

UNITED STATES GEOLOGICAL SURVEY

Originating in 1879, the United States Geological Survey (USGS or Survey), is the Nation's largest water, earth, and biological science and civilian mapping agency. As the sole science agency for the Department of the Interior, the Survey provides reliable scientific information to describe and understand the Earth; monitor and protect public safety, health, and American economic prosperity, and improve resilience to natural hazards; informs stewardship of energy and mineral resources; helps sustain healthy fish and wildlife populations; improves water resource decision making; investigates wildlife diseases; and provides accurate, high-resolution geospatial data. The Survey works in partnership within Interior and across the government as well as with States, Tribes, and academia. The diversity of Survey scientific expertise enables the Survey to provide the best available science and scientific information to resource managers and planners, emergency response officials, and the public.

SURVEYS, INVESTIGATIONS, AND RESEARCH

Appropriation enacted, 2020	\$1,270,957,000
Budget estimate, 2021	971,185,000
Recommended, 2021	1,292,987,000
Comparison:	
Appropriation, 2020	+22,030,000
Budget estimate, 2021	+321,802,000

The Committee recommends \$1,292,987,000 for Surveys, Investigations, and Research, \$22,030,000 above the enacted level and \$321,802,000 above the budget request. The budget request included a proposed budget restructure that the recommendation approves in a modified form to provide more detail and ensure program and funding transparency. Fixed costs are provided but requested program changes are not provided unless specifically addressed below. Recommended program changes, instructions, and details follow below and in the table at the end of this report.

The Survey provides critical scientific research and data to land and water managers in priority ecosystems including the California Bay Delta, the Everglades, the Chesapeake Bay and the Great Lakes. This work is funded through multiple mission areas and accounts, and the Committee expects this work to continue at no less than fiscal year 2020 enacted level, unless otherwise directed.

Ecosystems.—The recommendation modifies and expands upon the proposed budget restructure by including Environmental Health and Land Change Science and provides \$261,257,000, \$90,713,000 above the enacted level and \$133,920,000 above the budget request. The increase above the enacted level includes the fiscal year 2020 funding of \$23,495,000 for Environmental Health in the Energy and Minerals Mission Area and \$59,409,000 for National and Regional Climate Adaptation Science Centers and components of Land Change Science funded in the Land Resources Mission Area.

Environmental Health.—The recommendation does not approve the proposed elimination of the Environmental Health program and includes \$23,495,000, the enacted level. Funding is maintained at the enacted level for Contaminant Biology at \$10,397,000 and for Toxic Substances Hydrology at \$13,098,000. The Committee

does not accept the proposed reduction of more than \$1,000,000 for harmful algal bloom research and directs no less than \$2,000,000 be allocated for this research. The Survey is to continue its research on understanding the prevalence of toxins in the nation's natural bodies of water by expanding its understanding of cyanobacteria and toxins in stream and wetland ecosystems and the associated health impacts, especially through drinking water. The Survey is directed to examine pathways through which sediment and nutrients move that result in the formation of harmful algal blooms and to remain an active participant in the Harmful Algal Bloom and Hypoxia Research and Control Act Interagency Working Group to expedite the development and deployment of remote sensing tools to assist with early event warning delivered through mobile devices and web portals. The Committee also directs the Survey to maintain its monitoring and research activities in the Tahoe basin on nearshore algal blooms and to support implementation of P.L. 106-506. Within 60 days of enactment of this Act, the Survey is to provide a report to the Committee on the Environmental Health research it plans to conduct in fiscal year 2021.

Species Management Research Program.—For Species Management Research, the recommendation does not approve any of the proposed reductions and provides \$54,729,000, \$14,736,000 above the request. Funding for the Great Lakes Science Center is provided at no less than \$13,000,000. The Committee supports the Great Lakes Science Center's collaboration with the broader Great Lakes Partnership to implement priority science needs for biological assessment tools and technologies. House Report 116-9 requested a report on significant gaps that exist in understanding and enhancing the Great Lakes ecosystem and the funding needed to provide the scientific information required by resource managers. The Committee understands the Survey worked with State, Federal, Tribal and other partners, including the Great Lakes Fisheries Commission, to gather information on data gaps in understanding and enhancing the Great Lakes ecosystem and directs this report be expedited through the clearance process and provided to the Committee no later than 30 days after enactment of this Act. Accompanying this report, the Committee is to be briefed on whether a study by the National Academy of Sciences is needed to supplement the Survey report to identify research and infrastructure needs and make recommendations for federal investments.

Land Management Research Program.—For the Land Management Research Program, the recommendation does not approve any of the proposed reductions and provides \$57,408,000, \$19,471,000 above the request. The Survey is directed to fund all priority geographic landscapes and ecosystems, such as the Everglades and Chesapeake Bay, at no less than the enacted level. The Committee urges the Survey to continue its work on native plant research and identify opportunities for the Department to increase the use of native plants in land restoration projects as well as the native plant species that could be most successful for restoration and promote improved ecosystem function. The recommendation maintains the enacted level of funding for sage grouse research and urges the survey to ensure there is current population estimates and modeling to make an informed decision about the status and viability of the

species. The Survey is encouraged to study the hydrology of saline lakes in the Great Basin, specifically the relationship between migratory birds and wildlife, and submit a proposal for funding this research in the fiscal year 2022 budget.

Biological Threats and Invasive Species Research Program.—The recommendation renames the proposed Biological Threats Research Program to the Biological Threats and Invasive Species Research Program to provide more clarity about the research funded in this program. The recommendation provides \$37,666,000, \$9,125,000 above the request. This funding level provides \$10,620,000 to continue critical research for Asian Carp, including \$3,000,000 for research to contain or eradicate grass carp such as the Survey's ongoing work to develop species-specific toxicants for grass carp. The recommendation provides \$2,720,000, \$1,000,000 above the enacted level, for research on chronic wasting disease in wild populations of cervids. The Survey should continue to collaborate with partners, including institutions of higher education that have expertise in biology, ecology, and epidemiology of prion diseases, to develop early detection tools and compounds to disrupt transmission of the disease. Funding for research on Coral Disease, White Nose Syndrome, and Greater Everglades Invasive species is maintained at the enacted level. The Survey is encouraged to continue to inform monitoring and management efforts for the Emerald Ash Borer.

Climate Adaptation Science Centers and Land Change Science.—The Committee provides \$62,959,000 for Climate Adaptation and Land Change Science, \$42,093,000 above the request. The Committee does not accept the proposed funding reduction and realignment of the Climate Adaptation Science Centers (CASCs) and provides \$41,335,000, \$3,000,000 above the enacted level to ensure all centers remain open, operational, and fully functional. In fiscal year 2020, Congress demonstrated support to continue and advance the operation of the national and all nine regional climate adaptation science centers, including standing up the Midwest Climate Adaptation Science Center. The recommendation provides for no less than \$4,000,000 to support the development of the Midwest Climate Adaptation Science Center, which the Committee expects to be established through a competitive process and hosted in a Midwestern state. The Committee requests an update from the Survey on the status of the Midwest Climate Adaptation Science Center within 90 days of enactment of this Act.

CASCs provide actionable science and research that directly address many of the climate-related challenges unique to different regions of the country and are invaluable to stakeholders and policy makers. The Committee believes the Administration's attempt to reduce and curtail the activities of these centers is shortsighted and counterproductive at a time when our natural and cultural resources, our communities, and our health are being assaulted by climate change. The Committee remains concerned that funding for these regional centers and approval of the staffing plan continues to face unnecessary delays. The Survey is directed to expeditiously fill all staffing vacancies in fiscal year 2021 and to prioritize and expedite the distribution of funds to regional centers, including university consortia, to ensure timely obligations. The recommendation maintains funding for Tribal Climate Adaptation Science at the enacted level and provides \$21,624,000 for land change science.

Cooperative Research Units (CRUs).—The Committee recognizes the value of Cooperative Research Units and rejects the proposed elimination of the program. The recommendation includes \$25,000,000, \$1,000,000 above the enacted level, to support these research institutions and maintain the educational pipeline, including improving and increasing youth involvement in science and resource management. The recommendation continues the fiscal year 2020 directive to fill critical vacancies, specifically vacancies needed to build quantitative fisheries capacity in inland waters of the Upper Mississippi Basin. The Survey is to use \$700,000 from within available funds to establish a CRU with a programmatic focus on water scarcity with an institution of higher education that does not currently have a CRU. CRUs are expected to coordinate new research projects with the United.

Energy and Mineral Resources.—The Committee agrees to the proposed budget restructure, but not the elimination of the Environmental Health Program which the recommendation funds in the Ecosystems Mission Area. The recommendation provides \$91,181,000 for Energy and Minerals, \$1,140,000 above the enacted level which provides fixed costs and equal to the budget request.

The Committee recommends \$60,664,000 for the Mineral Resources Program, the budget request, which includes \$10,598,000 to support the Earth Mapping Resources Initiative, Earth MRI. This funding level allows the Survey to work with Federal and State partners to modernize the Nation's understanding of the subsurface and improve the topographic, geological, and geophysical mapping of the United States. Making this data available electronically supports management of private-sector mineral exploration of critical minerals and land-use planning.

The recommendation includes \$30,517,000 for the Energy Resources Program, the budget request. The Survey is directed to collaborate with the United States Fish and Wildlife Service to make sure any research or energy assessments do not adversely impact species or their habitats.

Natural Hazards.—The Committee recommends \$173,588,000 for Natural Hazards Programs, \$2,718,000 above the enacted level and \$35,589,000 above the budget request.

The recommendation does not accept the reductions proposed in the budget request and provides \$86,539,000 for Earthquake hazards, \$1,636,000 above the enacted level and \$26,229,000 above the budget request. The Committee strongly supports the Earthquake Hazards program and recommends \$25,700,000 for continued development and expansion of the ShakeAlert West Coast earthquake early warning (EEW) system and for capital costs associated with the buildout of the ShakeAlert EEW. The Survey is encouraged to continue its collaboration with California, Oregon, and Washington to advance this program. The recommendation funds deferred maintenance and modernization for the Advanced National Seismic System, Regional Seismic Network Support, and the Seismic Network, which includes the Central and Eastern U.S. Seismic Network, at no less than the enacted level. Funding for the operation and maintenance of the 43 adopted Earthscope USArray stations is maintained at \$3,000,000. The recommendation provides the funding requested for the next update of the National Seismic Hazard Model. The Survey may use up to \$500,000 from within avail-

able funds to update the seismic hazard models and maps for Puerto Rico and the U.S. Virgin Islands in the same manner that is being done for the models for Alaska and Hawaii. The Survey shall submit a report to the Committee on the updating of the National Seismic Hazard Map within 180 days of enactment of this Act.

The Committee remains concerned about the lack of knowledge and offshore real-time instrumentation available for the Cascadia subduction zone. Scientific understanding of earthquakes and the ocean environment will benefit from the wealth of offshore data collected. The Survey is to continue its development of an early earthquake warning system and its expansion into locations that will benefit from early detection and characterization of earthquakes and tsunamis, to include the Caribbean Basin.

The recommendation does not accept the proposed reductions for the Volcano Hazards program and provides \$30,695,000, \$429,000 above the enacted level for fixed costs. Maintaining the current level of funding for operations at high-threat volcanoes, next generation lahar detection operations, and next generation lahar detection system infrastructure on very high-threat volcanoes ensures there is a system and equipment in place to monitor, detect, and warn the public of volcano and seismic hazards, including lahars, and earthquakes on high-threat volcanoes.

The Committee does not accept the proposed reduction for the Landslides Hazards program, and provides \$4,091,000, \$53,000 above the enacted level for fixed costs. This funding level will prevent human and economic loss through the development of methods and models for landslide hazard assessment, monitoring, and tools for landslide early warning and situational awareness.

The recommendation does not accept the proposed reduction for station upgrades for the Global Seismographic Network (GSN) and provides \$7,189,000, \$36,000 above the enacted level for fixed costs. Adequate resources are provided to continue the multiyear effort to replace failing and obsolete equipment, install new Department of Energy funded sensors, and maintain the network at a high level of quality and reliability.

The USGS Geomagnetism program is part of the U.S. National Space Weather Program (NSWP), an interagency collaboration that includes programs in the National Aeronautics and Space Administration, Department of Defense, National Oceanic and Atmospheric Administration, and National Science Foundation. The program provides data to the NSWP agencies, oil drilling services companies, geophysical surveying companies, and electrical transmission utilities. The Committee funds this program at \$4,025,000, \$25,000 above the enacted level for fixed costs, to ensure that all 14 magnetic observatories remain open and operating and to avoid any disruption to this work. Funding is also provided to support the second year of the Magnetotelluric Survey of the contiguous United States.

The Coastal and Marine Hazards and Resources program supports the hazards programs across the Survey and the Administration's priorities to ensure secure and reliable supplies of critical mineral and energy resources. The recommendation includes \$41,049,000, \$539,000 above the enacted level for fixed costs and rejects the proposed reductions.

Water Resources.—The Committee does not accept the proposed budget restructure. If the Survey proposes another budget restructure in the fiscal year 2022 budget request, it should clearly outline the proposed programmatic changes and easily identify where significant programs will be housed. The recommendation funds Water Resources in the fiscal year 2020 budget structure and provides \$237,443,000, \$3,323,000 above the enacted level and \$56,634,000 above the budget request.

The recommendation includes \$46,051,000 for the Water Availability and Use Science Program, \$1,436,000 below the enacted level and rejects the proposed reductions. Instead of eliminating funding for the Mississippi Alluvial Plain Aquifer Assessment as requested, the Committee provides \$3,000,000 to continue this research program including monitoring saltwater intrusion. The Committee understands the Survey has already funded four major projects at the Lower Mississippi Gulf Water Science Center to map salinity constituents in the Mississippi Alluvial aquifer and Middle Claiborne Aquifer, monitor and model groundwater, and assess aquifer chlorides. The Survey is encouraged to include a proposal in the fiscal year 2022 budget request to monitor saltwater intrusion. The recommendation provides \$1,000,000 to initiate research that examines the hydrologic impact of extraction of water for bottling on water tables, on concentrations of contaminants, on saltwater intrusion into the groundwater, and to better understand water availability. The Water Resources Mission Area allows the Survey to provide information and tools to first responders, the public, water managers and planners, policy makers, and other decision makers. The Committee urges the Survey to continue to engage with universities and other partners to utilize the best available technology to develop advanced modeling tools, state-of-the-art forecasts, and decision support systems for water emergencies and daily water operations. The recommendation maintains the enacted level of funding for the U.S.-Mexico Transboundary Aquifer Assessment. The Committee supports the Survey's work on the development of an irrigation withdrawal model which will include consumptive use. The Survey is to brief the Committee 120 days after enactment of this Act on what is needed to improve model performance and assist water resource managers in their planning for current and future needs.

The Cooperative Matching Funds program is designed to bring State, Tribal, and local partners together to respond to emerging water issues through shared efforts and funding. The recommendation provides \$64,029,000, an increase of \$500,000 above the enacted level.

Streamgages are crucial to early warning and flood damage reduction efforts across the United States. The Committee recommends \$85,752,000 for the National Groundwater and Streamflow Information Program, \$1,579,000 above the enacted level. This increase provides for fixed costs and an additional \$500,000 for the Survey to acquire an additional 10 flood-hardened gages for the Federal Priority Streamgage (FPS) network and supports approximately 3,480 streamgages in the Federal Priority Streamgage Network, which accelerates attainment of the Survey's long-term goal of 4,760 sites. The Committee does not accept any of the proposed program reductions, including the elimination of

funding for Tribal Waters which the recommendation maintains at the enacted level.

The Committee recommends \$94,640,000 for the National Water Quality program, \$2,180,000 above the enacted level. The recommendation rejects the proposed reductions and includes an increase of \$500,000 for the Urban Waters Federal Partnership for a total funding level of \$1,500,000. To understand the health effects of harmful algal blooms (HABs), monitor, characterize, prevent, and control them, the recommendation includes an increase of \$500,000 for a total of no less than \$5,471,000. This increase provides for the implementation of a sentinel system, using multi-sensor satellite data, that will continuously monitor the U.S. for HABs and provide rapid response alerts to water resource agencies, health departments, and the public. As part of this research, the Committee supports the Survey's examination of the pathways through which sediment and nutrients move through watersheds and into bodies of water and how that relates to the formation of harmful algal blooms. The Survey is also urged to coordinate with the Environmental Protection Agency to monitor the nation's water systems and publish available data on the amount of per- and polyfluoroalkyl substances (PFOA/PFAS) detected in our water systems.

The Water Resources Research Act was designed to provide more effective coordination of the Nation's water research by establishing Water Resources Research Institutes at universities in each State, territory, and the District of Columbia. These institutes provide vital support to stakeholders, States, and Federal agencies for long-term water planning, policy development, and resource management. The recommendation does not accept the proposed elimination of funding for this program and provides \$11,000,000, \$1,000,000 above the enacted level. Research initiated in fiscal year 2020 on aquatic invasive species in the Upper Mississippi River region to address a critical need for multi-state research is maintained at no less than the enacted level. The Committee encourages the continuation of the development of multi-state research teams to coordinate needed research for aquatic invasive species in the basin and requests a briefing on the aquatic invasive species hydrologic research proposals that are approved. The Survey is encouraged to use the additional resources provided in the recommendation to support PFAS research.

Core Science Systems.—The Committee accepts the proposed budget restructure to include National Land Mapping in the Core Science Systems Mission Area and recommends \$252,291,000 for Core Science Systems, \$40,242,000 above the budget request.

National Land Imaging.—The Committee recommends \$107,218,000 for National Land Imaging, \$21,305,000 above the budget request. The recommendation does not accept the proposed program reductions and provides \$84,337,000 for Satellite Operations; \$4,847,000 for the National Civil Applications Center; and \$1,215,000 for Remote Sensing State grants, the enacted levels.

Science, Synthesis, Analysis and Research.—The recommendation does not include the proposed reduction for the USGS Library and provides \$24,273,000, \$222,000 above the enacted level for fixed costs. Funding for the National Geologic and Geophysical Data Preservation Program is continued at the enacted level.

National Cooperative Geologic Mapping Program.—The recommendation does not accept any of the proposed program reductions and includes \$40,685,000 for the National Geologic Mapping Program, \$6,288,000 above the enacted level. This increase includes fixed costs and provides \$6,000,000 above the enacted level to accelerate new mapping and sustain Phase Three of the National Geologic Map Database. This effort is bringing together detailed national and continental resolution 2D and 3D information, produced throughout the Survey and by federal and state partners, that is an essential underpinning of the USGS Earth Map and Earth MRI initiatives and will enhance drinking water protection, hazards resilience, infrastructure design, natural resource management, and support a wide range of fundamental research applications.

National Geospatial Program.—The recommendation includes \$80,115,000 for the National Geospatial Program, \$661,000 above the enacted level for fixed costs. The recommendation provides no less than \$46,000,000 for the 3D Elevation Program and directs the Survey to complete 100% coverage of the Great Lakes region, begin expanding coverage to the southeastern United States region, and to include a detailed cost estimate for achieving 100% coverage of that region in the fiscal year 2022 budget justification. The Committee supports the continued collaboration with partners to leverage the resources provided for 3DEP to achieve the goal of national coverage by 2026. Funding for the U.S. Topo program should be at no less than the enacted level and the Survey should continue to procure product-on-demand updates. The recommendation includes funding at the enacted level to produce digital surface models using unclassified satellite optical data for the U.S. and territories not mapped with LiDAR by 2021 in collaboration with appropriate U.S. agencies including the National Geospatial-Intelligence Agency, NASA, and the National Science Foundation. The Committee understands State and Federal agencies can use high accuracy lidar from the 3DEP program to quickly and remotely identify the location, size, and shape of sinkholes. and encourages the Survey to consider the inclusion of areas with a high risk of sinkhole development for repeat coverage. The Committee understands any funding awarded outside the Federal sector will undergo a competitive review process.

The Committee notes the importance of this mission area to conduct detailed surveys and distribute the resulting high-quality and highly accurate topographic, geologic, hydrographic, and biogeographic maps and remotely sensed data to the public. The Committee urges the Survey to continue to engage with universities and other partners to avoid duplication and utilize the best available technology to develop scalable, automated systems that can rapidly identify emerging hazard threats and provide real-time risk, damage and vulnerability assessments, and planning capabilities onto a website to provide enough precision to aid emergency responders and decision makers in easy to understand language, maps, graphics, and other appropriate outputs. The Committee understands the Survey has a long tradition of supporting university partners through peer-reviewed cooperative agreements and competitively awarded grants.

Science Support.—The Committee recommends \$97,245,000, \$417,000 above the enacted level which provides for fixed costs and reflects the transfer of ethics functions to the Office of the Solicitor. The recommendation does not accept the proposed reduction for program operations. The Committee expects administration and management services and information services to continue without reductions that would delay hiring, contracting, accounting functions, and other activities that support the missions of the Survey.

Facilities.—The recommendation includes \$179,982,000, \$901,000 below the enacted level and \$52,345,000 above the budget request. The recommendation includes \$109,718,000 for Rental Payments and Operations and Maintenance, \$4,999,000 above the enacted level and \$6,344,000 below the budget request. The recommendation does not provide the total increase requested but includes funding for rent increases at the National Center in Reston, the Denver Federal Center, and Menlo Park. Funding for fixed costs and for the relocation of Menlo Park to Moffett Field is also provided. For Deferred Maintenance and Capital Improvement, the recommendation does not accept the proposed increase and reductions in the budget request and provides \$70,264,000 which includes \$11,264,000 for projects. The COVID–19 pandemic highlights the need for continued research on zoonotic diseases in safe and secure facilities. The recommendation includes \$59,000,000 for discrete projects to renovate and support Biosafety level 2 and 3 Diagnostic Laboratories at the National Wildlife Health Center and ensure the facility has the capability to safely investigate outbreaks of wildlife disease. The Committee understands COVID–19 has impacted the co-locating of the USGS Mineral Resources Program research laboratories and personnel into a facility to be constructed on the campus of the Colorado School of Mines. The Survey is directed to update the Committee on this collaborative project within 60 days of enactment of this Act.

BUREAU OF OCEAN ENERGY MANAGEMENT
OCEAN ENERGY MANAGEMENT
(INCLUDING RESCISSION OF FUNDS)

Appropriation enacted, 2020	\$191,611,000
Budget estimate, 2021	188,815,000
Recommended, 2021	186,815,000
Comparison:	
Appropriation, 2020	– 4,796,000
Budget estimate, 2021	– 2,000,000

The Committee recommends \$186,815,000 for the Ocean Energy Management appropriation. This amount is \$4,796,000 below the enacted level and \$2,000,000 below the budget request. The overall funding level is partially offset through the collection of rental receipts and other cost recovery fees totaling \$63,055,000, resulting in a final appropriation of \$123,760,000. The recommendation also includes a rescission of \$2,000,000 in prior year unobligated balances. Details of the recommendation are explained through the narrative below and the table at the back of this report.

Renewable Energy.—The Committee recommends \$29,465,000 for Renewable Energy, \$6,140,000 above the enacted level and \$3,000,000 above the budget request. Changes to the request in-

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Bill	Bill vs. Enacted	Bill vs. Request
Emergencies, Hardships, Relocations, and Deficiencies.....	4,000	---	---	-4,000	---
Inholdings, Donations, and Exchanges.....	5,500	---	---	-5,500	---
American Battlefield Protection Program.....	13,000	5,000	---	-13,000	-5,000
Subtotal.....	68,400	17,626	---	-68,400	-17,626
Subtotal, Land Acquisition and State Assistance.....	208,400	17,626	---	-208,400	-17,626
Rescission.....	-2,279	-9,000	-2,000	+279	+7,000
Total, Land Acquisition and State Assistance....	206,121	8,626	-2,000	-208,121	-10,626
Centennial Challenge.....	15,000	---	15,000	---	+15,000
TOTAL, NATIONAL PARK SERVICE.....	3,377,284	2,792,561	3,224,266	-153,018	+431,705
UNITED STATES GEOLOGICAL SURVEY					
Surveys, Investigations, and Research					
Ecosystems:					
Environmental Health:					
Contaminant biology.....	---	---	10,397	+10,397	+10,397
Toxic substances hydrology.....	---	---	13,098	+13,098	+13,098
Subtotal.....	---	---	23,495	+23,495	+23,495

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Bill	Bill vs. Enacted	Bill vs. Request
Species Management Research.....	---	39,993	54,729	+54,729	+14,736
Land Management Research.....	---	37,937	57,408	+57,408	+19,471
Biological Threats Research.....	---	28,541	---	---	-28,541
Biological Threats and Invasive Species Research...	---	---	37,666	+37,666	+37,666
Climate Adaptation Science Centers.....	---	20,866	---	---	-20,866
Climate Adaptation Science Centers and Land Change Science:					
National and Regional Climate Adaptation Science Centers.....	---	---	41,335	+41,335	+41,335
Land Change Science.....	---	---	21,624	+21,624	+21,624
Subtotal.....	---	---	62,959	+62,959	+62,959
Status and trends.....	16,706	---	---	-16,706	---
Fisheries: Aquatic and endangered resources.....	22,136	---	---	-22,136	---
Wildlife: Terrestrial and endangered resources.....	45,957	---	---	-45,957	---
Terrestrial, freshwater and marine environments.....	38,415	---	---	-38,415	---
Invasive species.....	23,330	---	---	-23,330	---
Cooperative research units.....	24,000	---	25,000	+1,000	+25,000
Total, Ecosystems.....	170,544	127,337	261,257	+90,713	+133,920

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Bill	Bill vs. Enacted	Bill vs. Request
Land Resources:					
National Land Imaging.....	98,894	---	---	-98,894	---
Land change science.....	29,045	---	---	-29,045	---
National and Regional Climate Adaptation Science Centers.....	38,335	---	---	-38,335	---
Total, Land Resources.....	166,274	---	---	-166,274	---
Energy and Mineral Resources:					
Mineral resources.....	---	---	60,664	+60,664	+60,664
Energy resources.....	---	---	30,517	+30,517	+30,517
Total, Energy and Mineral Resources.....	---	---	91,181	+91,181	+91,181
Energy, Minerals, and Environmental Health:					
Mineral and Energy Resources:					
Mineral resources.....	59,869	60,664	---	-59,869	-60,664
Energy resources.....	30,172	30,517	---	-30,172	-30,517
Subtotal.....	90,041	91,181	---	-90,041	-91,181

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Bill	Bill vs. Enacted	Bill vs. Request
Environmental Health:					
Contaminant biology.....	10,397	---	---	-10,397	---
Toxic substances hydrology.....	13,098	---	---	-13,098	---
Subtotal.....	23,495	---	---	-23,495	---
Total, Energy, Minerals, and Environmental Health.....	113,536	91,181	---	-113,536	-91,181
Natural Hazards:					
Earthquake hazards.....	84,903	60,310	86,539	+1,636	+26,229
Volcano hazards.....	30,266	27,611	30,695	+429	+3,084
Landslide hazards.....	4,038	3,607	4,091	+53	+484
Global seismographic network.....	7,153	5,397	7,189	+36	+1,792
Geomagnetism.....	4,000	4,139	4,025	+25	-114
Coastal/Marine hazards and resources.....	40,510	36,935	41,049	+539	+4,114
Total, Natural Hazards.....	170,870	137,999	173,588	+2,718	+35,589
Water Resources:					
Water Resources Availability Program.....	---	71,857	---	---	-71,857
Water Observing Systems Program.....	---	108,952	---	---	-108,952
Water Availability and Use Science Program.....	47,487	---	46,051	-1,436	+46,051
Groundwater and Streamflow Information Program.....	84,173	---	85,752	+1,579	+85,752
National Water Quality Program.....	92,460	---	94,640	+2,180	+94,640
Water Resources Research Act Program.....	10,000	---	11,000	+1,000	+11,000
Total, Water Resources.....	234,120	180,809	237,443	+3,323	+56,634

(Amounts in thousands)

	FY 2020 Enacted	FY 2021 Request	Bill	Bill vs. Enacted	Bill vs. Request
Core Science Systems:					
National Land Imaging Program.....	---	85,913	---	---	-85,913
National Land Imaging..... (Satellite Operations).....	---	---	107,218	+107,218	+107,218
Science, synthesis, analysis, and research.....	24,051	24,264	(84,337)	(+84,337)	(+84,337)
National cooperative geologic mapping.....	34,397	21,757	24,273	+222	+9
National Geospatial Program.....	79,454	80,115	40,685	+6,288	+18,928
			80,115	+661	---
Total, Core Science Systems.....	137,902	212,049	252,291	+114,389	+40,242
Science Support:					
Administration and Management.....	74,881	24,617	75,128	+247	+50,511
Information Services.....	21,947	69,556	22,117	+170	-47,439
Total, Science Support.....	96,828	94,173	97,245	+417	+3,072
Facilities:					
Rental payments and operations & maintenance.....	104,719	116,062	109,718	+4,999	-6,344
Deferred maintenance and capital improvement.....	76,164	11,575	70,264	-5,900	+58,689
Total, Facilities.....	180,883	127,637	179,982	-901	+52,345
TOTAL, UNITED STATES GEOLOGICAL SURVEY.....	1,270,957	971,185	1,292,987	+22,030	+321,802