USGS COALITION

Testimony of the USGS Coalition
Elizabeth Duffy, Chair
Regarding the U.S. Geological Survey FY 2022 Budget

To the
House Committee on Appropriations
Subcommittee on Interior, Environment, and Related Agencies
April 16, 2021

The USGS Coalition is writing in support of the Administration's reinvigoration of federal science apparatus, and to recommend an increase in funding to support the critical science programming of the U.S. Geological Survey (USGS) to better enable USGS to fulfill its mission.

As the science agency supporting the Interior Department's eleven bureaus and additional offices, the USGS provides an unparalleled service to the nation. Its activities inform decision makers at all levels of governance on the needs and abilities to utilize natural resources for the betterment of Americans. Other federal agencies like the Federal Emergency Management Agency (FEMA), Department of Defense (DOD), and Department of Energy (DOE) heavily rely on USGS research, data, and products.

In order to help the federal government and partners solve today's most pressing challenges and address administration priorities, our diverse coalition of more than 85 organizations representing scientific associations, universities, businesses, and natural resource managers requests increased funding for the U.S. Geological Survey in Fiscal Year 2022. To fully implement the agency's mission and fulfill the USGS 21st-Century Science Strategy released earlier this year will **require $1.75 billion in annual appropriations**. While we understand this is a substantial increase, we firmly believe the agency needs to reach this funding level during this administration, to ensure that the USGS is able to respond to 21st- century challenges with 21st-century science and technology.

Essential Services to the Nation

A reinvestment in federal and cooperative science programming will allow the nation to face our most pressing challenges head on, including collecting and utilizing data to better adapt to a changing climate, assessing risk of COVID-19 spread to new species, combatting the growing surge of invasive species, and stemming the tide of habitat loss and degradation.

The USGS can help inform many of the transformational opportunities brought on by these societal-level challenges. The ambitious goal of conserving 30% of U.S. lands and waters by 2030 provides the opportunity for USGS researchers to determine metrics for current land use and conservation status, and target high-value habitats for potential inclusion or land use alteration. In alignment with the goals of 30x30, the USGS can also assist in determining the most-pressing natural infrastructure needs of federal and partner lands in order to promote equity in outdoor spaces and appropriate uses of the landscape.

The US Geological Survey is uniquely positioned to inform these responses due to their truly interdisciplinary teams of experts that gather data, conduct research, and develop integrated decision support tools. Through the mission areas outlined below, these professionals work to improve ecosystem management, ensure accurate assessments of our water quality and quantity, reduce risks from natural and human-induced hazards, deliver timely assessments of mineral and energy resources, and provide emergency responders with accurate geospatial data and maps.

Core Science Systems
The Core Science Systems mission area provides the fundamental research and data that underlies all of the USGS mission areas as well as other U.S. Government agencies. The scope of Core Science Systems covers the entire "Critical Zone" that most readily impacts society, from the top of trees to the base of groundwater. The results of these activities also support economic development, environmental management, infrastructure projects, and scientific applications across government and the private sector. Efforts such as 3D Elevation Program (3DEP), Earth Mapping Resources Initiative (MRI), and Subsidence include detailed surveys which develop high quality, highly accurate topographic, geologic, hydrographic, and biogeographic maps. These maps allow precise planning for critical mineral assessments; energy development; infrastructure projects; urban planning; flood prediction; emergency response; and hazard mitigation.

With increased funding, the Core Science Systems mission area and partners could effectively complete production of the 3D Elevation program by its 2023 target date.

Ecosystems
As the Department of the Interior's biological research arm, the Ecosystems mission area includes funding for cooperative science programming that brings federal, state, and university professionals together to solve challenges faced by stakeholders at every level of governance. Current research includes the creation of management tools for public land managers to adapt to climate change, manage forests and rangelands in line with ever-changing fire regimes, and determine distribution models based on available resources for at-risk species. The Ecosystems mission area also provides funding to the **National Wildlife Health Center**, a Survey-wide program that explores the latest trends in wildlife and zoonotic diseases. Recent work includes efforts to understand susceptibility risk to the SARS-CoV-2 virus in species such as mink.

With increased funding, the Ecosystems Mission Area could complete:

- A much needed reinvestment in the infrastructure of the National Wildlife Health Center, estimated to cost an additional $76 million beyond presently appropriated funds.
- A reinvigoration of cooperative science programming, including funds to allow for full staffing and expansion of the Cooperative Fish and Wildlife Research Units program to new states at a funding level of $27 million, and the adoption of new cooperative grant projects through the Climate Adaptation Science Centers at a funding level of $60 million.

Energy and Minerals
The Energy and Minerals mission area identifies the dynamics of the nation's natural resources, from the where and how much to the key information on supply and demand of raw materials. The Earth Mapping Resources Initiative (Earth MRI), created to map the Nation's critical

mineral resources, is led by the Energy and Minerals mission area to enable informed resource management decisions and decrease reliance on imported critical minerals that are important for electronics and renewable energy technology. By knowing the nation's mineral and energy potential, coupled with world-leading intelligence on commodity dynamics, the program is central to securing our nation, supporting economic development, and planning for complex efforts like the energy transition with its need for diverse energy sources and access to key mineral resources.

Natural Hazards

The Natural Hazards mission area is critical in making emergency response decisions. From floods and drought, to warning systems for earthquake and volcano hazards, USGS's products are innovative, reliable, timely, and actionable. Products like flood mapping and deployable stream gages provide crucial data in flood response, detecting water height and bringing attention when infrastructure is at risk of failure. Research conducted by USGS and university partners advances the capabilities of hazard mitigation tools to improve safety and reduce harmful economic impacts.

With increased funding, the Natural Hazards mission area could meet the full operations and maintenance needs of the ShakeAlert Earthquake Early Warning System, estimated to cost an additional $2.9 million.

Water Resources

The Water Resources mission area informs management of freshwater resources–both above and below the land surface–for drinking water, agriculture, commercial, industrial, recreational, and ecological purposes. Within this mission area, the Water Resources Availability and Water Observing Systems provide critical water data and analyses, integrating innovative modelling efforts with the knowledge gained in small, densely monitored river basins. In order to accurately apply the models developed in these small basins to a wider context, actual streamflow measurements are needed. These measurements are supported by the nation's robust network of streamgages, funding for which has been flatlined for many years. A reinvestment in this program will allow the Survey to maintain significant long-term data collection necessary for assessing impacts to water resources brought on by stressors such as climate change. A significant need exists to reinstate the USGS lead for collaboration among Federal, state and local water agencies, non-profit water organizations, the private sector and academia on pressing water science and data issues and mutually-leveraged cost-effective solutions.

With increased funding, the Water Resources mission area could:

- Build out of the Federal Priorities Streamgaging Program as mandated in the SECURE Water Act of 2009 at an estimated cost of $130 million. A portion of the cooperative matching funds that are utilized to operate streamgages across the nation would require an additional $70 million in order to bring the federal cost share back to 50% as envisioned by the program.
- Fully implement the Water Resources Research Act Program to address complex challenges in water research that range from tracking of COVID-19 in wastewater to evaluating impacts of droughts and algal blooms at an estimated cost of $59 million.

Obstacles to Success

While the U.S. Geological Survey has accomplished a tremendous amount with limited funding, including successful federal scientific coordination, there are numerous initiatives that require increased investment to best meet national needs to support conservation, emergency preparedness, resource management, and more. Administrative and political support recognizing the independence and caliber of our nation's scientists, as well as provide scientists and stakeholders access to the breadth of resources produced by the Survey, is required to ensure continued relevance of USGS science. Our coalition appreciates the 3.5 percent increase to USGS in FY 2021, however after years of underinvestment an infusion of funding is needed to fund research to meet the nation's current and future needs, train the emerging scientific workforce, and address the existing maintenance backlog.

Science Support

The past several fiscal years have proved extremely damaging to the underlying operations that support the work of USGS employees. USGS Science Support staff provide human resources, communications and publishing, and scientific oversight in support of the research conducted by USGS. Continued decreases in Science Support funding have come alongside minimal increases in funding for USGS mission areas. This disparity in funding has ripple effects for mission areas trying to use available funds in an allotted fiscal year, further aggravating backlogs in the posting of available jobs, the hiring of new scientists, and the dissemination of data and findings to stakeholders. In order for the USGS to effectively perform and function into the future, Science Support must see funding increases that align with those requested Survey-wide.

Scientific Integrity

Support for scientific integrity policies is critical to advancing national security, a strong economy, public health, and food security. Science that is communicated to the public improves and informs myriad aspects of everyday life, such as: earthquake hazard mapping; hurricane forecasting, tracking and landfall prediction; and assessments of water quality and quantity. These types of scientific information and more need to be publicly available to help farmers, industry, health workers and the general public.

Access to Information - USGS Library

The USGS Library is a core part of the infrastructure of the geoscience profession, which includes energy, minerals, water, the environment, natural hazards and other Earth topics, making access to it critical to national safety and prosperity. The Library houses more than 1.5 million volumes and more than three million maps, photographs and field records, which is timeless and irreplaceable—geological observations do not go out of date even if interpretations change, and more than one-third of this information is unique to the USGS or available from fewer than ten libraries worldwide. Small businesses and consultants in the energy, mining, environmental and engineering sectors are among the most frequent users of the Library's collections. Ensuring long-term funding and support for this vital resource will assist in the longevity of the U.S. natural resource science apparatus.

We thank you for taking the time to review our recommendation of $1.75 billion for the U.S. Geological Survey in FY 2022. The USGS Coalition is happy to answer any questions about this request or the initiatives outlined above. Please feel free to contact Coalition chair Elizabeth Duffy at eduffy@federalaffairs.com.