosystem Services

The Case of Multi-functional Wetlands

Routledge Ecosystem services can be broadly defined as the aspects of ecosystems that provide benefits to people. This book provides guidance on the valuation of ecosystem services, using the case of multifunctional wetlands to illustrate and make recommendations regarding the methods and techniques that can be applied to appraise management options. It provides a review of ecosystem service valuation rationale, including its importance from both a policy and project appraisal perspective, and a useful reference when considering policy and appraisal of ecosystem management options. It shows how legal obligations and other high-level management targets should be taken into account in valuation exercises, thus giving important policy context to the

management options. The authors set out what they call an Ecosystem Services Approach to the full appraisal of the role of ecosystem services in the economy and society. Although concentrating on wetlands, the approaches suggested provide an assessment framework that can be applied to other types of ecosystem assets.

Sustaining the World's Wetlands

Setting Policy and Resolving Conflicts

Springer Science & Business Media Wetlands throughout the world, including those described in this book are among the most sensitive and vulnerable ecosystems. They are critical habitats to the world's migratory birds and a broad range of endangered mammal, reptile, amphibian, and plant species. They provide a broad range of flood storage, pollution control, water supply, ecotourism functions to indigenous peoples and country populations as a whole. They are also at the center of severe land and water use conflicts. These are conflicts between countries where wetland resources or the water supplies required for such resources involve more than one country. These are conflicts in use such as conflicts between habitat protection and charcoal production in mangroves. These are conflicts between groups of peoples such as indigenous peoples and hydropower advocates. Many wetlands have already been destroyed by water extractions, dams, levees, channelization, and fills. Others have been degraded by water pollution, overfishing and overhunting, timber harvest, and a host of other activities. This book describes these conflicts and international policies and institutions developed to protect and manage wetland resources. Most of the broader literature and other books on wetlands focuses on wildlife. Wildlife is described in the case studies, which follow. But, Richard Smardon provides us with more. He traces the history of conflicts and the development of policies and institutions to protect and manage wetland resources.

Constructed Wetlands for Wastewater Treatment in Hot and Arid Climates

Springer This edited book presents the first collection of case studies and research projects on the sustainable technology of constructed wetlands for wastewater management under hot and arid climates. It is the first such work that summarizes in a single reference the current international experiences and knowledge on the implementation of this nature-based solution under these diverse and often harsh climatic conditions. It covers the relevant gap in the fragmented and limited literature by providing integrated information and documentation on the feasibility of this green technology. The book presents the treatment efficiency of constructed wetland facilities and the research output from 29 different countries across South America, Africa, Asia and Oceania, while it covers various applications such as domestic and municipal wastewater, various industrial effluents and municipal sludge. Many examples and case studies further demonstrate the potential of this technology to contribute to better address the issues of water scarcity and limited fresh water resources through circular management of treated effluents e.g. reuse in irrigation. It also discusses the various challenges and technical aspects that should be considered in such climates, along with the environmental, financial and social benefits of this technology. This work is a useful handbook and guide for professional engineers, practitioners, academics, researchers, students, and water authorities who wish to get a better understanding and first-hand information on the potential of constructed wetlands for cost-effective and sustainable wastewater management in countries with hot and arid climates.

Restoration of Aquatic Ecosystems

Science, Technology, and Public Policy

National Academies Press Aldo Leopold, father of the "land ethic," once said, "The time has come for science to busy itself with the earth itself. The first step is to reconstruct a sample of what we had to begin with." The concept he expressed "restoration" is defined in this comprehensive new volume that examines the prospects for repairing the damage society has done to the nation's aquatic resources: lakes, rivers and streams, and wetlands. Restoration of Aquatic Ecosystems outlines a national strategy for aquatic restoration, with practical recommendations, and features case studies of aquatic restoration activities around the country. The committee examines: Key concepts and techniques used in restoration. Common factors in successful restoration efforts. Threats to the health of the nation's aquatic ecosystems. Approaches to evaluation before, during, and after a restoration project. The emerging specialties of restoration and landscape ecology.

Ecology, Conservation, and Restoration of Chilika Lagoon, India

Springer Nature This book chronicles the decades-long work of studying, analyzing, and reversing the environmental pressures that threatened India's Chilika Lagoon, the largest brackish-water lagoon in the region, and the second largest in the world. Designated as one of India's first Ramsar Sites in 1981, Chilika Lagoon continued to degrade for a decade longer. Then, the Chilika Development Authority (CDA) was established to gather information and devise a restoration plan that benefits the ecosystems of the lagoon, with sensitivity to the needs and livelihoods of local communities. Expert contributors detail the work of analysis, planning and implementation, including extensive coverage of such topics as: Devising a plan for implementing Ramsar wise use guidelines Sedimentologic, chemical, and isotopic impacts Hydrodynamics and salinity Runoff and sediment in watersheds of the Lagoon's

Western Catchment Long-term analysis of water quality and continued water quality monitoring Bio-optical models for cyclone impact assessment Studies of geomorphology, land use, and sedimentary environments Spatiotemporal assessment of phytoplankton communities Creation of a post-restoration scenario for fish and fisheries Assessing status of waterbirds, species diversity and migration patterns The result was a major hydrological intervention to re-establish hydrological and salinity regimes, biodiversity, and fish catches, and help protect the livelihood of lagoon-dependent communities. The story of the rehabilitation and management of Chilika Lagoon demonstrates that it is possible to halt and reverse the encroachment and degradation of wetlands, to restore biodiversity and to provide benefits for large numbers of people. Ecology, Conservation, and Restoration of Chilika Lagoon goes beyond scientific research articles to explore institutional and governance issues, political ecology, and the Ramsar Convention's guidelines for ecosystem restoration. The book will benefit researchers, wetland managers, government policy makers and more general readers concerned with restoration and conservation of wetlands around the planet.

Ecosystem Services and Management Strategy in China

Springer Science & Business Media "Ecosystem Services and Management Strategy in China" is a two-year international cooperation project that culminated from the China Council for International Cooperation on Environment and Development's Task Force on Ecosystem Services and Management. It combines case studies, scenario analysis, and stakeholder consultations that focus on Chinese forest, grassland and wetland ecosystems and assesses the economic and social benefits of sustainable ecosystems management. It also identifies better practices in ecosystem management from Chinese and international experience and recommends a more intensive integration of ecosystem services into decision-making processes. In November 2010, the Task Force presented five strategic policy proposals for the implementation of sustainable management for Chinese ecosystems. These proposals were extremely well-received by senior decision makers and have since been adopted by national government agencies. The book represents a valuable reference work for researchers and professionals working in related areas. Professor Yiyu Chen worked as president at the National Natural Science Foundation of China from 2004 to early 2013 and is Member of the Chinese Academy of Sciences. Professor Beate Jessel works as president at the Federal Agency for Nature Conservation, Germany. Professor Bojie Fu works at the Research Center of Eco-Environment Sciences, CAS and is Member of the Chinese Academy of Sciences. Professor Xiubo Yu works at the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences. Dr. Jamie Pittock is a Senior Lecturer at the Fenner School of Environment and Society, Australian National University, Australia.

Applying Ecological Principles to Land Management

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

The Ecosystem Approach: Case studies

Effects of Agricultural Conservation Practices on Fish and Wildlife

A Conservation Effects Assessment Project (CEAP)

Bibliography

"The bibliography is a guide to recent scientific literature covering effects of agricultural conservation practices on fish and wildlife. The citations listed here provide information on how conservation programs and practices designed to improve fish and wildlife habitat, as well as those intended for other purposes (e.g., water quality improvement), affect various aquatic and terrestrial fauna"-- Abstract.

Water for the Environment

From Policy and Science to Implementation and Management

Academic Press Water for the Environment: From Policy and Science to Implementation and Management provides a holistic view of environmental water management, offering clear links across disciplines that allow water managers to face mounting challenges. The book highlights current challenges and potential solutions, helping define the future direction for environmental water management. In addition, it includes a significant review of current literature and state of knowledge, providing a one-stop resource for environmental water managers. Presents a multidisciplinary approach that allows water managers to make connections across related disciplines, such as hydrology, ecology, law, and economics Links science to practice for environmental flow researchers and those

that implement and manage environmental water on a daily basis Includes case studies to demonstrate key points and address implementation issues

Wildlife Review

Case Studies of Wildlife Ecology and Conservation in India

Routledge "This volume brings together a collection of case studies examining wildlife ecology and conservation across India. The book explores and examines a wide range of fauna across different terrains and habitats in India, revealing key issues and concerns for biodiversity conservation, with a particular emphasis on the impact of humans and climate change. Cases are as wide ranging as tigers, leopards, sloth bears, pheasants, insects and birds, across a diverse range of landscapes, including forests, wetlands, nature reserves and even a university campus. Split into three parts, Part I focuses on how the distribution of animals is influenced by the availability of resources such as food, water, and space. Chapters examine key determinants, such as diet and prey and habitat preferences, with habitat loss also being an important factor. In Part II, chapters examine human-wildlife interactions, dealing with issues such as the impact of urbanization, the establishment of nature reserves and competition for resources. The book concludes with an examination of landscape ecology and conservation, with chapters in Part III focusing on habitat degradation, changes in land-use patterns and ecosystem management. Overall, the volume not only reflects the great breadth and depth of biodiversity in India, but offers important insights to the challenges facing biodiversity conservation not only in this region, but worldwide. This volume will be of great interest to students and scholars of wildlife ecology, conservation biology, biodiversity conservation and the environmental sciences more broadly"--

Structured Decision Making

Case Studies in Natural Resource Management

JHU Press Smith, Jennifer A. Szymanski, Terry Walshe, Nicolas Zuël

Thirsty Planet

Strategies for Sustainable Water Management

Bloomsbury Publishing By the year 2025 nearly 2 billion people will live in regions experiencing absolute water scarcity. In the face of this emerging crisis, how should the planet's water be used and managed? Current international policy sees nature competing with human uses of water. Hunt takes issue with this perspective. She suggests that nature is the source of water and only by making the conservation of nature an absolute priority will we have the water we need for human use in future. It is essential, therefore, to manage water in ways that maintain the water cycle and the ecosystems that support it. This book looks at the complexity of the problem. It provides a wide array of ideas, information, case studies and ecological knowledge - often from remote corners of the developing world -- that could provide an alternative vision for water use and management at this critical time. Essential and compelling reading for students on courses related to water resource management and development; water managers and decision makers, and non-specialists with an interest in global water issues.