

Design Hydrology Sedimentology Small Catchments Haan

Poland, like other post-communist countries, is undergoing a transformation into a capitalist system. This transformation affects the country in many ways: economic, social, psychological and also ecological. Ecological problems are strongly connected with the political, economic and psychological inheritance of the past, as well as with changes in the post-communist society. In order to understand these problems, it is necessary to consider the following issues: - the geographic situation of Poland - the political transformations that occurred after World War II - forced development of heavy industry combined with neglect of its effects on the environment, and - the economic problems. The three main goals of Environmental Engineering V are (I) to assess the state of scientific research in various areas of environmental engineering. (II) to evaluate organizational, technical and technological progress in contributing to ecological security, and (III) to determine the place of environmental engineering in sustainable development, taking into account political and economic conditions. Environmental Engineering V is of interest for academics, engineers and professionals involved in environmental engineering, seeking solutions for environmental problems in emerging new democracies, especially those who plan to participate in numerous projects sponsored by the European Union.

Progress towards a present-day diagnosis of, and future strategies for, environmental management of rivers and catchments, with particular reference to Mediterranean (semiarid) environments. Geomorphological processes at both the basin and the river levels, and their interactions and relations with human activities that interfere with them, are explored.

The Clean Water Act, with its emphasis on storm water and sediment control in urban areas, has created a compelling need for information in small-catchment hydrology. Design Hydrology and Sedimentology for Small Catchments provides the basic information and techniques required for understanding and implementing design systems to control runoff, erosion, and sedimentation. It will be especially useful to those involved in urban and industrial planning and development, surface mining activities, storm water management, sediment control, and environmental management. This class-tested text, which presents many solved problems throughout as well as solutions at the end of each chapter, is suitable for undergraduate, graduate, and continuing education courses. In addition, practicing professionals will find it a valuable reference. Anderson/Woessner: APPLIED GROUNDWATER MODELING (1992) Shuirman/Slosson: FORENSIC ENGINEERING (1992) de Marsily: QUANTITATIVE HYDROGEOLOGY (1986) Selley: APPLIED SEDIMENTOLOGY, THIRD EDITION (1988) Huyakorn: COMPUTATIONAL METHODS IN SUBSURFACE FLOW (1986) Pinder: FINITE ELEMENT MODELING IN SURFACE AND SUBSURFACE HYDROLOGY (1977) Key Features * Covers major new improvements and state-of-the-art technologies in sediment control technology * Provides in-depth information on estimating the impact of land-use changes on runoff and flood flows, as well as on estimating erosion and sediment yield from small catchments * Presents superior coverage on design of flood and sediment detention ponds and design of runoff and sediment control measures

This book explores state-of-art techniques based on open-source software and statistical programming and modelling in modern geospatial applications, specifically focusing on recent trends in data mining techniques and robust modelling in Geomorphological, Hydrological, Bio-physical and Social activities. The book is organized into physical, mountainous, coastal, riverine, forest, urban and biological activities, with each chapter providing a review of the current knowledge in the focus area, and evaluating where future efforts should be directed. The text compiles a collection of recent developments and rigorous applications of Geospatial computational intelligence (e.g., artificial neural network, spatial interpolation, physical and environmental modelling and machine learning algorithms etc) in geomorphic processes from a team of expert contributors. The authors address the wide range of challenges and uncertainties in the study of earth system dynamics due to climate change, and complex anthropogenic interferences where spatial modelling may be applied in the risk assessment of vulnerable geomorphological landscapes. The book will act as a guide to find recent advancements in geospatial artificial intelligence techniques and its application to natural and social hazards. This information will be helpful for students, researchers, policy makers, environmentalists, planners involved in natural hazard and disaster management, NGOs, and government organizations.

Rates, Trends, Causes, and Consequences of Urban Land-use Change in the United States

Watershed Hydrology

Encyclopedia of water Science

Recent Trends in River Corridor Management

Reservoir Siltation in Ethiopia

The Interactions between Sediments and Water

An evolving, living organic/inorganic covering, soil is in dynamic equilibrium with the atmosphere above, the biosphere within, and the geology below. It acts as an anchor for roots, a purveyor of water and nutrients, a residence for a vast community of microorganisms and animals, a sanitizer of the environment, and a source of raw materials for co

Provides a unique and comprehensive assessment of soil erosion throughout Europe, an important aspect to control and manage if landscapes are to be sustained for the future. Written in two parts, Soil Erosion in Europe primarily focuses on current issues, area specific soil erosion rates, on and off-site impacts, government responses, soil conservation measures, and soil erosion risk maps. The first part overviews the erosion processes and the problems encountered within each European country, whilst the second section takes a cross-cutting theme approach. Based on an EU-funded project that has been running for four years with erosion scientists from 19 countries Reviews contemporary erosion processes and rates on arable and rangeland in Europe Looks at current issues, such as socio-economic drivers, controlling factors specific to the country and changes in land use

Nutrient enrichment of water resources by inputs of nitrogen and phosphorus, which can lead to eutrophication is still a water quality problem in agriculturally dominated watersheds around the world. Internationally, wetlands both constructed and natural are increasingly being used to help reduce both point and non-point source nutrient and contaminant loss from agricultural practices. This publication contains papers presented at the international symposium on "Nutrient Management in Agricultural Watersheds: A Wetlands Solution," which was held during May, 2004 in Wexford, Ireland. The symposium was the result of an

international collaboration between the Teagasc Research Centre, Johnstown Castle, Ireland, National Parks and Wildlife, Department of Environment, Heritage and Local Government, Ireland and the Soil and Water Science Department at the University of Florida, Gainesville, USA. These proceedings cover aspects of water quality within agricultural watersheds; management practices to mitigate contaminant and nutrient loss from agriculture; wetland biogeochemistry; wetland functions and values within agricultural dominated landscapes; case studies of wetlands used to retain nutrient and contaminant loss from agriculture; and finally some management and policy issues concerning wetlands are presented. This book provides a good interdisciplinary synthesis of international experiences both in Europe and the USA on the use of wetlands within agricultural watersheds. Ecologically-sensitive building and landscape design is a broad, intrinsically interdisciplinary field. Existing books independently cover narrow aspects of ecological design in depth (hydrology, ecosystems, soils, flora and fauna, etc.), but none of these books can boast of the integrated approach taken by this one. Drawing on the experience of the authors, this book begins to define explicit design methods for integrating consideration of ecosystem processes and services into every facet of land use design, management, and policy. The approach is to provide a prescriptive approach to ecosystem design based upon ecological engineering principles and practices. This book will include a novel collection of design methods for the non-built and built environments, linking landscape design explicitly to ecosystem services.

Anthropogeomorphology

Volumes 10 – 15

Urban Hydrology, Hydraulics, and Stormwater Quality

Engineering Applications and Computer Modeling

A Geospatial Technology Based Approach

International Conference, GRMSE 2014, Ypsilanti, USA, October 3-5, 2014, Proceedings

This volume constitutes the refereed proceedings of the Second International Conference on Geo-Informatics in Resource Management and Sustainable Ecosystem, GRMSE 2014, held in Ypsilanti, MI, China, in December 2014. The 73 papers presented were carefully reviewed and selected from 296 submissions. The papers are divided into topical sections on smart city in resource management and sustainable ecosystem; spatial data acquisition through RS and GIS in resource management and sustainable ecosystem; ecological and environmental data processing and management; advanced geospatial model and analysis for understanding ecological and environmental process; applications of geo-informatics in resource management and sustainable ecosystem.

Precipitation: Earth Surface Responses and Processes provides readers with a general and indispensable overview of processing rainfall processes through radar techniques, numerical models, geostatistical tools, photogrammetric methods, plots, indexes of connectivity or rainfall simulations. The handbook follows a clear and consistent format, and is structured as follows: Introduction (State-of-the-Art); Part 1. Rainfall and climate/atmosphere; Part 2. Models and applications; Part 3. Rainfall as a key actor playing the main role affecting different ecosystems. Part 3: Rainfall affecting the earth surface from different scales and landforms; Part 4: Rainfall and stormwater quality management in urban and rural areas. Precipitation is a key factor needed for understanding landscape evolution and ecosystem services. Knowing the main precipitation composition, mechanisms and processes allows for efficient land management plans and ecosystem restoration activities. However, precipitation shows different responses under specific environments depending on the climate (from the arid to the polar areas), parent material, scale (from the raindrops to catchment scale), intensity, landscape morphologies (soil sealing,

rills, gullies or rivers) or human activities (agriculture or urban areas). Precipitation: Earth Surface Responses and Processes bring this information together and provides indispensable material in a holistic manner for students, scientists and lecturers from different environmental disciplines such as climatology, meteorology, geomorphology, hydrology, soil science, geography, engineering, or ecology. Includes observations on a range of earth surface processes, from climate to coastal marine ecosystems Presents key case studies in each chapter, enhancing the applicability of each chapter Introduces precipitation as a key factor to understand earth mechanisms and processes

This book presents a wide range of recent advances in hydraulics and water engineering. It contains four sections: hydraulics and open channel flow; hydrology, water resources management and hydroinformatics; maritime hydraulics; ecohydraulics and water quality management. World authorities such as Mike Abbot, I Nezu, A J Metha, M Garcia and P Y Julien have contributed to the book.

The Soil Conservation Service (SCS) curve number (CN) method is one of the most popular methods for computing the runoff volume from a rainstorm. It is popular because it is simple, easy to understand and apply, and stable, and accounts for most of the runoff producing watershed characteristics, such as soil type, land use, hydrologic condition, and antecedent moisture condition. The SCS-CN method was originally developed for its use on small agricultural watersheds and has since been extended and applied to rural, forest and urban watersheds. Since the inception of the method, it has been applied to a wide range of environments. In recent years, the method has received much attention in the hydrologic literature. The SCS-CN method was first published in 1956 in Section-4 of the National Engineering Handbook of Soil Conservation Service (now called the Natural Resources Conservation Service), U. S. Department of Agriculture. The publication has since been revised several times. However, the contents of the methodology have been nonetheless more or less the same. Being an agency methodology, the method has not passed through the process of a peer review and is, in general, accepted in the form it exists. Despite several limitations of the method and even questionable credibility at times, it has been in continuous use for the simple reason that it works fairly well at the field level.

Precipitation

Climate Change-Sensitive Water Resources Management

Gully Erosion Studies from India and Surrounding Regions

Proceedings of the 9th International Symposium on the Interactions between Sediments and Water, held 5–10 May 2002 in Banff, Alberta, Canada

Principles of Soil Conservation and Management

Bridger-Teton National Forest (N.F.), Eagle Prospect Exploratory Wells

Open access to information of geographic places and spatial relationships provides an essential part of the analytical processing of spatial data. Access to connected geospatial programs allows for improvement in teaching and understanding science, technology, engineering, and mathematics.

Emerging Trends in Open Source Geographic Information Systems provides emerging research on the applications of free and open software in geographic information systems in various fields of study. While highlighting topics such as data warehousing, hydrological modeling, and software packages, this publication explores the assessment and techniques of open software functionality and interfaces. This book is an important resource for professionals, researchers, academicians, and students seeking current research on the different types and uses of data and data analysis in geographic information systems.

Advances in Geosciences is the result of a concerted effort to bring together the latest results and planning activities related to earth and space science in Asia and the international arena. The volume editors are all leading scientists in their research fields covering six sections: Atmospheric Science

(AS), Hydrological Science (HS), Ocean Science (OS), Solid Earth (SE), Solar Terrestrial (ST) and Planetary Science (PS). The main purpose is to highlight the scientific issues essential to the study of earthquakes, tsunamis, atmospheric dust storms, climate change, drought, flood, typhoons, monsoons, space weather, and planetary exploration.

“ Principles of Soil Management and Conservation ” comprehensively reviews the state-of-knowledge on soil erosion and management. It discusses in detail soil conservation topics in relation to soil productivity, environment quality, and agronomic production. It addresses the implications of soil erosion with emphasis on global hotspots and synthesizes available from developed and developing countries. It also critically reviews information on no-till management, organic farming, crop residue management for industrial uses, conservation buffers (e.g., grass buffers, agroforestry systems), and the problem of hypoxia in the Gulf of Mexico and in other regions. This book uniquely addresses the global issues including carbon sequestration, net emissions of CO₂, and erosion as a sink or source of C under different scenarios of soil management. It also deliberates the implications of the projected global warming on soil erosion and vice versa. The concern about global food security in relation to soil erosion and strategies for confronting the remaining problems in soil management and conservation are specifically addressed. This volume is suitable for both undergraduate and graduate students interested in understanding the principles of soil conservation and management. The book is also useful for practitioners, extension agents, soil conservationists, and policymakers as an important reference material.

This book focuses on sediments as a pollutant in natural freshwater and marine habitats, and as a vector for the transfer of chemicals such as nutrients and contaminants. Sediment-water research is carried out all over the world within a variety of disciplines. The selected papers cover three main topics relating to assessment and/or restoration of disturbed watersheds, sediment-water linkages in terrestrial and aquatic environments and evaluation of sediment and ecological changes in marine and freshwater habitats. Innovative research in both developed and less developed countries is included. Both fundamental research, insight into applied research and system management are covered. The volume will also appeal to readers involved in sediment geochemistry and dynamics, aquatic habitats, water quality, aquatic ecology, river morphology, restoration techniques and catchment management.

Environmental Geology Workbook

Causes, Source Areas, and Management Options

U.S. Geological Survey Professional Paper

Select Proceedings of ICWEES-2016

Landscape Performance

Select Proceedings of RCRM 2021

This book will greatly benefit professionals and researchers involved in lake management, remediation, or investigation of lake systems, and can be used as is or integrated within graduate and advanced undergraduate courses in limnology.

As water quality becomes a leading concern for people and ecosystems worldwide, it must be properly assessed in order to protect water resources for current and future generations. Water

Quality Concepts, Sampling, and Analyses supplies practical information for planning, conducting, or evaluating water quality monitoring programs. It presents the

Despite advances in modeling, such as graphical user interfaces, the use of GIS layers, and databases for developing input files, the approaches to modeling phosphorus (P) have not changed since their initial development in the 1980s. Current understanding of P processes has evolved and this new information needs to be incorporated into the current models. Filling this need, *Modeling Phosphorus in the Environment* describes basic approaches to modeling P, how the current models implement these approaches, and ways to improve them. The book sets the scene with a review of general approaches to modeling runoff and erosion, P in runoff, leaching of P, stream processes that affect P, and an examination of the important issue of model uncertainty. It describes state-of-the-science watershed-scale P transport models including dynamic semi-disturbed models, models of intermediate complexity, and two lumped models. Phosphorus Indexes (PIs) represent one end of the modeling spectrum and the book takes a comprehensive look at PIs developed in each state, and illustrates some of the problems encountered when incorporating PIs into farm-scale manure management software. The book discusses monitoring data, which is critical for calibrating models, and concludes with suggestions for improving the modeling of P. From researching mechanisms to applying regulations, the uses of phosphorus models have increased as our knowledge of the effects of phosphorus in the environment has increased. Drawing on contributions from experts, the book gives you the tools to select the model that best fits your needs.

One of the effects of global climate change is the increasing variability of extreme flood events and cyclones. Current measures to mitigate flood impacts, particularly in the urban environment, are based on previously-planned flood risk intervals and no longer provide sufficient protection. Being prepared for unexpected changes and extreme flood events asks for a paradigm shift in current strategies to avoid and manage flood disasters. In order to stem the increasing impact of urban floods, a major rethink of current planning and flood management policies and practice is required, taking into account different spatial and temporal scales. This book addresses a broad spectrum of relevant issues in the emerging field of urban flood management. It may act as a stimulus for further research and development in urban flood management while informing and engaging stakeholders in the promotion of integrated and cooperative approaches in water management. An interdisciplinary approach which will be of

interest to all those who are active in water, risk and urban management.

Handbook of Soil Sciences (Two Volume Set)

Nutrient Management in Agricultural Watersheds

Soil Conservation Service Curve Number (SCS-CN) Methodology

Restoring and Conserving Ecosystem Services

Hydrological Science (Hs)

Geographical Information Systems in Hydrology

Advances in Geosciences is the result of a concerted effort to bring together the latest results and planning activities related to earth and space science in Asia and the international arena. The volume editors are all leading scientists in their research fields covering six sections: Atmospheric Science (AS), Hydrological Science (HS), Ocean Science (OS), Solid Earth (SE), Solar Terrestrial (ST) and Planetary Science (PS). The main purpose is to highlight the scientific issues essential to the study of earthquakes, tsunamis, atmospheric dust storms, climate change, drought, flood, typhoons, monsoons, space weather, and planetary exploration. This volume is abstracted in NASA's Astrophysics Data System: <http://ads.harvard.edu> Contents: Volume 10: Atmospheric Science (AS) Rainfall over Thailand during ENSO (1997–2000) (Wonlee & Prungchan) Formation of Tropical Cyclone Concentric Eye Walls by Wave–Mean Flow Interactions (J-Y Peng et al.) Anthropogenic Aerosol Radiative Forcing in the INDO-Gangetic Basi (S Dey & S N Tripathi) and other papers Volume 11: Hydrological Science (HS) Study for the Fresh Ground Water Resources, Neil, Island, India (V K Saxena) Emerging Concepts in Hydrology for Tropical Pacific Regimes (J Terry) Analysis of Monami Waves in Aquatic Vegetation (S Patil et al.) and other papers Volume 12: Ocean Science (OS) 3D Current Characteristics Simulation with ANN (C Z Chew et al.) Classification of Ocean Waves from the Data Buoy Measurements (R Balaji et al.) Intercomparison of Various Latent Heat Flux Products in the South China Sea (Zhen et al.) and other papers Volume 13: Solid Earth (SE) The International Laser Ranging Service (M Pearlman et al.) Numerical Modeling of the 2006 Java Tsunami Earthquake (N R Hanifa et al.) Statistical Properties and Time Trend in the Number of Holocene Volcanic Eruptions. (A N Zemtsov & A A Tron) and other papers Volume 14: Solar Terrestrial (ST) ULF Waves: Exploring the Earth's Magnetosphere (B J Fraser) Spectrum of Density Fluctuations in the Solar Wind (V Krishnan) Polarization Properties of the Ultra-Low Frequency Waves in Non-Axisymmetric Background Magnetic Fields (K Kabin et al.) and other papers Volume 15: Planetary Science (PS) X-Rays from Nonmagnetic Planets (K Dennerl) Clouds, Clumps, Cores, and Comets — A Cosmic Chemical Connection? (S B Charnley & S D Rodgers) Comparative X-Ray Studies of Planetary Aurorae (G Branduardi-Raymont) and other papers Readership: Academics, researchers and postgraduate students in geosciences. Key Features: Provides an important source of new and not-yet-published results from the growing Asian and international geoscience community Presents a unique view of the rapid scientific progress made by Asian researchers in topics crucial to the future of the global environment Highlights a first-hand description of how the largest scientific population in the world is working together to manage the environmental problems which will determine the economic and social growth of the world itself Keywords: Planetary Science; Atmosphere; Ionosphere; Magnetosphere “This set is the result of an effort to bring together the latest results and planning activities related to earth and space science in Asia and the international arena. The main

purpose of this set is to highlight the scientific issues essential to the study of earthquakes, tsunami, atmospheric dust storms, climate change, drought, floods, typhoons, monsoons, space weather, and planetary exploration.” Bulletin of the American Meteorological Society

The last few years have witnessed an enormous interest in application of GIS in hydrology and water resources. This is partly evidenced by organization of several national and international symposia or conferences under the sponsorship of various professional organizations. This increased interest is, in a large measure, in response to growing public sensitivity to environmental quality and management. The GIS technology has the ability to capture, store, manipulate, analyze, and visualize the diverse sets of geo-referenced data. On the other hand, hydrology is inherently spatial and distributed hydrologic models have large data requirements. The integration of hydrology and GIS is therefore quite natural. The integration involves three major components: (1) spatial data construction, (2) integration of spatial model layers, and (3) GIS and model interface. GIS can assist in design, calibration, modification and comparison of models. This integration is spreading worldwide and is expected to accelerate in the foreseeable future. Substantial opportunities exist in integration of GIS and hydrology. We believe there are enough challenges in use of GIS for conceptualizing and modeling complex hydrologic processes and for globalization of hydrology. The motivation for this book grew out of the desire to provide under one cover a range of applications of GIS technology in hydrology. It is hoped that the book will stimulate others to write more comprehensive texts on this subject of growing importance.

The aim of the conference is to present and discuss new methods, issues and challenges encountered in all parts of the complex process of gradual development and application of digital surface models. This process covers data capture, data generation, storage, model creation, validation, manipulation, utilization and visualization. Each stage requires suitable methods and involves issues that may substantially decrease the value of the model. Furthermore, the conference provides a platform to discuss the requirements, features and research approaches for 3D modeling, continuous field modeling and other geoscience applications. The conference covers the following topics: - LIDAR for elevation data - Radar interferometry for elevation data - Surface model creation - Surface model statistics - Surface model storage (including data formats, standardization, database) - Feature extraction - Analysis of surface models - Surface models for hydrology, meteorology, climatology - Surface models for signal spreading - Surface models for geology (structural, mining) - Surface models for environmental science - Surface models for visibility studies - Surface models for urban geography - Surface models for human geography - Uncertainty of surface models and digital terrain analysis - Surface model visual enhancement and rendering

Filled with figures, images, and illustrations, Encyclopedia of Water Science, Second Edition provides effective concepts and procedures in environmental water science and engineering. It unveils a wide spectrum of design concepts, methods, and solutions for enhanced performance of water quality, treatment, conservation, and irrigation methods, as well as improved water efficiency in industrial, municipal, and agricultural programs. The second edition also includes greatly enhanced coverage of streams and lakes as well as many regional case studies. An International Team Addresses Important Issues The only source to provide full coverage of current debates in the field, the encyclopedia offers professional expertise on vital issues including: Current laws and regulations Irrigation management Environmental water economics Agroforestry Erosion control Nutrient best management practices Water sanitation Stream and lake morphology and processes Sharpen Your Skills — Meet Challenges Well-

Armed A direct and reliable source for best practices in water handling, preservation, and recovery, the encyclopedia examines challenges in the provision of safe water supplies, guiding environmental professionals as they face a worldwide demand for sanitary and affordable water reserves. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk

A Wetlands Solution

Emerging Trends in Open Source Geographic Information Systems

Ian McHarg's ecological planning in The Woodlands, Texas

An Introduction to Lake Mass Balance

Advances In Hydraulics And Water Engineering: Volumes I & II - Proceedings Of The 13th Iahr-apd Congress

Environmental Engineering V

The book provides an overview of climate change-sensitive water resources management with consideration of adaptation approaches, the assessment of climate change impacts, current contemporary management techniques, and ecological responses. Comprehensive assessments and studies from eight countries using innovative approaches that aid water management under evolving climates are documented. Topics ranging from hydrologic design to management and policy responses to climate change are discussed, which demonstrate updated theories that highlight methods, tools, and experiences on the topic of water resources under climate change. The generic approaches discussed, and their applications to different climate change-related problems, make this book appealing to a global readership. The practical and applied methodologies presented in the book and through insightful case studies discussed will provide readers worldwide with ready-to-use information to manage water resources sustainably under evolving climate. This book is ideally suited for water resource managers, scientists, professionals from water management agencies, graduate students, and national laboratory agencies responsible for water and environmental management.

The objective of the paper is to present methods that can be used to estimate the quantity and gradation of sediment produced from a watershed. These values are necessary for mobile boundary hydraulic modeling and other sedimentation studies. These quantities are needed for designing flood control channels, estimating sediment deposition in reservoirs or navigation channels, and evaluating the sedimentation impacts of proposed projects or land use modifications. Considerable information is available for the estimation of sediment yield from a watershed. These methods use both empirical techniques and land surface erosion theory. The same is true for quantifying sediment transport and sorting processes in rivers. This paper focuses on procedures for using land surface erosion computations to develop the inflowing sediment load for a river sedimentation model, specifically, HEC-6.

This fully revised edition provides a modern overview of the intersection of hydrology, water quality, and water management at the

rural-urban interface. The book explores the ecosystem services available in wetlands, natural channels and ponds/lakes. As in the first edition, Part I examines the hydrologic cycle by providing strategies for quantifying each component: rainfall (with NOAA 14), infiltration, evapotranspiration and runoff. Part II examines field and farm scale water quality with an introduction to erosion prediction and water quality. Part III provides a concise examination of water management on the field and farm scale, emphasizing channel design, field control structures, measurement structures, groundwater processes and irrigation principles. Part IV then concludes the text with a treatment of basin-scale processes. A comprehensive suite of software tools is available for download, consisting of Excel spreadsheets, with some public domain models such as HY-8 culvert design, and software with public domain readers such as Mathematica, Maple and TK solver.

This book contains seven parts. The first part deals with some aspects of rainfall analysis, including rainfall probability distribution, local rainfall interception, and analysis for reservoir release. Part 2 is on evapotranspiration and discusses development of neural network models, errors, and sensitivity. Part 3 focuses on various aspects of urban runoff, including hydrologic impacts, storm water management, and drainage systems. Part 4 deals with soil erosion and sediment, covering mineralogical composition, geostatistical analysis, land use impacts, and land use mapping. Part 5 treats remote sensing and geographic information system (GIS) applications to different hydrologic problems. Watershed runoff and floods are discussed in Part 6, encompassing hydraulic, experimental, and theoretical aspects. Water modeling constitutes the concluding Part 7. Soil and Water Assessment Tool (SWAT), Xinanjiang, and Soil Conservation Service-Curve Number (SCS-CN) models are discussed. The book is of interest to researchers and practitioners in the field of water resources, hydrology, environmental resources, agricultural engineering, watershed management, earth sciences, as well as those engaged in natural resources planning and management. Graduate students and those wishing to conduct further research in water and environment and their development and management find the book to be of value.

Design Hydrology and Sedimentology for Small Catchments

Environmental Impact Statement

Surface Models for Geosciences

Earth Surface Responses and Processes

Geo-Informatics in Resource Management and Sustainable Ecosystem

Human Interference on River Health

This book examines in detail the health of India's Haora River, which is of vital importance as the lifeline of Agartala, the Capital City of Tripura. From its source in the Baramura Hills, the river debouches onto the rolling plains of Chandrasadhubari. Thousands of people between Chandrasadhubari and the boundary of Bangladesh

have settled along the riverbanks and are directly dependent on the river. Since the 1970s the ever-growing population of the Haora River basin has been exerting tremendous pressure on the river. Several anthropogenic activities affect the river, increasing sedimentation and pollution, and are leading the Haora River toward its dying phase. This book presents the problems related to the overall health of the Haora River and discusses some proposals for restoring the ecological balance and geo-political stability of this strategically important part of the country.

A practical introduction on today's challenge of controlling and managing the water resources used by and affected by cities and urbanized communities. The book offers an integrated engineering approach, covering the spectrum of urban watershed management, urban hydraulic systems, and overall stormwater management. Each chapter concludes with helpful problems. Solutions Manual available to qualified professors and instructors upon request. Introduces the reader to two popular, non-proprietary computer-modeling programs: HEC-HMS (U.S. Army Corps of Engineers) and SWMM (U.S. EPA).

Ian McHarg's ecological planning approach has been influential since the 20th century. However, few empirical studies have been conducted to evaluate the performance of his projects. Using the framework of landscape performance assessment, this book demonstrates the long-term benefits of a renowned McHargian project (The Woodlands town development) through quantitative and qualitative methods. Including 44 black and white illustrations, Landscape Performance systematically documents the performance benefits of the environmental, social, and economic aspects of The Woodlands project. It delves into McHarg's planning success in The Woodlands in comparison with adjacent Houston developments, which demonstrated urban resilience after Hurricane Harvey in 2017. Lastly, it identifies the ingredients of McHarg's ability to do real and permanent good. Yang also includes a number of appendices which provide valuable information on the methods of assessing performance in landscape development. This book would be beneficial to academics and students of landscape architecture and planning with a particular interest in Ian McHarg.

This book offers the scientific basis for the ample evaluation of badland management in India and some surrounding regions. It examines the processes operating in the headwaters and main channels of ephemeral rivers in lateritic environments of India. In particular, the book covers a range of vital topics in the areas of gully erosion and water to soil erosion at lateritic uplands regions of India and other regions in Asia. It explores the probable gully erosion modeling through Remote Sensing & GIS Techniques. It is divided into three units. Unit I deals with the introduction of badland, types of badland and the process of badland formation. Unit II is devoted to a description of quantitative measurements. Unit III deals with the control and management processes related to various issues from different regions. As such this book serves as a reference book for research activities in this

area. It is an efficient guide for aspiring researchers in applied geography, explaining advanced techniques to help students recognize both simple and complex concepts.

Engineering Hydrology for Natural Resources Engineers

Advances in Geosciences

Lake Hydrology

Soil Erosion in Europe

A Study on the Haora River, Tripura, India

Use of Land Surface Erosion Techniques with Stream Channel Sedimentation Models

Environmental geologists use a wide range of geologic data to solve environmental problems and conflicts.

Professionals and academics in this field need to know how to gather information on such diverse conditions as soil type, rock structure, and groundwater flow and then utilize it to understand geological site conditions. Field surveys, maps, well logs, bore holes, ground-penetrating radar, aerial photos, geologic literature, and more help to reveal potential natural hazards in an area or how to remediate contaminated sites. This new workbook presents accessible activities designed to highlight key concepts in environmental geology and give students an idea of what they need to know to join the workforce as an environmental geologist, engineering geologist, geological engineer, or geotechnical engineer. Exercises cover:

- Preparation, data collection, and data analysis*
- Descriptive and engineering properties of earth materials*
- Basic tools used in conjunction with geoenvironmental investigations*
- Forces operating on earth materials within the earth*
- Inanimate forces operating on earth materials at the surface of the earth*
- Human activities operating on earth materials*

Each activity encourages students to think critically and develop deeper knowledge of environmental geology.

Ecological Engineering Design

Advances in Urban Flood Management

Hydrologic Modeling

Water Quality Concepts, Sampling, and Analyses

Geomorphological Processes and Human Impacts in River Basins

Modeling Phosphorus in the Environment