Testimony of the

Geological Society of America

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Regarding the

U.S. Geological Survey

FY 2013 Budget Proposal

To the

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Committee on Appropriations
Subcommittee on Interior Environment, and Related Agencies

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Summary

The Geological Society of America (GSA) urges Congress to fully fund the FY 2013 request for the U.S. Geological Survey (USGS) and restore cuts in the request to key programs. The USGS is one of the nation's premier science agencies. It addresses many of society's greatest challenges, including mineral and energy resources, natural hazards, climate change, and water availability and quality. Despite this critical role, funding for the USGS has stagnated in real dollars for more than a decade.

The Geological Society of America supports strong and growing budgets for the U.S. Geological Survey and thanks the committee for its support of USGS. Increased federal funding for Earth science is needed to protect lives and property for natural hazards, stimulate innovations that fuel the economy, provide national security, and enhance the quality of life. Approximately three quarters of the USGS budget is allocated for R&D, as its research underpins the activities of the Department of the Interior and communities across the 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.

Broader Impacts of the U.S. Geological Survey

The USGS is one of the nation's premier science agencies. Approximately three quarters of the USGS budget is allocated for research and development. In addition to underpinning the activities of the Department of the Interior, this research is used by communities across the nation. Through its offices and partnership across the country, the USGS data and resources are utilized by policymakers, emergency responders, natural resource managers, engineers, educators, and the public. USGS research addresses many of society's greatest challenges, including natural hazards, mineral and energy resources, climate change, and water availability and quality.

- Natural hazards – including earthquakes, tsunamis, volcanic eruptions, floods, droughts, wildfires, and hurricanes – remain a major cause of fatalities and economic losses world-wide. A failure to prevent natural hazards from becoming natural disasters will increase future expenditures for disaster response and recovery. 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 in 2011, with an aggregate damage total of approximately $52 billion. This record year breaks the previous record of nine billion-dollar weather/climate disasters in one year, which occurred in 2008. 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. We urge Congress to increase funding for the USGS to modernize and upgrade its natural hazards monitoring and warning systems and support the increases for early warning in the budget request.

- Energy and mineral resources are critical to the functioning of society and to national security and have positive impacts on local, national, and international economies. Improved scientific understanding of these resources will allow for their better management and utilization, while at the same time address economic and environmental issues. The USGS is the sole federal information source on mineral potential, production, and consumption. USGS assessments of mineral and energy resources – including rare earth elements, unconventional natural gas resources, and geothermal resources – are essential for making informed decisions about the nation's future. 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 although it has only 36 percent of identified world reserves (USGS, 2010). The increases proposed for rare earth research USGS will help ease our dependence on these foreign sources.

- Improved understanding of geologic processes in Earth's history can increase confidence in the ability to predict future states and enhance the prospects for mitigating or reversing adverse impacts to the planet and its inhabitants. In addition, USGS research on climate impacts is used by the Department of the Interior and local partners to make informed decisions.

- The devastating droughts in 2011 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—and communication of new insights by geoscientists in formats useful to decision makers—is necessary to ensure adequate and safe water resources for the future. The establishment of a National Groundwater Monitoring Network will expand our understanding of this critical resource.

- Research in Earth science is also fundamental to training and educating the next generation of Earth science professionals. A 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. According to the U.S. Bureau of Labor Statistics there were a total of 262,627 U.S. geoscientist jobs in 2008, and in 2018, the projected number of U.S. geoscientist jobs will be 322,683, a 23 percent increase. These projections do not include replacements due to attrition. Given the age demographics of the geoscience discipline, we expect a 12 percent replacement rate for attrition. With this adjustment, 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. Even in oil and gas companies, which typically offer the highest salaries of all geoscience employing industries, the supply of new geoscientists is short of replacement needs. 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. Earth Science provides knowledge and data essential for developing policies, legislation, and regulations regarding land, mineral, energy, and water resources at all levels of government.

- GSA supports the efforts of USGS, NASA, NOAA and OSTP to examine a future path forward for the Landsat satellites that maintains funding for other key programs within USGS. The Landsat satellites have collected the largest archive of remotely sensed land data in the world, an important resource for natural resource exploration, land use planning, and assessing water resources, the impacts of natural disasters, and global agriculture production. GSA thanks the committee for its insight that the future Landsat mission would overwhelm the USGS budget request and your support for studies to develop a path forward for this important program.

Budget Shortfalls

GSA supports the FY 2013 budget request for the U.S. Geological Survey and the increases provided for key areas such as hydraulic fracturing research, early earthquake warning, establishing a National Groundwater Monitoring Network, and invasive species research. However, we are concerned about cuts in some programs and ask that these areas be restored. Some proposed cuts of concern in the budget request include:

- $6.5 million for Water Resources Research Act Program
- $6.0 million for National Water Quality Assessment Methods Development and Monitoring
- $5.0 million for Cooperative Water Program Interpretive Studies
- $5.0 million for Mineral Resources Program.
- $3.3 million for Hydrologic Networks and Analysis Information Management and Delivery
- $2.0 million for Toxic Substances Hydrology Methods Development and Assessments

We urge Congress to support the FY 2013 budget request and restore these and other detrimental cuts. We recognize the financial challenges facing the nation, but losing irreplaceable data can increase costs to society in the long term.

Thank you for the opportunity to provide testimony about the U.S. Geological Survey. The Geological Society of America is grateful to House Appropriations Subcommittee on Interior, Environment, and Related Agencies for its leadership in strengthening the U.S. Geological Survey over many years. For additional information or to learn more about the Geological Society of America – including GSA Position Statements on water resources, mineral and energy resources, climate change, natural hazards, and public investment in Earth science research – please visit www.geosociety.org or contact Kasey White at kwhite@geosociety.org.