

Geologic Resource Management

Recognizing the interrelationships between the physical (geology, air, and water) and biological (plants and animals) components of the Earth is vital to understanding, managing, and protecting natural resources. The Geologic Resource Evaluation Program helps make this connection by providing information on the role of geology and geologic resource management in parks.

Geologic resources for management consideration include both the processes that act upon the Earth and the features and products formed as a result of these processes.

- Geologic processes include erosion and sedimentation; seismic, volcanic, and geothermal activity; glaciation, rockfalls, landslides, and shoreline change.
- Geologic features include mountains, canyons, natural arches and bridges, minerals, rocks, fossils, cave and karst systems, beaches, dunes, glaciers, volcanoes, and faults.



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*For additional information see,
<http://www2.nature.nps.gov/geology/inventory/>

Geologic Resource Evaluation Program



Geologic resources serve as the foundation of park ecosystems and provide important information needed for park decision making. Helping parks understand the role that geology plays in the environment is a core function of the Geologic Resource Evaluation Program.



Scoping Meetings

The GRE team conducts scoping meetings at parks to review available data on park geology and discuss geologic issues. Meeting participants may include the park managers and staff; geologists from the U.S. Geological Survey, state surveys, academic and private sectors; and other interested parties. The team evaluates the extent and quality of existing geologic maps and park-specific geologic resource management issues. In parks that lack or have inadequate map coverage the GRE Program may provide funds for new mapping.



Purpose

The Geologic Resource Evaluation (GRE) Program is one of 12 natural resource inventory efforts within the National Park Service (NPS). The Program strives to advance science-based management of natural resources in the national parks. It further aims to raise awareness about geology and the role that geologic features and processes play in the environment. The GRE Program serves natural resource managers and staff, park planners, interpreters, researchers, and other NPS personnel. The Geologic Resources Division of the NPS Natural Resource Program Center administers the GRE Program.



Digital Geologic Maps

Digital geologic map data bring an exciting, interactive dimension to traditional paper maps by providing geologic data for use in park Geographic Information Systems (GIS). GRE digital geologic maps are provided in ESRI Geodatabase, Coverage, and Shapefile formats. These products facilitate incorporating geologic considerations into a wide range of applications. For example,

- Sequoia and Kings Canyon National Parks – Document glacial response to climate change
- Buffalo National River – Explore groundwater and karst interaction
- Dinosaur National Monument – Identify threatened plant habitat
- Coronado National Memorial – Locate threatened animal habitat
- Yosemite National Park – Identify areas with rockfall potential

Geologic Resource Evaluation Reports

GRE reports include,

- Identification of key geologic resource management issues.
- Discussion of geologic features and processes important to park ecosystems and management.
- A map unit properties table that identifies characteristics of geologic map units.
- A brief geologic history of the park area.

All GRE products are available on the GRE products web site (http://www2.nature.nps.gov/geology/inventory/gre_publications.cfm). Additionally, digital geologic maps are posted on the NPS Data Store (<http://science.nature.nps.gov/nrdata/>).

Products

The GRE team, working closely with the Colorado State University Earth Science Department and a variety of other partners, provides each of the 270 natural area parks with a geologic scoping meeting, digital geologic map data, and a park-specific geologic report. These products are designed to enhance stewardship of park resources by providing valuable information about geologic formations, hazards, and links between geology and other natural resources. The maps and reports are available for use by a wide variety of audiences.

