

Erdas Imagine 2013 User Manual

The Proceeding contains the following sections: i) Groundwater Exploration and Exploitation; (ii) RS&GIS Applications in Water Resources; (iii) Watershed Management: Hydrological, Socio-Economic and Cultural Models; (iv) Water and Wastewater Treatment Technologies; (v) Rainwater Harvesting and Rural and Urban Water Supplies; (vi) Floods, Reservoir Sedimentation and Seawater Intrusion; (vii) Water Quality, Pollution and Environment; (viii) Irrigation Management; (ix) Water Logging and Water Productivity in Agriculture; (x) Groundwater Quality; (xi) Hydrologic Parameter Estimation and Modelling; (xii) Climate Change, Water, Food and Environmental Security; (xiii) Groundwater Recharge and Modelling; (xiv) Computational Methods in Hydrology; (xv) Soil and Water Conservation Technologies.

This book is an original and novel contribution to flood hazard assessment, climate change and land use change and is intended to serve both as an effective source of information and a valuable basis for priority setting and further technical, financial and political decisions regarding flood hazard assessment. The study area is located on the floodplain of the Ubaye River in the Barcelonnette area, part of the Alpes de Haute Provence in southeast France. The book offers a comparative overview of the major challenges faced when dealing with flood hazards. The research presented is intended to promote a deeper understanding of how climate change and land use change processes have evolved from past to present, and how they affect the flow regime of the Ubaye River based on sound and reproducible scientific arguments. The methodology implemented ranges from remote sensing interpretation to hydrodynamic modeling and includes the application of spatial and statistical modeling. The results of this research provide essential information for policymaking, decision-making support and flood hazard planning in the Barcelonnette area.

In this book, an interdisciplinary research group of faculty members, researchers, professionals, and planners contributed to an understanding of the dynamics and dimensions of emerging challenges and risks in megacities in the rapidly changing urban environments in Asia and examined emerging resilience themes from the point of view of sustainability and public policy. The world's urban population in 2009 was approximately 3.4 billion and Asia's urban population was about 1.72 billion. Between 2010 and 2020, 411 million people will be added to Asian cities (60 % of the growth in the world's urban population). By 2020, of the world's urban population of 4.2 billion, approximately 2.2 billion will be in Asia. China and India will contribute 31.3 % of the total world urban population by 2025. Developing Asia's projected global share of CO2 emissions for energy consumption will increase from 30 % in 2006 to 43 % by 2030. City regions serve as magnets for people, enterprise, and culture, but with urbanisation , the worst form of visible poverty becomes prominent. The Asian region, with a slum population of an estimated 505.5 million people, remains host to over half of the world's slum population . The book provides information on a comprehensive range of environmental threats faced by the inhabitants of megacities. It also offers a wide and multidisciplinary group of case studies from rapidly growing megacities (with populations of more than 5 million) from developed and developing countries of Asia.

This book comprises selected proceedings of the International Conference on Recent Advancements in Civil Engineering and Infrastructural Developments (ICRACEID 2019). The contents are broadly divided into five areas (i) smart transportation with urban planning, (ii) clean energy and environment, (iii) water distribution and waste management, (iv) smart materials and structures, and (v) disaster management. The book aims to provide solutions to global challenges using innovative and emerging technologies covering various fields of civil engineering. The major topics covered include urban planning, transportation, water distribution, waste management, disaster management, environmental pollution and control, environmental impact assessment, application of GIS and remote sensing, and structural analysis and design. Given the range of topics discussed, the book will be beneficial for students, researchers as well industry professionals.

Coral Reef Remote Sensing

Land Reclamation and Restoration Strategies for Sustainable Development

Analysis and Modelling of Water Supply and Demand Under Climate Change, Land Use Transformation and Socio-Economic Development

Urban Development Challenges, Risks and Resilience in Asian Mega Cities

Case Studies

Selected Papers of CARTOCON 2014

The book focuses on environment and conservation issues pertaining to the Himalayas, spanning Pakistan, Nepal, India, Bhutan and Myanmar. Environmental degradation, changes in snow cover and glaciers in India-Bhutan, threats to protected areas, and biodiversity in this ecologically fragile region are assessed in twelve distinct, regional case studies.

This unique book focuses on remote sensing (RS) and geographical information systems (GIS) in Iraq. The environmental applications include monitoring and mapping soil salinity and prediction of soil properties, monitoring and mapping of land threats, proximal sensing for soil monitoring and soil fertility, spatiotemporal land use/cover, agricultural drought monitoring, hydrological applications including spatial rainfall distribution, surface runoff and drought control, geo-morphometric analysis and flood simulation, hydrologic and hydraulic modelling and the effective management of water resources. Also, this book assesses the impacts of climate change on natural resources using both RS and GIS, as well as other applications, covering different parts of Iraq. The book chapters include tens of maps extracted from the remotely sensed datasets, in addition to tables and statistical relations obtained from the results of the studies of the chapters' authors. These studies have been conducted in different parts of Iraq; in the north (Kurdistan region) with its mountainous and undulating lands, in western parts which have desert soils, and in central and southern Iraq where there are salty soils, dunes, wetlands, and marshes. The book is written by distinguished scientists from Iraq, China, USA, Italy, Iran, Germany, and the Czech Republic who are interested in the Iraqi environment. The book is therefore a useful source of information and knowledge on Iraqi environment for graduate students, researchers, policy planners, and stakeholders in Iraq as well as similar regions.

This book is a printed edition of the Special Issue "Resilience and Sustainability of the Mississippi River Delta as a Coupled Natural-Human System" that was published in Water

Geographic information systems (GISs) have played a vital role in Earth sciences by providing a powerful means of observing the world and various tools for solving complex problems. The scientific community has used GISs to reveal fascinating details about the Earth and other planets. This book on recent advances in GIS for Earth sciences includes 12 publications from esteemed research groups worldwide. The research and review papers in this book belong to the following broad categories: Earth science informatics (geoinformatics), mining, hydrology, natural hazards, and society.

Analyzed by Hydrological and Statistical Modeling in Barcelonnette, France

Ten Years of TerraSAR-X—Scientific Results

Addressing Environmental Challenges Through Spatial Planning

Fusion, Modeling, and Analysis for GIS Applications

Advances in Civil Engineering and Infrastructural Development

Compilation from Volume 1 to Volume 9

Remote sensing stands as the defining technology in our ability to monitor coral reefs, as well as their biophysical properties and associated processes, at regional to global scales. With overwhelming evidence that much of Earth 's reefs are in decline, our need for large-scale, repeatable assessments of reefs has never been so great. Fortunately, the last two decades have seen a rapid expansion in the ability for remote sensing to map and monitor the coral reef ecosystem, its overlying water column, and surrounding environment. Remote sensing is now a fundamental tool for the mapping, monitoring and management of coral reef ecosystems. Remote sensing offers repeatable, quantitative assessments of habitat and environmental characteristics over spatially extensive areas. As the multi-disciplinary field of coral reef remote sensing continues to mature, results demonstrate that the techniques and capabilities continue to improve. New developments allow reef assessments and mapping to be performed with higher accuracy, across greater spatial areas, and with greater temporal frequency. The increased level of information that remote sensing now makes available also allows more complex scientific questions to be addressed. As defined for this book, remote sensing includes the vast array of geospatial data collected from land, water, ship, airborne and satellite platforms. The book is organized by technology, including: visible and infrared sensing using photographic, multispectral and hyperspectral instruments; active sensing using light detection and ranging (LiDAR); acoustic sensing using ship, autonomous underwater vehicle (AUV) and in-water platforms; and thermal and radar instruments. Emphasis and Audience This book serves multiple roles. It offers an overview of the current state-of-the-art technologies for reef mapping, provides detailed technical information for coral reef remote sensing specialists, imparts insight on the scientific questions that can be tackled using this technology, and also includes a foundation for those new to reef remote sensing. The individual sections of the book include introductory overviews of four main types of remotely sensed data used to study coral reefs, followed by specific examples demonstrating practical applications of the different technologies being discussed. Guidelines for selecting the most appropriate sensor for particular applications are provided, including an overview of how to utilize remote sensing data as an effective tool in science and management. The text is richly illustrated with examples of each sensing technology applied to a range of scientific, monitoring and management questions in reefs around the world. As such, the book is broadly accessible to a general audience, as well as students, managers, remote sensing specialists and anyone else working with coral reef ecosystems.

New data acquisition techniques are emerging and are providing fast and efficient means for multidimensional spatial data collection. Airborne LIDAR surveys, SAR satellites, stereo-photogrammetry and mobile mapping systems are increasingly used for the digital reconstruction of the environment. All these systems provide extremely high volumes of raw data, often enriched with other sensor data (e.g., beam intensity). Improving methods to process and visually analyze this massive amount of geospatial and user-generated data is crucial to increase the efficiency of organizations and to better manage societal challenges. Within this context, this book proposes an up-to-date view of computational methods and tools for spatio-temporal data fusion, multivariate surface generation, and feature extraction, along with their main applications for surface approximation and rainfall analysis. The book is intended to attract interest from different fields, such as computer vision, computer graphics, geomatics, and remote sensing, working on the common goal of processing 3D data. To this end, it presents and compares methods that process and analyze the massive amount of geospatial data in order to support better management of societal challenges through more timely and better decision making, independent of a specific data modeling paradigm (e.g., 2D vector data, regular grids or 3D point clouds). We also show how current research is developing from the traditional layered approach, adopted by most GIS softwares, to intelligent methods for integrating existing data sets that might contain important information on a geographical area and environmental phenomenon. These services combine traditional map-oriented visualization with fully 3D visual decision support methods and exploit semantics-oriented information (e.g., a-priori knowledge, annotations, segmentations) when processing, merging, and integrating big pre-existing data sets.

This book provides information essential for anyone interested in climate and environmental change of the Himalayan region, including land and resource managers, environmental planners, conservationists, environmentalists, geographers, climatologists, ecologists, and students. The book is unique in its coverage of the current understanding of the science of climate change in the Himalayan mountain system and of the major impacts on physical systems and ecosystems. The book gives an overview of the physical science basis of climate change and explains drivers and processes of glacier and vegetation dynamics. The book covers relevant aspects of accelerated climate change observed in the Himalayan mountain system, and highlights the regional differentiation of climatic changes and associated environmental modifications. The focus is on climate variability and change, and how physical systems and ecosystems respond to climate change impacts. Consequences include impacts on physical systems such as glacier shrinkage, glacial lake outburst floods, altered hydrological characteristics, permafrost warming and thawing, and mass movements on slopes. Climate change is also a powerful stressor on ecosystems and induces range shifts of plant and animal species and alterations in terms of phenology, biomass, plant cover, plant group dominance and species composition. Thus, ecosystem structure and functioning will be strongly affected. The book has an introductory chapter followed by a section on climate change, a section on impacts on glaciers and hydrology, and a section on vegetation dynamics. Each section has several chapters presenting key concepts, major drivers and key processes of environmental change in the Himalayan region from different perspectives. Climate change impacts in the Himalaya have not been studied in much detail, and respective findings were not presented so far in a comprehensive overview. This book summarizes the current knowledge of interactions between climate change and the dynamics of glaciers, hydrology, and vegetation.

A primatologist's guide to using geographic information systems (GIS); from mapping and field accuracy, to tracking travel routes and the impact of logging.

Geoinformatics in Health Facility Analysis

Climate Change, Glacier Response, and Vegetation Dynamics in the Himalaya

A Guide to Geoliteracy, Map and GIS Resources and Services

Water Management and Water Governance

Environmental Change in the Himalayan Region

Recent Advances in Geographic Information System for Earth Sciences

The causes and effects of climate change are just as varied as the proposed solutions and approaches for dealing with the problem. Given the global character of climate change, comprehensive global cooperation is called for that leads to effective and appropriate international action in accordance with the respective responsibilities. These will inevitably differ depending on the capabilities and the social and economic situations of the respective actors. The contributions in this book present a variety of ideas, approaches and tools regarding the adaptation to climate change in specific countries and regions. In addition to examining (existing) legal instruments, they also focus on the implementation of economic instruments and planning tools, as well as their (further) development. Rather than simply discussing strategies to counteract climate change by reducing emissions, the authors also search for ways of actively adapting to climate change.

A volume in the three-volume Remote Sensing Handbook series, Remote Sensing of Water Resources, Disasters, and Urban Studies documents the scientific and methodological advances that have taken place during the last 50 years. The other two volumes in the series are Remotely Sensed Data Characterization, Classification, and Accuracies, and Land Reso

The book presents the processes governing the dynamics of landscapes, soils and sediments, water and energy under different climatic regions using studies conducted in varied climatic zones including arid, semi-arid, humid and wet regions. The spatiotemporal availability of the processes and fluxes and their linkage to the environment, land, soil and water management are presented at various scales. Spatial scales including laboratory, field, watershed, river basin and regions are represented. The effect of tillage operations and land management on soil physical characteristics and soil moisture is discussed. The book has 35 chapters in seven sections: 1) Landscape and Land Cover Dynamics, 2) Rainfall-Runoff Processes, 3) Floods and Hydrological Processes 4) Groundwater Flow and Aquifer Management, 5) Sediment Dynamics and Soil Management, 6) Climate change impact on vegetation, sediment and water dynamics, and 7) Water and Watershed Management.

This book is designed for a widely diverse audience, from those new to geoprocessing to veteran industry users. For newcomers, the Guide "provides a brief history of the field, an extensive glossary of terms, and notes about applications for the different processes described." For more experienced users, the Guide "includes the formulas and algorithms that are used in the code," so that exactly how each operation works can be readily seen. -- from Introduction.

Environmental Information Systems: Concepts, Methodologies, Tools, and Applications

Remotely Sensed Data Characterization, Classification, and Accuracies

Potential and Future Trends

Sustainable Mountain Regions: Challenges and Perspectives in Southeastern Europe

The Water Resource Challenge and Adaptation Measures for Urumqi Region, Northwest China

Map Librarianship

Urbanization is giving rise to environmental concerns including urban flooding, which generally occurs due to the construction of houses in the low-lying areas; loss of green cover leading to a disturbance in the ecological cycle; water scarcity due to growing needs; and deforestation leading to habitat fragmentation, wildlife corridors disturbance, forest fires, and climate change. In order to correct these issues, a consolidated balance between human, nature, and spatial aspects must be resolved and spatial solutions integrated on a common platform. Addressing Environmental Challenges Through Spatial Planning is devoted to addressing environmental concerns and technology innovations in domains such as pollution, water insecurity, and resources management. This text works to bridge the gap between engineering considerations and spatial aspects of planning. Covering topics such as sustainable housing, environmental restoration, and air emissions, this text is essential for environmental engineers, planning researchers, faculty, environmental and civil administrators, architects, consultants, environmental activists, town and country planning organizations, and professionals in all industries who aspire to have an environmentally friendly atmosphere and to provide a sustainable way of dealing with the environment in their respective domains for process efficiency and cost optimization.

International Journal of Advanced Remote Sensing and GIS (IJARSG, ISSN 2320 - 0243) is an open-access peer-reviewed scholarly journal publishes original research papers, reviews, case study, case reports, and methodology articles in all aspects of Remote Sensing and GIS including associated fields. This Journal commits to working for quality and transparency in its publishing by following standard Publication Ethics and Policies.

"This 10-volume compilation of authoritative, research-based articles contributed by thousands of researchers and experts from all over the world emphasized modern issues and the presentation of potential opportunities, prospective solutions, and future directions in the field of information science and technology"--Provided by publisher.

This Special Issue is a collection of papers addressing the scientific use of data acquired in the course of the TerraSAR-X mission 10 years after launch. The articles deal with the mission itself, the accuracy of the products, with differential interferometry, and with applications in the domains cryosphere, oceans, wetlands, and urban areas.

Visual Database Systems 3

Image Processing and Data Analysis with ERDAS IMAGINE®

HYDROLOGY AND WATERSHED MANAGEMENT

Select Proceedings of ICRACEID 2019

Geospatial Technology Based Approach

Modern Trends in Cartography

Map Librarianship identifies basic geoliteracy concepts and enhances reference and instruction skills by providing details on finding, downloading, delivering, and assessing maps, remotely sensed imagery, and other geospatial resources and services, primarily from trusted government sources. By offering descriptions of traditional maps, geographic information systems (GIS), remote sensing, and other geospatial technologies, the book provides a timely and practical guide for the map and geospatial librarian to blend confidence in traditional library skill sets. Includes rarely discussed concepts of citing and referencing maps and geospatial data, fair use and copyright Creates an awareness and appreciation of existing print map collections, while building digital stewardship with surrogate map and aerial imagery collections Provides an introduction to the theory and applications of GIS, remote sensing, participatory neogeography and neocartography practices, and other geospatial technologies Includes a list of geospatial resources with descriptions and illustrations of commonly used map types and formats, online geospatial data sources, and an introduction to the most commonly used geospatial software packages available, on both desktop and mobile platforms

This book advances the scientific understanding and application of space-based technologies to address a variety of areas related to sustainable development; including environmental systems analysis, environmental management, clean processes, green chemistry, and green engineering. Geo-spatial techniques have gained considerable interest in recent decades among the earth and environmental science communities for solving and understanding various complex problems and approaches towards sustainable technologies. The book encompasses several scopes of interests on sustainable technologies in areas such as water resources, forestry, remote sensing, meteorology, atmospheric and oceanic modeling, environmental engineering and management, civil engineering, air and environmental pollution, water quality problems, etc. The book will appeal to people with an interest in geo-spatial techniques, sustainable development and other diverse backgrounds within earth and environmental sciences field.

Eleven original case studies make up this volume on sustainable development in Africa, carefully selected from presentations at a series of Sustainable Development Workshops organised by eight partner universities. The book is one answer to the critical appeal for greater research efforts aimed at understanding Africa's challenges as they pertain to poverty reduction and climate change. Its contributors include faculty and graduates of the three master's programmes in Sustainable Urban Development, Sustainable Integrated Rural Development and Mining and Mineral Resources coordinated by the eight partner African universities who make up the Education for Sustainable Development in Africa (ESDA) initiative. This initiative is administered by the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) in Tokyo, Japan. The volume is part of the ESDA book series that serves primarily as undergraduate and graduate instruction materials for courses on sustainable development in Africa. It also seeks to inform policy initiatives on development issues on the continent.

A volume in the Remote Sensing Handbook series, Remotely Sensed Data Characterization, Classification, and Accuracies documents the scientific and methodological advances that have taken place during the last 50 years. The other two volumes in the series are Land Resources Monitoring, Modeling, and Mapping with Remote Sensing, and Remote Sensing of

ERDAS Field Guide

Remote Sensing Handbook - Three Volume Set

Contributions Toward Future Earth Initiatives

A Guide for Mapping, Monitoring and Management

Earth Observation for Water Resource Management in Africa

Handbook of Research on Geographic Information Systems Applications and Advancements

This book demonstrates how GIS techniques and statistical methods can be used to emphasise the characteristics of population and its related variables, vis-à-vis care facilities and the status of vector borne diseases, as well as for malaria modeling. Concentrating on the Varanasi district of India, the main aim of the book is to determine and map the density areas of vector borne diseases using GIS techniques. The book explores how health GIS is an important sub-discipline of health science and medical geography, which is traditionally focused on the spatial aspects of disease ecology and health care facility analysis.

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.

Both the way we look at data, through a DBMS, and the nature of data we ask a DBMS to manage have drastically evolved over the last decade, moving from text to images (and to sound to a lesser extent). Visual representations are used extensively within new user interfaces. Powerful visual approaches are being experimented for data manipulation, including the investigation of three dimensional display techniques.

Similarly, sophisticated data visualization techniques are dramatically improving the understanding of the information extracted from a database. On the other hand, more and more applications use images as basic data or to enhance the quality and richness of data manipulation services. Image management has opened a wide area of new research topics in image understanding and analysis. The IFIP 2.6 Working Group on Databases strongly believes that a significant mutual enrichment is possible by confronting ideas, concepts and techniques supporting the work of researcher and practitioners in the two areas of visual interfaces to DBMS and DBMS management of visual data. For this reason, IFIP 2.6 has launched a series of conferences on Visual Database Systems. The first one has been held in Tokyo, 1989. VDB-2 was held in Budapest, 1991. This conference is the third in the series. As the preceding editions, the conference addresses researchers and practitioners active or interested in user interfaces, human-computer communication, knowledge representation and management, image processing and understanding, multimedia database techniques and computer vision.

Central to this edited volume is the proposition that the mountainous border region of Southeastern Europe needs to become a special target of European Union scale, regional development policy-making. Vivid case studies from eleven Central and Southeast European states present diverse perspectives on this region's physical geography, economy and demographics and demonstrate the integrative potential of the geographic perspective in mountain research. Europe as a whole has to gain from a "sustainable mountains" policy, especially in Southeast Europe. In their focus on the sustainable development of such areas, the chapters consider regional development policy, ecosystem services assessment, small-scale tourism, and forestry management. This book will be of interest to a wide audience, including academics, students, and practitioners in the fields of geography, ecology, and environmental studies.

Handbook of Research on Geospatial Science and Technologies

Twelve Case Studies

Response of Flood Events to Land Use and Climate Change

From the Molecular to the Landscape

Concepts, Methodologies, Tools, and Applications

Geomatic Approaches for Modeling Land Change Scenarios

Located in a narrow grassland corridor between the semi-desert and a mountain range in Northwest China, the research area Urumqi Region is despite its semi-arid climate in a relatively favourable hydrological situation. The nearby mountains provide water for settlements and agriculture, making human development possible in the first place. Due to the development of agriculture, population and economy during the last sixty years and the increasing water consumption, a demand- and population-driven water scarcity exists today and is expected to aggravate. At the same time, the effects of climate change and land use transformations on the hydrological system and the water availability are uncertain. This study evaluates the recent and future situation by combining a hydrological water balance model for the simulation of the water supply based on scenarios of climate and land use change with a socio-economic model for projecting the future water demand including predicted growth of population and economy.

This book focusses on hydrological modeling, water management, and water governance. It covers the applications of remote sensing and GIS tools and techniques for land use and land cover classifications, estimation of precipitation, evaluation of morphological changes, and monitoring of soil moisture variability. Moreover, remote sensing and GIS techniques have been applied for crop mapping to assess cropping patterns, computation of reference crop evapotranspiration, and crop coefficient. Hydrological modeling studies have been carried out to address various issues in the water sector. MODFLOW model was successfully applied for groundwater modeling and groundwater recharge estimation. Runoff modeling has been carried out to simulate the snowmelt runoff together with the rainfall and sub-surface flow contributions for snow-fed basins. A study has been included, which predicts the impact of the land use and land cover on stream flow. Various problems in the water sector have been addressed employing hydrological models such as SWAT, ArcSWAT, and VIC. An experimental study has been presented wherein the laboratory performance of rainfall simulator has been evaluated. Hydrological modeling studies involving modifications in the curve number methodology for simulation of floods and sediment load have also been presented. This book is useful for academicians, water practitioners, scientists, water managers, environmentalists, and administrators, NGOs, researchers, and students who are involved in water management with the focus on hydrological modeling, water management, and water governance.

This book is a printed edition of the Special Issue "Earth Observation for Water Resource Management in Africa" that was published in Remote Sensing

Globally, a wide variety of organizations rely on ERDAS IMAGINE® daily, including local, state and national mapping agencies, transportation departments, defense organizations, engineering and utility companies and many more. ERDAS IMAGINE® is a powerful software package used to collect, process, analyze and understand raw geospatial data, it has become the industry standard in digital image processing. This book provides the first comprehensive guide to develop a proficiency in digital image processing of remotely sensed data from a research/real-world application perspective, along with robust hands-on, start-to-finish examples that represent the most commonly/traditionally used methods.

International Journal of Advanced Remote Sensing and GIS

Applying GIS at Varying Scales

Ecosystem Resilience-Rural and Urban Water Requirements

California Fish and Game

Hydrological Modeling

Heterogeneous Spatial Data

This book provides a detailed overview of the concepts, techniques, applications, and methodological approaches involved in land use and cover change (LUCC) modeling, also known simply as land change modeling. More than 40 international experts in this field have participated in this book, which illustrates recent advances in LUCC modeling with examples from North and South America, the Middle East, and Europe. Given the broad range of geomatic approaches available, it helps readers select the approach that best meets their needs. The book is structured into five parts preceded by a foreword written by Roger White and a general introduction. Part I consists of four chapters, each of which focuses on a specific stage in the modeling process: calibration, simulation, validation, and scenarios. It presents and explains the fundamental ideas and concepts underlying LUCC modeling. This is complemented by a comparative analysis of the selected software packages, practically applied in various case studies in Part II and Part III. Part II discusses recently proposed methodological developments that have enhanced modeling procedures and results while Part III offers case studies as well as interesting, innovative methodological proposals. Part IV revises different fundamental techniques used in LUCC modeling and finally Part V describes the best-known software packages used in the applications presented in Parts II and III.

The fast exchange of information and knowledge are the essential conditions for successful and effective research and practical applications in cartography. For successful research development, it is necessary to follow trends not only in this domain, but also try to adapt new trends and technologies from other areas. Trends in cartography are also quite often topics of many conferences which have the main aim to link research, education and application experts in cartography and GIS&T into one large platform. Such the right place for exchange and sharing of knowledge and skills was also the CARTOCON2014 conference, which took place in Olomouc, Czech Republic, in February 2014 and this book is a compilation of the best and most interesting contributions. The book content consists of four parts. The first part New approaches in map and atlas making collects studies about innovative ways in map production and atlases compilation. Following part of the book Progress in web cartography brings examples and tools for web map presentation. The third part Advanced methods in map use includes achievement of eye-tracking research and users' issues. The final part Cartography in practice and research is a clear evidence that cartography and maps played the significant role in many geosciences and in many branches of the society. Each individual paper is original and has its place in cartography.

Land Reclamation and Restoration Strategies for Sustainable Development: Geospatial Technology Based Approach, Volume Ten covers spatial mapping, modeling and risk assessment in land hazards issues and sustainable management. Each section in the book explores state-of-art techniques using commercial, open source and statistical software for mapping and modeling, along with case studies that illustrate modern image processing techniques and computational algorithms. A special focus is given on recent trends in data mining techniques. This book will be of particular interest to students, researchers and professionals in the fields of earth science, applied geography, and those in the environmental sciences. Demonstrates a geoinformatics approach to data mining techniques, data analysis, modeling, risk assessment, visualization, and management strategies in different aspects of land use, hazards and reclamation Covers land contamination problems, including effects on agriculture, forestry, and coastal and wetland areas Suggests specific techniques of remediation Explores state-of-art techniques based on commercial, open source, and statistical software for mapping and modeling using modern image processing techniques and computational algorithm

This book investigates the introduction of invasive species and their behavior in oceanic islands. How can we define invasive species? What is their history? How did they come to dominate and transform ecosystems? These are relevant questions when trying to understand the behavior of invasive species—primarily in fragile ecosystems such as islands—and to understand the biological, ecological, social and economic impacts of invasions. We chose the Galapagos Islands, a place well-known to be unique in the study of evolution, as a laboratory to analyze the interactions between invasive and endemic species, to understand the makeup of the ecosystems emerging after invasions have occurred, to describe the relationships of invasives with the people that live in these islands, and to try to develop comprehensive analyses on this topic from multi-scalar and multi-disciplinary points of view. For a long time, the discussion has been about how proper management of the species could achieve two main goals: the eradication of the species to recover affected ecosystems and the conservation of endemic species. The discussion has taken on other nuances, including the suggestion that an invasive species, when it is already adapted to an ecosystem, forms an integral part of it, and thus eradication would in itself go against conservation. On the other hand, some invasive species are not only part of the biological compound of the island ecosystems, but they also form part of the social and cultural history of the inhabited islands. Some of these identified by the local inhabitants are species of real or potential economic value.

Hydraulics, Water Resources and Coastal Engineering

Sustainable Development in Africa

Implementing Adaptation Strategies by Legal, Economic and Planning Instruments on Climate Change

Resilience and Sustainability of the Mississippi River Delta as a Coupled Natural-Human System

Landscape Dynamics, Soils and Hydrological Processes in Varied Climates

Understanding Invasive Species in the Galapagos Islands

The impacts of climate change are beginning to be felt throughout the world, yet there is no clear explanation as to how these changes will alter our future. The research being conducted within the geospatial science field is pivotal to understanding the effects the global environment is experiencing. The Handbook of Research on Geospatial Science and Technologies is an essential scholarly reference source that evaluates the current methodologies and trends in geospatial science, and how these insights provide society with more efficient and effective ways to manage natural resources. Featuring discussions on relevant topics such as cartography, geographical information systems, remotely sensed data, and sustainability management, this publication is an informative resource for all academicians, students, scientists, and researchers that are interested in emerging developments within geospatial science.

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.

Encyclopedia of Information Science and Technology, Third Edition

Spatial Analysis in Field Primatology

Environmental Remote Sensing and GIS in Iraq

Visual information management

Applications and Challenges of Geospatial Technology

Water Resources Management and Reservoir Operation