

World Map of Natural Hazards

This publication was conceived, written and realized in terms of both graphic design and typography exclusively by staff of the Geoscience Research Group of Munich Re.

© 1998
Münchener Rückversicherungs-
Gesellschaft
Address for letters:
D-80791 München
Germany

<http://www.munichre.com>
E-mail: info@munichre.com

Order number 2658-V-e

The paper used for this brochure was produced without chlorine bleaching.

| | | |
|-------|--|----|
| | Foreword | 4 |
| 1 | Introduction | 6 |
| 2 | Description of natural hazards | 7 |
| 2.1 | Earthquakes | 7 |
| 2.2 | Seismic sea waves (tsunamis) | 8 |
| 2.3 | Volcanic eruptions | 9 |
| 2.4 | Windstorms | 9 |
| 2.4.1 | Tropical cyclones | 9 |
| 2.4.2 | Extratropical storms (winter storms) | 10 |
| 2.4.3 | Tornadoes | 10 |
| 2.4.4 | Regional storms, monsoon storms | 11 |
| 2.5 | Storm surges | 11 |
| 2.6 | High waves | 12 |
| 2.7 | Heavy rain | 12 |
| 2.8 | Hailstorms and lightning | 12 |
| 2.9 | Pack ice and iceberg drift | 13 |
| 2.10 | El Niño, climate change | 13 |
| 3 | Underwriting aspects | 15 |
| 4 | Munich Re services and natural hazards | 17 |
| 5 | Catalogue of major catastrophes | 19 |
| 5.1 | Africa | 20 |
| 5.2 | Asia | 24 |
| 5.3 | Europe | 32 |
| 5.4 | America | 38 |
| 5.5 | Australia, Oceania | 44 |
| | Bibliography | 47 |
| | Scales and references | 53 |