



# U.S. Geological Survey

## Mission

The U.S. Geological Survey (USGS) monitors, analyzes, and predicts current and evolving Earth-system interactions and delivers actionable science at scales and time frames relevant to decision makers. USGS provides science about natural hazards, energy and mineral resources, ecosystems and environmental health, and water resources.

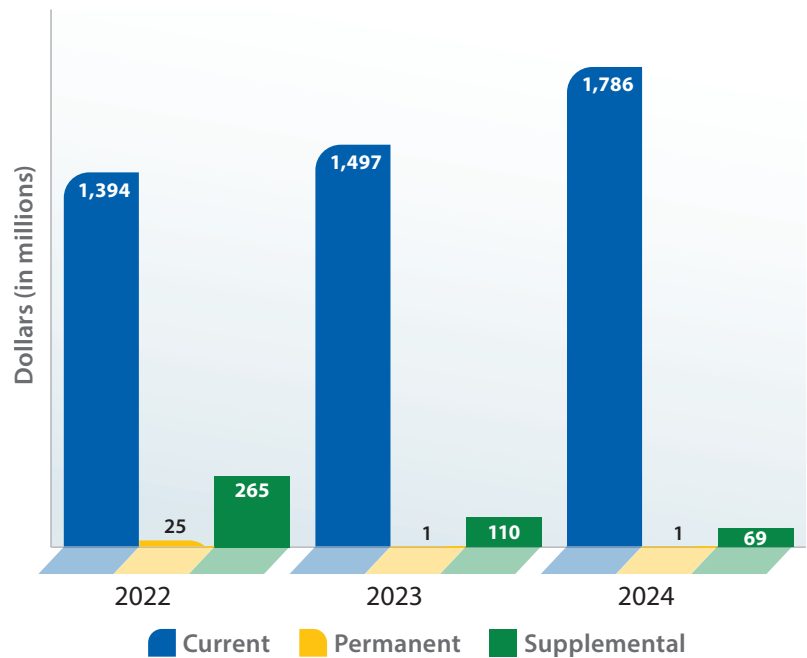
## Budget Overview

The 2024 USGS budget is \$1.8 billion, an increase of \$288.3 million above the 2023 enacted level; USGS estimates staffing is 8,401 full-time equivalents. The budget prioritizes science focusing on protection of health and human safety and climate change research to inform balanced decisions regarding resources and ensure the economic growth and well-being of the Nation.

## Ecosystems Programs

The 2024 budget includes \$395.0 million for Ecosystems programs, \$87.8 million above the 2023 enacted level. These programs provide the science to help ensure America's ecosystems are managed sustainably and biological resources in wild and urban spaces are conserved now and into the future. Scientists examine the consequences of climate and environmental change; effects of management actions on communities, lands, and species; and risks of and solutions to harmful invasive species, wildlife diseases, and contaminants in the environment.

## USGS Funding



Environmental Health is funded at \$31.4 million, \$1.0 million more than the 2023 enacted amount. Species Management Research is funded at \$77.4 million, \$13.5 million over 2023 enacted, with increases for monitoring and forecasting aquatic ecosystem health, decision support tools for clean energy development, and applied science focusing on conservation and adaptation. Land Management Research is funded at \$79.6 million, \$24.7 million over 2023 enacted, with increases supporting research to better understand and quantify ecosystems services, migration corridor mapping, and wildfire research. The Biological Threats and Invasive Species Research program is funded at \$49.4 million, an increase of \$2.8 million above the 2023 enacted level, with an emphasis on species' response to multiple stressors, including climate change, wildfire, contaminants, and changing coastal conditions. The Climate Adaptation Science Center and Land Change Science programs are funded at \$128.0 million, \$44.8 million above 2023 enacted. The request includes investments in the synthesis of regional research, Tribal climate adaptation science, biologic carbon sequestration research, monitoring of greenhouse gas

- The U.S. Geological Survey (USGS) was founded by an Act of Congress in 1879.
- USGS is a primary Federal source of science-based information available to the public, providing data and analysis on ecosystems, energy and mineral resources, natural hazards, water use availability and quality, and updated mapping and images of the Earth's land surface and subsurface.
- Since its establishment, USGS has published more than 165,000 scientific documents.
- USGS protects human health and safety by operating more than 3,800 earthquake sensors and by monitoring 70 volcanoes in the United States and more than 11,800 streamgages for advanced flood warnings.
- USGS cooperated with 11 western States, Tribes, and other Federal agencies to produce maps and movement details for 152 herds, including mule deer, elk, and pronghorn.
- The Landsat series of Earth Observation satellites, operated by USGS in cooperation with the National Aeronautics and Space Administration, have continuously acquired images of the Earth's land surface for more than 50 years, providing uninterrupted data to help land managers and policymakers make informed decisions about natural resources and the environment.

reduction processes, and other research on climate impacts. Cooperative Research Units are funded at \$29.3 million, \$1.1 million more than the 2023 enacted amount.

#### *Energy and Mineral Resources Programs*

The 2024 budget includes \$150.8 million for Energy and Mineral Resources programs, an increase of \$46.5 million over 2023 enacted. USGS conducts research and assessments on the location, quantity, and quality of mineral and energy resources, including the economic and environmental effects of extracting and using those resources. The Nation depends on energy resources to power homes and businesses and mineral resources to manufacture products, such as cell phones, laptops, cars, and components of renewable energy technologies. The Energy Resources program is funded at \$57.4 million, \$24.0 million above the 2023 enacted level, with increases to support assessments of geologic energy resources, including geothermal. The request also includes increases to better understand greenhouse gas emissions and sinks on Federal land. The Mineral Resources Program is funded at \$93.4 million, an increase of \$22.5 million more than 2023 enacted, with increases to support supply chain research related to critical minerals, mine waste research and assessments that support reclamation and potential mineral recovery, and research and assessments of potential new sources of critical minerals. This work builds on the Bipartisan

Infrastructure Law (BIL) investment in the Earth Mapping Resources Initiative's foundational geoscience data collection, interpretation, and delivery. In 2022, USGS used funding from the BIL to identify rare earth elements in Northern Maine that are important for electronics, defense, and manufacturing applications.

#### *Natural Hazards Programs*

The 2024 budget includes \$226.2 million for Natural Hazards programs, \$25.9 million above the 2023 enacted level. These programs provide information and tools to prepare for and respond to hazards such as volcanoes, earthquakes, coastal storms, solar flares, and landslides to enable greater resilience and reduce potential fatalities, injuries, property damage, and other social and economic effects. The Earthquake Hazards Program is funded at \$102.3 million, an increase of \$9.6 million, and continues to fund ShakeAlert expansion and operations and maintenance and research on induced seismicity related to energy development and carbon sequestration. This funding includes increases to support subduction zone science to better understand catastrophic earthquakes and to modernize and harden information technology (IT) infrastructure. The budget for the Coastal and Marine Hazards and Resources Program is \$63.0 million, an increase of \$19.9 million, including funding for forecasting coastal change hazards, risk-focused science to improve community resilience,

and research on coastal blue carbon sequestration. The Volcano Hazards Program is funded at \$35.8 million, \$1.7 million below 2023 enacted. Landslide Hazards is funded at \$11.8 million, \$2.7 million less than the 2023 enacted amount. The request includes \$7.4 million for the Global Seismographic Network and \$5.9 million for the Geomagnetism Program.

### *Water Resources Programs*

The 2024 budget includes \$313.4 million for Water Resources, an increase of \$8.9 million over 2023 enacted. These programs work with partners to monitor, assess, conduct targeted research on, and deliver information on a wide range of water resources conditions and issues, including streamflow, groundwater, water quality, and water use and availability. Across the Water Resources

mission area, the budget maintains support for Cooperative Matching Funds that allow USGS to leverage funding from State, Tribal, and local partners to support cooperative water projects. The Water Availability and Use Science Program is funded at \$74.7 million, \$406,000 above the 2023 enacted level, with increases for integrated science to understand drought and wildfire impacts on water availability, deliver national and regional water availability assessments, and develop water use withdrawal models. The Groundwater and Streamflow Information Program is funded at \$120.3 million, \$5.7 million over 2023 enacted, including increases to continue buildout of the Next Generation Water Observing System and expand the Federal Priority Streamgauge Network. The National Water Quality Program is funded

at \$103.3 million, \$3.3 million above 2023 enacted. The request includes funding to improve the capacity to forecast impacts of climate change and land use on water availability and ecosystem health. The Water Resources Research Act Program is funded at \$15.0 million, \$500,000 below the 2023 enacted amount.

### *Core Science Systems Programs*

The 2024 budget includes \$368.6 million for Core Science Systems, an increase of \$84.0 million above 2023 enacted. These programs provide the Nation with access to science, information, data, imagery, and geospatial frameworks to improve natural resource management, support infrastructure planning, and prepare for and respond to natural hazards. The Science Synthesis, Analysis, and Research Program is funded at \$85.1 million, \$54.6 million above the 2023 enacted level, including investing \$26.4 million in high-performance computing systems and data storage to provide timely and accurate Earth systems forecasting for drought, weather, land management, wildland fires, landslides, and volcanoes.



Earthquake early warning system monitoring station.

DOI Photo.



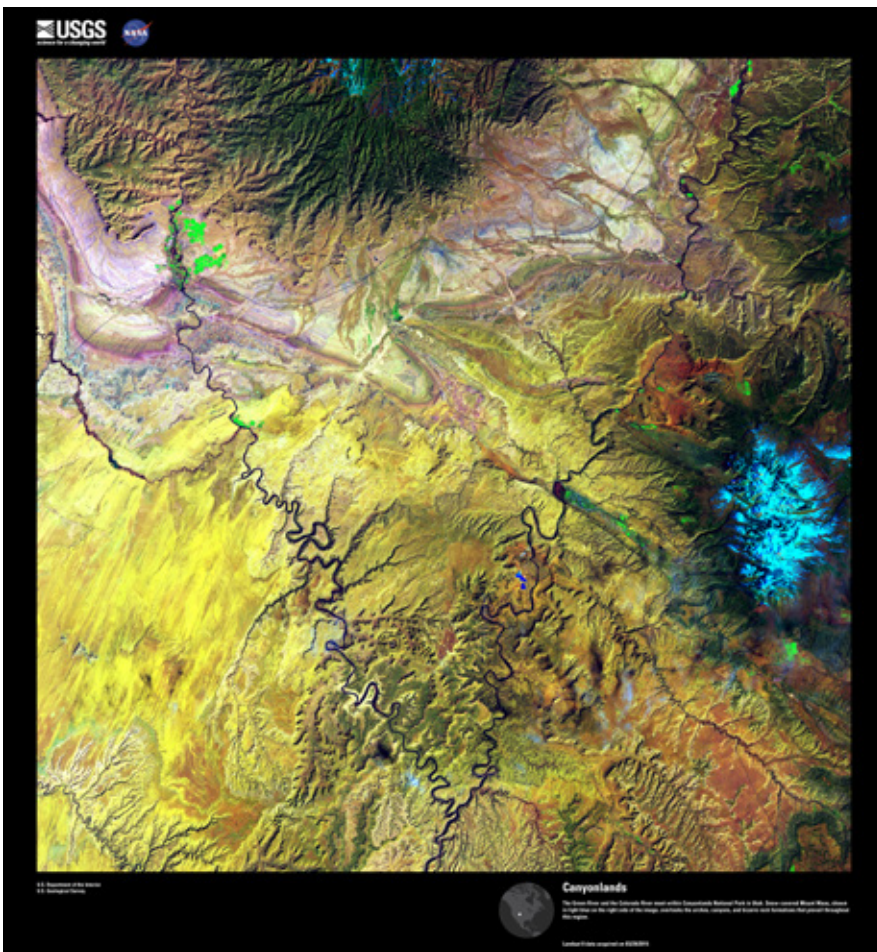
The request includes \$25.5 million to lead the development of the American Conservation and Stewardship Atlas (Atlas) that will be used by the Department and the Nation to support land and water conservation, stewardship, and restoration. The creation of the Atlas will provide scientific data to inform conservation, providing the information needed to achieve the Administration's goal of conserving 30 percent of the Nation's lands and waters by 2030.

The National Land Imaging program is funded at \$143.7 million, \$27.8 million more than the 2023 enacted amount, and includes \$110.3 million in Satellite Operations to support the Landsat 7, 8, and 9 satellite ground and flight operations. Within that amount, the request includes increases for the development of operational capability to

support Landsat Next, which is planned to launch by late 2030, and a pilot project that will augment Landsat data with commercially available satellite data. The request for Research and Investigations is \$24.6 million, \$9.7 million above 2023 enacted, with increases for Land Change Monitoring and Assessments and biologic carbon sequestration studies. The budget for the National Geospatial Program is \$97.5 million, \$3.9 million over 2023 enacted, and includes \$1.0 million to integrate USGS elevation and hydrography data into 3D models for infrastructure and hazard modeling applications. The request also includes funding for a Federal climate data portal to provide accessible information on historical and projected climate impacts, inform decision making, and strengthen community climate resilience. The National Cooperative Geologic Mapping Program is funded at \$42.3 million, \$2.2 million less than the 2023 enacted amount, continuing geologic mapping in partnership with State geological surveys.

#### *Science Support Programs*

The 2024 budget includes \$134.2 million for Science Support programs, \$27.9 million above 2023 enacted. These programs provide the necessary business services and IT management to operate USGS science programs. The budget includes \$99.4 million in Administration and Management, \$17.2 million over the 2023 enacted level, and strengthens scientific integrity efforts across the Department. The budget also includes \$3.6 million to transition the USGS fleet of vehicles to cleaner, electric vehicles. The request for Information Services is \$34.8 million, an increase of \$10.7 million over 2023 enacted, including funding to support, deliver, and protect USGS science with improved security products



The Green River and the Colorado River meet within Canyonlands National Park in Utah.

Since 1972, the joint National Aeronautics and Space Administration (NASA)/USGS Landsat series of Earth Observation satellites have continuously acquired images of the Earth's land surface, providing uninterrupted data to help land managers and policymakers make informed decisions about natural resources and the environment. USGS and NASA plan to launch Landsat Next in 2030 to enhance satellite monitoring capabilities.

USGS Photo.

and services, high-performance computing and cloud access, and other IT for the data-intensive needs of a modern science organization.

### Facilities

The 2024 budget provides \$197.5 million for Facilities, \$9.4 million more than the 2023 enacted amount. Funding includes \$118.4 million for Rental Payments and Operations and Maintenance, \$5.2 million over 2023 enacted, and \$79.1 million for Deferred Maintenance and Capital Improvements, \$4.2 million above the 2023 enacted level, including increases for priority facility projects and for DOI's Field Communications Modernization (DIFCOM) initiative to deploy remote broadband connectivity and provide employees in the field with voice, video, and data capabilities for all missions.

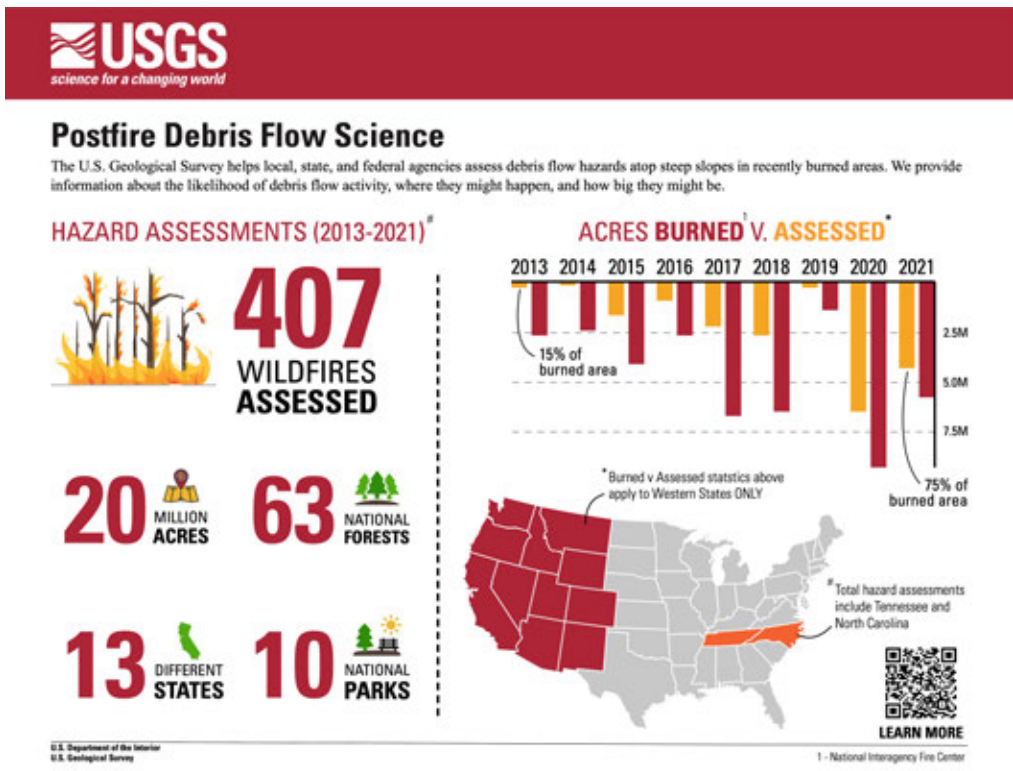
### Fixed Costs

Fixed costs of \$49.2 million are fully funded.

## BIL Funds Studies to Identify Critical Minerals in Mine Waste

USGS is applying \$5 million from the Bipartisan Infrastructure Law to collect data on above-ground waste from hardrock mining. The USGS Earth Mapping Resource Initiative (Earth MRI) will continue to issue grants to State geological surveys to identify critical minerals, including rare earth elements, that are known to occur alongside more commonly mined minerals such as iron or nickel. In February 2023, USGS began accepting grant applications from State geological surveys to contribute data to a national mine-waste inventory, characterize mine waste, and inform Earth MRI data collection.

Earth MRI is a partnership between USGS and State geological surveys to modernize the Nation's fundamental geologic framework and mapping of mineral resources. Earth MRI is providing new geologic maps, geochemical sampling, and geophysical, topographic, and hyperspectral surveys. These datasets and collaborations will inform decisions on reprocessing, reclaiming, and restoring mine waste sites.



## SUMMARY OF BUREAU APPROPRIATIONS <sup>1/</sup>

(dollar amounts in thousands)

### Comparison of 2024 Request with 2023 Enacted

	2023 Enacted		2024 Request		Change	
	FTE	Amount	FTE	Amount	FTE	Amount
<b>Current</b>						
Surveys, Investigations, and Research .....	4,806	1,606,873	5,198	1,854,164	+392	+247,291
Subtotal, Current .....	4,806	1,606,873	5,198	1,854,164	+392	+247,291
<b>Permanent</b>						
Surveys, Investigations, and Research .....	0	68	0	68	0	0
Contributed Funds .....	3	690	3	690	0	0
Subtotal, Permanent .....	3	758	3	758	0	0
<b>Allocation and Reimbursable</b>						
Allocation .....	45	0	45	0	0	0
Reimbursable .....	3,155	0	3,155	0	0	0
Subtotal, Allocation and Reimbursable .....	3,200	0	3,200	0	0	0
<b>TOTAL, U.S. GEOLOGICAL SURVEY .....</b>	<b>8,009</b>	<b>1,607,631</b>	<b>8,401</b>	<b>1,854,922</b>	<b>+392</b>	<b>+247,291</b>

<sup>1/</sup> Current funding amounts include supplemental appropriations and transfers. For further details, see Highlights of Budget Changes tables for each account.

## HIGHLIGHTS OF BUDGET CHANGES

By Appropriation Activity/Subactivity

### APPROPRIATION: Surveys, Investigations, and Research

	2022 Actual	2023 Enacted	2024 Request	Change
<b>Ecosystems</b>				
Environmental Health				
Contaminant Biology .....	11,100	12,528	12,970	+442
Toxic Substances Hydrology .....	15,389	17,929	18,471	+542
Species Management Research .....	55,418	63,904	77,378	+13,474
Land Management Research .....	58,103	54,806	79,552	+24,746
Biological Threats and Invasive Species Research .....	40,431	46,622	49,399	+2,777
Cooperative Research Units .....	26,006	28,206	29,257	+1,051
Climate Adaptation Science Centers and Land Change Science				
Climate Adaptation Science Centers .....	51,903	63,115	87,343	+24,228
Land Change Science .....	19,547	20,066	40,618	+20,552
Subtotal, Ecosystems .....	277,897	307,176	394,988	+87,812
<b>Energy and Mineral Resources</b>				
Energy Resources .....	31,486	33,365	57,391	+24,026
Mineral Resources .....	63,737	70,855	93,360	+22,505
Subtotal, Energy and Mineral Resources .....	95,223	104,220	150,751	+46,531

**APPROPRIATION: Surveys, Investigations, and Research** *(continued)*

	2022 Actual	2023 Enacted	2024 Request	Change
<b>Natural Hazards</b>				
Earthquake Hazards .....	90,037	92,651	102,292	+9,641
Volcano Hazards .....	33,282	37,500	35,835	-1,665
Landslide Hazards .....	8,929	14,432	11,764	-2,668
Global Seismographic Network .....	7,212	7,273	7,373	+100
Geomagnetism .....	4,673	5,251	5,870	+619
Coastal/Marine Hazards and Resources .....	41,865	43,149	63,029	+19,880
Subtotal, Natural Hazards .....	185,998	200,256	226,163	+25,907
<b>Water Resources</b>				
Water Availability and Use Science Program .....	64,501	74,296	74,702	+406
Groundwater and Streamflow Information Program .....	110,651	114,558	120,307	+5,749
National Water Quality Program .....	96,742	100,080	103,344	+3,264
Water Resources Research Act Program .....	14,000	15,500	15,000	-500
Subtotal, Water Resources .....	285,894	304,434	313,353	+8,919
<b>Core Science Systems</b>				
National Land Imaging Program				
Satellite Operations .....	84,788	92,184	110,252	+18,068
Research and Investigations .....	14,632	14,881	24,599	+9,718
Land Cover Monitoring and Assessments .....	8,072	8,856	8,856	0
Science Synthesis, Analysis, and Research Program .....	26,353	30,480	85,062	+54,582
National Cooperative Geologic Mapping Program .....	42,431	44,556	42,324	-2,232
National Geospatial Program .....	87,526	93,650	97,518	+3,868
Subtotal, Core Science Systems .....	263,802	284,607	368,611	+84,004
<b>Science Support</b>				
Information Services .....	22,216	24,125	34,784	+10,659
Administration and Management .....	77,520	82,179	99,388	+17,209
Subtotal, Science Support .....	99,736	106,304	134,172	+27,868
<b>Facilities</b>				
Rental Payments and Operations Maintenance .....	110,146	113,211	118,414	+5,203
Deferred Maintenance and Capital Improvements .....	74,664	74,840	79,057	+4,217
Subtotal, Facilities .....	184,810	188,051	197,471	+9,420
Special Initiatives (CDS) .....	1,000	2,130	0	-2,130
<b>TOTAL APPROPRIATION (w/o supplementals and transfer)</b>				
.....	1,394,360	1,497,178	1,785,509	+288,331
Disaster Relief Act, 2022 (P.L. 117-43) .....	+26,284	0	0	0
Disaster Relief Act, 2023 (P.L. 117-328) .....	0	+41,040	0	-41,040
Bipartisan Infrastructure Law (P.L. 117-58) .....	+239,668	+69,000	+69,000	0
Transfer to OIG (P.L. 117-58) .....	-1,198	-345	-345	0
<b>TOTAL APPROPRIATION (w/ supplementals and transfer)</b> .....	<b>1,659,114</b>	<b>1,606,873</b>	<b>1,854,164</b>	<b>+247,291</b>

