

VIOLENT FORCES OF NATURE

ROBERT H. MAYBURY



**VIOLENT FORCES
OF
NATURE**

Robert H. Maybury

Editor

Published in Cooperation with Unesco

LOMOND PUBLICATIONS, INC.

Mt. Airy, Maryland 21771

1986

Table Of Contents

Publisher's Note	vii
Preface by Robert H. Maybury	ix
Introduction: Reducing Vulnerability to Nature's Violent Forces: Cooperation between Scientist and Citizen by E. M. Fournier d'Albe	1
PART I: Earthquakes and Subsidence	7
Chapter 1 Quake Readiness Marshall Ingwerson	9
Chapter 2 Earthquakes and Plate Tectonics Henry Spall	19
Chapter 3 Chemical Signals May Help Predict Volcanoes, Earthquakes <i>Chemical & Engineering News</i>	25
Chapter 4 Earthquake Prediction and Public Response K. Kitizawa	31
Chapter 5 Land Subsidence: A Worldwide Environmental Hazard Laura Carbognin	45
PART II: Mountain Hazards	77
Chapter 6 The Five Components of Volcanic Risk Denis Westercamp	79
Chapter 7 Seismic and Volcanic Hazards Haroun Tazieff	103
Chapter 8 Mapping Mountain Hazards Jack D. Ives	111
Chapter 9 What Triggers an Avalanche? Dominique Marbouty	125

PART III: Water Hazards	143
Chapter 10 Assessment of Flood Risk Gilbert F. White	145
Chapter 11 The Effects of Tsunami on Society George Pararas-Carayannis	157
Chapter 12 Toward Improving Flood Forecast-Response Systems Roman Krzysztofowicz and Donald Davis	169
PART IV: Hazards of Climate	191
Chapter 13 The Social and Economic Impact of Tropical Cyclones Peter Rogers	193
Chapter 14 Lightning Damage and Lightning Protection E. Philip Krider	205
Chapter 15 Fire: Catastrophic or Creative Force Peter C. Moore	231
Chapter 16 Wind Shear and its Hazard to Aviation Committee on Low-Altitude Wind Shear and Its Hazard to Aviation National Research Council	247
Chapter 17 Climate, Drought and Desertification <i>Nature and Resources</i>	263
PART V: Preparedness and Rescue	279
Chapter 18 Consequences of Disasters for Developing Nations Charles H. V. Ebert	281
Chapter 19 Settlement in Disaster Prone Regions L. van Essche	293
Chapter 20 The Pan Caribbean Disaster Preparedness and Preservation Project <i>UNDRO News</i>	303
Chapter 21 School Buildings and Natural Disasters D. J. Vickery	315
Chapter 22 Needed: An International Rescue Organization Anthony R. Michaelis	327

Chapter 23 What to do Before, During,
and After an Earthquake
Stanford University News Service349

Chapter 24 Postscript: In the Service of
Curiosity and Concern
Robert H. Maybury357

**Appendix: A Selected Bibliography on Natural
Disaster and Hazard Mitigation**
Dennis King363

Index371

234 3128 INSTITUT
FÜR METEOROLOGIE U. KLIMATOLOGIE
UNIVERSITÄT HANNOVER
HERRENHAUSER STR. 2 · 3000 HANNOVER 21