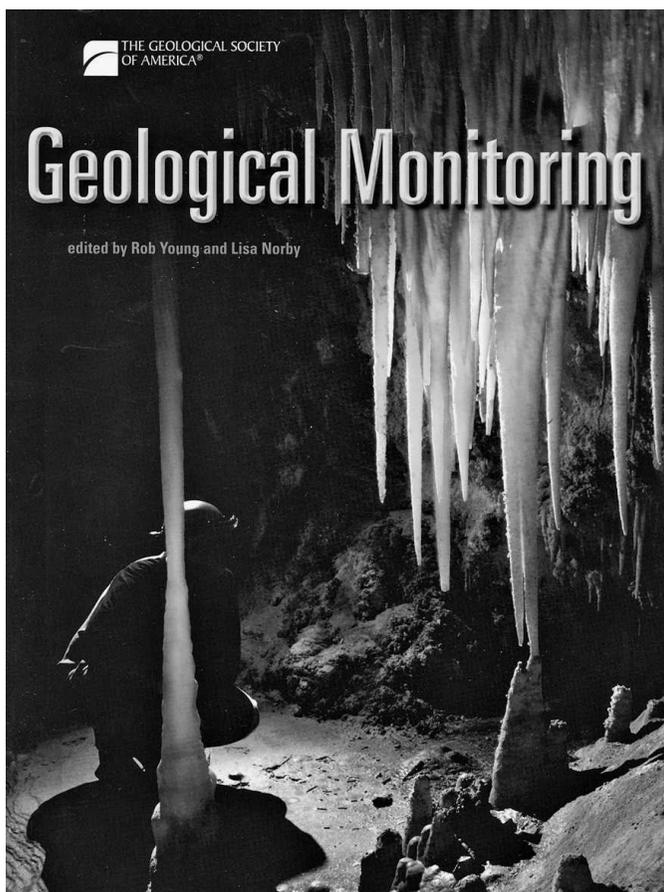


BOOK REVIEW



Geological Monitoring

Rob Young and Lisa Norby, editors, 2009. Boulder, Colorado, Geological Society of America, 305 p. ISBN 978-0-8137-6032-2, softbound, 8.5 × 11 inches, \$80 (\$56 for GSA members). Order at www.geosociety.org/bookstore.

This is a guide for resource managers who need to establish the status of the geological features and the effects of processes affecting them on the lands they supervise. Funded by the Geologic Resources Division of the National Park Service and published by the Geological Society of America, it has strong credentials. This is not a guide to inventorying resources, but a description of methods for their long-term monitoring. Methods of studying the most common geological features are described, with case studies.

The selected topics include features and processes of the following types: aeolian, spelean, coastal, fluvial, geother-

mal, glacial, marine, paleontological, permafrost, seismic, slope-movement, and volcanic. The book is well illustrated with photos, maps, and diagrams, mostly in color, and there is a nice cover shot of Carlsbad Cavern by Ron Kerbo, former NPS Cave Specialist. Each chapter begins with a detailed introduction to the topic, including a description of stresses to the resource. “Vital Signs” are then covered i.e., processes and features to monitor and methods for doing so. Approaches are graded according to their technical and financial demands.

The chapter on caves is by Rick Toomey of Mammoth Cave National Park. He stresses inventorying and recurrent, long-term research. Specific topics include (1) meteorology and its effect on speleothems; (2) airborne sediments, including natural and anthropogenic; (3) visitor impacts (everything from deliberate breakage to lampen-flora), with LIDAR and photomonitoring as promising approaches; (4) ice; (5) cave drips and pools (quantity and chemistry); (6) cave microbiology; (7) cave stability (breakdown, etc.); (8) mineral growth; (9) surface expressions and processes; (10) regional groundwater patterns, quantity, and chemistry; and (11) subterranean fluvial processes (brief coverage, so as not to overlap with the chapter specifically on this topic). References are mainly non-technical and aimed toward management issues. The other chapters deal mainly with geology and physical processes, with the discussion of cave microbiology in this chapter a welcome exception.

Although few other authors even mention caves and karst, they describe features, processes, and monitoring techniques that speleologists will find pertinent. This is particularly true for the fluvial, glacial, geothermal, and volcanic chapters. The chapter on volcanoes ignores lava caves, in preference to such topics as land stability and gas emissions, but vulcanospeleologists will still find much of value.

This book is not designed for entertainment, nor is it an introductory text. Appropriately, the arrangement of topics is formulaic, as in a cook-book. Those who need it most are resource managers who desire a guide to establishing their own programs and strategies. Students and researchers can also learn of potential projects, measurement techniques, and approaches to data analysis.

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