Testimony of the

Geological Society of America

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Regarding the

U.S. Geological Survey

FY 2015 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 fully fund the FY 2015 request for the U.S. Geological Survey (USGS). 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; researching and monitoring potential natural hazards that threaten U.S. and international security; and determining and assessing water quality and availability - keys to a healthy and prosperous society. Approximately two thirds of the USGS budget is allocated for research and development. In addition to underpinning the science activities and decisions of the Department of the Interior, this research is used by communities across the nation to make informed decisions in land use planning, emergency response, natural resource management, engineering, and education. Despite the critical role played by the USGS, funding for the Survey has stagnated in real dollars for more than a decade and the request is still below FY 2010. Given the importance of the many activities of the Survey that protect lives and property, stimulate innovations that fuel the economy, provide national security, and enhance the quality of life, GSA believes that balanced growth in federal funding for the Survey is necessary for the future of our Nation.

The Geological Society of America, founded in 1888, is a scientific society with over 26,000 members from academia, government, and industry in all 50 states and more than 100 countries. Through its meetings, publications, and programs, GSA enhances the professional growth of its members and promotes the geosciences in the service of humankind.

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

The USGS is one of the nation's premier science agencies. Approximately two thirds of the USGS budget is allocated for research and development. In addition to underpinning the science activities and decisions of the Department of the Interior, this research is used by communities across the nation to make informed decisions 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. Several are highlighted below.

- Natural hazards – including earthquakes, tsunamis, volcanic eruptions, wildfires, and landslides – are a major cause of fatalities and economic losses. Recent natural disasters, including the landslide in Washington and recent California earthquakes, provide unmistakable evidence that the United States remains vulnerable to staggering losses. The combined historic and recent geologic records demonstrate that areas in the United States will continue to experience major earthquake, landslide, 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. GSA is concerned about cuts to this important program in the request.

- 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." Improved scientific understanding of these resources will allow for their more economic and environmental management and utilization. Nevertheless, federal programs in minerals science, research, information, data collection and analysis have been severely weakened. Funding for the USGS Mineral Resources Program, the only primary source for minerals science and information, has been cut by 30% in constant dollar terms over the last decade, reducing its ability to provide critical information on mineral potential, production, and consumption that is used for decisionmaking across the federal government and by a range of businesses and industries.

- 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 ongoing water crisis in California and elsewhere is a testament to 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 through monitoring and research 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.

- 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. Last year's successful launch of Landsat 8 is an important step to continue to provide these resources. GSA supports interagency efforts to plan a path forward for future 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.

The report *Emerging Workforce Trends in the Energy and Mining Industries: A Call to Action*, found, "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. 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.

As the National Science Board's recent *2014 Science & Engineering Indicators* reports, America's share of the world's R&D fell from 37 percent to 30 percent from 2001 and 2012. As other nations have been increasing their support for long-term, high-risk research, we have been allowing ours to stagnate or decline. We must reverse that trend and tackle our mounting innovation deficit if we want to retain our global economic leadership.

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.