



U.S. GEOLOGICAL SURVEY

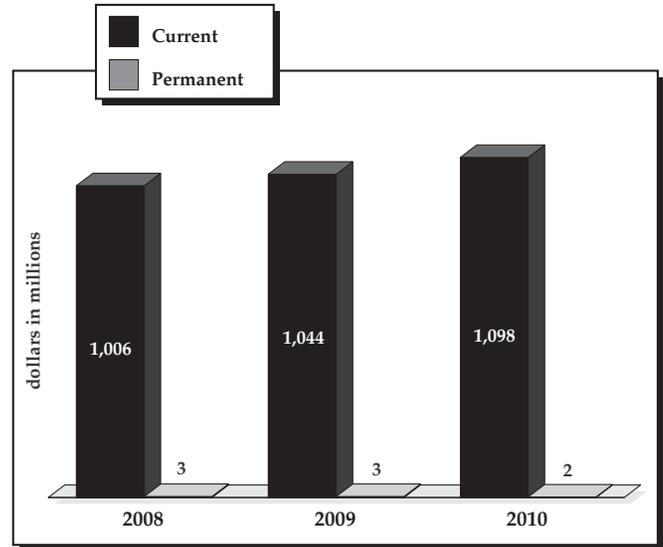
Mission – The mission of the U.S. Geological Survey is to provide reliable scientific information to describe and understand the Earth, minimize loss of life and property from natural disasters, assist others in managing water, biological, and other natural resources, and enhance and protect the quality of life.

Program Overview — The USGS provides a broad range of expertise in geography, geology, hydrology, and biology. The USGS places a special emphasis on providing scientific information and geospatial data to the Department’s land and resource management bureaus. The USGS geologic hazards programs produce information and enhance understanding of natural hazards, such as earthquakes, volcanoes, and landslides, which are used to reduce the impacts of these events on human life and the economy. The USGS is a primary Federal source of objective resource assessments and unbiased research on oil, gas, and alternative energy potential, production, consumption, and environmental effects. These investigations enable the Nation to make sound decisions regarding domestic energy production with an understanding of potential impacts on the environment.

Analyses of water quality and quantity at USGS help water and land resource managers develop, regulate, and monitor management practices to ensure the continued availability of water resources for human consumption, agriculture, business, recreation, and fish and wildlife and habitat. Biological studies help managers maintain healthy ecosystems and natural resources so that these habitats can continue to provide food, energy, medicine, transportation corridors, and recreation. The USGS geography program is expanding its partnerships with Federal agencies and State and local governments to develop and promote the use of geographic data and products that are important tools for economic and community development, land and natural resource management, and health and safety services.

To deliver the most accurate, timely, and impartial scientific information and geospatial data possible, USGS integrates its diverse programs, capabilities, and talents to address those issues that require a multi-disciplin-

USGS Funding



ary solution. The USGS places great value on partnerships and is increasing customer involvement to work collaboratively on issue identification, resource needs, and science solutions. Natural science supports informed decision-making by land and resource managers at Federal, State, and local levels; government program managers; industrial and agricultural corporations; scientists and academia; and the public.

Budget Overview — The 2010 budget for USGS totals \$1.1 billion, \$54.0 million above the 2009 enacted level. Increases in the areas of climate change, renewable energy, and education and training programs to ensure that the USGS builds strong scientific expertise among America’s youth are the highest budget priorities. The budget emphasizes science that will ensure the long-term viability of wildlife and habitat as energy and alternative energy resources are being developed on Federal lands; contribute research to enhance ecosystem-based management of coastal resources on the Great Lakes; and enhance multi-disciplinary work related to climate change.

New Energy Frontier Initiative — As part of a larger renewable energy initiative with the Bureau of Land

Management, Minerals Management Service, Fish and Wildlife Service, and Bureau of Indian Affairs, the 2010 USGS budget includes an increase of \$3.0 million over the 2009 enacted level for a suite of actions that will significantly improve understanding and knowledge about the Nation's alternative energy resources. These funds will be used to investigate an array of renewable energy sources, including geothermal, biofuels, wind, and solar. The USGS will build on previous efforts to study geothermal resources and provide a scientific basis to improve the viability of this resource to contribute to the domestic energy mix. The USGS will also provide the scientific base for understanding the impacts of other renewable energy options, such as wind, solar, and biofuels on ecosystems and wildlife populations. This information will come at a time when it is critical for communities and energy managers to better understand the sustainability of their energy resources and options for improved management.

Climate Impacts Initiative — The 2010 USGS budget expands climate change science activities with increases of \$22.0 million over 2009, as part of a Department-wide initiative to address climate impacts. Increases include \$5.0 million to expand climate change monitoring to understand the Earth's response to climate change over time. An increase of \$5.0 million will be used by the National Climate Change and Wildlife Science Center to develop regional collaborative research. Also included in the increase is \$7.0 million for USGS to conduct a national assessment for both geological and biological forms of carbon sequestration, and \$5.0 million for other Climate Change Science program increases will provide science support to the Fish and Wildlife Service.

21st Century Youth Conservation Corps — As part of the 21st Century Youth Conservation Corps initiative with BLM, FWS, and the National Park Service, the 2010 budget proposes an increase for USGS of \$2.0 million. The USGS will expand education, training, and workshop opportunities to provide more in-depth training through coursework and internships for high school and college students. This initiative will increase the total number of internships and fellowships supported or facilitated by the USGS educational program by 120 to 175.

Great Lakes Restoration Initiative — The USGS is participating in the Great Lakes Restoration initiative, which is requested in the Environmental Protection Agency budget. This initiative will expand research to enhance ecosystem-based management of coastal resources by USGS partners. The 2010 budget anticipates increases of \$14.9 million to be funded by EPA. With this funding, USGS will integrate collaborative studies that provide forecast models and assessments to anticipate future coastal change, and develop tools to effectively evalu-

ate policy and management strategies to preserve the environmental and economic health of coastal systems. Work by USGS scientists provides information to agencies and managers on deepwater science, invasive species, and wetlands and coastal habitat.

Geography — The 2010 budget includes \$143.9 million in Geography that supports a strong role for USGS in the National Geospatial Program. The request level represents an increase of \$71.6 million above 2009. Most of this increase, \$70.7 million, is due to the realignment of the National Geospatial program from Enterprise Information into the Geography discipline. This realignment will allow USGS to gain efficiencies, improve effectiveness, promote geographic research, leverage remote sensing technologies, and focus USGS geography programs on addressing important societal issues identified in the USGS Science Strategy.

The 2010 Geography budget also includes an increase of \$300,000 for Geographic Analysis and Monitoring for research on biofuels for the New Energy Frontier initiative. With a total budget of \$11.1 million, Geography research will focus on documenting the combined impacts of land use and climate change on soil properties and on renewable energy. Research at USGS improves the understanding of the rates, causes, and consequences of natural and human-induced processes that shape and change the landscape over time, and will provide comprehensive information needed to understand the environmental, resource, and economic consequences of landscape change.

In 2010, the Land Remote Sensing budget of \$62.1 million will allow USGS to continue operations and maintenance for Landsats 5 and 7, and will work with NASA and the Landsat Science Team to continue development of the Landsat Data Continuity Mission. This will improve USGS's ability to monitor and analyze changes on the Earth's surface and will maintain the constant record used by scientists and decisionmakers.

Geology — The 2010 budget includes \$247.0 million for geologic activities, \$4.8 million above the 2009 enacted level. This funding level includes an increase of \$1.0 million to expand the research necessary to more fully map the limits of the extended continental shelf in the Arctic Ocean. The budget also includes increases for renewable energy research of \$375,000 for wind and solar research in Coastal and Marine Geology; \$100,000 for biofuels research in Mineral Resources; and \$1.0 million for geothermal research in Energy Resources.

With a 2010 budget of \$91.3 million, Geologic Hazard Assessments will continue to provide the scientific information and knowledge necessary to reduce deaths,

injuries, and economic losses from earthquakes and earthquake-induced tsunamis, landslides, and liquefaction. The budget also provides \$74.4 million for Geologic Landscape and Coastal Assessments to improve the understanding of national ecosystems and resources through integrated interdisciplinary assessments, with a focus on the extended continental shelf and renewable energy.

Geologic Resource Assessments is provided with \$81.4 million in the 2010 budget to conduct research to better understand the fundamental processes that lead to the formation and accumulation of mineral and energy resources, with a focus on renewable energy. The Mineral Resources program is fully funded in order to maintain up-to-date minerals surveys and studies that are relevant to ongoing Departmental land management requirements.

Water Resources — The Water Resources Investigations activity is funded at \$227.9 million in the 2010 budget, which is \$6.5 million above the 2009 enacted level. The budget includes an increase of \$5.0 million in the National Streamflow Information program to re-establish discontinued streamgages with emphases on those stations with the greatest potential to provide information in support of climate change monitoring. The budget also includes an increase of \$200,000 for biofuels research in Hydrologic Networks and Analysis.

The 2010 budget provides \$155.8 million to Hydrologic Monitoring, Assessments, and Research for collection, management, and dissemination of hydrologic data, analysis of hydrologic systems through modeling or statistical methods, and research and development leading to new methods and new understanding, with a focus on climate change, arctic ecosystems, and renewable energy. The National Water Quality Assessment program is fully funded to continue to describe status and trends in water quality, provide an improved understanding of the natural factors and human activity affecting these conditions, and provide information to Federal, State, and local regulatory and policy decisionmakers.

With a 2010 budget of \$65.6 million, the Cooperative Water program will build on its efforts to leverage funds with State, local, and tribal partners to provide support for the majority of the national hydrologic data network of streamgages, wells, and monitoring sites. The Water Resources Research Act program is fully funded at \$6.5 million to promote State, regional, and national coordination of water resources research and training and a network of Institutes to facilitate research coordination and information and technology transfer.

Biological Research — The Biological Research activity is funded at \$199.3 million in the 2010 budget, which is \$13.9 million above 2009. The budget includes increases

in Biological Research and Monitoring of \$5.0 million in partnership with FWS to coordinate science support strategies and \$4.2 million for polar bear and arctic ecosystems research. The budget also includes increases in Biological Research and Monitoring of \$400,000 for biofuels research to support the Department's New Energy Frontier initiative and \$625,000 for wind and solar research. The USGS will also support Great Lakes mapping and monitoring in partnership with EPA and FWS.

The 2010 USGS budget request provides \$157.8 million to Biological Research and Monitoring to gain an understanding of how ecosystems are structured and function, with a focus on climate change, arctic ecosystems, and renewable energy. Biological Information Management and Delivery is funded at \$22.2 million to integrate information across geographic and political landscapes and biological levels of organization into the National Biological Information Infrastructure. Biology's Cooperative Research Units will receive a \$2.0 million increase for a total budget of \$19.3 million to enhance the cooperative partnership offices for research, education, and technical assistance on issues related to fish, wildlife, ecology, and natural resources.

Enterprise Information — The 2010 budget includes \$46.0 million for Enterprise Information, a net decrease of \$66.5 million below 2009, due to the realignment of the National Geospatial program from Enterprise Information into the Geography discipline. The budget includes an increase of \$2.0 million in Enterprise Information Resources to expand education, training, and workshop opportunities to provide more in-depth training through coursework and internships for high school and college students.

Enterprise Information Security and Technology is funded at \$26.3 million in the 2010 budget request to continue support for USGS in information security, telecommunications, and computing infrastructure. Enterprise Information Resources is funded at \$19.7 million to manage bureau-level systems and activities in information policy, information integration and delivery, and science education, with a focus on education and training programs for youth.

Global Change — The 2010 budget includes \$58.2 million for the Global Change activity, an increase of \$17.5 million above the 2009 enacted budget. The budget includes increases in Global Change of \$5.0 million for the National Climate Change and Wildlife Science Center; \$7.0 million for both geologic and biological carbon sequestration; and \$5.0 million for urgent climate change research and monitoring. A strong science component is essential to provide the basis for the development of adaptive management approaches that can be used by land managers to respond to changes on the landscape.

Global Change funds will be used to expand climate change monitoring and will enhance research in Alaska. Two climate transects will be initiated in order to understand and anticipate potential climate-induced environmental changes occurring over time and across different landscapes. Regional ecosystem forecasting models will be developed that will utilize data collected by USGS to predict ecosystem change at scales useful to resource managers for more effective decisionmaking.

Other activities related to global change are the \$3.7 million for the satellite data archive in Geography and \$1.1 million for research activities in Biology for total Climate Change Science program funding of \$63.0 million.

Science Support — The Science Support activity is funded at \$69.2 million in the 2010 budget, which is \$1.8 million above the 2009 enacted level. Science Support funds the executive and managerial direction of the bureau, as well as bureau sustaining support services.

Facilities — The Facilities activity is funded at \$106.4 million in the 2010 budget, which is \$4.3 million above the 2009 enacted level. Funds for this activity provide safe, functional workspace and facilities for accomplishing the bureau's scientific mission. Rental Payments and Operations and Maintenance are funded at \$99.1 million. Deferred Maintenance and Capital Improvement is funded at \$7.3 million, the same as the 2009 level.

Fixed Costs – The budget includes \$21.3 million to fully fund USGS's fixed cost increases.

American Recovery and Reinvestment Act — Under the Recovery Act, USGS received a total of \$140.0 million in budget authority for the following programs: Deferred Maintenance-Facilities (\$29.4 million); Construction (\$17.8 million); Deferred Maintenance-Streamgages, Cableways, and Wells (\$14.6 million); Upgrades to Streamgages (\$14.6 million); Earthquake Monitoring (\$29.4 million); Volcano Monitoring (\$15.2 million); Imagery and Elevation Data for Mapping (\$14.6 million); Data Preservation (\$488,000); and \$3.8 million for administrative costs. The USGS has developed a program plan to implement the Recovery Act. The plan includes an implementation strategy and detailed information on the prioritization processes and criteria used to select the projects funded under the Recovery Act. USGS selected projects that are prudent investments, support its critical mission areas, and maximize job opportunities to stimulate economic recovery. The Department is committed to an unprecedented level of accountability and transparency in the use of Recovery Act funds. Information regarding Interior program plans, project lists, and business opportunities is available centrally through www.recovery.gov and the Interior Recovery Act website at www.doi.gov/recovery. A copy of the USGS Recovery Act program plan is included in the 2010 Budget Justification.

SUMMARY OF BUREAU APPROPRIATIONS

(all dollar amounts in thousands)

Comparison of 2010 Request with 2009 Enacted:

	2009 Enacted		2010 Request		Change from 2009	
	FTE	Amount	FTE	Amount	FTE	Amount
Appropriations						
Surveys, Investigations, and Research.....	5,354	1,043,803	5,418	1,097,844	+64	+54,041
Subtotal, Appropriations (w/o ARRA).....	5,354	1,043,803	5,418	1,097,844	+64	+54,041
American Recovery and Reinvestment Act	0	140,000	0	0	0	-140,000
Subtotal, Appropriations (w/ ARRA).....	5,354	1,183,803	5,418	1,097,844	+64	-85,959
Permanents and Other						
Operations and Maintenance of Quarters.....	0	145	0	126	0	-19
Contributed Funds.....	21	2,412	11	1,562	-10	-850
Working Capital Fund.....	312	0	307	0	-5	0
Subtotal, Permanents, Trust Funds, and Others.	333	2,557	318	1,688	-15	-869
Reimbursables and Allocations						
Reimbursables	2,672	0	2,672	0	0	0
Allocations	11	0	11	0	0	0
Subtotal, Reimbursables and Allocations.....	2,683	0	2,683	0	0	0
TOTAL, U. S. GEOLOGICAL SURVEY (w/o ARRA)	8,370	1,046,360	8,419	1,099,532	+49	+53,172

HIGHLIGHTS OF BUDGET CHANGES

By Appropriation Activity/Subactivity

APPROPRIATION: Surveys, Investigations, and Research

	2008 Actual	2009 Enacted	2010 Request	Change from 2009
Geographic Research, Investigations, and Remote Sensing				
Land Remote Sensing	61,457	61,718	62,057	+339
Geographic Analysis and Monitoring..	16,266	10,598	11,135	+537
National Geospatial Program.....	0	0	70,748	+70,748
Subtotal, Geography	77,723	72,316	143,940	+71,624
Geologic Hazards, Resource, and Processes				
Geologic Hazards Assessments	85,651	90,585	91,263	+678
Geologic Landscape/ Coastal Assess....	80,614	72,381	74,351	+1,970
Geologic Resource Assessments	77,211	79,176	81,367	+2,191
Subtotal, Geology	243,476	242,142	246,981	+4,839
Water Resources Investigations				
Hydrologic Monitoring, Assess, Rsch..	151,367	150,786	155,820	+5,034
Cooperative Water Program	62,849	64,078	65,561	+1,483
Water Resources Rsch Act Program	6,304	6,500	6,500	0
Subtotal, Water Resources.....	220,520	221,364	227,881	+6,517
Biological Research				
Biological Research and Monitoring	141,275	146,416	157,765	+11,349
Biological Info. Mgmt./ Delivery	22,422	21,965	22,196	+231
Cooperative Research Units	16,174	16,949	19,313	+2,364
Subtotal, Biological Research.....	179,871	185,330	199,274	+13,944
Enterprise Information				
Enterprise Info Security/ Technology...	24,514	25,176	26,263	+1,087
Enterprise Information Resources	16,775	17,478	19,706	+2,228
National Geospatial Program.....	69,082	69,816	0	-69,816
Subtotal, Enterprise Information	110,371	112,470	45,969	-66,501
Global Change	7,383	40,628	58,177	+17,549
Science Support	67,167	67,430	69,225	+1,795
Facilities	99,969	102,123	106,397	+4,274
TOTAL APPROPRIATION (w/o ARRA)	1,006,480	1,043,803	1,097,844	+54,041
Am. Recovery / Reinvestment Act.....	0	140,000	0	-140,000
TOTAL APPROPRIATION (w/ ARRA).....	1,006,480	1,183,803	1,097,844	-85,959

Highlights of Budget Changes

Fixed Costs

Fixed costs total \$21,256, which are all budgeted.

Geographic Research, Investigations, and Remote Sensing

Geographic Analysis and Monitoring

The budget proposes an increase of \$300 to support renewable energy efforts in biofuels as it relates to the New Energy Frontier initiative. Fixed costs total \$237.

National Geospatial Program

The budget proposes an increase of \$70,748, including a technical adjustment of \$69,816 that moves the National Geospatial program to this budget activity. Fixed costs total \$932.

Geologic Hazards, Resources, and Processes

Geologic Hazard Assessments

The budget proposes a net increase of \$678, including a decrease of \$500 in the Earthquake Hazards program to eliminate a 2009 unrequested increase in funding for the Arkansas Seismological Observatory. Fixed costs total \$1,178.

Geologic Landscape and Coastal Processes

The 2010 budget proposes a net increase of \$1,970, including increases in the Coastal and Marine Geology program of \$1,000 for extended continental shelf studies and an increase of \$375 to support renewable energy efforts in wind and solar power as it relates to the New Energy Frontier initiative. A decrease is proposed in the Coastal and Marine Geology program of \$500 to eliminate a 2009 unrequested increase in funding for California sea floor mapping. Fixed costs total \$1,095.

Geologic Resource Assessments

The budget proposes a net increase of \$2,191, including increases of \$100 in the Mineral Resources program to support renewable energy efforts in biofuels as it relates to the New Energy Frontier initiative and \$1,000 in the Energy Resources program to support renewable energy efforts in geothermal power as it relates to the New Energy Frontier initiative. A decrease of \$650 is included in the Mineral Resources program to eliminate a 2009 unrequested increase in funding for mineral resource assessment in Nye County, Nevada. Fixed costs total \$1,741.

Water Resources Investigations

Hydrologic Monitoring, Assessments, and Research

The budget proposes a net increase of \$5,034, including increases of \$5,000 in the National Streamflow Information program to support streamgages in determining the potential effects of changes in climate patterns on the occurrence and distribution of freshwater and \$200 in the Hydrologic Networks and Analysis program to support renewable energy efforts in biofuels as it relates to the New Energy Frontier initiative. Decreases are proposed as follows: \$900 in the Groundwater Resources program to eliminate 2009 unrequested funding for San Diego, California aquifer mapping; a total of \$1,465 in the Hydrologic Research and Development program to eliminate 2009 unrequested funding for studies at Hood Canal, Washington, USGS participation in the San Pedro Partnership, the Long-Term Estuary Group, and US-Mexico trans-boundary aquifer study; and a total of \$843 in the Hydrologic Networks and Analysis program to eliminate 2009 unrequested funding for monitoring and studies at Lake Champlain and in Hawaii. Fixed costs total \$3,042.

Biological Research

Biological Research and Monitoring

The budget proposes a net increase of \$11,349, including increases of \$1,025 to support renewable energy efforts in wind, solar power, and biofuels as it relates to the New Energy Frontier initiative, \$727 for sustainable energy development in the Green River Basin, \$5,000 for climate change and science support for the Fish and Wildlife Service, and \$4,200 to refine forecasting models for a number of species as a result of changing Arctic ecosystems. Decreases are proposed to eliminate 2009 unrequested funding of \$800 for molecular biology at the Leetown Science Center, \$500 for San Francisco salt ponds studies, and the elimination of \$984 for NatureServe contractual work. Fixed costs total \$2,681.

Cooperative Research Units

The budget proposes an increase of \$2,364, including an increase of \$2,000 to fund vacant positions located in Cooperative Research Units across the country. Fixed costs total \$364.

Enterprise Information

Enterprise Information Resources

The budget proposes an increase of \$2,000 for enhancing opportunities for youth by expanding education, training, and workshop opportunities for high school and college students. Fixed costs total \$228.

National Geospatial Program

The budget proposes a decrease of \$69,816 resulting from the technical adjustment to move the National Geospatial program to the Geographic Research, Investigations, and Remote Sensing budget activity.

Global Change

The budget proposes an increase of \$17,549, including increases of \$5,000 for the National Climate Change and Wildlife Science Center to develop regional collaborative research hubs, \$7,000 for geological and biological carbon sequestration research that will include starting a national assessment of the geological storage capacity for carbon sequestration and developing a methodology for national assessment of biological carbon sequestration, and \$5,000 for climate change science to develop an Interior Climate Effects Network. Fixed costs total \$549.