Testimony of the

Geological Society of America

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Regarding the

U.S. Geological Survey

FY 2012 Budget Proposal

To the

U.S. House of Representatives

Committee on Appropriations
Subcommittee on Interior Environment, and Related Agencies

April 15, 2011

Summary

The Geological Society of America (GSA) urges Congress to appropriate at least $1.2 billion for the U.S. Geological Survey (USGS) in fiscal year 2012. 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. The USGS benefits every American every day. The magnitude 9.0 earthquake and tsunami that devastated Japan on March 11, 2011 emphatically demonstrates the value of robust natural hazards monitoring and warning systems and the need for increased funding for the USGS. Nevertheless, 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. Increased federal funding for Earth science is needed to stimulate innovations that fuel the economy, provide national security, and enhance the quality of life. The USGS has a unique combination of expertise and assets that enable it to address interdisciplinary research challenges that are beyond the capabilities of most other organizations.

The Geological Society of America, founded in 1888, is a scientific society with over 24,000 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.

Rationale

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." In 2010, the National Academies issued an updated report, *Above the Gathering Storm, Revisited*, which says:

> It would be impossible not to recognize the great difficulty of carrying out the *Gathering Storm* recommendations, such as doubling the research budget, in today's fiscal environment…with worthy demand after worthy demand confronting budgetary realities. However, it is emphasized that actions such as doubling the research budget are investments that will need to be made if the nation is to maintain the economic strength to provide for its citizens healthcare, social security, national security, and more. One seemingly relevant analogy is that a non-solution to making an over-weight aircraft flight-worthy is to remove an engine.

Likewise, the National Commission on Fiscal Responsibility and Reform, headed by Erskine Bowles and Alan Simpson, said:

> Cut and invest to promote economic growth and keep America competitive. We should cut red tape and unproductive government spending that hinders job creation and growth. At the same time, 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.

Advancing Science and Scientific Integrity at the Department of the Interior

Science and scientific integrity advanced through the combination of two recent developments at the U.S. Department of the Interior. Secretary of the Interior Ken Salazar issued a new five-year strategic plan that for the first time elevates science to one of five mission areas for the entire department. The Interior Department also adopted a comprehensive scientific integrity policy that sets clear expectations for all employees, including political appointees, public affairs officers, and scientists. These developments are cause for optimism. GSA expects that the elevation of science to a mission area will guide investments and the allocation of resources that are reflected in the budget for the U.S. Geological Survey.

Broader Impacts of the U.S. Geological Survey

The USGS is one of the nation's premier science agencies. It 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. The magnitude 9.0 earthquake and tsunami that devastated Japan on March 11, 2011, the magnitude 7.0 earthquake that killed more than 200,000 people in Haiti on January 12, 2010, and the small volcanic eruptions in Iceland that disrupted global air traffic in April 2011, provide compelling evidence that the United States needs better data to inform further actions to reduce risks from natural hazards. An improved scientific understanding of geologic hazards will reduce future losses through better forecasts of their occurrence and magnitude. We urge Congress to increase funding for the USGS to modernize and upgrade its natural hazards monitoring and warning systems.

- 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 and quality of life. Improved scientific understanding of these resources will allow for their better management and utilization, while at the same time address economic and environmental issues. 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. Widespread deployment of new energy technologies can reduce greenhouse gas emissions, mitigate climate change, and reduce dependence on foreign oil. Minerals and energy are intertwined because 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). A renewed federal commitment to innovative research, information, and education on mineral and energy resources is needed to address these issues.

- Forecasting the outcomes of human interactions with Earth's natural systems, including climate change, is limited by an incomplete understanding of geologic and environmental processes. Improved understanding of these 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.

- 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 critical 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.

- Research in Earth science is also fundamental to training and educating the next generation of Earth science professionals.

Budget Shortfalls

President Obama's FY 2012 budget request for the U.S. Geological Survey is $1.118 billion, a decrease of $15 million or 1.3 percent below the USGS budget request for FY 2011. Although there is a $6 million or 0.5% increase in the total USGS budget request for FY 2012 compared to the FY 2010 enacted level, the FY 2012 budget request contains $89.1 million in budget cuts in core science programs that would be offset by increases in other areas, including a $48 million increase in a new account for National Land Imaging. The proposed budget cuts would have significant negative impacts on the scientific capabilities of the USGS. Proposed reductions in the FY 2012 USGS budget request include -$9.8 million for Biological Information Management and Delivery, -$9.6 million for Mineral Resources, -$8.9 million for National Water Quality Assessment, -$6.5 million for Water Resources Research Act Program, and -$4.7 million for Earthquake Hazards. The Geological Society of America urges Congress to appropriate at least $1.2 billion for the USGS in FY 2012.

It appears that responsibilities for Landsat satellites have been transferred from NASA to USGS without a corresponding transfer of budget authority. In the USGS budget request for FY 2012, a $48 million increase for National Land Imaging would be offset by budget decreases for core USGS science programs. This trend cannot continue without compromising the mission of the U.S. Geological Survey. Experience with other satellites indicates that the cost of operating Landsat is likely to rise significantly in future years with the launch of Landsat 8, 9, and 10.

The USGS budget has been nearly stagnant in real dollars since 1996. The USGS budget for FY 2010 was below the USGS budget for FY 2001 in real dollars. The decline in funding for the USGS during this time period would have been greater if Congress had not repeatedly restored proposed budget cuts. Federal funding for non-defense R&D has increased significantly while funding for the USGS stagnated for more than a decade. During this time, natural hazards, mineral and energy resources, and water availability and quality have become increasing important to the nation.

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 Dr. Craig Schiffries at cschiffries@geosociety.org.