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Hydrology and Floodplain Analysis Hydrology and Floodplain Analysis Hydrology and Floodplain Analysis Hydrology and Floodplain Analysis **Outlines and Highlights for Hydrology and Floodplain Analysis by Philip B Bedient, Isbn** *Hydrology and Floodplain Analysis* **Flood Plain Analysis and Risk Assessment** Computer-assisted Floodplain Hydrology and Hydraulics *Hydrologic and Hydraulic Modeling Support* **Two-dimensional Floodplain Modeling Elevation Data for Floodplain Mapping Defence from Floods and Floodplain Management Hydraulic and Hydrologic Aspects of Flood-plain Planning** *Mapping the Zone* **Tying Flood Insurance to Flood Risk for Low-Lying Structures in the Floodplain** Water Resources Systems Analysis *Flood Plain Management* **Estimating Flood-Peak Discharge Magnitudes and Frequencies for Rural Streams in Illinois The Central Amazon Floodplain** Efficient Decision Support Systems US-95 Garwood to Sagle, Kootenai and Bonner Counties **Floodplain-management Plan Enumeration** *Assessing the Resolution Effects of Digital Elevation Models on Automated Floodplain Delineation* Floodplain Modeling Using HEC-RAS *Mon/Fayette Transportation Project, from I-68 in Monongalia County, WV to Route 43 (formerly Chadville Demonstration Project) in Fayette County, PA* **Tongass National Forest (N.F.) Traitors Cove Timber Sale Flooding and Management of Large Fluvial Lowlands** Interstate 25 Improvements, the New Pueblo Freeway, Pueblo County, Colorado NASA Authorization for Fiscal Year 1977 *Hydrosystems Engineering and Management* **CSAH-18 Replacement from I-494 to TH-13-101, Scott/Hennepin Counties Comparative Plant Succession Among Terrestrial Biomes of the World** *Rock Creek Park (N.P.), Rock Creek Park and the Rock Creek and Potomac Parkway Project General Management Plan* **Selected Water Resources Abstracts Riverine Ecosystem Management** Levees and the National Flood Insurance Program *Restoring Floodplains in Europe Orange County Gateway Project Within the Cities of Placentia and Anaheim and Unincorporated Orange County to Provide Grade Separation Alternatives Along the Burlington Northern Santa Fe Railroad Tracks from West of Bradford Avenue to West of Imperial Highway (State Route 90)* **Levees and the National Flood Insurance Program The Structure, Function and Management Implications of Fluvial Sedimentary Systems**

Tying Flood Insurance to Flood Risk for Low-Lying Structures in the Floodplain Aug 12 2021 Floods take a heavy toll on society, costing lives, damaging buildings and property, disrupting livelihoods, and sometimes necessitating federal disaster relief, which has risen to record levels in recent years. The National Flood Insurance Program (NFIP) was created in 1968 to reduce the flood risk to individuals and their reliance on federal disaster relief by making federal flood insurance available to residents and businesses if their community adopted floodplain management ordinances and minimum standards for new construction in flood prone areas. Insurance rates for structures built after a flood plain map was adopted by the community were intended to reflect the actual risk of flooding, taking into account the likelihood of inundation, the elevation of the structure, and the relationship of inundation to damage to the structure. Today, rates are subsidized for one-fifth of the NFIP's 5.5 million policies. Most of these structures are negatively elevated, that is, the elevation of the lowest floor is lower than the NFIP construction standard. Compared to structures built above the base flood elevation, negatively elevated structures are more likely to incur a loss because they are inundated more frequently, and the depths and durations of inundation are greater. "Tying Flood Insurance to Flood Risk for Low-Lying Structures in the Floodplain" studies the pricing of negatively elevated structures in the NFIP. This report review current NFIP methods for calculating risk-based premiums for these structures, including risk analysis, flood maps, and engineering data. The report then evaluates alternative approaches for calculating risk-based premiums and discusses engineering hydrologic and property assessment data needs to implement full risk-based premiums. The findings and conclusions of this report will help to improve the accuracy and precision of loss estimates for negatively elevated structures, which in turn will increase the credibility, fairness, and transparency of premiums for policyholders.

Hydrology and Floodplain Analysis Sep 25 2022 Now in its third edition, "Hydrology and Floodplain Analysis" continues to offer a clear and up-to-date presentation of the fundamental concepts and design methods required to understand hydrology and floodplain analysis. It addresses the computational emphasis of modern hydrology and provides a balanced approach to important applications in watershed analysis, floodplain computation, flood control, urban hydrology, stormwater design, and computer modeling. Includes HEC-HMS, HEC-RAS, and SWMM models plus GIS and radar rainfall. The text is ideal for students taking an undergraduate or graduate course on hydrology, while the practicing engineer

should value the book as a modern reference for hydrologic principles, flood frequency analysis, floodplain analysis, computer simulation, and hydrologic storm water design. Updated coverage in the third edition includes: "Three New Chapters" Chapter 1: Geographic Information Systems (GIS) Chapter 2: Use of NEXRAD Radar Data Chapter 3: Floodplain Management Issues in Hydrology A new, detailed case study of a complex watershed using GIS linked with radar technology. New tools and technologies used for watershed analysis, hydrologic modeling, and modern floodplain delineation. New examples and homework problems in each chapter.

Floodplain-management Plan Enumeration Jan 05 2021

Water Resources Systems Analysis Jul 11 2021 Focusing on conflict resolution, Water Resources Systems Analysis discusses systematic approaches to the mathematical modeling of various water resources issues, which helps decision-makers allocate water effectively and efficiently. Readers will gain an understanding of simulation, optimization, multi-criterion-decision-making, as well as engineer

NASA Authorization for Fiscal Year 1977 May 29 2020

CSAH-18 Replacement from I-494 to TH-13-101, Scott/Hennepin Counties Mar 27 2020

Interstate 25 Improvements, the New Pueblo Freeway, Pueblo County, Colorado Jun 29 2020

Rock Creek Park (N.P.), Rock Creek Park and the Rock Creek and Potomac Parkway Project General Management Plan Jan 25 2020

Flooding and Management of Large Fluvial Lowlands Jul 31 2020 Examines interrelations between flood management, flooding, and environmental change, for advanced students, researchers, and practitioners.

Levees and the National Flood Insurance Program Jul 19 2019 The Federal Emergency Management Agency's (FEMA) Federal Insurance and Mitigation Administration (FIMA) manages the National Flood Insurance Program (NFIP), which is a cornerstone in the U.S. strategy to assist communities to prepare for, mitigate against, and recover from flood disasters. The NFIP was established by Congress with passage of the National Flood Insurance Act in 1968, to help reduce future flood damages through NFIP community floodplain regulation that would control development in flood hazard areas, provide insurance for a premium to property owners, and reduce federal expenditures for disaster assistance. The flood insurance is available only to owners of insurable property located in communities that participate in the NFIP. Currently, the program has 5,555,915 million policies in 21,881 communities3 across the United States. The NFIP defines the one percent annual chance flood (100-year or base flood) floodplain as a Special Flood Hazard Area (SFHA). The SFHA is delineated on FEMA's Flood Insurance Rate Maps (FIRM's) using topographic, meteorologic, hydrologic, and hydraulic information. Property owners with a federally back mortgage within the SFHAs are required to purchase and retain flood insurance, called the mandatory flood insurance purchase requirement (MPR). Levees and floodwalls, hereafter referred to as levees, have been part of flood management in the United States since the late 1700's because they are relatively easy to build and a reasonable infrastructure investment. A levee is a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding. A levee system is a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices. Recognizing the need for improving the NFIP's treatment of levees, FEMA officials approached the National Research Council's (NRC) Water Science and Technology Board (WSTB) and requested this study. The NRC responded by forming the ad hoc Committee on Levee and the National Flood Insurance Program: Improving Policies and Practices, charged to examine current FEMA treatment of levees within the NFIP and provide advice on how those levee-elated policies and activities could be improved. The study addressed four broad areas, risk analysis, flood insurance, risk reduction, and risk communication, regarding how levees are considered in the NFIP. Specific issues within these areas include current risk analysis and mapping procedures behind accredited and non-accredited levees, flood insurance pricing and the mandatory flood insurance purchase requirement, mitigation options to reduce risk for communities with levees, flood risk communication efforts, and the concept of shared responsibility. The principal conclusions and recommendations are highlighted in this report.

Hydrology and Floodplain Analysis May 21 2022 Never HIGHLIGHT a Book Again! Virtually all of the testable terms, concepts, persons, places, and events from the textbook are included. Cram101 Just the FACTS101 studyguides give all of the outlines, highlights, notes, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanys: 9780130322227 .

US-95 Garwood to Sagle, Kootenai and Bonner Counties Feb 06 2021

Estimating Flood-Peak Discharge Magnitudes and Frequencies for Rural Streams in Illinois May 09 2021

Hydrosystems Engineering and Management Apr 27 2020 This book is intended to be a textbook for students of water resources engineering and management. It is an introduction to methods used in hydrosystems for upper level undergraduate and graduate students. The material can be presented to students with no background in operations research and with only an undergraduate background in hydrology and hydraulics. A major focus is to bring together the use of economics, operations research, probability and statistics with the use of hydrology, hydraulics, and water resources for the analysis, design, operation, and management of various types of water projects. This book is an excellent reference for engineers,

water resource planners, water resource systems analysts, and water managers. This book is concerned with the mathematical modeling of problems in water project design, analysis, operation, and management. The quantitative methods include: (a) the simulation of various hydrologic and hydraulic processes; (b) the use of operations research, probability and statistics, and economics. Rarely have these methods been integrated in a systematic framework in a single book like Hydrosystems Engineering and Management. An extensive number of example problems are presented for ease in understanding the material. In addition, a large number of end-of-chapter problems are provided for use in homework assignments.

Tongass National Forest (N.F.) Traitors Cove Timber Sale Sep 01 2020

Assessing the Resolution Effects of Digital Elevation Models on Automated Floodplain Delineation Dec 04 2020 Automated floodplain modeling commonly requires Digital Elevation Models (DEMs) to represent the topography. As a raster representation of the Earth surface, changing a DEMs resolution (data cell size) has a profound impact on the floodplain delineation. Since 1995 DEM resolution has increased from 100- to 1-meter resolution. This thesis addresses how different DEM resolutions, and different DEM data sources, affect the outcome of modeled floodplain boundaries in the Camp Creek Watershed, a predominately agricultural watershed in Missouri. Two data sets are analyzed: a Light Detection and Ranging (LiDAR) terrain model re-sampled to 1-, 3-, 5-, 10-, 15-, and 30-meter resolutions and existing United States Geological Survey (USGS) 5-, 10-, and 30-meter DEMs. The floodplain delineation process includes hydrologic modeling, hydraulic modeling, and floodplain delineation. Each process includes various input parameters and outputs. Resultant stream networks, watershed boundaries, and floodplains are examined to evaluate the effects of different resolutions. Using 3- or 5- meter LiDAR DEMs produces data that agree with the 1-m data greater than the 90th percentile. The agreement also includes the 10-m DEM data when analyses remove the floodplain modeling cumulative discrepancy effects. Similar trends were not found when using the USGS counterparts; possibly due to the use of the same underlying source material to create the DEMs. When removing the cumulative distortion effect of resolution on the entire modeling process, LiDAR DEM floodplains displayed a 1-4% increase in goodness of fit. Analyzing the results of two separate hydraulic models (HEC-RAS and CARES) finds little difference between their calculated flood surface elevations. Additionally, the thesis analyzes the data storage needs and processing time for modeling different resolutions, finding substantial savings in both as the underlying DEM resolution is decreased. The thesis begins to analyze how models are affected by input variables but many additional studies are needed. Further study of these variables is needed to determine if a single most appropriate model and DEM resolution exists, or what combination of models are appropriate for various types of automated floodplain modeling.

Flood Plain Management Jun 10 2021 Economic and social studies are essential in any process of water rsources planning or river bank management. This study deals with the establishment of an integrated system which would form the basis of the rational planning of flood plains and would include hydrological, hydrodynamic, physical and economic components. The application of such a system to a region of interest should lead to the establishment of a management policy for river banks. The results of this study will contribute to the development of cirteria for studying the value of management projects; the judicious choice of a flood control system after criteria, both technical and economic, have been determined; the determination of flood/damage correlation with not need for post-flood investigations; and the integration of urban and rural hydrology to obtian better watershed planning.

Selected Water Resources Abstracts Dec 24 2019

Outlines and Highlights for Hydrology and Floodplain Analysis by Philip B Bedient, Isbn Jun 22 2022 Never HIGHLIGHT a Book Again! Virtually all of the testable terms, concepts, persons, places, and events from the textbook are included. Cram101 Just the FACTS101 studyguides give all of the outlines, highlights, notes, and quizzes for your textbook with optional online comprehensive practice tests. Only Cram101 is Textbook Specific. Accompanys: 9780131745896 .

Comparative Plant Succession Among Terrestrial Biomes of the World Feb 24 2020 Provides a comparative approach to plant succession among all terrestrial biomes and disturbances, helping to reveal generalizable patterns.

Restoring Floodplains in Europe Sep 20 2019 This book addresses the complex institutional dimensions to restoring floodplains. Despite the recent surge of interest in restoring floodplains among policy and research circles, as well as in the public domain, very few schemes for restoring functional floodplains have been put into practice in Europe to date. The book explores the reasons behind this discrepancy between interest and applications with an original, comparative analysis of the institutional drivers and constraints of floodplain restoration in Europe. It explains why so few projects have been successfully implemented, how recent policy shifts are creating new opportunities for floodplain restoration and what lessons for policy development and project management can be drawn from in-depth analysis of past and present schemes. At a time of rapidly growing interest in restoring floodplains as an important component of efforts to improve flood protection, enhance riparian habitats, strengthen catchment management, raise water quality and pursue integrated rural development, the book critically appraises the relationship between macro-level policy development and enforcement and micro-level project design and implementation. The book begins with two chapters setting out the case for floodplain restoration and assessing the relevant drivers and constraints of EU policy. The next three chapters analyse the policy contexts of floodplain restoration in France, Germany and Britain, addressing the principal drivers and constraints in the fields of water management, flood protection, nature

conservation, spatial planning and agriculture. This is followed by six case studies of schemes to restore floodplains, divided between early schemes of the mid-1990s (Rheinvorland-Sud on the Upper Rhine, Bourret on the Garonne and the Long Eau project in England) and ongoing schemes of today (Lenzen on the Elbe, La Basse on the Seine and the Parrett Catchment Project). The book concludes by drawing lessons from the principal findings and providing recommendations for ways of developing policy and designing projects for restoring floodplains in the future.

Flood Plain Analysis and Risk Assessment Apr 20 2022 Flooding is one of the most striking water induced disaster. This study aims to find out the extent of floodplain for flood discharge of different return periods using one dimensional hydraulic model HEC-RAS, ArcView GIS and Hec-GeoRAS.The study focuses on case study of Lothar Khola.Triangulated Irregular Network was prepared from contour and spot elevations in ArcView GIS.In HEC-RAS, boundary conditions, flood discharges for different return periods were inputted. Steady flow analysis was done for the results. Approach developed by Gilard (1996) was used for flood risk assessment. Area inundated by 2, 10, 50, 100 and 200 years return period flood was 230, 239, 246, 249 and 252 ha., respectively. The classification of flood depth area shows most of the flooding area has water depth greater than 3m. The assessment of the flood area shows that large percentage (> 40 %) of vulnerable area lies on sand area followed by forest, cultivation area, etc. Flooding of cultivation land indicates potential damage in food production and negative effects on the livelihoods of local people. Thus, the study may help in planning and management for future probable disaster through technical approach.

Orange County Gateway Project Within the Cities of Placentia and Anaheim and Unincorporated Orange County to Provide Grade Separation Alternatives Along the Burlington Northern Santa Fe Railroad Tracks from West of Bradford Avenue to West of Imperial Highway (State Route 90) Aug 20 2019

Hydraulic and Hydrologic Aspects of Flood-plain Planning Oct 14 2021

The Central Amazon Floodplain Apr 08 2021 Floodplains are ecosystems which are driven by periodic inundation and oscillation between terrestrial and aquatic phases. An understanding of such pulsing systems is only possible by studying both phases and linking the results into an integrated overview. This book presents the results of a 15-year study of the structure and function of one of the largest tropical floodplains, the Amazon River floodplain. It covers qualitative aspects, e.g., adaptations of aquatic and terrestrial organisms to the flood pulse as well as quantitative aspects, e.g., studies of biomass, primary production, decomposition, and nutrient cycles. The authors interpret their findings and the most important data from other studies under an integrating scientific concept, the Flood Pulse Concept.

Mapping the Zone Sep 13 2021 Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps portray the height and extent to which flooding is expected to occur, and they form the basis for setting flood insurance premiums and regulating development in the floodplain. As such, they are an important tool for individuals, businesses, communities, and government agencies to understand and deal with flood hazard and flood risk. Improving map accuracy is therefore not an academic question--better maps help everyone. Making and maintaining an accurate flood map is neither simple nor inexpensive. Even after an investment of more than $1 billion to take flood maps into the digital world, only 21 percent of the population has maps that meet or exceed national flood hazard data quality thresholds. Even when floodplains are mapped with high accuracy, land development and natural changes to the landscape or hydrologic systems create the need for continuous map maintenance and updates. Mapping the Zone examines the factors that affect flood map accuracy, assesses the benefits and costs of more accurate flood maps, and recommends ways to improve flood mapping, communication, and management of flood-related data.

Computer-assisted Floodplain Hydrology and Hydraulics Mar 19 2022 Master next-generation flood control techniques. Here's the hands-on help you need to apply state-of-the-art computer programs for modeling flood plain hydrologic and hydraulic systems pioneered by the U.S. Army Corps of Engineers. Daniel Hoggan's Computer-Assisted Floodplain Hydrology and Hydraulics, Second Edition, takes you step-by-step through the HEC-2 Water Surface Profiles Program, the Windows-based HEC-RAS River Analysis System Program, the HEC-1 Flood Hydrograph and Parameter Estimation Program and many other Software packages. It helps you simulate basin hydrology, analyze flood frequency, compute water surface profiles and more. Armed with these powerful techniques, you'll accurately analyze rainfall and rainfall loss, flood routing, urbanizing basins, interior flooding, culvert flow, floodway and channel improvement and much more.

Mon/Fayette Transportation Project, from I-68 in Monongalia County, WV to Route 43 (formerly Chadville Demonstration Project) in Fayette County, PA Oct 02 2020

Hydrology and Floodplain Analysis Aug 24 2022 For undergraduate and graduate courses in Hydrology. This text offers a clear and up-to-date presentation of fundamental concepts and design methods required to understand hydrology and floodplain analysis. It addresses the computational emphasis of modern hydrology and provides a balanced approach to important applications in watershed analysis, floodplain computation, flood control, urban hydrology, stormwater design, and computer modeling.

Levees and the National Flood Insurance Program Oct 22 2019 The Federal Emergency Management Agency's (FEMA) Federal Insurance and Mitigation Administration (FIMA) manages the National Flood Insurance Program (NFIP), which is a cornerstone in the U.S. strategy to assist communities to prepare for, mitigate against, and recover from flood disasters. The NFIP was established by Congress with passage of the National Flood Insurance Act in 1968, to help reduce future flood damages through NFIP community floodplain regulation that would control development in flood hazard areas, provide insurance for a premium to property owners, and reduce federal expenditures for disaster assistance. The flood insurance is available only to owners of insurable property located in communities that participate in the NFIP. Currently, the program has 5,555,915 million policies in 21,881

communities3 across the United States. The NFIP defines the one percent annual chance flood (100-year or base flood) floodplain as a Special Flood Hazard Area (SFHA). The SFHA is delineated on FEMA's Flood Insurance Rate Maps (FIRM's) using topographic, meteorologic, hydrologic, and hydraulic information. Property owners with a federally back mortgage within the SFHAs are required to purchase and retain flood insurance, called the mandatory flood insurance purchase requirement (MPR). Levees and floodwalls, hereafter referred to as levees, have been part of flood management in the United States since the late 1700's because they are relatively easy to build and a reasonable infrastructure investment. A levee is a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding. A levee system is a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices. Recognizing the need for improving the NFIP's treatment of levees, FEMA officials approached the National Research Council's (NRC) Water Science and Technology Board (WSTB) and requested this study. The NRC responded by forming the ad hoc Committee on Levee and the National Flood Insurance Program: Improving Policies and Practices, charged to examine current FEMA treatment of levees within the NFIP and provide advice on how those levee-elated policies and activities could be improved. The study addressed four broad areas, risk analysis, flood insurance, risk reduction, and risk communication, regarding how levees are considered in the NFIP. Specific issues within these areas include current risk analysis and mapping procedures behind accredited and non-accredited levees, flood insurance pricing and the mandatory flood insurance purchase requirement, mitigation options to reduce risk for communities with levees, flood risk communication efforts, and the concept of shared responsibility. The principal conclusions and recommendations are highlighted in this report.

Hydrology and Floodplain Analysis Jul 23 2022

Defence from Floods and Floodplain Management Nov 15 2021 Proceedings of the NATO Advanced Study Institute, Budapest, Hungary, April 26--May 7, 1994

The Structure, Function and Management Implications of Fluvial Sedimentary Systems Jun 17 2019

Elevation Data for Floodplain Mapping Dec 16 2021 Floodplain maps serve as the basis for determining whether homes or buildings require flood insurance under the National Flood Insurance Program run by the Federal Emergency Management Agency (FEMA). Approximately $650 billion in insured assets are now covered under the program. FEMA is modernizing floodplain maps to better serve the program. However, concerns have been raised as to the adequacy of the base map information available to support floodplain map modernization. Elevation Data for Floodplain Mapping shows that there is sufficient two-dimensional base map imagery to meet FEMA's flood map modernization goals, but that the three-dimensional base elevation data that are needed to determine whether a building should have flood insurance are not adequate. This book makes recommendations for a new national digital elevation data collection program to redress the inadequacy. Policy makers; property insurance professionals; federal, local, and state governments; and others concerned with natural disaster prevention and preparedness will find this book of interest.

Floodplain Modeling Using HEC-RAS Nov 03 2020 Introduction to floodplain modeling and management - Introduction to open channel hydraulics - Hydraulic modeling tools - Planning for floodplain modeling studies - Data needs, availability, and development - Bridge modeling - Culvert modeling - Data review, calibration, and results analysis - The U.S. national flood insurance program - Floodway modeling - Channel modification - Advanced floodplain modeling - Mobile boundary situations and bridge scour - Unsteady flow modeling - Importing and exporting files with HEC-RAS.

Hydrology and Floodplain Analysis Oct 26 2022 For courses in hydrology and hydraulics. Clear, up-to-date presentation of fundamental concepts for hydrology and floodplain analysis Hydrology and Floodplain Analysis , 6th Edition offers a clear and up-to-date presentation of fundamental concepts and design methods required to understand hydrology and floodplain analysis. The text addresses the computational emphasis of modern hydrology and provides a balanced approach to important applications in watershed analysis, floodplain computation, flood control, urban hydrology, stormwater design, and computer modeling. Three main sections guide readers through the material, while examples, case studies, and homework problems reinforce major concepts. The 6th Edition includes brand-new chapters that cover geographical information systems (GIS) and the latest advances in computer modeling applications, along with new and updated examples and case studies.

Riverine Ecosystem Management Nov 22 2019 This open access book surveys the frontier of scientific river research and provides examples to guide management towards a sustainable future of riverine ecosystems. Principal structures and functions of the biogeosphere of rivers are explained; key threats are identified, and effective solutions for restoration and mitigation are provided. Rivers are among the most threatened ecosystems of the world. They increasingly suffer from pollution, water abstraction, river channelisation and damming. Fundamental knowledge of ecosystem structure and function is necessary to understand how human acitivities interfere with natural processes and which interventions are feasible to rectify this. Modern water legislation strives for sustainable water resource management and protection of important habitats and species. However, decision makers would benefit from more profound understanding of ecosystem degradation processes and of innovative methodologies and tools for efficient mitigation and restoration. The book provides best-practice examples of sustainable river management from on-site studies, European-wide analyses and case studies from other parts of the world. This book will be of interest to researchers in the field of aquatic ecology, river system functioning, conservation and restoration, to postgraduate students, to institutions involved in water management, and to water

related industries.
Efficient Decision Support Systems Mar 07 2021 This series is directed to diverse managerial professionals who are leading the transformation of individual domains by using expert information and domain knowledge to drive decision support systems (DSSs). The series offers a broad range of subjects addressed in specific areas such as health care, business management, banking, agriculture, environmental improvement, natural resource and spatial management, aviation administration, and hybrid applications of information technology aimed to interdisciplinary issues. This book series is composed of three volumes: Volume 1 consists of general concepts and methodology of DSSs; Volume 2 consists of applications of DSSs in the biomedical domain; Volume 3 consists of hybrid applications of DSSs in multidisciplinary domains. The book is shaped decision support strategies in the new infrastructure that assists the readers in full use of the creative technology to manipulate input data and to transform information into useful decisions for decision makers.
Two-dimensional Floodplain Modeling Jan 17 2022 A two-dimensional horizontal finite element numerical model (RMA-2) was applied to a 15 mile (24 km) river channel-floodplain reach in West Germany. Previous applications of such models have been restricted to much smaller scales. The results indicate that finite element schemes may successfully estimate river stage in large scale floodplain applications. Computed stage hydrographs compared well with observed data using loss coefficients within expected ranges. Two-dimensional flow models have been applied to certain classes of river channel problems. Applications have included detailed analyses of flow patterns near structures such as bridges and floodplains. In all these problems the scale of interest has been small, e.g. reaches of river a few river widths long. Many estuary studies have been done that were of large scale; some of these utilized a hybrid (numerical plus physical) modeling technique. In a review of the application of finite element methods to river channels, Samuels reported that the river channel was resolved separately from the floodplain in only two studies. Missing in previous work is attention to large scale floodplain modeling. The work reported in this paper focuses on the feasibility and accuracy of applying a two-dimensional flow model to a large floodplain. Traditional floodplain studies have used semi-empirical flow routing with steady, one-dimensional computation of water surface elevations to define inundated areas. Keywords: Army Corps of Engines. (kr).
Hydrologic and Hydraulic Modeling Support Feb 18 2022 Digital elevation model issues in water resources modeling - Preparation of DEMs for use in environmental modeling analysis - Source water protection project : a comparison of watershed delineation methods in ARC/INFO and arcView GIS - DEM preprocessing for efficient watershed delineation - Gis tools for HMS modeling support - Hydrologic model of the buffalo bayou using GIS - Development of digital terrain representation for use in river modeling - HEC-GeoRAS : linking GIS to hydraulic analysis using ARC/INFO and HEC-RAS - Floodplain determination using arcView GIS and HEC-RAS - The accuracy and efficiency of GIS-Based floodplain determinations.