WHAT IS GEOSCIENCE?

Geoscience is the study of the Earth and the complex geologic, marine, atmospheric, and hydrologic processes that sustain life and the economy. Understanding the Earth’s surface and subsurface, its resources, history, and hazards allows us to develop solutions to critical economic, environmental, health, and safety challenges.

By the numbers: UTAH

- 4,224 geoscience employees (excludes self-employed)
- 1.15 billion gallons/day: total groundwater withdrawal
- $2.61 billion: value of nonfuel mineral production in 2017
- 31 total disaster declarations, including 18 fire, 8 flood, and 2 severe storm disasters (1953-2017)
- $9.02 million: NSF GEO grants awarded in 2017

WORKFORCE IN UTAH

- 4,224 geoscience employees (excludes self-employed) in 2017
- $77,125: average median geoscience employee salary
- 10 academic geoscience departments

WATER USE IN UTAH

- 1.15 billion gallons/day: total groundwater withdrawal
- 3.08 billion gallons/day: total surface water withdrawal
- 627 million gallons/day: public supply water withdrawal
- 3.03 billion gallons/day: water withdrawal for irrigation
- 54 million gallons/day: self-supplied industrial fresh water withdrawal
- 98% of the population is served by public water supplies

ENERGY AND MINERALS IN UTAH

- $2.61 billion: value of nonfuel mineral production in 2017
- Copper, magnesium metal, gold: top three nonfuel minerals in order of value produced in 2017
- 14.0 million short tons: coal produced in 2016
- 314 billion cubic feet: natural gas produced in 2017
- 33.1 million barrels: crude oil produced in 2017
- 1.97 million megawatt hours: solar produced in 2017
- 463,000 megawatt hours: geothermal produced in 2017

NATURAL HAZARDS IN UTAH

- 31 total disaster declarations, including 18 fire, 8 flood, and 2 severe storm disasters (1953-2017)
- 15 weather and/or climate events, each with costs exceeding $1 billion (inflation adjusted) (1980-2017)

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4 U.S. Geological Survey, Mineral Commodity Summaries 2018
5 U.S. Energy Information Administration
6 FEMA Data Visualization: Summary of Disaster Declarations and Grants (accessed May 2, 2018)
AGI’s Geoscience Policy and Critical Issues programs support well-informed public policy and decision making by providing information and facilitating dialogue between the geoscience community and decision makers at all levels.

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Geoscience, Utah, and Federal Agencies

U.S. GEOLOGICAL SURVEY (USGS)
- $1.15 billion: total USGS budget in FY 2018 (5.8% increase from FY 2017)\(^8\)
- The National Cooperative Geologic Mapping Program funds geologic mapping projects with federal (FEDMAP), state (STATEMAP), and university (EDMAP) partners
- $4.2 million: Utah STATEMAP funding (1993-2016)\(^9\)
- Brigham Young University, University of Utah, and Utah State University have participated in EDMAP\(^9\)
- USGS streamgages collect real-time or recent streamflow, groundwater, and water-quality data throughout Utah

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)
- $20.7 billion: total NASA budget in FY 2018 (5.5% increase from FY 2017)\(^10\)
- $1.9 billion: total NASA Earth Science budget in FY 2018 (0% change from FY 2017)\(^10\)
- Gravity Recovery and Climate Experiment (GRACE) satellites measure groundwater changes in Utah
- Soil Moisture Active Passive (SMAP) satellite measures soil moisture in Utah

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)
- $5.9 billion: total NOAA budget in FY 2018 (4.1% increase from FY 2017)\(^11\)
- Next-generation geostationary (GOES) and polar orbiting (JPSS) satellites provide weather forecasting over Utah
- Deep Space Climate Observatory (DISCOVR) satellite monitors radiation and air quality over Utah
- 12 National Weather Service Automated Surface Observing Systems (ASOS) stations in Utah\(^12\)
- 179 National Weather Service Cooperative Observer Program (COOP) sites in Utah\(^12\)

NATIONAL SCIENCE FOUNDATION (NSF)
- $7.8 billion: total NSF budget in FY 2018 (4% increase from FY 2017)\(^13\)
- $1.4 billion: total NSF Geosciences Directorate (GEO) awards in FY 2017 (7.2% increase from FY 2016)\(^14\)
- 35 NSF GEO awards in Utah totaling $9.02 million in 2017\(^14\)
- $5.2 million: NSF GEO grants awarded to University of Utah in 2017\(^14\)

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
- $8.1 billion: total EPA budget in FY 2018 (0% change from FY 2017)\(^15\)
- 15 active Superfund sites in Utah in 2018\(^16\)
- $8.6 million: Drinking Water State Revolving Fund (DWSRF) grants in Utah in 2017\(^17\)

FEDERAL FACILITIES IN UTAH
- USGS Utah Water Science Center, West Valley City
- USGS Southwest Biological Science Center Research Center, Moab

YOUR STATE SOURCE FOR GEOSCIENCE INFORMATION
Utah Geological Survey
1594 W. North Temple
PO Box 146100
Salt Lake City, UT 84114-6100
http://geology.utah.gov/
801-537-3300

\(^8\) U.S. Department of the Interior, FY 2019 Budget in Brief
\(^9\) U.S. Geological Survey, National Cooperative Geologic Mapping Program
\(^10\) National Aeronautics and Space Administration, FY 2019 Budget Estimates
\(^11\) National Oceanic and Atmospheric Administration, FY 2019 Bluebook
\(^12\) NOAA In Your State and Territory
\(^13\) U.S. House of Representatives, FY 2018 Omnibus Spending Bill (Division B) – Commerce, Justice, Science, and Related Agencies Appropriations Act, 2018
\(^14\) National Science Foundation, Budget Information System
\(^15\) U.S. House of Representatives, FY 2018 Omnibus Spending Bill (Division G) – Department of the Interior, Environment, and Related Agencies Appropriations Act, 2018
\(^16\) U.S. Environmental Protection Agency, Superfund Sites
\(^17\) U.S. Environmental Protection Agency, Drinking Water State Revolving Fund National Information Management System Reports

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