



## Geologic Resource Evaluation Program



Bedrock and surficial geology information provides the foundation for studies of groundwater, geomorphology, soils, and environmental hazards. Cedar Breaks National Monument, Utah.

*Under the Natural Resource Challenge, a program to advance the management and protection of park resources, the National Park Service has accelerated efforts to inventory the natural resources of parks. The Geologic Resource Evaluation (GRE) Program is administered by the NPS Geologic Resource Division. The goal of the GRE Program is to provide each of the identified 274 "Natural Area" parks with a digital geologic map, a geologic evaluation report, and a geologic bibliography. Each product supports the stewardship of park resources and each is designed to be user friendly to non-geoscientists.*

**Scoping Meetings** - The GRE team holds scoping meetings at each park to review available data on the geology of the park and to discuss the geologic issues in the park. Much of what we learn about the extent and quality of existing map coverage and geologic resources issues comes from these scoping meetings. Although scoping meetings are usually held in each park individually to expedite the process some scoping meetings

are multipark meetings for an entire Vital Signs Monitoring Network. Those invited include the park superintendent, interested park staff, U.S. Geological Survey geologists, state survey geologists, academic and private sector geologists, and any other interested parties. Generally, it requires one entire day to review the available geologic maps and bibliography and to discuss the geologic management issues for the park.

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*Geologic resources serve as the foundation of park ecosystems and yield important information needed for park decision making.*

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*Each Geologic Resource Evaluation product is a tool to support the stewardship of park resources and each is designed to be user friendly to non-geoscientists.*

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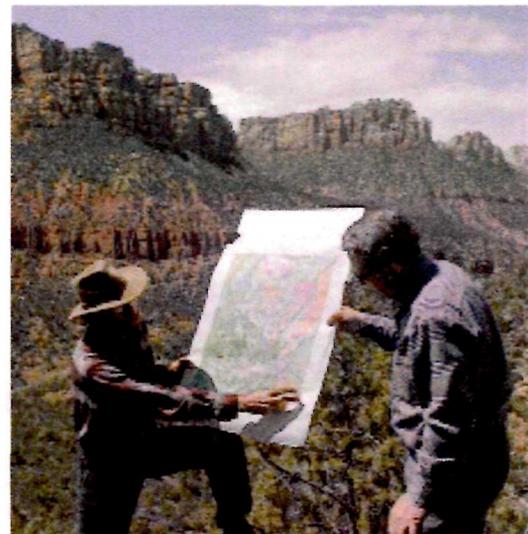
**Digitized Geologic Maps** - Digitized geologic maps are a key component of the GRE Program. If existing maps are not available, additional mapping needs are identified at the scoping meeting, supplemental funds may be available to complete the mapping. Partnering with other federal, state and academic groups has been an effective way of obtaining new geologic data. For example, these funds have been used for ongoing projects with the USGS in Death Valley National Park, the Utah Geological Survey in Glen Canyon National Recreation Area and with Stanford University at Great Basin National Park. The goal is to provide quality geologic maps in a digital format to park management in such a way that park managers need not be geologists to understand them. Completed digitized geologic maps can be found on the Internet at : <http://www3.nature.nps.gov/im/gis/ftp/ftparchive.cfm>

**Geologic Resource Evaluation Reports** - The GRE report identifies geological features and processes that are important to the ecosystem of the park, how these features and processes have been impacted by human activity, how important these features and processes are to park management, and any special characteristics of the feature and processes that park managers need to be aware of. The report also identifies research and monitoring needs and educational and interpretation opportunities. Below is a brief outline of the report format.

***Geologic Resource Evaluation Report***

*Executive Summary  
Geologic Overview  
Geologic Features and Processes  
Formation Properties  
Geologic Issues  
Appendices:  
    PMIS Statements  
    Contact List  
    Glossary  
    AGI Report  
    Geologic Map  
    Geologic Cross-sections  
    Bibliography*

**Geologic Bibliography** - The bibliography serves as a consolidated clearing house for geologic references for each park in the GRE inventory. It is a source for further reading, investigation, and future research. The



**Utah Geological Survey geologists showcase new geologic mapping during a scoping session at Zion National Park, Utah. Geologic maps describe the underlying physical habitat of the natural systems that are integral components of an ecosystem.**

geologic bibliography is generated for each park and posted on a website. Sources for the bibliography include the American Geological Institute (AGI) GeoRef, U.S. Geological Survey GeoIndex, and Procite information from specific park libraries. Bibliographic compilations are validated by GRI staff and become part of a Microsoft Access database keyed to park, author, year of publication, title, publisher, publication number, and a miscellaneous field for notes.

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For additional information see: <http://science.nature.nps.gov/im/apps/npbib/index.htm>