Ecological Restoration Second Edition Principles Values And Structure Of An Emerging Profession The Science And Practice Of Ecological Restoration Series

Environmental ToxicologyRoutledge Handbook of Ecological and Environmental RestorationEcological RestorationEffective Monitoring to Evaluate Ecological Restoration in the Gulf of MexicoEncyclopedia of EcologyIntroduction to Restoration EcologyPrinciples of Ecological Landscape DesignThe Routledge Handbook of Urban EcologyHandbook of Ecological Restoration: Volume 1, Principles of RestorationTotem SalmonRestoration EcologyEcological RestorationPrimer of Ecological RestorationRestoration EcologyEcological Restoration, Second EditionCoastal Wetlands: Alteration and RemediationEcological Engineering and Ecosystem RestorationPrinciples of Risk AnalysisWildlife Habitat ManagementPrinciples and Guidelines for Ecological Restoration in Canada's Protected Natural AreasProject Planning and Managemfor Ecological RestorationEcological restoration for protected areas: principles, guidelines and best practicesRestoring Neighborhood StreamsWetland EcologyEnvironmental Land Use Planning and ManagementEncyclopedia of BiodiversityRestoring Disturbed LandscapesEnvironmental and Pollution ScienceLandscape Restoration HandbookLandscape

Restoration Handbook, Second EditionEcological EngineeringA Guide for Desert and Dryland RestorationWatershed RestorationPrinciples and Methods in Landscape EcologyEcological Principles of AgricultureThe Ecological World ViewFish ConservationRestoring Natural CapitalFoundations of Restoration EcologyKey Topics in Conservation Biology 2

Environmental Toxicology

In every decision context there are things we know and things we do not know. Risk analysis uses science and the best available evidence to assess what we know-and it is intentional in the way it addresses the importance of the things we don't know. Principles of Risk Analysis: Decision Making Under Uncertainty lays out the tasks of risk analysis i

Routledge Handbook of Ecological and Environmental Restoration

After its bestselling first edition from 1993, the "Landscape Restoration Handbook" returns with many new features and enhancements. Updated and expanded information includes a new chapter on ecological restoration types; an appendix on ecological restoration resources (professionals, organizations, natural heritage programs, web sites); and an appendix on regulatory considerations for wetland restoration.

Ecological Restoration

DIVToday, there is a growing demand for designed landscapes—from public parks to backyards—to be not only beautiful and functional, but also sustainable. Sustainability means more than just saving energy and resources. It requires integrating the landscapes we design with ecological systems. With Principles of Ecological Landscape Design, Travis Beck gives professionals and students the first book to translate the science of ecology into design practice. DIV DIVThis groundbreaking work explains key ecological concepts and their application to the design and management of sustainable landscapes. It covers biogeography and plant selection, assembling plant communities, competition and coexistence, designing ecosystems, materials cycling and soil ecology, plant-animal interactions, biodiversity and stability, disturbance and succession, landscape ecology, and global change. Beck draws on real world cases where professionals have put ecological principles to use in the built landscape. DIV DIVThe demand for this information is rising as professional associations like the American Society of Landscape Architects adopt new sustainability guidelines (SITES). But the need goes beyond certifications and rules. For constructed landscapes to perform as we need them to, we must get their underlying ecology right. Principles of Ecological Landscape Design provides the tools to do just that.

Effective Monitoring to Evaluate Ecological Restoration in the Gulf of

Mexico

Ideal for allied health and pre-nursing students, Alcamos Fundamentals of Microbiology, Body Systems Edition, retains the engaging, student-friendly style and active learning approach for which award-winning author and educator Jeffrey Pommerville is known. It presents diseases, complete with new content on recent discoveries, in a manner that is directly applicable to students and organized by body system. A captivating art program, learning design format, and numerous case studies draw students into the text and make them eager to learn more about the fascinating world of microbiology.

Encyclopedia of Ecology

This text provides a synthesis of the existing field of wetland ecology using a few central themes, including key environmental factors that produce wetland community types and some unifying problems such as assembly rules, restoration and conservation.

Introduction to Restoration Ecology

Ecological Restoration provides an overview of the strategies being used globally to reverse human impacts on landscapes, ecosystems, and species. Using research-based knowledge and lessons learned from 20 actual restorations, this book aims to improve the outcomes of restorations by strengthening the connections between theory and practice.

Principles of Ecological Landscape Design

Dryland degradation and desertification now affect almost a billion people around the world. Tragically, the biological resources and productivity of millions of acres of land are lost to desertification each year because people remain unaware of strategies and techniques that could improve yields, reduce risk, and begin healing the world's deserts. A Guide for Desert and Dryland Restoration is the first book to offer practical, field-tested solutions to this critical problem. Author David Bainbridge has spent more than 25 years actively involved in restoring lands across the American Southwest. A Guide for Desert and Dryland Restoration presents the results of his years of fieldwork, as well as research and experience from scientists and practitioners around the globe. The book discusses the ecology of desert plants, explores the causes of desertification and land abuse, and outlines the processes and procedures needed to evaluate, plan, implement, and monitor desert restoration projects. It sets forth economical and practical field-tested solutions for understanding site characteristics, selecting and growing plants, and ensuring that they survive with a minimal amount of water and care. Each chapter represents a guide to a critical topic for environmental restoration; extensive photographs, diagrams and drawings give detailed information for immediate application, and additional resources are included in appendixes. A Guide for Desert and Dryland Restoration is the first comprehensive book focused on restoring arid

regions, and clearly demonstrates that arid lands can be successfully rehabilitated. In addition to restorationists, the book will be an invaluable resource for anyone working in arid lands, including farmers, ranchers, gardeners, landscapers, outdoor recreation professionals, and activists.

The Routledge Handbook of Urban Ecology

This second edition covers recent developments around the world with contributors from 33 different countries. It widens the handbook's scope by including ecological design; consideration of cultural dimensions of the use and conservation of urban nature; the roles of government and civil society; and the continuing issues of equity and fairness in access to urban greenspaces. New features include an emphasis on the biophilic design of homes and workplaces, demonstrating the value of nature, in order to counter the still prevalent attitude among many developers that nature is a constraint rather than a value. The volume explores great practical achievements have occurred since the first edition, with many governments increasingly recognising and legislating on urban nature and green infrastructure matters, since cities play a major role in adapting to change, particularly to climate crisis. New topics such as the ecological role of light at night and human microbiota in the urban ecosystem are introduced. Additional attention is given to food production in cities, particularly the multiple roles of urban agriculture and household gardens in different

contexts from wealthy communities to the poorest informal settlements in deprived communities. The emphasis is on demonstrating what can be achieved, and what is already being done. The book will help scholars and graduate students by providing an invaluable and up-to-date guide to current urban ecological thinking across the range of disciplines, such as geography, ecology, environmental science/studies, planning, urban studies, that converge in the study of towns and cities and urban design and living. It will also assist practitioners and civil society members in discovering the ways different specialists and thinkers approach urban nature.

Handbook of Ecological Restoration: Volume 1, Principles of Restoration

Written for upper-division undergraduates and first-year graduate students, this new textbook offers a real-life introduction to the field of restoration ecology and an interdisciplinary overview of the theory behind it. The text is organized around a restoration process that has been tested and revised by the authors in their restoration ecology courses taught at the University of Wisconsin-Madison over the past thirty years. Success in ecological restoration requires not only technical proficiency but also skill in the social, cultural, and political arenas. Introduction to Restoration Ecology can help students develop the skills they need to succeed in all of these areas and is a much-needed new resource.

Totem Salmon

Restoring Disturbed Landscapes is a hands-on guide for individuals and groups seeking to improve the functional capacity of landscapes. Abundantly illustrated with photos and figures, Restoring Disturbed Landscapes is an engaging and accessible work designed specifically for restoration practitioners with limited training or experience in the field. It uses a five-step adaptive procedure to tell restorationists where to start, what information they need to acquire, and how to apply this information to their specific situations. Cosponsored by the Society for Ecological Restoration International and Island Press, this series offers a foundation of practical knowledge and scientific insight that will help ecological restoration become the powerful reparative and healing tool that the world needs

Restoration Ecology

Completely updated to keep pace with current technology. * Provides a firm grounding the fundamentals, theory, and latest techniques. * Includes completely updated case studies.

Ecological Restoration

Project Planning and Managemfor Ecological Restoration addresses a problem that is the reason many currrestoration projects are not as effective or successful as they could be: a lack of understanding of the principles of sound planning and management.

John Rieger, John Stanley, and Ray Traynor, who collectively have decades of experience implementing successful restoration projects, provide a straightforward framework for developing and executing an ecological restoration project in order to maximize its potential for success. The authors focus on process, planning, design, implementation, and managemrather than science. They describe a simple project managemplan, identify the design approaches and the commitments that decisions require, and explain how design theory is translated to on-the-ground project design. The book includes numerous illustrations, as well as a series of checklists and tables to help restorationists recognize and then correct problems that may arise.

Primer of Ecological Restoration

The 7-volume Encyclopedia of Biodiversity, Second Edition maintains the reputation of the highly regarded original, presenting the most current information available in this globally crucial area of research and study. It brings together the dimensions of biodiversity and examines both the services it provides and the measures to protect it. Major themes of the work include the evolution of biodiversity, systems for classifying and defining biodiversity, ecological patterns and theories of biodiversity, and an assessment of contemporary patterns and trends in biodiversity. The science of biodiversity has become the science of our future. It is an interdisciplinary field spanning areas of both physical and life sciences. Our awareness of the loss of

biodiversity has brought a long overdue appreciation of the magnitude of this loss and a determination to develop the tools to protect our future. Second edition includes over 100 new articles and 226 updated articles covering this multidisciplinary field— from evolution to habits to economics, in 7 volumes The editors of this edition are all well respected, instantly recognizable academics operating at the top of their respective fields in biodiversity research; readers can be assured that they are reading material that has been meticulously checked and reviewed by experts Approximately 1,800 figures and 350 tables complement the text, and more than 3,000 glossary entries explain key terms

Restoration Ecology

This book delves into human-induced and natural impacts on coastal wetlands, intended or otherwise, through a series of vignettes that elucidate the environmental insults and efforts at amelioration and remediation. The alteration, and subsequent restoration, of wetland habitats remain key issues among coastal scientists. These topics are introduced through case studies and pilot programs that are designed to better understand the best practices of trying to save what is left of these fragile ecosystems. Local approaches, as well as national and international efforts to restore the functionality of marsh systems are summarily approached and evaluated by their efficacy in producing resilient reclamations in terms of climate-smart habitat conservation. The outlook of this work is global in

extent and local by intent. Included here in summarized form are professional opinions of experts in the field that investigate the crux of the matter, which proves to be human pressure on coastal wetland environments. Even though conservation and preservation of these delicate environmental systems may be coming at a later date, many multi-pronged approaches show promise through advances in education, litigation, and engineering to achieve sustainable coastal systems. The examples in this book are not only of interest to those working exclusively with coastal wetlands, but also to those working to protect the surrounding coastal areas of all types.

Ecological Restoration, Second Edition

Five years after the first edition of Landscape Restoration Handbook was published, its natural landscaping and ecological restoration techniques have become standard-and successful-practice throughout the nation. Now, the Landscape Restoration Handbook: Second Edition substantially widens the scope of the original work. Approximately 250 pages larger than the first edition, new and expanded chapters offer guidance on: Development of natural landscaping and ecological restoration programs Education, regional planning, and increased biological diversity Ecological communities species listings Scientific and common plant names associated with ecological communities Nurseries that propagate and sell native plants throughout the United States Naturalization has proven to be a "win-

win" situation all around. Monetary costs that landowners are saving on maintenance and chemicals also translates to environmental benefits for the greater community. Landscape and golf course architects, urban planners, horticulturists, golf course superintendents and consultants have already put the Landscape Restoration Handbook to the test. Let the Second Edition bring you up-to-date on the numerous benefits of naturalization.

Coastal Wetlands: Alteration and Remediation

Ecological Engineering and Ecosystem Restoration

Following the much acclaimed success of the first volume ofKey Topics in Conservation Biology, this entirely new secondvolume addresses an innovative array of key topics in contemporaryconservation biology. Written by an internationally renownedteam of authors, Key Topics in Conservation Biology 2 addsto the still topical foundations laid in the first volume(published in 2007) by exploring a further 25 cutting-edge issuesin modern biodiversity conservation, including controversialsubjects such as setting conservation priorities, balancing thefocus on species and ecosystems, and financial mechanisms to valuebiodiversity and pay for its conservation. Other chapters, settingthe framework for conservation, address the sociology andphilosophy of peoples' relation with Nature and its impact onhealth, and such

challenging practical issues as wildlife trade andconflict between people and carnivores. As a new development, thissecond volume of Key Topics includes chapters on major ecosystems,such as forests, islands and both fresh and marine waters, alongwith case studies of the conservation of major taxa: plants,butterflies, birds and mammals. A further selection of topicsconsider how to safeguard the future through monitoring, reserveplanning, corridors and connectivity, together with approaches toreintroduction and re-wilding, along with managing wildlifedisease. A final chapter, by the editors, synthesises thinking onthe relationship between biodiversity conservation and humandevelopment. Each topic is explored by a team of top international experts,assembled to bring their own cross-cutting knowledge to apenetrating synthesis of the issues from both theoretical andpractical perspectives. The interdisciplinary nature of biodiversity conservation isreflected throughout the book. Each essay examines the fundamentalprinciples of the topic, the methodologies involved and, crucially,the human dimension. In this way, Key Topics in ConservationBiology 2, like its sister volume, Key Topics in ConservationBiology, embraces issues from cutting-edge ecological scienceto policy, environmental economics, governance, ethics, and thepractical issues of implementation. Key Topics in Conservation Biology 2 will, like itssister volume, be a valuable resource in universities and colleges,government departments, and conservation agencies. It is aimedparticularly at senior undergraduate and graduate students inconservation biology and wildlife management and wider

ecologicaland environmental subjects, and those taking Masters degrees in anyfield relevant to conservation and the environment. Conservationpractitioners, policy-makers, and the wider general public eager tounderstand more about important environmental issues will also findthis book invaluable.

Principles of Risk Analysis

Part lyrical true-life adventure, part social and philosophical manifesto, TOTEM SALMON tells of a watershed community that worked for two decades to save one of the last purely native stocks of salmon in California.

Wildlife Habitat Management

Ecological restoration is a rapidly growing discipline that encompasses a wide range of activities and brings together practitioners and theoreticians from a variety of backgrounds and perspectives, ranging from volunteer backyard restorationists to highly trained academic scientists and professional consultants. This book offers a comprehensive and coherent account of the field for everyone who initiates, finances, designs, administers, issues government permits for, manages, and implements ecological restoration projects, and all those who serve in supportive roles. Originally published in 2007, this revised and reorganized edition brings the book up to date with new developments and current trends in the field. In a lively, personal fashion, the authors

discuss scientific and practical aspects of the field as well as the human needs and values that motivate practitioners. The book identifies fundamental concepts upon which restoration is based considers the principles of restoration practice explores the diverse values that are fulfilled with the restoration of ecosystems reviews the structure of restoration practice, including the various contexts for restoration work, the professional development of its practitioners, and the relationships of restoration with allied fields and activities The book also includes case studies and Virtual Field Trips around the world that illustrate points made in the book with on-the-ground information from those who were intimately involved with the projects described. Throughout, ecological restoration is conceived as a holistic endeavor, one that addresses issues of ecological degradation, biodiversity loss, personal engagement, and sustainability science simultaneously, and draws upon cultural resources and local skills and knowledge in restoration work.

Principles and Guidelines for Ecological Restoration in Canada's Protected Natural Areas

Comprehensive introductory textbook for students and specialists in ecology, environmental science, and chemistry.

Project Planning and Managemfor Ecological Restoration

Ecological restoration is a rapidly evolving discipline that is engaged with developing both methodologies and strategies for repairing damaged and polluted ecosystems and environments. During the last decade the rapid pace of climate change coupled with continuing habitat destruction and the spread of non-native species to new habitats has forced restoration ecologists to re-evaluate their goals and the methods they use. This comprehensive handbook brings together an internationally respected group of established and rising experts in the field. The book begins with a description of current practices and the state of knowledge in particular areas of restoration, and then identifies new directions that will help the field achieve increasing levels of future success. Part I provides basic background about ecological and environmental restoration. Part II systematically reviews restoration in key ecosystem types located throughout the world. In Part III, management and policy issues are examined in detail, offering the first comprehensive treatment of policy relevance in the field, while Part IV looks to the future. Ultimately, good ecological restoration depends upon a combination of good science, policy, planning and outreach – all issues that are addressed in this unrivalled volume.

Ecological restoration for protected areas: principles, guidelines and best practices

Encyclopedia of Ecology, Second Edition continues the acclaimed work of the previous edition published in

2008. It covers all scales of biological organization, from organisms, to populations, to communities and ecosystems. Laboratory, field, simulation modelling, and theoretical approaches are presented to show how living systems sustain structure and function in space and time. New areas of focus include micro- and macro scales, molecular and genetic ecology, and global ecology (e.g., climate change, earth transformations, ecosystem services, and the food-water-energy nexus) are included. In addition, new, international experts in ecology contribute on a variety of topics. Offers the most broad-ranging and comprehensive resource available in the field of ecology Provides foundational content and suggests further reading Incorporates the expertise of over 500 outstanding investigators in the field of ecology, including top young scientists with both research and teaching experience Includes multimedia resources, such as an Interactive Map Viewer and links to a CSDMS (Community Surface Dynamics Modeling System), an open-source platform for modelers to share and link models dealing with earth system processes

Restoring Neighborhood Streams

Fish Conservation offers, for the first time in a single volume, a readable reference with a global approach to marine and freshwater fish diversity and fishery resource issues. Gene Helfman brings together available knowledge on the decline and restoration of freshwater and marine fishes, providing ecologically sound answers to biodiversity declines as well as to

fishery management problems at the subsistence, recreational, and commercial levels. Written in an engaging and accessible style, the book: considers the value of preserving aquatic biodiversity offers an overview of imperiled fishes on a taxonomic and geographic basis presents a synthesis of common characteristics of imperiled fishes and their habitats details anthropogenic causes of decline examines human exploitation issues addresses ethical questions surrounding exploitation of fishes The final chapter integrates topics and evaluates prospects for arresting declines, emphasizing the application of evolutionary and ecological principles in light of projected trends. Throughout, Helfman provides examples, explores case studies, and synthesizes available information from a broad taxonomic, habitat, and geographic range. Fish Conservation summarizes the current state of knowledge about the degradation and restoration of diversity among fishes and the productivity of fishery resources, pointing out areas where progress has been made and where more needs to be done. Solutions focus on the application of ecological knowledge to solving practical problems, recognizing that effective biodiversity conservation depends on meeting human needs through management that focuses on long term sustainability and an ecosystem perspective.

Wetland Ecology

Environmental Land Use Planning and Management

Landscape ecology is an integrative and multi-disciplinary science and Principles and Methods in Landscape Ecology reconciles the geological, botanical, zoological and human perspectives. In particular ,new paradigms and theories such as percolation, metapopulation, hierarchies, source-sink models have been integrated in this last edition with the recent theories on bio-complexity, information and cognitive sciences. Methods for studying landscape ecology are covered including spatial geometry models and remote sensing in order to create confidence toward techniques and approaches that require a high experience and long-time dedication. Principles and Methods in Landscape Ecology is a textbook useful to present the landscape in a multi-vision perspective for undergraduate and graduate students of biology, ecology, geography, forestry, agronomy, landscape architecture and planning. Sociology, economics, history, archaeology, anthropology, ecological psychology are some sciences that can benefit of the holistic vision offered by this texbook.

Encyclopedia of Biodiversity

Less expensive and more environmentally appropriate than conventional engineering approaches, constructed ecosystems are a promising technology for environmental problem solving. Undergraduates, graduate students, and working professionals need an introductory text that details the biology and ecology of this rapidly developing discipline, known as

Restoring Disturbed Landscapes

How can environmental degradation be stopped? How can it be reversed? And how can the damage already done be repaired? The authors of this volume argue that a two-pronged approach is needed: reducing demand for ecosystem goods and services and better management of them, coupled with an increase in supply through environmental restoration. Restoring Natural Capital brings together economists and ecologists, theoreticians, practitioners, policy makers, and scientists from the developed and developing worlds to consider the costs and benefits of repairing ecosystem goods and services in natural and socioecological systems. It examines the business and practice of restoring natural capital, and seeks to establish common ground between economists and ecologists with respect to the restoration of degraded ecosystems and landscapes and the still broader task of restoring natural capital. The book focuses on developing strategies that can achieve the best outcomes in the shortest amount of time as it: • considers conceptual and theoretical issues from both an economic and ecological perspective • examines specific strategies to foster the restoration of natural capital and offers a synthesis and a vision of the way forward Nineteen case studies from around the world illustrate challenges and achievements in setting targets, refining approaches to finding and implementing restoration projects, and using restoration of natural capital as an economic opportunity. Throughout, contributors make the case that the restoration of natural capital requires close

collaboration among scientists from across disciplines as well as local people, and when successfully executed represents a practical, realistic, and essential tool for achieving lasting sustainable development.

Environmental and Pollution Science

Enlarged, enhanced and internationalized edition of the firstrestoration ecology textbook to be published, with foreword by Dr.Steven Whisnant of Texas A&M University and Chair of theSociety of Ecological Restoration. Since 2006, when the first edition of this book appeared, majoradvances have taken place in restoration science and in thepractice of ecological restoration. Both are now accepted as keycomponents of the increasingly urgent search for sustainability atglobal, national, and community levels – hence the phrase'New Frontier' in the title. While the first edition focused onecosystems and landscapes in Europe, this new edition covers biomesand contexts all over the world. Several new chapters deal withbroad issues such as biological invasions, climate change, andagricultural land abandonment as they relate to restoration scienceand ecological restoration. Case studies are included fromAustralia, North America, and the tropics. This is an accessible textbook for senior undergraduate andgraduate level students, and early career scientists. The book alsoprovides a solid scientific background for managers, volunteers,and mid-career professionals involved in the practice of ecologicalrestoration. Review of the first edition: "I

suspect that this volume will find its way onto the shelvesof many restoration researchers and practitioners and will be usedas a key text in graduate courses, where it will help fill a largevoid. My own copy is already heavily bookmarked, and will be aconstant source of research ideas and lecture material."(Environmental Conservation) Companion Website: A companion website with downloadable figures is available at ahref="http://www.wiley.com/go/vanandel/restorationecology"www.wiley.com/go/vanandel/restorationecology/a

Landscape Restoration Handbook

As the practical application of ecological restoration continues to grow, there is an increasing need to connect restoration practice to areas of underlying ecological theory. Foundations of Restoration Ecology is an important milestone in the field, bringing together leading ecologists to bridge the gap between theory and practice by translating elements of ecological theory and current research themes into a scientific framework for the field of restoration ecology. Each chapter addresses a particular area of ecological theory, covering traditional levels of biological hierarchy (such as population genetics, demography, community ecology) as well as topics of central relevance to the challenges of restoration ecology (such as species interactions, fine-scale heterogeneity, successional trajectories, invasive species ecology, ecophysiology). Several chapters focus on research tools (research design, statistical analysis, modeling), or place restoration ecology

research in a larger context (large-scale ecological phenomena, macroecology, climate change and paleoecology, evolutionary ecology). The book makes a compelling case that a stronger connection between ecological theory and the science of restoration ecology will be mutually beneficial for both fields: restoration ecology benefits from a stronger grounding in basic theory, while ecological theory benefits from the unique opportunities for experimentation in a restoration context. Foundations of Restoration Ecology advances the science behind the practice of restoring ecosystems while exploring ways in which restoration ecology can inform basic ecological questions. It provides the first comprehensive overview of the theoretical foundations of restoration ecology, and is a must-have volume for anyone involved in restoration research, teaching, or practice.

Landscape Restoration Handbook, Second Edition

Environmental and Pollution Science, Third Edition, continues its tradition on providing readers with the scientific basis to understand, manage, mitigate, and prevent pollution across the environment, be it air, land, or water. Pollution originates from a wide variety of sources, both natural and man-made, and occurs in a wide variety of forms including, biological, chemical, particulate or even energy, making a multivariate approach to assessment and mitigation essential for success. This third edition has been updated and revised to include topics that are critical to addressing

pollution issues, from human-health impacts to environmental justice to developing sustainable solutions. Environmental and Pollution Science, Third Edition is designed to give readers the tools to be able to understand and implement multi-disciplinary approaches to help solve current and future environmental pollution problems. Emphasizes conceptual understanding of environmental systems and can be used by students and professionals from a diversity of backgrounds focusing on the environment Covers many aspects critical to assessing and managing environmental pollution including characterization, risk assessment, regulation, transport and fate, and remediation or restoration New topics to this edition include Ecosystems and Ecosystem Services, Pollution in the Global System, Human Health Impacts, the interrelation between Soil and Human Health, Environmental Justice and Community Engagement, and Sustainability and Sustainable Solutions Includes color photos and diagrams, chapter questions and problems, and highlighted key words

Ecological Engineering

A Guide for Desert and Dryland Restoration

The field of ecological restoration is a rapidly growing discipline that encompasses a wide range of activities and brings together practitioners and theoreticians from a variety of backgrounds and perspectives,

ranging from volunteer backyard restorationists to highly trained academic scientists and professional consultants. Ecological Restoration offers for the first time a unified vision of ecological restoration as a field of study, one that clearly states the discipline's precepts and emphasizes issues of importance to those involved at all levels. In a lively, personal fashion, the authors discuss scientific and practical aspects of the field as well as the human needs and values that motivate practitioners. The book: -identifies fundamental concepts upon which restoration is based -considers the principles of restoration practice -explores the diverse values that are fulfilled with the restoration of ecosystems -reviews the structure of restoration practice, including the various contexts for restoration work, the professional development of its practitioners, and the relationships of restoration with allied fields and activities A unique feature of the book is the inclusion of eight "virtual field trips," short photo essays of project sites around the world that illustrate various points made in the book and are "led" by those who were intimately involved with the project described. Throughout, ecological restoration is conceived as a holistic endeavor, one that addresses issues of ecological degradation, biodiversity loss, and sustainability science simultaneously, and draws upon cultural resources and local skills and knowledge in restoration work.

Watershed Restoration

Thirty years ago, the best thinking on urban stream

management prescribed cement as the solution to flooding and other problems of people and flowing water forced into close proximity. Urban streams were perceived as little more than flood control devices designed to hurry water through cities and neighborhoods with scant thought for aesthetics or ecological considerations. Stream restoration pioneers like hydrologist Ann Riley thought differently. She and other like-minded field scientists imagined that by restoring ecological function, and with careful management, streams and rivers could be a net benefit to cities, instead of a net liability. In the intervening decades, she has spearheaded numerous urban stream restoration projects and put to rest the long-held misconception that degraded urban streams are beyond help. What has been missing, however, is detailed guidance for restoration practitioners wanting to undertake similar urban stream restoration projects that worked with, rather than against, nature. This book presents the author's thirty years of practical experience managing long-term stream and river restoration projects in heavily degraded urban environments. Riley provides a level of detail only a hands-on design practitioner would know, including insights on project design, institutional and social context of successful projects, and how to avoid costly and time-consuming mistakes. Early chapters clarify terminology and review strategies and techniques from historical schools of restoration thinking. But the heart of the book comprises the chapters containing nine case studies of long-term stream restoration projects in northern California. Although the stories are local, the principles, methods, and tools are universal, and can be applied

in almost any city in the world.

Principles and Methods in Landscape Ecology

Filled with many examples of topic issues and current events, this book develops a basic understanding of how the natural world works and of how humans interact with the planet's natural ecosystems. It covers the history of ecology and describes the general approaches of the scientific method, then takes a look at basic principles of population dynamics and applies them to everyday practical problems.

Ecological Principles of Agriculture

Gulf Coast communities and natural resources suffered extensive direct and indirect damage as a result of the largest accidental oil spill in US history, referred to as the Deepwater Horizon (DWH) oil spill. Notably, natural resources affected by this major spill include wetlands, coastal beaches and barrier islands, coastal and marine wildlife, seagrass beds, oyster reefs, commercial fisheries, deep benthos, and coral reefs, among other habitats and species. Losses include an estimated 20% reduction in commercial fishery landings across the Gulf of Mexico and damage to as much as 1,100 linear miles of coastal salt marsh wetlands. This historic spill is being followed by a restoration effort unparalleled in complexity and magnitude in U.S. history. Legal settlements in the wake of DWH led to the

establishment of a set of programs tasked with administering and supporting DWH-related restoration in the Gulf of Mexico. In order to ensure that restoration goals are met and money is well spent, restoration monitoring and evaluation should be an integral part of those programs. However, evaluations of past restoration efforts have shown that monitoring is often inadequate or even absent. Effective Monitoring to Evaluate Ecological Restoration in the Gulf of Mexico identifies best practices for monitoring and evaluating restoration activities to improve the performance of restoration programs and increase the effectiveness and longevity of restoration projects. This report provides general guidance for restoration monitoring, assessment, and synthesis that can be applied to most ecological restoration supported by these major programs given their similarities in restoration goals. It also offers specific guidance for a subset of habitats and taxa to be restored in the Gulf including oyster reefs, tidal wetlands, and seagrass habitats, as well as a variety of birds, sea turtles, and marine mammals.

The Ecological World View

Introduction to ecology and ecological principles for agricultural students with no prior coursework in ecology.

Fish Conservation

An essential handbook for anyone concerned with the restoration of aquatic or terrestrial ecosystems,

worldwide.

Restoring Natural Capital

Since the first publication of this landmark textbook in 2004, it has received high praise for its clear, comprehensive, and practical approach. The second edition continues to offer a unique framework for teaching and learning interdisciplinary environmental planning, incorporating the latest thinking, newest research findings, and numerous, updated case studies into the solid foundation of the first edition. The book has been reorganized based on feedback from instructors, and contains a new chapter entitled "Land Use, Energy, Air Quality and Climate Change." Throughout, boxes have been added on such topics as federal laws, state and local environmental programs, and critical problems and responses. This new edition addresses three broad subject areas. Part I, "Environmental Planning and Management," provides an overview of the field, along with the fundamentals of land use planning, and presents a collaborative approach to environmental planning. Part II, "Sustainable Land Use Principles and Planning Analysis," considers environmental and geospatial information; soils, topography, and land use; stream flow, flooding, and runoff; stormwater management and stream restoration; groundwater hydrology; landscape ecology; wildlife habitats and biodiversity; energy, air quality and climate change; and methods for land analysis. Part III, "Managing Watersheds, Ecosystems and Development to Achieve Sustainable Communities," explains the principles of ecosystem

management, restoration, and protection; land conservation; and the mitigation of natural hazards. With this thoroughly revised second edition, Environmental Land Use Planning and Management maintains its preeminence as the leading textbook in its field.

Foundations of Restoration Ecology

In recent years, conflicts between ecological conservation and economic growth forced a reassessment of the motivations and goals of wildlife and forestry management. Focus shifted from game and commodity management to biodiversity conservation and ecological forestry. Previously separate fields such as forestry, biology, botany, and zoology merged into a common framework known as conservation biology and resource professionals began to approach natural resource problems in an interdisciplinary light. Wildlife Habitat Management: Concepts and Applications in Forestry presents anintegrated reference combining silvicultural and forest planning principles with principles of habitat ecology and conservation biology. With extensive references and case studies drawn from real situations, this book begins with general concepts such as habitat selection, forest composition, influences on habitat patterns, and the dynamics of disturbance ecology. It considers management approaches for specific habitats including even-aged and uneven-aged systems, riparian areas, and dead wood and highlights those approaches that will conserve and manage biodiversity. The author

discusses assessment and prioritization policies, monitoring techniques, and ethical and legal issues that can have worldwide impact. Detailed appendices provide a glossary, scientific names, and tools for measuring and interpreting habitat elements. Writing in a species-specific manner, the author emphasizes the need to consider the potential effects of management decisions on biodiversity conservation and maintains a holistic approach throughout the book. Drawing from the author's more than 30 years working and teaching in natural resources conservation, Wildlife Habitat Management: Concepts and Applications in Forestry provides a synopsis of current preservation techniques and establishes a common body of knowledge from which to approach the conservation of biodiversity in the future.

Key Topics in Conservation Biology 2

The pace, intensity, and scale at which humans have altered our planet in recent decades is unprecedented. We have dramatically transformed landscapes and waterways through agriculture, logging, mining, and fire suppression, with drastic impacts on public health and human well-being. What can we do to counteract and even reverse the worst of these effects? Restore damaged ecosystems. The Primer of Ecological Restoration is a succinct introduction to the theory and practice of ecological restoration as a strategy to conserve biodiversity and ecosystems. In twelve brief chapters, the book introduces readers to the basics of restoration project planning, monitoring, and adaptive management. It

explains abiotic factors such as landforms, soil, and hydrology that are the building blocks to successfully recovering microorganism, plant, and animal communities. Additional chapters cover topics such as invasive species and legal and financial considerations. Each chapter concludes with recommended reading and reference lists, and the book can be paired with online resources for teaching. Perfect for introductory classes in ecological restoration or for practitioners seeking constructive guidance for real-world projects, Primer of Ecological Restoration offers accessible, practical information on recent trends in the field.

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