WHAT'S BENEATH YOUR FEET?

GEOLOGIC MAPS OF NATIONAL PARKS

DORMANT VOLCANOES

Bryce Canyon, Utah

COLORFUL SANDSTONE

SCULPTED GRANITE

Crater Lake, Oregon

Acadia, Maine

Cumberland Gap, KY, TN, VA

FAULTED MOUNTAINS
GEOLOGIC MAPS ARE CRUCIAL TO UNDERSTANDING A NATIONAL PARK. PARK STAFF USE GEOLOGIC MAPS FOR MANY PURPOSES.

IDENTIFY HAZARDS. The Navajo sandstone of Utah’s Zion National Park is responsible for much of the dramatic scenery that draws visitors to the site. This sandstone is also the source of dangerous rock falls. Large boulders routinely fall to the valley floor and cause damage. A geologic map is used to determine where these events are most likely to occur.

SUPPORT SCIENCE. John Day Fossil Beds National Monument in Oregon is home to one of the planet’s most diverse and extensive fossil records of the past 65 million years. Park paleontologists are crafting a highly detailed geologic map to better correlate past and future fossil discoveries. The map is expected to increase understanding of the changes experienced over time by animals, plants, ecosystems, and climate during the Age of Mammals.

PROMOTE EDUCATION. Kentucky’s Mammoth Cave National Park preserves the longest known cave in the world, featuring almost 400 miles of mapped interconnected passages. Examination of a geologic map shows limestone rock, through which the cave is formed, beneath a layer of sandstone. The sandstone protects the underlying limestone cave, similar to the way a roof protects your home.

DISCOVER CONNECTIONS. Capitol Reef National Park of Utah is home to dozens of rare, endemic plant species. Microhabitats that support these plants are sometimes connected to the underlying rocks. A prime example is Winkler’s cactus, which only grows on exposures of the Salt Wash Member of the Jurassic Morrison Formation. A digital geologic map, combined with soil and slope data, is used to determine potential habitat areas and focus resource management efforts.

DOCUMENT CHANGE. Assateague Island National Seashore, spanning Maryland and Virginia, is a barrier island shaped by coastal processes. Because the islands are primarily sand, this geologic map of the park differentiates deposits based on how they formed (dunes, beaches, etc.) rather than by material or age. Such maps can be used to predict future alterations of the coast as climate continues to change and sea level rises.

LEARN MORE

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http://go.nps.gov/geomaps

NATIONAL GEOLOGIC MAP DATABASE
http://ngmdb.usgs.gov/ngmdb/ngmdb_home.html

AGI GEOLOGIC MAPS
www.agiweb.org/environment/publications/mapping

NATIONAL GEOLOGIC MAP DAY
http://geologicmap.org/

GEOLOGIC MAPS IN ACTION

Geologic maps are critical to understanding a national park. Park staff use geologic maps for many purposes. These are just a few examples. Can you think of other uses for geologic maps in national parks?