Testimony of the

Geological Society of America

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Regarding the

U.S. Geological Survey

FY 2014 Budget

To the

U.S. House of Representatives

Committee on Appropriations
Subcommittee on Interior Environment, and Related Agencies

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Summary

The Geological Society of America (GSA) urges Congress to at least restore the FY 2012 appropriation for the U.S. Geological Survey (USGS) in FY14. As one of our Nation's key science agencies, the USGS plays a vital role in understanding and documenting mineral and energy resources that underpin economic growth worldwide; researching and monitoring potential natural hazards that can undermine US and international security; and determining and assessing water availability and quality necessary for society. Despite the critical role played by the USGS, funding for the Survey has stagnated in real dollars for more than a decade. The cuts from sequestration in an agency already operating in a constrained environment are decreasing this agency's ability to monitor and assess resources upon which our society depends. Given the importance of the many activities of the Survey that protect lives and property for natural hazards, stimulate innovations that fuel the economy, provide national security, and enhance the quality of life, the Geological Society of America believes sustained, steady growth in federal funding for the Survey is necessary for the well being of our Nation.

The Geological Society of America, founded in 1888, is a scientific society with over 25,000 members from academia, government, and industry in all 50 states and more than 90 countries. Through its meetings, publications, and programs, GSA advances the geosciences, enhances the professional growth of its members, and promotes the geosciences in the service of humankind. GSA encourages cooperative research among earth, life, planetary, and social scientists, fosters public dialogue on geoscience issues, and supports all levels of earth science education.

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U.S. Geological Survey Contributions to National Security, Health, and Welfare

The USGS is one of the nation's premier science agencies. Approximately seventy percent of the USGS budget is allocated for research and development. In addition to underpinning the science activities of the Department of the Interior, this research is used by communities across the nation in land use planning, emergency response, natural resource management, engineering, and education. USGS research addresses many of society's greatest challenges for national security, health, and welfare, including natural hazards, mineral and energy resources, climate change, and water availability and quality.

- Natural hazards – including earthquakes, tsunamis, volcanic eruptions, wildfires, and hurricanes – are a major cause of fatalities and economic losses world-wide. Recent natural disasters provide unmistakable evidence that the United States remains vulnerable to staggering losses. 2011 was a record year for natural disasters in the United States, with 12 separate billion dollar weather/climate disasters. The combined historic and recent geologic records demonstrate that areas in the United States will continue to experience major earthquake and/or volcanic activity in the future. An improved scientific understanding of geologic hazards will reduce future losses through better forecasts of their occurrence and magnitude, and allow for better planning and mitigation in these areas. GSA urges Congress to support efforts for USGS to modernize and upgrade its natural hazards monitoring and warning systems to protect communities from the devastating personal and economic effects of natural disasters.

- Energy and mineral resources are critical to national security and economic growth. Improved scientific understanding of these resources will allow for their more economic and environmental management and utilization. The USGS is the sole federal information source on mineral potential, production, and consumption. USGS assessments of mineral and energy resources are essential for making informed decisions about the nation's future. GSA is greatly concerned about recent cuts in mineral resources and their effect on the ability of our nation to safely develop new resources.

- Many emerging energy technologies – such as wind turbines and solar cells – depend on rare earth elements and critical minerals that currently lack diversified sources of supply. China accounts for 95 percent of world production of rare earth elements (USGS, 2010). USGS research will play a lead role in helping ease our dependence on these foreign sources.

- The devastating droughts in 2012 reminded us of our dependence on water. The availability and quality of surface water and groundwater are vital to the well being of both society and ecosystems. Greater scientific understanding of these resources is necessary to ensure adequate and safe water resources for the health and welfare of society.

- USGS research on climate impacts is used by the Department of the Interior and local policymakers and resource managers to make sound decisions based on the best possible science. The Climate Science Centers, for example, provide scientific information necessary to anticipate, monitor, and adapt to climate change's effects at regional and local levels, ranging from sea level rise and extreme weather events to the impact of climate change on wildfires to effects on agriculture.

- The Landsat satellites have amassed the largest archive of remotely sensed land data in the world, a tremendously important resource for natural resource exploration, land use planning, and assessing water resources, the impacts of natural disasters, and global agriculture production. The successful launch of Landsat 8 is an important step to continue to provide these resources. GSA supports interagency efforts to examine a path forward for multi-program support of Landsat.

Research in Earth science is fundamental to training and educating the next generation of Earth science professionals. The United States faces a looming shortage of qualified workers in these areas that are critical for national security. We are very concerned that cuts in earth science funding will cause students and young professionals to leave the field, potentially leading to a lost generation of professionals in areas that are already facing worker shortages. Investments in these areas could lead to job growth, as demand for these professionals now and in the future is assessed to be high.

A 2013 report by the National Research Council, *Emerging Workforce Trends in the Energy and Mining Industries: A Call to Action*, found, "Energy and mineral resources are essential for the nation's fundamental functions, its economy, and its security… In mining (nonfuel and coal) a personnel crisis for professionals and workers is pending and it already exists for faculty."

Another recent study, *Status of the Geoscience Workforce 2011*, by the American Geosciences Institute found: "The supply of newly trained geoscientists falls short of geoscience workforce demand and replacement needs. …aggregate job projections are expected to increase by 35 percent between 2008 and 2018….The majority of geoscientists in the workforce are within 15 years of retirement age. By 2030, the unmet demand for geoscientists in the petroleum industry will be approximately 13,000 workers for the conservative demand industry estimate."

Science and technology are engines of economic prosperity, environmental quality, and national security. Federal investments in research pay substantial dividends. According to the National Academies' report *Rising Above the Gathering Storm* (2007), "Economic studies conducted even before the information-technology revolution have shown that as much as 85% of measured growth in US income per capita was due to technological change." Likewise, the National Commission on Fiscal Responsibility and Reform, headed by Erskine Bowles and Alan Simpson, said: "We must invest in education, infrastructure, and high-value research and development to help our economy grow, keep us globally competitive, and make it easier for businesses to create jobs." Earth science is a critical component of the overall science and technology enterprise. Growing support for Earth science in general and the U.S. Geological Survey in particular are required to stimulate innovations that fuel the economy, provide security, and enhance the quality of life.

Thank you for the opportunity to provide testimony about the U.S. Geological Survey. For additional information or to learn more about the Geological Society of America – including GSA Position Statements on water resources, mineral and energy resources, natural hazards, and public investment in Earth science research – please visit www.geosociety.org or contact Kasey White at kwhite@geosociety.org.