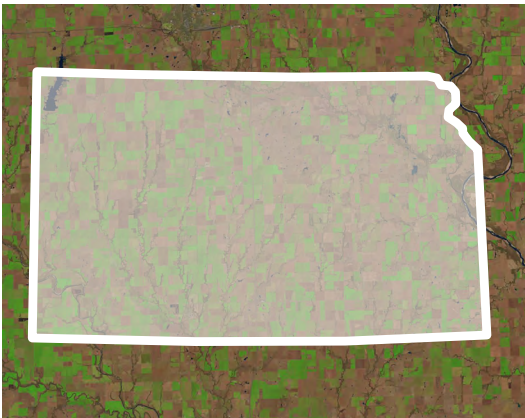


WHAT IS GEOSCIENCE?

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.



Satellite image: NASA/USGS Landsat Program. State outline (not to scale): Matt Battison.

By the numbers: KANSAS

- 3,380 geoscience employees (excludes self-employed)¹
- 2.84 billion gallons/day: total groundwater withdrawal³
- \$598 million: value of nonfuel mineral production in 2017⁴
- 60 total disaster declarations, including 33 severe storm, 13 flood, and 4 fire disasters (1953-2017)⁶
- \$1.99 million: NSF GEO grants awarded in 2017¹⁴

WORKFORCE IN KANSAS

- 3,380 geoscience employees (excludes self-employed) in 2017¹
- \$76,053: average median geoscience employee salary¹
- 6 academic geoscience departments²

WATER USE IN KANSAS

- 2.84 billion gallons/day: total groundwater withdrawal³
- 1.18 billion gallons/day: total surface water withdrawal³
- 351 million gallons/day: public supply water withdrawal³
- 2.68 billion gallons/day: water withdrawal for irrigation³
- 38 million gallons/day: self-supplied industrial fresh water withdrawal³
- 95% of the population is served by public water supplies³

ENERGY AND MINERALS IN KANSAS

- \$598 million: value of nonfuel mineral production in 2017⁴
- Helium (Grade-A), cement (portland), salt: top three nonfuel minerals in order of value produced in 2017⁴
- 18.5 million megawatt hours: wind produced in 2017⁵
- 220 billion cubic feet: natural gas produced in 2017⁵
- 26,800 short tons: coal produced in 2016⁵
- 35.6 million barrels: crude oil produced in 2017⁵

NATURAL HAZARDS IN KANSAS

- 60 total disaster declarations, including 33 severe storm, 13 flood, and 4 fire disasters (1953-2017)⁶
- \$29 million: individual assistance grants (2005-2017)⁶
- \$146 million: mitigation grants (2005-2017)⁶
- \$150 million: preparedness grants (2005-2017)⁶
- \$881 million: public assistance grants (2005-2017)⁶
- 61 weather and/or climate events, each with costs exceeding \$1 billion (inflation adjusted) (1980-2017)⁷

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)

⁷ NOAA National Centers for Environmental Information, *U.S. Billion-Dollar Weather and Climate Disasters from 1980 to 2018* (accessed April 6, 2018)

¹ U.S. Bureau of Labor Statistics, *Occupational Employment Statistics*, May 2017

² American Geosciences Institute, *Directory of Geoscience Departments*, 53rd Edition (2018)

³ U.S. Geological Survey, *Estimated Use of Water in the United States in 2015*

AGI is a network of 52 member societies, representing more than 260,000 geoscientists.

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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
- \$2.78 million: Kansas STATEMAP funding (1993-2016)⁹
- University of Kansas and Wichita State University have participated in EDMAP⁹
- USGS streamgages collect real-time or recent streamflow, groundwater, and water-quality data throughout Kansas

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 (0% change from FY 2017)¹⁰
- Gravity Recovery and Climate Experiment (GRACE) satellites measure groundwater changes in Kansas
- Soil Moisture Active Passive (SMAP) satellite measures soil moisture in Kansas

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 Kansas
- Deep Space Climate Observatory (DISCOVER) satellite monitors radiation and air quality over Kansas
- 24 National Weather Service Automated Surface Observing Systems (ASOS) stations in Kansas¹²
- 366 National Weather Service Cooperative Observer Program (COOP) sites in Kansas¹²

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
- 11 NSF GEO awards in Kansas totaling \$1.99 million in 2017¹⁴
- \$1.8 million: NSF GEO grants to University of Kansas Center for Research in 2017¹⁴

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

- \$8.1 billion: total EPA budget in FY 2018 (0% change from FY 2017)¹⁵
- 12 active Superfund sites in Kansas in 2018¹⁶
- \$9.17 million: Drinking Water State Revolving Fund (DWSRF) grants in Kansas in 2017¹⁷

FEDERAL FACILITIES IN KANSAS

- USGS Kansas Water Science Center, Lawrence
- USGS Organic Geochemistry Research Laboratory (OGRL), Lawrence
- NSF Center for Remote Sensing of Ice Sheets (CREGIS), Lawrence
- NOAA NWS Center Weather Service Unit, Kansas City

YOUR STATE SOURCE FOR GEOSCIENCE INFORMATION

Kansas Geological Survey
1930 Constant Ave
Lawrence, KS 66047
<http://www.kgs.ku.edu/>
785-864-3965

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

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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