
Preface

The media now broadcast loss of life and property damage caused by a variety of geologic hazards and geologic terrains worldwide on a near-daily frequency and in near-real-time.

Themes

This Atlas and Glossary is the result of the author's lifetime vocation, practice and research worldwide on the application of vertical air photography and Earth Observation satellite images to geomorphology.

His teaching experience and consulting for civil engineers led him to increasingly emphasize the links between specific geounits and their inherent geologic hazards. The idea of producing an atlas documenting these links was inspired by the activities of the International Decade for Natural Disaster Reduction, and he began work on the book in 1998.

The integrity of any structure has to rely on the ground on which it stands. There is a general awareness that such common hazards as rock falls, rock slides, and floods are associated with certain geologic formations, structures, and topographic situations. However, this knowledge is not as widespread as a dozen other destructive hazards that threaten human life and property, and are functionally associated with particular geologic processes and formations. These relationships have been established by distilling a selection of geounits as agents of, or susceptible to, specific geohazards, from a comprehensive photogeologic classification and photographic archive that was developed during the author's training and consultancy work.

Objectives

The Atlas and Glossary is a portfolio approach that aims to provide an accessible source of concise information for earth science professionals and students who need to understand the hazards that are associated with specific geological units and geostructures that are mappable using airphotos and satellite images.

All the material is presented as integrated data sets whose texts and figures of world wide coverage characterizing a geounit and its geohazards, are a convenient synthesis of information providing a rapid insight for the user from frequently widely scattered sources.

The Illustrations

The Atlas and Glossary includes 995 satellite images, vertical airphotos, air perspective views, ground photos and line-art figures that depict and document the classified geounits in their varied photogeologic appearances in diverse biophysical environments on a planet that is too easily thought of as small. Eighty-nine countries are represented.

Characterization of Geounits

The descriptions of geounit data sets are concise syntheses of current geoscience knowledge.

A geounit, as an agent of a geohazard or its susceptibility to other geohazards is discussed in relation to a set of fifteen hazard types detectable on air photos and images under the heading geohazard relations.

Photogeologic Interpretation

The Classification provides a set of descriptor codes for the identification of photogeologic units. Interpretations delineate and annotate geounits on the majority of the satellite images and airphotos.

Stereo Viewing

The Presentation section of the Introduction explains the inclusion of a CD-ROM to provide stereo viewing of airphoto figures in the Atlas.

Copyright

Every effort was made to obtain permission to reproduce copyright material throughout this book. The illustrations are all drawn from an archive of over 400 files. Because some date back more than four decades, the provenance of some has been lost and their source is listed as unattributed. If any proper acknowledgment has not been made, this oversight will be corrected in subsequent editions of the Atlas and Glossary.

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Geohazard-associated Geounits

Atlas and Glossary

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