

R. H. Behnke, Odessa Centre, Great Wolford, UK

## Desertification: Causes, Impacts & Consequences

Amongst the first in the new Springer-Praxis Earth System Science Series 'Desertification: The Interplay of Science, Politics and Public Opinion' describes how the process of desertification, a man-induced process that leads to soil nutrient depletion and reduction of biological productivity has heavily affected Sahelian droughts. The team of global experts takes our current understanding of desertification to a far broader level covering wider environmental science and public policy issues. This innovative new book attempts to distinguish between desertification hysteria and the considerable real threat that the process poses to many semi-arid landscapes and to those who inhabit them with particular focus on current scientific understandings of the mechanisms that drive desertification and reviews of the regional, continental and world-wide evidence for desertification. The book is structured into six core parts. The first part by Roy Behnke sets the scene and explains the event and related problems. The team explains how spheres and events interact and the related problems. Part 2 by Camilla Toulmin examines the evolution in thinking & ideas about desertification, the confrontation of new data & field experience with policy and legal frameworks set within the context of rising concerns about climate change. Part 3, written by Alessandra Giannini explores the scientific causes of desertification.

### Features

► One of the first books in the new Springer-Praxis Earth System Science Series ► Written by a global team of experts with up-to-date knowledge of desertification ► Makes good use of colour images for scientific interpretation ► Unrivalled in approach, this book delivers broad coverage of the topic and tackles possible influences, causes and consequences

### Fields of interest

Meteorology/Climatology; Soil Science & Conservation; Nature Conservation

### Target groups

Research

### Discount group

P

*Due June 2011*

2011. Approx. 600 p. (Earth System Science Series) Hardcover

► **approx. \$279.00**  
ISBN 978-3-642-11498-4

P. E. Beynen, University of South Florida, Tampa, USA (Ed.)

## Karst Management

Focusing specifically on the management of karst environments, this volume draws together the world's leading karst experts to provide a vital source for the study and management of this unique physical setting. Although karst landscapes cover 12% of the Earth's terrain and provide 25% of the world's drinking water, the resource management of karst environments has only previously received indirect attention. Through a comprehensive approach, Karst Management focuses on engineering issues associated with surface karst such as quarries, dams, and agriculture; subsurface topics such as the management of groundwater, show caves, cave biota, and geo-archaeology projects. Chapters that focus on karst as an integrated system look at IUCN World Heritage sites, national parks, policy and regulation, measuring systematic disturbance, information management, and public environmental education. The text incorporates the most up-to-date research from leading karst scientists such as Derek Ford, Paul Williams, John Gunn, Barry Beck, Stephen Worthington and Mario Parise.

This volume provides vital perspectives for university students, educators, geoengineers, resource managers, and planners who are interested in or work with this unique physical landscape.

### Features

► The book focuses specifically on karst management ► It provides comprehensive coverage of topic ► The chapters are written by leading karst researchers of the world ► The book can be readily used as basis for a course, although not a textbook

### Fields of interest

Physical Geography; Geology; Geoecology/Natural Processes

### Target groups

Research

### Discount group

P

*Due May 2011*

2012. X, 360 p. 210 illus. Hardcover

► **approx. \$179.00**  
ISBN 978-94-007-1206-5

A. F. Idziak, R. Dubiel, University of Silesia, Sosnowiec, Poland (Eds.)

## Geophysics in Mining and Environmental Protection

This book contains contributions to the 32nd Polish-Czech-Slovak Symposium on Mining and Environmental Geophysics held in May 2009 in Piechowice (Poland). The papers are related to various aspects of geophysical science such as induced seismicity, engineering seismology, environmental geophysics and geophysics in geology

### Features

► Numerous step-by-step tutorials which help the reader to learn quickly ► A special chapter on next generation ► Flash prepares the reader for the future ► Includes ten tips on how to protect flash sites from hackers

### Fields of interest

Geophysics/Geodesy; Industrial Pollution Prevention; Geophysics and Environmental Physics

### Target groups

Research

### Discount group

P

*Due July 2011*

2011. 150 p. (Geoplanet: Earth and Planetary Sciences, Volume 2) Hardcover

► **\$129.00**  
ISBN 978-3-642-19096-4

S. J. Jansen, H. C. Coolen, Research Institute OTB, Delft University of Technology, Delft, The Netherlands; R. W. Goetgeluk, ABF Research, Delft, The Netherlands (Eds.)

## The Measurement and Analysis of Housing Preferences and Choice

What are the current trends in housing? Is my planned project commercially viable? What should be my marketing and advertisement strategies? These are just some of the questions real estate agents, landlords and developers ask researchers to answer. But to find the answers, researchers are faced with a wide variety of methods that measure housing preferences and choices. To select and value a valid research method, one needs a well-structured overview of the methods that are used in housing preference and housing choice research. This comprehensive introduction to this field offers just such an overview. It discusses and compares numerous methods, detailing the potential limitation of each one, and it reaches beyond methodology, illustrating how thoughtful consideration of methods and techniques in research can help researchers and other professionals to deliver products and services that are more in line with residents' needs.

### Features

- Contains a descriptive overview of methods and techniques applied in housing preference and choice research
- Includes a description of every method in practice with at least one applied example
- The overview is up-to-date
- Provides comparisons of various methods and techniques
- Discusses the most important topics in the research field of housing

### Fields of interest

Housing; Methodology of the Social Sciences; Statistical Theory and Methods

### Target groups

Research

### Discount group

P

A. Omstedt, University Gothenburg, Göteborg, Sweden

## Guide to Process Based Modelling of Lakes and Coastal Seas

Mounting concern about the influence of humans on climate and environmental conditions has increased the need for multi-disciplinary modelling efforts, including systems such as oceans, lakes, land surfaces, ice, rivers and atmosphere. Scientists have traditionally developed specialized models limited to application within their own disciplines. Increasing effort, however, is now being put into the development of general equation solvers that allow users to create a code applicable to a broad range of problems. The use of computational fluid dynamics to analyse and predict changes in the environment has increased considerably during the past decades. Numerical models are now standard tools in both research and in a wide range of applications.

### Features

- Provides a unique teaching tool for the systematic learning of aquatic modelling
- Approaches ocean modeling from a new angle
- Introduces aquatic modelling using a process approach

### Fields of interest

Coastal Sciences; Marine & Freshwater Sciences; Physical Geography

### Target groups

Research

### Discount group

P

R. A. Ramalho, School of Earth Sciences, University of Bristol, UK

## Building the Cape Verde Islands

Hotspots are enigmatic surface features that are not easily explained in the framework of plate tectonics. Investigating their origin is the goal of this thesis, using field evidence collected in the Cape Verde Islands, a prominent hotspot archipelago in the eastern Atlantic Ocean. The approach taken is to document uplift of the islands relative to sea level and use the uplift features to test various models of hotspot development. Island uplift is thought to arise from the growth of the anomalously shallow seafloor on which the islands rest, known as the bathymetric swell, which is characteristic of hotspots.

The work comprises a geological summary and detailed mapping of paleo sea level markers on Cape Verde. Isotopic dating of the markers shows that uplift on the islands over the last 6 Myr is up to 400 m, and that the uplift chronology varies among islands. Two processes act to raise the Cape Verde Islands. The dominant process is one that is local to individual islands. The regional, swell-related component is smaller, and possibly episodic. The observations provide strong constraints on swell development and on hotspot models.

### Features

- Nominated by University of Bristol for a Springer Theses Prize
- The work comprises a geological summary and detailed mapping of paleo sea level markers on Cape Verde
- The observations described in this thesis provide strong constraints on swell development and on hot spot models

### Fields of interest

Geology; Geophysics/Geodesy; Oceanography

### Target groups

Research

### Discount group

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Due May 2011

Due May 2011

2011. IV, 260 p. Hardcover

► \$139.00

ISBN 978-90-481-8893-2

2011. X, 300 p. 55 illus., 30 in color. (Springer Praxis Books / Geophysical Sciences) Hardcover

► approx. \$139.00

ISBN 978-3-642-17727-9

Due April 2011

2011. 262 p. 67 illus., 23 in color. (Springer Theses) Hardcover

► \$129.00

ISBN 978-3-642-19102-2

P. Rowinski, Polish Academy of Sciences, Warsaw, Poland (Ed.)

## Experimental Methods in Hydraulic Research

It is clear that hydraulic research is developing beyond traditional civil engineering to satisfy increasing demands in natural hazards assessment and also environmental research. Our ability to describe processes in nature rests on the observation and experimental methods as well as on theoretical basics of various disciplines. Under such conditions experimental methods draw from various areas of human activities and research, i.e. from physics, biology, chemistry, aerospace research, oceanic research etc. The current volume, is the result of a meeting that took place during the 30th International School of Hydraulics in Poland and presents both the state of the art and ongoing research projects in which experimental methods play a key role. Authors from numerous leading laboratories and from various countries guarantee a representative sample of different studies at the frontier of the field.

### Features

► State-of-the-art on experimental methods in hydraulic research ► Description of projects covering a wide range of applications within hydraulics ► Chapters prepared by top world specialists in the field

### Fields of interest

Hydrogeology; Structural Foundations, Hydraulic Engineering; Fluid- and Aerodynamics

### Target groups

Research

### Discount group

P

*Due May 2011*

2011. 350 p. (Geoplanet: Earth and Planetary Sciences) Hardcover

► **\$179.00**

ISBN 978-3-642-17474-2

D. Tang, Chinese Academy of Sciences, Guangzhou, China (Ed.)

## Remote Sensing of the Changing Oceans

Dr. Tang has organized several international conferences, workshops, and training, she also services as member of organizing committee for several international scientific organizations; she was the Chairman of the 9th Pan Ocean Remote Sensing Conference (PORSEC 2008), and currently is the President-elect of PORSEC Association.

### Features

► Is an introduction to, and a synthesis of various new ideas and theories ► Presents the most comprehensive state of the sciences of global climate change, natural hazards and costal environment, as seen from space by satellite remote sensors ► Couples theories with applications from around the world, with contributions by world-renowned scientists

### Fields of interest

Remote Sensing/Photogrammetry; Oceanography; Natural Hazards

### Target groups

Professional/practitioner

### Discount group

P

*Due May 2011*

2011. VIII, 449 p. 182 illus., 130 in color. Hardcover

► **\$179.00**

ISBN 978-3-642-16540-5

W. Wagner, Hannover, Germany

## Groundwater in the Arab Middle East

The book gives an outline of prevailing hydrogeologic conditions in the Arab Middle East together with the geologic background. Emphasis is given to relationships between the main features influencing the hydrogeologic conditions - regional geologic developments, paleogeographic conditions, morphology, climate and paleo-climate - and the resulting hydrogeologic features: formation of aquifers, distribution of major aquifers, main groundwater flow systems, occurrence of renewable and fossil groundwater. Reported data on hydraulic aquifer parameters, recharge rates and groundwater flow volumes are evaluated with a view to arrive at characteristic values under the specific hydrogeologic and climatic conditions. The area considered covers approximately the Arabian Plate. Information on the following countries is included: Bahrain, Iraq, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, West Bank and Gaza, Yemen.

### Features

► Information is presented on hydrogeologic conditions and groundwater occurrence for the entire Arab Middle East ► Explains relationships between geologic developments on the Arabian Plate and the distribution and characteristics of main aquifers ► Includes evaluations of groundwater quality conditions and quantitative aspects of groundwater regimes for all major aquifers of the Arab Middle East ► Summarizes information on isotope hydrologic data from the Arab Middle East with conclusions on paleo-hydrologic and groundwater recharge conditions

### Fields of interest

Hydrogeology; Waste Water Technology / Water Pollution Control / Water Management / Aquatic Pollution; Landscape/Regional and Urban Planning

### Target groups

Professional/practitioner

### Discount group

P

*Due May 2011*

2011. 300 p. 111 illus. Hardcover

► **approx. \$139.00**

ISBN 978-3-642-19350-7

J. Wang, Chinese Academy of Sciences, Beijing, China; M. M. Fischer, Vienna University of Economics and Business, Vienna, Austria

## Spatial Data Analysis: Problems, Techniques and Applications

Applications of spatial data, coupled with geographic information systems, are finding increasing use in the disciplines of geography and geology, as well as environmental science, ecology, epidemiology, economics and the social sciences. Disciplines that are concerned with spatial variations and patterns and the relationships between such patterns. Spatial data is defined here as data where the absolute locations and/or relative spatial locations of the observations are taken into account, in addition to the values relating to the phenomena of interest.

This textbook is aimed at students seeking to apply GIS and spatial data analysis and statistics to their fields of study and focuses on detecting patterns and exploring and modeling relationships between such patterns in order to understand the processes responsible for the observed patterns. It avoids an exhaustive presentation of the whole of spatial data analysis, providing instead a subset of techniques that are both accessible and of practical use.

The spatial analysis techniques presented include: visualisation tools, exploratory devices and more formal model-based approaches.

### Features

► Introduces undergraduates to statistical techniques used in spatial data analysis ► Provides a set of spatial data analysis techniques which are both accessible and of practical use ► Chapters are accompanied by a set of examples, case studies and computer based exercises

### Fields of interest

Geographical Information Systems/Cartography; Computer Applications; Applied Earth Sciences

### Target groups

Research

### Discount group

P

*Due July 2011*

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2011. 350 p. 50 illus. (Advances in Geographic Information Science) Hardcover

► **approx. \$99.95**

ISBN 978-3-540-85864-5

Causes of land desertification are a combination of natural phenomena and human activities. These include things like climate change, deforestation, and overexploitation of soil by farming. According to sites like greenfacts.org, the current major factors that contribute to or drive desertification are

“Desertification is a significant global ecological and environmental problem with far-reaching consequences on socio-economic and political conditions.” - Wikipedia.

What is the process of desertification? Land desertification, as we have already seen, is the gradual, yet continuous, process of ecosystem degradation in an affected area. Desertification is a type of land degradation in drylands in which biological productivity is lost due to natural processes or induced by human activities whereby fertile areas become increasingly arid. It is the spread of arid areas caused by a variety of factors, such as climate change (particularly the current global warming) and overexploitation of soil as a result of human activity.

What causes Desertification? Question Sheet. Section 2 What are the consequences of Desertification? What can be done about Desertification? Question Sheet.

The impacts of desertification vary from place to place. Although the United States has the highest percentage of drylands at 74%, Sub-Saharan Africa, because of its dependence on land, is more deeply affected. In Kenya, around 80% of the land surface is threatened by desertification.

What causes desertification? Lands turn to desert due to a number of reasons, but much of the desertification that is occurring around the world today is caused by human activity on lands that are extremely vulnerable to overexploitation and improper agricultural methods. The following are some of the primary causes of desertification in our world.

#1 Overgrazing.

The link between soil erosion and other consequences of desertification only confirms this, as erosion is another negative outcome but also a catalyst of previously mentioned problems.

This list of causes and impacts of desertification is just a brief fraction of the whole scope of such an extensive problem taking place on our lands every day.

Desertification, explained. Humans are driving the transformation of drylands into desert on an unprecedented scale around the world, with serious consequences. But there are solutions.

3 Minute Read. By Christina Nunez. As global temperatures rise and the human population expands, more of the planet is vulnerable to desertification, the permanent degradation of land that was once arable.

When land becomes desert, its ability to support surrounding populations of people and animals declines sharply. Food often doesn't grow, water can't be collected, and habitats shift. This often produces several human health problems that range from malnutrition, respiratory disease caused by dusty air, and other diseases stemming from a lack of clean water.

Desertification solutions.