# A Gis Based Approach For Hazardous Dam Assessment

"A GIS offers a means by which the data collected during the assessment of possible mining impacts can be stored and manipulated. A GIS that provides a central focus point for the storage, manipulation and retrieval of information generated by the investigation into the geomorphological impact of the ERA Jabiluka Mine has been developed. Implementing a flexible, GIS-centred approach to data managment allows the data storage, manipulation and retrieval powers of GIS to be retained whilst maintaining access to the functionality contained within these other software packages. The GIS has also been linked to the DistFW hydrology model and SIBERIA landform evolution model, to provide a more spatial approach to assessing the impact of mining on the long-term landform evolution of a catchment."--Executive summary.

The importance of Geographic Information Systems (GIS) can hardly be overemphasized in today's academic and professional arena. More professionals and academics have been using GIS than ever – urban

A GIS-based Approach for Mapping CyberspaceA GIS Based Approach for 3D Noise Modelling Using 3D City ModelsCarrying on with Neanderthal MobilityA GIS-based Approach to Group Movement in Northern SpainThree-dimensional GIS-based Approach for Highway Design Consistency EvaluationDevelopment of a GIS Based Approach to Mining Risk Assessment

This SpringerBrief presents the principles, methods, and workflows for processing and analyzing coastal LiDAR data time-series. Robust methods for computing high resolution digital elevation models (DEMs) are introduced as well as raster-based metrics for assessment of topographic change. An innovative approach to feature extraction and measurement of feature migration is followed by methods for estimating volume change and sand redistribution mapping. Simple methods for potential storm impacts and inundation pattern analysis are also covered, along with visualization techniques to support analysis of coastal terrain feature and surface dynamics. Hands-on examples in GRASS GIS and python scripts are provided for each type of analysis and visualization using public LiDAR data time-series. GIS-based Analysis of Coastal Lidar Time-Series is ideal for professors and researchers in GIS and earth sciences. Advanced-level students interested in computer applications and engineering will also find this brief a valuable resource.

This thesis is framed as a contribution to the study of spatial organization at the scale of the individual settlement, specifically in the context of the castros of Northwest Iberia. I argue that new approaches to the description and analysis of organizational properties are needed to improve the current state of research on this topic. I propose a new methodology toward this end by applying concepts and methods from spatial statistics in a GIS environment. I demonstrate the potential of my proposition through a preliminary case study involving two castro

sites from northwestern Portugal: Cividade de Terroso and Castro de Romariz. I conclude by discussing the implications of my work for the study of architecture and spatial organization in castro settlements, suggesting that there is much to be gained by further pursuit and expansion of this new methodological approach Moving awayfrom the highly constrained, purely humanistic and empirical studies ofhillfort location and morphology of the past, this book presents amulti-regional GIS-based analysis of the form and siting of several groups ofhillforts across Britain. Thelocation and morphology of hillforts in Ceredigion, Dartmoor, Aberdeenshire,The Gower and Warminster are investigated through a combination of GIS-basedanalysis and field visits. An innovative approach of integrating movement withvisibility is employed to investigate whether movement, visibility andtopography influenced the location and morphology of these hillforts. Thisinvestigation emphasises the complexity of hillforts as a class of site. Itdemonstrates that GIS-based analysis, when combined with fieldwork, caneffectively be applied to the investigation of hillfort location and form,paving the way for future research agendas within hillforts and beyond.

Over the last decades, the rapid growth of the world population has led to a large number of emerging megacities. The 1999 Izmit (Turkey) earthquake is a striking example of the impact of natural hazards on megacities. On August 17, 1999, a magnitude 7.6 earthquake struck the area of Izmit, Turkey, resulting in 18,000 fatalities and US$ 18 billion in economic losses. The probability of a magnitude 7 earthquake striking Istanbul within the next 30 years ranges between 30% to 70%. In order to reduce the impact of natural hazards on human lives, emergency management plans are essential. The development of these plans strongly relies on up-to-date population and inventory data. However, existing techniques for population data generation do not meet the requirements of today's dynamic cities. In this context, remote sensing has become an important source of information in the last years. However, detailed analyses on the suitability of remote sensing for urban applications are still rare.For her study, Julia Kubanek conducted a quantitative evaluation of the suitability of Ikonos imagery (1m resolution) for population modeling in the district of Zeytinburnu (Istanbul, Turkey). The results show that Ikonos images can be used for complementing existing inventory data sets. The automated extraction of single buildings was identified as the major source of error in the estimation of the population. Kubanek's study discusses the replacement of traditional, time-consuming and cost-intensive techniques for population estimation with remotely sensed imagery as a relatively new data source in an increasingly urbanized and fast-changing world. Her book addresses scientists and professionals in geography, remote sensing, urban planning, and natural hazards research.

This book discusses various statistical models and their implications for developing landslide susceptibility and risk zonation maps. It also presents a range of statistical techniques, i.e. bivariate and multivariate statistical models and machine learning models, as well as multi-criteria evaluation, pseudo-

quantitative and probabilistic approaches. As such, it provides methods and techniques for RS & GIS-based models in spatial distribution for all those engaged in the preparation and development of projects, research, training courses and postgraduate studies. Further, the book offers a valuable resource for students using RS & GIS techniques in their studies.

Obesity has become one of the major issues in the United States. Research done by Center for Disease Control and other organizations revealed the relationship between obesity and physical inactivity. This is a major concern to the planners today, as the built environment affects the walkability of a neighborhood and influences the pedestrians choice of walking. In this thesis, an effort is made to identify the measures of walkability and incorporate them into a GIS based model that would help in determining the level of walkability in a neighborhood. The model is then tested on a neighborhood in St Louis named Central West End.

This edited volume assesses capabilities of data mining algorithms for spatial modeling of natural hazards in different countries based on a collection of essays written by experts in the field. The book is organized on different hazards including landslides, flood, forest fire, land subsidence, earthquake, and gully erosion. Chapters were peer-reviewed by recognized scholars in the field of natural hazards research. Each chapter provides an overview on the topic, methods applied, and discusses examples used. The concepts and methods are explained at a level that allows undergraduates to understand and other readers learn through examples. This edited volume is shaped and structured to provide the reader with a comprehensive overview of all covered topics. It serves as a reference for researchers from different fields including land surveying, remote sensing, cartography, GIS, geophysics, geology, natural resources, and geography. It also serves as a guide for researchers, students, organizations, and decision makers active in land use planning and hazard management.

This book includes selected papers presented at the international expert forum on "Mainstreaming Resilience and Disaster Risk Reduction in Education," held at the Asian Institute of Technology, Thailand on 1–2 December 2017. The journey towards disaster risk reduction and resilience requires the participation of a wide array of stakeholders ranging from academics to policymakers, to disaster managers. Given the multifaceted and interdependent nature of disasters, disaster risk reduction and resilience require a multidisciplinary problem-solving approach and evidence-based techniques from the natural, social, engineering, and other relevant sciences. Traditionally, hazard and disaster-related studies have been dominated by the engineering and social science fields. In this regard, the main purpose of this book is to capture the multidisciplinary and multisectoral nature of disaster risk reduction, and to gather existing data, research, conceptual work, and practical cases regarding risk reduction and its ties to sustainable development under a single "umbrella." Along with the sustainability aspect, the book also links disaster risk reduction with development, technology,

governance, education, and climate change, and includes discussions on challenges, solutions, and best practices in the mainstreaming of disaster risk reduction.

Professionals involved in the planning, design, operation, and construction of water, wastewater, and stormwater systems need to understand the productivity-enhancing applications of GIS. Inspired by an ASCE-sponsored continuing education course taught by the author, GIS Applications for Water, Wastewater, and Stormwater Systems focuses on the practical aspects of software and data tools that enable GIS applications. The book documents and analyzes effective use of GIS, demonstrating how you can apply the technology to make tasks easier to perform, saving time and money for your organization. The book first describes GIS, detailing its importance and explaining how to avoid potential pitfalls via a needs analysis study. It then describes GIS-related technologies that are crucial in applications development: remote sensing; DEM data; GPS; Internet applications; and mobile GIS. The final ten chapters focus on the "Four Ms" of the water industry–Mapping, Monitoring, Modeling, and Maintenance–applications that define the most important activities for efficient management of water, wastewater, and stormwater systems. Promoting a performance- (or outcome-) based style of learning, each chapter first states learning objectives and later concludes with a chapter summary and questions. The text encourages more effective and natural inductive study by first presenting case studies, then explaining procedures. This volume supplements the text with numerous maps, tables, and illustrations.

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