

Restoration Of Lakes Streams Floodplains And Bogs In Europe Principles And Case Studies Wetlands Ecology Conservation And Management

Thirty years ago, 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. But stream restoration pioneers like hydrologist Ann Riley argued that by restoring ecological function, and with careful management, streams and rivers could be a net benefit to cities, instead of a net liability. Riley has since 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. Although the case studies are local, the principles, methods, and tools are universal, and can be applied in almost any city in the world.

This edition of Evapotranspiration - Remote Sensing and Modeling contains 23 chapters related to the modeling and simulation of evapotranspiration (ET) and remote sensing-based energy balance determination of ET. These areas are at the forefront of technologies that quantify the highly spatial ET from the Earth's surface. The topics describe mechanics of ET simulation from partially vegetated surfaces and stomatal conductance behavior of natural and agricultural ecosystems. Estimation methods that use weather based methods, soil water balance, the Complementary Relationship, the Hargreaves and other temperature-radiation based methods, and Fuzzy-Probabilistic calculations are described. A critical review describes methods used in hydrological models. Applications describe ET patterns in alpine catchments, under water shortage, for irrigated systems, under climate change, and for grasslands and pastures. Remote sensing based approaches include Landsat and MODIS satellite-based energy balance, and the common process models SEBAL, METRIC and S-SEBS. Recommended guidelines for applying operational satellite-based energy balance models and for overcoming common challenges are made.

Freshwater Ecology and Conservation

Sustainability Science

Microbiology of wetlands

Lake Chelan National Recreation Area (N.R.A.), Stehekin River Corridor Implementation Plan

Initial Alternatives Information Report

Method, Evaluation and Management

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.

Weltweit sind viele natürliche Biotope (u.a. Moore, Wälder, Flussauen) und durch historische Nutzung entstandene Ökosysteme (u.a. Heiden, Trockenrasen) stark beeinträchtigt oder zerstört worden, sodass wichtige Leistungen für den Menschen verloren gegangen sind und sie nicht mehr nachhaltig genutzt werden können. Dieser Trend kann nur durch eine zielgerichtete Renaturierung umgekehrt werden, um für zukünftige Generationen lebenswerte Bedingungen zu erhalten. In diesem Lehrbuch werden die konzeptionellen Grundlagen der Ökosystemrenaturierung erarbeitet und die abiotischen und biotischen Parameter erläutert. In den Kapiteln zu den einzelnen Ökosystemtypen der mitteleuropäischen Natur- und Kulturlandschaft werden jeweils deren typische Ausprägungen, die Beeinträchtigung durch den Menschen, die spezifischen Renaturierungsziele und Erfahrungen und Erfolge sowie Probleme der Renaturierung aus wissenschaftlicher und praktischer Perspektive beleuchtet. Eigene Kapitel beschäftigen sich mit den umweltethischen Hintergründen einer Ökosystemrenaturierung, den ökonomischen Faktoren sowie den Akteuren in der Renaturierung. Abschließend werden die Herausforderungen für die Zukunft der Renaturierungsökologie hervorgehoben. Das Lehrbuch soll Studierenden und Lehrenden unterschiedlicher Fachrichtungen (Biologie, Ökologie, Landschaftsökologie, Geografie, Umweltplanung, Naturschutz und Landschaftsplanung, Landespflege sowie Umwelt- und Ressourcenschutz) ein Grundlagenwerk an die Hand geben, mit dessen Hilfe sie das vorliegende Wissen reflektieren und fachgerecht anwenden bzw. weitervermitteln können. Außerdem soll das Buch Wissenschaftler und in der Renaturierungspraxis tätige Personen dazu anhalten, die noch bestehenden Wissenslücken gezielt durch weitergehende Forschungen und Praxiserfahrungen zu schließen.

Evapotranspiration

Shasta Lake Water Resources Investigation

Climate Change Impacts on Freshwater Ecosystems

Ein interdisziplinäres Fachbuch

Principles and Case Studies

Approaches and Techniques

Published by the American Geophysical Union as part of the Geophysical Monograph Series, Volume 194. Stream Restoration in Dynamic Fluvial Systems: Scientific Approaches, Analyses, and Tools brings together leading contributors in stream restoration science to provide comprehensive consideration of process-based approaches, tools, and applications of techniques useful for the implementation of sustainable restoration strategies. Stream restoration is a catchall term for modifications to streams and adjacent riparian zones undertaken to improve geomorphic and/or ecologic function, structure, and integrity of river corridors, and it has become a multibillion dollar industry. A vigorous debate currently exists in research and professional communities regarding the approaches, applications, and tools most effective in designing, implementing, and assessing stream restoration strategies given a multitude of goals, objectives, stakeholders, and boundary conditions. More importantly, stream restoration as a research-oriented academic discipline is, at present, lagging stream restoration as a rapidly evolving, practitioner-centric endeavor. The volume addresses these main areas: concepts in stream restoration, river mechanics and the use of hydraulic structures, modeling in restoration design, ecology, ecologic indices, and habitat, geomorphic approaches to stream and watershed management, and sediment considerations in stream restoration. Stream Restoration in Dynamic Fluvial Systems will appeal to scholars, professionals, and government agency and institute researchers involved in examining river flow processes, river channel changes and improvements, watershed processes, and landscape systematics.

Europe still retains large areas which play host to numerous native and free-functioning ecosystems and lack roads, buildings, bridges, cables and other permanent manifestations of modern society. In the past such areas were considered wastelands, whose value lay only in their potential for cultivation and economic exploitation. Today, these wilderness areas are increasingly cherished as places for rest and recreation and as important areas for scientific research, biodiversity conservation and the mitigation of and adaptation to certain climate change effects. This book provides the first major appraisal of the role of international, European and domestic law in protecting the remaining wilderness areas and their distinguishing qualities in Europe. It also highlights the lessons that can be learned from the various international, regional and national approaches, identifies obstacles to wilderness protection in Europe and considers whether and how the legal protection of wilderness can be further advanced.

New Trends in Environmental Engineering, Agriculture, Food Production, and Analysis

Interagency Hazard Mitigation Team Report

Stream Restoration in Dynamic Fluvial Systems

Science for Floodplain Management Into the 21st Century

Natural Resources Conservation and Advances for Sustainability

Upper Klamath Basin (and Wood River Wetland) Resource(s) Management Plan (RMP), Klamath Falls Resource Area

This Special Issue presents the latest advances in agriculture, aquaculture, food technology and environmental protection and engineering, discussing, among others, the following issues: new technologies in water, stormwater and wastewater treatment; water saving, lake restoration; new sludge and waste management systems; biodiesel production from animal fat waste; the microbiological quality of compound fish feeds for aquaculture; the role of technological processes to improve food quality and safety; new trends in the analysis of food and food components including in vitro, in vivo, and in silico analyses; and functional and structural aspects of bioactivities of food molecules.

Eutrophication has become one of the major environmental issues of global concern due to the adverse effects on water quality, public health, and ecosystem sustainability. Fundamental research on the restoration of eutrophic freshwaters, i.e., lakes and rivers, is crucial to supporting further evidence-based practical implementations. The 12 published research papers can be classified into to three major aspects of this topic, into which they provide valuable contributions. Firstly, a background investigation into the migration of nutrients and the characteristics of submerged biota will guide and assist understanding of the mechanisms of future restoration. Secondly, various restoration strategies are studied and evaluated, including control of both external and internal nutrient loading. Thirdly, an evaluation of field sites after restoration treatment is reported in order to support the selection of appropriate restoration approaches. We foresee that the papers will significantly contribute to eutrophication control, natural water sustainability, and ecological restoration.

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

The Natural and Beneficial Functions of Floodplains

Long-term Hazard Mitigation Alternatives and Funding Sources for State and Local Governments

Ecology of Australian Freshwater Fishes

Lake and River Restoration

CALFED Bay-Delta Program Programmatic EIS, Long-Term Comprehensive Plan to Restore Ecosystem Health and Improve Water Management, San Francisco Bay - Sacramento/San Joaquin River Bay-Delta D,Dsum; Program Goals and Objectives, Dappl; No Action Alternative,

In diesem disziplinübergreifenden Fachbuch, welches die Brücke zwischen den Natur- und Sozialwissenschaften schlägt, werden sowohl die wissenschaftlichen Grundlagen der Renaturierungsökologie wie auch praktische Aspekte der Ökosystemrenaturierung umfassend dargestellt. Hierbei werden die Vielfalt der Landnutzungstypen mit einem Schwerpunkt auf Mitteleuropa herausgestellt und Fallbeispiele von praktischen Renaturierungsprojekten präsentiert. Das Fachbuch bietet sowohl für Studierende, die sich mit der Umwelt beschäftigen, für Wissenschaftler wie auch für Praktiker einen profunden und aktuellen, aber auch kritischen Überblick über den Stand des Wissens. Dieses Buch erschließt das breite Spektrum degradierter Ökosysteme der mitteleuropäischen Natur- und Kulturlandschaften. In weiteren Kapiteln wird auf marine Ökosysteme und deren Renaturierung sowie auf Entwicklungspotenziale, aber auch Grenzen der Renaturierung detaillierter eingegangen. Die ökologischen Grundlagen werden durch eine interdisziplinäre

Perspektive unter Berücksichtigung der Umweltethik, Soziologie, Anthropologie und Ökonomie erweitert. Das Fachbuch bietet neben einer aktuellen Übersicht über die verschiedenen Bereiche und Tätigkeitsfelder der Renaturierungsökologie und Ökosystemrenaturierung eine wertvolle Grundlage für Studium, Wissenschaft und Praxis. Die Studierenden erhalten zudem eine Hilfestellung zur Literatursuche und kritischen Faktenanalyse und die Dozenten zu Lehrformen und interdisziplinären Diskussionsansätzen der Renaturierungsökologie.

This text examines the impact of climate change on freshwater ecosystems, past, present and future. It especially considers the interactions between climate change and other drivers of change including hydromorphological modification, nutrient loading, acid deposition and contamination by toxic substances using evidence from palaeolimnology, time-series analysis, space-for-time substitution, laboratory and field experiments and process modelling. The book evaluates these processes in relation to extreme events, seasonal changes in ecosystems, trends over decadal-scale time periods, mitigation strategies and ecosystem recovery. The book is also concerned with how aspects of hydrophysical, hydrochemical and ecological change can be used as early indicators of climate change in aquatic ecosystems and it addresses the implications of future climate change for freshwater ecosystem management at the catchment scale. This is an ideal book for the scientific research community, but is also accessible to Masters and senior undergraduate students.

Environmental Management, Restoration, and Ecological Implications

Chequamegon-Nicolet National Forest (N.F.), Twentymile Restoration Project

Golden Gate National Recreation Area (N.R.A.), Point Reyes National Seashore, Marin County, Giacomini Wetland Restoration Project

Restoring Neighborhood Streams

Planning, Design, and Construction

Modeling and Management in Asian Countries

This practical manual of freshwater ecology and conservation provides a state-of-the-art review of the approaches and techniques used to measure, monitor, and conserve freshwater ecosystems. It offers a single, comprehensive, and accessible synthesis of the vast amount of literature for freshwater ecology and conservation that is currently dispersed in manuals, toolkits, journals, handbooks, 'grey' literature, and websites. Successful conservation outcomes are ultimately built on a sound ecological framework in which every species must be assessed and understood at the individual, community, catchment and landscape level of interaction. For example, freshwater ecologists need to understand hydrochemical storages and fluxes, the physical systems influencing freshwaters at the catchment and landscape scale, and the spatial and temporal processes that maintain species assemblages and their dynamics. A thorough understanding of all these varied processes, and the techniques for studying them, is essential for the effective conservation and management of freshwater ecosystems.

This book provides basic information on the botanical diversity in the Czech Republic and relates the patterns in flora and vegetation to environmental factors, biogeographical history and human impact. Focusing on vascular plants, bryophytes and lichens, it summarizes the data on taxonomic diversity and provides details of relict, endemic, rare, alien and other biogeographically important species. Main vegetation types are characterized in terms of their structure, distribution, ecology and dynamics, emphasizing the long-term vegetation changes since the late Pleistocene, historical impact of humans on vegetation and current changes in vegetation including the impact of alien species. Special attention is paid to the conservation of threatened plant species and their habitats and ecological restoration. An account of the history of botanical research in this country is also provided. The book is illustrated with numerous maps, graphs and photographs of plant species and communities. The book is an essential reference for any biogeographer, botanist and plant ecologist who is working in Central Europe or is searching for both general and more specific information on this part of the world.

Federal Register

Environmental Impact Statement

Analysis of Impact of Blackwood Creek Reach 6 Stream Channel and Floodplain Restoration on Sediment Loading to Lake Tahoe During 2009 and 2010 Water Years

Geospatial Technology for Environmental Hazards

A Conservation Effects Assessment Bibliography

Floodplains

With \$2 billion spent annually on stream restoration worldwide, there is a pressing need for guidance in this area, but until now, there was no comprehensive text on the subject. Filling that void, this unique text covers both new and existing information following a stepwise approach on theory, planning, implementation, and evaluation methods for the restoration of stream habitats. Comprehensively illustrated with case studies from around the world, Stream and Watershed Restoration provides a systematic approach to restoration programs suitable for graduate and upper-level undergraduate courses on stream or watershed restoration or as a reference for restoration practitioners and fisheries scientists. Part of the Advancing River Restoration and Management Series. Additional resources for this book can be found at: www.wiley.com/go/roni/streamrestoration.

Reviews our past and present understanding of Australian freshwater fishes.

Northwestern Minnesota Basin Flood Control Impoundments, Red River, St. Paul District

The Role of International, European and National Law

Kemper County ICGG Project

Remote Sensing and Modeling

Environmental Effects of U.S. Department of Agriculture Conservation Programs

Wilderness Protection in Europe

Natural Resources Conservation and Advances for Sustainability addresses the latest challenges associated with the management and conservation of natural resources. It presents interdisciplinary approaches to promote advances in solving these challenges. By examining what has already been done and analyzing it in the context of what still needs to be done, particularly in the context of latest technologies and sustainability, the book helps to identify ideal methods for natural resource management and conservation. Each chapter begins with a graphical abstract and presents complicated or detailed content in the form of figures or tables. In addition, the book compares the latest techniques with conventional techniques and troubleshoots conventional methods with modifications, making it a practical resource for researchers in environmental science and natural resource management. Discusses the pros and cons of past and current endeavors related to natural resource management Presents recent technologies and methods for management and conservation, particularly with applications for sustainability Covers a variety of disciplines, from environmental science to life science Includes a graphical abstract as well as a section on significant achievements in the field and future perspectives

The book demonstrates the geospatial technology approach to data mining techniques, data analysis, modeling, risk assessment, visualization, and management strategies in different aspects of natural and social hazards. This book has 25 chapters associated with risk assessment, mapping and management strategies of environmental hazards. It covers major topics such as Landslide Susceptibility, Arsenic Contaminated Groundwater, Earthquake Risk Management, Open Cast Mining, Soil loss, Flood Susceptibility, Forest Fire Risk, Malaria prevalence, Flood inundation, Socio-Economic Vulnerability, River Bank Erosion, and Socio-Economic Vulnerability. The content of this book will be of interest to researchers, professionals, and policymakers, whose work involves environmental hazards and related solutions.

Restoration of Aquatic Ecosystems

Malheur National Forest (N.F.), Long Creek Ranger District, Fox Ecosystem Restoration Projects: Day and Dunning Salvage Timber Sales and Other Projects

Renaturierung von Ökosystemen im Spannungsfeld von Mensch und Umwelt

Upper Truckee River Restoration and Golf Course Reconfiguration Project

Reducing Flood Losses by Protecting and Restoring the Floodplain Environment : a Report for Congress

Lake Tahoe Basin Management Unit, South Shore Fuel Reduction and Healthy Forest Restoration

A floodplain is a flat, or nearly flat, land that is adjacent to a stream or river which experiences occasional flooding (a naturally occurring process), and those who live near rivers and floodplains are especially interested in them. Historically, floodplains have been used for waste disposal, supplies, power generation, transport and food. In this book, the student or professional will find information about some floodplains around the world and their main problems, as well as some techniques used to study them. This book is divided into nine chapters, and each one aims to show some relevant studies in floodplains and lakes using assorted themes, such as: mercury speciation and bioavailability, plant-soil interactions, indicators for evaluating floodplain restoration, floodplain formation, phytoplankton community, storage and release of water, hydrogenic heavy metals and hydrodynamics.

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.

Report of the Interagency Floodplain Management Review Committee to the Administration Floodplain Management Task Force

Renaturierung von Ökosystemen in Mitteleuropa

Stream and Watershed Restoration

Scientific Approaches, Analyses, and Tools

Randleman Lake and Dam Project, Guilford County

Flora and Vegetation of the Czech Republic

A new, holistic transdisciplinary endeavour born in the 21st century, Sustainability Science: Managing Risk and Resilience for Sustainable Development aims to provide conceptual and practical

approaches to sustainable development that help us to grasp and address uncertainty, complexity, ambiguity and dynamic change. Four aspects that permeate our contemporary world and undermine much of our traditional ways of thinking and doing. The concepts of risk and resilience are central in this endeavour to explain, understand and improve core challenges of humankind. Sustainability and sustainable development are increasingly important guiding principles across administrative levels, functional sectors and scientific disciplines. Policymakers, practitioners and academics continue to wrestle with the complexity of risk, resilience and sustainability, but because of the necessary transdisciplinary focus, it is difficult to find authoritative content in a single source. Sustainability Science: Managing Risk and Resilience for Sustainable Development presents the state of the world in relation to major sustainability challenges and their symptomatic effects, such as climate change, environmental degradation, poverty, disease and disasters. It then continues by elaborating on ways to approach and change our world to make it a safer and more sustainable place for current and future generations. The natural, applied and social sciences are woven together throughout the book to provide a more inclusive understanding of relevant processes, changes, trends and events. Shows how disturbances, disruptions and disasters have always been intrinsic byproducts of the same human-environment systems that supply us with opportunities, as well as what implications that has for policy and practice towards sustainable development today Introduces a new approach for grasping and addressing issues of risk and resilience in relation to sustainable development that is firmly rooted in a comprehensive philosophical and theoretical foundation and clearly linking the conceptual with the practical Presents a holistic agenda for change that includes a more explicit role of science, reinforced focus on capacity development and the overall necessity of fundamental social change Features more than 150 figures, full-color photographs, diagrams, and illustrations to highlight major themes and aid in the retention of key concepts

*Managing Risk and Resilience for Sustainable Development
Science, Technology, and Public Policy
A Guide to Restoring Riverine Processes and Habitats*