

# GEOENVIRONMENTAL MAPPING

*Methods, Theory and Practice*

Peter T. Bobrowsky *Editor*



## Contents

INTRODUCTION Peter T. Bobrowsky	1
ENGINEERING-GEOLOGY MAPPING OF SLOPES AND LANDSLIDES <i>Jeffrey R. Keaton &amp; Richard Rinne</i>	9
REGOLITH-LANDFORM MAPPING: AN AUSTRALIAN APPROACH <i>C.F. Pain, M.A. Craig, D.L. Gibson &amp; J.R. Wilford</i>	29
ENVIRONMENTAL MAPPING OF GEOCHEMICAL SYSTEMS <i>Gyözö Jordán &amp; Andrea Szücs</i>	57
MULTILEVEL GEOLOGIC HAZARD ASSESSMENT MAPPING IN THE RIO GRANDE GORGE, NORTHERN NEW MEXICO, USA <i>William C. Haneberg, Paul W. Bauer &amp; William X. Chávez, Jr</i>	75
CALIFORNIA'S SEISMIC HAZARDS MAPPING ACT: GEOSCIENCE AND PUBLIC POLICY <i>Charles R. Real</i>	93
SUBSURFACE GEOLOGIC MAPPING FROM DESCRIPTIVE AND PETROPHYSICAL BOREHOLE LOGS <i>Larry N. Smith</i>	121
MAPPING WITH ALLOSTRATIGRAPHIC FRAMEWORKS: IMPLICATIONS FOR UNDERSTANDING ALLUVIAL LANDSCAPES IN SOUTHERN BURGUNDY, FRANCE <i>Eric C. Straffin</i>	147
MINERAL EXPLORATION AND ENVIRONMENTAL APPLICATIONS OF LAKE SEDIMENT GEOCHEMICAL MAPPING IN THE CANADIAN CORDILLERA <i>Stephen J. Cook</i>	169

VI Contents

AGGREGATE POTENTIAL MAPPING <i>Ross I. Kelly &amp; Peter T. Bobrowsky</i>	195
'HOT SPOTS' AND 'SENSITIVE AREAS': CONTRIBUTION OF REMOTE SENSING TO GEOENVIRONMENTAL MAPPING IN LEBANON <i>Mohamad R. Khawlie</i>	223
GEOENVIRONMENTAL MAPPING IN SOUTHWESTERN SASKATCHEWAN: RAINFALL EROSION POTENTIAL <i>D.J. Sauchyn</i>	239
BATHOMETRIC DATA FOR 2D AND 3D LANDSCAPE MAPPING <i>C. Cam Muir, R.F. Watkins, The T. Ha &amp; Michael A. Vankoeveringe</i>	251
GEOENVIRONMENTAL MAPPING FOR GROUNDWATER PROTECTION IN ILLINOIS, USA <i>Richard C. Berg</i>	273
THE DEVELOPMENT AND SIGNIFICANCE OF A GEOLOGIC SENSITIVITY MAP OF THE ROUGE RIVER WATERSHED IN SOUTHEASTERN MICHIGAN, USA <i>Daniel T. Rogers</i>	295
MAPPING RIVER CHANNELS AND VELOCITY FIELDS FOR ENVIRONMENTAL ANALYSIS <i>Brian L. Cluer</i>	321
FLOODPLAIN HAZARD ASSESSMENT: APPLICATION TO FOREST LAND MANAGEMENT IN BRITISH COLUMBIA, CANADA <i>J.W. Schwab, D.L. Hogan &amp; I. Weiland</i>	343
ENVIRONMENTAL GEOLOGY MAPPING FOR URBAN PLANNING IN LITHUANIA <i>Jurgis Valiunas</i>	369
NATURAL HAZARD MAPPING IN SMALL URBAN AREAS, ANTIOQUIA, COLOMBIA <i>Natalia Hoyos &amp; Michel Hermelin</i>	387
DIRECT AND INDIRECT ANTHROPOGENIC MODIFICATIONS IN THE BASIN OF MEXICO <i>José Lugo, J. Juan Zamorano &amp; Arturo García-Romero</i>	411
ENCOURAGING BETTER USE OF GEOLOGICAL INFORMATION BY PLANNERS AND DEVELOPERS IN ENGLAND <i>B.R. Marker</i>	429

GEOENVIRONMENTAL MAPPING APPLIED TO URBAN SETTLEMENTS: LA VALL DE GALLINERA, ALICANTE, SPAIN <i>I. De Villota, M. De Luxán, J.L. Goy, I. Bustamante &amp; C. Zazo</i>	451
MEDICAL GEOLOGY: METHOD, THEORY AND PRACTICE <i>O. Selinus</i>	473
THE GEOGRAPHY OF DISEASE FAMILY TREES: THE CASE OF SELENIUM <i>Harold D. Foster</i>	497
MAP REPRESENTATION OF INDICATORS FOR ASSESSING ENVIRONMENTAL IMPACTS OF MINING IN THE ZAMBIAN COPPERBELT <i>D. Limpitlaw &amp; A.G. Fabbri</i>	531
HAZARD RISK ASSESSMENT IN RUSSIA <i>Irina Chesnokova, Gregory Koff &amp; David Huntley</i>	547
AN OVERVIEW OF VOLCANIC HAZARD MAPS: PAST, PRESENT AND FUTURE <i>C.J. Hickson</i>	557
GEOLOGICAL RADON POTENTIAL MAPPING <i>J.D. Appleton &amp; T.K. Ball</i>	577
THE MAKASSAR STRAIT TSUNAMIGENIC REGION, INDONESIA <i>G.S. Prasetya, W.P. De Lange &amp; T.R. Healy</i>	615
TSUNAMI DEPOSIT MAPPING AT SEASIDE, OREGON, USA <i>Brooke K. Fiedorowicz &amp; Curt D. Peterson</i>	629
ACTUAL AND POTENTIAL DOLINE SUBSIDENCE HAZARD MAPPING: CASE STUDY IN THE EBRO BASIN (SPAIN) <i>J.L. Simón-Gómez &amp; M.A. Soriano</i>	649
MAPPING IN THE INTERPRETATION AND RISK ASSESSMENT OF FLOWSLIDES IN SENSITIVE QUATERNARY MUDDY SEDIMENTS <i>Michael A. Carson &amp; Marten Geertsema</i>	667
QUANTITATIVE PREDICTION MODEL FOR LANDSLIDE HAZARD MAPPING: TSITIKA AND SCHMIDT CREEK WATERSHEDS, NORTHERN VANCOUVER ISLAND, BRITISH COLUMBIA, CANADA <i>Chang-Jo Chung, Peter T. Bobrowsky &amp; Richard Guthrie</i>	697
INDEX	717