



Testimony of the
American Geophysical Union

To the
U.S. House Committee on Appropriations
Subcommittee on the Interior, Environment and Related Agencies
6 March 2020

Regarding the
U.S. Geological Survey
FY 2021 Budget Request

The American Geophysical Union (AGU), a non-profit, non-partisan scientific society, appreciates the opportunity to submit testimony¹ regarding the fiscal year 2021 (FY21) budget request for the United States Geological Survey (USGS). **AGU, on behalf of its community of 110,000 Earth and space scientists, respectfully requests Congress appropriate \$1.35 billion for the USGS.** Restoring strong funding to the USGS will allow the agency to sustain current programs and invest in geologic, environmental, and ecological data needed by decision makers across the country.

The USGS is uniquely positioned to provide informed responses to many of our nation's greatest challenges. For example, the USGS plays a crucial role in assessing water quality and quantity, reducing risks from natural hazards, assessing mineral and energy resources, and managing our nation's ecosystems. Through its offices across the country, the USGS provides high-quality research and data to policymakers, emergency responders, natural resource managers, civil and environmental engineers, educators, and the public. A few examples of the USGS's valuable work are provided below.

Monitoring and Evaluating Water Availability and Quality

The USGS collects information on water availability and quality to inform the public and decision makers about the status and history of freshwater resources. For example, around the country, the USGS operates more than 10,000 stream gages, which are fixed structures that measure the amount of water flowing through a body of water over time.² These stream gages produce vital data that inform decision making and planning for water management, energy development, infrastructure design, flood mapping and forecasting, water quality monitoring, ecosystem management, and recreational safety approaches.

¹ Testimony from AGU was prepared by Caitlin Bergstrom, Public Affairs Analyst, and Michael Villafranca, Senior Specialist of Public Affairs.

² Eberts, S.M., Woodside, M.D., Landers, M.N., and Wagner, C.R., 2018, Monitoring the pulse of our Nation's rivers and streams—The U.S. Geological Survey streamgaging network: U.S. Geological Survey Fact Sheet 2018–3081, 2 p., <https://doi.org/10.3133/fs20183081>.

Predicting and Observing Natural Hazards

The USGS works to reduce risks from floods, wildfires, earthquakes, tsunamis, volcanic eruptions, landslides, and other natural hazards that jeopardize human lives and cost billions of dollars in damages every year—earthquakes alone are estimated to cost the U.S. \$6.1 billion annually.³ For example, the USGS conducts hazard analyses, using seismic networks, to formulate earthquake probabilities that are used by local officials to establish building codes. The USGS monitors volcanoes and provides warnings about impending eruptions that are used by aviation officials to prevent planes from flying into volcanic ash clouds. Data from the USGS network of streamgages are used by the National Weather Service to issue flood and drought warnings. The USGS and its federal partners monitor seasonal wildfires and provide maps of current fire locations and the potential spread of fires that are used by local officials and firefighters. In short, in domestic and global events, emergency managers and public officials rely on the USGS to inform them of risks and hazards posed to human and natural systems.

Mapping and Assessing Mineral and Energy Resources

The USGS assessments of mineral and energy resources – including rare earth elements, coal, oil, unconventional natural gas, and geothermal – are essential for making decisions about the nation’s energy and technology future. The USGS identifies the location and quantity of domestic mineral and energy resources and assesses the economic and environmental effects of resource extraction and use. The USGS also maps domestic supplies of rare earth elements to be used in new energy technologies, which can reduce dependence on foreign oil sources. The USGS is the sole federal source of information on mineral potential, production, and consumption of around 100 selected mineral commodities for approximately 180 countries.⁴

Supporting and Informing Land Management

The USGS plays a critical role in informing sound management of natural resources on federal and state lands. The USGS conducts research and monitoring of fish, wildlife, and vegetation – data that informs management decisions by other Department of Interior bureaus regarding protected species and land use. Ecosystems research is also used to control invasive species and wildlife diseases that would otherwise cause billions of dollars in economic losses. The USGS provides information for resource managers as they develop strategies for restoration and long-term use of the nation’s natural resources in the face of environmental change.

Collecting and Assessing Data

Research and data collected by the USGS is vital to predicting the impacts of land use and climate change on water resources, wildfires, and ecosystems. For nearly 50 years, Landsat

³ Jaiswal, K., Bausch, D., Rozelle, J., Holub, J., and McGowan, S., April 2017, Hazus Estimated Annualized Earthquake Losses for the United States: FEMA P-366, <https://www.fema.gov/media-library/assets/documents/132305>.

⁴ See Program History of USGS’s Mineral Resources Program, <https://www.usgs.gov/energy-and-minerals/mineral-resources-program/about/program-history>.

satellites—co-managed by USGS and NASA—have collected the largest archive of remotely sensed land data in the world, allowing for access to current and historical images that are used to assess the impact of natural disasters on communities and the environment and monitor global agriculture production. Landsat imagery, which has been available to the public at no cost since 2008, provided an estimated \$3.45 billion in benefits to its users in 2017.⁵ The consistency of data sets like those provided by Landsat is vital for advances in science, more efficient natural resource management, and profitable applications of data in commerce and industry.

Developing and Providing Mapping for the Nation

The USGS utilizes unique technologies that enable the nationwide collection of accurate terrain information used by businesses, water managers and emergency responders. In particular, leveraging funds from the private sector and other federal agencies, the USGS provides modernized, high-resolution topographic maps through their 3D Elevation Program (3DEP). The initiative provides open-access elevation data to support cutting edge resource management and energy projects, from better flood-inundation maps, to cost-effective precision farming, and renewable energy project development.

Maintaining and Evaluating Public Health

The USGS helps to maintain public health at the local, state, and national level by monitoring changes in ecosystem and environmental health and evaluating human susceptibility to contaminants, pathogens, and environmental disease. This unique perspective into the intersection between the physical environment, living environment, and human allows the USGS to provide valuable insight regarding public health concerns. For example, the agency assesses negative health effects caused by the dispersion of contaminants after natural and man-made disasters, such as hurricanes and oil spills. In one such instance, after Hurricane Sandy, the USGS provided soil, water, and sediment information to public health agencies to help them protect citizens from toxic contaminants.

Engaging the Next Generation of Scientists

The USGS offers various programs and tools to help educate students and prepare them for careers in science. For example, the Youth and Education in Science (YES) office coordinates internal funding and internship programs including graduate internships, tools for the classroom for K-12 teachers, and [work-transition programs](#) for young adults with cognitive disabilities. Programs, such as the USGS's [Cooperative Research Units \(CRU\)](#), provide under-represented undergraduate students in 38 states with mentoring and hands-on experience designed as a pathway to Department Of Interior recruitment. Since 2015, 670 students have graduated through the program.

Funding

Over the years, Congress has worked in a bipartisan fashion to provide essential funding to

⁵ Straub, C.L., Koontz, S.R., and Loomis, J.B., 2019, Economic valuation of Landsat imagery: U.S. Geological Survey Open-File Report 2019-1112, 13 p., <https://doi.org/10.3133/ofr20191112>.

support the USGS's critical work. The funding has paid real-world dividends in the U.S.'s ability to plan for and respond to natural disasters, as well as our ability to use scientific data to access vital natural resources for our nation's economic growth. The Administration's proposed USGS budget would make dramatic and harmful cuts and eliminate several essential mission areas. The Land Resources mission area would be eliminated entirely, and the Climate Adaptation Science Centers would be decentralized, making a response to the scientific needs of state partners and other stakeholders more difficult. The Natural Hazards Mission Area would receive a \$32 million cut, including reducing funding by two-thirds for earthquake and early warning systems, as well as all support for new seismic stations in Alaska and other existing seismic networks.

Taken together, these cuts would hobble the ability of the USGS to carry out critical research and monitoring, predict and prepare for natural disasters, and implement initiatives that will help us prepare for the future.

Conclusion

AGU was very pleased to see that the USGS received a 9.6% funding increase in the FY20 Omnibus. We appreciate that Congress understands the significant value the agency's work provides to society, especially since, historically, the USGS has been underfunded and strained by a large workload and too few resources. As we face unprecedented societal challenges, such as demand for limited energy, vulnerability to natural hazards, and the need for clean water, continued substantial funding increases are needed for USGS to maximize support for the nation's economic, environmental, and national security.

AGU respectfully requests that Congress appropriate \$1.35 billion for the USGS in FY21. We appreciate the opportunity to submit this testimony to the Subcommittee and thank you for your thoughtful consideration of our request.