

Meeting Challenges with Geologic Maps

Introduction

Geologic maps are our most important and complete compilation of information about the solid Earth we live on, and we cannot understand the Earth without them. We use geologic maps and the fundamental information they provide in many ways. Geologic maps help delineate fragile habitat and ecosystems, protect against natural hazards, and find needed resources. The following information is developed from the AGI Environmental Awareness Series book, "Meeting Challenges with Geologic Maps" by William A. Thomas and others (for more AGI publications click [here](#)). This information includes some basics about geologic maps, how geologists make geologic maps (contributed by R.D. Hatcher, Jr.), an assessment of the value of geologic maps, and specific examples of how geologic maps have been used to meet challenges across the United States.

It Helps to Know

Explore the topics below by clicking on them for more specific and useful information about geologic maps.

+ *Scale*

+ *Legend*

+ *Geologic Time Scale*

+ *How Geologists Make Geologic Maps*

+ *The Value of Geologic Maps*

For additional basic information about geologic maps, visit this [USGS/NPS website](#).

Download a pdf of the entire book by clicking [here](#) (8.1 MB). (You will need Adobe Acrobat Reader to view this pdf file).

Examples of Geologic Maps Meeting Challenges

The following examples represent the wide range of geologic map uses. The examples are widely distributed geographically, as geologic maps have valuable uses in every part of our country, and throughout the world. The maps are organized in four subject categories: Environment, Hazard Mitigation, Resource Evaluation, and Land Use Planning. Click on any map name below to view the example. You will need Adobe Acrobat to view the examples. Click [here](#) to get Adobe, if you do not have it already installed on your computer.

Click [here](#) for a U.S. map (11.9 MB) showing the location of the examples. (Note: Right-click the link to save the document before opening, if you're working over a slower connection.)

Environment

- Habitat Prediction, UT (0.2 MB)
- Protecting Groundwater, AL (0.2 MB)
- Delineation of Ecosystems, Appalachians (0.2 MB)
- Grand Canyon, AZ (1.7 MB)

Hazard Mitigation

- Landslide Hazards, KS

- Sinkhole Susceptibility, MD
- Landslide Hazards, CA
- Earthquake Damage Prediction, NJ
- Post-Wildfire Hazards, CO
- Volcanic Hazards, WA
- Mitigation of Earthquake Damage, AK
- Landslide Susceptability, CO (1.69 MB)
- Radioactive Drinking Water, NH
- Collapsible Soil and Karst Hazards, CO (1.72 MB)
- Earthquake and Landslide Hazards, CA (16.4 MB)
- Geologic Hazards, ID (0.9 MB)
- Flood Hazards, NE (1.26 MB)
- Geologic Hazards, UT (0.9 MB)

Resource Evaluation

- Mineral Resources, NV
- Delineating Sand and Gravel, CO
- Coal Resources and Past Mining, PA
- Finding Groundwater, NM
- Petroleum Systems, AK
- Geology and Groundwater, NM (1.36 MB)
- Aquifers, IL (0.5 MB)
- Hydrogeology, WA (1 MB)
- Groundwater, VA (1.52 MB)
- Aquifers, ME (0.6 MB)

Land Use Planning

- Cave Resources, KY
 - Power Plant Development, NY (0.4 MB)
 - Transportation, ND
 - Development, AL (0.6 MB)
 - Washington DC (0.5 MB)
 - Karst Topography, FL (1.76 MB)
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