Geoscience in Tennessee

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: TENNESSEE
- 5,302 geoscience employees (excludes self-employed)¹
- 430 million gallons/day: total groundwater withdrawal³
- $1.14 billion: value of nonfuel mineral production in 2017⁴
- 68 total disaster declarations, including 31 severe storm, 17 flood, and 11 fire disasters (1953-2017)⁶
- $2.22 million: NSF GEO grants awarded in 2017¹⁴

WORKFORCE IN TENNESSEE
- 5,302 geoscience employees (excludes self-employed) in 2017¹
- $73,201: average median geoscience employee salary¹
- 9 academic geoscience departments²

WATER USE IN TENNESSEE
- 430 million gallons/day: total groundwater withdrawal³
- 5.99 billion gallons/day: total surface water withdrawal³
- 850 million gallons/day: public supply water withdrawal³
- 64 million gallons/day: water withdrawal for irrigation³
- 734 million gallons/day: industrial fresh water withdrawal³
- 91% of the population is served by public water supplies³

ENERGY AND MINERALS IN TENNESSEE
- $1.14 billion: value of nonfuel mineral production in 2017⁴
- Stone (crushed), zinc, cement (portland): top three nonfuel minerals in order of value produced in 2017⁴
- 640,000 short tons: coal produced in 2016⁵
- 270,000 barrels: crude oil produced in 2017⁵
- 150,000 megawatt hours: solar produced in 2017⁵
- 7.61 million megawatt hours: hydroelectricity produced in 2017⁵

NATURAL HAZARDS IN TENNESSEE
- 68 total disaster declarations, including 31 severe storm, 17 flood, and 11 fire disasters (1953-2017)⁶
- $196 million: individual assistance grants (2005-2017)⁶
- $149 million: mitigation grants (2005-2017)⁶
- 69 weather and/or climate events, each with costs exceeding $1 billion (inflation adjusted) (1980-2017)⁷

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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 is a network of 52 member societies, representing more than 260,000 geoscientists.
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https://www.americangeosciences.org/policy/factsheet/states | govt@americangeosciences.org
Geoscience, Tennessee, 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
- $1.06 million: Tennessee STATEMAP funding (1993-2016)\(^9\)
- Tennessee Technological University, Vanderbilt University, and University of Tennessee have participated in EDMAP\(^9\)
- USGS streamgages collect real-time or recent streamflow, groundwater, and water-quality data in Tennessee

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)\(^14\)
- 13 NSF GEO awards in Tennessee totaling $2.22 million in 2017\(^14\)
- $849,000: NSF GEO grants awarded to University of Tennessee Knoxville in 2017\(^14\)

U.S. ENVIROMENTAL PROTECTION AGENCY (EPA)
- $8.1 billion: total EPA budget in FY 2018 (0% change from FY 2017)\(^15\)
- 18 active Superfund sites in Tennessee in 2018\(^16\)
- $8.24 million: Drinking Water State Revolving Fund (DWSRF) grants in Tennessee in 2017\(^17\)

FEDERAL FACILITIES IN TENNESSEE
- USGS NOROCK Southern Appalachian Duty Station, Knoxville
- DOE Oak Ridge National Lab, Oak Ridge
- NOAA Air Resources Laboratory, Oak Ridge
- USGS Patuxent Wildlife Research Center, Memphis

YOUR STATE SOURCE FOR GEOSCIENCE INFORMATION
Tennessee Geological Survey
312 Rosa L. Parks Ave
Nashville, TN 37243
https://www.tn.gov/environment/program-areas/tennessee-geological-survey.html
615-532-1502

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\(^8\) U.S. Department of the Interior, FY 2019 Budet 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