

Design Hydrology And Sedimentology For Small Catchments

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.

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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.

Joint Characteristics of Annual Maximum Instantaneous Flood

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Discharges and Associated Flood Volumes in Unregulated Midwestern Catchments

Collected Papers : Papers Presented at Coal Development
Workshops in Grand Junction, Colorado and Casper, Wyoming
Environmental Engineering V

International Journal of Sediment Research
Journal

The modern southwestern cities of Phoenix, Tucson, Las Vegas, Albuquerque, and El Paso occupy lands that once supported rich desert ecosystems. Typical development activities often resulted in scraping these desert lands of an ancient living landscape, to be replaced with one that is human-made and dependent on a large consumption of

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energy and natural resources. Design with the Desert: Conservation and Sustainable Development explores the natural and built environment of the American Southwest and introduces development tools for shaping the future of the region in a more sustainable way. Explore the Desert Landscape and Ecology This transdisciplinary collaboration draws on insights from leading authorities in their fields, spanning science, ecology, planning, landscape development, architecture, and urban design. Organized into five parts, the book begins by introducing the physical aspects of the desert realm: the land, geology, water, and climate. The second part deals with the "living" and

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ecological aspects, from plants and animals to ecosystems. The third part, on planning in the desert, covers the ecological and social issues surrounding water, natural resource planning, and community development. Bring the Desert into the City The fourth part looks at how to bring nature into the built environment through the use of native plants, the creation of habitats for nature in urban settings, and the design of buildings, communities, and projects that create life. The final part of the book focuses on urban sustainability and how to design urban systems that provide a secure future for community development. Topics include water security, sustainable building

practices, and bold architecture and community designs. Design Solutions That Work with the Local Environment This book will inspire discussion and contemplation for anyone interested in desert development, from developers and environmentalists to planners, community leaders, and those who live in desert regions. Throughout this volume, the contributors present solutions to help promote ecological balance between nature and the built environment in the American Southwest—and offer valuable insights for other ecologically fragile regions around the world. Over the last quarter of the twentieth century diffuse

pollution emerged as a major problem worldwide. In developed countries it was frequently found that after massive spending on abatement of point source pollution, receiving water bodies had not improved, while in developing countries, as a result of population growth and migration, urbanization with inadequate sanitation, land use changes, deforestation, and other factors added to untreated point-source pollution to place unprecedented burdens on the natural ecosystems and on water resources. Newer more holistic strategies are being developed, incorporating innovative technologies, economic and regulatory tools, basin-wide planning, and

citizens? initiatives. From a very large programme with a genuinely global perspective, 41 papers have been selected for these proceedings. They fall under the following topics: nutrient pollution from agricultural systems; solutions to nutrient and sediment pollution from agriculture; agricultural pesticide pollution; modelling technology for agricultural pollution management; lake loading and eutrophication; water quality monitoring; economic, social and policy issues; urban pollution and solutions; and integrated modelling technology.

Sedimentology and Stratigraphy

Tunnelling. A Decade of Progress. GeoDelft 1995-2005

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Transactions of the ASAE.

Hydrologic Modeling

Guidelines for Mine Waste Dump and Stockpile Design

This fully revised and updated edition introduces the reader to sedimentology and stratigraphic principles, and provides tools for the interpretation of sediments and sedimentary rocks. The processes of formation, transport and deposition of sediment are considered and then applied to develop conceptual models for the full range of sedimentary environments, from deserts to deep seas and reefs to rivers. Different approaches to using stratigraphic principles to date and correlate strata are

also considered, in order to provide a comprehensive introduction to all aspects of sedimentology and stratigraphy. The text and figures are designed to be accessible to anyone completely new to the subject, and all of the illustrative material is provided in an accompanying CD-ROM. High-resolution versions of these images can also be downloaded from the companion website for this book at:

www.wiley.com/go/nicholssedimentology.

An attempt is made to place before students (degree and post-degree) and professionals in the fields of Civil and Agricultural Engineering, Geology and Earth Sciences, this important branch of Hydroscience, i.e., Hydrology. It

deals with all phases of the Hydrologic cycle and related topics in a lucid style and in metric system. There is a departure from empiricism, with emphasis on collection of hydrological data, processing and analysis of data, and hydrological design on sound principles and matured judgement. Large number of hydrological design problems are worked out at the end of each article, to illustrate the principles involved and the design procedure. Problems for assignment are given at the end of each chapter, along with objective type and intelligence questions.

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

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Engineering Hydrology for Natural Resources Engineers
Variability in Suspended Sediment Transport Due to
Rainfall

Status and Perspectives of Hydrology in Small Basins
Fossil Energy Update

This volume contains most of the scientific contributions to the workshop "Prediction of Agricultural Nonpoint Source Pollution: Model Selection and Application" held in Venice, in the historic Ca' Vendramin Calergi, in June, 1984. Other contributions of specialists who were not able to attend the workshop have also been included in an attempt to make the work more complete. It is hoped that this collection will be useful to planners who operate in the field of agricultural diffuse source

pollution, since several contributions are state-of-the-art presentations and others are specialized studies by American and European researcher.

With reference to India.

Suspended Sediment in the River Rhine

Computer Aided Hydrologic Design of Mine Ponds

Proceedings, 1981 Symposium on Surface Mining Hydrology,

Sedimentology, and Reclamation, December 7-11, 1981

Stilling Basin Design and Operation for Water Quality

Hydrology : Principles, Analysis And Design

Many construction projects involve the need to pump turbid water from borrow pits or other excavations into stilling basins

or sediment bags prior to discharge. The design and operation of these basins needs to be optimized to provide the best water treatment prior to discharge. This project was designed to provide an evaluation of stilling basin designs and polyacrylamide (PAM) injection to minimize turbidity in discharged water. A Piedmont subsoil was mixed with water in a large holding pond which served as a source of the turbid water which was pumped into the stilling basin. Initial turbidities were in the range of 250-400 nephelometric turbidity

units (NTU) in the source basin. Physical changes to the open basin, both with porous baffles and distribution along the bottom, significantly reduced turbidity or total suspended solids in the stilling basin, but the highest reduction was only 25%. Chemical treatment with PAM reduced turbidity and TSS by up to 88% and 84%, respectively, with little effect from the baffles or bottom spreader. Both types of PAM dosing systems worked well. There was some evidence that flocs formed after PAM treatment were intercepted by the dam

slope. The porous baffle with 10% open pore space was significantly more effective than the baffle with 45% open pore space, but only when no PAM was added. The PAM treatments were highly effective and should be relatively simple and economical to use to reduce turbidity in pumped water.

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.

The Impact of Climate Change on Erosion,
Transport, and Deposition

Handbook of Wetland Management

A Guide to Professional Licensure for
Agricultural, Food, and Biological Systems
Engineers

Coal Development

Proceedings, 1988 Symposium on Mining,

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Hydrology, Sedimentology, and Reclamation
The movement of sediment and associated pollutants over the landscape and into water bodies is of increasing concern with respect to pollution control, prevention of muddy floods and environmental protection. In addition, the loss of soil on site has implications for declining agricultural productivity, loss of biodiversity and decreased amenity and landscape value. The fate

of sediment and the conservation of soil are important issues for land managers and decision-makers. In developing appropriate policies and solutions, managers and researchers are making greater use of erosion models to characterise the processes of erosion and their interaction with the landscape. A study of erosion requires one to think in terms of microseconds to understand the mechanics of impact of a single raindrop on a soil surface, while

landscapes form over periods of thousands of years. These processes operate on scales of millimetres for single raindrops to mega-metres for continents. Erosion modelling thus covers quite a lot of ground. This book introduces the conceptual and mathematical frameworks used to formulate models of soil erosion and uses case studies to show how models are applied to a variety of purposes at a range of spatial and temporal scales.

The aim is to provide land managers and others with the tools required to select a model appropriate to the type and scale of erosion problem, to show what users can expect in terms of accuracy of model predictions and to provide an appreciation of both the advantages and limitations of models. Problems covered include those arising from agriculture, the construction industry, pollution and climatic change and range in scale from farms to small and large

catchments. The book will also be useful to students and research scientists as an up-to-date review of the state-of-art of erosion modelling and, through knowledge of how models are used in practice, in highlighting the gaps in knowledge that need to be filled in order to develop even better models. 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

The Professional Geologist

Restoring and Conserving Ecosystem Services

Ecological Engineering Design

Hydrologic and Water Quality

Characteristics of a Small Wetland

Hydrology and Sedimentology of Surface

Mined Lands

Weak rocks encountered in open pit mines cover a wide variety of materials, with properties ranging between soil and rock. As such, they can provide a significant challenge for the slope designer. For these materials, the mass strength can be the primary control in the design of the pit slopes, although structures can also play an important role. Because of the typically weak nature of the materials, groundwater and surface water can also have a controlling influence on stability. Guidelines for Open Pit Slope Design in Weak Rocks is a companion

to Guidelines for Open Pit Slope Design, which was published in 2009 and dealt primarily with strong rocks. Both books were commissioned under the Large Open Pit (LOP) project, which is sponsored by major mining companies. These books provide summaries of the current state of practice for the design, implementation and assessment of slopes in open pits, with a view to meeting the requirements of safety, as well as the recovery of anticipated ore reserves. This book, which follows the general cycle of the slope design process for open pits, contains 12 chapters. These chapters were compiled and

written by industry experts and contain a large number of case histories. The initial chapters address field data collection, the critical aspects of determining the strength of weak rocks, the role of groundwater in weak rock slope stability and slope design considerations, which can differ somewhat from those applied to strong rock. The subsequent chapters address the principal weak rock types that are encountered in open pit mines, including cemented colluvial sediments, weak sedimentary mudstone rocks, soft coals and chalk, weak limestone, saprolite, soft iron ores and other leached

rocks, and hydrothermally altered rocks. A final chapter deals with design implementation aspects, including mine planning, monitoring, surface water control and closure of weak rock slopes. As with the other books in this series, Guidelines for Open Pit Slope Design in Weak Rocks provides guidance to practitioners involved in the design and implementation of open pit slopes, particularly geotechnical engineers, mining engineers, geologists and other personnel working at operating mines.

Following years of research, the first bored tunnel in soft soil in the Netherlands, the

Tweede Heinenoord tunnel, was completed in 1998. Since then, Dutch engineers have increased their knowledge of soft soil tunnelling, with a significant and important part of this research being carried out by GeoDelft, the Dutch National Institute of Geo-Engineering. This book contains the most important publications by GeoDelft on the subject of soft soil tunnelling, focusing on the period from 1992 to the present, it is divided into four main headings: field measurements; grout behaviour; model testing; and numerical analysis. This impressive overview of the progress made in the

Netherlands in soft soil tunnelling research over more than a decade is a valuable resource to those working in soft soil tunnelling worldwide.

Diffuse/Non-point Pollution and Watershed Management

Water Supply and Pollution Control

Design Manual for Sedimentation Control Through Sedimentation Ponds and Other Physical/chemical Treatment

Upper Dorn Creek Wetland, Wisconsin

Design Hydrology and Sedimentology for Small Catchments

"Water Supply and Pollution Control,"

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Seventh Edition has been revised and modernized to meet the contemporary needs of civil and environmental engineering students who will be engaged in the design and management of water and wastewater systems, practicing engineers, and those planning to take the examination for licensing as a professional engineer. Warren Viessman, Jr. and Mark J. Hammer emphasize the application of scientific methods to problems associated with the

development, movement, and treatment of water and wastewater. Treatment processes are presented in the context of what they can do, rather than compartmentalizing them along clean water or wastewater lines. The concept of total water management, recognizing that all waters are potential sources of supply, is a dominant theme. Improvements in the seventh edition include New material on water quality standards, water and wastewater

treatment process design, water distribution system analysis and design, water quality, advanced wastewater treatment for recycling, storm water management and urban hydrology Major revisions of the sections on water supply and use, water distribution, hydraulics and hydrology of sewer and storm drainage systems, monitoring of drinking water for pathogens, membrane filtration, disinfection/disinfection by-products

rule, biological treatment processes, and indirect reuse to augment drinking water supply The latest version of EPANET is introduced. This water distribution network model offers students an opportunity to address problems of all scale and to become acquainted with state-of-the-art software used by practitioners. New topics such as security of potable water supplies, the use of membranes in water treatment, and the application of

Geographical Information Systems (GIS) to water supply and wastewater management problems have been introduced. More practical examples and many new problems have been added. Guidelines for Mine Waste Dump and Stockpile Design is a comprehensive, practical guide to the investigation, design, operation and monitoring of mine waste dumps, dragline spoils and major stockpiles associated with large open pit mines. These facilities are

some of the largest man-made structures on Earth, and while most have performed very well, there are cases where instabilities have occurred with severe consequences, including loss of life and extensive environmental and economic damage. Developed and written by industry experts with extensive knowledge and experience, this book is an initiative of the Large Open Pit (LOP) Project. It comprises 16 chapters that follow the life cycle of a mine

waste dump, dragline spoil or stockpile from site selection to closure and reclamation. It describes the investigation and design process, introduces a comprehensive stability rating and hazard classification system, provides guidance on acceptability criteria, and sets out the key elements of stability and runout analysis. Chapters on site and material characterisation, surface water and groundwater characterisation

and management, risk assessment, operations and monitoring, management of ARD, emerging technologies and closure are included. A chapter is also dedicated to the analysis and design of dragline spoils. Guidelines for Mine Waste Dump and Stockpile Design summarises the current state of practice and provides insight and guidance to mine operators, geotechnical engineers, mining engineers, hydrogeologists, geologists

and other individuals that are responsible at the mine site level for ensuring the stability and performance of these structures. Readership includes mining engineers, geotechnical engineers, civil engineers, engineering geologists, hydrogeologists, environmental scientists, and other professionals involved in the site selection, investigation, design, permitting, construction, operation, monitoring, closure and reclamation of

mine waste dumps and stockpiles.

Energy Research Abstracts

Agricultural Nonpoint Source Pollution
Guidelines for Open Pit Slope Design in
Weak Rocks

Selected Water Resources Abstracts
Proceedings, 1983 Symposium on Surface
Mining--Hydrology, Sedimentology and
Reclamation, November 28-December 2,
1983

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.

Design with the Desert

Handbook of Erosion Modelling

Field Testing

Conservation and Sustainable Development

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Sediment Runoff from Agricultural Watersheds