Gully Erosion And Management Methods And Application A

The proper management of geographic data can provide assistance to a number of different sectors within society. As such, it is imperative to continue advancing research for spatial data analysis. The Handbook of Research on Geographic Information Systems Applications and Advancements presents a thorough overview of the latest developments in effective management techniques for collecting, processing, analyzing, and utilizing geographical data and information. Highlighting theoretical frameworks and relevant applications, this book is an ideal reference source for researchers, academics, professionals, and students actively involved in the field of geographic information systems.

This book contains a vivid description of monitoring the performance of structural and non-structural techniques for rill-gully management at laboratory, plot and catchment scale. The best among the alternative techniques and available species are thus selected for better management of rill-gully erosion in badland topography. This book is designed to assist geomorphologists, hydrologists, sedimentologists, geotechnical engineers as well as land managers.

This Special Issue includes manuscripts about soil erosion and degradation processes and the accelerated rates due to hydrological processes and climate change. The new research included in this issue focuses on measurements, modeling, and experiments in field or laboratory conditions developed at different scales (pedon, hillslope, and catchment). This Special Issue received investigations from different parts of the world such as Ethiopia, Morocco, China, Iran, Italy, Portugal, Greece, and Spain, among others. We are happy to see that all papers presented findings characterized as unconventional, provocative, innovative, and methodologically new. We hope that the readers of the journal Water can enjoy and learn about hydrology and soil erosion using the published material, and share the results with the scientific community, policymakers, and stakeholders to continue this amazing adventure, facing plenty of issues and challenges.

This book, the only one of its kind on ravine lands, reflects the significant advances made over the past two decades in our understanding of gully erosion, its controlling factors, and various aspects of gully erosion. It also addresses central research gaps and unanswered questions, which include historical studies on gully erosion to better understand the different stages of their formation; appropriate measuring techniques for monitoring or assessing the geological and hydrological parameters and processes involved in gully development; interaction of hydrological and other soil degradation processes; ecology and biodiversity of fragile ravines; impact of climate and environmental changes on soil erosion processes; development of effective and reliable gully erosion models; effective gully prevention and control measures; watershed-based management options; and ravine rehabilitation policies. The present book is a highly timely publication and deals with various aspects of ravine ecology and rehabilitation of degraded lands, particularly with the aid of biological approaches. As such, it offers a valuable guide for all scientists working in the fields of soil conservation / rehabilitation and agroforestry, students, environmentalists, educationists, and policymakers. More importantly, it focuses on the rehabilitation of one of the world’s most degraded and fragile ecosystems, ensuring the livelihoods of resource-poor farmers and landless families living in harsh ecologies that are more vulnerable to climate change.

This new volume is the first independent analysis of an important national data base, the National Resources Inventory. It cites potential uses of the NRI in controlling soil erosion; determining land use; deciding conservation treatment; classifying soils; and protecting groundwater quality. Methods for soil conservation activities, ranging from the ranking of the lands most susceptible to erosion to the measurement and prediction of both wind and water erosion, are recommended throughout the volume.

Gully Erosion and Management Methods and ApplicationA Field Manual

The movement of sediment and associated pollutants over thelandscape and into water bodies is of increasing concern withrespect to pollution control, prevention of muddy floods andenvironmental protection. In addition, the loss of soil on site hasimplications for declining agricultural productivity, loss ofbiodiversity and decreased amenity and landscape value. The fate ofsediment and the conservation of soil are important issues for landmanagers and decision-makers. In developing appropriate policiesand solutions, managers and researchers are making greater use oferosion models to characterise the processes of erosion and theirinteraction with the landscape. A study of erosion requires one to think in terms ofmicroseconds to understand the mechanics of impact of a singleraindrop on a soil surface, while landscapes form over periods ofthousands of years. These processes operate on scales ofmillimetres for single raindrops to mega-metres for continents.Erosion modelling thus covers quite a lot of ground. This bookintroduces the conceptual and mathematical frameworks used toformulate models of soil erosion and uses case studies to show howmodels are applied to a variety of purposes at a range of spatialand temporal scales. The aim is to provide land managers and otherswith the tools required to select a model appropriate to the typeand scale of erosion problem, to show what users can expect interms of accuracy of model predictions and to provide anappreciation of both the advantages and limitations of models.Problems covered include those arising from agriculture, theconstruction industry, pollution and climatic change and range inscale from farms to small and large catchments. The book will alsobe useful to students and research scientists as an up-to-datereview of the state-of-art of erosion modelling and, through aknowledge of how models are used in practice, in highlighting thegaps in knowledge that need to be filled in order to develop evenbetter models.

Environmental information and systems play a major role in environmental decision making. As such, it is vital to understand the impact that they have on different aspects of sustainable environmental management, as well as to understand the opportunism they might present for further improvement. Environmental Information Systems: Concepts, Methodologies, Tools, and Applications is an innovative reference source containing the latest research on the use of information systems to track and organize environmental data for use in an overall environmental management system. Highlighting a range of topics such as environmental analysis, remote sensing, and geographic information science, this multi-volume book is designed for engineers, data scientists, practitioners, academicians, and researchers interested in all aspects of environmental information systems.

With reference to Allahabad District of India.

Recent digital innovations provide opportunities to deliver better policies for the agriculture sector by helping to overcome information gaps and asymmetries, lower policy-related transaction costs, and enable people with different preferences and incentives to work better together. Drawing on ten illustrative case studies and unique new data gathered via an OECD questionnaire on agri-environmental policy organisations' experiences with digital tools, this report explores opportunities to improve current agricultural and agri-environmental policies, and to deliver new, digitally enabled and information-rich policy approaches.

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.

The technological advances of recent years include the emergence of new remote sensing and geographic information systems that are invaluable for the study of wetlands, agricultural land, and land use change. Students, hydrologists, and environmental engineers are searching for a comprehensive hydrogeologic overview that supplements information on hydrologic processes with data on these new information technology tools. Environmental Hydrology, Second Edition builds upon the foundation of the bestselling first edition by providing a qualitative understanding of hydrologic processes while introducing new methods for quantifying hydrologic parameters and processes. Written by authors with extensive multidisciplinary experience, the text first discusses the components of the hydrologic cycle, then follows with chapters on precipitation, stream processes, human impacts, new information system applications, and numerous other methods and strategies. By updating this thorough text with the newest analytical tools and measurement methodologies in the field, the authors provide an ideal reference for students and professionals in environmental science, hydrology, soil science, geology, ecological engineering, and countless other environmental fields.

The Book Is A StudyOf Life Cycles Of Natural And Man-Impacted Gullies Of Various Orders For Successive Years Based On Field Data Obtained Through Instrumentation Survey And MeasurementWith The Object Of Studying Causes Of Genesis Accelerated Growth And Diffusion AndManagement Of Gullies In Gully Infested Areas.

Issues in Environmental Law, Policy, and Planning: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Science and Public Policy. The editors have built Issues in Environmental Law, Policy, and Planning: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Science and Public Policy in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Environmental Law, Policy, and Planning: 2013 Edition has been produced by the world’s leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.

Man and soil erosion; The machanics of erosion; The physics of rainfall; The erosivity of rainfall; The erodibility of soil; The principles of mechanical protection; The estimation of surface run-off; The design of machanical protection works; Land management; The universal soil-loss equation; Control of erosion by crop management; Gully erosion; Erosion control on non-arable land; Wind erosion and its control; Erosion research methods; Pollution and soil erosion.

Describes quantitative Idaho research results on the effectiveness of the Idaho Forest Practices Act rules & reg's. pertaining to timber harvest & forest road construction & maintenance. These rules & reg's. are designated as the best management practicesÓ for the preservation of nonpoint source pollution from silviculture. For each practice, the relevant research results are summarized. Contents: background & need; the best management practices project; format; rule 3 timber harvestingÓ; rule 4 road construction & maintenanceÓ; general erosion research summary; references.