

Statement of
Dr. Marcia K. McNutt, Director
U.S. Geological Survey
Department of the Interior
before the
Committee on Natural Resources,
Subcommittee on Energy and Mineral Resources
U.S. House of Representatives
March 22, 2012

Good morning, Mr. Chairman and Members of the Subcommittee. Thank you for the opportunity to appear before you today to discuss the Administration's 2013 budget request for the U.S. Geological Survey (USGS).

Recognizing constrained fiscal resources, the 2013 USGS budget reflects careful investments in priority science to support a robust and growing economy and a strong and resilient Nation. The proposal addresses key science issues while maintaining a strong commitment to the USGS mission and its core science functions to provide geologic, hydrologic, and topographic information that contributes to the wise management of the Nation's natural resources and promotes the health, safety, and well-being of the people.

Investments in research and development (R&D) promote economic growth and innovation. R&D is at the core of the USGS mission and fuels advancement in areas such as preparing for natural disasters and understanding the U.S. energy and mineral resource endowment. As the Nation's largest water, Earth, and biological science and civilian mapping agency, the USGS collects and analyzes data about natural resource conditions, issues, and challenges in support of its mission: to provide reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect the quality of life. The 2013 budget request for the USGS supports this continued legacy of world-class science to support decisionmaking.

USGS scientists and technicians responded to a number of natural hazard events throughout 2011, including damaging earthquakes in Japan, New Zealand, and Virginia and earthquake sequences in Colorado, Arkansas, Oklahoma, and Ohio. USGS hydrologists responded to historic flooding on the Mississippi and Missouri Rivers, as well as devastating floods in the Northeast caused by Hurricane Irene. As new record levels were set on rivers and streams, USGS information helped other Federal agencies and State and local governments manage dams, levees, and spillways and make informed decisions to minimize flood damage to communities. Globally, 2011 was the costliest year in history for natural disasters. In the United States, losses due to natural disasters are in the billions of dollars each year. USGS science supports efforts to minimize losses to life and property associated with such hazards.

Turning from natural hazards to natural resources, in August 2011 the USGS released its new assessment of gas resources in the Marcellus Shale in the Appalachian Basin, estimating about 84 trillion cubic feet of undiscovered, technically recoverable natural gas and 3.4 billion barrels

of undiscovered, technically recoverable natural gas liquids. These estimates are significantly greater than the estimates of the last assessment released in 2002, owing to the availability of new geologic information and engineering data. Technological improvements have led to rapid growth in commercial gas production, particularly in the oldest producing petroleum province in the United States, the Appalachian Basin. Similar technological advances have led to the current USGS effort to reassess oil resources in the Bakken Formation of North Dakota and Montana, which is an important component of the recent increase in domestic oil production. The USGS is the only provider of publicly available estimates of domestic and global undiscovered, technically recoverable oil and gas resources, exclusive of the U.S. Federal offshore. It is critical to understand the occurrence, distribution, technical viability, and quality of the resource to know what potential future reserves are available, both domestically and globally.

These accomplishments depend on the creative intelligence of thousands of dedicated scientists. A number of USGS scientists were honored in 2011 for their contributions to the Nation; in this statement, I would just like to mention four who demonstrate the breadth and depth of talent to be found at the USGS. Three scientists received the Presidential Early Career Award for Scientists and Engineers: geophysicist Dr. Elizabeth Cochran, research ecologist Dr. Sasha Reed, and research geophysicist Dr. David Shelly. Hydrologist Dr. Paul Hsieh, a USGS employee for more than 33 years, was recognized as the 2011 Federal Employee of the Year.

The 2013 budget request for the USGS is \$1.1 billion, an increase of \$34.5 million from the 2012 enacted level. The budget includes \$73.2 million in targeted increases that are offset by \$49.5 million in targeted decreases. Fixed costs to address the 0.5 percent pay raise, GSA rent increases, and IT transformation are funded collectively at \$10.8 million. This request represents a 3.2 percent increase above the 2012 enacted level and supports a balanced science investment portfolio that is essential to a healthy science agency and a strong and resilient Nation. To address the President's priority on fiscal responsibility, the USGS 2013 budget request balances investments in monitoring, research, and assessments with targeted program reductions while maintaining the diverse expertise necessary to respond to evolving science needs. The 2013 budget request for the USGS represents the Administration's commitment to supporting science for decisionmaking.

In November 2011, President Obama issued an Executive Order reinforcing ongoing performance and management reforms and the achievement of efficiencies and cost-cutting across the government. This Executive Order identified specific savings as part of the Administration's Campaign to Cut Waste to achieve a 20 percent reduction in administrative spending from 2010 to 2013. In response to this Executive Order, the USGS is working to reduce its facilities footprint, cut travel costs, and reduce the size of its vehicle fleet.

Budget Highlights

The 2013 budget request for the USGS includes increases in a number of priority areas. The funding request to address issues associated with hydraulic fracturing is \$18.6 million, which is a \$13.0 million increase over the 2012 budget. The proposed increase supports USGS science as part of a larger \$45 million interagency research and development effort between the USGS, the Department of Energy, and the U.S. Environmental Protection Agency. The goal of this effort is

to address the highest priority challenges associated with safely and prudently developing unconventional natural gas resources, by better understanding and minimizing potential environmental, health, and safety impacts of hydraulic fracturing. The proposed budget increase in 2013 will support priority research in a number of areas, including

- Characterization of the gas resource and related geologic framework;
- Water supply and water quality;
- Impacts on landscapes, habitats, and living resources;
- Induced seismicity and earthquake triggering;
- Air emissions and pollutants; and
- Comprehensive data integration.

Recent events have increased expectations for the USGS to provide rapid, robust information in response to natural disasters. In 2013, the USGS proposes to expand and enhance its science efforts for rapid response to natural disasters such as earthquakes, volcanic ash eruptions, and floods with an increase of \$8.6 million over 2012 to expand science and monitoring efforts. The Rapid Disaster Response initiative proposed in this budget request would leverage substantial investments in earthquake and volcano monitoring made through the American Recovery and Reinvestment Act (ARRA), which resulted in significant progress toward the replacement of older earthquake-monitoring stations and the upgrading of communications and data centers in 2010 and 2011. Combined with the ARRA network upgrades and ARRA-funded seismic and geodetic monitoring investments being made in 2010-2012 by the National Science Foundation (NSF), USGS capabilities for monitoring earthquakes have been significantly improved, especially in the Pacific Northwest, and the groundwork has been laid for development of a prototype earthquake early warning system in California being developed in partnership with the University of California-Berkeley, California Institute of Technology (Caltech), and University of Washington-Seattle. Investments proposed for 2013 include

- telecommunications improvements, so that warnings can be delivered more quickly; tele
- a partnership with social scientists to understand how to best communicate technical information to support emergency managers and other decisionmakers as they respond to earthquake activity; a
- expanded development of real-time ash-fall modeling, and a more comprehensive database of ash-fall deposits in the Western United States; exp
- expansion of the Southern California debris-flow warning system to northern California and southern Oregon, in partnership with NOAA's National Weather Service; and exp
- focused research on East Coast earthquakes, in the wake of the magnitude 5.8 Virginia earthquake in August 2011, which was felt by approximately 30 million people in 20 States, shut down a nuclear power plant for several months, and resulted in more than \$100 million in property damage. foc

The 2013 budget request includes \$65.5 million, a \$16.2 million increase from 2012, for monitoring, research, and development to support ecosystem management and restoration in priority ecosystems, including the Chesapeake Bay, the California Bay Delta, the Columbia River, the Everglades, the Klamath River, and the Upper Mississippi River. The increase also includes funding to address ecosystem science needs related to Asian carp control and prevention in the Great Lakes and the Upper Mississippi River Basin and provides funding to apply land-use science, build data and information access and decision tools, and engage Tribes in ecosystem challenges related to climate change. Another \$2.0 million is requested to expand research efforts on brown tree snakes, coral reefs, and white-nose syndrome in bats – an emerging wildlife disease in the United States that is devastating bat populations and putting at risk the pest control services provided by native bats, which save the U.S. agricultural industry at least \$3 billion a year.

Growing coastal populations and increased demand for energy development and resource use in coastal areas require information that helps communities make wise decisions. The 2013 budget includes an increase of \$6.8 million over 2012 that will allow the USGS to expand its efforts in support of coastal and ocean stewardship and the National Ocean Policy. The USGS will expand efforts in regions where coastal and marine science and management objectives intersect with Interior's responsibilities for energy resource development, adaption to climate change, ecosystem sustainability, and resilience of vulnerable native and indigenous communities.

Summary by Budget Activity

The 2013 budget includes a total of \$177.9 million for the Ecosystems Mission Area. The request includes increases across all mission area programs to support research and development efforts focused on ecosystem priorities such as the California Bay-Delta, the Chesapeake Bay, the Columbia River, the Everglades, the Klamath Basin, and Puget Sound.

The Climate and Land Use Change budget activity request totals \$153.7 million and includes increases in funding for Science Support for DOI Bureaus, research and development that enhance resource management, and funding to support the Northwest and Northeast DOI Climate Science Centers to work closely with tribal partners to identify key resource management science needs in the Columbia River and Great Lakes ecosystems, respectively. Funding is also provided that will allow the USGS to better assess the causes and consequences of land-cover change.

In 2013, the total request for Energy, Minerals, and Environmental Health is \$97.1 million, to support programs that conduct research and assessments on the location, quantity, and quality of the Nation's and world's mineral and energy resources. Programs within this activity also conduct research on environmental impacts of human activities that introduce chemical and pathogenic contaminants into the environment and threaten human, animal (fish and wildlife), and ecological health. Recognizing fiscal constraints, difficult choices resulted in targeted reductions of the mineral resources program to support priorities such as research on rare-earth elements, as well as advancing priorities elsewhere in the budget request. An overall decrease to the mineral resources program is offset by an increase of \$1.0 million to enhance

research and assessments for rare-earth elements [REE], resulting in a net decrease to the program of \$4.25 million.

The total requested funding level for Natural Hazards in 2013 is \$144.8 million or \$10.3 million above the 2012 enacted level, which will allow the USGS to strengthen its natural hazards research and assessment capabilities to improve disaster response and to better understand hazard risk.

In 2013, the total budget request for Core Science Systems is \$120.4 million. This includes increases in each of the Core Science Systems programs to support administration priorities such as Science for Coastal and Ocean Stewardship, Hydraulic Fracturing, and Ecosystem Priorities. Increases are focused on research, synthesis, and analysis of information and data; development of information access and decision tools; the creation of geologic maps; and a synthesis of available science on hydraulic fracturing through the John Wesley Powell Center. This request also reflects an internal transfer of funds from Administration and Enterprise Information, which realigns program and activities to best reflect the mission of the Science Synthesis, Analysis, and Research Program.

The total funding level for Administration and Enterprise Information in 2013 is requested at \$99.1 million and reflects a net program reduction of \$3.7 million in addition to the internal transfer to Core Science Systems mentioned previously.

The 2013 total budget request for Facilities is \$99.7 million to provide a safe, functional workspace for accomplishing the bureau's scientific mission. Resources support basic facility operations, security costs, and facility maintenance in compliance with Federal, State, and local standards.

Conclusion

For more than 125 years, its diversity of scientific expertise has enabled the USGS to carry out large-scale, multi-disciplinary investigations and provide impartial scientific information to resource managers, policymakers, and the public.

The 2013 USGS budget reflects the Administration's commitment to R&D and its support for USGS science as a foundation for resource management decisions, while recognizing constrained fiscal resources. This budget reflects careful and difficult decisions, while balancing USGS research, assessment, and monitoring activities to ensure its continued ability to address a broad array of natural-resource and natural-science issues facing the Nation.

This concludes my statement, Mr. Chairman. I will be happy to answer the questions you and other Members have.