

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: LOUISIANA

- 6,570 geoscience employees (excludes self-employed)¹
- 1.74 billion gallons/day: total groundwater withdrawal³
- \$477 million: value of nonfuel mineral production in 2017⁴
- 75 total disaster declarations, including 26 flood, 23 hurricane, and 14 severe storm disasters (1953-2017)⁶
- \$4.1 million: NSF GEO grants awarded in 2017¹⁴

WORKFORCE IN LOUISIANA

- 6,570 geoscience employees (excludes self-employed) in 2017¹
- \$88,739: average median geoscience employee salary¹
- 12 academic geoscience departments²

WATER USE IN LOUISIANA

- 1.74 billion gallons/day: total groundwater withdrawal³
- 7 billion gallons/day: total surface water withdrawal³
- 709 million gallons/day: public supply water withdrawal³
- 1.05 billion gallons/day: water withdrawal for irrigation³
- 2.14 billion gallons/day: self-supplied industrial fresh water withdrawal³
- 89% of the population is served by public water supplies³

ENERGY AND MINERALS IN LOUISIANA

- \$477 million: value of nonfuel mineral production in 2017⁴
- Salt, sand and gravel, and stone (crushed): top three nonfuel minerals in order of value produced in 2017⁴
- 2.8 million short tons: coal produced in 2016⁵
- 2.12 trillion cubic feet: natural gas produced in 2017⁵
- 50 million barrels: crude oil produced in 2017⁵
- 1.23 million megawatt hours: hydroelectricity produced in 2017⁵

NATURAL HAZARDS IN LOUISIANA

- 75 total disaster declarations, including 26 flood, 23 hurricane, and 14 severe storm disasters (1953-2017)⁶
- \$6.99 billion: individual assistance grants (2005-2017)⁶
- \$2.95 billion: mitigation grants (2005-2017)⁶
- \$431 million: preparedness grants (2005-2017)⁶
- \$15.5 billion: public assistance grants (2005-2017)⁶
- 59 weather and/or climate events, each with costs exceeding \$1 billion (inflation adjusted) (1980-2017)⁷

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*

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)

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
- \$1.99 million: Louisiana STATEMAP funding (1993-2016)⁹
- 4 Louisiana universities, including Louisiana State University and Centenary College of Louisiana, have participated in EDMAP⁹
- USGS streamgages collect real-time or recent streamflow, groundwater, and water-quality data throughout Louisiana

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 Louisiana
- Soil Moisture Active Passive (SMAP) satellite measures soil moisture in Louisiana

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 Louisiana
- Deep Space Climate Observatory (DISCOVER) satellite monitors radiation and air quality over Louisiana
- 21 National Weather Service Automated Surface Observing Systems (ASOS) stations in Louisiana¹²
- 166 National Weather Service Cooperative Observer Program (COOP) sites in Louisiana¹²

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
- 19 NSF GEO awards in Louisiana totaling \$4.1 million million in 2017¹⁴
- \$2.3 million: NSF GEO grants awarded to Louisiana State University in 2017¹⁴

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

- \$8.1 billion: total EPA budget in FY 2018 (0% change from FY 2017)¹⁵
- 13 active Superfund sites in Louisiana in 2018¹⁶
- \$11.3 million: Drinking Water State Revolving Fund (DWSRF) grants in Louisiana in 2017¹⁷

FEDERAL FACILITIES IN LOUISIANA

- USGS Wetland and Aquatic Research Center, Lafayette
- USGS Lower Mississippi-Gulf Water Science Center, Baton Rouge
- Louisiana Spatial Reference Center, Baton Rouge
- DOE Strategic Petroleum Reserve, New Orleans

YOUR STATE SOURCE FOR GEOSCIENCE INFORMATION

Louisiana Geological Survey
3079 Energy, Coastal and Environment Building
Louisiana State University
Baton Rouge, LA 70803
<http://www.lsu.edu/lgs/>
225-578-5320

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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